



2019

Annual Report



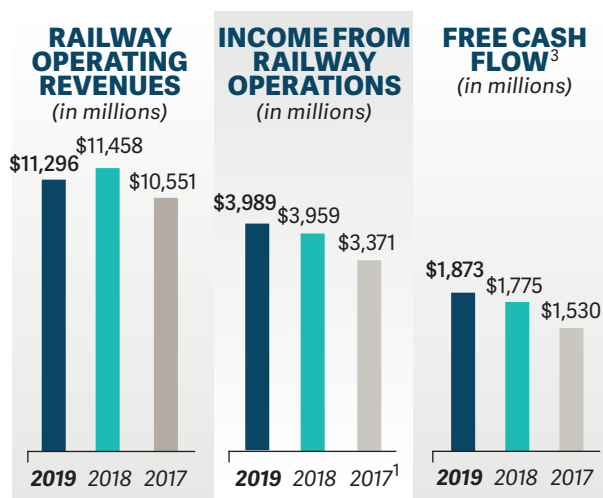
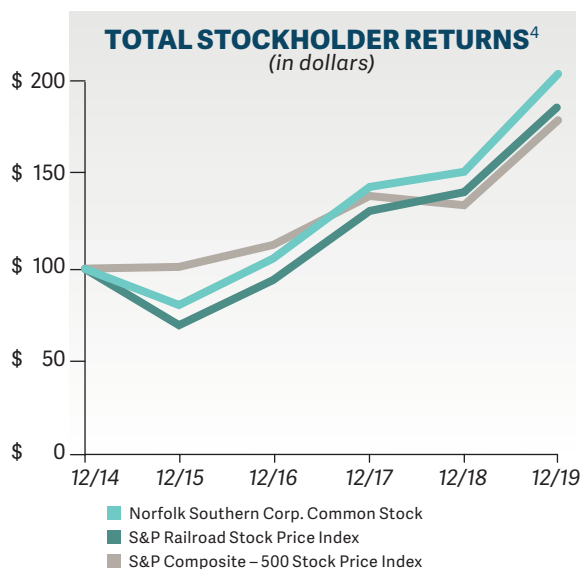
FINANCIAL HIGHLIGHTS

NORFOLK SOUTHERN CORPORATION & SUBSIDIARIES

DESCRIPTION OF BUSINESS

Norfolk Southern Corporation (NYSE: NSC) is one of the nation's premier transportation companies. Its Norfolk Southern Railway Company subsidiary operates approximately 19,500 route miles in 22 states and the District of Columbia, serves every major container port in the eastern United States, and provides efficient connections to other rail carriers. Norfolk Southern is a major transporter of industrial products, including chemicals, agriculture, forest and consumer goods, and metals and construction materials. In addition, the railroad operates the most extensive intermodal network in the East and is a principal carrier of coal, automobiles, and automotive parts.

FOR THE YEAR (numbers in millions, except per-share amounts)	2019	2018	2017
Railway operating revenues	\$ 11,296	\$ 11,458	\$ 10,551
Income from railway operations ¹	\$ 3,989	\$ 3,959	\$ 3,371
Net income ¹	\$ 2,722	\$ 2,666	\$ 1,922
Per share – diluted ¹	\$ 10.25	\$ 9.51	\$ 6.61
Dividends per share	\$ 3.60	\$ 3.04	\$ 2.44
Dividend payout ratio ¹	35%	32%	37%
Net cash provided by operating activities	\$ 3,892	\$ 3,726	\$ 3,253
Property additions	\$ 2,019	\$ 1,951	\$ 1,723
Free cash flow ³	\$ 1,873	\$ 1,775	\$ 1,530
AT YEAR-END			
Total assets ²	\$ 37,923	\$ 36,239	\$ 35,711
Total debt	\$ 12,196	\$ 11,145	\$ 9,836
Stockholders' equity	\$ 15,184	\$ 15,362	\$ 16,359
Shares outstanding	257.9	268.1	284.2
FINANCIAL RATIOS			
Operating ratio ¹	64.7%	65.4%	68.1%
Debt-to-total-capitalization ratio	44.5%	42.0%	37.5%



¹ Our 2017 financial results included the effects of remeasurement of net deferred tax liabilities ("2017 tax adjustments") resulting from the enactment of the Tax Cuts and Jobs Act. For purposes of period-over-period comparability, 2017 results for income from railway operations, net income, net income per share – diluted, dividend payout ratio, and operating ratio have been adjusted to exclude the effects of the 2017 tax adjustments, and are considered non-GAAP financial measures. The 2017 dividend payout ratio is dividends paid (\$703M) as a percentage of net income (\$1,922M). For more information, see the "Reconciliation of Non-GAAP Financial Measures" on page K19 of our Annual Report on Form 10-K for the fiscal year ended Dec. 31, 2019.

² On Jan. 1, 2019, we adopted Financial Accounting Standards Board Accounting Standards Update 2016-02, "Leases (Topic 842)," which requires lessees to recognize right-of-use (ROU) assets and lease liabilities on the balance sheet for leases greater than 12 months. As a result of the adoption, the Consolidated Balance Sheets at Dec. 31, 2019, includes the recognition of ROU assets of \$539 million and corresponding lease liabilities of \$538 million.

³ Free cash flow is considered a non-GAAP financial measure and is a measure of cash available for other investing and financing activities, including payment of dividends, repurchases of common stock, and repayments of debt. Management believes that this non-GAAP financial measure provides useful supplemental information to investors regarding our ability to generate cash flows after taking into consideration cash necessary to cover operations and maintain and grow our capital base. Net cash provided by operating activities is a GAAP measure. Free cash flow (\$1,873M) is net cash provided by operating activities (\$3,892M) reduced by payments for property additions (\$2,019M).

⁴ This graph compares cumulative stockholder returns on Norfolk Southern Corporation common stock with the other identified indices. It assumes an investment of \$100 in NSC common stock and each index on Dec. 31, 2014, and that all dividends were reinvested over the five-year period. Data furnished by Bloomberg Financial Markets.

DEAR FELLOW SHAREHOLDERS:

2019 was a year of transformation for Norfolk Southern. With a commitment to enhance shareholder value, we rolled out a new three-year plan to reimagine our company. Thanks to the hard work and determination of our employees, we made great progress, changing the way we operate our railroad, improving customer service, and building a foundation for long-term growth.

ACHIEVING RECORD FINANCIAL AND OPERATIONAL PERFORMANCE

Our successes drove record financial and operational performance. With efficiency gains and a sharp focus on the bottom line, we recorded a best-ever operating ratio of 64.7%, and remain on track to achieve our 2021 goal of 60%. 2019 also saw record income from railway operations as well as growth in net income and earnings per share.

These results were impressive considering the headwinds that challenged the U.S. freight transportation industry. During the year, weakness in manufacturing and industrial activity, among other factors, contributed to overall declines of 1% in our railway operating revenues and 5% in traffic volumes. Our intermodal revenue declined 2% on a 4% drop in volume. Merchandise revenue was up 1% despite a 3% volume decline. Coal revenue dropped 8% on a 12% decline in volume. Driven by our improved service product, however, revenue-per-unit increased an average 3% across all three of our primary business markets.

We set company records for train speed, which improved 17% year-over-year, and terminal dwell, which was down 30%. With improved fluidity, we delivered record shipment consistency and first- and last-mile performance, helping our customers meet their supply-chain needs.





DRIVING IMPROVEMENT WITH OUR BRAND OF PRECISION SCHEDULED RAILROADING

Propelling these improvements was the adoption of our brand of precision scheduled railroading, or PSR. Thoughtful planning, customer collaboration, and diligent execution were the brand's hallmarks. In late 2018, we introduced PSR to the market with a "Clean Sheeting" initiative to streamline terminal operations and speed the flow of rail cars from yards to customers. In midyear 2019, we launched TOP21, a new operating plan that overhauls the way we run trains across the network. With TOP21, we're running fewer, heavier trains, reducing circuitry and train miles, reducing car handlings, and increasing network velocity.

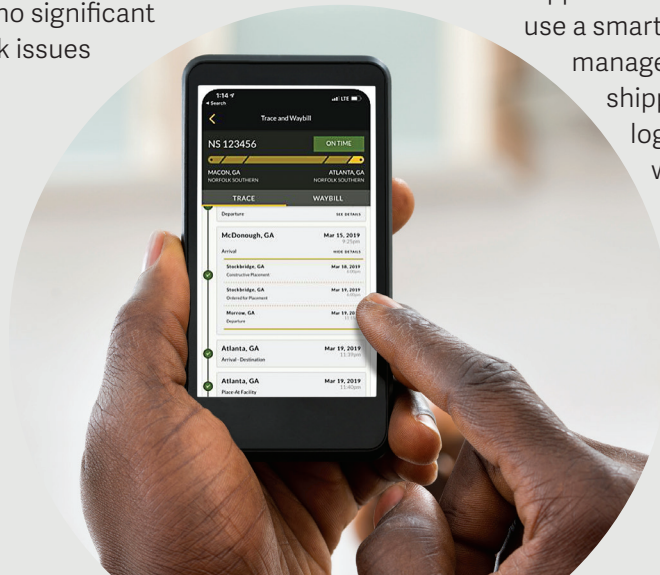
Our new Network Planning and Optimization team developed TOP21 using modeling and simulation tools to analyze operating data and train flows. Weeks before the TOP21 rollout, our marketing teams met with hundreds of customers to communicate expectations for the transition. The launch was seamless, with no significant customer or network issues reported. Operating efficiencies gained through PSR have enabled us to improve customer service, hone the use of our assets, and reduce operating costs.

Faster trains have created capacity and added resiliency to our network. Operating more efficiently frees up track space, locomotives, rail cars, and train crews. This "capacity dividend" enhances our ability to grow without adding infrastructure and other assets. In 2019, we operated with roughly 20% fewer locomotives and 21% fewer rail cars than the preceding year. We are now running a network that is more resilient to extreme weather events – such as early 2019's Polar Vortex and Midwest flooding later in the year – and other incidents that can disrupt normal traffic flows.

