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BEFORE THE
SURFACE TRANSPORTATION BOARD

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RAILROAD COST OF CAPITAL — 2025	)	STB Docket No. EP 558 (Sub-No. 29)

REVISED COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS AND ITS MEMBER RAILROADS

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June 17, 2026

TABLE OF CONTENTS

I. Introduction 2

II. The Cost of Common Equity Capital 3

III. The Cost of Preferred Equity Capital 8

IV. The Cost of Debt 9

V. The 2025 Capital Structure of the Railroad Industry and the Overall Cost of Capital 9

Conclusion 10

REVISED VERIFIED STATEMENT

Witness*	Subject
Dr. Rand Ghayad	The railroads' market value capital structure, overall cost of capital, cost of common and preferred equity, and cost of all types of debt.

*Revised verified statements are referenced in these comments by witness name – viz., Ghayad V.S. at _

BEFORE THE
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RAILROAD COST OF CAPITAL — 2025	)))))	STB Docket No. EP 558 (Sub-No. 29)

REVISED COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS AND ITS MEMBER RAILROADS

By a decision served on March 20, 2026, the Surface Transportation Board ("STB" or "Board") instituted this proceeding to determine the railroad industry's cost of capital for the year 2025. The Board noted that this determination will enable it to make the required annual individual railroad revenue adequacy determination for 2025. 49 U.S.C. § 10701(d)(2), § 10704(a)(2). The Board noted further that the cost of capital determination may also be used in various other STB railroad proceedings. *See Railroad Cost of Capital – 2025*, EP 558 (Sub- No. 29) (STB served Mar. 20, 2026) ("*Cost of Capital – 2025*"), slip op. at 1.

On May 22, 2026, the railroads, through the Association of American Railroads ("AAR"), submitted their calculation of: (1) the railroads' 2025 cost of common equity capital; (2) the railroads' 2025 current cost of preferred equity capital; (3) the railroads' current 2025 cost of debt capital; and (4) the 2025 capital structure mix of the railroad industry on a market value basis. On June 10, 2026, the Board issued a decision directing the Association of American Railroads to submit a revised version of these comments and supporting workpapers correcting the issues identified by the Board. Consistent with the Board's direction, AAR reviewed the underlying data and workpapers and corrected the data alignment and sampling issues

identified in the Board's decision. The analyses have been rerun using the updated inputs, and the resulting calculations, tables, charts, and supporting materials are included in this revised submission.

The AAR's revised calculations are discussed in the attached revised verified statement of Dr. Rand Ghayad, Senior Vice President, Policy and Economics of the AAR. Dr. Ghayad's statement establishes the following:

1. The revised 2025 cost of common equity capital is 10.77 percent.
2. The 2025 cost of preferred equity capital is 0.00 percent.
3. The revised 2025 cost of debt capital is 5.26 percent.
4. The capital structure of the railroad industry is 17.85 percent debt, 0.00 percent preferred equity,[1] and 82.15 percent common equity.

From these data, Dr. Ghayad concludes that the revised overall railroad industry cost of capital for 2025 is 9.79 percent.[2]

I. Introduction

The sole purpose of this proceeding is to determine the railroad industry's cost of capital for 2025. The cost of capital will be computed using the current cost of debt and equity and market value weights. *See Standards for Railroad Revenue Adequacy*, 3 I.C.C.2d 261 (1986), *aff'd sub nom., Consolidated Rail Corporation v. United States*, 855 F.2d 78 (3rd Cir. 1988). The Board has adopted a composite railroad approach to computing an industry-wide cost of capital. This approach relies upon data from a sample of railroads meeting criteria established

[1] There is no preferred equity in 2025.

[2] Ghayad V.S. at 2.

by the Board and its predecessor, the Interstate Commerce Commission, in Ex Parte No. 458, *Railroad Cost of Capital — 1984,* 1 I.C.C.2d 989, 1003-04 (1985), and *Revisions to the Cost-of-Capital Composite Railroad Criteria*, EP 664 (Sub-No. 3) (STB served Oct. 25, 2017). Those criteria are: (1) the company is a Class I line-haul railroad; (2) if the Class I railroad is controlled by another company, the controlling company is primarily a railroad company (at least 50 percent of its total assets are devoted to railroad operations), and it is not already included in the study frame; (3) the company's bonds are rated at least BBB by Standard & Poor's and Baa by Moody's; (4) the company's stock is listed on either the New York Stock Exchange (NYSE) or the Nasdaq Stock Market (NASDAQ); and (5) the company has paid dividends throughout the year (2025).[3]

This year there are three railroad corporations or holding companies in the sample meeting the Board's criteria: CSX Corporation, Norfolk Southern Corporation, and Union Pacific Corporation. These are the same companies included in the 2024 sample.

II. The Cost of Common Equity Capital

In its March 20, 2026 order instituting this proceeding, the Board directed that the cost of capital components be calculated "using the methodology followed in Railroad Cost of Capital – 2024." *See Cost of Capital – 2025*, slip op. at 2. In *Railroad Cost of Capital – 2024*, the Board calculated the cost of equity component in its annual cost of capital proceeding using a simple average of the estimates produced by the Capital Asset Pricing Model ("CAPM") adopted in *Methodology to be Employed in Determining the Railroad Industry's Cost of Capital,* EP 664

[3] Effective November 24, 2017, the Board modified the fourth screening criterion to require a company's stock to be listed on either the NYSE or NASDAQ.

(STB served Jan. 17, 2008) and the Morningstar/Ibbotson Multi-Stage Discounted Cash Flow Model ("MSDCF") adopted in *Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital,* EP 664 (Sub-No. 1) (STB served Jan. 28, 2009).[4] *See Railroad Cost of Capital – 2024,* EP 558 (Sub-No. 28), slip op. at 7-11 (STB served July 21, 2025).[5] Dr. Ghayad used a simple average of the CAPM and Morningstar/Ibbotson MSDCF models adopted by the Board in his calculation of the cost of common equity in this proceeding.

A. <u>The CAPM Methodology</u>

Under the CAPM methodology as applicable to the annual cost of capital proceeding, the cost of common equity is calculated by determining the return an investor would receive on a risk-free investment and by adding to the risk-free return a premium associated with the risk of railroad stocks. The premium is calculated by multiplying the market risk premium of the stock market as a whole by a factor, known as beta, that represents the non-diversifiable risk of holding railroad stocks. In formulaic terms, the CAPM can be expressed as:

K = RF + beta (MRP)

Where K = the firm's cost of equity,
RF = the risk-free rate,
MRP = the market's risk premium, and
beta = coefficient of systematic, non-diversifiable risk of the stock.

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[4] The Morningstar/Ibbotson MSDCF model adopted by the Board is a modified version that includes only the railroads that pass the screening criteria set forth in *Railroad Cost of Capital—1984*, 1 I.C.C.2d 989 (1985), for inclusion in the sample of railroads used for the annual cost of capital determination.

[5] The Board determined that using a simple average of CAPM and the commercially accepted Morningstar/Ibbotson multi-stage DCF model to calculate the cost of equity yields a more precise determination than relying on CAPM alone. As noted by the Board, "By using an average of the results produced by both models, we harness the strengths of both models while minimizing their respective weaknesses. The result should be a stable yet precise estimate of the cost of equity that we can use in future regulatory proceedings and to gauge the financial health of the railroad industry." *Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital*, EP 664 (Sub-No. 1), slip op. at 15 (STB served Jan. 28, 2009).

Since the 2006 cost of capital determination, the well-regarded and widely accepted Ibbotson Equity Risk Premium has been used for the market risk premium, as found in the *Ibbotson SBBI Valuation Yearbook* published by Morningstar.[6] Though that publication was discontinued after the 2013 edition, much of the same data could be found in the *Ibbotson SBBI Classic Yearbook.* Beginning in 2016, Morningstar stopped publishing its *Ibbotson SBBI Classic Yearbook.* For the 2015 cost of capital calculation, the AAR utilized the Duff & Phelps *2016 Valuation Handbook – Guide to Cost of Capital* as a source for the Ibbotson Equity Risk Premium (a.k.a. market risk premium), because this figure is calculated using the same sources and methodology as Ibbotson.[7] Ghayad V.S. at 31-32. For the 2016 calculation, the same source was used: the Duff & Phelps *2017 Valuation Handbook – Guide to Cost of Capital.* Though that publication was discontinued in hardcover form, the publication is available through the Duff & Phelps online *Cost of Capital Navigator*. For the 2025 calculation, the same source was used (the Duff & Phelps *Valuation Handbook – U.S. Guide to Cost of Capital*), but it was obtained through the online *Cost of Capital Navigator*. The calculation for beta was made using the S&P 500 Price Index and the same methodology approved by the Board in previous cost of capital proceedings, including but not limited to the 2020, 2021, 2022, 2023, and 2024 cost of capital proceedings. The values determined by Dr. Ghayad for the elements of the CAPM methodology were 4.78 percent for the risk-free rate, 7.37 percent for the market risk premium, and a revised

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[6] Ibbotson Associates is a wholly owned subsidiary of Morningstar, Inc. "SBBI" stands for "Stocks, Bonds, Bills, and Inflation."

[7] Duff and Phelps notes that this premium is "[c]alculated as the average annual return of the S&P 500 total return index minus the average annual return of the SBBI long-term (20-year) government bond income return series over the 1926-2016 time period. The long-horizon historical equity risk premium was previously published on the "back page" of the Morningstar/Ibbotson *SBBI Valuation Yearbook* (discontinued)."

0.7971 for beta. Ghayad V.S. at 37.

Based on the three-railroad composite described above and the procedures used by the STB in the last cost of capital proceeding, Dr. Ghayad estimates that under the CAPM methodology the revised cost of common equity capital for 2025 is 10.65 percent. Ghayad V.S. at 37.

B. <u>The Morningstar/Ibbotson MSDCF Methodology</u>

The Morningstar/Ibbotson MSDCF methodology, as adopted by the Board, calculates the cost of common equity capital as follows:

> The cost of equity in a DCF model is the discount rate that equates a firm's market value to the present value of the stream of cash flows that could affect investors. These cash flows are not presumed to be paid out to investors; instead, it is assumed investors will ultimately benefit from these cash flows through higher regular dividends, special dividends, stock buybacks, or stock price appreciation. The incorporation of these cash flows and the expected growth of earnings are the essential aspects of the multi-stage DCF we are adopting here.
>
> The Morningstar/Ibbotson model defines cash flows (CF), for the first two stages, as income before extraordinary items (IBEI) minus capital expenditures (CAPEX) plus depreciation (DEP) and deferred taxes (DT), or
>
> $$CF = IBEI - CAPEX + DEP + DT.$$
>
> An average cash flow figure is used as the starting point of the analysis under the Morningstar/Ibbotson model. To find the average cash flow, the model uses the 5-year period leading up to the year being analyzed, and the total cash flows for that time period are divided by total sales, which determine the 5-year cash-flow-to-sales ratio. The ratio is then multiplied by the total sales for the year being analyzed to obtain the average cash flow estimate for that year. For the third (and final) stage of the Morningstar/Ibbotson multistage DCF model stage, Morningstar/Ibbotson uses two additional assumptions: that there is no depreciation or deferred taxes. Therefore, in the third stage, cash flows are based solely on income before extraordinary items.
>
> Growth of earnings is also calculated in three stages. In the first stage (years 1-5), the firm's annual earnings growth rate is assumed to be the median

> value of the qualifying railroad's 3- to 5-year growth estimates as determined by railroad industry analysts and published by Institutional Brokers Estimate System (IBES). In the second stage (years 6-10), the growth rate is the simple average of all growth rates in stage 1. In stage three (years 11 and onwards), the growth rate is the average long-run nominal growth rate of the U.S. economy. This long-run nominal growth rate is estimated by using the historical growth in real GDP and the long-run expected inflation rate.

Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital, EP 664 (Sub-No. 1), slip. op. at 5-6 (STB served Jan. 28, 2009).

The cost of common equity capital using the Morningstar/Ibbotson MSDCF model adopted by the Board is also calculated and explained in the attached Verified Statement of Dr. Ghayad. Consistent with the methodology approved by the Board in *Railroad Cost of Capital – 2008*, EP 558 (Sub-No. 12), slip op. at 9-10 (STB served Sept. 25, 2009), Dr. Ghayad's calculations used only IBES growth estimates (distributed by Refinitiv) available as of the end of 2025, and stock market values were based on shares outstanding and stock prices as of the last trading day of the last full week for 2025 – January 2, 2026 (Friday). Ghayad V.S. at 43.[8]

Dr. Ghayad calculates the cost of common equity capital for 2025, using STB's version of the Morningstar/Ibbotson MSDCF model, as 10.88 percent. Ghayad V.S. at 52.

C. <u>Conclusion as to the Cost of Common Equity Capital</u>

Under the Board's methodology, the cost of common equity capital is the simple average of the results using the CAPM and Morningstar/Ibbotson MSDCF models. The simple average produces a revised cost of common equity capital of 10.77 percent for 2025. Ghayad

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8 Consistent with the methodology approved by the Board in *Railroad Cost of Capital – 2017,* EP 558 (Sub-No. 21), slip op. at 11-12, Dr. Ghayad's calculations used data inputs in the cash flow formula as retrieved from the railroads' 2021-2025 10-K filings with the SEC (and used restated data where set forth in any subsequently filed 10-K filings with the SEC). *See* Ghayad V.S. at 42.

V.S. at 51-52.

III. The Cost of Preferred Equity Capital

Preferred stock is a hybrid security which has some characteristics of debt and some characteristics of equity. Its cost depends on its specific features. The methodology used by the Board applies the following criteria:

(a) Where the preferred is not convertible into common stock, and where the corporation is not required to redeem the preferred at specific times, the cost of preferred equity is equal to its current dividend yield.

(b) Where the preferred is not convertible but is subject to mandatory redemption providing holders of the instrument with a premium, the cost is equal to the current dividend yield, plus the present value of the premium.

(c) Where the preferred is convertible at the option of the holder, and the market values of the preferred and common indicate that conversion is likely to occur or that the conversion right controls the price of the preferred, the preferred has the same cost as common equity.

From 2002 until 2012, no railroads in the composite had preferred stock outstanding. Beginning in 2013, one of the railroad companies comprising the railroad sample had preferred stock outstanding, and this continued through 2020. However, as was the case last year, one railroad company no longer meets the criteria for inclusion in the sample, so there is no preferred stock in this year's calculation. The estimated cost of preferred equity is 0.00 percent for 2025. Ghayad V.S. at 52.

IV. The Cost of Debt

According to the Board's well-established methodology, the cost of debt includes costs for three categories (bonds, equipment trust certificates, conditional sales agreements) of debt instruments, plus flotation costs. *See, e.g., Railroad Cost of Capital – 1997,* EP 558 (Sub-No. 1), slip op. at 2-3 (STB served July 16, 1998); *Railroad Cost of Capital – 2021*, EP 558 (Sub-No. 25), slip op. at 4. To determine the cost of debt for bonds,[9] Dr. Ghayad has computed the average current bond yield for 130 bonds from the sample railroads for which data were available during 2025 according to the Board's well-established methodology. Under this approach, the bond yield is based on a sample representing nearly 99 percent of the book value of the bonds issued by the railroads in the sample.[10] As the Board has recognized, equipment trust certificates ("ETCs") and conditional sales agreements ("CSAs") are not actively traded in secondary markets. Their costs were therefore estimated by comparing them to the yields on Treasury securities that are actively traded.[11] The composite current cost of debt is the market-weighted average cost of bonds, ETCs, and CSAs (if there were any), plus a small flotation cost.[12] Using the Board's established methodology, the railroads' revised 2025 cost of debt is 5.26 percent. Ghayad V.S. at 24.

V. The 2025 Capital Structure of the Railroad Industry and the Overall Cost of Capital

Pursuant to the Board's March 20, 2026 decision, the market values of debt, preferred

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[9] The term "bonds" is used to describe bonds, notes, debentures, and other similar types of debt.

[10] Bond data were retrieved from a Bloomberg database. Ghayad V.S. at 10.

[11] Ghayad V.S. at 12-13. No CSAs were modeled because none are outstanding.

[12] In this proceeding, the AAR calculated bond flotation costs by using data reported by the sample railroads to the Securities and Exchange Commission (SEC) regarding new debt offerings in 2025. Ghayad V.S. at 19-23.

equity, and common equity were compiled to compute the 2025 capital structure of the railroad industry. The railroads' market value capital structure on a market value basis is 17.85 percent debt, 82.15 percent common equity capital, and 0.00 percent preferred equity capital. Ghayad V.S. at 2. Based upon this capital structure, the revised overall 2025 cost of capital is 9.79 percent. Ghayad V.S. at 2.

Conclusion

The Board should determine that the railroads' cost of capital for 2025 is 9.79 percent.

Respectfully submitted,

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June 17, 2026

CERTIFICATE OF SERVICE

I hereby certify that on this 17th day of June 2026, I caused to be served by electronic mail a copy of the foregoing on the following:

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BEFORE THE

SURFACE TRANSPORTATION BOARD

EX PARTE NO. 558 (Sub-No. 29)

RAILROAD COST OF CAPITAL — 2025

VERIFIED STATEMENT

OF

DR. RAND GHAYAD

SENIOR VICE PRESIDENT — POLICY AND ECONOMICS

ASSOCIATION OF AMERICAN RAILROADS

June 17, 2026

STATEMENT FOR REFILED SUBMISSION

Pursuant to the Surface Transportation Board's decision issued on June 10, 2026, the Association of American Railroads (AAR) hereby submits updated cost of capital calculations and supporting workpapers for Railroad Cost of Capital 2025, EP 558 (Sub-No. 29).

Consistent with the Board's direction, AAR reviewed the underlying data and workpapers and corrected the data alignment and sampling issues identified in the Board's decision. The analyses have been rerun using the updated inputs, and the resulting calculations, tables, charts, and supporting materials have been updated as appropriate.

As a result of these revisions, the estimated railroad industry cost of capital for 2025 has been updated from 9.58 percent to 9.79 percent.

AAR respectfully submits these updated materials in response to the Board's June 10, 2026 decision.

Please contact Kiara Carter at kcarter@aar.org with any questions regarding this submission.

Table of Contents

Page

I. Introduction 1

II. Determining the Cost of Capital 3

A. Defining the Cost of Capital 3
B. The Composite Railroad Approach 4
C. Selection of Railroads for Analysis 4
D. Types of Railroad Capital 6

III. Debt Capital in 2025 7

A. Bonds, Notes and Debentures 8
1. Market Value of Bonds, Notes and Debentures 9
2. Current Cost of Bonds, Notes and Debentures 11
B. Equipment Trust Certificates 12
C. Conditional Sales Agreements 16
D. All Other Debt 16
E. Market Value of Debt 18
F. Flotation Costs for Debt Capital 19
G. Conclusion as to the Cost of Debt Capital 23

IV. Common Equity Capital in 2025 24

A. The Market Value of Common Equity Capital 24
B. The Capital Asset Pricing Model (CAPM) 27
1. Risk Free Rate (RF) 29
2. Market Risk Premium (MRP) 30
3. Beta 32
4. Cost of Common Equity Using the CAPM 37
C. The Multi-Stage Discounted Cash Flow Model 38
1. Cash Flows 39
2. Growth Rates 42
3. Market Values 48
4. Cost of Common Equity Using the MSDCF Model 49
D. Conclusion as to Cost of Common Equity Capital 51

V. Preferred Equity Capital in 2025 52

VI. The Overall Cost of Capital in 2025 52

A. Determination of Market Value Weights 52

B. The Overall Cost of Capital 53

VII. Qualifications of Dr. Rand Ghayad 54

List of Tables

Page

1. Evaluation of Class I Railroads 5
2. Bonds, Notes and Debentures - Average Market Value 10
3. Bonds, Notes and Debentures - Weighted Current Cost 11
4. History of Premiums for Equipment Trust Certificates (ETC) 14
5. Summary of Equipment Trust Certificates Modeled for 2025 15
6. Market Value of Debt 18
7. Flotation Costs for Equipment Trust Certificates 22
8. Flotation Costs for Debt 23
9. Composite Current Cost of Debt 24
10. Average Market Value for Common Equity in 2025 25
11. 20-Year U.S. Treasury Bonds 2013 - 2025 30
12. Cost of Common Equity Using STB's Capital Asset Pricing Model 37
13. Example Cash Flow Calculations for NS in 2025 41
14. 2025 Thomson Median Growth Rate Estimates 44
15. Equity Market Value on Year-End, 2025 49
16. Cost of Equity Using STB's Ibbotson MSDCF 51
17. Cost of Common Equity Capital 52
18. Capital Structure and Weights 53
19. Weighted Current Cost of Capital 54

List of Charts

Page

1. S&P 500 (2025 vs. 2024) 26
2. S&P 500 vs Railroad Stock for 2025 26

List of Appendices

Appendix A — Bonds, Notes and Debentures

Appendix B — Interest Rates on Selected Government Instruments (Yield Curve)

Appendix C — Equipment Trust Certificates

Appendix D — 2025 Market Value of Debt

Appendix E — 2025 Flotation Costs for Bonds

Appendix F — 2025 Current Cost of Debt

Appendix G — Market Value for Common Equity (2025)

Appendix H — Historical Risk Free Rates and Market Risk Premiums

Appendix I — AAR Regression for 2025 Beta

Appendix J — Cost of Common Equity Using the Multi-Stage DCF model (formula)

Appendix K — Cash Flow Calculation

Appendix L — 2025 Median Growth Rates for MSDCF

Appendix M — Stage 3 Growth Rate for MSDCF

Appendix N — Market Value Data for MSDCF

Appendix O — 2025 Cost of Equity Using STB's MSDCF

Verified Statement

of

Dr. Rand Ghayad

I. Introduction

My name is Dr. Rand Ghayad. I am the Chief Economist and Senior Vice President of Policy and Economics at the Association of American Railroads (AAR), headquartered at 425 Third Street, SW, Suite 1000, Washington, DC 20024. The AAR is the trade association of the Nation's major railroads, as well as the railroads of Canada and Mexico. The AAR's United States railroad members, which include all Class I railroads plus about 180 additional Class II and III freight railroads, account for approximately 98 percent of our Nation's total railroad freight operating revenue.

When appropriate, the AAR represents the railroad industry before government bodies, including economic regulatory proceedings before the Surface Transportation Board ("STB" or "Board"). In particular, the AAR has participated in all of the STB proceedings addressing revenue adequacy standards and the annual cost of capital determinations.

Aside from other responsibilities, I've provided economic analyses and consulting services to clients across diverse industries such as aviation, railroads, postal and shipping, addressing a wide range of policy and business matters. A summary of my qualifications and experience appears at the end of this statement.

This revised statement is submitted in response to the Board's decision served June 10, 2026, directing AAR to submit a revised version of its comments and workpapers in Railroad Cost of Capital 2025, EP 558 (Sub-No. 29). Consistent with the Board's decision served March

20, 2026, instituting this proceeding, I calculate the railroad industry's 2025 cost of capital using the methodologies adopted by the Board in prior cost-of-capital determinations. In this revised statement, I calculate the cost of debt for the railroad industry using the procedures accepted in previous STB proceedings. I also calculate the cost of common equity using a simple average of the estimates produced using the following methods: (1) the Capital Asset Pricing Model used by the Board in Ex Parte No. 558 (Sub-No. 28); and (2) the STB's version of the Morningstar/Ibbotson Multi-Stage Discounted Cash Flow Model as used by the Board in Ex Parte No. 558 (Sub-No. 28). When applicable, I calculate a cost of preferred equity using the dividend yield method, as used in Ex Parte No. 558 (Sub-No. 28). Finally, I calculate the market value capital structure and the overall cost of capital using the procedures accepted in previous Cost of Capital proceedings. This statement presents the details for calculating the necessary components for the overall cost of capital: the market value capital structure, the cost of debt, the cost of common equity capital using the Capital Asset Pricing Model and the Multi-Stage Discounted Cash Flow Model, and, as applicable, the cost of preferred equity capital.

I conclude that the revised 2025 cost of capital for the railroad industry is 9.79 percent. This estimate is based on a current cost of debt of 5.26 percent, a cost of common equity capital of 10.77 percent; a cost of preferred equity of 0.00 percent; and market value weights for debt, common equity, and preferred equity of 17.85 percent, 82.15 percent, and 0.00 percent, respectively.

II. Determining the Cost of Capital

A. Defining the Cost of Capital

The cost of capital represents the *expected* return on investment that the providers of capital require to make them indifferent between investments with equivalent risk profiles. The cost of capital necessarily incorporates long-term investor expectations for a company's performance. Investment funds flow to companies where the expected returns, over the investors' investment horizons, are thought to at least equal the expected returns available from other investment opportunities, giving consideration to the relative (or commensurate) risk of investment. Similarly, within a company, limited capital resources flow to projects where the expected returns are anticipated to be highest, considering the relative (or commensurate) risk, uncertainty, and timing of investment. Because it is challenging to precisely ascertain these expectations of long-term investors, it is standard in the literature to estimate the parameters associated with the cost of capital using modern finance techniques. Such financial models are inherently imprecise, and the results provide only an estimate of an expected value of the cost of invested capital at a particular point in time. For some types of capital, such as traded bonds, investor expectations can be readily observed. For other types of capital, such as common equity, modeling is necessary. Using multiple models to estimate the cost of equity is crucial. Two widely employed methods for regulatory purposes include the Capital Asset Pricing Model (CAPM) and a Discounted Cash Flow (DCF) model.

B. The Composite Railroad Approach

The STB has adopted a composite railroad approach to computing an industry-wide cost of capital. This approach relies upon data from a sample of railroads meeting criteria established by the Board's predecessor, the Interstate Commerce Commission, in Ex Parte No. 458, *Railroad Cost of Capital — 1984,* 1 I.C.C. 2d 989, 1003–1004 (1985), and modified by the STB in Ex Parte No. 664 (Sub-No. 3) served October 25, 2017.

C. Selection of Railroads for Analysis

Under the criteria established by the Board for individual firm inclusion in the composite railroad sample, a company must meet certain criteria. (Ex Parte No. 558 Sub-No. 29 Decision) Those criteria are:

- The company is a Class I line-haul railroad;
- If the Class I railroad is controlled by another company, the controlling company is primarily a railroad company (at least 50 percent of its total assets are devoted to railroad operations), and it is not already included in the study frame;
- The company's bonds are rated at least BBB by Standard & Poor's and Baa by Moody's;
- The company's stock is listed on either the New York Stock Exchange (NYSE) or the Nasdaq Stock Market (NASDAQ); and
- The company has paid dividends throughout the year (2025).

Table 1 lists the AAR's evaluation of railroad companies that may meet the STB's criteria.

Table No. 1
Evaluation of Class I Railroads
Under Surface Transportation Board Selection Criteria
2025

Class I Railroad	Parent	Stock Symbol	Dividends Throughout 2025	Rail Assets Account For At Least 50% of Parent	Adequate Debt Rating	NYSE or NASDAQ
BNSF	Berkshire Hathaway	BRK-A	No	No	Yes	Yes
CSX	CSX Corporation	CSX	Yes	Yes	Yes	Yes
CNGT*	Canadian National Railway Co.	CNI	---	Non-U.S. company	---	
NS	Norfolk Southern Corporation	NSC	Yes	Yes	Yes	Yes
CPKC*	Canadian Pacific Kansas City	CP	---	Non-U.S. company	---	
UP	Union Pacific Corporation	UNP	Yes	Yes	Yes	Yes

* CNGT is Grand Trunk Corporation, and consists of almost all of the U.S. railroad operations of Canadian National Railway (a.k.a. CN). CPKC is KCS and Soo Line Corporation, and consists of the U.S. operations of Canadian Pacific Kansas City (CPKC). Following STB precedent, CN and CPKC were not included in the sample because both CN and CPKC are Canadian corporations – and the cost of capital proceeding is concerned with determining costs for U.S. railroads under STB jurisdiction.

This year there are three railroad corporations or holding companies in the sample which meet the Board's criteria: CSX Corporation, Norfolk Southern Corporation, and Union Pacific Corporation. Consistent with past proceedings, the two Canadian-owned railroads have been excluded from the sample.[1] Berkshire Hathaway, owner of BNSF Railway Company, did not pay dividends throughout 2025, and the railroad is less than 50% of the company's assets.[2] Based on data from the Revenue, Expense, & Income (RE&I) and Condensed Balance Sheet (CBS)

[1] *See* STB Ex Parte No. 558, decided July 2, 1997, page 2, and verified statement of Craig F. Rockey on behalf of the Association of American Railroads in Ex Parte No. 558, submitted March 19, 1997, Table 1 on page 6. Accounting methods, differences in the treatment of taxes, and currency conversion could also be issues if foreign companies were added to the composite railroad. The railroad parents (CN and Canadian Pacific Kansas City) are still more Canadian than USA. Comparing operating revenues for 2024 as reported in the AAR's *Railroad Facts* book, 2025 edition: CNGT was 27 percent of CN, and KCS and SOO combined was 33 percent of Canadian Pacific Kansas City.

[2] The rail operations of BNSF Railway Company are the principal operating subsidiary of Burlington Northern Santa Fe, LLC – which is a subsidiary of Berkshire Hathaway, Inc. For 2025, BNSF accounted for 8.0 percent of Berkshire Hathaway assets. Among the many other diverse subsidiaries of Berkshire Hathaway are GEICO, Fruit of the Loom, and Helzberg Diamonds. The company also owns pipelines, manufacturers, numerous automobile dealerships, real estate companies, and newspapers.

Forms from Q4 2025, the three-firm composite accounts for over 60 percent of the operating revenues and assets of all Class I railroads.

D. Types of Railroad Capital

The total capital of a firm may include various forms of debt and two types of equity; common stock and preferred stock. Each of these three sources of capital has different expected rates of return (reflecting different levels of perceived risk of the particular debt or equity instrument), and the overall cost of capital is calculated as the market value weighted average of the costs of common equity, preferred equity, and debt. Different approaches are used to estimate the costs of each of the types of capital. In this statement, 98.8 percent of the cost of debt is calculated using bonds and similar instruments (including notes and debentures). The remaining 1.2 percent – in the form of Equipment Trust Certificates – is calculated with a long-used model that permits comparison of market-determined yields for government debt, and the historical relationship between government debt and the type of railroad debt modeled.[3] No Conditional Sales Agreements were used to calculate the 2025 cost of debt because they have all been retired. The estimate of the cost of common equity is a simple average of the results from two estimation methods. One method is calculated using the backward-looking Capital Asset Pricing Model (CAPM) following the methodology prescribed by the Board and used in the 2024 Cost of Capital decision. The other method is calculated using the somewhat more forward-looking Multi-Stage Discounted Cash Flow model (MSDCF) methodology prescribed by the Board and also used in the 2024 Cost of Capital decision. It is

[3] There are currently four Equipment Trust Certificates modeled.

the combined return on equity estimate—rather than the outcomes of any single model—that matters for evaluating the cost of equity in the railroad industry. The cost of preferred equity capital would have been calculated using a simple dividend yield method, as also used in the 2024 Cost of Capital decision; however, none of the participating railroads have any preferred equity this year. Calculations for all three types of capital are based on data through 2025. The industry's overall cost of capital is computed as a weighted average of the three costs — debt, common equity, and preferred equity — based upon the market value for each type of capital.

III. Debt Capital in 2025

The current cost of debt is determined from the current market-determined yields on all debt outstanding. This approach is necessary and, in past Board Cost of Capital decisions, has been accepted as appropriate because of the reasons listed below.[4]

1. There is a lack of sufficient new debt issues from which to develop a representative, and statistically reliable, current cost.
2. The stated rate of interest/dividend payment to the investor is not always the same as the cost to the railroad. For example, when securities are issued, the total amount paid by investors is seldom received by the railroad. Administrative fees, such as compensation paid to investment bankers, reduce the proceeds to the railroad. The effect of this is to increase the cost of the securities to the railroad.

[4] *See* Ex Parte Nos. 415, 436, 452, 458, 464, 466, 473, 478, 486, 491, 506, 513, 518, 523, 523 (Sub-No. 1), 558, and 558 (Sub-No. 1) through (Sub-No. 28).

3. The maturity mix and the type of instrument (equipment trust certificates, conditional sales agreements, long-term debt) of new security issues may be different from the average of existing securities. Because of the effect that length of maturity and type of security has on its current cost, the use of only new issues would not accurately measure the current cost.

4. The quantity and quality of existing debt have an impact on the yield of new issues.

A. Bonds, Notes and Debentures

As in previous Cost of Capital determinations, calculations relating to the bond market value use market data for the composite railroad whenever possible, and calculations for the cost of bond debt rely entirely on market data.[5] Multiple sources for market data are available, and each source has its own criteria for including a financial instrument in its database. However, no market data will be available in any database for bonds that do not trade.[6] For 2025, yields and prices of the sample railroads' bonds, notes, and debentures were obtained from Bloomberg.[7] This source is the same data source used since the 2011 cost of capital determination. We were able to find data for 130 unique CUSIPs (bond identifiers).[8] The 130

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[5] The terms "bonds" and "bonds, notes, and debentures" are used interchangeably herein.

[6] In some cases, a comparable bond method could be used, where yields for traded bonds could be used for non-traded bonds with similar qualities (maturity date and type of instrument), enabling the calculation of a probable market price. Another approach would be to construct a yield curve for a railroad. We have not recommended these approaches because the supply of bonds with market data is adequate.

[7] Bloomberg's product is called Bloomberg Professional, and it is available as a subscription service. https://www.bloomberg.com/professional/

[8] A CUSIP number is a 9-character identification code used to identify a security. CUSIP is an abbreviation for Committee on Uniform Securities Identification Procedures.

bonds represent nearly 99 percent of the book value of all railroad bonds belonging to the composite railroad. The bonds not included in the market value calculation are those that are either not in Bloomberg's database or were in the database but did not trade.

1. Market Value of Bonds, Notes, and Debentures

The average market value for traded bonds, notes, and debentures is calculated using the methodology employed in previous Cost of Capital proceedings. For each of the 130 bonds with market data in 2025, an average price is calculated based on the simple average of monthly prices. The prices represent what the investor is willing to pay for the bond given its coupon rate and maturity date. The market value is the average market price (stated as a price per hundred dollars of principal) times the amount of debt outstanding as of December 31, 2025.[9] Where market prices are not available (i.e., for instruments that did not trade or were not found in the Bloomberg database), the "face value" of the bond is assumed to be the price investors would pay. This assumption may slightly overstate the market value of some issues and understate the value of others, depending upon the relationship between the instruments' coupon rate and the current market rate. However, this possible variation is not likely to significantly affect the overall estimate of the cost of debt capital, since the differences are likely to be both small and offsetting – and, most importantly, since nearly 99 percent of the book value of bonds is priced at market. Table 2 summarizes the results of the market value

[9] Securities that were newly issued during the year were prorated by the ratio of the number of months outstanding (rounded to the nearest half month) to the twelve-month year, as done in past proceedings.

calculations for 2025. The market value for bonds, notes, and debentures that traded is $56.1 billion, which is 98.5 percent of the total market value of $56.9 billion.