TRANSFORMING OUR BUSINESS WITH TECHNOLOGY

In today's fast-paced, tech-driven marketplace, Norfolk Southern recognizes that we must deploy advanced technologies across all areas of our business. Our Information Technology Department has assembled a team of data scientists who use data analytics, machine learning, and artificial intelligence to enhance the safety and efficiency of operations. We are now using big data to predict locomotive engine failure and rail wear, allowing us to take preventive measures and avoid costly service disruptions. We're also investing in technologies to improve service and the customer experience. In 2019, we released a

mobile app that lets customers use a smartphone to manage all of their shipping and logistics needs with us.



As we fully implement positive train control in 2020, we will seek to leverage its powerful communication capabilities. We envision tapping the PTC network to automate many aspects of our operations, making it a communications platform for next-generation railroading. Already, we're using the PTC network to monitor locomotive engine health. In another advancement, we've integrated PTC and onboard locomotive energy management systems to enhance safety while optimizing fuel efficiency, reducing fuel costs and greenhouse gas emissions – good for business and the environment. By the end of 2020, we expect 100% of our road locomotives to be equipped with energy management systems. Our commitment to sustainable business practices will help us manage our assets, control our costs, and reduce environmental impacts.

CREATING ALIGNMENT, COLLABORATION, ACCOUNTABILITY

As part of our transformation, we began restructuring and right-sizing our organization in 2019. We appointed a chief transformation officer and a chief strategy officer to lead and support change and focus on strategic initiatives that give us a competitive edge today and in the future. We realigned marketing, operations, and customer support teams to improve collaboration and to be more proactive in how we interact with customers. In operations, we streamlined the chain-of-command to speed up decision-making and build accountability. With restructuring and efficiency gains, we are advancing our strategic plan goals with a leaner, nimbler workforce. At year-end, our average headcount was down 8%.

OPERATING SAFELY, CONTRIBUTING TO ECONOMIC GROWTH, AN EMPLOYER OF CHOICE

As we transform, Norfolk Southern recognizes our obligation to the communities we serve, beginning with safety. In 2019, through our Operation Awareness and Response initiative, members of our safety and environmental team provided rail safety training at no cost to more than 5,700 first responders across 14 states. That included 23 stops by our safety train for classroom and hands-on training on how to prepare for and safely respond to rail-related incidents. In addition, we participated in six tabletop drills and exercises in Ohio, Georgia, and Pennsylvania, strengthening relationships and lines of communication with local and state emergency management officials.

Our railroad contributes to the economic vitality of our communities. Our industrial development, marketing, and operations teams in 2019 worked with 77 businesses to open new or expanded facilities in 16 states across our network. This development represented nearly \$2 billion of customer investment, more than 1,160 customer jobs, and more than 62,300 carloads of new rail traffic annually for us.

As a Fortune 300 company, Norfolk Southern strives to be an employer of choice, providing jobs that offer rewarding careers and excellent pay and benefits. In 2019, we expanded parental leave and announced a new flexible holiday program. As a rail industry leader in workforce diversity and inclusion, we created a new Inclusion Council to lead employee-driven initiatives supporting inclusion, collaboration, and innovation. We believe our focus on inclusion is a competitive advantage driving business improvement and shareholder value.

Ensuring the safety of our workforce is an unwavering commitment. While we reduced serious injuries for the third consecutive year, we were deeply saddened to lose two employees to fatal on-the-job accidents. Applying analytics to injury data, we have created digital dashboards for use by our operations teams to promote daily rules compliance and focus on addressing risky behaviors. With a strong peer-to-peer focus on safety, daily safety briefings, and regular workplace safety checkups, we strive for zero injuries and incidents.

REINVESTING IN THE BUSINESS, RETURNING CASH TO SHAREHOLDERS, AN ENGAGED BOARD

In support of our strategic plan goals, Norfolk Southern invests in our business to achieve reliable customer service, safe and efficient operations, and long-term growth. In 2019, we funded over \$2 billion in rail infrastructure and equipment purchases to support those goals, including nearly \$1.4 billion in roadway projects and \$648 million on assets like locomotives, rail cars, and technology.

While reinvesting in our company, we fulfilled our commitment to return capital to shareholders. Our board raised the quarterly dividend twice, for an overall increase of 18% and a total payout of \$949 million. In addition, we repurchased nearly \$2.1 billion of the company's shares.

In 2019, we appointed two new board members, one a former railroad chief executive officer with experience in precision scheduled railroading and the other a chief executive in global financial services. They bring fresh perspectives to an exceptionally qualified and diverse board. Our independent board members are actively involved in our strategic plan and fully engaged in monitoring our transformation and progress toward our goals.

BUILDING A RAILROAD THAT IS FASTER, SMARTER, MORE RESILIENT

As remarkable as 2019 was, we aim to achieve much more as we continue to transform our company into a railroad of the future. Our success driving service improvements and operating efficiencies has generated tremendous momentum and differentiated our company in the marketplace. We are positioned to grow as the economy strengthens. With a strong foundation laid, we are confident that we can build a railroad that is even faster, smarter, and more resilient – in short, a railroad that will deliver superior shareholder value in 2020 and beyond.

Thank you for your investment in Norfolk Southern.



BOARD OF DIRECTORS

All directors are subject to re-election each year. Information as of Feb. 1, 2020.

THOMAS D. BELL JR. | DIRECTOR SINCE 2010

Bell is chairman of Mesa Capital Partners LLC, a real-estate investment company. From 2002 to 2009, he served as chairman and CEO of Cousins Properties, a publicly traded real-estate investment trust that invests in office buildings throughout the South. He is a director of Southern Company Gas, formerly AGL Resources. Previously, he was a director of Regal Entertainment Group Inc.



COMMITTEES: compensation, executive, finance and risk management (chair)

EXPERTISE: CEO/senior officer; environmental and safety; governance/board; governmental and stakeholder relations; human resources and compensation; marketing; strategic planning

DANIEL A. CARP | DIRECTOR SINCE 2006

Carp served as chairman of the board and chief executive officer of Eastman Kodak Company from 2000 until his retirement in 2005. He is a director of Delta Air Lines Inc., having been nonexecutive chairman of its board from 2007 until May 2016. He was a director of Texas Instruments Inc. until April 2019.



COMMITTEES: compensation (chair), executive, governance and nominating

EXPERTISE: CEO/senior officer; governance/board; human resources and compensation; information technology; strategic planning; transportation

MITCHELL E. DANIELS JR. | DIRECTOR SINCE 2016

Daniels has been president of Purdue University since 2013. He served as governor of Indiana from 2005 to 2013. From 1990 to 2000, he worked for Eli Lilly and Company, holding the executive positions of president of North American pharmaceutical operations and senior vice president of corporate strategy and policy. He is a director of Cerner Corp.



COMMITTEES: compensation, governance and nominating

EXPERTISE: CEO/senior officer; finance and accounting; governance/board; governmental and stakeholder relations; strategic planning

MARCELA E. DONADIO | DIRECTOR SINCE 2016

Donadio retired as a partner of Ernst & Young LLP, a multinational professional services firm, in 2014. From 2007 until her retirement, she was Americas Oil & Gas sector leader, with responsibility for one of Ernst & Young's significant industry groups. She helped set firm strategy for oil and gas industry clients in the United States and throughout the Americas. She is a director of Marathon Oil Corp. and National Oilwell Varco Inc.



COMMITTEES: audit, finance and risk management

EXPERTISE: CEO/senior officer; finance and accounting; governance/board; human resources and compensation; strategic planning

THOMAS C. KELLEHER | DIRECTOR SINCE 2019

Kelleher served as president of Morgan Stanley, a leading global financial services firm, from 2016 until his retirement in June 2019.

He also served as chairman and chief executive officer of Morgan Stanley Bank N.A. until June 2019. He was president of Morgan Stanley Institutional Securities from 2010 to 2016, CEO of Morgan Stanley International from 2011 to 2016, chief financial officer and co-head of corporate strategy from 2007 to early 2010, and served as Morgan Stanley's head of global capital markets from 2006 to 2007.



COMMITTEES: audit, finance and risk management

EXPERTISE: CEO/senior officer; finance/accounting; governance/board; governmental and stakeholder relations; human resources and compensation; strategic planning

STEVEN F. LEER | LEAD DIRECTOR | DIRECTOR SINCE 1999

Leer served as the chief executive officer of Arch Coal Inc., a company engaged in coal mining and related businesses, from 1992 through 2012. He was chairman of its board from 2006 through 2012 and its executive chairman from 2012 through 2014. He served as senior advisor to the president and CEO of Arch Coal from 2014 through May 2015. He is a director of Cenovus Energy Inc. and Parsons Corporation. He previously served as the nonexecutive chairman of USG Corporation.



COMMITTEES: compensation, executive, governance and nominating (chair)

EXPERTISE: CEO/senior officer; environmental and safety; governance/board; governmental and stakeholder relations; human resources and compensation; marketing; strategic planning; transportation

MICHAEL D. LOCKHART | DIRECTOR SINCE 2008

Lockhart served as chairman of the board, president and chief executive officer of Armstrong World Industries Inc. and its predecessor, Armstrong Holdings Inc., a leading global producer of flooring products and ceiling systems, from 2000 until his retirement in February 2010. Previously, he served as chairman and chief executive officer of General Signal Corporation, a diversified manufacturer, from September 1995 until it was acquired in 1998.



COMMITTEES: audit, finance and risk management

EXPERTISE: CEO/senior officer; environmental and safety; finance and accounting; governance/board; marketing; strategic planning; transportation

AMY E. MILES | DIRECTOR SINCE 2014

Miles served as chief executive officer of Regal Entertainment Group Inc., a leading motion picture exhibitor, from 2009 until its acquisition in March 2018. During that time, she served as a director of Regal and was named chair of its board in March 2015. Previously, she served as Regal Entertainment's executive vice president, chief financial officer and treasurer from March 2002 through June 2009.