Table No. 2
Bonds, Notes and Debentures
Average Market Value

Railroad Co.	Traded Value ($000)	Non-Traded Value ($000)	Total Value ($000)	Weight Based on Traded
CSX	$16,342,844	$441,679	$16,784,524	29.14 %
NSC	$14,801,720	$400,000	15,201,720	26.40
UNP	$24,931,325	$0	24,931,325	44.46
Total	$56,075,889	$841,679	$56,917,568	100.00 %
Prior Year	$55,820,986	$591,679	$56,412,666	
Change	0.5%	42.3%	0.9%	

Although the number of bond offerings decreased in 2025, the total market value for bonds is up 0.9 percent from the previous year. Among the causes of this increase are existing debt offerings increasing in market value, as average yields decline.

Appendix A lists details for each of the 130 bonds, notes, and debentures belonging to the composite railroad that have trading data available for 2025 in the Bloomberg database. As footnoted earlier, there are a few cases where a similar series of bonds has been assigned two CUSIPs because a privately-placed portion trades among qualified institutional buyers instead of through an exchange, as allowed under the Securities and Exchange Commission's Rule 144A. All instruments are summarized for each sample railroad in the front of the Appendix. Book values for non-traded debt are also listed.

2. Current Cost of Bonds, Notes, and Debentures

Table 3 summarizes the yield or cost of each railroad's debt (bonds, notes, and debentures), which, when weighted by the market value of the traded debt (as shown in Table 3), determines the sample composite cost of bonds, notes and debentures. The weighted average is 5.179 percent, which is 0.003 percentage points higher than 2024's figure of 5.176 percent.

Table No. 3
Bonds, Notes and Debentures
Weighted Current Cost

Railroad Co.	Weight	Current Cost
CSX	29.14 %	5.141 %
NSC	26.40	5.281
UNP	44.46	5.142
Total	100.00 %	5.179 %

As noted earlier, the current cost for bonds, notes, and debentures is based on traded instruments issued by the sample railroads. Appendix A contains the average yield for each of the 130 securities that traded according to Bloomberg's database. The average yield for each security is a simple average of the twelve month-end yields. The traded portion of Appendix A (in the front section) summarizes the yield, or cost of each railroad's debt, which, when weighted by the market value of the traded debt, determines the sample composite cost of bonds, notes and debentures of 5.179 percent. The weights used in Table 3, as derived from the calculations in Table 2, are also based on the traded portion of bonds, notes and debentures listed in Appendix A.

B. Equipment Trust Certificates

Equipment Trust Certificates (ETCs) are debt obligations that are secured by the particular equipment which is acquired with the instrument's proceeds. In the event of default, creditors may repossess and resell or lease the equipment to pay off the debt obligations. This type of security has declined in popularity. In the 1990 cost of capital determination, ETCs accounted for 17.70 percent of the market value for the sum of bonds, ETCs, and conditional sales agreements.[10] For 2025, this percentage is 1.2 percent. Because entire ETCs are not actively traded in secondary markets, it is necessary to determine their cost by examining the return on other debt securities that are actively traded.

An ETC is generally serially issued. As such, each year during its life an equal amount (typically 1/15th) of the original amount must be retired. Consequently, an ETC may be thought of as a series of individual, annually-retiring bonds. In fact, when ETCs are issued, each of the maturities is sold independently from the others. A serially issued debt instrument provides an investor with the ability to purchase only those maturities of particular interest. To correctly compute the composite yield on a serially issued bond, the internal rate of return on the bond's principal and interest payments must be calculated.

To compare ETCs to other debt instruments, the yields to maturity (as detailed in Appendix B) for government bills, notes, and bonds having the same range of maturities as current ETCs were obtained from Federal Reserve data. The yield curve for these government

[10] See Table 1 in ICC Ex Parte No. 491, decided June 12, 1991. Conditional Sales Agreements accounted for an additional 2.46 percent of debt in the market value calculation.

securities (also in Appendix B) shows the relationship between the current costs, or yields to maturity, and maturity dates for government bonds (which, unlike ETCs, are actively traded in secondary markets).

These yield data have been adjusted by the Federal Reserve Board to reflect constant maturities, such that the data accurately reflect the 2025 relationships between yields and maturities. After determining the yields to maturity for government bonds of maturities similar to those of an ETC, those yields are adjusted to reflect the risk associated with the ETCs as compared to government bonds. This adjustment is the risk premium for railroad ETCs, which is the spread between ETCs and government securities.

In 2014, 2015, and 2016, a railroad issued new ETCs with interest rate spreads above government bonds of 76, 44, and 70 basis points, respectively. Since there were no new ETCs issued between 2016 and 2025, the 70 basis point spread is our most recent calculation, and I have used that difference for 2025. For comparisons, Table 4 lists historical spreads used since 2004 and the spread proposed for 2025.[11] Other than the spread for data year 2015, which appears to be an anomaly, the spread of 70 basis points is the lowest spread used in this century.

[11] The 70 basis point spread was calculated using the same method that was used in 2008, 2010, 2014, 2015, and 2016, and calculations were included in work papers submitted with each verified statement.

Table No. 4
History of Premiums for
Equipment Trust Certificates (ETC)

Data Year	Proceeding	Basis Points
2004	Ex Parte No. 558 (Sub-No. 8)	114
2005	Ex Parte No. 558 (Sub-No. 9)	114
2006	Ex Parte No. 558 (Sub-No. 10)	114
2007	Ex Parte No. 558 (Sub-No. 11)	125
2008	Ex Parte No. 558 (Sub-No. 12)	125
2009	Ex Parte No. 558 (Sub-No. 13)	80
2010	Ex Parte No. 558 (Sub-No. 14)	80
2011	Ex Parte No. 558 (Sub-No. 15)	80
2012	Ex Parte No. 558 (Sub-No. 16)	80
2013	Ex Parte No. 558 (Sub-No. 17)	80
2014	Ex Parte No. 558 (Sub-No. 18)	76
2015	Ex Parte No. 558 (Sub-No. 19)	44
2016	Ex Parte No. 558 (Sub-No. 20)	70
2017	Ex Parte No. 558 (Sub-No. 21)	70
2018	Ex Parte No. 558 (Sub-No. 22)	70
2019	Ex Parte No. 558 (Sub-No. 23)	70
2020	Ex Parte No. 558 (Sub-No. 24)	70
2021	Ex Parte No. 558 (Sub-No. 25)	70
2022	Ex Parte No. 558 (Sub-No. 26)	70
2023	Ex Parte No. 558 (Sub-No. 27)	70
2024	Ex Parte No. 558 (Sub-No. 28)	70
2025	Proposed for EP 558 (Sub-No. 29)	70

Source for 2004-2025: STB Cost of Capital Decisions.

The methodology used to determine the cost of ETC debt is the same as the method employed and approved in previous proceedings. Risk-adjusted yields provide the basis to value each ETC. Using formulae suggested by *Standard Security Calculation Methods,* the market value of each maturity comprising an ETC is determined. In effect, these formulae make it possible to determine the price investors would pay in 2025 for the contractual interest payments and price appreciation for holding the instrument. It is the most accurate way to compute the current cost of ETCs to the firm for the defined period. Computing the internal rate of return of the ETC prices and their associated cash flow streams establish the current

cost for ETCs. The weighted-average cost for all modeled Equipment Trust Certificates is shown in Table 5.[12]

Table No. 5
Summary of Equipment Trust Certificates Modeled for 2025
($000)

Railroad	Amount Outstanding Beg.	Ending	Average	Yield	Current Market Value	Current Interest Amount	No. ETC
CSX	$0	$0	$0	--	$0	$0	0
NS	0	0	0	--	0	0	0
UP	731,873	693,021	712,447	4.588%	692,136	31,756	4
Total	$731,873	$693,021	$712,447	4.588%	$692,136	$31,756	4

Weighing railroad yield (there was only one railroad) by its current market value for modeled ETCs results in a current cost of 4.588 percent. The average rate is lower than the 5.069 percent found in 2024. In this year's case, the premium used in the model is the same as last year – so the higher yield curve for 2025 reflects the higher interest rates on government

[12] The formulae used to value these bonds are standards of the security industry. They are:

For bonds with less than six months to maturity:

$$DP = \left[\frac{100 + C/2}{1 + DY/360}\right] - \left[C/2\ \frac{(180 - D)}{180}\right]$$

For bonds with six months or longer to maturity:

$$DP = \left[\frac{100}{(1 + Y/2)_{\text{EXP}}(N - 1 + D/180)}\right] + \left[\sum_{k=1}^{N} \frac{C/2}{(1 + Y/2)_{\text{EXP}}(K - 1 + D/180)}\right] - \left[C/2\frac{(180 - D)}{180}\right]$$

Where:
- DP = Dollar price of the bond
- C = Coupon rate as a percent per year
- D = Number of days from settlement date to coupon date
- Y = Yield to maturity as a decimal per year
- EXP = Raise the term on the left to the power indicated by the term on the right
- N = Whole number of coupons payable plus 13
- K = Compute for K, values 1 to N and sum the results

securities (See Appendix B). Appendix C lists each ETC, and includes a market value and a current yield for those modeled. Appendix C also lists ETCs that were not modeled and those current, which are not used. Union Pacific is the only railroad with ETCs, and there were no current ETCs that were fully amortized in 2025. ETCs can fail to be modeled for two reasons: (1) the ETC instrument does not have all of the characteristics typical of an ETC; or (2) the ETC has a floating rate (instead of fixed) making its rate for a particular future year uncertain. There were no non-modeled ETCs this year. The market value of all modeled ETCs is $692.1 million.

C. Conditional Sales Agreements

Conditional Sales Agreements (CSAs) are another form of railroad financing that is treated by investors as debt securities, because their interest obligations are essentially the same as interest obligations on ETCs. Like ETCs, CSAs are not generally traded in secondary markets. Accordingly, as in prior proceedings, their current cost can be determined from current yields on government bonds in a similar manner to ETCs, using a 1997 relationship between CSAs and ETCs to determine the yield spread over government bonds. As in other recent years, no CSAs were outstanding in 2025 – so none were modeled and none were added to Miscellaneous Debt. No CSAs have been modeled since 2010, and none have been outstanding (non-modeled or current) since 2014. There is no appendix for CSAs.

D. All Other Debt

Capital leases and miscellaneous debt, which are normally relatively small amounts outstanding, are listed as All Other Debt. To comply with past decisions of the Board, non-

modeled Equipment Trust Certificates and Conditional Sales Agreements would have been listed in this category had there been any this year. Capital leases are the largest portion of the All Other Debt category.

Capital leases are contracts between two parties and as such take many forms.[13] Since capital leases are not traded in the marketplace, their current cost is not directly observable. The lack of complete information with respect to leases necessitates that many assumptions be made to estimate their current cost and their values. For market value purposes, capital leases are included at book value. Given the large number of these leases and the significant differences among their terms, this is the only practical option available. Because the cost of capital calculation assigns this debt a cost based on traded or modeled securities (bonds, notes, debentures, ETCs and CSAs) that typically have a lower cost, the cost used for capital leases will be somewhat understated. The book value (assumed market value) of capital leases for 2025 is $122.5 million.

Miscellaneous debt, such as floating rate loans, demand deposits, premiums/discounts, and various instruments with extremely small amounts outstanding are also excluded from the current cost computations. However, miscellaneous debt is valued at negative $1,147.0 million because in 2025 it consists mostly of discounts and unamortized debt issuance costs.

Capital leases and miscellaneous debt, when combined, net to negative $1,024.5 million and there were zero non-modeled ETCs. Therefore, All Other Debt as a percent of the total market value of debt of the composite railroad is negative 2.0 percent. Miscellaneous debt fell

[13] *See* generally 49 C.F.R. 1201, 2–20 for definitions.

further than its 2024 level, and much of the decrease was caused by capital leases and discounts. More details on Miscellaneous Debt can be found in the Debt Reconciliation portion of my work papers. This treatment of All Other Debt is the same approach used in the previous cost of capital proceeding.[14]

E. Market Value of Debt

Table 6 summarizes the total market value for each debt category. The total market value for traded and non-traded debt is $56,585 million.

Table No. 6
Market Value of Debt ($000)

Type of Debt	Market Value	Percent of Total	Percent of Subtotal
Bonds, Notes & Debentures	$56,917,568	100.59 %	98.80 %
Equipment Trust Certificates	692,136	1.22	1.20
Conditional Sales Agreements	0	0.00	0.00
Subtotal	57,609,705	101.81	100.00 %
All Other Debt*	-1,024,470	-1.81	
Total	$56,585,235	100.00 %	

* If any ETCs or CSAs are not modeled, they are included in All Other Debt.

Bonds, Notes, and Debentures (Bonds) account for 100.6 percent of the total market value. More details can be found in Appendix D. As can be computed from that appendix, nearly 99 percent of the Bonds' market value is determined by the results of trading throughout the year, while the remaining portion is based upon the book value of non-traded bonds.

[14] Non-modeled ETCs and/or CSAs would also have been included in the All Other category if there had been any.

Current costs can be determined for three of the four debt categories: Bonds, Equipment Trust Certificates, and Conditional Sales Agreements, had there been any. Therefore, in 2025, the weighted average cost of debt is based upon these three (of the four) debt categories (see subtotal column). The total market value of debt, used to determine the weight for debt in the overall cost of capital calculation, includes all four categories.

F. Flotation Costs for Debt Capital

The cost of issuing new debt generally has two portions. First, when new debt is issued by a negotiated offering or a competitive bid, the issuing firm pays a fee to the investment banking firm or firms handling the offer. These fees cover the banker's administrative costs in handling the sale and profits. Second, the issuer incurs expenses such as legal, accounting, and printing. Those types of expenses are quantified in the Securities and Exchange Commission's Form 424(b)(5) or 424(b)(2), as are the investment banker's fee and other details of new debt offerings. Flotation costs generally vary by type of security. For ETCs and CSAs, the fees are extremely small, but costs increase as the administrative burden and underwriting risk increase (i.e., in order of increasing cost ETCs and CSAs, bonds and notes, convertible bonds, and preferred stock and common stock). As discussed below, flotation costs directly reduce the gross proceeds available to the issuing firm.

An example helps to illustrate how flotation costs permanently increase the cost of debt capital to the railroad. If a railroad sells a 10-year bond with an annual coupon of 15 percent and investors are willing to pay $98 for each $100 in face value, the effective yield on the bond is 15.40 percent. Because the investment banker requires compensation (flotation costs) for

his work, the railroad does not receive the full $98 from the investors. In addition, the railroad will have its own internal costs such as legal and accounting. If flotation costs reduce the net proceeds to say $96, the effective cost to the railroad over the life of the bond is 15.82 percent. Therefore, flotation costs have increased the cost of debt from 15.40 to 15.82, or by 42 basis points. Proper accounting treatment requires the $4 per $100 ($100 - $96) to be amortized on a straight line basis over the life of the bond. In addition, the Uniform System of Accounts requires the annual amortization to be charged directly to Account No. 548, Amortization of Discount on Funded Debt, a fixed charge item. This results in fixed charges for the year totaling $15.40 ($15.00 coupon payment + amortization of $0.20 discount + $0.20 flotation costs). It is important to note that these flotation costs are not recovered through operating costs but are fixed charges each year during the life of the bond. Also, it is evident that in order to reflect the total current cost of debt, flotation costs must be included.

Firms require the opportunity to cover flotation costs before they have an incentive to make future capital expenditures. Before creditors will lend their funds, they must be assured that the railroad will have the opportunity to earn returns sufficient to cover all costs.

Using the same methodology used since 2008, I calculated 2025 flotation costs for bonds using publicly available data from electronic filings with the Securities and Exchange Commission (SEC).[15] The filing types are "Prospectus Rule 424(b)(2)" and "Prospectus Rule 424(b)(5)". In addition to standard bond information such as coupon and maturity date, these

[15] The SEC's EDGAR (Electronic Data Gathering, Analysis, and Retrieval) system is available on the internet at the following address: https://www.sec.gov/edgar.shtml .

filings also provide the price to investors, underwriter's fee, and railroad expenses excluding the underwriter's fee. I have calculated a yield based on the price to investors and a yield that also included flotation costs. The difference between the two yields is the flotation cost expressed in percentage points. For 2025, five new issues were reported with a flotation cost of 0.093 percent, which is 0.032 points higher than the average figure used by the Board for 2024. As before, debt exchanges have not been included. Page 1 of Appendix E contains a table with input data and calculations. Pages 2 and 3 of the same appendix contain, as an example, the pages from the SEC filing that were used as a source for one of the filings. The source filings for all of the new bond issues have been included in my work papers. I believe the new railroad debt issued provides the best information to determine flotation costs for 2025, and I have therefore used 0.093 percent for the flotation costs for bonds.

Flotation costs for ETCs have much less significance compared to bonds simply because ETCs are less than 2 percent of the market value of the debt used to determine the current cost of debt. I have calculated flotation costs for ETCs using the same methodology used in the previous Cost of Capital decision. See the testimony for 2012 for a discussion of the incorrect assumption used with the current method. Because ETCs are such a small portion of total debt, this established method for estimating flotation costs for ETCs does not affect the cost of debt, so I have not expended resources with an alternative method.

The Securities and Exchange Commission (SEC) conducted a study of flotation costs using railroad ETC data for the years 1951, 1952 and 1955.[16] In that study, the SEC determined

[16] *Cost of Flotation of Corporate Securities 1951-1955,* Securities and Exchange Commission, June 1957.

that ETC flotation costs averaged 0.89 percent of gross proceeds. My calculation uses this historical study, applies the established assumption regarding average railroad yields, and assumes a duration of 15 years. This methodology, suggested by a third party in 2008, was first approved by the Board in its cost of capital for 2007 decision served September 26, 2008.

Table 7 below calculates flotation costs for ETCs using the flotation percent of gross proceeds discussed above. No flotation costs have been calculated for CSAs, as none have been modeled.

Table No. 7
Flotation Costs for
Equipment Trust Certificates

Given	**ETC**
Flotation Costs as Pct of Gross Proceeds	0.890%
Avg. Railroad Yields (Table 5)	4.588%
Assumed Duration of New Instrument (Yrs)	15
Calculated	
Price After Flotation Costs	$99.11
Effective Yield Including Flotation Costs	4.671%
Difference Between Yields With and Without Floatation Costs =	
Flotation Cost as Percentage	**0.083%**

In this calculation, current average yields on railroad ETCs are assumed to be equal to the yield resulting from the price to investors for a new issue. Coupons are assumed to be paid twice per year. The duration for new ETCs is assumed to be 15 years. Given the input data, effective yields can be calculated, and the difference between the yields excluding flotation costs and the yields including flotation costs are the flotation costs measured in percentage

points. The results are flotation costs for ETCs of 0.083 percent – which is 0.003 percentage points lower than the value for 2024.

To compute the overall effect of flotation cost on debt, the market value weight of the debt outstanding is multiplied by the respective flotation cost. The weights for each type of debt are based on market values for debt (excluding All Other Debt), as found in the Percent of Subtotal column in Table 6. All Other Debt is excluded from the weight calculation, since a current cost of debt for that category has not been determined. As shown in Table 8, flotation costs increase the cost of debt by 0.093 percent.

Table No. 8
Flotation Costs For Debt

Type of Debt	Market Weight	Flotation Cost
Bonds, Notes & Debentures	98.80%	0.093%
Equipment Trust Certificates	1.20%	0.083%
Conditional Sales Agreements	0.00%	not calculated
Total	100.00%	0.093%

This flotation cost for 2025 is 0.032 percentage points higher than the number used by the Board in its 2024 Cost of Capital decision. Since bonds have a market weight of over 98 percent, flotation costs for total debt rounds to the same number as the flotation costs for bonds.

G. Conclusion as to the Cost of Debt Capital

To determine the overall composite current cost of debt, the current cost of each of three categories of debt (Bonds, ETCs, and CSAs) is multiplied by its market value proportion.

Market values are properly used in this connection, because they represent the amounts on which the current cost must be paid. Table 9 shows the results of this calculation.

Table No. 9
Composite Current Cost Of Debt

Type of Debt	Market Weight	Current Cost
Bonds, Notes & Debentures	98.80%	5.179%
Equipment Trust Certificates	1.20%	4.588%
Conditional Sales Agreements	0.00%	--
Subtotal	100.00%	5.171%
Flotation Costs		0.093%
Weighted Cost of Debt		5.264%
Weighted Cost of Debt (Rounded)		**5.26%**

The current weighted cost of debt before flotation costs is 5.171 percent. The addition of flotation costs results in a rounded cost of debt of 5.26 percent. This cost of debt is higher than the 2024 of 5.24 percent.[17] A summary for the 2025 calculation of the overall cost of debt is provided in Appendix F. That appendix also has some historical costs of debt for comparisons.

IV. Common Equity Capital In 2025

A. The Market Value of Common Equity Capital

The market value of common equity is based on stock prices and shares outstanding for 2025. Table 10 below summarizes the market value calculation. The Weight column, which is not used directly in our calculation, is provided as additional information.

[17] The AAR's *Railroad Facts* book lists the cost of debt decided by the Board and its predecessor. The 2013 edition contains, on page 19, data from 1978 through 2012. The 2025 edition lists, on page 20, data from 1991 through 2024.

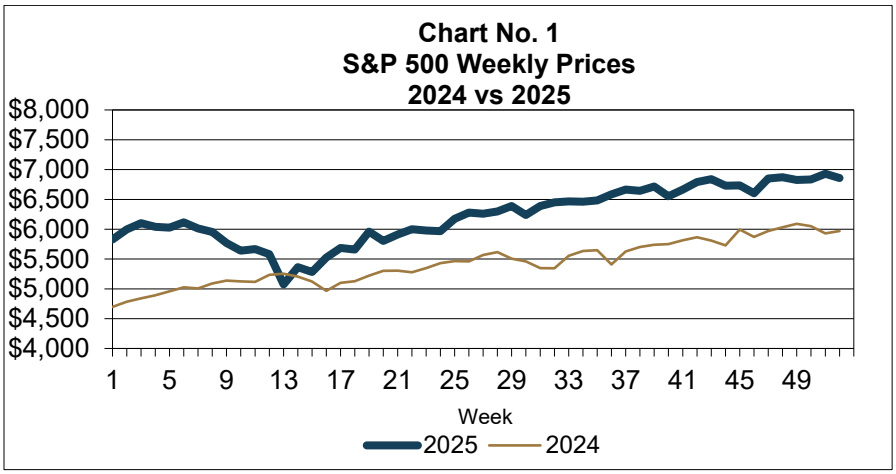
Table No. 10
Average Market Value
For Common Equity in 2025

Railroad Co.	Value ($000)	Weight %
CSX	62,673,704.6	24.06
NSC	59,466,913.1	22.84
UNP	138,279,307.6	53.10
Total	$260,419,925.2	100.00 %
Prior Year	$268,483,332.0	
Change	-3.0%	

Details of the calculation are presented in Appendix G. Weekly market values were calculated for each railroad using shares outstanding data from railroad 10-Q and 10-K reports multiplied by stock prices at the close of each week in 2025.[18] Note that the week beginning on April 14 ends on Thursday April 17 because of the Good Friday holiday. Thus, any railroad shares outstanding change effective on April 18 would not happen until the following week because the market was closed on April 18. Page 5 of Appendix G lists all full-day stock market holidays. Page 4 of the appendix lists the holiday that caused any week to not begin trading on a Monday or end trading on a Friday. Calculations for 2025 included 52 weeks. Week 1 began on Monday January 6, 2025, and is the first week after 2024's week 53 used in last year's calculation. The week beginning Monday December 30, 2024, qualifies as the final week for 2024. Thus, 2025 is a 52-week year for the purpose of calculating the market value of common equity.

[18] The 10-Q and 10-K reports are filed with the US. Securities and Exchange Commission (SEC) and are available from railroad web sites or the SEC web site.

The 52-week average market capitalization of the composite railroad (the three railroads that comprise the composite sample), listed in Table 10 and on page 4 of Appendix G, is $260.4 billion. This is a 3.0 percent decrease from last year's average.



As shown in Chart 1, the stock market in general, as represented by the Standard & Poor's 500, was higher in 2025 than it was in 2024. The S&P 500 finished the year 17.7 percent higher than it had been a year earlier.

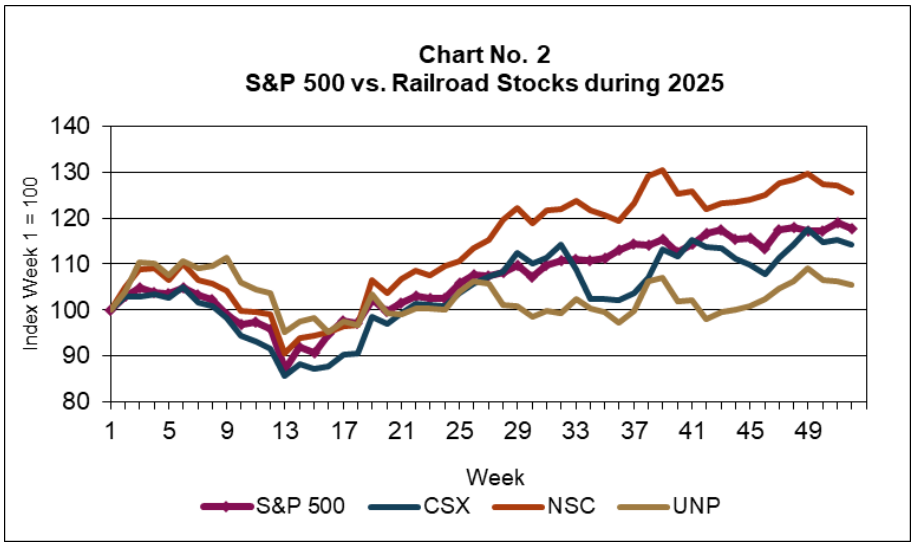


Chart 2 compares stock performance for 2025. In 2025, all but one railroad underperformed the S&P 500. Railroad equities generally tracked broader market movements during the year, though with lower relative volatility, as reflected in the composite beta estimate of 0.7971. In general, stocks with betas of approximately 1.0 (see more on betas in section 3) move with the market, as illustrated in the chart (especially shown in the first half of the year).

B. The Capital Asset Pricing Model (CAPM)

The cost of equity is a measure of investor expectations, including the opportunity cost of investing in a share of a firm's stock; i.e., the expected rate of return that investors require on the market value (purchase price) of the stock in light of alternative investment opportunities of comparable risk. Because investor expectations are not directly observable, analysts have developed methods of inferring the cost of equity from available financial data. There are several methods available to estimate the cost of equity. Two of these methods, the Capital Asset Pricing Model (CAPM) and a Multi-Stage Discounted Cash Flow model (MSDCF) are used in this statement to compute an estimate for the cost of equity — in accordance with STB Ex Parte No. 558 (Sub No. 28). The CAPM is discussed herein, and the MSDCF is discussed in the next section.

The CAPM relies on historical measurements of the risk and returns of assets in the market to forecast the likely future risk-return relationship governing the cost of capital. The theory underlying the CAPM is that an investor seeks a risk-free return plus a premium that is dependent upon risk. Since all of the principal elements of the CAPM (the risk-free rate, the market risk premium, and the beta) are estimated using historical data and relationships

computed from those data, the CAPM is essentially a backward look at how equity markets have historically regarded a particular firm or group of firms. The backward-looking nature of the CAPM means that it may not fully capture contemporaneous changes in the market or reflect the impact of current operational, financial, political or economic trends and events on market valuations or risk perceptions. The CAPM is also sensitive to changes in the risk-free rate, which is determined as of the estimation date. In formulaic terms, the cost of equity as estimated by the CAPM may be expressed as:

K = RF + beta (MRP)

Where K = the firm's cost of equity,
RF = the risk-free rate,
MRP = the market's risk premium, and
beta = the coefficient of systematic, non-diversifiable risk of the stock.

Therefore, each firm's cost of equity above the risk-free rate depends on the market risk premium adjusted for the non-diversifiable risk of its common stock, with the adjustment factor represented in the model as beta. The risk-free rate (RF) is typically represented by the rate of a U.S. Government (Treasury) instrument. As the risk-free rate enters the CAPM linearly, the impact of a change in the risk-free rate is one-for-one. Moreover, fluctuations in the risk-free rate might primarily reflect shifts in monetary policy rather than variations in the cost of capital for private firms. Consequently, during periods of significant financial uncertainty, the model may yield biased outcomes. The market risk premium (MRP) is the expected future difference between returns for the overall stock market and risk-free returns. That expected difference is typically estimated using historical differences. Beta is the coefficient of systematic, non-diversifiable risk of stock, which depends on its volatility and its correlation with the overall

stock market. The beta for the overall stock market is 1.0. Firms with higher risk will have a beta above 1.0, while firms with lower risk will have a beta below 1.0. As with the market risk premium, betas are also typically estimated using historical relationships. The methodology used for the CAPM calculation — including details for using certain inputs — follows the methodology prescribed and used by the STB in the 2024 Cost of Capital decision.[19]

1. Risk-Free Rate (RF)

In all decisions regarding the CAPM, the Board has specified a risk-free rate based on an average yield to maturity for a 20-year U.S. Treasury Bond. The average yield-to-maturities for U.S. Treasury Bonds are available from the Federal Reserve web site, and I have again utilized this resource to retrieve data for 2025.[20] A copy of the "download" from the Federal Reserve web site is included in my work papers. Table 11 lists a 10-year history of this bond. As the table shows, the average rate for 20-Year U.S. Treasury Bonds in 2025 is an increase from the previous year. Appendix H lists all of the annual 20-Year U.S. Treasury Bond rates available since 1981. The 20-year rate for 2020 was the lowest rate during that period, and 2021 is the second lowest.[21]

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[19] *Railroad Cost of Capital – 2024,* EP 558 (Sub-No. 28) (STB served July 21, 2025).

[20] Federal Reserve's new web site is https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H15. For Data set, choose Selected Interest Rates. For Instrument, select U.S. government securities/Treasury constant maturities/Nominal. For Maturity, select 20-year. For Frequency, select Annual.

[21] The Federal Reserve Board has two series for 20-Year Treasury Bonds. The first data set is from 1962 through 1986. The second set has data from 1993 to current. Rates from the two data sets are listed in my work papers. There are no data for 1987 through 1992.

Table No. 11
20-Year U.S. Treasury Bonds 2016 - 2025

Year	Average Annual Rate
2016	2.22 %
2017	2.65
2018	3.02
2019	2.40
2020	1.35
2021	1.98
2022	3.30
2023	4.26
2024	4.50
2025	4.78

Source: Federal Reserve

Using the average yield to maturity in 2025 for a 20-year U.S. Treasury Bond, as directed in STB Ex Parte No. 558 (Sub No. 29), the CAPM's risk-free rate is 4.78 percent.

2. Market Risk Premium (MRP)

In previous decisions, the STB has required that the market risk premium (a.k.a. equity risk premium) calculation begin with year 1926, which is a standard approach. The Standard & Poor's 500 Index is to be used as the representative of the market — also a standard approach. The STB's decision also stated that the "data are also available from a variety of commercial vendors, including Ibbotson."

In the 2006 through 2012 Cost of Capital determinations, the well-regarded and widely-accepted Ibbotson Equity Risk Premium was used. The premium was listed in the *Ibbotson SBBI Valuation Yearbook* published by Morningstar.[22] This premium is the long-horizon equity risk

[22] Ibbotson Associates is a wholly-owned subsidiary of Morningstar, Inc. "SBBI" stands for "Stocks, Bonds, Bills, and Inflation.

premium, using the S&P 500 and data beginning with 1926. Although Morningstar discontinued its *Ibbotson SBBI Valuation Yearbook,* it published the same long-horizon equity risk premium in the *Ibbotson SBBI Classic Yearbook.* This source was used for 2013 and 2014 equity risk premiums.

In 2015 and 2016, yet another source of data was needed, as Morningstar decided to discontinue its *Ibbotson SBBI Classic Yearbook.* The valuation and financial advisory firm Duff & Phelps maintains many of the same series formerly published by Ibbotson, and their *Valuation Handbook-U.S. Guide to Cost of Capital* included a page that listed the long-horizon expected equity risk premium.[23] The Duff & Phelps *Valuation Handbook-U.S. Guide to Cost of Capital* was the source used to obtain the 2015 and 2016 equity risk premiums. In 2018, however, Duff & Phelps decided to discontinue the publication of that book in hardcover form, which would have been used as the source for the 2017 equity risk premium. Although the physical book is no longer be published, Duff & Phelps has developed an online tool called the *Cost of Capital Navigator*, and the data that would have been published in the *Valuation Handbook-U.S. Guide to Cost of Capital* are available in the online *Cost of Capital Navigator*.[24] The *Cost of Capital Navigator* contains the "Long-horizon expected equity risk premium (historical)", which is calculated using "large company stock total returns minus long-term government bond income

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[23] The Duff & Phelps *2017 Valuation Handbook – Guide to Cost of Capital* was published by John Wiley & Sons. The handbook listed the premium on page 36 of chapter 3 (and page 14 of chapter 5). The last sentence of Footnote 5-16 (on page 14 of Chapter 5) in the Handbook says "The long-horizon historical equity risk premium was previously published on the "back page" of the Morningstar/Ibbotson SBBI Valuation Yearbook (discontinued)."

[24] The References section of the online *Cost of Capital Navigator* contains the same data, in the same chapter format, that would have been published in the *Valuation Handbook – U.S. Guide to Cost of Capital*. It is essentially an online book, instead of a hardcover book.

returns", beginning 1926. This premium is calculated using the same method as that used by Ibbotson to calculate the market risk premiums used in previous cost of capital determinations. For 2025, the online Duff & Phelps *Cost of Capital Navigator* shows this premium as 7.37 percent (note that Duff & Phelps is now a Kroll company). There was an increase of 0.06 percentage points from the figure used by the Board for 2024. (Page 1 of my Appendix H shows Equity Risk Premiums since 1981, and page 2 shows a screen shot of the on-line source for the 2025 equity risk premium.) Thus, I used 7.37 percent as the rate for the CAPM's market risk premium.

3. Beta

The STB Ex Parte No. 664 decision requires parties to calculate the CAPM's beta using a portfolio of weekly, merger-adjusted stock returns for the prior five years in the following equation:

R – SRRF = Alpha + beta (RM – SRRF) + E

Where:

R	= merger and dividend-adjusted stock returns for the portfolio of railroads;[25]
SRRF	= short-run risk-free rate represented by 3-mo. U.S. Treasury Bills;
alpha	= constant term;
beta	= coefficient of systematic, non-diversifiable risk;
RM	= return for the market, represented by the S&P 500; and
E	= random error term.

[25] Railroads must meet the screening criteria set forth in *Railroad Cost of Capital – 1984* and modified recently by the Board in Revisions to the *Cost-of-Capital Composite Railroad Criteria*.

In its Railroad Cost of Capital – 2006 decision, the STB clarified its beta calculation methodology. The STB noted that "[t]he proper way to arrive at the weekly portfolio change is to calculate the weekly stock percentage change for each firm, weighted by that firm's share of the industry as a whole." The STB also determined that the Standard & Poor's 500 Price Index, which is publicly available, should be used as a proxy for the Standard & Poor's 500 Total Return Index, unless the Total Return Index is made available to the public.

Using the STB instructions, the value for beta can be solved for by using a linear regression. The railroad portfolio return less the short-term risk free rate is the dependent variable, while the market return less the risk free rate is the independent variable. The regression's random error term is unknown, the intercept is the alpha, and the coefficient for the explanatory variable is the beta.

The raw regression data set used in the AAR calculation has normally been derived from publicly available data from web sites on the internet (for further information, see the work papers). Due to prior data-quality concerns involving dividend-adjusted historical price series, Bloomberg stock price data were used for the 2025 CAPM beta regression.

Consistent with the Board's June 10, 2026 decision, I reviewed all input data including weekly stock price data and the weekly yield-to-maturity figures for U.S. Treasury Bonds used in the beta regression. The revised workpapers correct the alignment issues identified by the Board and apply a sampling convention consistent with prior cost-of-capital proceedings. The raw data consists of weekly observations from the last week of 2020 (Week 0) through the last week of 2025 (Week 261). Bloomberg identifies each week in the dataset by the last trading day of the week (typically Friday), which means that the stock price data and the identification of

the week are aligned.[26] Week 1 in the regression data set is the week ending Friday, January 8, 2021 (or beginning Monday January 4, 2021).[27] This week satisfies the Board's criterion for Week 1 because it is the first week containing three or more trading days in 2021. The last week of 2025, Week 261, began on Monday, December 29. Week 0 began in 2020 on Monday, December 28, 2020, and it is *not* directly used in the beta regression. The purpose of Week 0 is to allow calculation of the Week 1 return and to provide a beginning-of-period value for Week 1. This treatment allows the Week 1 return to be included in the regression dataset, consistent with the clarification provided by the Board in its 2008 cost of capital decision.[28]

Three categories of data are necessary for the raw regression data set. First, weekly stock prices for CSX, NSC, and UNP are acquired.[29] The price index values for Standard & Poor's 500 Price Index were also downloaded. Stock prices adjusted for dividends and splits are used to calculate the regression's dependent variable, while prices that are only adjusted for splits are used for weighting.[30]

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[26] In some cases, stock did not trade on Friday. For example, trading during Week 224 ended Thursday, April 17, 2025, because Friday, April 18, 2025, was the Good Friday holiday. There are also cases where the first trading day of the week was not Monday because of a holiday. For example, Week 212 began on Tuesday, January 21, because of the Martin Luther King Day holiday on January 20.

[27] Following the Board's clarification in Ex Parte No. 558 (Sub-No. 12), the week beginning December 31, 2018, is the first week in the relevant year that contains 3 or more trading days. The previous week had no trading days in 2019.

[28] EP 558 (Sub-No. 12), (STB served Sept. 25, 2009).

[29] CSX Corporation has a stock symbol of CSX, Norfolk Southern Corporation is NSC, and Union Pacific Corporation is UNP.

[30] The dividend-adjusted values may differ for a given week if the data are downloaded at different times during the year, especially if dividends have been paid during the interim time. The difference typically affects the fourth digit after the decimal of the beta calculations. The current data sets were downloaded January 28, 2026, and the range of data was from 12/21/2020 through 1/7/2026.

The second category of data is shares outstanding. Stock shares outstanding, and an effective date, were gathered from each railroad's 10-Q and 10-K reports. The shares outstanding data were adjusted for stock splits, if necessary. For each railroad, a shares outstanding value is assigned to each week based upon the latest available 10-Q or 10-K submissions by that railroad to the Securities and Exchange Commission.[31] In some cases, the last trading day of a week was actually a Thursday (Good Friday is always a holiday for the U.S. stock markets), and this can affect the shares outstanding used. All of the days stocks traded, and stock market holidays, are listed in my work papers.

The final category of raw data is the rate for 3-Month U.S. Treasury Bills. These securities are also known as 13-Week Treasury Bills or 90-Day Treasury Bills. The Treasury Bill rates are acquired from the Federal Reserve web site, and the "download" is included in my work papers.

SAS statistical software was used to prepare the regression data set from the raw data.[32] The weekly stock percentage change for each railroad was calculated and weighted by that railroad's share of the industry as a whole to create a composite railroad return.[33] Weekly returns are also calculated for the Standard & Poor's 500 Price Index (the proxy for the market as a whole). Each week's three-month Treasury Bill rate, which is the measure employed for

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[31] Shares outstanding are updated using the first Friday on (provided the stock traded that day), or after, the effective date listed in the 10-Q and 10-K reports – since Friday's (or the end of the week) stock price is used.

[32] SAS Institute Inc., Cary, NC.

[33] Since the weight needs to be the weight at the beginning of the week instead of the end of the week, data from the end of the previous period are used to represent the beginning of the current period.

the short-run risk-free rate, is restated from an annual to a weekly rate to make it comparable to the weekly returns. The method used to convert from an annual rate to a weekly rate accounts for compounding. The weekly Treasury Bill rates are then deducted from the composite railroad portfolio returns and market returns as was done in the previous cost of capital submissions. The resulting regression data set has 261 observations (weeks 1 through 261), since week 0 of the raw data set was used only to calculate a weighted return for week 1.

The SAS General Linear Model procedure (Proc GLM) was used to calculate the regression, with composite railroad returns less the short-run risk-free rate as the dependent variable and the market returns less the short-run risk-free rate as the independent variable. As a check against our beta calculations, a spreadsheet has also been utilized to calculate the beta using a linear regression, and the results matched the SAS calculation. As specified by the STB decisions, the regression includes an intercept. Appendix I contains a summary of the regression using SAS. The beta is the estimate of the parameter shown on the bottom of the Appendix page. The entire SAS printout and a spreadsheet version are included in my work papers. The regression using the Bloomberg data resulted in a beta estimate of 0.7970566 using a spreadsheet, and 0.7970614905 using SAS – both round to 0.7971.[34]

The 2025 beta is lower than the beta for 2024 (0.9478) and is the lowest in over two decades. We have evaluated our beta calculation by comparing it to previous years and expectations. The value of 0.7971 for beta is used as an input to the CAPM.

[34] Differences between the SAS regression and the spreadsheet regression were probably caused by the number of digits after the decimal allowed in the data sets by the two software packages.

4. Cost of Common Equity Using the CAPM

A review of the Capital Asset Pricing Model (CAPM) is as follows:

K = RF + beta (MRP)

Where K = the cost of equity for the portfolio of railroads,

RF = the risk-free rate,
MRP = the market's risk premium, and
beta = coefficient of systematic, non-diversifiable risk.

Our CAPM used the methodology endorsed by the STB in the previous cost of capital determination, Ex Parte No. 558 (Sub-No. 28). Table 12 is a summary of our CAPM cost of common equity calculation, which resulted in an average 2025 cost of equity estimate for the composite railroad of 10.65 percent. This is a decrease from 2024's 11.43 percent.

Table No. 12
Cost of Common Equity
Using STB's Capital Asset Pricing Model

Inputs to Model	**2025**	**2024**	
Risk-Free Rate	4.78 %	4.50 %	Table No. 11
Market Risk Premium	7.37	7.31	Appendix H
Beta	0.7971	0.9478	Appendix I
Calculation			
Risk-Free Rate	4.78	4.50	Given
Plus: Beta Adj. Risk Premiun	5.87	6.93	Beta x MRP
CAPM Cost of Equity	10.65 %	11.43 %	RF Rate + Prem.

C. The Multi-Stage Discounted Cash Flow Model

As stated earlier, there are several methods available to estimate the cost of equity. The Multi-Stage Discounted Cash Flow Model (MSDCF) is another model available. Using this model, the cost of equity is the discount rate that equates a firm's market value to the present value of the expected stream of free cash flow that is potentially available for distribution to equity investors. The multiple stage portion of the model accounts for the assumption that the firm will not experience a constant growth rate throughout its life. The MSDCF uses company-specific growth rates in stage 1 and long-term GDP growth in stage 3, because in the long-term growth is expected to normalize to that of the economy. These features of the model make the MSDCF somewhat more forward looking in that it relies on the expectations of the equities markets as to the firm's future performance although its accounting treatment of cash flows remains grounded in historic relationships. Nonetheless, its theoretical basis contrasts dramatically with the historic view of the CAPM, and brings investor perceptions of the firm's future into the process of estimating its cost of equity. Investor perceptions of a firm's future opportunities and potential difficulties will inevitably have a substantial impact on the level of risk that investor associates with a firm. That risk level is, in turn, a major determinate of the rate of return that will be required to encourage acquisition or retention of an equity position in the company. Thus, estimations of the cost of equity using MSDCF more closely align with section 16 of the Surface Transportation Board Reauthorization Act of 2015, which directed the agency to consider current and future conditions when evaluating railroad revenue adequacy, a key function of the STB's cost of capital calculation.

The STB, in Ex Parte No. 664 (Sub No. 1), adopted the Morningstar/Ibbotson MSDCF model to use for estimating the cost of common equity capital.[35] This model assumes that investor cash flows do not all have to be in the form of dividends. Instead, investors benefit from regular dividends, special dividends, stock buybacks, or stock price appreciation.[36] Major inputs to the model include cash flows, expected growth rates, and market values. An equation for this model can be found in Appendix J. A firm's present value as determined by the market is therefore equal to the sum of the present value of three sets of future cash flows. This is the same formula that appeared in the Appendix to the Board's decision in Ex Parte No. 664 (Sub No.1) served August 11, 2008, and it is the same formula found in the AAR's submissions for the 2008 through 2024 cost of capital.

1. Cash Flows

The Morningstar/Ibbotson MSDCF model defines cash flows for the first two stages, as income before extraordinary items minus capital expenditures plus depreciation and deferred

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[35] The Morningstar/Ibbotson MSDCF model adopted by the Board in Ex Parte No. 664 (Sub-No.1) is a modified version that includes only the railroads that pass the screening criteria set forth in Railroad Cost of Capital – 1984, 1 I.C.C. 2d 989 (1985), for inclusion in the sample of railroads used for the annual cost of capital determination. See Ex Parte No. 664 (Sub-No.1), *Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital,* served January 28, 2009.

[36] One interested party believes that stock repurchases (buybacks) bias the MSDCF *upwardly*. However, stock repurchases have the opposite effect – they bias the MSDCF *downward*. The MSDCF does not fully reflect the reality that distributions to shareholders (buybacks) mean cash flows to investors are shifted forward in time, and earlier cash flows should raise cost of equity estimates since the present value of a dollar received today is always (unless we have deflation) greater than the present value of that same dollar received at some future date. Since the model cannot account for this shift forward in cash flows, it is likely to understate the cost of equity. See September 5, 2014, verified statement of Dr. Bente Villadsen on behalf of Association of American Railroads in Ex Parte No. 664 (Sub-No.2).

taxes. Income before extraordinary items (IBEI) is derived by deducting extraordinary items from net income. Thus, the model's formula for cash flows is as follows:

$$CF = (NI - EI) - CAPEX + DEP + DT$$

Where CF = cash flow,
NI = net income,
EI = extraordinary items,
CAPEX = capital expenditures,
DEP = depreciation, and
DT = deferred taxes.

The Morningstar/Ibbotson MSDCF model utilizes five-year moving averages for each railroad leading up to the year being analyzed. The years used in this case are 2021 through 2025. Data are copied from the Consolidated Cash Flow and Income Statement of each railroad's annual 10-K report, and any changes to prior years have been incorporated. The 10-K reports, which are filed with the Securities and Exchange Commission, are usually available each year around February. In addition to the data points listed above, sales (a.k.a. revenue) is used as part of a smoothing (or averaging) process. Table 13 illustrates the Morningstar/Ibbotson process to calculate an average cash flow. Revenue, Net Income, and Extraordinary Items are sourced from the Income Statement. Depreciation, Deferred Taxes, and Capital Expenditures are sourced from the Statement of Cash Flows.

Table No. 13
Example Cash Flow Calculations for NSC in 2025
($ in millions)

	2021	2022	2023	2024	2025	Total
Net Income	$3,005	$3,270	$1,827	$2,622	$2,873	$13,597
Less Extraord. Items	0	0	0	0	0	0
Inc. Bef. Extraord. Items (+)	$3,005	$3,270	$1,827	$2,622	$2,873	$13,597
Capital Expenditures (-)	$1,470	$1,948	$2,327	$2,381	$2,204	$10,330
Depreciation (+)	1,181	1,221	1,298	1,353	1,393	6,446
Deferred Taxes (+)	184	83	-49	176	277	671
Cash Flow	$2,900	$2,626	$749	$1,770	$2,339	$10,384
Revenue (a.k.a. "Sales")	$11,142	$12,745	$12,156	$12,123	$12,180	$60,346
Ratio of Cash Flow to Sales (Smoothed Ibbotson-style) = ($10,384 / $60,346) =						0.17207
Initial Cash Flow in 2025 (Smoothed Ibbotson-style) = (0.17207 x $12,180) =						**$2,095.87**
Ratio of IBEI to Sales (Smoothed Ibbotson-style) = ($13,597 / $60,346) =						0.22532
Terminal Cash Flow input (Smoothed Ibbotson-style) = (0.22532 x $12,180) =						**$2,744.37**

After the financial data are collected, they are combined (Total column in the example) into a five-year cash flow for the purpose of averaging or smoothing. The average cash flow for 2025, which is the initial cash flow in the model, is calculated by multiplying revenue for 2025 times the five-year average ratio of cash flow to revenue. In our example here, the model's input for the initial cash flow is $2,095.9 million. The ratio of cash flow to sales is calculated by dividing the five year total cash flow by the five year total revenue.

The model's terminal cash flow value is based on the assumptions that in the third stage of the model, capital expenditures will consist of just maintenance capital (no growth capital), so that capital expenditures and depreciation are equal. Moreover, since deferred taxes are associated with capital expenditures, this amount is anticipated to diminish as capital expenditures converge toward maintenance levels in the long-term. Consequently, the adjustment to earnings before taxes (depreciation minus capital expenditures plus deferred

taxes) will gradually approach zero over the long term. The remaining part of the equation for the model's terminal cash flow is income before extraordinary items (IBEI), which we calculate by subtracting extraordinary items from net income. In our Table 13 example, the model's input for the terminal cash flow is $2,744.4 million. The model's terminal cash flow input is calculated by multiplying revenue for 2025 times the five-year average ratio of income before extraordinary items to revenue. The ratio of income before extraordinary items to sales is calculated by dividing the five-year income before extraordinary items by the five-year total revenue.

All cash flow calculations herein have been calculated using the same procedure used by the STB for the previous cost of capital determination. Appendix K contains the cash flow calculations for all three railroads. The pages from the 2025 10-K reports that were used as data sources for cash flows are included in my work papers. Data for prior years (2021-2024) used in this year's calculation are unchanged from last year's submission[37] – unless restated/revised data were found in the 2025 10-K statements.

2. Growth Rates

The first stage of the Morningstar/Ibbotson MSDCF model applies to a period that is one to five years in the future. The current year (2025) is considered to be year 0. In each year of the first stage, a firm's annual earnings growth rate is assumed to be the median value of the firm's three- to five-year growth estimates that are made by railroad industry analysts after the

[37] Excepting where necessary to remove Kansas City Southern (KCS) from prior year computations.

release of the year-end financial statements. However, in Ex Parte No. 558 (Sub No. 12), the STB clarified their interpretation of the Morningstar/Ibbotson MSDCF model by specifying use of data in effect at the end of the current year as the date for growth rates, stock prices, and stock shares outstanding.[38] (Clearly, the Board's interpretation does not anticipate the use of growth estimates based on the release of audited year-end financial statements.) In Ex Parte No. 558 (Sub No. 16), the STB made another clarification in their interpretation of the Morningstar/Ibbotson MSDCF model by specifying the *last full week of the year* as the point from which stock prices should be used. Therefore, we have utilized growth rate projections that were in effect at the end of 2025, and stock prices as of January 2, 2026 – the prices at the end of the last full week for 2025.[39] Each growth rate projection was reviewed by the brokerage firm's analyst during 2025, and the stock prices were retrieved from Yahoo! Finance. The January 2, 2026 stock prices used for the MSDCF market-value calculation were also checked against Bloomberg and confirmed to match.

For many years, analyst growth rate estimates were collected, and distributed, by the Institutional Brokers Estimate System (a.k.a. IBES or I/B/E/S). In recent years, the IBES growth rates have been distributed by Thomson Financial (now called Refinitiv) through its Eikon service.[40] Although the term "IBES" is rarely used by Thomson, many users of the data still refer to these growth rates as "IBES" growth rates. Thomson Financial has also distributed

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[38] *Railroad Cost of Capital – 2008*, EP 558 (Sub-No. 12) (STB served Sept. 25, 2009).

[39] Friday, January 2, 2026 was the last trading day for the week.

[40] In October 2018, we were notified that the Financial and Risk business of Thomson Reuters is now called Refinitiv.

medians of the IBES growth rate estimates on a historical basis through its Thomson ONE Banker service. The median estimates provided through the Thomson ONE Banker service did not always reflect the full set of growth rate estimates. Therefore, I have utilized all estimates available from the Refinitiv/Thomson Reuters Eikon service, and determined medians based on those data. These growth rates are described in the Thomson Financial Glossary as the expected annual increase in operating earnings over a company's next full business cycle. A worktable and the source data are included in Appendix L. Table 14 lists the median growth rate estimates.

Table No. 14
2025 Thomson Median Growth Rate Estimates

Company	Stock Symbol	Growth Rate
CSX Corporation	CSX	6.30 %
Norfolk Southern Corporation	NSC	6.33
Union Pacific Corporation	UNP	7.30
Simple Average		6.64

Thus, the median growth rate estimates have been retrieved using the same procedure and source used by the AAR last year. Each individual railroad's median growth rate is used in the first stage of the Morningstar/Ibbotson MSDCF model.

The second stage of the Morningstar/Ibbotson MSDCF model applies to a period six to ten years in the future. This is *not a transition stage* where the growth rate should be smoothed between the first and third stages. Morningstar's model assumes "that over a middle horizon, growth of any particular company will lie more in line with the industry as a

whole".[41] In other words, other companies "catch" their industry growth leaders, or the leaders fall back to the rate of the slower growth railroads. Therefore, in this stage, the cash flows at the end of year five are assumed to grow at the simple (not weighted) average of the individual firm medians used in the first stage. Any attempt to change the second stage to a transition stage is corrupting the intent of the model.

In Table 14, the average of the median growth rates is 6.64 percent, which is a decrease from 2024 (8.75 percent). For all railroads in the Morningstar/Ibbotson MSDCF model, a second stage growth rate of 6.64 percent is used.[42]

The third stage of the MSDCF model begins 11 years in the future and continues in perpetuity. Starting in year 11, the firm's growth rate is assumed to be the long-run nominal growth rate of the aggregate U.S. economy, which can be thought of as a combination of expected inflation plus the real growth rate in Gross Domestic Product (GDP). Until the 2013 Cost of Capital determination, the long-run nominal growth rate was supplied by Morningstar/Ibbotson in its *Ibbotson SBBI Valuation Yearbook*. In September 2013, customers subscribing to the *Ibbotson SBBI Valuation Yearbook* were notified that the publication was being discontinued. The *Ibbotson® SBBI® Classic Yearbook* (Classic Yearbook) was expanded and contained some of the data needed for the Stage 3 calculation, but it was discontinued after two years. Therefore, beginning with the 2013 determination, and then more so beginning with the 2015 determination, I have continued the original Ibbotson methodology by

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[41] *Ibbotson SBBI 2013 Valuation Yearbook*, page 51.

[42] The model used an average rounded to 2 digits after the decimal.

using data available from the Federal Reserve and Bureau of Economic Analysis. Work and data sources for this third stage of the MSDCF model are shown in Appendix M.

As summarized on page 1 of Appendix M, the long-run expected nominal growth rate of the U.S. economy (Stage 3 growth rate of the MSDCF) is the long-term expected growth rate for real GDP plus the long-term expected inflation rate. The real GDP growth rate is simply a historical compound growth rate calculated from Bureau of Economic Analysis data beginning in 1929, and it is illustrated on pages 2 through 4 of Appendix M. This procedure has been used, and accepted, since the 2013 Cost of Capital determination, and it is the same method used by Morningstar for 2008 through 2012. Page 2 of Appendix M has a replication of the Morningstar long-term real GDP growth rate calculation for 2009 through 2012, and AAR has continued this calculation (now using 2012 dollars) up to the latest year. Pages 3 and 4 of the same Appendix show data sources used on page 2. The calculation for 2025 is 3.17 percent – which is slightly higher than 2024 (3.13).

The second piece of our Stage 3 calculation, expected inflation, is calculated by subtracting Inflation Indexed 20-Year Treasury Bond rates from Long-Term Government Yields (which are not inflation indexed). Work for this second piece of Stage 3 is shown on page 5 of Appendix M. Using data from the Ibbotson and the Federal Reserve, I have replicated the 2009 through 2012 Ibbotson calculations for expected long-term inflation. Beginning with the 2013 Cost of Capital determination, Ibbotson did not release a rate for Inflation-Indexed 20-Year

Bonds. However, I have been able to replicate their source,[43] and Long-Term Government yields were available from Morningstar's Ibbotson SBBI Classic yearbook. This methodology to determine expected inflation was accepted every year since the 2013 cost of capital determination.

Beginning with the 2015 Cost of Capital determination, the SBBI long-term government yields are no longer available since Morningstar no longer publishes its *Ibbotson SBBI Classic Yearbook*. In lieu of the SBBI number used for part of the calculation (that is no longer available), I have used 20-Year U.S. Treasury Bond yields at the end of the year, which are very close to the numbers used by Ibbotson.[44] This addition to the methodology was accepted in the 2015 through 2024 cost of capital determinations, and has been used again for 2025. Comparing yields for long-term government bonds to inflation indexed bonds, I calculate an expected long-term inflation rate of 2.40 percent.

Page 1 of Appendix M summarizes my calculations shown on pages 2 through 5 (with source data) of the same Appendix. Because expected real growth in output is usually very stable, changes in the Stage 3 growth rate are usually determined by changes in inflation expectations. For comparison purposes, page 6 of Appendix M shows Stage 3 rates since 2008, including the two components: the expected real growth in output (as measured by Gross Domestic Product) and expected inflation. The Stage 3 rate for 2025 is 5.57 percent (3.17 +

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[43] See Appendix M, page 5, columns (d) and (e) for a comparison of Inflation Indexed 20-Year Treasury Bonds from the SBBI compared to 20-Year Treasury Bonds at the end of the year from the Federal Reserve web site.

[44] See Appendix M, page 5, columns (b) and (c) for a comparison of Long-Term Government Yields from the SBBI compared to 20-Year Treasury Bonds at the end of the year from the Federal Reserve web site.

2.40 as also shown on page 1 of Appendix M), which is nearly the same as the 5.58 used for 2024. Real growth and expected inflation are relatively the same as the previous year and caused the slight decrease in the Stage 3 Growth rate calculated for 2025. This is the same method I used for the previous year.

3. Market Values

The final inputs to the Morningstar/Ibbotson MSDCF model are the stock market values for the common equity of each railroad. The market values serve two purposes. First, a firm's market value is a necessary part of the MSDCF model. As stated earlier, each railroad's cost of equity in the MSDCF model is determined by solving for the discount rate that equates a firm's *market value* to the present value of the expected stream of free cash flow that is potentially available for distribution to equity investors.

Market values are also used to determine weights for combining the model's cost of equity for each individual railroad into the composite railroad mandated by the Board. Thus, Table 15 below calculates the market value for each railroad, and it uses the market values to calculate weights. Prices and shares outstanding are for common stock. Although weights are shown at three digits after the decimal, they have been left at full float for calculation purposes – and so they will total to exactly 100 percent.

Table No. 15
Equity Market Value on January 2, 2026

Company	Stock Price	Shares Outstanding	Market Value ($mil)	Weight
CSX	$36.27	1,862,136,956	67,539.7	25.044 %
NSC	$287.82	224,386,617	64,583.0	23.948
UNP	$231.91	593,160,889	137,559.9	51.008
Total		2,679,684,462	$269,682.6	100.000 %

As directed by the Board, I have used stock prices (from Yahoo! Finance) for January 2, 2026, the last trading day of the week that qualifies as the last week of 2025 for cost of capital purposes. I have also used the shares outstanding for that day from the 2025 Q3 10-Q reports (the latest information available prior to January 2, 2026) filed with the Securities and Exchange Commission. Market value is simply each firm's stock price multiplied by its shares outstanding, and weights are based on the market values. Appendix N contains the stock price pages as retrieved from Yahoo! Finance, and it also contains the 10-Q pages used for shares outstanding.[45]

4. Cost of Common Equity Using the MSDCF Model

The equation found in Appendix J provides the mathematical formula that is used to generate the three-stage DCF cost of equity estimates for each railroad. The left side of this equation is the market value of the firm in year 0. The right side of the equation is the discounted value of the cash flows from the three stages of the firm's expected future growth. Essentially, this equation is solved for each firm by simply testing discount rates (cost of equity)

[45] Although we found some errors in dividend-adjusted stock prices downloaded from Yahoo! Finance when examining the data set to be used for the CAPM's beta calculation in prior years, no problems were found with regular stock prices.

in an effort to find one that causes the sum of the present values of the cash flows for the three stages to be equal to the market value at year 0. An iterative process can be used to narrow down the possible solutions to the ultimate answer, or Microsoft Excel's Solver function can be used to automate the process.[46]

Applying the methods described above, I have calculated a cost of common equity for each of the three railroads specified using a spreadsheet like the one utilized in the 2022 filing. Using an initial cash flow, an input for calculating the terminal cash flow, growth rates for each of the three stages, and a market value effective January 2, 2026, I have solved for the discount rate (cost of equity) that causes the sum of the present values of cash flows for each stage to equal the firm's market value.[47] The spreadsheet used for the calculations is displayed in Appendix O.

The resulting costs of common equity for each railroad, using the Board's MSDCF, are shown in Table 16. In the same table, I have also calculated an MSDCF cost of common equity (using weights from Table 15 and the individual railroad cost of equities) for the composite railroad, which is the current cost of equity for this model.

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[46] A commonly used Excel user's manual describes the Solver function as follows: "Solver is an Excel add-in that goes several steps further than goal seeking. It uses the same basic trial-and-error approach (known to scientific types as an iterative approach), but it's dramatically more intelligent than goal seeking." See Matthew McDonald, Excel: *The Missing Manual*, O'Reilly Media, 2005, p. 519.

[47] As noted in Appendix K, cash flow data for 2017 utilizes the Board's adjustments to net income and deferred taxes that remove the impact of the Tax Cuts and Jobs Act.

Table No. 16
Cost of Equity Using STB's Ibbotson MSDCF

Company	Weight	Cost of Equity	Weighted Calculation
CSX	25.044%	11.14 %	2.79
NSC	23.948%	10.01	2.40
UNP	51.008%	11.16	5.69
Total	100.000%		
Weighted Current Cost of Equity			**10.88 %**

Thus, the MSDCF produces a cost of common equity of 10.88 percent for 2025 – a decrease from the 12.20 percent used by the Board for 2024 (2020 was the lowest ever calculated since the MSDCF began being used in 2008).

D. Conclusion as to the Cost of Common Equity Capital

In the STB's Ex Parte No. 558 (Sub-No. 29) decision served March 20, 2026, the Board specified that comments "should focus … using the methodology followed in *Railroad Cost of Capital – 2024",* which means that a simple average of the estimates produced by the CAPM adopted in STB Ex Parte No. 664 and the Morningstar/Ibbotson Multi-Stage DCF Model specified in STB Ex Parte 664 (Sub No. 1) should be used. Table 17 contains the cost of common equity estimated by each model, and a simple average of the estimates.[48] Once again, it should be noted that each cost of equity model has its strengths and weaknesses, and this illustrates the Board's wisdom in using more than one model to estimate the cost of common equity.[49]

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[48] Although the CAPM is currently favored by groups that want a low cost of equity calculation, that has not always been true. In the 1981 Cost of Capital determination, Ex Parte No. 415 decided June 11, 1982, the Interstate Commerce Commission noted that "In general, the various shipper groups dislike the use of the CAPM methodology for determining the railroads' cost of equity capital."

[49] Utility companies also believe multiple cost of equity models are appropriate, as noted in STB Ex Parte 664 (Sub-No. 2) testimony on behalf of the Association of American Railroads entered July 23, 2015.

The cost of common equity for 2025 is 10.77 percent, which is below the 11.82 percent decided for 2024.

Table No. 17
Cost of Common Equity Capital

Model		
Capital Asset Pricing Model	10.65 %	From Table No. 12
Multi-Stage Discounted Cash Flow	10.88	From Table No. 16
Cost of Common Equity	10.77 %	Average

V. Preferred Equity Capital in 2025

There were no preferred stock shares outstanding for the composite railroad sample from 2002 through 2012. Beginning 2013, one of the railroad companies comprising the railroad composite sample had preferred stock outstanding, and this continued through 2020. However, that one railroad company no longer meets the criteria for inclusion in the sample, so there is no preferred stock in this year's calculation.

VI. The Overall Cost of Capital In 2025

A. Determination of Market Value Weights

With more detail shown in Tables 6, 10, and 18, the average market value of debt, common equity, and preferred equity are $56.6 billion, $260.4 billion, and $0.0, respectively. More market value details are provided in Appendixes D and G. The figure for the market value of debt includes market values of bonds, notes, debentures, equipment trust certificates, and conditional sales agreements (if there had been any). Other debt and capitalized leases are included at their book value, because market values are difficult to determine (in some

instances book values correspond to market values) and because these other instruments are a minimal portion of all railroad debt.

Based on the market value calculations, the capital structure for 2025 has weights for debt, common equity, and preferred equity of 17.85 percent, 82.15 percent, and 0.00 percent, respectively. Table 18 contains the weights computation and a comparison to the previous year.

Table No. 18
Capital Structure and Weights

		2025		2024	
	Source Table	Market Value (mil)	Capital Structure Weight	Market Value (mil)	Capital Structure Weight
Debt	6	$56,585.2	17.85 %	$56,014.2	17.26 %
Common Equity	10	260,419.9	82.15	268,483.3	82.74
Preferred Equity	18	0.0	0.00	0.0	0.00
Total		$317,005.2	100.00 %	$324,497.5	100.00 %

The market value for debt increased, while the market value of common equity decreased from the prior year. The market value for preferred equity remained at zero. Weights remained similar to their values for 2024. Debt increased 0.59 percentage points from 2024, while common equity decreased by that amount, and preferred remains at zero.

B. The Overall Cost of Capital

Multiplying the cost of debt, the cost of common equity capital, and the cost of preferred equity capital, by their respective market value proportions, results in a 2025 overall cost of capital of 9.79 percent, as shown in Table 19. This is lower than the cost of capital decision of 10.68 percent for 2024. The decrease was primarily driven by a lowered market value of stock, which reduced the current cost of common equity.

Table No. 19
Weighted Current Cost of Capital for 2025

	Source Table	Capital Structure Weight	Current Cost
Debt	11	17.85 %	5.26 %
Common Equity	18	82.15	10.77
Preferred Equity	20	0.00	0.00
Total		100.000 %	
Weighted Current Cost of Capital			**9.79 %**

VII. Qualifications of Dr. Rand Ghayad

My name is Dr. Rand Ghayad and I am the Chief Economist and Senior Vice President of Policy and Economics at the Association of American Railroads (AAR), headquartered at 425 Third Street SW, Suite 1000, Washington, DC 20024. In this capacity, I lead AAR's economics, data, and policy analysis functions, overseeing the collection, analysis, and dissemination of economic and operational information pertaining to railroads and their broader economic landscape. My responsibilities include directing economic, financial, statistical, and cost studies that inform industry strategy, regulatory proceedings, and public policy discussions.

Prior to joining the AAR, I served as Head of Economics and Global Labor Markets at LinkedIn Corporation, where I lead the company's thought leadership and economic research agenda on labor market dynamics and the future of work. My work focused on identifying emerging workforce trends and translating large-scale labor market data into actionable insights for business leaders, policymakers, and researchers.

Before LinkedIn, I held senior economist positions at the International Monetary Fund (IMF) and The Brattle Group. At the IMF, I advised member countries on macroeconomic policy, economic stabilization, labor markets, and structural reforms, while conducting research on

economic growth, finance, and labor market issues. My work supported policymakers across both emerging and advanced economies.

At The Brattle Group, I provided economic and financial analysis in regulatory, litigation, and policy matters. I assisted corporations, government agencies, and regulators, including the U.S. Department of Justice and the Internal Revenue Service, in the development of economic and financial testimony and analyses involving taxation, finance, competition, and regulatory policy. My consulting work spanned multiple industries, including transportation, railroads, aviation, and postal and shipping services.

Earlier in my career, I held research and consulting roles with the Federal Reserve Bank of Boston, the Brookings Institution, and the International Labor Organization. My research has focused on economic growth, labor markets, inequality, taxation, and public policy.

Since 2014, I have served on the faculty of Harvard University, where I teach economics and public policy. I hold a Ph.D. in Economics from Northeastern University and dual Master's degrees in Financial Economics and Multinational Commerce from Boston University.

VERIFICATION

I, Rand Ghayad, declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this statement.

Executed on this 17th day of June, 2026.

Rand Ghayad, Ph.D.