COMMITTEES: audit (chair), executive, governance and nominating

EXPERTISE: CEO/senior officer; finance and accounting; governance/board; information technology; marketing; strategic planning

CLAUDE MONGEAU | DIRECTOR SINCE 2019

Mongeau served as president and chief executive officer of Canadian National Railway Company (CN), a North American railroad and transportation company, from January 2010 to June 2016 and as a director of CN from October 2009 to June 2016. During his 22-year career at CN, he also served as executive vice president and chief financial officer, vice president strategic and financial planning, and assistant vice president corporate development. He also is a director of Cenovus Energy and Toronto-Dominion Bank and was formerly a director of Telus, a telecommunications company, from 2017 to 2019.



COMMITTEES: compensation, finance and risk management

EXPERTISE: CEO/senior officer; environmental and safety; finance and accounting; governance/board; governmental and stakeholder relations; human resources and compensation; marketing; strategic planning; transportation

JENNIFER F. SCANLON | DIRECTOR SINCE 2018

Scanlon has been president, chief executive officer and board member of UL, a global science safety organization, since September 2019. She is the first woman to lead the organization. She previously served as president and chief executive officer of USG Corporation, from 2016 until its acquisition in April 2019. During that time, she served as a board member of USG. Scanlon also previously served as president of USG's international business, president of its L&W Supply Corporation, and chief information officer and chairman of the board for USG Boral Building Products.



COMMITTEES: compensation, finance and risk management

EXPERTISE: CEO/senior officer; environmental and safety; governance/board; information technology; marketing; strategic planning; transportation

JAMES A. SQUIRES | CHAIRMAN, PRESIDENT AND CEO | DIRECTOR SINCE 2014

Squires has been president of Norfolk Southern since 2013 and chief executive officer since June 2015. He was named chairman of the board of Norfolk Southern in October 2015. Previously, he served as Norfolk Southern's executive vice president administration, executive vice president finance and chief financial officer, senior vice president finance, senior vice president law, and vice president law.



COMMITTEES: executive (chair)

EXPERTISE: CEO/senior officer; finance and accounting; governance/board; governmental and stakeholder relations; human resources and compensation; marketing; strategic planning; transportation

JOHN R. THOMPSON | DIRECTOR SINCE 2013

Thompson served as a government relations consultant for Best Buy Co. Inc., a multinational consumer electronics corporation, from October 2012 to April 2016. He served as senior vice president and general manager of BestBuy.com LLC, a subsidiary of Best Buy Co. Inc., from 2002 through 2012. Previously, he was a director of Belk Inc. and Wendy's International Inc.



COMMITTEES: audit, governance and nominating

EXPERTISE: CEO/senior officer; finance and accounting; governance/board; governmental and stakeholder relations; information technology; marketing; strategic planning

OFFICERS

As of Feb. 1, 2020

James A. Squires

Chairman, President
and Chief Executive Officer

Ann A. Adams

Executive Vice President
and Chief Transformation Officer

Mark R. George

Executive Vice President Finance
and Chief Financial Officer

John M. Scheib

Executive Vice President
and Chief Strategy Officer

Alan H. Shaw

Executive Vice President
and Chief Marketing Officer

Michael J. Wheeler

Executive Vice President
and Chief Operating Officer

Michael A. Farrell

Senior Vice President
Operations and Mechanical

Vanessa Allen Sutherland

Senior Vice President Government
Relations and Chief Legal Officer

Clyde H. Allison Jr.

Vice President and Treasurer

Edward F. Boyle Jr.

Vice President Engineering

Michael F. Cox

Vice President Taxation

Fredric M. Ehlers

Vice President Information Technology
and Chief Information Officer

Claude E. Elkins

Vice President Industrial Products

John H. Friedmann

Vice President Network Planning
and Optimization

Jeffrey S. Heller

Vice President Intermodal and Automotive

Karol R. Lawrence

Vice President Customer Operations

David T. Lawson

Vice President Coal

Marque I. Ledoux

Vice President Government Relations

Robert E. Martínez

Vice President Business Development
and Real Estate

Michael R. McClellan

Vice President Strategic Planning

Thomas W. Schnautz

Vice President Advanced Train Control

Susan S. Stuart

Vice President Audit and Compliance

Scott R. Weaver

Vice President Labor Relations

Jason A. Zampi

Vice President and Controller

Denise W. Hutson

Corporate Secretary

EQUAL EMPLOYMENT OPPORTUNITY POLICY

Norfolk Southern Corporation's policy is to comply with all applicable laws, regulations, and executive orders concerning equal employment opportunity and nondiscrimination.

The company's policy is to offer employment on the basis of qualification and performance, regardless of race, religion, color, national origin, gender, age, status as a covered veteran, sexual orientation, gender identity, the presence of a disability, genetic information, or any other legally protected status.

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

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
for the fiscal year ended **DECEMBER 31, 2019**

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

(IRS Employer Identification No.)

Three Commercial Place

Norfolk, Virginia

(Address of principal executive offices)

23510-2191

(Zip Code)

(757) 629-2680

(Registrant's telephone number, including area code)

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

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

Securities registered pursuant to Section 12(g) of the Act: NONE

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes No

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 Act). Yes No

The aggregate market value of the voting common equity held by non-affiliates at June 30, 2019 was \$52,456,511,032 (based on the closing price as quoted on the New York Stock Exchange on June 28, 2019).

The number of shares outstanding of each of the registrant's classes of common stock, at January 31, 2020: 257,844,180 (excluding 20,320,777 shares held by the registrant's consolidated subsidiaries).

DOCUMENTS INCORPORATED BY REFERENCE: Portions of the Registrant's definitive proxy statement to be filed electronically pursuant to Regulation 14A not later than 120 days after the end of the fiscal year, are incorporated herein by reference in Part III.

TABLE OF CONTENTS

NORFOLK SOUTHERN CORPORATION AND SUBSIDIARIES

		Page	
<u>Part I.</u>	<u>Items 1 and 2.</u>	<u>Business and Properties</u>	<u>K3</u>
	<u>Item 1A.</u>	<u>Risk Factors</u>	<u>K10</u>
	<u>Item 1B.</u>	<u>Unresolved Staff Comments</u>	<u>K13</u>
	<u>Item 3.</u>	<u>Legal Proceedings</u>	<u>K14</u>
	<u>Item 4.</u>	<u>Mine Safety Disclosures</u>	<u>K14</u>
		<u>Information About Our Executive Officers</u>	<u>K15</u>
<u>Part II.</u>	<u>Item 5.</u>	<u>Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u>	<u>K16</u>
	<u>Item 6.</u>	<u>Selected Financial Data</u>	<u>K17</u>
	<u>Item 7.</u>	<u>Management’s Discussion and Analysis of Financial Condition and Results of Operations</u>	<u>K18</u>
	<u>Item 7A.</u>	<u>Quantitative and Qualitative Disclosures About Market Risk</u>	<u>K29</u>
	<u>Item 8.</u>	<u>Financial Statements and Supplementary Data</u>	<u>K30</u>
	<u>Item 9.</u>	<u>Changes in and Disagreements with Accountants on Accounting and Financial Disclosure</u>	<u>K74</u>
	<u>Item 9A.</u>	<u>Controls and Procedures</u>	<u>K74</u>
	<u>Item 9B.</u>	<u>Other Information</u>	<u>K74</u>
<u>Part III.</u>	<u>Item 10.</u>	<u>Directors, Executive Officers and Corporate Governance</u>	<u>K75</u>
	<u>Item 11.</u>	<u>Executive Compensation</u>	<u>K75</u>
	<u>Item 12.</u>	<u>Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	<u>K76</u>
	<u>Item 13.</u>	<u>Certain Relationships and Related Transactions, and Director Independence</u>	<u>K78</u>
	<u>Item 14.</u>	<u>Principal Accounting Fees and Services</u>	<u>K78</u>
<u>Part IV.</u>	<u>Item 15.</u>	<u>Exhibits, Financial Statement Schedules</u>	<u>K79</u>
	<u>Item 16.</u>	<u>Form 10-K Summary</u>	<u>K88</u>
		<u>Power of Attorney</u>	<u>K89</u>
		<u>Signatures</u>	<u>K89</u>

PART I

NORFOLK SOUTHERN CORPORATION AND SUBSIDIARIES

Item 1. Business and Item 2. Properties

GENERAL – Our company, Norfolk Southern Corporation (Norfolk Southern), is a Norfolk, Virginia-based company that owns a major freight railroad, Norfolk Southern Railway Company (NSR). We were incorporated on July 23, 1980, under the laws of the Commonwealth of Virginia. Our common stock (Common Stock) is listed on the New York Stock Exchange (NYSE) under the symbol “NSC.”

Unless indicated otherwise, Norfolk Southern Corporation and its subsidiaries, including NSR, are referred to collectively as NS, we, us, and our.

We are primarily engaged in the rail transportation of raw materials, intermediate products, and finished goods primarily in the Southeast, East, and Midwest and, via interchange with rail carriers, to and from the rest of the United States. We also transport overseas freight through several Atlantic and Gulf Coast ports. We offer the most extensive intermodal network in the eastern half of the United States.

We make available free of charge through our website, www.norfolksouthern.com, our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports as soon as reasonably practicable after such material is electronically filed with or furnished to the U.S. Securities and Exchange Commission (SEC). In addition, the following documents are available on our website and in print to any shareholder who requests them:

- Corporate Governance Guidelines
- Charters of the Committees of the Board of Directors
- The Thoroughbred Code of Ethics
- Code of Ethical Conduct for Senior Financial Officers
- Categorical Independence Standards for Directors
- Norfolk Southern Corporation Bylaws

RAILROAD OPERATIONS – At December 31, 2019, our railroad operated approximately 19,500 route miles in 22 states and the District of Columbia.