Appendix A
Bonds, Notes and Debentures

Summaries

CSX Corporation **A-2**

Norfolk Southern Corporation **A-5**

Union Pacific Corporation **A-8**

Individual Bonds, Notes, and Debentures

CSX Corporation **A-11**

Norfolk Southern Corporation **A-44**

Union Pacific Corporation **A-81**

CSX Corporation
12/31/2025

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
						Traded						
1	Notes	CSX Corp.	1	126408BM4	7.950%	5/1/2027	$64,266	$64,266	106.591	$68,502	4.060%	$2,781
2	Notes	CSX Corp.	2	126408BP7	7.250%	5/1/2027	$83,312	$83,312	105.170	$87,619	4.180%	$3,662
3	Notes	CSX Corp.	3	126408HH9	3.250%	6/1/2027	$850,000	$850,000	98.316	$835,690	4.170%	$34,848
4	Notes	CSX Corp.	4	126408HJ5	3.800%	3/1/2028	$800,000	$800,000	99.051	$792,406	4.170%	$33,043
5	Notes	CSX Corp.	5	12641LBU6	6.800%	12/1/2028	$200,000	$200,000	107.628	$215,256	4.330%	$9,321
6	Notes	CSX Corp.	6	126408HM8	4.250%	3/15/2029	$950,000	$950,000	99.879	$948,852	4.270%	$40,516
7	Notes	CSX Corp.	7	126408HQ9	2.400%	2/15/2030	$400,000	$400,000	92.038	$368,152	4.330%	$15,941
8	Notes	CSX Corp.	8	126408HU0	4.100%	11/15/2032	$950,000	$950,000	96.732	$918,950	4.630%	$42,547
9	Notes	CSX Corp.	9	126408HW6	5.200%	11/15/2033	$600,000	$600,000	103.063	$618,378	4.750%	$29,373
10	Notes (new)	CSX Corp.	10	126408HZ9	5.050%	6/15/2035	$900,000	**$900,000**	100.779	$907,012	4.950%	$44,897
11	Notes	CSX Corp.	11	126408GH0	6.000%	10/1/2036	$400,000	$400,000	107.520	$430,080	5.110%	$21,977
12	Notes	CSX Corp.	12	126408GK3	6.150%	5/1/2037	$700,000	$700,000	108.689	$760,821	5.160%	$39,258
13	Notes	CSX Corp.	13	126408GP2	7.450%	4/1/2038	$79,226	$79,226	119.238	$94,468	5.340%	$5,045
14	Notes	CSX Corp.	14	126408GS6	6.220%	4/30/2040	$660,000	$660,000	108.613	$716,846	5.370%	$38,495
15	Notes	CSX Corp.	15	126408GU1	5.500%	4/15/2041	$550,000	$550,000	100.778	$554,281	5.430%	$30,097
16	A-44	CSX Corp.	16	126408GW7	4.750%	5/30/2042	$600,000	$600,000	92.010	$552,060	5.480%	$30,253
17	Notes	CSX Corp.	17	126408GX5	4.400%	3/1/2043	$300,000	$300,000	87.747	$263,240	5.490%	$14,452
18	Notes	CSXT - Conrail	18	126410LL1	7.875%	5/15/2043	$99,989	$99,989	122.879	$122,866	5.800%	$7,126
19	Notes	CSX Corp.	19	126408GY3	4.100%	3/15/2044	$800,000	$800,000	83.490	$667,917	5.530%	$36,936
20	Notes	CSX Corp.	20	126408HF3	3.800%	11/1/2046	$800,000	$800,000	78.259	$626,072	5.560%	$34,810
21	Notes	CSX Corp.	21	126408HK2	4.300%	3/1/2048	$850,000	$850,000	83.492	$709,681	5.600%	$39,742
22	Notes	CSX Corp.	22	126408HN6	4.750%	11/15/2048	$650,000	$650,000	89.037	$578,742	5.600%	$32,410
23	Notes	CSX Corp.	23	126408HP1	4.500%	3/15/2049	$400,000	$400,000	85.595	$342,379	5.610%	$19,207
24	Notes	CSX Corp.	24	126408HR7	3.350%	9/15/2049	$600,000	$600,000	70.466	$422,796	5.600%	$23,677
25	Notes	CSX Corp.	25	126408HS5	3.800%	4/15/2050	$500,000	$500,000	76.367	$381,836	5.570%	$21,268
26	Notes	CSX Corp.	26	126408HC0	3.950%	5/1/2050	$600,000	$600,000	78.363	$470,180	5.570%	$26,189
27	Notes	CSX Corp.	27	126408HT3	2.500%	5/15/2051	$500,000	$500,000	58.615	$293,073	5.530%	$16,207
28	Notes	CSX Corp.	28	126408HV8	4.500%	11/15/2052	$900,000	$900,000	84.983	$764,843	5.580%	$42,678
29	Notes	CSX Corp.	29	126408HA4	4.500%	8/1/2054	$450,000	$450,000	84.437	$379,967	5.590%	$21,240
30	Notes	CSX Corp.	32	126408HY2	4.900%	3/15/2055	$550,000	$550,000	90.094	$495,514	5.590%	$27,699
31	Notes	CSX Corp.	33	126408HG1	4.250%	11/1/2066	$700,000	$700,000	77.264	$540,849	5.690%	$30,774
32	Notes	CSX Corp.	34	126408HL0	4.650%	3/1/2068	$350,000	$350,000	82.703	$289,461	5.740%	$16,615
33	Notes	CSX Corp.	35	126408HL0	4.650%	3/1/2068	$150,000	$150,000	82.703	$124,055	5.740%	$7,121
37												
38												
39												
40												
41												
42												
43												
44												
45												
46												
47												
48												
49												
50												
Total							**$17,986,793**	**$17,986,793**		**$16,342,844**	**5.141%**	**$840,207**

CSX Corporation
12/31/2025

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
					Trading Data Not Available or Did Not Trade							
1	Notes	CSX Corp.			1.310%	12/17/2050	73,304	73,304	100.000	$73,304		
2	Conrail Tax Note	CSXT			1.310%	12/17/2050	368,375	368,375	100.000	$368,375		
3												
4												
5												
6												
7												
8												
9												
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25												
26												
27												
28												
29												
30												
Total							**$441,679**	**$441,679**		**$441,679**		

CSX Corporation
12/31/2025

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
					Matures in 2026							
1	Notes	CSX Corp.		126408HE6	2.600%	11/1/2026	$700,000					
2												
3												
4												
5												
6												
7												
8												
9												
10												
Total							**$700,000**					

Grand Totals			
Total Traded and Trading Data Not Available	**$18,428,472**	**$18,428,472**	**$16,784,524**
Grand Total (for reconciliation to carrier data only)	**$19,128,472**		

From CSX:

Corporate Notes	$18,660,108
Convertible Debt	0
CSXT Notes	468,364
Secured Equipment Notes	0
Other Notes	0
Total	**$19,128,472**

Norfolk Southern Corporation
12/31/2025

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
						Traded						
1	Conrail Notes	CR NSC 2027	34	655844AJ7	7.800%	5/15/2027	$319,135	$319,135	106.234	$339,029	4.180%	$14,171
2	Notes	Senior	35	655844BT4	3.150%	6/1/2027	$300,000	$300,000	98.089	$294,267	4.200%	$12,359
3	Notes	Senior	36	655844BZ0	3.800%	8/1/2028	$600,000	$600,000	98.822	$592,930	4.200%	$24,903
4	Notes	Senior	37	655844AX6	5.640%	5/17/2029	$210,316	$210,316	104.269	$219,293	4.400%	$9,649
5	Notes	Senior	38	655844CE6	2.550%	11/1/2029	$400,000	$400,000	92.948	$371,794	4.360%	$16,210
6	Notes	Senior	39	655844CR7	5.050%	8/1/2030	$600,000	$600,000	102.908	$617,447	4.390%	$27,106
7	Notes	Senior	40	655844AQ1	7.250%	2/15/2031	$284,028	$284,028	113.036	$321,055	4.570%	$14,672
8	Notes	Senior	41	655844CK2	2.300%	5/15/2031	$500,000	$500,000	88.850	$444,250	4.490%	$19,947
9	Notes	Senior	42	655844CM8	3.000%	3/15/2032	$600,000	$600,000	90.505	$543,032	4.670%	$25,360
10	Notes	Senior	43	655844CQ9	4.450%	3/1/2033	$500,000	$500,000	97.980	$489,898	4.760%	$23,319
11	Notes	Senior	44	655844CT3	5.550%	3/15/2034	$400,000	$400,000	104.610	$418,440	4.890%	$20,462
12	Conrail Notes	CR NSC 2037	45	655844AF5	7.050%	5/1/2037	$171,750	$171,750	114.793	$197,156	5.340%	$10,528
13	Notes	Senior	46	655844BH0	4.837%	10/1/2041	$595,504	$595,504	92.919	$553,338	5.510%	$30,489
14	Notes	Senior 144A	47	655844BE7	4.837%	10/1/2041	$0	$0	92.967	$0	5.500%	$0
15	Notes	Senior	48	655844BM9	3.950%	10/1/2042	$600,000	$600,000	82.325	$493,951	5.560%	$27,464
16	A-44	Southern Railway	49	655855FB5	7.875%	5/15/2043	$138,085	$138,085	119.743	$165,347	6.050%	$10,004
17	Notes	Senior	50	655844BN7	4.800%	8/15/2043	$291,829	$291,829	88.938	$259,548	5.800%	$15,054
18	Notes	Senior	51	655844BQ0	4.450%	6/15/2045	$500,000	$500,000	86.199	$430,997	5.610%	$24,179
19	Notes	Senior	52	655844BR8	4.650%	1/15/2046	$600,000	$600,000	88.271	$529,629	5.620%	$29,765
20	Notes	Senior	53	655844BX5	3.942%	11/1/2047	$749,997	$749,997	78.781	$590,856	5.630%	$33,265
21	Notes	Senior	54	655844BY3	4.150%	2/28/2048	$700,000	$700,000	81.099	$567,692	5.640%	$32,018
22	Notes	Senior	55	655844CC0	4.100%	5/15/2049	$400,000	$400,000	79.778	$319,111	5.660%	$18,062
23	Notes	Senior	56	655844CD8	3.400%	11/1/2049	$400,000	$400,000	70.574	$282,295	5.640%	$15,921
24	Notes	Senior	57	655844CF3	3.050%	5/15/2050	$800,000	$800,000	65.849	$526,790	5.620%	$29,606
25	Notes	Senior	58	655844CL0	2.900%	8/25/2051	$600,000	$600,000	63.146	$378,879	5.610%	$21,255
26	Notes	Senior	59	655844BV9	4.050%	8/15/2052	$749,994	$749,994	78.042	$585,313	5.640%	$33,012
27	Notes	Senior	60	655844CN6	3.700%	3/15/2053	$400,000	$400,000	72.986	$291,943	5.640%	$16,466
28	Notes	Senior	61	655844CP1	4.550%	6/1/2053	$750,000	$750,000	84.763	$635,724	5.640%	$35,855
29	Notes	Senior	62	655844CS5	5.350%	8/1/2054	$1,000,000	$1,000,000	98.422	$984,222	5.460%	$53,739
30	Notes	Senior	63	655844CH9	3.155%	5/15/2055	$799,996	$799,996	64.411	$515,286	5.630%	$29,011
31	Notes	Senior 144A	64	655844CG1	3.155%	5/15/2055	$1	$1	64.469	$1	5.630%	$0
32	Notes	Senior	65	655844CU0	5.950%	3/15/2064	$600,000	$600,000	103.181	$619,084	5.750%	$35,597
33	Notes	CR NSC 2097	66	655844AK4	7.900%	5/15/2097	$196,302	$196,302	129.419	$254,052	6.090%	$15,472
34	Notes	Senior 2105	67	655844AV0	6.000%	3/15/2105	$157,780	$157,780	95.953	$151,394	6.260%	$9,477
35	Notes	Senior	68	655844BD9	6.000%	5/23/2111	$79,726	$79,726	97.383	$77,640	6.160%	$4,783
36	Notes	Senior	69	655844CB2	5.100%	8/1/2118	$350,521	$350,521	86.577	$303,470	5.900%	$17,905
37	Notes	Senior	70	655844CJ5	4.100%	5/15/2121	$600,000	$600,000	72.762	$436,570	5.650%	$24,666
39												
40												
41												
42												
43												
44												
45												
Total							**$16,944,964**	**$16,944,964**		**$14,801,720**	**5.281%**	**$781,748**

Norfolk Southern Corporation

12/31/2025

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
					Trading Data Not Available or Did Not Trade							
1	Notes	Senior			5.550%	3/15/2034	400,000	400,000	100.000	$400,000		
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30												
Total							**$400,000**	**$400,000**		**$400,000**		

Norfolk Southern Corporation

12/31/2025

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
						Matures in 2026						
1	Notes	Norfolk Southern Corp		655844BS6	2.900%	6/15/2026	$600,000					
2												
3												
4												
5												
6												
7												
8												
9												
10												
Total							**$600,000**					

	Grand Totals		
Total Traded and Trading Data Not Available	**$17,344,964**	**$17,344,964**	**$15,201,720**
Grand Total (for reconciliation to carrier data only)	**$17,944,964**		

From NSC:

Income Debentures	$138,085
Medium Term Notes & Conrail Notes	17,806,879
Other Debt (Poca Dev)	
Total	**$17,944,964**

Union Pacific Corporation
12/31/2025

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
						Traded						
1	Notes	UP Corp.	71	907818FJ2	2.150%	2/5/2027	$499,269	$499,269	97.057	$484,576	4.100%	$19,868
2	Notes	UP Corp.	72	907818EP9	3.000%	4/15/2027	$498,357	$498,357	98.125	$489,015	4.090%	$20,001
3	Debentures	UP Corp.	73	907818BY3	7.125%	2/1/2028	$161,398	$161,398	106.523	$171,926	4.360%	$7,496
4	Notes	UP Corp.	74	907818EY0	3.950%	9/10/2028	$1,051,504	$1,051,504	99.405	$1,045,252	4.140%	$43,273
5	Debentures	UP Corp.	75	907818CF3	6.625%	2/1/2029	$390,840	$390,840	107.908	$421,746	4.180%	$17,629
6	Notes	UP Corp.	76	907818FB9	3.700%	3/1/2029	$772,205	**$772,205**	98.233	$758,561	4.220%	$32,011
7	Notes	UP Corp.	77	907818FH6	2.400%	2/5/2030	$746,090	$746,090	92.113	$687,245	4.320%	$29,689
8	Notes	UP Corp.	78	907818FU7	2.375%	5/20/2031	$998,286	$998,286	89.838	$896,844	4.360%	$39,102
9	Notes	UP Corp.	79	907818FX1	2.800%	2/14/2032	$1,240,123	$1,240,123	90.087	$1,117,187	4.560%	$50,944
10	Notes	UP Corp.	80	907818GB8	4.500%	1/20/2033	$892,542	$892,542	99.268	$886,010	4.610%	$40,845
11	Debentures	UP Corp.	81	907818CS5	5.375%	6/1/2033	$143,321	$143,321	104.074	$149,160	4.740%	$7,070
12	Debentures	UP Corp.	82	907818CU0	6.250%	5/1/2034	$152,702	$152,702	109.472	$167,165	4.910%	$8,208
13	Notes	UP Corp.	83	907818EB0	3.375%	2/1/2035	$446,858	$446,858	89.157	$398,406	4.800%	$19,124
14	Notes (new)	UP Corp.	84	907818GG7	5.100%	2/20/2035	$988,896	**$988,896**	101.892	$1,007,605	4.850%	$48,869
15	Notes (Exchange)	UP Corp.	85	907818FQ6	2.891%	4/6/2036	$621,630	$621,630	82.982	$515,838	4.960%	$25,586
16	A-44	UP Corp. 144A	86	907818FP8	2.891%	4/6/2036	$1,716	$1,716	82.982	$1,424	4.960%	$71
17	Debentures	UP Corp.	87	907818CX4	6.150%	5/1/2037	$89,986	$89,986	109.275	$98,332	5.090%	$5,005
18	Notes	UP Corp.	88	907818EQ7	3.600%	9/15/2037	$496,309	$496,309	87.070	$432,135	5.030%	$21,736
19	Notes	UP Corp.	89	907818EV6	4.375%	9/10/2038	$231,385	$231,385	92.844	$214,828	5.130%	$11,021
20	Notes	UP Corp.	90	907818FD5	3.550%	8/15/2039	$495,121	$495,121	83.810	$414,959	5.190%	$21,536
21	Notes	UP Corp. 144A	91	907818DE5	5.780%	7/15/2040	$10	$10	101.690	$10	5.610%	$1
22	Notes	UP Corp.	92	907818DF2	5.780%	7/15/2040	$65,951	$65,951	102.629	$67,685	5.520%	$3,736
23	Notes	UP Corp.	93	907818FT0	3.200%	5/20/2041	$992,457	$992,457	76.919	$763,392	5.390%	$41,147
24	Notes	UP Corp.	94	907818DJ4	4.750%	9/15/2041	$213,069	$213,069	90.561	$192,957	5.650%	$10,902
25	Notes	UP Corp.	95	907818FY9	3.375%	2/14/2042	$495,523	$495,523	77.855	$385,788	5.420%	$20,910
26	Notes	UP Corp.	96	907818DL9	4.300%	6/15/2042	$204,537	$204,537	84.946	$173,745	5.700%	$9,903
27	Notes	UP Corp.	97	907818DP0	4.250%	4/15/2043	$183,915	$183,915	83.346	$153,285	5.760%	$8,829
28	Notes	UP Corp.	98	907818DU9	4.750%	12/15/2043	$182,896	$182,896	89.197	$163,137	5.710%	$9,315
29	Notes	UP Corp.	99	907818DT2	4.821%	2/1/2044	$133,241	$133,241	89.852	$119,719	5.720%	$6,848
30	Notes	UP Corp. 144A	100	907818DS4	4.821%	2/1/2044	$1	$1	89.282	$1	5.770%	$0
31	Notes	UP Corp.	101	907818DX3	4.850%	6/15/2044	$83,420	$83,420	90.727	$75,685	5.660%	$4,284
32	Notes	UP Corp.	102	907818DZ8	4.150%	1/15/2045	$229,430	$229,430	81.857	$187,804	5.710%	$10,724
33	Notes	UP Corp.	103	907818EF1	4.050%	11/15/2045	$396,354	$396,354	81.880	$324,534	5.550%	$18,012
34	Notes	UP Corp.	104	907818EJ3	4.050%	3/1/2046	$516,542	$516,542	81.575	$421,371	5.560%	$23,428
35	Notes	UP Corp.	105	907818EK0	3.350%	8/15/2046	$296,705	$296,705	72.672	$215,621	5.570%	$12,010
36	Notes	UP Corp.	106	907818EN4	4.000%	4/15/2047	$490,360	$490,360	80.271	$393,616	5.580%	$21,964
37	Notes	UP Corp.	107	907818EW4	4.500%	9/10/2048	$386,260	$386,260	85.832	$331,536	5.600%	$18,566
38	Notes	UP Corp.	108	907818FC7	4.300%	3/1/2049	$627,580	$627,580	83.240	$522,395	5.590%	$29,202
39	Notes	UP Corp.	109	907818FK9	3.250%	2/5/2050	$1,698,586	$1,698,586	69.230	$1,175,932	5.570%	$65,499
40	Notes	UP Corp.	110	907818EM6	3.799%	10/1/2051	$725,180	$725,180	75.697	$548,943	5.580%	$30,631
41	Notes	UP Corp.	111	907818FW3	2.950%	3/10/2052	$841,816	$841,816	64.035	$539,059	5.550%	$29,918
42	Notes	UP Corp.	112	907818GC6	4.950%	9/9/2052	$590,417	$590,417	95.794	$565,587	5.240%	$29,637
43	Notes	UP Corp.	113	907818FZ6	3.500%	2/14/2053	$1,235,375	$1,235,375	71.168	$879,189	5.560%	$48,883
44	Notes	UP Corp.	114	907818GF9	4.950%	5/15/2053	$494,310	$494,310	95.628	$472,699	5.250%	$24,817
45	Notes (new)	UP Corp.	115	907818GH5	5.600%	12/1/2054	$988,982	**$988,982**	99.993	$988,913	5.600%	$55,379
46	Notes	UP Corp.	116	907818EC8	3.875%	2/1/2055	$444,528	$444,528	75.429	$335,304	5.580%	$18,710
47	Notes	UP Corp.	117	907818EX2	4.800%	9/10/2058	$25,794	$25,794	81.088	$20,916	6.150%	$1,286
48	Notes	UP Corp.	118	907818FE3	3.950%	8/15/2059	$491,644	$491,644	74.302	$365,299	5.660%	$20,676
49	Notes	UP Corp.	119	907818FG8	3.839%	3/20/2060	$1,427,669	$1,427,669	72.481	$1,034,791	5.660%	$58,569
50	Notes	UP Corp. 144A	120	907818FF0	3.839%	3/20/2060	$184	$184	72.481	$133	5.660%	$8
51	Notes	UP Corp.	121	907818FV5	3.550%	5/20/2061	$640,667	$640,667	67.631	$433,286	5.670%	$24,567
52	Notes (Exchange)	UP Corp.	122	907818FN3	2.973%	9/16/2062	$722,661	$722,661	58.618	$423,610	5.650%	$23,934
53	Notes (Exchange)	UP Corp. 144A	123	907818FM5	2.973%	9/16/2062	$3,004	$3,004	58.618	$1,761	5.650%	$99
54	Notes	UP Corp.	124	907818GD4	5.150%	1/20/2063	$393,239	$393,239	95.616	$375,999	5.430%	$20,417
55	Notes	UP Corp.	125	907818EG9	4.375%	11/15/2065	$169,602	$169,602	76.736	$130,146	5.890%	$7,666
56	Notes	UP Corp.	126	907818ER5	4.100%	9/15/2067	$494,607	$494,607	74.489	$368,430	5.710%	$21,037
57	Notes	UP Corp.	127	907818FL7	3.750%	2/5/2070	$742,441	$742,441	68.139	$505,893	5.740%	$29,038

Union Pacific Corporation
12/31/2025

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
58	Notes (Exchange)	UP Corp.	128	907818FS2	3.799%	4/6/2071	$819,936	$819,936	68.966	$565,479	5.720%	$32,345
59	Notes (Exchange)	UP Corp. 144A	129	907818FR4	3.799%	4/6/2071	$7,274	$7,274	68.965	$5,017	5.720%	$287
60	Notes	UP Corp.	130	907818GA0	3.850%	2/14/2072	$493,648	$493,648	69.775	$344,442	5.710%	$19,668
61												
62												
63												
64												
65												
66												
Total							**$29,868,350**	**$29,868,350**		**$24,931,325**	**5.142%**	**$1,281,935**
						Trading Data Not Available or Did Not Trade						
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Total							**$0**	**$0**		**$0**		

Union Pacific Corporation
12/31/2025

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
						Matures in 2026						
1	Notes	UP Corp.	71	907818GE2	4.750%	2/21/2026	$499,827					
2	Notes	UP Corp.	72	907818EH7	2.750%	3/1/2026	$649,899					
3												
4												
5												
6												
7												
8												
9												
10												
Total							**$1,149,726**					

	Grand Totals		
Total Traded and Trading Data Not Available	**$29,868,350**	**$29,868,350**	**$24,931,325**
Grand Total (for reconciliation to carrier data only)	**$31,018,075**		

From UNP:

Corporate Debentures, Notes, Floating Rate Loans, and Commercial Paper	$31,018,075
Removal of Floating Rate Loans & Commercial Paper	
UP RR Debt Securities Outstanding	-786
Removal of unamortized SOR Fees	786
Removal of Sale of Receivables	0
Total	**$31,018,075**

CSX Corporation

1

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408BM4
Coupon Rate:	7.950%
Maturity Date:	5/1/2027
Amount Outstanding ($ 000)	$64,266
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	107.451	4.42 %
February	107.271	4.38
March	107.218	4.29
April	107.587	3.97
May	106.791	4.22
June	106.858	4.03
July	106.510	4.05
August	106.546	3.85
September	106.137	3.91
October	105.633	4.03
November	105.799	3.71
December	105.296	3.82
Average	106.591	4.06 %

Source: Bloomberg

CSX Corporation

2

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408BP7
Coupon Rate:	7.250%
Maturity Date:	5/1/2027
Amount Outstanding ($ 000)	$83,312
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	105.847	4.48 %
February	105.824	4.39
March	105.802	4.31
April	105.877	4.16
May	105.011	4.49
June	105.156	4.29
July	104.619	4.47
August	104.972	4.12
September	104.983	3.97
October	104.916	3.83
November	104.773	3.76
December	104.260	3.93
Average	105.170	4.18 %

Source: Bloomberg

CSX Corporation

3

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HH9
Coupon Rate:	3.250%
Maturity Date:	6/1/2027
Amount Outstanding ($ 000)	$850,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	97.202	4.53 %
February	97.565	4.40
March	97.760	4.34
April	98.115	4.20
May	97.971	4.32
June	98.406	4.12
July	98.113	4.33
August	98.680	4.04
September	98.815	3.99
October	98.883	3.99
November	99.100	3.87
December	99.187	3.85
Average	98.316	4.17 %

Source: Bloomberg

CSX Corporation

4

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HJ5
Coupon Rate:	3.800%
Maturity Date:	3/1/2028
Amount Outstanding ($ 000)	$800,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	97.685	4.61 %
February	98.265	4.43
March	98.515	4.35
April	99.128	4.13
May	98.654	4.32
June	99.132	4.15
July	98.786	4.30
August	99.499	4.01
September	99.609	3.97
October	99.588	3.99
November	99.844	3.87
December	99.904	3.85
Average	99.051	4.17 %

Source: Bloomberg

CSX Corporation

5

Type:	Notes
Description:	CSX Corp.
CUSIP:	12641LBU6
Coupon Rate:	6.800%
Maturity Date:	12/1/2028
Amount Outstanding ($ 000)	$200,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	107.500	4.64 %
February	107.757	4.52
March	107.360	4.59
April	107.723	4.44
May	107.369	4.50
June	107.968	4.27
July	107.051	4.50
August	108.423	4.01
September	107.684	4.18
October	107.620	4.14
November	107.753	4.03
December	107.327	4.11
Average	107.628	4.33 %

Source: Bloomberg

CSX Corporation

6

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HM8
Coupon Rate:	4.250%
Maturity Date:	3/15/2029
Amount Outstanding ($ 000)	$950,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	98.259	4.72 %
February	98.909	4.55
March	99.194	4.47
April	99.763	4.32
May	99.365	4.43
June	100.023	4.24
July	99.607	4.37
August	100.393	4.13
September	100.456	4.11
October	100.689	4.03
November	101.005	3.92
December	100.887	3.95
Average	99.879	4.27 %

Source: Bloomberg

$350,000
600,000
$950,000

same CUSIP

CSX Corporation

7

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HQ9
Coupon Rate:	2.400%
Maturity Date:	2/15/2030
Amount Outstanding ($ 000)	$400,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	89.186	4.85 %
February	90.225	4.63
March	90.656	4.56
April	91.382	4.42
May	91.401	4.45
June	92.298	4.25
July	92.014	4.36
August	92.929	4.16
September	93.188	4.12
October	93.520	4.06
November	94.014	3.96
December	93.642	4.09
Average	92.038	4.33 %

Source: Bloomberg

CSX Corporation

8

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HU0
Coupon Rate:	4.100%
Maturity Date:	11/15/2032
Amount Outstanding ($ 000)	$950,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	94.058	5.03 %
February	95.559	4.80
March	95.621	4.79
April	95.984	4.74
May	95.321	4.86
June	97.009	4.58
July	96.399	4.69
August	97.215	4.56
September	98.297	4.38
October	98.259	4.39
November	98.806	4.30
December	98.251	4.40
Average	96.732	4.63 %

Source: Bloomberg

CSX Corporation

9

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HW6
Coupon Rate:	5.200%
Maturity Date:	11/15/2033
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	100.652	5.11 %
February	102.363	4.86
March	102.024	4.91
April	102.332	4.86
May	101.539	4.97
June	103.463	4.69
July	102.833	4.78
August	103.488	4.68
September	104.501	4.53
October	104.400	4.54
November	104.947	4.45
December	104.214	4.56
Average	103.063	4.75 %

Source: Bloomberg

CSX Corporation

10

Type:	Notes (new)
Description:	CSX Corp.
CUSIP:	126408HZ9
Coupon Rate:	5.050%
Maturity Date:	6/15/2035
Amount Outstanding ($ 000)	$900,000
Months Outstanding	10.0

End of Month in 2025	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	99.588	5.10
April	99.696	5.09
May	98.783	5.21
June	100.605	4.97
July	99.882	5.07
August	100.962	4.92
September	102.029	4.79
October	101.671	4.83
November	102.692	4.70
December	101.883	4.80
Average	100.779	4.95 %

Source: Bloomberg

$600,000
300,000
$900,000

CSX Corporation

11

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GH0
Coupon Rate:	6.000%
Maturity Date:	10/1/2036
Amount Outstanding ($ 000)	$400,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	105.515	5.36 %
February	108.085	5.07
March	106.726	5.22
April	106.145	5.28
May	105.241	5.38
June	107.512	5.11
July	106.965	5.17
August	107.732	5.08
September	108.736	4.96
October	109.070	4.92
November	109.721	4.84
December	108.792	4.94
Average	107.520	5.11 %

Source: Bloomberg

CSX Corporation

12

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GK3
Coupon Rate:	6.150%
Maturity Date:	5/1/2037
Amount Outstanding ($ 000)	$700,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	106.781	5.39 %
February	108.835	5.16
March	108.075	5.24
April	107.147	5.34
May	105.989	5.46
June	108.598	5.17
July	107.603	5.27
August	108.933	5.12
September	110.567	4.94
October	110.577	4.93
November	111.171	4.86
December	109.988	4.99
Average	108.689	5.16 %

Source: Bloomberg

CSX Corporation

13

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GP2
Coupon Rate:	7.450%
Maturity Date:	4/1/2038
Amount Outstanding ($ 000)	$79,226
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	114.564	5.85 %
February	116.602	5.64
March	118.461	5.45
April	116.760	5.61
May	117.375	5.54
June	119.486	5.32
July	119.183	5.35
August	120.457	5.21
September	121.515	5.10
October	121.849	5.06
November	122.670	4.97
December	121.938	5.03
Average	119.238	5.34 %

Source: Bloomberg

CSX Corporation

14

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GS6
Coupon Rate:	6.220%
Maturity Date:	4/30/2040
Amount Outstanding ($ 000)	$660,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	107.416	5.49 %
February	109.603	5.29
March	107.880	5.45
April	106.425	5.58
May	105.552	5.66
June	108.048	5.42
July	107.463	5.48
August	108.281	5.40
September	110.598	5.18
October	110.613	5.17
November	111.334	5.10
December	110.144	5.21
Average	108.613	5.37 %

Source: Bloomberg

CSX Corporation

15

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GU1
Coupon Rate:	5.500%
Maturity Date:	4/15/2041
Amount Outstanding ($ 000)	$550,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	99.805	5.52 %
February	101.918	5.32
March	100.224	5.48
April	98.346	5.66
May	97.728	5.72
June	100.237	5.48
July	99.559	5.54
August	100.212	5.48
September	102.737	5.24
October	102.813	5.23
November	103.506	5.17
December	102.256	5.28
Average	100.778	5.43 %

Source: Bloomberg

$300,000
250,000
$550,000

same CUSIP

CSX Corporation

16

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GW7
Coupon Rate:	4.750%
Maturity Date:	5/30/2042
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	91.231	5.54 %
February	93.353	5.34
March	91.828	5.49
April	90.113	5.66
May	89.222	5.75
June	91.550	5.53
July	90.986	5.58
August	91.108	5.57
September	93.917	5.30
October	93.988	5.30
November	94.215	5.28
December	92.609	5.44
Average	92.010	5.48 %

Source: Bloomberg

CSX Corporation

17

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GX5
Coupon Rate:	4.400%
Maturity Date:	3/1/2043
Amount Outstanding ($ 000)	$300,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	87.370	5.51 %
February	89.457	5.32
March	88.272	5.43
April	86.205	5.64
May	85.095	5.75
June	87.467	5.52
July	86.468	5.62
August	86.918	5.58
September	89.378	5.34
October	89.025	5.38
November	89.246	5.36
December	88.060	5.48
Average	87.747	5.49 %

Source: Bloomberg

CSX Corporation

18

Type:	Notes
Description:	CSXT - Conrail
CUSIP:	126410LL1
Coupon Rate:	7.875%
Maturity Date:	5/15/2043
Amount Outstanding ($ 000)	$99,989
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	124.479	5.69
April	120.404	6.01
May	120.391	6.00
June	122.582	5.82
July	121.278	5.92
August	120.917	5.95
September	124.223	5.68
October	125.725	5.56
November	126.368	5.51
December	122.427	5.81
Average	122.879	5.80 %

Source: Bloomberg

CSX Corporation

19

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GY3
Coupon Rate:	4.100%
Maturity Date:	3/15/2044
Amount Outstanding ($ 000)	$800,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	82.813	5.57 %
February	85.053	5.36
March	83.485	5.52
April	81.988	5.67
May	81.023	5.77
June	83.279	5.55
July	82.335	5.65
August	82.502	5.63
September	84.867	5.41
October	85.329	5.37
November	85.216	5.38
December	83.986	5.50
Average	83.490	5.53 %

Source: Bloomberg

CSX Corporation

20

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HF3
Coupon Rate:	3.800%
Maturity Date:	11/1/2046
Amount Outstanding ($ 000)	$800,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	77.684	5.59 %
February	79.712	5.40
March	78.282	5.54
April	76.994	5.66
May	75.738	5.79
June	78.122	5.56
July	77.070	5.67
August	77.247	5.66
September	79.562	5.44
October	79.995	5.41
November	80.116	5.40
December	78.586	5.55
Average	78.259	5.56 %

Source: Bloomberg

CSX Corporation

21

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HK2
Coupon Rate:	4.300%
Maturity Date:	3/1/2048
Amount Outstanding ($ 000)	$850,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	83.119	5.61 %
February	85.318	5.43
March	83.523	5.58
April	81.985	5.72
May	80.891	5.83
June	83.436	5.60
July	82.383	5.70
August	82.506	5.69
September	84.929	5.48
October	84.943	5.48
November	85.190	5.46
December	83.680	5.59
Average	83.492	5.60 %

Source: Bloomberg

CSX Corporation

22

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HN6
Coupon Rate:	4.750%
Maturity Date:	11/15/2048
Amount Outstanding ($ 000)	$650,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	88.711	5.62 %
February	91.006	5.43
March	88.914	5.60
April	87.537	5.72
May	86.378	5.82
June	88.910	5.61
July	87.884	5.70
August	87.700	5.71
September	90.487	5.48
October	90.720	5.46
November	91.033	5.44
December	89.167	5.60
Average	89.037	5.60 %

Source: Bloomberg

CSX Corporation

23

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HP1
Coupon Rate:	4.500%
Maturity Date:	3/15/2049
Amount Outstanding ($ 000)	$400,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	85.335	5.62 %
February	87.981	5.40
March	85.822	5.58
April	84.517	5.69
May	82.696	5.86
June	85.308	5.63
July	84.208	5.73
August	84.308	5.72
September	86.837	5.51
October	87.344	5.47
November	87.234	5.48
December	85.547	5.62
Average	85.595	5.61 %

Source: Bloomberg

CSX Corporation

24

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HR7
Coupon Rate:	3.350%
Maturity Date:	9/15/2049
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	69.968	5.62 %
February	71.907	5.44
March	70.471	5.58
April	69.770	5.65
May	68.022	5.83
June	70.208	5.62
July	69.360	5.70
August	69.442	5.70
September	71.772	5.48
October	71.994	5.46
November	72.077	5.46
December	70.601	5.61
Average	70.466	5.60 %

Source: Bloomberg

CSX Corporation

25

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HS5
Coupon Rate:	3.800%
Maturity Date:	4/15/2050
Amount Outstanding ($ 000)	$500,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	75.961	5.59 %
February	78.308	5.39
March	76.658	5.53
April	75.247	5.67
May	73.887	5.80
June	76.284	5.58
July	75.176	5.68
August	74.951	5.71
September	77.656	5.46
October	77.896	5.45
November	77.991	5.44
December	76.391	5.59
Average	76.367	5.57 %

Source: Bloomberg

CSX Corporation

26

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HC0
Coupon Rate:	3.950%
Maturity Date:	5/1/2050
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	77.855	5.60 %
February	80.441	5.38
March	78.983	5.51
April	77.412	5.65
May	75.849	5.79
June	78.217	5.58
July	77.285	5.67
August	77.017	5.70
September	79.664	5.46
October	80.161	5.42
November	79.698	5.47
December	77.778	5.64
Average	78.363	5.57 %

Source: Bloomberg

CSX Corporation

27

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HT3
Coupon Rate:	2.500%
Maturity Date:	5/15/2051
Amount Outstanding ($ 000)	$500,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	58.254	5.53 %
February	59.983	5.36
March	58.338	5.54
April	57.465	5.63
May	56.395	5.76
June	58.082	5.58
July	57.309	5.67
August	57.432	5.66
September	59.687	5.43
October	60.524	5.35
November	60.614	5.35
December	59.292	5.49
Average	58.615	5.53 %

Source: Bloomberg

CSX Corporation

28

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HV8
Coupon Rate:	4.500%
Maturity Date:	11/15/2052
Amount Outstanding ($ 000)	$900,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	84.855	5.58 %
February	87.061	5.41
March	85.477	5.53
April	83.575	5.69
May	82.306	5.80
June	84.685	5.60
July	83.616	5.69
August	83.340	5.71
September	86.358	5.47
October	86.788	5.44
November	86.736	5.44
December	84.993	5.59
Average	84.983	5.58 %

Source: Bloomberg

CSX Corporation

29

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HA4
Coupon Rate:	4.500%
Maturity Date:	8/1/2054
Amount Outstanding ($ 000)	$450,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	84.699	5.56 %
February	87.184	5.37
March	85.260	5.52
April	83.271	5.68
May	81.509	5.83
June	84.072	5.62
July	82.708	5.73
August	82.493	5.75
September	85.478	5.51
October	86.189	5.46
November	86.007	5.47
December	84.376	5.60
Average	84.437	5.59 %

Source: Bloomberg

CSX Corporation

30

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HY2
Coupon Rate:	4.900%
Maturity Date:	3/15/2055
Amount Outstanding ($ 000)	$550,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	89.801	5.61 %
February	92.377	5.42
March	90.604	5.55
April	88.876	5.68
May	87.272	5.80
June	89.988	5.59
July	88.609	5.70
August	88.461	5.71
September	91.806	5.46
October	91.775	5.47
November	91.693	5.47
December	89.860	5.61
Average	90.094	5.59 %

Source: Bloomberg

CSX Corporation

31

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HG1
Coupon Rate:	4.250%
Maturity Date:	11/1/2066
Amount Outstanding ($ 000)	$700,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	76.594	5.73 %
February	78.963	5.55
March	77.465	5.67
April	75.629	5.81
May	74.611	5.90
June	77.493	5.67
July	76.214	5.77
August	75.965	5.79
September	78.826	5.57
October	79.124	5.55
November	79.164	5.54
December	77.122	5.70
Average	77.264	5.69 %

Source: Bloomberg

CSX Corporation

32

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HL0
Coupon Rate:	4.650%
Maturity Date:	3/1/2068
Amount Outstanding ($ 000)	$350,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	82.443	5.76 %
February	85.253	5.56
March	82.992	5.72
April	81.539	5.83
May	79.954	5.95
June	82.318	5.77
July	80.925	5.87
August	81.280	5.85
September	84.701	5.60
October	84.453	5.62
November	84.387	5.62
December	82.194	5.78
Average	82.703	5.74 %

Source: Bloomberg

CSX Corporation

33

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HL0
Coupon Rate:	4.650%
Maturity Date:	3/1/2068
Amount Outstanding ($ 000)	$150,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	82.443	5.76 %
February	85.253	5.56
March	82.992	5.72
April	81.539	5.83
May	79.954	5.95
June	82.318	5.77
July	80.925	5.87
August	81.280	5.85
September	84.701	5.60
October	84.453	5.62
November	84.387	5.62
December	82.194	5.78
Average	82.703	5.74 %

Source: Bloomberg

Norfolk Southern Corp.

34

Type:	Conrail Notes
Description:	CR NSC 2027
CUSIP:	655844AJ7
Coupon Rate:	7.800%
Maturity Date:	5/15/2027
Amount Outstanding ($ 000)	$319,135
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	106.906	4.58 %
February	106.827	4.50
March	106.861	4.38
April	106.954	4.20
May	106.464	4.31
June	106.658	4.07
July	105.889	4.34
August	106.022	4.10
September	105.938	3.98
October	105.636	3.97
November	105.488	3.88
December	105.161	3.89
Average	106.234	4.18 %

Source: Bloomberg

Norfolk Southern Corp.

35

Type:	Notes
Description:	Senior
CUSIP:	655844BT4
Coupon Rate:	3.150%
Maturity Date:	6/1/2027
Amount Outstanding ($ 000)	$300,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	97.033	4.51 %
February	97.376	4.39
March	97.535	4.35
April	97.781	4.27
May	97.697	4.37
June	98.151	4.16
July	97.887	4.36
August	98.485	4.06
September	98.617	4.01
October	98.618	4.06
November	98.928	3.89
December	98.961	3.91
Average	98.089	4.20 %

Source: Bloomberg

Norfolk Southern Corp.

36

Type:	Notes
Description:	Senior
CUSIP:	655844BZ0
Coupon Rate:	3.800%
Maturity Date:	8/1/2028
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	97.197	4.68 %
February	97.981	4.44
March	98.112	4.41
April	98.707	4.23
May	98.395	4.35
June	98.926	4.17
July	98.673	4.28
August	99.523	3.97
September	99.526	3.98
October	99.538	3.98
November	99.696	3.92
December	99.586	3.97
Average	98.822	4.20 %

Source: Bloomberg

Norfolk Southern Corp.

37

Type:	Notes
Description:	Senior
CUSIP:	655844AX6
Coupon Rate:	5.640%
Maturity Date:	5/17/2029
Amount Outstanding ($ 000)	$210,316
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	103.064	4.84 %
February	104.094	4.56
March	104.008	4.56
April	104.191	4.49
May	104.002	4.52
June	104.597	4.34
July	104.115	4.45
August	105.047	4.16
September	104.486	4.29
October	104.750	4.18
November	104.460	4.24
December	104.408	4.22
Average	104.269	4.40 %

Source: Bloomberg

Norfolk Southern Corp.

38

Type:	Notes
Description:	Senior
CUSIP:	655844CE6
Coupon Rate:	2.550%
Maturity Date:	11/1/2029
Amount Outstanding ($ 000)	$400,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	90.620	4.78 %
February	91.499	4.60
March	91.613	4.60
April	92.242	4.47
May	91.902	4.60
June	92.914	4.36
July	92.883	4.40
August	94.106	4.10
September	94.152	4.12
October	94.368	4.09
November	94.553	4.07
December	94.529	4.11
Average	92.948	4.36 %

Source: Bloomberg

Norfolk Southern Corp.

39

Type:	Notes
Description:	Senior
CUSIP:	655844CR7
Coupon Rate:	5.050%
Maturity Date:	8/1/2030
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	101.211	4.80 %
February	101.750	4.68
March	102.174	4.58
April	102.706	4.47
May	102.348	4.53
June	103.346	4.31
July	102.744	4.43
August	103.610	4.23
September	103.679	4.20
October	103.649	4.19
November	103.932	4.11
December	103.744	4.14
Average	102.908	4.39 %

Source: Bloomberg

Norfolk Southern Corp.

40

Type:	Notes
Description:	Senior
CUSIP:	655844AQ1
Coupon Rate:	7.250%
Maturity Date:	2/15/2031
Amount Outstanding ($ 000)	$284,028
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	111.586	5.00 %
February	112.911	4.73
March	113.179	4.66
April	113.189	4.63
May	112.079	4.80
June	112.974	4.60
July	112.740	4.62
August	113.733	4.39
September	113.539	4.39
October	113.540	4.35
November	113.799	4.26
December	113.166	4.35
Average	113.036	4.57 %

Source: Bloomberg

Norfolk Southern Corp.

41

Type:	Notes
Description:	Senior
CUSIP:	655844CK2
Coupon Rate:	2.300%
Maturity Date:	5/15/2031
Amount Outstanding ($ 000)	$500,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	86.145	4.89 %
February	87.509	4.64
March	87.289	4.71
April	87.861	4.63
May	87.617	4.71
June	88.899	4.47
July	88.641	4.55
August	89.943	4.31
September	90.405	4.24
October	90.414	4.26
November	90.827	4.20
December	90.650	4.27
Average	88.850	4.49 %

Source: Bloomberg

Prospectus supplement dated May 3, 2021
Interest accrues from May 12, 2021

Norfolk Southern Corp.

42

Type:	Notes
Description:	Senior
CUSIP:	655844CM8
Coupon Rate:	3.000%
Maturity Date:	3/15/2032
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	87.690	5.08 %
February	88.995	4.87
March	88.982	4.89
April	89.469	4.82
May	89.225	4.88
June	90.768	4.62
July	90.394	4.71
August	91.131	4.59
September	92.181	4.40
October	92.217	4.42
November	92.739	4.33
December	92.272	4.44
Average	90.505	4.67 %

Source: Bloomberg

Norfolk Southern Corp.

43

Type:	Notes
Description:	Senior
CUSIP:	655844CQ9
Coupon Rate:	4.450%
Maturity Date:	3/1/2033
Amount Outstanding ($ 000)	$500,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	95.554	5.13 %
February	97.106	4.89
March	96.648	4.97
April	96.698	4.96
May	96.232	5.04
June	97.850	4.79
July	97.671	4.82
August	98.489	4.69
September	99.593	4.52
October	99.750	4.49
November	100.352	4.39
December	99.811	4.48
Average	97.980	4.76 %

Source: Bloomberg

Norfolk Southern Corp.

44

Type:	Notes
Description:	Senior
CUSIP:	655844CT3
Coupon Rate:	5.550%
Maturity Date:	3/15/2034
Amount Outstanding ($ 000)	$400,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	102.504	5.20 %
February	104.262	4.96
March	103.899	5.00
April	103.976	4.99
May	103.034	5.12
June	104.733	4.88
July	104.099	4.96
August	104.865	4.85
September	106.061	4.67
October	106.054	4.67
November	106.179	4.64
December	105.653	4.71
Average	104.610	4.89 %

Source: Bloomberg

Norfolk Southern Corp.

45

Type:	Conrail Notes
Description:	CR NSC 2037
CUSIP:	655844AF5
Coupon Rate:	7.050%
Maturity Date:	5/1/2037
Amount Outstanding ($ 000)	$171,750
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	112.238	5.65 %
February	114.605	5.40
March	113.891	5.46
April	113.848	5.46
May	112.401	5.61
June	114.204	5.41
July	114.558	5.36
August	115.467	5.26
September	116.285	5.16
October	117.131	5.07
November	117.215	5.05
December	115.667	5.20
Average	114.793	5.34 %

Source: Bloomberg

Norfolk Southern Corp.

46

Type:	Notes
Description:	Senior
CUSIP:	655844BH0
Coupon Rate:	4.837%
Maturity Date:	10/1/2041
Amount Outstanding ($ 000)	$595,504
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	91.541	5.63 %
February	93.570	5.43
March	91.895	5.60
April	90.611	5.73
May	89.841	5.81
June	92.413	5.55
July	91.794	5.62
August	92.727	5.53
September	95.144	5.29
October	95.382	5.27
November	95.595	5.25
December	94.518	5.36
Average	92.919	5.51 %

Source: Bloomberg

Prospectus supplement dated May 3, 2021
Interest accrues from May 12, 2021

Norfolk Southern Corp.

47

Type:	Notes
Description:	Senior 144A
CUSIP:	655844BE7
Coupon Rate:	4.837%
Maturity Date:	10/1/2041
Amount Outstanding ($ 000)	$0
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	91.467	5.63 %
February	93.802	5.41
March	91.879	5.60
April	90.825	5.71
May	89.688	5.82
June	92.320	5.56
July	91.845	5.61
August	92.949	5.50
September	95.297	5.28
October	95.338	5.27
November	95.585	5.25
December	94.608	5.35
Average	92.967	5.50 %

Source: Bloomberg

Prospectus supplement dated August 16, 2021
Interest accrues from August 25, 2021

Norfolk Southern Corp.

48

Type:	Notes
Description:	Senior
CUSIP:	655844BM9
Coupon Rate:	3.950%
Maturity Date:	10/1/2042
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	80.925	5.67 %
February	82.953	5.47
March	81.561	5.62
April	80.696	5.71
May	79.615	5.84
June	81.840	5.61
July	81.337	5.66
August	81.872	5.61
September	84.455	5.35
October	84.688	5.34
November	84.720	5.34
December	83.240	5.49
Average	82.325	5.56 %

Source: Bloomberg

Norfolk Southern Corp.

49

Type:	Debenture
Description:	Southern Railway
CUSIP:	655855FB5
Coupon Rate:	7.875%
Maturity Date:	5/15/2043
Amount Outstanding ($ 000)	$138,085
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	117.334	6.27 %
February	120.457	6.01
March	118.290	6.18
April	117.059	6.28
May	115.044	6.45
June	119.721	6.05
July	118.436	6.15
August	118.065	6.18
September	123.133	5.77
October	122.591	5.80
November	123.752	5.71
December	123.035	5.76
Average	119.743	6.05 %

Source: Bloomberg

Norfolk Southern Corp.

50

Type:	Notes
Description:	Senior
CUSIP:	655844BN7
Coupon Rate:	4.800%
Maturity Date:	8/15/2043
Amount Outstanding ($ 000)	$291,829
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	88.373	5.84 %
February	90.028	5.68
March	88.273	5.85
April	84.459	6.24
May	85.043	6.18
June	87.963	5.89
July	87.906	5.90
August	90.107	5.69
September	91.175	5.59
October	91.827	5.53
November	91.233	5.59
December	90.874	5.62
Average	88.938	5.80 %

Source: Bloomberg

Norfolk Southern Corp.

51

Type:	Notes
Description:	Senior
CUSIP:	655844BQ0
Coupon Rate:	4.450%
Maturity Date:	6/15/2045
Amount Outstanding ($ 000)	$500,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	85.142	5.69 %
February	87.513	5.48
March	85.768	5.64
April	84.590	5.75
May	83.330	5.88
June	85.547	5.67
July	85.343	5.69
August	85.786	5.65
September	88.003	5.45
October	88.431	5.41
November	88.360	5.42
December	86.580	5.59
Average	86.199	5.61 %

Source: Bloomberg

Norfolk Southern Corp.

52

Type:	Notes
Description:	Senior
CUSIP:	655844BR8
Coupon Rate:	4.650%
Maturity Date:	1/15/2046
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	87.316	5.69 %
February	89.432	5.51
March	87.597	5.67
April	86.572	5.77
May	85.376	5.88
June	87.905	5.65
July	87.558	5.69
August	88.037	5.65
September	90.342	5.44
October	90.277	5.45
November	90.171	5.46
December	88.674	5.60
Average	88.271	5.62 %

Source: Bloomberg

Norfolk Southern Corp.

53

Type:	Notes
Description:	Senior
CUSIP:	655844BX5
Coupon Rate:	3.942%
Maturity Date:	11/1/2047
Amount Outstanding ($ 000)	$749,997
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	77.599	5.71 %
February	79.701	5.52
March	78.166	5.67
April	77.262	5.76
May	76.004	5.88
June	78.548	5.64
July	77.988	5.70
August	78.494	5.66
September	80.742	5.45
October	80.939	5.44
November	80.778	5.46
December	79.152	5.61
Average	78.781	5.63 %

Source: Bloomberg

Norfolk Southern Corp.

54

Type:	Notes
Description:	Senior
CUSIP:	655844BY3
Coupon Rate:	4.150%
Maturity Date:	2/28/2048
Amount Outstanding ($ 000)	$700,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	80.241	5.70 %
February	82.748	5.48
March	80.376	5.69
April	79.279	5.80
May	78.402	5.88
June	80.859	5.66
July	80.057	5.74
August	80.529	5.70
September	82.754	5.50
October	83.163	5.46
November	83.132	5.47
December	81.647	5.61
Average	81.099	5.64 %

Source: Bloomberg

Norfolk Southern Corp.

55

Type:	Notes
Description:	Senior
CUSIP:	655844CC0
Coupon Rate:	4.100%
Maturity Date:	5/15/2049
Amount Outstanding ($ 000)	$400,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	79.048	5.70 %
February	81.304	5.51
March	79.361	5.68
April	78.340	5.78
May	76.694	5.94
June	79.526	5.68
July	78.795	5.75
August	78.884	5.74
September	81.496	5.51
October	81.893	5.48
November	81.785	5.49
December	80.208	5.63
Average	79.778	5.66 %

Source: Bloomberg

Norfolk Southern Corp.

56

Type:	Notes
Description:	Senior
CUSIP:	655844CD8
Coupon Rate:	3.400%
Maturity Date:	11/1/2049
Amount Outstanding ($ 000)	$400,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	69.823	5.69 %
February	72.033	5.48
March	70.432	5.64
April	69.215	5.76
May	67.960	5.89
June	70.361	5.66
July	69.758	5.72
August	69.714	5.73
September	72.219	5.49
October	72.138	5.51
November	72.222	5.50
December	71.010	5.62
Average	70.574	5.64 %

Source: Bloomberg

Norfolk Southern Corp.

57

Type:	Notes
Description:	Senior
CUSIP:	655844CF3
Coupon Rate:	3.050%
Maturity Date:	5/15/2050
Amount Outstanding ($ 000)	$800,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	65.030	5.67 %
February	66.782	5.50
March	65.350	5.65
April	64.569	5.73
May	63.530	5.85
June	65.737	5.63
July	65.139	5.69
August	65.186	5.69
September	67.704	5.45
October	67.739	5.45
November	67.451	5.48
December	65.968	5.64
Average	65.849	5.62 %

Source: Bloomberg

Norfolk Southern Corp.

58

Type:	Notes
Description:	Senior
CUSIP:	655844CL0
Coupon Rate:	2.900%
Maturity Date:	8/25/2051
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	62.301	5.66 %
February	64.154	5.48
March	62.565	5.64
April	61.742	5.73
May	61.001	5.82
June	62.956	5.62
July	62.551	5.67
August	62.563	5.67
September	65.034	5.43
October	65.039	5.44
November	64.746	5.47
December	63.105	5.64
Average	63.146	5.61 %

Source: Bloomberg

Norfolk Southern Corp.

59

Type:	Notes
Description:	Senior
CUSIP:	655844BV9
Coupon Rate:	4.050%
Maturity Date:	8/15/2052
Amount Outstanding ($ 000)	$749,994
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	77.225	5.70 %
February	79.526	5.50
March	78.032	5.63
April	76.619	5.76
May	75.351	5.88
June	77.506	5.69
July	77.407	5.70
August	77.420	5.70
September	79.946	5.49
October	79.831	5.50
November	79.781	5.50
December	77.864	5.67
Average	78.042	5.64 %

Source: Bloomberg

Norfolk Southern Corp.

60

Type:	Notes
Description:	Senior
CUSIP:	655844CN6
Coupon Rate:	3.700%
Maturity Date:	3/15/2053
Amount Outstanding ($ 000)	$400,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	72.385	5.68 %
February	74.343	5.51
March	72.842	5.64
April	71.516	5.77
May	70.484	5.87
June	72.979	5.64
July	72.245	5.71
August	72.348	5.70
September	74.693	5.50
October	74.584	5.51
November	74.296	5.54
December	73.114	5.65
Average	72.986	5.64 %

Source: Bloomberg

Norfolk Southern Corp.

61

Type:	Notes
Description:	Senior
CUSIP:	655844CP1
Coupon Rate:	4.550%
Maturity Date:	6/1/2053
Amount Outstanding ($ 000)	$750,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	84.040	5.69 %
February	86.337	5.51
March	84.841	5.63
April	83.367	5.75
May	81.908	5.88
June	84.733	5.64
July	83.959	5.71
August	83.604	5.74
September	86.713	5.49
October	86.580	5.50
November	86.459	5.51
December	84.618	5.66
Average	84.763	5.64 %

Source: Bloomberg

Note: These are Rule 144-A notes, which trade among qualified institutional buyers and have their own CUSIP. The exchange-traded notes similar to these are on the proceeding page.

61	Exchange traded	$750,000
62	Rule 144-A	**0**
		$750,000

This note has 3 CUSIPs, but one of them has no trading data available, and 595,504 is the amount submitted by NS

Norfolk Southern Corp.

62

Type:	Notes
Description:	Senior
CUSIP:	655844CS5
Coupon Rate:	5.350%
Maturity Date:	8/1/2054
Amount Outstanding ($ 000)	$1,000,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	103.731	5.11 %
February	97.867	5.50
March	99.359	5.39
April	93.400	5.82
May	95.018	5.70
June	95.008	5.70
July	98.472	5.45
August	101.079	5.28
September	103.135	5.14
October	98.610	5.44
November	100.076	5.34
December	95.311	5.68
Average	98.422	5.46 %

Source: Bloomberg

Norfolk Southern Corp.

63

Type:	Notes
Description:	Senior
CUSIP:	655844CH9
Coupon Rate:	3.155%
Maturity Date:	5/15/2055
Amount Outstanding ($ 000)	$799,996
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	63.713	5.68 %
February	65.381	5.52
March	64.104	5.65
April	63.160	5.74
May	61.961	5.87
June	64.342	5.64
July	63.738	5.70
August	63.604	5.72
September	66.186	5.47
October	66.123	5.48
November	66.176	5.48
December	64.445	5.65
Average	64.411	5.63 %

Source: Bloomberg

Note: This is the exchange-traded portion of these notes. The Rule 144-A notes similar to these have a different CUSIP, and are shown on the next page.

63	Exchange traded	**$799,996**
64	Rule 144-A	1
		$799,997

Norfolk Southern Corp.

64

Type:	Notes
Description:	Senior 144A
CUSIP:	655844CG1
Coupon Rate:	3.155%
Maturity Date:	5/15/2055
Amount Outstanding ($ 000)	$1
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	63.927	5.66 %
February	65.858	5.48
March	64.238	5.64
April	63.382	5.72
May	61.396	5.92
June	64.024	5.67
July	63.756	5.70
August	63.882	5.69
September	66.143	5.48
October	66.716	5.43
November	66.230	5.48
December	64.072	5.69
Average	64.469	5.63 %

Source: Bloomberg

Note: These are Rule 144-A notes, which trade among qualified institutional buyers and have their own CUSIP. The exchange-traded notes similar to these are on the proceeding page.

63	Exchange traded	$799,996
64	Rule 144-A	1
		$799,997

Norfolk Southern Corp.

65

Type:	Notes
Description:	Senior
CUSIP:	655844CU0
Coupon Rate:	5.950%
Maturity Date:	3/15/2064
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	102.446	5.79 %
February	105.160	5.62
March	103.167	5.75
April	101.182	5.87
May	99.360	5.99
June	103.151	5.75
July	101.895	5.83
August	102.158	5.81
September	105.968	5.57
October	105.950	5.57
November	105.146	5.62
December	102.584	5.78
Average	103.181	5.75 %

Source: Bloomberg

Norfolk Southern Corp.

66

Type:	Notes
Description:	CR NSC 2097
CUSIP:	655844AK4
Coupon Rate:	7.900%
Maturity Date:	5/15/2097
Amount Outstanding ($ 000)	$196,302
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	126.871	6.21 %
February	130.487	6.03
March	129.292	6.09
April	125.269	6.29
May	122.956	6.41
June	129.100	6.10
July	127.552	6.18
August	130.689	6.02
September	132.058	5.96
October	133.709	5.88
November	134.739	5.84
December	130.306	6.04
Average	129.419	6.09 %

Source: Bloomberg

Norfolk Southern Corp.

67

Type:	Notes
Description:	Senior 2105
CUSIP:	655844AV0
Coupon Rate:	6.000%
Maturity Date:	3/15/2105
Amount Outstanding ($ 000)	$157,780
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	96.388	6.23 %
February	100.546	5.97
March	95.691	6.27
April	93.991	6.39
May	92.472	6.49
June	94.615	6.34
July	93.000	6.45
August	93.864	6.40
September	98.074	6.12
October	98.388	6.10
November	97.978	6.12
December	96.426	6.22
Average	95.953	6.26 %

Source: Bloomberg

Norfolk Southern Corp.

68

Type:	Notes
Description:	Senior
CUSIP:	655844BD9
Coupon Rate:	6.000%
Maturity Date:	5/23/2111
Amount Outstanding ($ 000)	$79,726
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	97.323	6.17 %
February	100.625	5.96
March	98.796	6.07
April	97.100	6.18
May	93.727	6.40
June	95.440	6.29
July	95.339	6.29
August	95.597	6.28
September	98.888	6.07
October	98.675	6.08
November	99.431	6.03
December	97.659	6.14
Average	97.383	6.16 %

Source: Bloomberg

Norfolk Southern Corp.

69

Type:	Notes
Description:	Senior
CUSIP:	655844CB2
Coupon Rate:	5.100%
Maturity Date:	8/1/2118
Amount Outstanding ($ 000)	$350,521
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	86.604	5.89 %
February	89.542	5.70
March	87.213	5.85
April	85.276	5.98
May	82.798	6.16
June	85.767	5.95
July	84.349	6.05
August	84.149	6.07
September	87.665	5.82
October	89.366	5.71
November	89.226	5.72
December	86.966	5.87
Average	86.577	5.90 %

Source: Bloomberg

Norfolk Southern Corp.

70

Type:	Notes
Description:	Senior
CUSIP:	655844CJ5
Coupon Rate:	4.100%
Maturity Date:	5/15/2121
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	76.454	5.37 %
February	72.099	5.70
March	73.322	5.60
April	68.733	5.97
May	70.181	5.85
June	70.373	5.84
July	73.858	5.56
August	76.532	5.37
September	75.961	5.41
October	72.306	5.68
November	74.002	5.55
December	69.319	5.92
Average	72.762	5.65 %

Source: Bloomberg

Union Pacific Corp.

71

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FJ2
Coupon Rate:	2.150%
Maturity Date:	2/5/2027
Amount Outstanding ($ 000)	$499,269
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	95.594	4.47 %
February	96.093	4.29
March	96.316	4.25
April	96.651	4.14
May	96.665	4.23
June	97.108	4.04
July	96.906	4.29
August	97.480	3.99
September	97.659	3.95
October	97.842	3.93
November	98.123	3.79
December	98.247	3.80
Average	97.057	4.10 %

Source: Bloomberg

Union Pacific Corp.

72

Type:	Notes
Description:	UP Corp.
CUSIP:	907818EP9
Coupon Rate:	3.000%
Maturity Date:	4/15/2027
Amount Outstanding ($ 000)	$498,357
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	97.000	4.44 %
February	97.361	4.32
March	97.547	4.27
April	97.962	4.09
May	97.804	4.23
June	98.182	4.06
July	97.883	4.30
August	98.399	4.03
September	98.660	3.91
October	98.749	3.90
November	98.912	3.82
December	99.046	3.76
Average	98.125	4.09 %

Source: Bloomberg

Union Pacific Corp.

73

Type:	Debentures
Description:	UP Corp.
CUSIP:	907818BY3
Coupon Rate:	7.125%
Maturity Date:	2/1/2028
Amount Outstanding ($ 000)	$161,398
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	106.453	4.79 %
February	106.751	4.62
March	107.361	4.33
April	107.033	4.38
May	106.438	4.53
June	106.756	4.33
July	106.105	4.52
August	106.684	4.18
September	106.348	4.24
October	106.135	4.23
November	105.958	4.22
December	106.256	3.96
Average	106.523	4.36 %

Source: Bloomberg

Union Pacific Corp.

74

Type:	Notes
Description:	UP Corp.
CUSIP:	907818EY0
Coupon Rate:	3.950%
Maturity Date:	9/10/2028
Amount Outstanding ($ 000)	$1,051,504
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	97.801	4.62 %
February	98.520	4.41
March	98.866	4.31
April	99.486	4.11
May	99.057	4.26
June	99.522	4.11
July	99.139	4.25
August	99.942	3.97
September	100.164	3.89
October	99.932	3.97
November	100.207	3.87
December	100.229	3.86
Average	99.405	4.14 %

Source: Bloomberg

Union Pacific Corp.

75

Type:	Debentures
Description:	UP Corp.
CUSIP:	907818CF3
Coupon Rate:	6.625%
Maturity Date:	2/1/2029
Amount Outstanding ($ 000)	$390,840
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	107.282	4.61 %
February	108.203	4.32
March	108.203	4.28
April	108.516	4.15
May	107.890	4.27
June	108.105	4.17
July	107.531	4.29
August	107.773	4.16
September	107.829	4.09
October	107.740	4.05
November	107.985	3.92
December	107.834	3.90
Average	107.908	4.18 %

Source: Bloomberg

Union Pacific Corp.

76

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FB9
Coupon Rate:	3.700%
Maturity Date:	3/1/2029
Amount Outstanding ($ 000)	$772,205
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	96.309	4.71 %
February	97.172	4.48
March	97.625	4.37
April	98.077	4.25
May	98.054	4.27
June	98.350	4.19
July	97.955	4.32
August	98.831	4.06
September	98.944	4.03
October	98.917	4.05
November	99.283	3.94
December	99.280	3.94
Average	98.233	4.22 %

Source: Bloomberg

Union Pacific Corp.

77

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FH6
Coupon Rate:	2.400%
Maturity Date:	2/5/2030
Amount Outstanding ($ 000)	$746,090
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	89.570	4.77 %
February	90.388	4.60
March	91.109	4.46
April	91.582	4.38
May	91.420	4.45
June	92.309	4.26
July	91.861	4.41
August	93.114	4.12
September	93.251	4.11
October	93.241	4.15
November	93.809	4.02
December	93.701	4.09
Average	92.113	4.32 %

Source: Bloomberg

Union Pacific Corp.

78

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FU7
Coupon Rate:	2.375%
Maturity Date:	5/20/2031
Amount Outstanding ($ 000)	$998,286
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	87.018	4.79 %
February	88.170	4.58
March	88.518	4.54
April	89.282	4.41
May	88.789	4.54
June	89.973	4.32
July	89.396	4.47
August	90.745	4.21
September	91.107	4.16
October	91.298	4.15
November	91.957	4.03
December	91.808	4.09
Average	89.838	4.36 %

Source: Bloomberg

Union Pacific Corp.

79

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FX1
Coupon Rate:	2.800%
Maturity Date:	2/14/2032
Amount Outstanding ($ 000)	$1,240,123
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	87.186	4.98 %
February	88.551	4.75
March	88.910	4.71
April	89.422	4.63
May	88.958	4.74
June	90.299	4.51
July	89.861	4.61
August	90.749	4.47
September	91.574	4.33
October	91.527	4.36
November	92.123	4.26
December	91.881	4.32
Average	90.087	4.56 %

Source: Bloomberg

Union Pacific Corp.

80

Type:	Notes
Description:	UP Corp.
CUSIP:	907818GB8
Coupon Rate:	4.500%
Maturity Date:	1/20/2033
Amount Outstanding ($ 000)	$892,542
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	96.642	5.02 %
February	98.189	4.78
March	98.298	4.76
April	98.551	4.73
May	97.868	4.84
June	99.453	4.59
July	98.767	4.70
August	99.552	4.57
September	100.647	4.39
October	100.694	4.39
November	101.456	4.26
December	101.101	4.32
Average	99.268	4.61 %

Source: Bloomberg

Union Pacific Corp.

81

Type:	Debentures
Description:	UP Corp.
CUSIP:	907818CS5
Coupon Rate:	5.375%
Maturity Date:	6/1/2033
Amount Outstanding ($ 000)	$143,321
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	101.561	5.14 %
February	103.630	4.84
March	103.598	4.84
April	103.139	4.90
May	103.011	4.92
June	104.101	4.75
July	103.052	4.90
August	104.636	4.65
September	105.925	4.45
October	105.606	4.49
November	105.623	4.48
December	105.008	4.57
Average	104.074	4.74 %

Source: Bloomberg

Union Pacific Corp.

82

Type:	Debentures
Description:	UP Corp.
CUSIP:	907818CU0
Coupon Rate:	6.250%
Maturity Date:	5/1/2034
Amount Outstanding ($ 000)	$152,702
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	107.507	5.22 %
February	109.161	4.99
March	108.621	5.05
April	108.515	5.06
May	108.259	5.09
June	109.420	4.92
July	108.434	5.05
August	110.606	4.74
September	110.987	4.68
October	111.450	4.61
November	110.297	4.75
December	110.403	4.72
Average	109.472	4.91 %

Source: Bloomberg

Union Pacific Corp.

83

Type:	Notes
Description:	UP Corp.
CUSIP:	907818EB0
Coupon Rate:	3.375%
Maturity Date:	2/1/2035
Amount Outstanding ($ 000)	$446,858
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	87.197	5.02 %
February	88.819	4.81
March	88.223	4.90
April	88.226	4.91
May	87.784	4.98
June	89.287	4.78
July	88.422	4.92
August	89.347	4.79
September	90.551	4.63
October	90.519	4.65
November	91.054	4.58
December	90.459	4.68
Average	89.157	4.80 %

Source: Bloomberg

Union Pacific Corp.