Our system reaches many manufacturing plants, electric generating facilities, mines, distribution centers, transload facilities, and other businesses located in our service area.



Corridors with heaviest freight volume:

- New York City area to Chicago (via Allentown and Pittsburgh)
- Chicago to Macon (via Cincinnati, Chattanooga, and Atlanta)
- Central Ohio to Norfolk (via Columbus and Roanoke)
- Birmingham to Meridian
- Cleveland to Kansas City
- Memphis to Chattanooga

The miles operated, which include major leased lines between Cincinnati, Ohio, and Chattanooga, Tennessee, and an exclusive operating agreement for trackage rights over property owned by North Carolina Railroad Company, were as follows:

Mileage Operated at December 31, 2019					
	Route Miles	Second and Other Main Track	Passing Track, Crossovers and Turnouts	Way and Yard Switching	Total
Owned	14,655	2,677	2,008	8,320	27,660
Operated under lease, contract or trackage rights	4,796	1,889	407	840	7,932
Total	19,451	4,566	2,415	9,160	35,592

We operate freight service over lines with significant ongoing Amtrak and commuter passenger operations, and conduct freight operations over trackage owned or leased by Amtrak, New Jersey Transit, Southeastern Pennsylvania Transportation Authority, Metro-North Commuter Railroad Company, Maryland Department of Transportation, and Michigan Department of Transportation.

The following table sets forth certain statistics relating to our railroads' operations for the past five years:

	Years ended December 31,				
	2019	2018	2017	2016	2015
Revenue ton miles (billions)	194	207	201	191	200
Revenue per thousand revenue ton miles	\$ 58.21	\$ 55.25	\$ 52.38	\$ 51.91	\$ 52.63
Revenue ton miles (thousands) per railroad employee	7,939	7,822	7,474	6,838	6,645
Ratio of railway operating expenses to railway operating revenues (Railway operating ratio)	64.7%	65.4%	66.6%	69.6%	72.8%

RAILWAY OPERATING REVENUES – Total railway operating revenues were \$11.3 billion in 2019.

Following is an overview of our three commodity groups. See the discussion of merchandise revenues by major commodity group, intermodal revenues, and coal revenues and tonnage in Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

MERCHANDISE – Our merchandise commodity group is composed of five groupings:

- Chemicals includes sulfur and related chemicals, petroleum products (including crude oil), chlorine and bleaching compounds, plastics, rubber, industrial chemicals, and chemical wastes.
- Agriculture products includes soybeans, wheat, corn, fertilizer, livestock and poultry feed, food products, food oils, flour, sweeteners, and ethanol.
- Metals and construction includes steel, aluminum products, machinery, scrap metals, cement, aggregates, sand, minerals, transportation equipment, and items for the U.S. military.
- Automotive includes finished motor vehicles and automotive parts.
- Forest and consumer includes lumber and wood products, pulp board and paper products, wood fibers, wood pulp, scrap paper, clay, beverages, canned goods, and consumer products

Merchandise carloads handled in 2019 were 2.4 million, the revenues from which accounted for 60% of our total railway operating revenues.

INTERMODAL – Our intermodal commodity group consists of shipments moving in domestic and international containers and trailers. These shipments are handled on behalf of intermodal marketing companies, international steamship lines, premium customers and asset owning companies. Intermodal units handled in 2019 were 4.2 million, the revenues from which accounted for 25% of our total railway operating revenues.

COAL – Revenues from coal accounted for 15% of our total railway operating revenues in 2019. We handled 102 million tons, or 0.9 million carloads, in 2019, most of which originated on our lines from major eastern coal basins, with the balance from major western coal basins received via the Memphis and Chicago gateways. Our coal franchise supports the electric generation market, serving approximately 60 coal generation plants, as well as the export, domestic metallurgical and industrial markets, primarily through direct rail and river, lake, and coastal facilities, including various terminals on the Ohio River, Lamberts Point in Norfolk, Virginia, the Port of Baltimore, and Lake Erie.

FREIGHT RATES – Our predominant pricing mechanisms, private contracts and exempt price quotes, are not subject to regulation. In general, market forces are the primary determinant of rail service prices.

RAILWAY PROPERTY

Our railroad infrastructure makes us capital intensive with net property of approximately \$32 billion on a historical cost basis.

Property Additions – Property additions for the past five years were as follows:

	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
	<i>(\$ in millions)</i>				
Road and other property	\$ 1,371	\$ 1,276	\$ 1,210	\$ 1,292	\$ 1,514
Equipment	648	675	513	595	658
Delaware & Hudson acquisition	—	—	—	—	213
Total	<u>\$ 2,019</u>	<u>\$ 1,951</u>	<u>\$ 1,723</u>	<u>\$ 1,887</u>	<u>\$ 2,385</u>

Our capital spending and replacement programs are and have been designed to assure the ability to provide safe, efficient, and reliable rail transportation services.

Equipment – At December 31, 2019, we owned or leased the following units of equipment:

	Owned	Leased	Total	Capacity of Equipment
Locomotives:				(Horsepower)
Multiple purpose	3,711	—	3,711	14,234,300
Auxiliary units	178	—	178	—
Switching	17	—	17	23,800
Total locomotives	<u>3,906</u>	<u>—</u>	<u>3,906</u>	<u>14,258,100</u>
Freight cars:				(Tons)
Gondola	22,081	3,541	25,622	2,476,401
Hopper	9,877	—	9,877	1,109,777
Covered hopper	6,320	—	6,320	699,985
Box	4,432	747	5,179	388,615
Flat	1,572	387	1,959	190,213
Other	1,592	4	1,596	73,203
Total freight cars	<u>45,874</u>	<u>4,679</u>	<u>50,553</u>	<u>4,938,194</u>
Other:				
Chassis	33,861	—	33,861	
Containers	18,920	—	18,920	
Work equipment	5,754	258	6,012	
Vehicles	3,349	59	3,408	
Miscellaneous	2,391	—	2,391	
Total other	<u>64,275</u>	<u>317</u>	<u>64,592</u>	

The following table indicates the number and year built for locomotives and freight cars owned at December 31, 2019:

	2019	2018	2017	2016	2015	2010-2014	2005-2009	2004 & Before	Total
Locomotives:									
No. of units	35	15	55	66	8	325	359	3,043	3,906
% of fleet	1%	—%	2%	2%	—%	8%	9%	78%	100%
Freight cars:									
No. of units	200	—	470	775	2,090	6,841	4,760	30,738	45,874
% of fleet	—%	—%	1%	2%	5%	15%	10%	67%	100%

The following table shows the average age of our owned locomotive and freight car fleets at December 31, 2019, and information regarding 2019 retirements:

	<u>Locomotives</u>	<u>Freight Cars</u>
Average age – in service	25.7 years	27.0 years
Retirements	250 units	8,825 units
Average age – retired	29.8 years	42.6 years

Track Maintenance – Of the approximately 35,600 total miles of track on which we operate, we are responsible for maintaining approximately 28,400 miles, with the remainder being operated under trackage rights from other parties responsible for maintenance.

Over 84% of the main line trackage (including first, second, third, and branch main tracks, all excluding rail operated pursuant to trackage rights) has rail ranging from 131 to 155 pounds per yard with the standard installation currently at 136 pounds per yard. Approximately 44% of our lines, excluding rail operated pursuant to trackage rights, carried 20 million or more gross tons per track mile during 2019.

The following table summarizes several measurements regarding our track roadway additions and replacements during the past five years:

	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
Track miles of rail installed	449	416	466	518	523
Miles of track surfaced	5,012	4,594	5,368	4,984	5,074
Crossties installed (millions)	2.4	2.2	2.5	2.3	2.4

Traffic Control – Of the approximately 16,400 route miles we dispatch, about 11,300 miles are signalized, including 8,500 miles of centralized traffic control (CTC) and 2,800 miles of automatic block signals. Of the 8,500 miles of CTC, approximately 7,600 miles are controlled by data radio originating at 355 base station radio sites.

ENVIRONMENTAL MATTERS – Compliance with federal, state, and local laws and regulations relating to the protection of the environment is one of our principal goals. To date, such compliance has not had a material effect on our financial position, results of operations, liquidity, or competitive position. See Note 17 to the Consolidated Financial Statements.

EMPLOYEES – The following table shows the average number of employees and the average cost per employee for wages and benefits:

	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
Average number of employees	24,587	26,662	27,110	28,044	30,456
Average wage cost per employee	\$ 85,000	\$ 83,000	\$ 79,000	\$ 76,000	\$ 77,000
Average benefit cost per employee	\$ 40,000	\$ 39,000	\$ 42,000	\$ 35,000	\$ 32,000

Approximately 80% of our railroad employees are covered by collective bargaining agreements with various labor unions. See the discussion of “Labor Agreements” in Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

GOVERNMENT REGULATION – In addition to environmental, safety, securities, and other regulations generally applicable to all business, our railroads are subject to regulation by the U.S. Surface Transportation Board (STB). The STB has jurisdiction to varying extents over rates, routes, customer access provisions, fuel surcharges, conditions of service, and the extension or abandonment of rail lines. The STB has jurisdiction to determine whether we are “revenue adequate” on an annual basis based on the results of the prior year. A railroad is “revenue adequate” on an annual basis under the applicable law when its return on net investment exceeds the rail industry’s composite cost of capital. This determination is made pursuant to a statutory requirement. The STB also has jurisdiction over the consolidation, merger, or acquisition of control of and by rail common carriers.

The relaxation of economic regulation of railroads, following the Staggers Rail Act of 1980, included exemption from STB regulation of the rates and most service terms for intermodal business (trailer-on-flat-car, container-on-flat-car), rail boxcar shipments, lumber, manufactured steel, automobiles, and certain bulk commodities such as sand, gravel, pulpwood, and wood chips for paper manufacturing. Further, all shipments that we have under contract are effectively removed from commercial regulation for the duration of the contract. Approximately 90% of our revenues comes from either exempt shipments or shipments moving under transportation contracts; the remainder comes from shipments moving under public tariff rates.