84

Type:	Notes (new)
Description:	UP Corp.
CUSIP:	907818GG7
Coupon Rate:	5.100%
Maturity Date:	2/20/2035
Amount Outstanding ($ 000)	$988,896
Months Outstanding	11.0

End of Month in 2025	Price	Yield
January	Not Traded	- %
February	101.291	4.93
March	100.890	4.98
April	100.632	5.02
May	100.220	5.07
June	101.766	4.87
July	101.025	4.96
August	101.754	4.87
September	102.868	4.72
October	103.075	4.69
November	103.958	4.57
December	103.332	4.65
Average	101.892	4.85 %

Source: Bloomberg

Union Pacific Corp.

85

Type:	Notes (Exchange)
Description:	UP Corp.
CUSIP:	907818FQ6
Coupon Rate:	2.891%
Maturity Date:	4/6/2036
Amount Outstanding ($ 000)	$621,630
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	81.063	5.14 %
February	82.589	4.95
March	82.072	5.03
April	81.991	5.06
May	81.475	5.14
June	82.932	4.96
July	82.075	5.09
August	82.994	4.98
September	84.196	4.83
October	84.567	4.79
November	85.193	4.72
December	84.631	4.81
Average	82.982	4.96 %

Source: Bloomberg

Exchange Offer, 424B3, Prospectus Dated September 3, 2021
Note: This is the Exchange traded portion of the notes, the 144A portion is shown on the prior page

85	$621,630
86	1716
	$623,346

Union Pacific Corp.

86

Type:	Notes (Exchange)
Description:	UP Corp. 144A
CUSIP:	907818FP8
Coupon Rate:	2.891%
Maturity Date:	4/6/2036
Amount Outstanding ($ 000)	$1,716
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	81.063	5.14 %
February	82.589	4.95
March	82.072	5.03
April	81.991	5.06
May	81.475	5.14
June	82.932	4.96
July	82.075	5.09
August	82.994	4.98
September	84.196	4.83
October	84.567	4.79
November	85.193	4.72
December	84.631	4.81
Average	82.982	4.96 %

Source: Bloomberg

Exchange Offer, 424B3, Prospectus Dated September 3, 2021,
interest accrues from April 6, 2021

Note: These are Rule 144-A notes, which trade among qualified institutional buyers.

86	$1,716
85	621630
	$623,346

Union Pacific Corp.

87

Type:	Debentures
Description:	UP Corp.
CUSIP:	907818CX4
Coupon Rate:	6.150%
Maturity Date:	5/1/2037
Amount Outstanding ($ 000)	$89,986
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	108.845	5.17 %
February	109.545	5.09
March	108.201	5.23
April	107.899	5.25
May	107.411	5.30
June	110.122	5.01
July	106.845	5.36
August	108.683	5.15
September	110.273	4.97
October	111.599	4.82
November	111.142	4.87
December	110.736	4.90
Average	109.275	5.09 %

Source: Bloomberg

Union Pacific Corp.

88

Type:	Notes
Description:	UP Corp.
CUSIP:	907818EQ7
Coupon Rate:	3.600%
Maturity Date:	9/15/2037
Amount Outstanding ($ 000)	$496,309
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	84.200	5.34 %
February	86.322	5.09
March	85.929	5.14
April	85.893	5.16
May	85.230	5.25
June	87.077	5.03
July	86.297	5.13
August	86.848	5.07
September	88.727	4.85
October	89.272	4.80
November	89.877	4.73
December	89.165	4.82
Average	87.070	5.03 %

Source: Bloomberg

Union Pacific Corp.

89

Type:	Notes
Description:	UP Corp.
CUSIP:	907818EV6
Coupon Rate:	4.375%
Maturity Date:	9/10/2038
Amount Outstanding ($ 000)	$231,385
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	90.864	5.33 %
February	93.550	5.04
March	91.743	5.24
April	91.391	5.28
May	90.445	5.39
June	92.800	5.13
July	91.560	5.28
August	92.544	5.17
September	93.694	5.04
October	94.514	4.96
November	94.700	4.94
December	96.328	4.76
Average	92.844	5.13 %

Source: Bloomberg

Union Pacific Corp.

90

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FD5
Coupon Rate:	3.550%
Maturity Date:	8/15/2039
Amount Outstanding ($ 000)	$495,121
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	81.682	5.38 %
February	83.676	5.17
March	83.038	5.25
April	82.511	5.31
May	81.852	5.40
June	83.790	5.18
July	83.000	5.28
August	83.519	5.23
September	85.092	5.06
October	85.616	5.01
November	86.384	4.93
December	85.557	5.03
Average	83.810	5.19 %

Source: Bloomberg

Union Pacific Corp.

91

Type:	Notes
Description:	UP Corp. 144A
CUSIP:	907818DE5
Coupon Rate:	5.780%
Maturity Date:	7/15/2040
Amount Outstanding ($ 000)	$10
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	99.078	5.87 %
February	102.757	5.51
March	102.366	5.55
April	102.912	5.49
May	99.436	5.84
June	100.888	5.69
July	99.682	5.81
August	101.201	5.66
September	101.754	5.60
October	101.945	5.58
November	104.775	5.31
December	103.491	5.43
Average	101.690	5.61 %

Source: Bloomberg

Note: These are Rule 144-A notes, which trade among qualified institutional buyers.

91	$10
92	65951
	$65,961

Union Pacific Corp.

92

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DF2
Coupon Rate:	5.780%
Maturity Date:	7/15/2040
Amount Outstanding ($ 000)	$65,951
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	99.705	5.81 %
February	102.536	5.53
March	103.187	5.47
April	102.232	5.56
May	99.685	5.81
June	102.023	5.58
July	100.718	5.71
August	102.203	5.56
September	103.745	5.41
October	105.087	5.28
November	106.405	5.15
December	104.024	5.38
Average	102.629	5.52 %

Source: Bloomberg

Note: This is the exchange-traded portion of these notes. The Rule 144-A notes similar to these have a different CUSIP, and are shown on the next page.

92	$65,951
91	10
	$65,961

Union Pacific Corp.

93

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FT0
Coupon Rate:	3.200%
Maturity Date:	5/20/2041
Amount Outstanding ($ 000)	$992,457
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	75.586	5.49 %
February	77.264	5.31
March	76.286	5.42
April	75.243	5.55
May	74.532	5.64
June	76.678	5.41
July	75.964	5.50
August	76.499	5.44
September	78.515	5.23
October	78.787	5.21
November	79.089	5.18
December	78.590	5.25
Average	76.919	5.39 %

Source: Bloomberg

Prospectus supplement dated May 17, 2021
Interest accrues from May 20, 2021

Union Pacific Corp.

94

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DJ4
Coupon Rate:	4.750%
Maturity Date:	9/15/2041
Amount Outstanding ($ 000)	$213,069
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	89.904	5.70 %
February	92.195	5.47
March	90.655	5.63
April	88.993	5.80
May	87.811	5.93
June	90.382	5.66
July	89.036	5.81
August	90.305	5.68
September	91.616	5.55
October	92.006	5.51
November	92.363	5.48
December	91.464	5.57
Average	90.561	5.65 %

Source: Bloomberg

Union Pacific Corp.

95

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FY9
Coupon Rate:	3.375%
Maturity Date:	2/14/2042
Amount Outstanding ($ 000)	$495,523
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	76.458	5.53 %
February	78.506	5.32
March	77.443	5.43
April	76.285	5.57
May	75.576	5.65
June	77.868	5.41
July	76.913	5.52
August	77.143	5.51
September	79.277	5.28
October	79.879	5.23
November	80.045	5.21
December	78.865	5.35
Average	77.855	5.42 %

Source: Bloomberg

Union Pacific Corp.

96

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DL9
Coupon Rate:	4.300%
Maturity Date:	6/15/2042
Amount Outstanding ($ 000)	$204,537
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	83.949	5.78 %
February	86.296	5.54
March	85.195	5.66
April	83.429	5.84
May	82.135	5.99
June	84.856	5.71
July	83.967	5.80
August	84.561	5.75
September	86.194	5.58
October	86.575	5.55
November	86.772	5.53
December	85.422	5.68
Average	84.946	5.70 %

Source: Bloomberg

Union Pacific Corp.

97

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DP0
Coupon Rate:	4.250%
Maturity Date:	4/15/2043
Amount Outstanding ($ 000)	$183,915
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	82.824	5.79 %
February	85.197	5.56
March	83.566	5.72
April	82.026	5.88
May	81.541	5.94
June	83.855	5.71
July	82.150	5.89
August	81.805	5.93
September	84.059	5.70
October	85.384	5.57
November	84.425	5.67
December	83.316	5.79
Average	83.346	5.76 %

Source: Bloomberg

Union Pacific Corp.

98

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DU9
Coupon Rate:	4.750%
Maturity Date:	12/15/2043
Amount Outstanding ($ 000)	$182,896
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	88.007	5.80 %
February	91.387	5.49
March	90.916	5.54
April	87.468	5.86
May	86.251	5.99
June	89.330	5.69
July	88.041	5.82
August	88.248	5.80
September	90.509	5.59
October	90.716	5.57
November	90.511	5.59
December	88.974	5.74
Average	89.197	5.71 %

Source: Bloomberg

Union Pacific Corp.

99

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DT2
Coupon Rate:	4.821%
Maturity Date:	2/1/2044
Amount Outstanding ($ 000)	$133,241
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	89.389	5.75 %
February	92.086	5.50
March	90.255	5.67
April	87.704	5.91
May	86.439	6.04
June	89.733	5.73
July	90.762	5.63
August	91.061	5.61
September	90.693	5.64
October	90.667	5.65
November	90.371	5.68
December	89.061	5.81
Average	89.852	5.72 %

Source: Bloomberg

Note: This is the exchange-traded portion of these notes. The Rule 144-A notes similar to these have a different CUSIP, and are shown on the next page.

99	$133,241
100	1
	$133,242

Union Pacific Corp.

100

Type:	Notes
Description:	UP Corp. 144A
CUSIP:	907818DS4
Coupon Rate:	4.821%
Maturity Date:	2/1/2044
Amount Outstanding ($ 000)	$1
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	88.775	5.80 %
February	92.179	5.49
March	89.831	5.71
April	88.210	5.87
May	86.838	6.00
June	89.532	5.74
July	88.123	5.88
August	87.974	5.90
September	90.569	5.65
October	90.691	5.64
November	89.799	5.73
December	88.862	5.83
Average	89.282	5.77 %

Source: Bloomberg

Note: These are Rule 144-A notes, which trade among qualified institutional buyers.

100	$1
99	133241.094
	$133,242

Union Pacific Corp.

101

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DX3
Coupon Rate:	4.850%
Maturity Date:	6/15/2044
Amount Outstanding ($ 000)	$83,420
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	89.093	5.79 %
February	92.310	5.50
March	91.498	5.58
April	88.926	5.82
May	86.942	6.01
June	90.226	5.70
July	89.500	5.77
August	91.795	5.56
September	91.311	5.61
October	92.712	5.48
November	92.768	5.48
December	91.645	5.58
Average	90.727	5.66 %

Source: Bloomberg

Union Pacific Corp.

102

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DZ8
Coupon Rate:	4.150%
Maturity Date:	1/15/2045
Amount Outstanding ($ 000)	$229,430
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	80.705	5.79 %
February	83.763	5.50
March	81.952	5.68
April	80.223	5.85
May	79.064	5.98
June	81.572	5.73
July	80.755	5.82
August	81.346	5.76
September	83.738	5.53
October	83.120	5.60
November	83.301	5.58
December	82.742	5.64
Average	81.857	5.71 %

Source: Bloomberg

Union Pacific Corp.

103

Type:	Notes
Description:	UP Corp.
CUSIP:	907818EF1
Coupon Rate:	4.050%
Maturity Date:	11/15/2045
Amount Outstanding ($ 000)	$396,354
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	81.103	5.60 %
February	83.454	5.39
March	81.850	5.54
April	80.601	5.66
May	79.596	5.76
June	81.792	5.55
July	80.579	5.67
August	80.820	5.65
September	83.177	5.44
October	83.652	5.40
November	83.725	5.39
December	82.207	5.54
Average	81.880	5.55 %

Source: Bloomberg

Union Pacific Corp.

104

Type:	Notes
Description:	UP Corp.
CUSIP:	907818EJ3
Coupon Rate:	4.050%
Maturity Date:	3/1/2046
Amount Outstanding ($ 000)	$516,542
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	80.812	5.61 %
February	83.106	5.41
March	81.664	5.54
April	80.869	5.62
May	79.465	5.76
June	81.528	5.57
July	80.310	5.69
August	80.277	5.69
September	82.758	5.46
October	83.256	5.42
November	83.180	5.43
December	81.680	5.57
Average	81.575	5.56 %

Source: Bloomberg

Union Pacific Corp.

105

Type:	Notes
Description:	UP Corp.
CUSIP:	907818EK0
Coupon Rate:	3.350%
Maturity Date:	8/15/2046
Amount Outstanding ($ 000)	$296,705
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	71.783	5.63 %
February	74.464	5.37
March	72.661	5.55
April	71.459	5.68
May	70.562	5.78
June	72.326	5.60
July	71.499	5.69
August	71.905	5.66
September	73.805	5.47
October	74.241	5.43
November	74.475	5.42
December	72.882	5.58
Average	72.672	5.57 %

Source: Bloomberg

Union Pacific Corp.

106

Type:	Notes
Description:	UP Corp.
CUSIP:	907818EN4
Coupon Rate:	4.000%
Maturity Date:	4/15/2047
Amount Outstanding ($ 000)	$490,360
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	79.481	5.63 %
February	82.041	5.40
March	80.463	5.55
April	79.152	5.67
May	78.320	5.76
June	80.293	5.57
July	79.086	5.69
August	78.948	5.71
September	81.578	5.47
October	81.663	5.46
November	81.886	5.44
December	80.339	5.59
Average	80.271	5.58 %

Source: Bloomberg

Union Pacific Corp.

107

Type:	Notes
Description:	UP Corp.
CUSIP:	907818EW4
Coupon Rate:	4.500%
Maturity Date:	9/10/2048
Amount Outstanding ($ 000)	$386,260
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	85.246	5.64 %
February	87.947	5.41
March	86.317	5.55
April	84.802	5.68
May	83.105	5.84
June	85.747	5.61
July	84.439	5.72
August	84.402	5.73
September	87.071	5.50
October	87.128	5.50
November	87.650	5.45
December	86.133	5.59
Average	85.832	5.60 %

Source: Bloomberg

Union Pacific Corp.

108

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FC7
Coupon Rate:	4.300%
Maturity Date:	3/1/2049
Amount Outstanding ($ 000)	$627,580
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	83.010	5.59 %
February	85.433	5.39
March	83.833	5.53
April	82.161	5.67
May	80.757	5.80
June	83.007	5.61
July	82.031	5.69
August	81.649	5.73
September	84.463	5.49
October	84.966	5.45
November	84.448	5.49
December	83.118	5.61
Average	83.240	5.59 %

Source: Bloomberg

Union Pacific Corp.

109

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FK9
Coupon Rate:	3.250%
Maturity Date:	2/5/2050
Amount Outstanding ($ 000)	$1,698,586
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	68.643	5.59 %
February	70.738	5.40
March	69.300	5.54
April	68.201	5.65
May	67.063	5.77
June	69.263	5.56
July	68.190	5.67
August	68.056	5.69
September	70.494	5.45
October	70.717	5.44
November	70.756	5.44
December	69.340	5.58
Average	69.230	5.57 %

Source: Bloomberg

Union Pacific Corp.

110

Type:	Notes
Description:	UP Corp.
CUSIP:	907818EM6
Coupon Rate:	3.799%
Maturity Date:	10/1/2051
Amount Outstanding ($ 000)	$725,180
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	75.135	5.61 %
February	77.452	5.41
March	75.960	5.54
April	74.631	5.66
May	73.238	5.79
June	75.542	5.59
July	74.457	5.69
August	74.515	5.69
September	77.138	5.46
October	77.305	5.44
November	77.382	5.44
December	75.614	5.60
Average	75.697	5.58 %

Source: Bloomberg

Union Pacific Corp.

111

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FW3
Coupon Rate:	2.950%
Maturity Date:	3/10/2052
Amount Outstanding ($ 000)	$841,816
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	63.570	5.57 %
February	65.521	5.39
March	64.291	5.51
April	63.127	5.63
May	61.814	5.77
June	63.966	5.56
July	63.004	5.66
August	62.796	5.68
September	65.191	5.45
October	65.595	5.42
November	65.508	5.43
December	64.040	5.58
Average	64.035	5.55 %

Source: Bloomberg

Prospectus supplement dated September 7, 2021
Interest accrues from September 10, 2021

Union Pacific Corp.

112

Type:	Notes
Description:	UP Corp.
CUSIP:	907818GC6
Coupon Rate:	4.950%
Maturity Date:	9/9/2052
Amount Outstanding ($ 000)	$590,417
Months Outstanding	12.0

End of Month in 2024	Price	Yield
January	100.270	4.93 %
February	95.747	5.24
March	96.397	5.19
April	91.520	5.55
May	92.798	5.45
June	93.273	5.42
July	96.504	5.19
August	98.188	5.07
September	100.115	4.94
October	95.708	5.24
November	97.154	5.14
December	91.859	5.53
Average	95.794	5.24 %

Source: Bloomberg

Union Pacific Corp.

113

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FZ6
Coupon Rate:	3.500%
Maturity Date:	2/14/2053
Amount Outstanding ($ 000)	$1,235,375
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	70.779	5.57 %
February	72.921	5.39
March	71.415	5.52
April	70.442	5.61
May	68.733	5.78
June	70.956	5.57
July	70.187	5.65
August	69.846	5.68
September	72.415	5.45
October	72.640	5.44
November	72.668	5.44
December	71.012	5.59
Average	71.168	5.56 %

Source: Bloomberg

Union Pacific Corp.

114

Type:	Notes
Description:	UP Corp.
CUSIP:	907818GF9
Coupon Rate:	4.950%
Maturity Date:	5/15/2053
Amount Outstanding ($ 000)	$494,310
Months Outstanding	12.0

End of Month in 2024	Price	Yield
January	99.939	4.95 %
February	95.461	5.26
March	96.333	5.20
April	91.324	5.56
May	92.773	5.45
June	93.314	5.41
July	96.266	5.20
August	98.180	5.07
September	100.173	4.94
October	95.423	5.26
November	96.833	5.16
December	91.519	5.55
Average	95.628	5.25 %

Source: Bloomberg

Union Pacific Corp.

115

Type:	Notes (new)
Description:	UP Corp.
CUSIP:	907818GH5
Coupon Rate:	5.600%
Maturity Date:	12/1/2054
Amount Outstanding ($ 000)	$988,982
Months Outstanding	11.0

End of Month in 2025	Price	Yield
January	Not Traded	- %
February	102.406	5.43
March	100.488	5.56
April	98.652	5.69
May	96.825	5.82
June	99.751	5.61
July	98.773	5.68
August	98.421	5.71
September	101.655	5.48
October	101.280	5.51
November	101.747	5.48
December	99.926	5.61
Average	99.993	5.60 %

Source: Bloomberg

Union Pacific Corp.

116

Type:	Notes
Description:	UP Corp.
CUSIP:	907818EC8
Coupon Rate:	3.875%
Maturity Date:	2/1/2055
Amount Outstanding ($ 000)	$444,528
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	74.868	5.62 %
February	77.245	5.42
March	75.610	5.56
April	73.994	5.70
May	72.572	5.83
June	75.610	5.57
July	74.690	5.65
August	74.171	5.69
September	76.985	5.46
October	76.942	5.46
November	77.201	5.44
December	75.264	5.61
Average	75.429	5.58 %

Source: Bloomberg

Union Pacific Corp.

117

Type:	Notes
Description:	UP Corp.
CUSIP:	907818EX2
Coupon Rate:	4.800%
Maturity Date:	9/10/2058
Amount Outstanding ($ 000)	$25,794
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	80.880	6.15 %
February	83.192	5.97
March	81.169	6.13
April	79.365	6.29
May	78.151	6.39
June	80.458	6.19
July	79.328	6.29
August	79.537	6.28
September	82.547	6.03
October	83.479	5.95
November	83.636	5.94
December	81.308	6.13
Average	81.088	6.15 %

Source: Bloomberg

Union Pacific Corp.

118

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FE3
Coupon Rate:	3.950%
Maturity Date:	8/15/2059
Amount Outstanding ($ 000)	$491,644
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	73.637	5.71 %
February	76.184	5.50
March	74.637	5.63
April	72.932	5.77
May	71.436	5.90
June	74.072	5.68
July	73.241	5.75
August	72.857	5.79
September	76.008	5.52
October	76.016	5.52
November	76.232	5.51
December	74.366	5.66
Average	74.302	5.66 %

Source: Bloomberg

Union Pacific Corp.

119

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FG8
Coupon Rate:	3.839%
Maturity Date:	3/20/2060
Amount Outstanding ($ 000)	$1,427,669
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	71.995	5.69 %
February	74.392	5.49
March	72.718	5.63
April	71.028	5.78
May	69.816	5.89
June	72.194	5.68
July	71.567	5.74
August	71.335	5.76
September	74.092	5.53
October	74.185	5.52
November	74.158	5.53
December	72.294	5.69
Average	72.481	5.66 %

Source: Bloomberg

Note: This is the exchange-traded portion of these notes. The Rule 144-A notes similar to these have a different CUSIP, and are shown on the next page.

119	$1,427,669
120	184
	$1,427,853

Union Pacific Corp.

120

Type:	Notes
Description:	UP Corp. 144A
CUSIP:	907818FF0
Coupon Rate:	3.839%
Maturity Date:	3/20/2060
Amount Outstanding ($ 000)	$184
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	71.995	5.69 %
February	74.392	5.49
March	72.718	5.63
April	71.028	5.78
May	69.816	5.89
June	72.194	5.68
July	71.567	5.74
August	71.335	5.76
September	74.092	5.53
October	74.185	5.52
November	74.158	5.53
December	72.294	5.69
Average	72.481	5.66 %

Source: Bloomberg

Note: These are Rule 144-A notes, which trade among qualified institutional buyers.

120	$184
119	1427669.223
	$1,427,853

Union Pacific Corp.

121

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FV5
Coupon Rate:	3.550%
Maturity Date:	5/20/2061
Amount Outstanding ($ 000)	$640,667
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	67.481	5.67 %
February	69.859	5.47
March	67.986	5.63
April	66.249	5.79
May	64.983	5.91
June	67.322	5.70
July	66.381	5.78
August	66.676	5.76
September	69.009	5.56
October	69.152	5.55
November	69.214	5.54
December	67.254	5.72
Average	67.631	5.67 %

Source: Bloomberg

Prospectus supplement dated May 17, 2021
Interest accrues from May 20, 2021

Union Pacific Corp.

122

Type:	Notes (Exchange)
Description:	UP Corp.
CUSIP:	907818FN3
Coupon Rate:	2.973%
Maturity Date:	9/16/2062
Amount Outstanding ($ 000)	$722,661
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	58.156	5.68 %
February	60.072	5.50
March	58.491	5.65
April	57.388	5.76
May	56.340	5.87
June	58.473	5.66
July	57.607	5.75
August	57.801	5.73
September	59.951	5.53
October	60.266	5.50
November	60.057	5.52
December	58.816	5.64
Average	58.618	5.65 %

Source: Bloomberg

Exchange Offer, 424B3, Prospectus Dated May 5, 2021,

Note: This is the Exchange traded portion of the notes, the 144A portion is shown on the next page

122	$722,661
123	3004
	$725,665

Union Pacific Corp.

123

Type:	Notes (Exchange)
Description:	UP Corp. 144A
CUSIP:	907818FM5
Coupon Rate:	2.973%
Maturity Date:	9/16/2062
Amount Outstanding ($ 000)	$3,004
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	58.156	5.68 %
February	60.072	5.50
March	58.491	5.65
April	57.388	5.76
May	56.340	5.87
June	58.473	5.66
July	57.607	5.75
August	57.801	5.73
September	59.951	5.53
October	60.266	5.50
November	60.057	5.52
December	58.816	5.64
Average	58.618	5.65 %

Source: Bloomberg

Note: These are Rule 144-A notes, which trade among qualified institutional buyers.

123	$3,004
122	$ 722,661
	$725,665

Union Pacific Corp.

124

Type:	Notes
Description:	UP Corp.
CUSIP:	907818GD4
Coupon Rate:	5.150%
Maturity Date:	1/20/2063
Amount Outstanding ($ 000)	$393,239
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	100.308	5.13 %
February	95.551	5.43
March	96.964	5.34
April	90.573	5.76
May	92.347	5.64
June	92.434	5.63
July	95.946	5.40
August	98.016	5.27
September	100.822	5.10
October	95.734	5.42
November	97.527	5.30
December	91.170	5.72
Average	95.616	5.43 %

Source: Bloomberg

Note: These are Medium Term Notes, referred to as Series B.

Union Pacific Corp.

125

Type:	Notes
Description:	UP Corp.
CUSIP:	907818EG9
Coupon Rate:	4.375%
Maturity Date:	11/15/2065
Amount Outstanding ($ 000)	$169,602
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	77.536	5.82 %
February	79.036	5.71
March	76.705	5.89
April	75.153	6.02
May	73.967	6.12
June	76.520	5.91
July	75.708	5.98
August	75.761	5.97
September	77.906	5.80
October	77.862	5.81
November	78.226	5.78
December	76.450	5.92
Average	76.736	5.89 %

Source: Bloomberg

Union Pacific Corp.

126

Type:	Notes
Description:	UP Corp.
CUSIP:	907818ER5
Coupon Rate:	4.100%
Maturity Date:	9/15/2067
Amount Outstanding ($ 000)	$494,607
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	73.949	5.74 %
February	76.475	5.55
March	74.632	5.69
April	73.093	5.82
May	71.953	5.91
June	74.197	5.73
July	73.258	5.81
August	73.014	5.83
September	76.142	5.58
October	76.358	5.56
November	76.592	5.54
December	74.210	5.73
Average	74.489	5.71 %

Source: Bloomberg

Union Pacific Corp.

127

Type:	Notes
Description:	UP Corp.
CUSIP:	907818FL7
Coupon Rate:	3.750%
Maturity Date:	2/5/2070
Amount Outstanding ($ 000)	$742,441
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	67.820	5.76 %
February	70.074	5.57
March	68.521	5.70
April	66.515	5.88
May	65.652	5.96
June	68.087	5.74
July	67.435	5.80
August	66.889	5.85
September	69.801	5.60
October	69.529	5.62
November	69.510	5.63
December	67.837	5.77
Average	68.139	5.74 %

Source: Bloomberg

Union Pacific Corp.

128

Type:	Notes (Exchange)
Description:	UP Corp.
CUSIP:	907818FS2
Coupon Rate:	3.799%
Maturity Date:	4/6/2071
Amount Outstanding ($ 000)	$819,936
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	68.657	5.74 %
February	70.810	5.56
March	69.036	5.71
April	67.720	5.82
May	66.286	5.95
June	68.771	5.74
July	67.935	5.81
August	67.603	5.84
September	70.704	5.58
October	70.579	5.59
November	70.753	5.58
December	68.740	5.74
Average	68.966	5.72 %

Source: Bloomberg

Exchange Offer, 424B3, Prospectus Dated September 3, 2021,

Note: This is the Exchange traded portion of the notes, the 144A portion is shown on the next page

128	$819,936
129	7274
	$827,210

Union Pacific Corp.

129

Type:	Notes (Exchange)
Description:	UP Corp. 144A
CUSIP:	907818FR4
Coupon Rate:	3.799%
Maturity Date:	4/6/2071
Amount Outstanding ($ 000)	$7,274
Months Outstanding	12.0

End of Month in 2025	Price	Yield
January	68.657	5.74 %
February	70.810	5.56
March	69.036	5.71
April	67.720	5.82
May	66.286	5.95
June	68.771	5.74
July	67.935	5.81
August	67.603	5.84
September	70.695	5.58
October	70.579	5.59
November	70.753	5.58
December	68.740	5.74
Average	68.965	5.72 %

Source: Bloomberg

Note: These are Rule 144-A notes, which trade among qualified institutional buyers.

129	$7,274
128	819936.4402
	$827,210

Union Pacific Corp.

130

Type:	Notes
Description:	UP Corp.
CUSIP:	907818GA0
Coupon Rate:	3.850%
Maturity Date:	2/14/2072
Amount Outstanding ($ 000)	$493,648
Months Outstanding	12.0

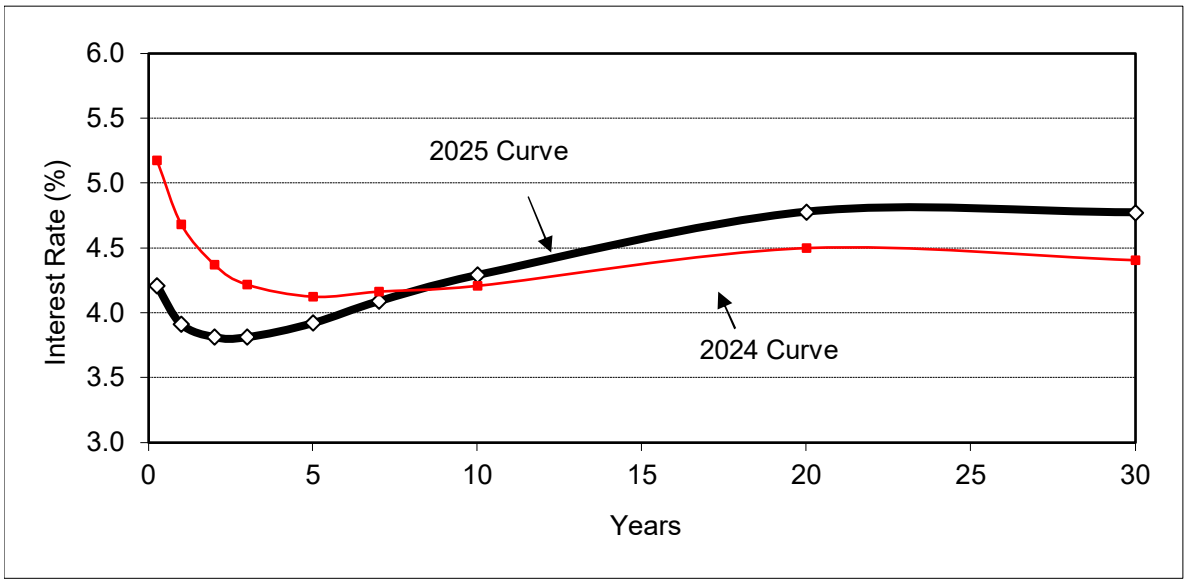
End of Month in 2025	Price	Yield
January	69.460	5.73 %
February	72.146	5.52
March	70.207	5.67
April	68.314	5.83
May	67.062	5.94
June	69.605	5.73
July	68.656	5.81
August	68.287	5.84
September	71.032	5.61
October	71.577	5.57
November	71.372	5.58
December	69.581	5.73
Average	69.775	5.71 %

Source: Bloomberg

Interest Rates on Selected Government Instruments

Yield in Percent Per Annum, Constant Maturity Rates for 2025

	3 Mo.	1 Yr	2 Yr	3 Yr	5 Yr	7 Yr	10 Yr	20 Yr	30 Yr
January	4.34	4.18	4.27	4.33	4.43	4.53	4.63	4.92	4.85
February	4.33	4.19	4.21	4.22	4.28	4.37	4.45	4.73	4.68
March	4.34	4.06	3.97	3.96	4.04	4.16	4.28	4.63	4.60
April	4.32	3.95	3.78	3.78	3.91	4.08	4.28	4.74	4.71
May	4.36	4.09	3.92	3.90	4.02	4.22	4.42	4.92	4.90
June	4.42	4.06	3.89	3.86	3.96	4.16	4.38	4.90	4.89
July	4.41	4.08	3.88	3.84	3.95	4.15	4.39	4.92	4.92
August	4.30	3.89	3.70	3.67	3.79	4.00	4.26	4.85	4.87
September	4.07	3.66	3.57	3.55	3.66	3.86	4.12	4.71	4.74
October	3.98	3.61	3.52	3.53	3.65	3.83	4.06	4.61	4.64
November	3.94	3.66	3.55	3.56	3.67	3.86	4.09	4.67	4.70
December	3.68	3.54	3.50	3.55	3.70	3.90	4.14	4.76	4.80
Average	**4.21**	**3.91**	**3.81**	**3.81**	**3.92**	**4.09**	**4.29**	**4.78**	**4.78**



Source: Federal Reserve statistical release H.15, Treasury Constant Maturities, Nominal

Equipment Trust Certificates for CSX

Modeled ETCs

	ETC ID	Maturity	Balance For 2025 ($000) Beg.	Ending	Avg O/S	Current Valuation Interest Rate	Valuation Factor	Current Market Value	Interest
1.	[None]				--			--	--
2.					--			--	--
3.					--			--	--
4.					--			--	--
5.					--			--	--
6.					--			--	--
7.					--			--	--
8.					--			--	--
9.					--			--	--
10.					--			--	--
11.					--			--	--
12.					--			--	--
13.					--			--	--
14.					--			--	--
15.					--			--	--
	Total		$0	$0	$0	--		**$0**	$0

Non-Modeled ETCs

	ETC ID	Maturity	Balance For 2025 ($000) Beg.	Ending
1.	[None]			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
	Total		$0	$0

Equipment Trust Certificates for CSX (continued)

Entire ETC Current – Not Used for Cost or Market Value

	ETC ID	Maturity	Balance 2025 ($000) Beg.	Ending
1.	[None]			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
	Total		$0	$0

Grand Totals (for reconciliation to carrier data)

	Balance For 2025 ($000) Beg.	Ending
Total Modeled	$0	$0
Total Non-Modeled	0	0
Sub Total	0	0
Total All Current	0	0
Grand Total	$0	$0
From CSX:		
Total ETCs		$0
Difference		$0

Equipment Trust Certificates for NS

Modeled ETCs

	ETC ID	Maturity	Balance For 2025 ($000) Beg.	Ending	Avg O/S	Current Valuation Interest Rate	Valuation Factor	Current Market Value	Interest
1.	[None]				--			--	--
2.					--			--	--
3.					--			--	--
4.					--			--	--
5.					--			--	--
6.					--			--	--
7.					--			--	--
8.					--			--	--
9.					--			--	--
10.					--			--	--
11.					--			--	--
12.					--			--	--
13.					--			--	--
14.					--			--	--
15.					--			--	--
	Total		$0	$0	$0	--		**$0**	$0

Non-Modeled ETCs

	ETC ID	Maturity	Balance For 2025 ($000) Beg.	Ending
1.	[None]			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
	Total		$0	$0

Equipment Trust Certificates for NS (continued)

Entire ETC Current – Not Used for Cost or Market Value

	ETC ID	Maturity	Balance 2025 ($000) Beg.	Ending
1.	[None]			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
	Total		$0	$0

Grand Totals (for reconciliation to carrier data)

	Balance For 2025 ($000) Beg.	Ending
Total Modeled	$0	$0
Total Non-Modeled	0	0
Sub Total	0	0
Total All Current	0	0
Grand Total	$0	$0
From NS:		
Total ETCs		$0
Difference		$0

Equipment Trust Certificates for UP

Modeled ETCs

	ETC ID	Maturity	Balance For 2025 ($000) Beg.	Ending	Avg O/S	Current Valuation Interest Rate	Valuation Factor	Current Market Value	Interest
1.	ETC UPC Series J	1/2/2031	19,030	16,282	17,656	4.761%	1.05192	18,573	884
2.	ETC UPC Series A	5/14/2026	328,190	310,980	319,585	4.579%	0.98141	313,645	14,361
3.	ETC UPC Series 2015 A	5/12/2027	275,510	261,820	268,665	4.567%	0.96579	259,474	11,850
4.	ETC UPC Series 2016 A	11/9/2029	109,143	103,939	106,541	4.641%	0.94278	100,445	4,661
5.					--			--	--
6.					--			--	--
7.					--			--	--
8.					--			--	--
9.					--			--	--
10.					--			--	--
11.					--			--	--
12.					--			--	--
13.					--			--	--
14.					--			--	--
15.					--			--	--
	Total		$731,873	$693,021	$712,447	**4.588%**		**$692,136**	$31,756

Non-Modeled ETCs

	ETC ID	Maturity	Balance For 2025 ($000) Beg.	Ending
1.	[None]			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
	Total		$0	$0

Equipment Trust Certificates for UP (continued)

Entire ETC Current – Not Used for Cost or Market Value

	ETC ID	Maturity	Balance 2025 ($000) Beg.	Ending
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
	Total		$0	$0

Grand Totals (for reconciliation to carrier data)

	Balance For 2025 ($000) Ending
Total Modeled	$693,021
Total Non-Modeled	0
Sub Total	693,021
Total All Current	0
Grand Total	$693,021
From UP:	
Total ETCs	$693,021
Difference	$0

2025 Market Value of Debt ($000)

Type of Debt	Market Value: Traded or Modeled	Market Value: Non-Traded or Non-Modeled	Market Value: Total	Percent of: Subtotal	Percent of: Total
Bonds, Notes & Debentures	$56,075,889	$841,679	$56,917,568	98.80%	100.59%
Equipment Trust Certificates	692,136		692,136	1.20%	1.22%
Conditional Sales Agreements	0		0	0.00%	0.00%
Sub Total	$56,768,026	$841,679	$57,609,705	100.00%	101.81%
All Other — Capital Leases		$122,490	$122,490	-11.96%	0.22%
All Other — Misc. Debt		-1,146,960	-1,146,960	111.96%	-2.03%
All Other — Non-Modeled ETC		0	0	0.00%	0.00%
All Other — Non-Modeled CSA		0	0	0.00%	0.00%
Sub Total			-$1,024,470	100.00%	-1.81%
Total Market Value			**$56,585,235**		100.00%

General Notes:

Bonds, Notes, and Debentures from Appendix A. Securities that did not trade were assigned a market value equal to their book value. The traded portion accounts for 98.52 percent of the total market value for this category.