Efforts have been made over the past several years to increase federal economic regulation of the rail industry, and such efforts are expected to continue in 2020. The Staggers Rail Act of 1980 substantially balanced the interests of shippers and rail carriers, and encouraged and enabled rail carriers to innovate, invest in their infrastructure, and compete for business, thereby contributing to the economic health of the nation and to the revitalization of the industry. Accordingly, we will continue to oppose efforts to reimpose increased economic regulation.

Government regulations are further discussed within Item 1A “Risk Factors” and the safety and security of our railroads are discussed within the “Security of Operations” section contained herein.

COMPETITION – There is continuing strong competition among rail, water, and highway carriers. Price is usually only one factor of importance as shippers and receivers choose a transport mode and specific hauling company. Inventory carrying costs, service reliability, ease of handling, and the desire to avoid loss and damage during transit are also important considerations, especially for higher-valued finished goods, machinery, and consumer products. Even for raw materials, semi-finished goods, and work-in-progress, users are increasingly sensitive to transport arrangements that minimize problems at successive production stages.

Our primary rail competitor is CSX Corporation (CSX); both NS and CSX operate throughout much of the same territory. Other railroads also operate in parts of the territory. We also compete with motor carriers, water carriers, and with shippers who have the additional options of handling their own goods in private carriage, sourcing products from different geographic areas, and using substitute products.

Certain marketing strategies to expand reach and shipping options among railroads and between railroads and motor carriers enable railroads to compete more effectively in specific markets.

SECURITY OF OPERATIONS – We continue to enhance the security of our rail system. Our comprehensive security plan is modeled on and was developed in conjunction with the security plan prepared by the Association of American Railroads (AAR) post September 11, 2001. The AAR Security Plan defines four Alert Levels and details the actions and countermeasures that are being applied across the railroad industry to mitigate the risk of terrorist, violent extremist or seriously disruptive cyber-attack increases or decreases. The Alert Level actions include countermeasures that will be applied in three general areas: (1) operations (including transportation, engineering, and mechanical); (2) information technology and communications; and, (3) railroad police. All of our Operations Division employees are advised by their supervisors or train dispatchers, as appropriate, of any change in Alert Level and any additional responsibilities they may incur due to such change.

Our security plan also complies with U.S. Department of Transportation (DOT) security regulations pertaining to training and security plans with respect to the transportation of hazardous materials. As part of the plan, security awareness training is given to all railroad employees who directly affect hazardous material transportation safety,

and is integrated into hazardous material training programs. Additionally, location-specific security plans are in place for rail corridors in certain metropolitan areas referred to as High Threat Urban Areas (HTUA). Particular attention is aimed at reducing risk in a HTUA by: (1) the establishment of secure storage areas for rail cars carrying toxic-by-inhalation (TIH) materials; (2) the expedited movement of trains transporting rail cars carrying TIH materials; (3) reducing the number of unattended loaded tank cars carrying TIH materials; and (4) cooperation with federal, state, local, and tribal governments to identify those locations where security risks are the highest.

We also operate six facilities that are under U.S. Coast Guard (USCG) Maritime Security Regulations. With respect to these facilities, each facility's security plan has been approved by the applicable Captain of the Port and remains subject to inspection by the USCG.

Additionally, we continue to engage in close and regular coordination with numerous federal and state agencies, including the U.S. Department of Homeland Security (DHS), the Transportation Security Administration, the Federal Bureau of Investigation, the Federal Railroad Administration (FRA), the USCG, U.S. Customs and Border Protection, the Department of Defense, and various state Homeland Security offices.

In 2019, through the Norfolk Southern Operation Awareness and Response Program as well as participation in the Transportation Community Awareness and Emergency Response Program, we provided rail accident response training to approximately 5,700 emergency responders, such as local police and fire personnel. Our other training efforts throughout 2019 included participation in tabletop and full scale exercises for local, state, and federal agencies. We also have ongoing programs to sponsor local emergency responders at the Security and Emergency Response Training Course conducted at the AAR Transportation Technology Center in Pueblo, Colorado.

We also continually evaluate ourselves for appropriate business continuity and disaster recovery planning, with test scenarios that include cybersecurity attacks. Our risk-based information security program helps ensure our defenses and resources are aligned to address the most likely and most damaging potential attacks, to provide support for our organizational mission and operational objectives, and to keep us in the best position to detect, mitigate, and recover from a wide variety of potential attacks in a timely fashion.

Item 1A. Risk Factors

The risks set forth in the following risk factors could have a materially adverse effect on our financial position, results of operations, or liquidity in a particular year or quarter, and could cause those results to differ materially from those expressed or implied in our forward-looking statements. The information set forth in this Item 1A "Risk Factors" should be read in conjunction with the rest of the information included in this annual report, including Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" and Item 8 "Financial Statements and Supplementary Data."

Significant governmental legislation and regulation over commercial, operating and environmental matters could affect us, our customers, and the markets we serve. Congress can enact laws that could increase economic regulation of the industry. Railroads presently are subject to commercial regulation by the STB, which has jurisdiction to varying extents over rates, routes, customer access provisions, fuel surcharges, conditions of service, and the extension or abandonment of rail lines. The STB also has jurisdiction over the consolidation, merger, or acquisition of control of and by rail common carriers. Additional economic regulation of the rail industry by Congress or the STB, whether under new or existing laws, could have a significant negative impact on our ability to negotiate prices for rail services, on railway operating revenues, and on the efficiency of our operations. This potential material adverse effect could also result in reduced capital spending on our rail network or abandonment of lines.

Railroads are also subject to the enactment of laws by Congress and regulation by the DOT and the DHS, which regulate most aspects of our operations related to safety and security. The Rail Safety Improvement Act of 2008, the Surface Transportation Extension Act of 2015, and the implementing regulations promulgated by the FRA (collectively "the PTC laws and regulations") require us (and each other Class I railroad) to implement, on certain mainline track where intercity and commuter passenger railroads operate and where TIH hazardous materials are

transported, an interoperable positive train control system (PTC). PTC is a set of highly advanced technologies designed to prevent train-to-train collisions, speed-related derailments, and certain other accidents caused by human error, but PTC will not prevent all types of train accidents or incidents. We met the deadline under the PTC laws and regulations to install all hardware and to implement PTC on some of those rail lines, and we are required to fully implement PTC on the remainder of those rail lines by December 31, 2020. In addition, other railroads' implementation schedules could impose additional interoperability requirements and accelerated timelines on us, which could impact our operations over other railroads if not met.

Full implementation of PTC will result in additional operating costs and capital expenditures, and PTC implementation may result in reduced operational efficiency and service levels, as well as increased compensation and benefits expenses, and increased claims and litigation costs.

Our operations are subject to extensive federal and state environmental laws and regulations concerning, among other things, emissions to the air; discharges to waterways or groundwater supplies; handling, storage, transportation, and disposal of waste and other materials; and the cleanup of hazardous material or petroleum releases. The risk of incurring environmental liability, for acts and omissions, past, present, and future, is inherent in the railroad business. This risk includes property owned by us, whether currently or in the past, that is or has been subject to a variety of uses, including our railroad operations and other industrial activity by past owners or our past and present tenants.

Environmental problems that are latent or undisclosed may exist on these properties, and we could incur environmental liabilities or costs, the amount and materiality of which cannot be estimated reliably at this time, with respect to one or more of these properties. Moreover, lawsuits and claims involving other unidentified environmental sites and matters are likely to arise from time to time.

Concern over climate change has led to significant federal, state, and international legislative and regulatory efforts to limit greenhouse gas (GHG) emissions. Restrictions, caps, taxes, or other controls on GHG emissions, including diesel exhaust, could significantly increase our operating costs, decrease the amount of traffic handled, and decrease the value of coal reserves we own.

In addition, legislation and regulation related to GHGs could negatively affect the markets we serve and our customers. Even without legislation or regulation, government incentives and adverse publicity relating to GHGs could negatively affect the markets for certain of the commodities we carry and our customers that (1) use commodities that we carry to produce energy, including coal, (2) use significant amounts of energy in producing or delivering the commodities we carry, or (3) manufacture or produce goods that consume significant amounts of energy.

As a common carrier by rail, we must offer to transport hazardous materials, regardless of risk.

Transportation of certain hazardous materials could create catastrophic losses in terms of personal injury and property (including environmental) damage, and compromise critical parts of our rail network. The cost of a catastrophic rail accident involving hazardous materials could exceed our insurance coverage. We have obtained insurance for potential losses for third-party liability and first-party property damages (see Note 17 to the Consolidated Financial Statements); however, insurance is available from a limited number of insurers and may not continue to be available or, if available, may not be obtainable on terms acceptable to us.

We may be affected by general economic conditions. Prolonged negative changes in domestic and global economic conditions could affect the producers and consumers of the commodities we carry. Economic conditions could also result in bankruptcies of one or more large customers.

Significant increases in demand for rail services could result in the unavailability of qualified personnel and locomotives. In addition, workforce demographics and training requirements, particularly for engineers and conductors, could have a negative impact on our ability to meet short-term demand for rail service. Unpredicted increases in demand for rail services may exacerbate such risks.

We may be affected by energy prices. Volatility in energy prices could have a significant effect on a variety of items including, but not limited to: the economy; demand for transportation services; business related to the energy sector, including crude oil, natural gas, and coal; fuel prices; and fuel surcharges.

We face competition from other transportation providers. We are subject to competition from motor carriers, railroads and, to a lesser extent, ships, barges, and pipelines, on the basis of transit time, pricing, and quality and reliability of service. While we have used primarily internal resources to build or acquire and maintain our rail system, trucks and barges have been able to use public rights-of-way maintained by public entities. Any future improvements, expenditures, legislation, or regulation materially increasing the quality or reducing the cost of alternative modes of transportation in the regions in which we operate (such as granting materially greater latitude for motor carriers with respect to size or weight limitations or adoption of autonomous commercial vehicles) could have a material adverse effect on our operations.

The operations of carriers with which we interchange may adversely affect our operations. Our ability to provide rail service to customers in the U.S. and Canada depends in large part upon our ability to maintain collaborative relationships with connecting carriers (including shortlines and regional railroads) with respect to, among other matters, freight rates, revenue division, car supply and locomotive availability, data exchange and communications, reciprocal switching, interchange, and trackage rights. Deterioration in the operations of or service provided by connecting carriers, or in our relationship with those connecting carriers, could result in our inability to meet our customers' demands or require us to use alternate train routes, which could result in significant additional costs and network inefficiencies. Additionally, any significant consolidations, mergers or operational changes among other railroads may significantly redefine our market access and reach.

We rely on technology and technology improvements in our business operations. If we experience significant disruption or failure of one or more of our information technology systems, including computer hardware, software, and communications equipment, we could experience a service interruption, a security breach, or other operational difficulties. We also face cybersecurity threats which may result in breaches of systems, or compromises of sensitive data, which may result in an inability to access or operate systems necessary for conducting operations and providing customer service, thereby impacting our efficiency and/or damaging our corporate reputation. Additionally, if we do not have sufficient capital to acquire new technology or we are unable to implement new technology, we may suffer a competitive disadvantage within the rail industry and with companies providing other modes of transportation service.

The vast majority of our employees belong to labor unions, and labor agreements, strikes, or work stoppages could adversely affect our operations. Approximately 80% of our railroad employees are covered by collective bargaining agreements with various labor unions. If unionized workers were to engage in a strike, work stoppage, or other slowdown, we could experience a significant disruption of our operations. Additionally, future national labor agreements, or renegotiation of labor agreements or provisions of labor agreements, could significantly increase our costs for health care, wages, and other benefits.

We may be subject to various claims and lawsuits that could result in significant expenditures. The nature of our business exposes us to the potential for various claims and litigation related to labor and employment, personal injury, commercial disputes, freight loss and other property damage, and other matters. Job-related personal injury and occupational claims are subject to the Federal Employer's Liability Act (FELA), which is applicable only to railroads. FELA's fault-based tort system produces results that are unpredictable and inconsistent as compared with a no-fault worker's compensation system. The variability inherent in this system could result in actual costs being different from the liability recorded.

Any material changes to current litigation trends or a catastrophic rail accident involving any or all of freight loss, property damage, personal injury, and environmental liability could have a material adverse effect on us to the extent not covered by insurance. We have obtained insurance for potential losses for third-party liability and first-party property damages; however, insurance is available from a limited number of insurers and may not continue to be available or, if available, may not be obtainable on terms acceptable to us.

Severe weather could result in significant business interruptions and expenditures. Severe weather conditions and other natural phenomena, including hurricanes, floods, fires, and earthquakes, may cause significant business interruptions and result in increased costs, increased liabilities, and decreased revenues.

We may be affected by terrorism or war. Any terrorist attack, or other similar event, any government response thereto, and war or risk of war could cause significant business interruption. Because we play a critical role in the nation's transportation system, we could become the target of such an attack or have a significant role in the government's preemptive approach or response to an attack or war.

Although we currently maintain insurance coverage for third-party liability arising out of war and acts of terrorism, we maintain only limited insurance coverage for first-party property damage and damage to property in our care, custody, or control caused by certain acts of terrorism. In addition, premiums for some or all of our current insurance programs covering these losses could increase dramatically, or insurance coverage for certain losses could be unavailable to us in the future.

We may be affected by supply constraints resulting from disruptions in the fuel markets or the nature of some of our supplier markets. We consumed approximately 451 million gallons of diesel fuel in 2019. Fuel availability could be affected by any limitation in the fuel supply or by any imposition of mandatory allocation or rationing regulations. A severe fuel supply shortage arising from production curtailments, increased demand in existing or emerging foreign markets, disruption of oil imports, disruption of domestic refinery production, damage to refinery or pipeline infrastructure, political unrest, war or other factors could impact us as well as our customers and other transportation companies.

Due to the capital intensive nature, as well as the industry-specific requirements of the rail industry, high barriers of entry exist for potential new suppliers of core railroad items, such as locomotives and rolling stock equipment. Additionally, we compete with other industries for available capacity and raw materials used in the production of locomotives and certain track and rolling stock materials. Changes in the competitive landscapes of these limited supplier markets could result in increased prices or significant shortages of materials.

The state of capital markets could adversely affect our liquidity. We rely on the capital markets to provide some of our capital requirements, including the issuance of debt instruments, as well as the sale of certain receivables. Significant instability or disruptions of the capital markets, including the credit markets, or deterioration of our financial position due to internal or external factors could restrict or eliminate our access to, and/or significantly increase the cost of, various financing sources, including bank credit facilities and issuance of corporate bonds. Instability or disruptions of the capital markets and deterioration of our financial position, alone or in combination, could also result in a reduction in our credit rating to below investment grade, which could prohibit or restrict us from accessing external sources of short- and long-term debt financing and/or significantly increase the associated costs.

Item 1B. Unresolved Staff Comments

None.

Item 3. Legal Proceedings

In 2007, various antitrust class actions filed against us and other Class I railroads in various Federal district courts regarding fuel surcharges were consolidated in the District of Columbia by the Judicial Panel on Multidistrict Litigation. In 2012, the court certified the case as a class action. The defendant railroads appealed this certification, and the Court of Appeals for the District of Columbia vacated the District Court's decision and remanded the case for further consideration. On October 10, 2017, the District Court denied class certification. The decision was upheld by the Court of Appeals on August 16, 2019. Since that decision, various individual cases have been filed in multiple jurisdictions. We believe the allegations in the complaints are without merit and intend to vigorously defend the cases. We do not believe the outcome of these proceedings will have a material effect on our financial position, results of operations, or liquidity.

Item 4. Mine Safety Disclosures

Not applicable.

Information About Our Executive Officers

Our executive officers generally are elected and designated annually by the Board of Directors at its first meeting held after the annual meeting of stockholders, and they hold office until their successors are elected. Executive officers also may be elected and designated throughout the year as the Board of Directors considers appropriate. There are no family relationships among our officers, nor any arrangement or understanding between any officer and any other person pursuant to which the officer was selected. The following table sets forth certain information, at February 1, 2020, relating to our officers.

Name, Age, Present Position	Business Experience During Past Five Years
James A. Squires, 58, Chairman, President and Chief Executive Officer	Present position since October 1, 2015. Served as CEO since June 1, 2015. Served as President since June 1, 2013.
Ann A. Adams, 49, Executive Vice President and Chief Transformation Officer	Present position since April 1, 2019. Served as Vice President Human Resources from April 1, 2016 to April 1, 2019. Served as Assistant Vice President Human Resources from July 1, 2012 to April 1, 2016.
Mark R. George, 52, Executive Vice President – Finance and Chief Financial Officer	Present position since November 1, 2019. Prior to joining Norfolk Southern, served as Vice President, Finance and Chief Financial Officer at segments of United Technologies Corporation. The positions were Vice President Finance, Strategy, IT and Chief Financial Officer at Otis Elevator Company from October 2015 to May 2019, and Vice President Finance and Chief Financial Officer at Carrier Corporation from September 2008 until September 2015, and again June 2019 until joining Norfolk Southern.
John M. Scheib, 48, Executive Vice President and Chief Strategy Officer	Present position since April 1, 2019. Served as Executive Vice President – Law and Administration and Chief Legal Officer from March 1, 2018 to April 1, 2019. Served as Senior Vice President Law and Corporate Relations from October 1, 2017, to March 1, 2018. Served as Vice President Law from December 1, 2016, to October 1, 2017. Served as General Counsel from August 16, 2010, to December 1, 2016.
Alan H. Shaw, 52, Executive Vice President and Chief Marketing Officer	Present position since May 16, 2015. Served as Vice President Intermodal Operations from November 1, 2013 to May 16, 2015.
Michael J. Wheeler, 57, Executive Vice President and Chief Operating Officer	Present position since February 1, 2016. Served as Senior Vice President Operations from October 1, 2015 to February 1, 2016. Served as Vice President Engineering from November 1, 2012 to October 1, 2015.
Jason A. Zampi, 45, Vice President and Controller	Present position since December 16, 2018. Served as Assistant Vice President Corporate Accounting from April 1, 2016 to December 16, 2018. Served as Director Accounting Research and Analysis from May 1, 2014 to April 1, 2016.

PART II

NORFOLK SOUTHERN CORPORATION AND SUBSIDIARIES

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

STOCK INFORMATION

Common Stock is owned by 23,273 stockholders of record as of December 31, 2019, and is traded on the New York Stock Exchange under the symbol "NSC."

ISSUER PURCHASES OF EQUITY SECURITIES

<u>Period</u>	<u>Total Number of Shares (or Units) Purchased⁽¹⁾</u>	<u>Average Price Paid per Share (or Unit)</u>	<u>Total Number of Shares (or Units) Purchased as Part of Publicly Announced Plans or Programs⁽²⁾</u>	<u>Maximum Number (or Approximate Dollar Value) of Shares (or Units) that may yet be Purchased under the Plans or Programs⁽²⁾</u>
October 1-31, 2019	1,024,028	\$ 178.89	1,020,083	29,956,368
November 1-30, 2019	923,726	192.84	922,109	29,034,259
December 1-31, 2019	987,478	191.40	987,478	28,046,781
Total	<u>2,935,232</u>		<u>2,929,670</u>	

⁽¹⁾ Of this amount, 5,562 represents shares tendered by employees in connection with the exercise of stock options under the stockholder-approved Long-Term Incentive Plan.