Equipment Trust Certificates from Appendix C.

All Conditional Sales Agreements have been retired.

Capital Leases and Miscellaneous Debt listed in work papers.

The capital leases and miscellaneous debt portion of the All Other debt category was assigned a market value equal to its book value, and totals to -$1,024,470 thousand. The non-modeled ETCs and CSAs are typically also assigned a market value equal to their book value, but there were none for this year. The All Other category totals to -$1,024,470 thousand, or -1.8 percent of total debt.

If negative numbers appear in Miscellaneous Debt, they typically are related to debt premiums and discounts.

2025 Flotation Costs for Bonds

	CSX Sr Notes	CSX Sr Notes	NSC Sr. Notes	UNP Sr Notes	UNP Sr Notes
From 424(b)	**3/7/2025**	**10/22/2025**	**4/29/2025**	**2/12/2025**	**2/12/2025**
Face Amount	$600,000,000	$300,000,000	$400,000,000	$1,000,000,000	$1,000,000,000
Coupon Rate	5.050%	5.050%	5.100%	5.100%	5.600%
Maturity Date	6/15/2035	6/15/2035	5/1/2035	2/20/2035	12/1/2054
Frequency of Coupon Payment	2	2	2	2	2
Interest Accrual Date	3/15/2025	6/15/2025	11/1/2025	8/20/2025	12/1/2025
Price To Investors	99.739	103.069	99.83	99.619	99.921
Proceeds from Sale (before expenses)	$598,434,000	$309,207,000	$399,320,000	$996,190,000	$999,210,000
Underwriter Fee as % of Gross Proceeds	0.650%	0.650%	0.650%	0.650%	0.875%
Underwriter's Fee	$3,900,000	$1,950,000	$2,600,000	$6,500,000	$8,750,000
Railroad Expenses Excluding Fee	$450,000.00	$375,000.00	$975,000.00	$250,000.00	$250,000.00
Page in 424(b) for Expenses	S-22	S-24	S-16	S-11	S-11
Calculated					
Yield Based on Price to Investors	5.082%	4.663%	5.123%	5.151%	5.606%
Issue Price Per $100 Less Flotation	$99.01	$102.29	$98.94	$98.94	$99.02
Yield on New Issue Including Flotation	5.174%	4.759%	5.244%	5.243%	5.669%
Flotation Costs (Diff. in Pct Pts)	**0.092%**	**0.097%**	**0.121%**	**0.091%**	**0.064%**
Avg. Flotation Cost (Pct. Points)	**0.093%**				
(includes costs on page 2)					
Previous Year's Average	0.061%				

Source: SEC 424(b)(5) or 424(b)(2) filings.

In cases where multiple series of notes were issued with one set of expenses (excluding underwriting fee), the expenses are allocated by the face amount of the notes involved.

Example of Source for Bond Flotation Costs

Filed Pursuant to Rule 424(b)(5)
Registration Statement No. 333-277044

Prospectus Supplement (To Prospectus Dated February 13, 2024)

$2,000,000,000

BUILDING AMERICA®

$1,000,000,000 5.100% Notes due 2035
$1,000,000,000 5.600% Notes due 2054

Union Pacific Corporation (the "*Company*") is offering $1,000,000,000 aggregate principal amount of 5.100% notes due 2035 (the "*2035 notes*") and $1,000,000,000 aggregate principal amount of 5.600% notes due 2054 (the "*2054 notes*" and, collectively with the 2035 notes, the "*notes*"). The 2035 notes will mature on February 20, 2035 and the 2054 notes will mature on December 1, 2054.

We will pay interest on the 2035 notes semi-annually in arrears on each February 20 and August 20, commencing August 20, 2025. We will pay interest on the 2054 notes semi-annually in arrears on each June 1 and December 1, commencing on December 1, 2025.

We may redeem some or all of each series of notes at any time and from time to time at the applicable redemption prices described in this prospectus supplement under the heading "Description of the Notes—Optional Redemption." There is no sinking fund for the notes. If we experience a change of control repurchase event, we may be required to offer to purchase the notes from holders. See "Description of the Notes—Change of Control Repurchase Event."

There is currently no market for the notes offered hereby, and we cannot assure you that a market for the notes will develop. We do not intend to list the notes on any national securities exchange.

Investing in our notes involves risks. See "Risk Factors" beginning on page S-2 of this prospectus supplement and on page 3 of the accompanying prospectus.

	Price to Public[1]	Underwriting Discount	Proceeds to the Company before expenses[1]
Per 2035 Note	99.619%	0.650%	98.969%
Total	$996,190,000	$ 6,500,000	$ 989,690,000
Per 2054 Note	99.921%	0.875%	99.046%
Total	$999,210,000	$ 8,750,000	$ 990,460,000

(1) Plus accrued interest from February 13, 2025, if any.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

Delivery of the notes, in book-entry form only through The Depository Trust Company ("*DTC*" or the "*Depository*"), will be made on or about February 13, 2025. Beneficial interests in the notes will be shown on, and transfers thereof will be effected only through, records maintained by DTC and its direct and indirect participants, including Clearstream Banking S.A., and Euroclear Bank SA/NV, as operator of the Euroclear system.

Joint Book-Running Managers

BofA Securities **Citigroup** **Morgan Stanley** **Wells Fargo Securities**

Senior Co-Managers

Barclays **Goldman Sachs & Co. LLC** **J.P. Morgan** **US Bancorp**

Co-Managers

Mizuho **MUFG** **PNC Capital Markets LLC**
Truist Securities **AmeriVet Securities** **BNY Capital Markets**
Cabrera Capital Markets LLC **Fifth Third Securities** **Loop Capital Markets**

The date of this prospectus supplement is February 10, 2025.

Example of Source for Bond Flotation Costs

UNDERWRITING

BofA Securities, Inc., Citigroup Global Markets Inc., Morgan Stanley & Co. LLC and Wells Fargo Securities, LLC are acting as joint book-running managers for the offering and as representatives for the underwriters named below. Under the terms and subject to the conditions contained in an underwriting agreement dated February 10, 2025, we have agreed to sell to the underwriters, and each underwriter has severally, and not jointly, agreed to purchase, the aggregate principal amount of each series of notes set forth opposite their names in the following table:

Underwriter	Principal Amount of the 2035 Notes	Principal Amount of the 2054 Notes
BofA Securities, Inc.	$ 160,000,000	$ 160,000,000
Citigroup Global Markets Inc.	$ 160,000,000	$ 160,000,000
Morgan Stanley & Co. LLC	$ 160,000,000	$ 160,000,000
Wells Fargo Securities, LLC	$ 160,000,000	$ 160,000,000
Barclays Capital Inc.	$ 50,000,000	$ 50,000,000
Goldman Sachs & Co. LLC	$ 50,000,000	$ 50,000,000
J.P. Morgan Securities LLC	$ 50,000,000	$ 50,000,000
U.S. Bancorp Investments, Inc.	$ 50,000,000	$ 50,000,000
Mizuho Securities USA LLC	$ 22,500,000	$ 22,500,000
MUFG Securities Americas Inc.	$ 27,500,000	$ 27,500,000
PNC Capital Markets LLC	$ 22,500,000	$ 22,500,000
Truist Securities, Inc.	$ 22,500,000	$ 22,500,000
AmeriVet Securities, Inc.	$ 10,000,000	$ 10,000,000
BNY Mellon Capital Markets, LLC	$ 15,000,000	$ 15,000,000
Cabrera Capital Markets LLC	$ 10,000,000	$ 10,000,000
Fifth Third Securities, Inc.	$ 15,000,000	$ 15,000,000
Loop Capital Markets LLC	$ 15,000,000	$ 15,000,000
Total	$ 1,000,000,000	$ 1,000,000,000

The underwriting agreement provides that the underwriters are obligated to purchase all of the notes if any are purchased.

The underwriters propose to offer the notes of each series at the applicable public offering price on the cover page of this prospectus supplement and may offer notes to certain other broker-dealers at those prices less selling concessions of 0.400% and 0.525% of the principal amount per 2035 note and 2054 note, respectively. The underwriters and such broker-dealers may allow discounts of 0.250% and 0.350% of the principal amount per 2035 note and 2054 note, respectively, on sales to other broker-dealers. After the initial public offering, the representatives may change the public offering prices and concessions and discounts to broker-dealers.

The following table shows the underwriting discounts that we are to pay to the underwriters in connection with this offering (expressed as a percentage of the principal amount of the notes):

	Paid by Union Pacific Corporation
Per 2035 Note	0.650%
Per 2054 Note	0.875%

We estimate that our out-of-pocket expenses (excluding the underwriting discounts) for this offering will be approximately $500,000.

2025 Current Cost of Debt

Type of Debt	Cost Reference	Appendix D Weight	Current Cost	Weighted Cost
Type of Instrument				
Bonds, Notes & Debentures	App. A & Table 3	98.80%	5.179%	5.116%
Equipment Trust Certificates	App. C & Table 5	1.20%	4.588%	0.055%
Conditional Sales Agreements	Railroad Data	0.00%	--	--
Total Without Floatation Costs		100.00%		5.171%
Floatation Costs				
Bonds, Notes & Debentures	App. F & Table 8	98.80%	0.093%	0.092%
Equipment Trust Certificates	Tables 7 and 8	1.20%	0.083%	0.001%
Conditional Sales Agreements	Table 8	0.00%	not calculated	--
Total Floatation Costs		100.00%		0.093%
Weighted Cost of Debt				5.264%
Weighted Cost of Debt (rounded)				**5.26%**

Historical Weighted Cost of Debt (for comparison purposes only)

Item	Year	Reference	Weighted Cost
Previous Year	2024	EP 558 (Sub-No. 28) Served July 21, 2025	5.24%
Highest	1982	EP 436 Decided July 22, 1983	14.0%
Lowest	2020	EP 558 (Sub-No. 24) Served August 6, 2021	2.54%

Market Value for Common Equity

Bloomberg's stock prices had already been adjusted for the split, but the shares outstanding need to also be adjusted, done below.

CSX Data from Bloomberg 1-28-2026

End of Wk. Date	End of Wk Close	Shares Outstanding	Capitalization ($000)
Friday, January 10, 2025	31.78	1,928,419,153	61,285,161
Friday, January 17, 2025	32.73	1,928,419,153	63,117,159
Friday, January 24, 2025	32.69	1,928,419,153	63,040,022
Friday, January 31, 2025	32.87	1,894,616,582	62,276,047
Friday, February 7, 2025	32.59	1,894,616,582	61,745,554
Friday, February 14, 2025	33.37	1,894,616,582	63,223,355
Friday, February 21, 2025	32.30	1,894,616,582	61,196,116
Friday, February 28, 2025	32.01	1,894,616,582	60,646,677
Friday, March 7, 2025	31.26	1,894,616,582	59,225,714
Friday, March 14, 2025	30.01	1,894,616,582	56,857,444
Friday, March 21, 2025	29.57	1,894,616,582	56,023,812
Friday, March 28, 2025	29.11	1,894,616,582	55,152,289
Friday, April 4, 2025	27.21	1,894,616,582	51,552,517
Friday, April 11, 2025	28.01	1,894,616,582	53,068,210
Thursday, April 17, 2025	27.68	1,894,616,582	52,442,987
Friday, April 25, 2025	27.84	1,894,616,582	52,746,126
Friday, May 2, 2025	28.70	1,894,616,582	54,375,496
Friday, May 9, 2025	28.74	1,894,616,582	54,451,281
Friday, May 16, 2025	31.32	1,894,616,582	59,339,391
Friday, May 23, 2025	30.82	1,894,616,582	58,392,083
Friday, May 30, 2025	31.59	1,894,616,582	59,850,938
Friday, June 6, 2025	32.23	1,894,616,582	61,063,492
Friday, June 13, 2025	32.12	1,894,616,582	60,855,085
Friday, June 20, 2025	32.06	1,894,616,582	60,741,408
Friday, June 27, 2025	32.91	1,894,616,582	62,351,832
Thursday, July 3, 2025	33.60	1,894,616,582	63,659,117
Friday, July 11, 2025	34.10	1,894,616,582	64,606,425
Friday, July 18, 2025	34.39	1,894,616,582	65,155,864
Friday, July 25, 2025	35.76	1,894,616,582	67,751,489
Friday, August 1, 2025	35.01	1,894,616,582	66,330,527
Friday, August 8, 2025	35.43	1,894,616,582	67,126,266
Friday, August 15, 2025	36.32	1,894,616,582	68,812,474
Friday, August 22, 2025	34.58	1,894,616,582	65,515,841
Friday, August 29, 2025	32.51	1,894,616,582	61,593,985
Friday, September 5, 2025	32.53	1,894,616,582	61,631,877
Friday, September 12, 2025	32.47	1,894,616,582	61,518,200
Friday, September 19, 2025	32.98	1,894,616,582	62,484,455
Friday, September 26, 2025	34.01	1,894,616,582	64,435,910
Friday, October 3, 2025	36.01	1,894,616,582	68,225,143
Friday, October 10, 2025	35.49	1,894,616,582	67,239,942
Friday, October 17, 2025	36.60	1,894,616,582	69,342,967
Friday, October 24, 2025	36.13	1,894,616,582	68,452,497
Friday, October 31, 2025	36.02	1,894,616,582	68,244,089
Friday, November 7, 2025	35.34	1,894,616,582	66,955,750
Friday, November 14, 2025	34.90	1,894,616,582	66,122,119
Friday, November 21, 2025	34.28	1,894,616,582	64,947,456
Friday, November 28, 2025	35.36	1,894,616,582	66,993,642
Friday, December 5, 2025	36.30	1,894,616,582	68,774,582
Friday, December 12, 2025	37.39	1,894,616,582	70,839,714
Friday, December 19, 2025	36.50	1,894,616,582	69,153,505
Friday, December 26, 2025	36.62	1,894,616,582	69,380,859
Friday, January 2, 2026	36.27	1,894,616,582	68,717,743

Note: Capitalization calulated using close of week price multiplied by the number of shares outstanding.

Market Value for Common Equity

NSC Data from Bloomberg 1-28-2026

End of Wk. Date	End of Wk Close	Shares Outstanding	Capitalization ($000)
Friday, January 10, 2025	233.94	226,239,662	52,926,507
Friday, January 17, 2025	245.34	226,239,662	55,505,639
Friday, January 24, 2025	254.67	226,239,662	57,616,455
Friday, January 31, 2025	255.30	226,434,128	57,808,633
Friday, February 7, 2025	249.10	226,434,128	56,404,741
Friday, February 14, 2025	255.99	226,434,128	57,964,872
Friday, February 21, 2025	247.76	226,434,128	56,101,320
Friday, February 28, 2025	245.75	226,434,128	55,646,187
Friday, March 7, 2025	242.22	226,434,128	54,846,874
Friday, March 14, 2025	232.30	226,434,128	52,600,648
Friday, March 21, 2025	231.75	226,434,128	52,476,109
Friday, March 28, 2025	230.55	226,434,128	52,204,388
Friday, April 4, 2025	210.93	226,434,128	47,761,751
Friday, April 11, 2025	218.31	226,434,128	49,432,834
Thursday, April 17, 2025	219.84	226,434,128	49,779,279
Friday, April 25, 2025	221.71	226,434,128	50,202,711
Friday, May 2, 2025	224.36	226,434,128	50,802,761
Friday, May 9, 2025	223.50	226,434,128	50,608,028
Friday, May 16, 2025	246.10	226,434,128	55,725,439
Friday, May 23, 2025	240.02	226,434,128	54,348,719
Friday, May 30, 2025	247.12	226,434,128	55,956,402
Friday, June 6, 2025	250.77	226,434,128	56,782,886
Friday, June 13, 2025	248.60	226,434,128	56,291,524
Friday, June 20, 2025	253.18	226,434,128	57,328,593
Friday, June 27, 2025	255.81	226,434,128	57,924,114
Thursday, July 3, 2025	262.50	226,434,128	59,438,959
Friday, July 11, 2025	266.57	226,434,128	60,360,546
Friday, July 18, 2025	276.66	226,434,128	62,645,266
Friday, July 25, 2025	282.38	226,434,128	63,940,469
Friday, August 1, 2025	274.85	226,434,128	62,235,420
Friday, August 8, 2025	280.03	226,434,128	63,408,349
Friday, August 15, 2025	280.74	226,434,128	63,569,117
Friday, August 22, 2025	284.60	226,434,128	64,443,153
Friday, August 29, 2025	279.98	226,434,128	63,397,027
Friday, September 5, 2025	277.75	226,434,128	62,892,079
Friday, September 12, 2025	274.72	226,434,128	62,205,984
Friday, September 19, 2025	283.71	226,434,128	64,241,626
Friday, September 26, 2025	297.49	226,434,128	67,361,889
Friday, October 3, 2025	300.15	226,434,128	67,964,204
Friday, October 10, 2025	288.37	226,434,128	65,296,809
Friday, October 17, 2025	289.78	226,434,128	65,616,082
Friday, October 24, 2025	280.50	226,434,128	63,514,773
Friday, October 31, 2025	283.38	226,434,128	64,166,903
Friday, November 7, 2025	284.25	226,434,128	64,363,901
Friday, November 14, 2025	283.98	226,434,128	64,302,764
Friday, November 21, 2025	286.29	226,434,128	64,825,827
Friday, November 28, 2025	292.09	226,434,128	66,139,144
Friday, December 5, 2025	294.19	226,434,128	66,614,656
Friday, December 12, 2025	296.98	226,434,128	67,246,407
Friday, December 19, 2025	291.41	226,434,128	65,985,169
Friday, December 26, 2025	290.96	226,434,128	65,883,274
Friday, January 2, 2026	287.82	226,434,128	65,172,271

Note: Capitalization calulated using close of week price multiplied by the number of shares outstanding.

Market Value for Common Equity

UNP Data from Bloomberg 1-28-2026

End of Wk. Date	End of Wk Close	Shares Outstanding	Capitalization ($000)
Friday, January 10, 2025	225.21	606,256,627	136,535,055
Friday, January 17, 2025	234.26	606,256,627	142,021,677
Friday, January 24, 2025	248.78	606,256,627	150,824,524
Friday, January 31, 2025	247.79	604,286,378	149,736,122
Friday, February 7, 2025	242.08	604,286,378	146,285,646
Friday, February 14, 2025	249.22	604,286,378	150,600,251
Friday, February 21, 2025	245.55	604,286,378	148,382,520
Friday, February 28, 2025	246.69	604,286,378	149,071,407
Friday, March 7, 2025	249.31	604,286,378	150,654,637
Friday, March 14, 2025	237.53	604,286,378	143,536,143
Friday, March 21, 2025	233.88	604,286,378	141,330,498
Friday, March 28, 2025	232.15	604,286,378	140,285,083
Friday, April 4, 2025	213.26	604,286,378	128,870,113
Friday, April 11, 2025	218.59	604,286,378	132,090,959
Thursday, April 17, 2025	220.26	604,286,378	133,100,118
Friday, April 25, 2025	213.29	604,286,378	128,888,242
Friday, May 2, 2025	218.29	604,286,378	131,909,673
Friday, May 9, 2025	216.32	604,286,378	130,719,229
Friday, May 16, 2025	231.42	604,286,378	139,843,954
Friday, May 23, 2025	222.11	604,286,378	134,218,047
Friday, May 30, 2025	221.66	604,286,378	133,946,119
Friday, June 6, 2025	223.43	604,286,378	135,015,705
Friday, June 13, 2025	223.37	604,286,378	134,979,448
Friday, June 20, 2025	222.51	604,286,378	134,459,762
Friday, June 27, 2025	231.41	604,286,378	139,837,911
Thursday, July 3, 2025	236.28	604,286,378	142,780,785
Friday, July 11, 2025	235.10	604,286,378	142,067,727
Friday, July 18, 2025	224.87	604,286,378	135,885,878
Friday, July 25, 2025	224.74	604,286,378	135,807,321
Friday, August 1, 2025	219.40	604,286,378	132,580,431
Friday, August 8, 2025	222.24	604,286,378	134,296,605
Friday, August 15, 2025	220.78	604,286,378	133,414,347
Friday, August 22, 2025	227.85	604,286,378	137,686,651
Friday, August 29, 2025	223.57	604,286,378	135,100,306
Friday, September 5, 2025	220.31	604,286,378	133,130,332
Friday, September 12, 2025	214.91	604,286,378	129,867,185
Friday, September 19, 2025	220.61	604,286,378	133,311,618
Friday, September 26, 2025	235.20	604,286,378	142,128,156
Friday, October 3, 2025	236.80	604,286,378	143,095,014
Friday, October 10, 2025	225.45	604,286,378	136,236,364
Friday, October 17, 2025	226.04	604,286,378	136,592,893
Friday, October 24, 2025	216.61	604,286,378	130,894,472
Friday, October 31, 2025	220.37	604,286,378	133,166,589
Friday, November 7, 2025	221.48	604,286,378	133,837,347
Friday, November 14, 2025	223.02	604,286,378	134,767,948
Friday, November 21, 2025	226.22	604,286,378	136,701,664
Friday, November 28, 2025	231.83	604,286,378	140,091,711
Friday, December 5, 2025	235.31	604,286,378	142,194,628
Friday, December 12, 2025	239.95	604,286,378	144,998,516
Friday, December 19, 2025	234.23	604,286,378	141,541,998
Friday, December 26, 2025	233.44	604,286,378	141,064,612
Friday, January 2, 2026	231.91	604,286,378	140,140,054

Note: Capitalization calulated using close of week price multiplied by the number of shares outstanding.

Market Value for Common Equity

Total Market Value for CSX, NSC, and UNP combined

Based on close price on last trading day of week and shares outstanding from 10-K and 10-Q.

	Days For Week (actual trading days)		Capitalization	
	Beginning	End	($000)	Holiday (M or F)
1.	Monday, January 6, 2025	Friday, January 10, 2025	$250,746,722	
2.	Monday, January 13, 2025	Friday, January 17, 2025	$260,644,475	
3.	Tuesday, January 21, 2025	Friday, January 24, 2025	$271,481,000	Martin Luther King Day
4.	Monday, January 27, 2025	Friday, January 31, 2025	$269,820,802	
5.	Monday, February 3, 2025	Friday, February 7, 2025	$264,435,942	
6.	Monday, February 10, 2025	Friday, February 14, 2025	$271,788,479	
7.	Tuesday, February 18, 2025	Friday, February 21, 2025	$265,679,955	Washington's Birthday
8.	Monday, February 24, 2025	Friday, February 28, 2025	$265,364,270	
9.	Monday, March 3, 2025	Friday, March 7, 2025	$264,727,226	
10.	Monday, March 10, 2025	Friday, March 14, 2025	$252,994,235	
11.	Monday, March 17, 2025	Friday, March 21, 2025	$249,830,420	
12.	Monday, March 24, 2025	Friday, March 28, 2025	$247,641,760	
13.	Monday, March 31, 2025	Friday, April 4, 2025	$228,184,381	
14.	Monday, April 7, 2025	Friday, April 11, 2025	$234,592,004	
15.	Monday, April 14, 2025	Thursday, April 17, 2025	$235,322,383	Good Friday
16.	Monday, April 21, 2025	Friday, April 25, 2025	$231,837,078	
17.	Monday, April 28, 2025	Friday, May 2, 2025	$237,087,930	
18.	Monday, May 5, 2025	Friday, May 9, 2025	$235,778,537	
19.	Monday, May 12, 2025	Friday, May 16, 2025	$254,908,784	
20.	Monday, May 19, 2025	Friday, May 23, 2025	$246,958,850	
21.	Tuesday, May 27, 2025	Friday, May 30, 2025	$249,753,458	Memorial Day
22.	Monday, June 2, 2025	Friday, June 6, 2025	$252,862,084	
23.	Monday, June 9, 2025	Friday, June 13, 2025	$252,126,057	
24.	Monday, June 16, 2025	Friday, June 20, 2025	$252,529,762	
25.	Monday, June 23, 2025	Friday, June 27, 2025	$260,113,857	
26.	Monday, June 30, 2025	Thursday, July 3, 2025	$265,878,861	Fourth of July
27.	Monday, July 7, 2025	Friday, July 11, 2025	$267,034,698	
28.	Monday, July 14, 2025	Friday, July 18, 2025	$263,687,008	
29.	Monday, July 21, 2025	Friday, July 25, 2025	$267,499,279	
30.	Monday, July 28, 2025	Friday, August 1, 2025	$261,146,378	
31.	Monday, August 4, 2025	Friday, August 8, 2025	$264,831,219	
32.	Monday, August 11, 2025	Friday, August 15, 2025	$265,795,938	
33.	Monday, August 18, 2025	Friday, August 22, 2025	$267,645,645	
34.	Monday, August 25, 2025	Friday, August 29, 2025	$260,091,318	
35.	Tuesday, September 2, 2025	Friday, September 5, 2025	$257,654,288	Labor Day
36.	Monday, September 8, 2025	Friday, September 12, 2025	$253,591,370	
37.	Monday, September 15, 2025	Friday, September 19, 2025	$260,037,699	
38.	Monday, September 22, 2025	Friday, September 26, 2025	$273,925,955	
39.	Monday, September 29, 2025	Friday, October 3, 2025	$279,284,361	
40.	Monday, October 6, 2025	Friday, October 10, 2025	$268,773,116	
41.	Monday, October 13, 2025	Friday, October 17, 2025	$271,551,941	
42.	Monday, October 20, 2025	Friday, October 24, 2025	$262,861,742	
43.	Monday, October 27, 2025	Friday, October 31, 2025	$265,577,582	
44.	Monday, November 3, 2025	Friday, November 7, 2025	$265,156,998	
45.	Monday, November 10, 2025	Friday, November 14, 2025	$265,192,830	
46.	Monday, November 17, 2025	Friday, November 21, 2025	$266,474,947	
47.	Monday, November 24, 2025	Friday, November 28, 2025	$273,224,498	
48.	Monday, December 1, 2025	Friday, December 5, 2025	$277,583,866	
49.	Monday, December 8, 2025	Friday, December 12, 2025	$283,084,638	
50.	Monday, December 15, 2025	Friday, December 19, 2025	$276,680,673	
51.	Monday, December 22, 2025	Friday, December 26, 2025	$276,328,745	
52.	Monday, December 29, 2025	Friday, January 2, 2026	$274,030,068	
		Average	**$260,419,925.24**	

Market Value for Common Equity

List of U.S. Stock Market Full-Day Holidays in 2025

	Day	Holiday
1.	Wednesday, January 1, 2025	New Year's Day
2.	Monday, January 20, 2025	Martin Luther King Jr. Day
3.	Monday, February 17, 2025	Washington's Birthday
4.	Friday, April 18, 2025	Good Friday
5.	Monday, May 26, 2025	Memorial Day
6.	Thursday, June 19, 2025	Juneteenth
7.	Friday, July 4, 2025	Independence Day
8.	Monday, September 1, 2025	Labor Day
9.	Thursday, November 27, 2025	Thanksgiving Day
10.	Thursday, December 25, 2025	Christmas Day

Historical Risk Free Rates and Market Risk Premiums

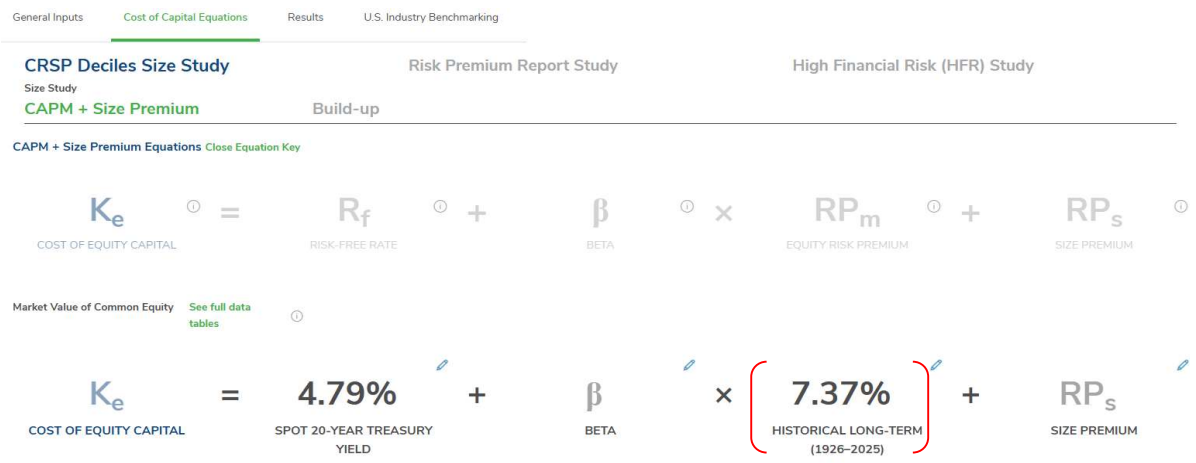
The Surface Transportation Board (STB) has used a Capital Asset Pricing Model (CAPM) as part of its cost of capital determination since 2006. Two major components of the STB's CAPM are the Risk-Free Rate, which is based on 20-Year U.S. Government Bonds, and the Market Risk Premium (a.k.a. Equity Risk Premium), as calculated by Ibbotson Associates using data beginning in 1926. The table below lists the rates used by the STB (since 2006), the rate for the current year, and earlier rates that would have been used as part of the current STB specifications.

Year	Risk-Free Rate	Market Risk Premium
1981	13.72 %	7.20 %
1982	12.92	7.20
1983	11.34	7.30
1984	12.49	7.10
1985	10.97	7.30
1986	7.84	7.40
1987	n.a.	7.20
1988	n.a.	7.20
1989	n.a.	7.50
1990	n.a.	7.20
1991	n.a.	7.40
1992	n.a.	7.30
1993	6.29	7.20
1994	7.49	7.00
1995	6.95	7.40
1996	6.83	7.50
1997	6.69	7.80
1998	5.72	8.00
1999	6.20	8.10
2000	6.23	7.80
2001	5.63	7.40
2002	5.43	7.00
2003	4.96	7.20
2004	5.04	7.20
2005	4.64	7.10
2006	5.00	7.13
2007	4.91	7.05
2008	4.36	6.47
2009	4.11	6.67
2010	4.03	6.72
2011	3.62	6.62
2012	2.54	6.70
2013	3.12	6.96
2014	3.07	7.00
2015	2.55	6.90
2016	2.22	6.94
2017	2.65	7.07
2018	3.02	6.91
2019	2.40	7.15
2020	1.35	7.25
2021	1.98	7.46
2022	3.30	7.17
2023	4.26	7.17
2024	4.50	7.31
2025	4.78	7.37

Sources Federal Reserve Board for U.S. government 20-year bonds (Risk-Free Rate) and Morningstar's *Ibbotson SBBI Valuation Yearbook* Table A-1 for Market Risk Premiums through 2012. Morningstar's *Ibbotson SBBI Classic Yearbook* is the source for premiums beginning 2013. The Duff & Phelps *Valuation Handbook Guide to Cost of Capital* is the source for premiums in 2015 and 2016. Values for 2017-2025 are from the Duff & Phelps online Cost of Capital Navigator, which is now owned by Kroll. 2006 through 2024 match decisions by the STB. The U.S. Government did not issue 20-Year bonds in 1987 through 1992.

Historical Risk Free Rates and Market Risk Premiums

The Surface Transportation Board (STB) has always used a **long-term** equity risk premium (a.k.a. market risk premium) for its Capital Asset Pricing Model, and Kroll (previously Duff & Phelps) has been the source used in recent years. Kroll calculates this premium using the same method as the earlier source used by the STB, Morningstar/Ibbotson as found in its Ibbotson *SBBI Valuation Yearbook*. The screenshot shown below is from the 2026 *Cost of Capital Navigator by Kroll*.The latest long-term equity risk premium, as shown below, is **7.37 percent**. The years used for this calculation are 1926 through 2025.