⁽²⁾ On September 26, 2017, our Board of Directors authorized the repurchase of up to an additional 50 million shares of Common Stock through December 31, 2022. As of December 31, 2019, 28.0 million shares remain authorized for repurchase.

Item 6. Selected Financial Data**FIVE-YEAR FINANCIAL REVIEW**

	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
	<i>(\$ in millions, except per share amounts)</i>				
RESULTS OF OPERATIONS					
Railway operating revenues	\$ 11,296	\$ 11,458	\$ 10,551	\$ 9,888	\$ 10,511
Railway operating expenses	7,307	7,499	7,029	6,879	7,656
Income from railway operations	3,989	3,959	3,522	3,009	2,855
Other income – net	106	67	156	136	132
Interest expense on debt	604	557	550	563	545
Income before income taxes	3,491	3,469	3,128	2,582	2,442
Income taxes	769	803	(2,276)	914	886
Net income	<u>\$ 2,722</u>	<u>\$ 2,666</u>	<u>\$ 5,404</u>	<u>\$ 1,668</u>	<u>\$ 1,556</u>
PER SHARE DATA					
Basic earnings per share	\$ 10.32	\$ 9.58	\$ 18.76	\$ 5.66	\$ 5.13
Diluted earnings per share	10.25	9.51	18.61	5.62	5.10
Dividends	3.60	3.04	2.44	2.36	2.36
Stockholders' equity at year-end	58.87	57.30	57.57	42.73	40.93
FINANCIAL POSITION					
Total assets	\$ 37,923	\$ 36,239	\$ 35,711	\$ 34,892	\$ 34,139
Total debt	12,196	11,145	9,836	10,212	10,093
Stockholders' equity	15,184	15,362	16,359	12,409	12,188
OTHER					
Property additions	\$ 2,019	\$ 1,951	\$ 1,723	\$ 1,887	\$ 2,385
<hr/>					
Average number of shares outstanding (thousands)	263,270	277,708	287,861	293,943	301,873
Number of stockholders at year-end	23,273	24,475	25,737	27,288	28,443
Average number of employees:					
Rail	24,442	26,512	26,955	27,856	30,057
Nonrail	145	150	155	188	399
Total	<u>24,587</u>	<u>26,662</u>	<u>27,110</u>	<u>28,044</u>	<u>30,456</u>

Note 1: In 2017, as a result of the enactment of tax reform, “Railway operating expenses” included a \$151 million benefit and “Income taxes” included a \$3,331 million benefit, which added \$3,482 million to “Net income” and \$12.00 to “Diluted earnings per share.”

Note 2: On January 1, 2019, we adopted Financial Accounting Standards Board (FASB) Accounting Standards Update (ASU) 2016-02, “Leases (Topic 842),” which requires lessees to recognize right-of-use (ROU) assets and lease liabilities on the balance sheet for leases greater than twelve months. As a result of the adoption, the Consolidated Balance Sheets at December 31, 2019 includes the recognition of ROU assets of \$539 million and corresponding lease liabilities of \$538 million.

See accompanying consolidated financial statements and notes thereto.

Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations

Norfolk Southern Corporation and Subsidiaries

The following discussion and analysis should be read in conjunction with the Consolidated Financial Statements and Notes.

OVERVIEW

We are one of the nation’s premier transportation companies. Our Norfolk Southern Railway Company subsidiary operates approximately 19,500 route miles in 22 states and the District of Columbia, serves every major container port in the eastern United States, and provides efficient connections to other rail carriers. Norfolk Southern is a major transporter of industrial products, including chemicals, agriculture, and metals and construction materials. In addition, we operate the most extensive intermodal network in the East and are a principal carrier of coal, automobiles, and automotive parts.

The execution of the initiatives in our strategic plan allowed us to achieve records for income from railway operations and railway operating ratio (a measure of the amount of operating revenues consumed by operating expenses) for the year. We continued our focus on improving the efficiency of our operations and utilization of our assets, allowing us to reduce our operating expenses by 3% in the face of a 1% revenue decline.

SUMMARIZED RESULTS OF OPERATIONS

	2019	2018	2017	2019	2018
	vs. 2018	vs. 2017			
	<i>(\$ in millions, except per share amounts)</i>			<i>(% change)</i>	
Income from railway operations	\$ 3,989	\$ 3,959	\$ 3,522	1%	12%
Net income	\$ 2,722	\$ 2,666	\$ 5,404	2%	(51%)
Diluted earnings per share	\$ 10.25	\$ 9.51	\$ 18.61	8%	(49%)
Railway operating ratio (percent)	64.7	65.4	66.6	(1%)	(2%)

Income from railway operations rose in 2019 as a 3% reduction in railway operating expenses more than offset the impact of a 1% decline in railway operating revenues. In addition to higher income from railway operations, net income and diluted earnings per share growth in 2019 also benefited from a lower effective tax rate. Our continuing share repurchase program contributed to diluted earnings per share growth that exceeded that of net income.

On December 22, 2017, the Tax Cuts and Jobs Act (“tax reform”) was signed into law. The following table adjusts our 2017 U.S. Generally Accepted Accounting Principles (GAAP) financial results to exclude the effects of tax reform, specifically, the effects of remeasurement of net deferred tax liabilities related to the reduction of the federal tax rate from 35% to 21% (the “2017 tax adjustments”). We use these non-GAAP financial measures internally and believe this information provides useful supplemental information to investors to facilitate making period-to-period comparisons by excluding the 2017 tax adjustments. While we believe that these non-GAAP financial measures are useful in evaluating our business, this information should be considered as supplemental in nature and is not meant to be considered in isolation or as a substitute for the related financial information prepared in accordance with GAAP. In addition, these non-GAAP financial measures may not be the same as similar measures presented by other companies.

Reconciliation of Non-GAAP Financial Measures

	Reported 2017 (GAAP)	2017 tax adjustments	Adjusted 2017 (non-GAAP)
	<i>(\$ in millions, except per share amounts)</i>		
Income from railway operations	\$ 3,522	\$ (151)	\$ 3,371
Net income	\$ 5,404	\$ (3,482)	\$ 1,922
Diluted earnings per share	\$ 18.61	\$ (12.00)	\$ 6.61
Railway operating ratio (percent)	66.6	1.5	68.1

In the table below and the paragraph following, references to 2017 results and related comparisons use the adjusted, non-GAAP results from the reconciliation in the table above.

	2019	2018	Adjusted 2017 (non-GAAP)	2019 vs. 2018	2018 vs. Adjusted 2017 (non-GAAP)
	<i>(\$ in millions, except per share amounts)</i>			<i>(% change)</i>	
Income from railway operations	\$ 3,989	\$ 3,959	\$ 3,371	1%	17%
Net income	\$ 2,722	\$ 2,666	\$ 1,922	2%	39%
Diluted earnings per share	\$ 10.25	\$ 9.51	\$ 6.61	8%	44%
Railway operating ratio (percent)	64.7	65.4	68.1	(1%)	(4%)

Income from railway operations increased in 2018 as compared to 2017, as a 9% increase in railway operating revenues more than offset a 4% increase in adjusted operating expenses. In addition to higher income from railway operations, net income and diluted earnings per share growth in 2018 also benefited from a lower effective tax rate, primarily due to the enactment of tax reform. Finally, our share repurchase program resulted in diluted earnings per share growth that exceeded that of net income.

DETAILED RESULTS OF OPERATIONS

Railway Operating Revenues

The following tables present a three-year comparison of revenues, volumes (units), and average revenue per unit by major commodity group. At the beginning of 2019, we made changes in the categorization of certain commodity groups within Merchandise. Prior period railway operating revenues, units, and revenue per unit have been reclassified to conform to the current presentation (see Note 2).

	Revenues			2019	2018
	2019	2018	2017	vs. 2018	vs. 2017
	(\$ in millions)			(% change)	
Merchandise:					
Chemicals	\$ 1,874	\$ 1,858	\$ 1,710	1%	9%
Agriculture products	1,567	1,514	1,416	4%	7%
Metals and construction	1,522	1,539	1,481	(1%)	4%
Automotive	994	991	955	—%	4%
Forest and consumer	846	842	795	—%	6%
Merchandise	6,803	6,744	6,357	1%	6%
Intermodal	2,824	2,893	2,452	(2%)	18%
Coal	1,669	1,821	1,742	(8%)	5%
Total	\$ 11,296	\$ 11,458	\$ 10,551	(1%)	9%

	Units			2019	2018
	2019	2018	2017	vs. 2018	vs. 2017
	(in thousands)			(% change)	
Merchandise:					
Chemicals	514.9	523.3	488.6	(2%)	7%
Agriculture products	528.5	538.9	524.8	(2%)	3%
Metals and construction	721.3	759.7	761.2	(5%)	—%
Automotive	394.7	403.9	423.1	(2%)	(5%)
Forest and consumer	273.0	293.3	293.7	(7%)	—%
Merchandise	2,432.4	2,519.1	2,491.4	(3%)	1%
Intermodal	4,207.2	4,375.7	4,074.1	(4%)	7%
Coal	914.0	1,033.5	1,046.0	(12%)	(1%)
Total	7,553.6	7,928.3	7,611.5	(5%)	4%

	Revenue per Unit			2019	2018
	2019	2018	2017	vs. 2018	vs. 2017
	(\$ per unit)			(% change)	
Merchandise:					
Chemicals	\$ 3,640	\$ 3,551	\$ 3,501	3%	1%
Agriculture products	2,964	2,809	2,697	6%	4%
Metals and construction	2,110	2,026	1,946	4%	4%
Automotive	2,517	2,453	2,257	3%	9%
Forest and consumer	3,101	2,870	2,706	8%	6%
Merchandise	2,797	2,677	2,552	4%	5%
Intermodal	671	661	602	2%	10%
Coal	1,826	1,762	1,665	4%	6%
Total	1,495	1,445	1,386	3%	4%

Revenues decreased \$162 million in 2019 but increased \$907 million in 2018 compared to the prior years. As reflected in the table below, lower 2019 revenues were the result of decreased volumes, partially offset by higher average revenue per unit, driven by pricing gains. The rise in 2018 revenues was the result of higher average revenue per unit, driven by pricing gains and higher fuel surcharge revenue, partially offset by the mix-related impacts of increased intermodal volume and decreased coal volume. In addition, overall volume also increased.