AAR Regression for 2025 Beta

AAR Regression for 2025 Beta
STB-Style 5-Year Beta using SP 500 Price Index, Weighted RR Returns, 90-Day T-Bill as RF
CSX, NSC, and UNP

The GLM Procedure

Dependent Variable: ZRR

Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	-.0008152948	0.00141406	-0.58	0.5647
ZSP5	0.7970614905	0.06290011	12.67	<.0001

Cost of Common Equity using the Multi-Stage Discounted Cash Flow Model

The cost of equity for each firm (r_i) in the Surface Transportation Board's interpretation of the Morningstar/Ibbotson three-stage DCF model is the solution to the following equation:[1]

$$\mathrm{MV}_{i0} = \sum_{t=1}^{5} \frac{\mathrm{CF}_{i0}(1+g_{i1})^t}{(1+r_i)^t} + \sum_{t=6}^{10} \frac{\mathrm{CF}_{i5}(1+g_{i2})}{(1+r_i)^t} + \frac{\left(\dfrac{\mathrm{IBEI}_{i10}(1+g_{i3})}{r_i - g_{i3}}\right)}{(1+r_i)^{10}},$$

where

MV_{i0} = market value of equity for firm i in year 0 (i.e., the year for which the cost of equity is being estimated);

CF_{it} = average cash flow for firm i at the end of year t;

g_{ij} = earnings growth rate for firm i in stage j (j = 1, 2, or 3);

r_i = the cost of equity for firm i; and

$\mathrm{IBEI}_{10} = \mathrm{IBEI}_0(1+g_1)^5(1+g_2)^5$.

Note that IBEI_0 is determined by the same process as CF_0 (See Table 13 in text).

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[1] *Cost of Capital Yearbook*, 2008, Morningstar, Inc., p. 24.

Cash Flow Calculation

CSX, Corp.	1	2	3	4	5	Total
	2021	2022	2023	2024	2025	
($ in millions)						
Revenue	12,522	14,853	14,657	14,540	14,092	70,664
Net Income	3,781	4,114	3,668	3,470	2,889	17,922
Extraordinary Items	0	0	0	0	0	0
Depreciation	1,420	1,502	1,607	1,658	1,680	7,867
Deferred Taxes	167	100	126	12	194	599
Capital Expenditures	1,791	2,113	2,257	2,529	2,902	11,592
Cash Flow	3,577	3,603	3,144	2,611	1,861	14,796
Cash Flow / Revenue	0.28566	0.24258	0.21451	0.17957	0.13206	0.20939
NIBEI / Revenue	0.30195	0.27698	0.25026	0.23865	0.20501	0.25362

Ibbotson Smoothed Cash Flow = $14,092 x 0.20939 = $2,950.66
Ibbotson Smoothed Net Income BEI = $14,092 x 0.25362 = $3,574.05

Cash Flow Calculation

Norfolk Southern	1	2	3	4	5	Total
	2021	2022	2023	2024	2025	
($ in millions)						
Revenue	11,142	12,745	12,156	12,123	12,180	60,346
Net Income	3,005	3,270	1,827	2,622	2,873	13,597
Extraordinary Items	0	0	0	0	0	0
Depreciation	1,181	1,221	1,298	1,353	1,393	6,446
Deferred Taxes	184	83	-49	176	277	671
Capital Expenditures	1,470	1,948	2,327	2,381	2,204	10,330
Cash Flow	2,900	2,626	749	1,770	2,339	10,384
Cash Flow / Revenue	0.26028	0.20604	0.06162	0.14600	0.19204	0.17207
NIBEI / Revenue	0.26970	0.25657	0.15030	0.21628	0.23588	0.22532

Ibbotson Smoothed Cash Flow = $12,180 x 0.17207 = $2,095.87
Ibbotson Smoothed Net Income BEI = $12,180 x 0.22532 = $2,744.37

Cash Flow Calculation

Union Pacific Corp.	1	2	3	4	5	Total
	2021	2022	2023	2024	2025	
($ in millions)						
Revenue	21,804	24,875	24,119	24,250	24,510	119,558
Net Income	6,523	6,998	6,379	6,747	7,138	33,785
Extraordinary Items	0	0	0	0	0	0
Depreciation	2,208	2,246	2,318	2,398	2,465	11,635
Deferred Taxes	154	262	117	28	241	802
Capital Expenditures	2,936	3,620	3,606	3,452	3,791	17,405
Cash Flow	5,949	5,886	5,208	5,721	6,053	28,817
Cash Flow / Revenue	0.27284	0.23662	0.21593	0.23592	0.24696	0.24103
NIBEI / Revenue	0.29917	0.28133	0.26448	0.27823	0.29123	0.28258

Ibbotson Smoothed Cash Flow = $24,510 x 0.24103 = $5,907.63
Ibbotson Smoothed Net Income BEI = $24,510 x 0.28258 = $6,926.10

2025 Median Growth Rates for MSDCF

	Analyst Growth Rates from IBES December 31								
Company	**Rate 1**	**Rate 2**	**Rate 3**	**Rate 4**	**Rate 5**	**Rate 6**	**Rate 7**	**Rate 8**	**Median**
CSX	6.30	7.18	4.40	--	--	--	--	--	**6.30**
NSC	4.45	8.20	--	--	--	--	--	--	**6.33**
UNP	7.50	7.14	7.30	--	--	--	--	--	**7.30**

Simple Average of Medians = 6.64 percent.

2025 Median Growth Rates for MSDCF
CSX

CORPORATE

Detail Estimates - Period Summary

Enter RIC : CSX.O **CSX Corp**

Measure : Earnings Per Share

Period : Long Term Growth

Currency: USD *(in millions except for per share items)*

	Ests	Mean	High	Low
Earnings Per Share	3	5.96	7.18	4.40
Filtered/Preliminary Mean**:	2	6.74	7.18	6.30
30 Day Ago Mean	3	6.20	7.89	4.40

	12/2024\	3/2025\	6/2025\	9/2025\	12/2024A
Reported	0.42	0.34	0.44	0.44	1.83
Surprise Mean	0.42	0.37	0.42	0.43	1.83
Surprise (%)	-0.74	-7.96	5.31	3.44	-0.03

* Only selected brokers below are included in the filtered mean

Check / Uncheck	Contributor	Analyst	Current Estimate	Current Estimate Date	Previous Estimate	Previous Estimate Date	Review Date
✓	Permission Denied 32	Permission Denie(	6.30 ↓	Sep 24, 25	7.10	Apr 17, 25	Dec 16, 25
✓	Permission Denied 392	Permission Denie(	7.18 ↓	Dec 11, 25	7.89	Oct 17, 25	Dec 14, 25
	Permission Denied 398136	Permission Denie(	4.40 ↓	Oct 17, 25	4.60	Apr 16, 25	Oct 17, 25

2025 Median Growth Rates for MSDCF
NSC

CORPORATE

Detail Estimates - Period Summary

Enter RIC : NSC **Norfolk Southern Corp**

Measure : Earnings Per Share

Period : Long Term Growth

Currency: USD *(in millions except for per share items)*

	Ests	Mean	High	Low
Earnings Per Share	2	6.33	8.20	4.45
Filtered/Preliminary Mean**:	2	6.33	8.20	4.45
30 Day Ago Mean	2	8.55	8.89	8.20

	12/2024\	3/2025\	6/2025\	9/2025\	12/2024A
Reported	3.04	2.69	3.29	3.30	11.85
Surprise Mean	2.95	2.69	3.30	3.19	11.78
Surprise (%)	2.95	-0.01	-0.40	3.51	0.59

* Only selected brokers below are included in the filtered mean

Check / Uncheck	Contributor	Analyst	Current Estimate	Current Estimate Date	Previous Estimate	Previous Estimate Date	Review Date
✓	Permission Denied 392	Permission Denie	4.45 ↓	Dec 11, 25	8.00	Oct 08, 88	Dec 14, 25
✓	Permission Denied 398136	Permission Denie	8.20 ↓	Oct 24, 25	11.90	Apr 23, 25	Oct 24, 25

2025 Median Growth Rates for MSDCF
UNP

CORPORATE

Detail Estimates - Period Summary

Enter RIC : UNP **Union Pacific Corp**

Measure : Earnings Per Share

Period : Long Term Growth

Currency: USD *(In millions except for per share items)*

	Ests	Mean	High	Low
Earnings Per Share	3	7.31	7.50	7.14
Filtered/Preliminary Mean**:	2	7.32	7.50	7.14
30 Day Ago Mean	3	7.53	7.80	7.30

	12/2024\	3/2025\	6/2025\	9/2025\	12/2024A
Reported	2.96	2.70	3.03	3.08	11.14
Surprise Mean	2.78	2.75	2.91	2.99	10.97
Surprise (%)	6.31	-1.79	4.09	2.90	1.54

* Only selected brokers below are included in the filtered mean

Check / Uncheck	Contributor	Analyst	Current Estimate	Current Estimate Date	Previous Estimate	Previous Estimate Date	Review Date
✓	Permission Denied 32	Permission Denie(	7.50 ↓	Oct 23, 25	7.80	Sep 23, 25	Dec 18, 25
✓	Permission Denied 392	Permission Denie(	7.14 ↓	Dec 11, 25	7.80	Oct 23, 25	Dec 14, 25
	Permission Denied 398136	Permission Denie(	7.30 ↓	Oct 23, 25	8.50	Jul 24, 25	Oct 23, 25

Stage 3 Growth Rate for MS-DCF
Summary

The Surface Transportation Board's Multi-Stage Discounted Cash Flow model for estimating the cost of common equity uses 3 stages of growth. The third stage is the long-run nominal growth rate of the U.S. economy, and it is estimated by adding the long-term expected growth in output (represented by the historical growth rate for U.S. Real Gross Domestic Product since 1929) to the long-run expected U.S. inflation rate.

Long Term Expected Growth in Output			3.17 %
Historical Growth Rate for Real GDP, 1929-2024		(page 2)	
Long Term Expected Inflation Rate			2.40
Rate for Long-Term U.S. Government Bonds	4.79	(page 5)	
Rate for 20-year U.S. Inflation-Indexed Bonds	2.39	(page 5)	
	2.40		
Stage 3 Growth Rate (real growth + inflation)			**5.57 %**

The purpose of this appendix is to replicate Morningstar's Stage 3 Growth Rate used by the Surface Transportation Board in its version of the Multi-Stage Discounted Cash Flow model used to estimate the cost of common equity for the railroad industry.

Morningstar's Ibbotson SBBI Valuation Yearbook has annually been used as a source for the Stage 3 growth rate of the Surface Transportation Board's Multi-Stage Discounted Cash Flow (MSDCF) model. On September 19, 2013, Morningstar customers were notified that the *SBBI Valuation Yearbook* was being discontinued, but much of the same data could be found in a different publication -- the *Ibbotson SBBI Classic Yearbook*.

Customer Service said **"We won't be publishing the long-term growth rate anymore, however it's pretty simple to calculate using data that will be in the Classic Yearbook and publicly available data."** They also said "Essentially, you would take the long-term government yield as of December (which would be included in the Classic Yearbook) and subtract the Treasury Real Yield for 20 year bonds as of the same date. This value is called the inflation estimate." "From there, you need the GDP growth rate, which you can calculate from the Current-dollar and "real" GDP link in the BEA website. Using the GDP in billions of chained 2005 dollars column, calculate an annual growth rate. One thing, however, is that we've always used GDP chained to 2005 dollars and it looks like they've since changed it to be chained to 2009 dollars. This may cause a slight change in the historical growth rates."

Beginning in 2016, Morningstar stopped publishing its Ibbotson SBBI Classic Yearbook. Calculations on page 5 of this appendix use 20-Year U.S. Treasury Bonds in lieu of the Ibbotson Long-Term Government Yields.

Stage 3 Growth Rate for MS-DCF
Long-Term Expected Growth in Output

AAR Replicates Morningstar

Year	(a) GDP in billions of chained 2005 dollars	(b) Years of Growth	(c) AAR Calc. Growth Rate	(d) SBBI Text Growth Rate
1929	976.1			
2009	12,757.9	80	3.27%	3.3%
2010	13,063.0	81	3.25%	3.3%
2011	13,299.1	82	3.24%	3.24%
2012	13,591.1	83	3.22%	3.22%

The Bureau of Economic Analysis rebased Real GDP from 2005 dollars to 2009 dollars, and may have revised recent year data. Therefore, GDP data in 2005 $ were not available for 2013. Beginning in 2024, BEA began using 2017 dollars.

(a) Real GDP in 2005 $ - 2009-2012 are from the Economic Report of the President 2013, Table B-11
1929 is from BEA table dated August 2011
(b) Year minus 1929 = number of years of growth from 1929 to year
(c) Compound growth rate from 1929 to year
(d) Ibbotson SBBI Valuation Yearbook, chapter 4. For 2012 data, 2013 edition, page 52.

AAR Calculates Growth Rate using GDP in 2017 dollars

Year	(e) GDP in billions of chained 2017 dollars	(f) Years of Growth	(g) AAR Calc. Growth Rate	(h) AAR Calc. Growth Rate using 2009 $
1929	1,191.1			
2016	19,141.7	87	3.24%	3.22%
2017	19,612.1	88	3.23%	3.21%
2018	20,193.9	89	3.23%	
2019	20,692.1	90	3.22%	
2020	20,234.1	91	3.16%	
2021	21,407.7	92	3.19%	
2022	21,822.0	93	3.18%	
2023	22,374.3	94	3.17%	
2024	22,303.5	**95**	**3.13%**	
2025	23,850.4	**96**	**3.17%**	

(e) Real GDP in 2017 $ downloaded from BEA 2/27/2025.
(f) Year - 1929 = number of years of growth from 1929 to year
(g) Compound growth rate from 1929 to year
(h) Previous years' calculations used 2012 $, which have now been discontinued. This column's purpose is only for comparison purposes.

Stage 3 Growth Rate for MS-DCF
Data Sources for Real GDP in 2005 $

186 GDP and Other Major NIPA Series August 2011

Table 2A. Real Gross Domestic Product—Continues

[Billions of chained (2005) dollars; quarterly estimates are seasonally adjusted at annual rates]

Year and quarter	Gross domestic product	Personal consumption expenditures	Gross private domestic investment	Exports and imports of goods and services		Government consumption expenditures and gross investment	Residual	Final sales of domestic product	Gross domestic purchases	Final sales to domestic purchasers	Gross national product	Percent change from preceding period				
				Exports	Imports							Gross domestic product	Final sales of domestic product	Gross domestic purchases	Final sales to domestic purchasers	Gross national product
1929	976.1	736.3	101.4	37.9	49.1	146.5	3.1	986.8	994.1	1,005.2	984.6	...	...	...	...	...
1930	892.0	696.8	67.6	31.3	42.7	161.4	−22.4	919.2	911.1	939.2	900.0	−8.6	−6.8	−8.4	−6.6	−8.6
1931	834.2	674.9	42.5	26.1	37.2	168.2	−40.3	865.2	853.9	885.9	840.7	−6.5	−5.9	−6.3	−5.7	−6.6
1932	725.2	614.4	12.8	20.4	30.9	162.6	−54.1	766.6	743.9	786.5	730.5	−13.1	−11.4	−12.9	−11.2	−13.1
1933	715.8	600.8	18.9	20.5	32.2	157.2	−49.4	743.2	735.1	763.4	720.3	−1.3	−3.1	−1.2	−2.9	−1.4
1934	793.7	643.7	34.1	22.8	32.9	177.3	−51.3	814.0	812.7	833.7	797.7	10.9	9.5	10.6	9.2	10.7
1935	864.2	683.0	63.1	24.1	43.1	182.2	−45.1	864.5	892.2	892.7	868.9	8.9	6.2	9.8	7.1	8.9
1936	977.0	752.5	80.9	25.3	42.6	212.6	−51.7	978.9	1,006.1	1,008.1	981.1	13.1	13.2	12.8	12.9	12.9
1937	1,027.1	780.4	101.1	31.9	47.9	203.6	−42.0	1,019.8	1,052.9	1,045.5	1,032.5	5.1	4.2	4.7	3.7	5.2
1938	991.8	767.8	66.8	31.5	37.3	219.3	−56.3	1,005.2	1,007.3	1,021.0	997.4	−3.4	−1.4	−4.3	−2.3	−3.4
1939	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.4	8.1	7.4	8.1

Table B–2. Real gross domestic product, 1964–2012

[Billions of chained (2005) dollars, except as noted; quarterly data at seasonally adjusted annual rates]

Year or quarter	Gross domestic product	Personal consumption expenditures			Gross private domestic investment				
						Fixed investment			
							Nonresidential		
		Total	Goods	Services	Total	Total	Total	Structures	Equipment and software
1964	3,389.4	2,107.5	...	...	382.1	...	...	...	...
1965	3,607.0	2,240.8	...	...	435.7	...	...	...	...
1966	3,842.1	2,367.9	...	...	474.1	...	...	...	...
1967	3,939.2	2,438.8	...	...	452.4	...	...	...	...
1968	4,129.9	2,579.6	...	...	478.7	...	...	...	...
1969	4,258.2	2,676.2	...	...	506.6	...	...	...	...
1970	4,266.3	2,738.9	...	...	473.4	...	...	...	...
1971	4,409.5	2,843.3	...	...	527.3	...	...	...	...
1972	4,643.8	3,018.1	...	...	589.8	...	...	...	...
1973	4,912.8	3,167.7	...	...	658.9	...	...	...	...
1974	4,885.7	3,141.4	...	...	610.3	...	...	...	...
1975	4,875.4	3,212.6	...	...	502.2	...	...	...	...
1976	5,136.9	3,391.5	...	...	603.7	...	...	...	...
1977	5,373.1	3,534.3	...	...	694.9	...	...	...	...
1978	5,672.8	3,690.1	...	...	778.7	...	...	...	...
1979	5,850.1	3,777.8	...	...	803.5	...	...	...	...
1980	5,834.0	3,764.5	...	...	715.2	...	...	...	...
1981	5,982.1	3,821.6	...	...	779.6	...	...	...	...
1982	5,865.9	3,874.9	...	...	670.3	...	...	...	...
1983	6,130.9	4,096.4	...	...	732.8	...	...	...	...
1984	6,571.5	4,313.6	...	...	948.7	...	...	...	...
1985	6,843.4	4,538.3	...	...	939.8	...	...	...	...
1986	7,080.5	4,722.4	...	...	933.5	...	...	...	...
1987	7,307.0	4,868.0	...	...	962.2	...	...	...	...
1988	7,607.4	5,064.3	...	...	984.9	...	...	...	...
1989	7,879.2	5,207.5	...	...	1,024.4	...	...	...	...
1990	8,027.1	5,313.7	...	...	989.9	...	...	...	...
1991	8,008.3	5,321.7	...	...	909.4	...	...	...	...
1992	8,280.0	5,503.2	...	...	983.1	...	...	...	...
1993	8,516.2	5,698.6	...	...	1,070.9	...	...	...	...
1994	8,863.1	5,916.2	...	...	1,216.4	...	...	...	...
1995	9,086.0	6,076.2	1,896.0	4,208.5	1,254.3	1,231.2	787.9	342.0	489.4
1996	9,425.8	6,288.3	1,980.9	4,331.7	1,365.3	1,341.6	861.5	361.4	541.4
1997	9,845.9	6,520.4	2,075.3	4,465.3	1,535.2	1,465.4	965.5	387.9	615.9
1998	10,274.7	6,862.3	2,215.5	4,662.1	1,688.9	1,624.4	1,081.4	407.7	705.2
1999	10,770.7	7,237.6	2,392.0	4,853.1	1,837.6	1,775.5	1,194.3	408.2	805.0
2000	11,216.4	7,604.6	2,518.2	5,093.6	1,963.1	1,906.8	1,311.3	440.0	889.2
2001	11,337.5	7,810.3	2,597.3	5,219.1	1,825.2	1,870.7	1,274.8	433.3	860.6
2002	11,543.1	8,018.3	2,702.9	5,318.5	1,800.4	1,791.5	1,173.7	356.6	824.2
2003	11,836.4	8,244.5	2,827.2	5,418.2	1,870.1	1,854.7	1,189.6	343.0	850.0
2004	12,246.9	8,515.8	2,953.3	5,582.7	2,058.2	1,992.5	1,263.0	346.7	917.3
2005	12,623.0	8,803.5	3,076.7	5,726.8	2,172.3	2,122.3	1,347.3	351.8	995.6
2006	12,958.5	9,054.5	3,178.9	5,875.6	2,231.8	2,172.7	1,455.5	384.0	1,071.1
2007	13,206.4	9,262.9	3,273.5	5,990.2	2,159.5	2,130.6	1,550.0	438.2	1,106.8
2008	13,161.9	9,211.7	3,192.9	6,017.0	1,939.8	1,978.6	1,537.6	466.4	1,059.4
2009	12,757.9	9,032.6	3,098.2	5,930.6	1,458.1	1,602.2	1,259.8	368.1	885.2
2010	13,063.0	9,196.2	3,209.1	5,987.6	1,658.0	1,598.7	1,268.5	310.6	963.9
2011	13,299.1	9,428.8	3,331.0	6,101.5	1,744.0	1,704.5	1,378.2	319.2	1,070.0
2012 p	13,591.1	9,604.9	3,433.0	6,178.0	1,911.0	1,850.1	1,484.9	351.3	1,143.5

"Survey of Current Business", August 2011, U.S. Bureau of Economic Analysis

"Economic Report of the President", March 2013

Stage 3 Growth Rate for MS-DCF
Data Sources for Real GDP in 2017 $

Current-Dollar and "Real" Gross Domestic Product 13-Apr-26

Annual			Quarterly (Seasonally adjusted annual rates)		
	GDP in billions of current dollars	GDP in billions of chained 2017 dollars		GDP in billions of current dollars	GDP in billions of chained 2017 dollars
1929	104.6	1,191.1	1947Q1	243.2	2182.7
1930	92.2	1,089.8	1947Q2	246	2176.9
1931	77.4	1,020.0	1947Q3	249.6	2172.4
1932	59.5	888.4	1947Q4	259.7	2206.5
2016	18,804.9	19,141.7	1968Q4	968	5202.2
2017	19,612.1	19,612.1	1969Q1	993.3	5283.6
2018	20,656.5	20,193.9	1969Q2	1009	5299.6
2019	21,540.0	20,715.7	1969Q3	1030	5334.6
2020	21,375.3	20,284.5	1969Q4	1038.1	5308.6
2021	23,725.6	21,532.4	1970Q1	1051.2	5300.7
2022	26,054.6	22,075.9	1970Q2	1067.4	5308.2
2023	27,811.5	22,723.7	1970Q3	1086.1	5357.1
2024	29,298.0	23,358.4	1970Q4	1088.6	5299.7
2025	30,762.1	23,850.4	1971Q1	1135.2	5443.6

Download for Bureau of Economic Analysis web site. Middle years and some quarters omitted to enable data to fit on this page. Use the 2017 dollars column (annual), circled values.

Stage 3 Growth Rate for MS-DCF
Long-Term Inflation Rate

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Long-Term Gov. Yields			Inflation Indexed		Long Term	
	From SBBI		T-Bonds	20-Yr T-Bonds		Inflation Rate	
Year	Text	Appendix	20-Yr	SBBI Text	Daily	SBBI Text	AAR Calc
2011	2.48	2.48	2.57	0.5	0.53	1.95	1.95 %
2012	2.41	2.41	2.54	0.15	0.15	2.26	2.26
2013	n/a	3.67	3.72	n/a	1.36	n/a	2.31
2014	n/a	2.4	2.47	n/a	0.68	n/a	1.72
2015	n/a	n/a	2.67	n/a	1.07	n/a	1.60
2016	n/a	n/a	2.79	n/a	0.82	n/a	1.97
2017	n/a	n/a	2.58	n/a	0.61	n/a	1.97
2018	n/a	n/a	2.87	n/a	1.09	n/a	1.78
2019	n/a	n/a	2.25	n/a	0.39	n/a	1.86
2020	n/a	n/a	1.45	n/a	-0.61	n/a	2.06
2021	n/a	n/a	1.94	n/a	-0.63	n/a	2.57
2022	n/a	n/a	4.14	n/a	1.62	n/a	2.52
2023	n/a	n/a	4.20	n/a	1.84	n/a	2.36
2024	n/a	n/a	4.86	n/a	2.41	n/a	2.45
2025	n/a	n/a	4.79	n/a	2.39	n/a	2.40

n/a = no longer available

Sources:

(a) Ibbotson SBBI Valuation Yearbook, chapter 4. For 2012 data, 2013 edition, page 52.

(b) SBBI Appendix B, Table B-9 (Long-Term Government Bonds), December
Beginning in 2014, data from Ibbotson® SBBI® Classic Yearbook (Classic Yearbook).
2013 is from Table 2-2 of the Classic Yearbook, on page 42. The 2013 and 2014 numbers are also found in the Ibbotson SBBI Market Report with data as of December, in Table 3 on page 9.

(c) Treasury Constant Maturities, Nominal, 20-Year, Business Day, last day of year
https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H15 (See workpapers)

(d) Ibbotson SBBI Valuation Yearbook, chapter 4. For 2012 data, 2013 edition, page 52.

(e) Treasury Constant Maturities, Inflation Indexed, 20-Year, Business Day, last (business) day of year
https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H15 (See workpapers)

(f) Ibbotson SBBI Valuation Yearbook, chapter 4. For 2012 data, 2013 edition, page 52.

(g) Column (b) less column (e) except for 2015 to 2025, which is column (c) less column (e)

List of Stage 3 Growth Rates for MS-DCF

The Surface Transportation Board's Multi-Stage Discounted Cash Flow model for estimating the cost of common equity uses 3 stages of growth. The third stage is the long-run nominal growth rate of the U.S. economy, and it is estimated by adding the long-term expected real growth in output (represented by the historical growth rate for U.S. Real Gross Domestic Product since 1929) to the long-run expected U.S. inflation rate. Listed below are the rates used by the Board since the 2010 Cost of Capital determination.

	Long-Term Expected		Stage 3
Year	Real Growth in Output	Inflation Rate	Growth Rate
2011	3.24	1.95	5.19 %
2012	3.22	2.26	5.48
2013	3.27	2.31	5.58
2014	3.26	1.72	4.98
2015	3.24	1.6	4.84
2016	3.22	1.97	5.19
2017	3.21	1.97	5.18
2018	3.22	1.78	5
2019	3.21	1.86	5.07
2020	3.14	2.06	5.2
2021	3.16	2.57	5.73
2022	3.16	2.52	5.68
2023	3.17	2.36	5.53
2024	3.13	2.45	5.58
2025	3.17 %	2.40 %	5.57 %

Notes:
The Stage 3 Growth Rate for years 2011 and 2012 are from the Ibbotson SBBI Valuation Yearbooks for those years. Ibbotson displayed 1 digit after the decimal in 2010 for the long-term expected growth rate in output and inflation rate.

Market Value Data for MSDCF
Stock Price for CSX - End of 2025

CSX Corporation (CSX) ☆

44.68 -0.55 (-1.22%) **44.68** 0.00 (0.00%)

At close: 4:00:01 PM EDT After hours: 4:02:10 PM EDT

Trade CSX on Coinbase

Trading disclosure

Dec 28, 2025 - Jan 06, 2026 | Historical Prices | Daily

Currency in USD | Downloa

Date	Open	High	Low	Close	Adj Close	Volum
Jan 5, 2026	36.09	36.36	35.61	35.91	35.79	18,680,20
Jan 2, 2026	36.40	36.44	35.94	36.27	36.15	10,167,40
Dec 31, 2025	36.46	36.52	36.24	36.25	36.13	7,161,40
Dec 30, 2025	36.62	36.71	36.08	36.42	36.30	9,548,70
Dec 29, 2025	36.65	36.76	36.53	36.72	36.60	7,667,00

Retrieved April 29, 2026
Link to web page: http://finance.yahoo.com/quote/CSX/history

Market Value Data for MSDCF
Stock Price for NSC - End of 2025

Norfolk Southern Corporation (NSC) ☆

312.24 -4.47 (-1.41%) 312.12 -0.12 (-0.04%)

At close: 3:59:59 PM EDT After hours: 4:04:49 PM EDT

Trade NSC on Coinbase

Trading disclosure

Dec 28, 2025 - Jan 05, 2026 | Historical Prices | Daily

Currency in USD | Download

Date	Open	High	Low	Close	Adj Close	Volume
Jan 2, 2026	288.89	290.18	287.01	287.82	286.55	1,567,700
Dec 31, 2025	290.49	290.70	288.57	288.72	287.45	719,900
Dec 30, 2025	291.55	291.97	290.10	290.11	288.83	621,500
Dec 29, 2025	291.58	292.95	290.28	292.05	290.77	505,500

Retrieved April 29, 2025
Link to web page: http://finance.yahoo.com/quote/NSC/history

Market Value Data for MSDCF
Stock Price for UNP - End of 2025

Union Pacific Corporation (UNP) ☆

264.87 -2.88 (-1.07%) **264.78** -0.08 (-0.03%)

At close: 3:59:58 PM EDT After hours: 4:04:49 PM EDT

Trade UNP on Coinba

Trading disclosu

Dec 28, 2025 - Jan 06, 2026 | Historical Prices | Daily

Currency in USD | Downl

Date	Open	High	Low	Close ⓘ	Adj Close ⓘ	Vol
Jan 5, 2026	231.02	234.44	230.06	231.97	230.76	2,560,8
Jan 2, 2026	231.35	232.72	229.64	231.91	230.70	2,569,9
Dec 31, 2025	233.14	233.49	231.17	231.32	230.12	1,768,6
Dec 30, 2025	233.98	234.63	232.92	233.06	231.85	1,884,3
Dec 29, 2025	233.44	234.66	233.09	234.53	233.31	1,554,1

Retrieved April 29, 2026
Link to web page: http://finance.yahoo.com/quote/UNP/history

Market Value Data for MSDCF
Shares Outstanding for CSX - End of 2025

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

(☒) QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended September 30, 2025

OR

(☐) TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number 1-8022

CSX CORPORATION

(Exact name of registrant as specified in its charter)

Virginia		62-1051971
(State or other jurisdiction of incorporation or organization)		*(I.R.S. Employer Identification No.)*

500 Water Street, 15th Floor, Jacksonville, FL	32202	904	359-3200
(Address of principal executive offices)	*(Zip Code)*	*(Telephone number, including area code)*	

No Change
(Former name, former address and former fiscal year, if changed since last report.)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of exchange on which registered
Common Stock, $1 Par Value	CSX	Nasdaq Global Select Market

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes (X) No ( )

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes (X) No ( )

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company (as defined in Exchange Act Rule 12b-2).

Large Accelerated Filer (X) Accelerated Filer ( ) Non-accelerated Filer ( ) Smaller Reporting Company (☐) Emerging growth company (☐)

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ( )

Indicate by a check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes (☐) No (X)

There were 1,862,136,956 shares of common stock outstanding on September 30, 2025 (the latest practicable date that is closest to the filing date).

Market Value Data for MSDCF
Shares Outstanding for NSC - End of 2025

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-Q

☒ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended **September 30, 2025**

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to_____

Commission File Number: 1-8339

NORFOLK SOUTHERN CORPORATION
(Exact name of registrant as specified in its charter)

Virginia — (State or other jurisdiction of incorporation or organization)
52-1188014 — (I.R.S. Employer Identification No.)

650 West Peachtree Street NW
Atlanta, Georgia — (Address of principal executive offices)
30308-1925 — (Zip Code)

(855) 667-3655
(Registrant's telephone number, including area code)

No change
(Former name, former address and former fiscal year, if changed since last report)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol	Name of each exchange on which registered
Norfolk Southern Corporation Common Stock (Par Value $1.00)	**NSC**	**New York Stock Exchange**

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.
Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

https://www.sec.gov/Archives/edgar/data/702165/000162828025046128/nsc-20250930.htm 1/72

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Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

Class	Outstanding at September 30, 2025
Common Stock ($1.00 par value per share)	224,386,617 (excluding 20,320,777 shares held by the registrant's consolidated subsidiaries)

Market Value Data for MSDCF
Shares Outstanding for UNP - End of 2025

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

☑ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended September 30, 2025

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number 1-6075

UNION PACIFIC CORPORATION
(Exact name of registrant as specified in its charter)

Utah	**13-2626465**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
1400 Douglas Street, Omaha, Nebraska	**68179**
(Address of principal executive offices)	(Zip Code)

(402) 544-5000
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each Class	Trading Symbol	Name of each exchange on which registered
Common Stock (Par Value $2.50 per share)	UNP	New York Stock Exchange

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ☑ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). ☑ Yes ☐ No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer ☑ Accelerated Filer ☐ Non-Accelerated Filer ☐
Smaller Reporting Company ☐ Emerging Growth Company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). ☐ Yes ☑ No

As of October 17, 2025, there were 593,160,889 shares of the Registrant's Common Stock outstanding.

2025 Cost of Equity Using STB's MSDCF

Company	CSX		NSC		UNP	
Year	2025		2025		2025	
Inputs						
Initial Cash Flow	$2,950.66		$2,095.87		$5,907.63	
Input for Terminal C.F.	$3,574.05		$2,744.37		$6,926.10	
Stage One Growth	6.300%		6.330%		7.300%	
Stage Two Growth	6.640%		6.640%		6.640%	
Stage Three Growth*	5.570%		5.570%		5.570%	
Year	Val. 12/31	Pres Val.	Val. 12/31	Pres Val.	Val. 12/31	Pres Val.
1	$3,137	$2,822	$2,229	$2,026	$6,339	$5,702
2	3,334	2,699	2,370	1,958	6,802	5,504
3	3,544	2,582	2,520	1,892	7,298	5,313
4	3,767	2,470	2,679	1,829	7,831	5,129
5	4,005	2,362	2,849	1,768	8,403	4,951
6	4,271	2,267	3,038	1,713	8,960	4,749
7	4,554	2,175	3,240	1,661	9,555	4,556
8	4,857	2,087	3,455	1,610	10,190	4,371
9	5,179	2,003	3,684	1,561	10,867	4,193
10	5,523	1,922	3,929	1,513	11,588	4,023
Terminal	126,902	44,151	122,200	47,053	256,572	89,067
Sum of Pres. Values		$67,539.71		$64,582.96		$137,559.94
Market Value (input)		$67,539.71		$64,582.96		$137,559.94
Cost of Equity	**11.14%**		**10.01%**		**11.16%**	
Prev. Yr. Cost of Equity	12.88%		11.56%		12.14%	