The table below reflects the components of the revenue change by major commodity group.

	2019 vs. 2018			2018 vs. 2017		
	Increase (Decrease)			Increase (Decrease)		
	<i>(\$ in millions)</i>					
	Merchandise	Intermodal	Coal	Merchandise	Intermodal	Coal
Volume	\$ (232)	\$ (111)	\$ (210)	\$ 71	\$ 182	\$ (21)
Fuel surcharge revenue	(14)	(30)	(35)	119	159	20
Rate, mix and other	305	72	93	197	100	80
Total	<u>\$ 59</u>	<u>\$ (69)</u>	<u>\$ (152)</u>	<u>\$ 387</u>	<u>\$ 441</u>	<u>\$ 79</u>

Approximately 90% of our revenue base is covered by contracts that include negotiated fuel surcharges. These revenues totaled \$578 million, \$657 million, and \$359 million in 2019, 2018, and 2017, respectively.

For 2020, merchandise and intermodal revenues are expected to increase, while coal revenues are anticipated to decline, resulting in overall revenues that are expected to be flat.

MERCHANDISE revenues increased in both 2019 and 2018 compared with the prior years. In 2019, revenues grew due to higher average revenue per unit, driven by pricing gains, which were partially offset by volume declines in all commodity groups. In 2018, revenues grew due to higher average revenue per unit, driven by pricing gains and higher fuel surcharge revenue, as well as higher volumes. Volume gains in chemicals and agriculture products were partially offset by declines in automotive traffic.

Chemicals revenues rose in both 2019 and 2018 compared with the prior years. In 2019, the rise was the result of higher average revenue per unit, due to pricing gains, which were partially offset by volume declines. Volume declines in natural gas, petroleum products, organic and inorganic chemicals, and plastics were partially offset by gains in crude oil and municipal waste. In 2018, the rise was the result of higher volume and higher average revenue per unit, due to pricing gains and higher fuel surcharge revenue. Volumes grew due to increased shipments of crude oil, liquefied petroleum gas, plastics, and municipal waste shipments, partially offset by a decrease in coal ash shipments.

Agriculture products revenues rose in both 2019 and 2018 compared to the prior years. Growth in 2019 was due to higher average revenue per unit, a result of pricing gains, which more than offset volume declines. Volumes were down due to decreased shipments of ethanol, soybeans, and fertilizer, partially offset by increases in corn shipments. Growth in 2018 was due to higher average revenue per unit, a result of pricing gains and higher fuel surcharge revenues, and higher volume. Higher ethanol and fertilizer shipments more than offset declines in soybean and corn shipments.

Metals and construction revenues declined in 2019 but increased in 2018 compared to the prior years. In 2019, volume declines were largely offset by higher average revenue per unit, the result of pricing gains. Volume declines in iron and steel, coil, sand, and scrap metal were partially offset by increases in aggregates shipments due to improved service and market strength. In 2018, higher average revenue per unit, the result of pricing gains and

higher fuel surcharge revenue, drove the increase while volumes remained flat. Volume increases in frac sand shipments for use in natural gas drilling in the Marcellus and Utica regions were offset by declines in aggregates, cement, aluminum, and iron and steel.

Automotive revenues were flat in 2019 and increased in 2018 compared to the prior years. In 2019, higher average revenue per unit, driven by price increases, offset volume declines that were primarily the result of decreases in U.S. light vehicle production and the United Automobile Workers strike in the fourth quarter. In 2018, higher average revenue per unit, driven by price increases and higher fuel surcharge revenues, more than offset volume declines. Traffic declines were the result of shortages of availability of multilevel equipment and scheduled automotive plant downtime.

Forest and consumer revenues were flat in 2019 and increased in 2018 compared to the prior years. In 2019, higher average revenue per unit, the result of pricing gains, offset volume declines. Volume declines were primarily driven by reduced shipments of pulpboard, lumber and wood, and kaolin. In 2018, higher average revenue per unit, the result of pricing gains and higher fuel surcharge revenue drove the increase while volumes remained flat. Gains in pulpboard, a result of tightened truck capacity, were offset by decreases in pulp, woodchip, and graphic paper.

INTERMODAL revenues decreased in 2019, but increased considerably in 2018 compared to the prior years. The decline in 2019 was driven by lower volumes, which were partially offset by higher average revenue per unit, a result of pricing gains. The rise in 2018 was driven by higher average revenue per unit, a result of increased fuel surcharge revenue and pricing gains, and higher volume.

Intermodal units by market were as follows:

	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
	<i>(units in thousands)</i>			<i>(% change)</i>	
Domestic	2,593.5	2,801.1	2,585.0	(7%)	8%
International	1,613.7	1,574.6	1,489.1	2%	6%
Total	<u>4,207.2</u>	<u>4,375.7</u>	<u>4,074.1</u>	(4%)	7%

Domestic volume fell in 2019 but increased in 2018. Volume was challenged in 2019 by stronger over-the-road competition. The rise in 2018 benefited from continued highway conversions due to tighter capacity in the truck market, higher truckload pricing, and growth from existing accounts.

International volume increased in both periods reflecting increased demand from new and existing customers, despite 2019 volume being somewhat tempered by tariff concerns.

COAL revenues decreased in 2019, but increased in 2018 compared with the prior years. The decrease in 2019 was a result of lower volume, which was partially offset by higher average revenue per unit, driven by pricing gains. Revenue growth in 2018 was the result of higher average revenue per unit, largely the result of pricing gains, which more than offset volume declines.

As shown in the following table, total tonnage decreased in both periods.

	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
	<i>(tons in thousands)</i>			<i>(% change)</i>	
Utility	60,278	65,688	67,899	(8%)	(3%)
Export	23,324	28,046	26,460	(17%)	6%
Domestic metallurgical	13,562	15,500	15,675	(13%)	(1%)
Industrial	4,655	5,410	5,545	(14%)	(2%)
Total	101,819	114,644	115,579	(11%)	(1%)

Utility coal tonnage declined in both periods from continued headwinds from low natural gas prices as well as additional natural gas and renewable energy generating capacity, that were slightly offset by our service improvements and customer inventory rebuilding.

Export coal tonnage decreased in 2019 but increased in 2018. The decline in 2019 was a result of weak thermal seaborne pricing and coal supply disruptions at certain mines. The increase in 2018 was due to strong seaborne pricing that resulted in higher demand for U.S. coal.

Domestic metallurgical coal tonnage was down in both years. The decline in 2019 was a reflection of challenging overall market conditions including softening domestic steel demand, customer sourcing changes, and plant outages. The decline in 2018 was a reflection of customer sourcing changes.

Industrial coal tonnage decreased in both years driven by customer sourcing changes and pressure from natural gas conversions.

Railway Operating Expenses

Railway operating expenses summarized by major classifications were as follows:

	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
	<i>(\$ in millions)</i>			<i>(% change)</i>	
Compensation and benefits	\$ 2,751	\$ 2,925	\$ 2,979	(6%)	(2%)
Purchased services and rents	1,725	1,730	1,414	—%	22%
Fuel	953	1,087	840	(12%)	29%
Depreciation	1,138	1,102	1,055	3%	4%
Materials and other	740	655	741	13%	(12%)
Total	\$ 7,307	\$ 7,499	\$ 7,029	(3%)	7%

In 2019, expenses fell as our strategic initiatives to improve productivity resulted in lower compensation, equipment rents, and materials expense. These decreases along with lower fuel prices and consumption were partially offset by lower gains on property sales, increased depreciation, and a write-off of a \$32 million receivable as a result of a legal dispute. In 2018, expenses rose due to higher fuel prices as well as volume-related increases and costs associated with overall lower network velocity, partially offset by higher gains on property sales.

Compensation and benefits decreased in 2019, reflecting changes in:

- employment levels (down \$117 million),
- incentive and stock-based compensation (down \$83 million),
- overtime and reworks (down \$45 million),
- higher capitalized labor (\$9 million),
- 2018 employment tax refund (\$31 million unfavorable in 2019),
- pay rates (up \$76 million), and
- other (down \$27 million).

In 2018, compensation and benefits decreased, a result of changes in:

- employment levels (down \$61 million),
- health and welfare benefit rates for agreement employees (down \$34 million),
- employment tax refund (\$31 million benefit),
- incentive and stock-based compensation (down \$7 million),
- pay rates (up \$34 million),
- overtime and reworks (up \$58 million), and
- other (down \$13 million).

Our employment averaged 24,587 in 2019, compared with 26,662 in 2018, and 27,110 in 2017.

Purchased services and rents includes the costs of services purchased from outside contractors, including the net costs of operating joint (or leased) facilities with other railroads and the net cost of equipment rentals. In 2017, this line item includes a \$151 million benefit from the 2017 tax adjustments (\$36 million in purchased services and \$115 million in equipment rents) in the form of higher income of certain equity investees.

	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2019</u> <u>vs. 2018</u>	<u>2018</u> <u>vs. 2017</u>
	<i>(\$ in millions)</i>			<i>(% change)</i>	
Purchased services	\$ 1,434	\$ 1,367	\$ 1,233	5%	11%
Equipment rents	291	363	181	(20%)	101%
Total	<u>\$ 1,725</u>	<u>\$ 1,730</u>	<u>\$ 1,414</u>	—%	22%

The increase in purchased services in 2019 was the result of increased technology-related expenses, expenses associated with our headquarters relocation, and increased intermodal-related costs partially offset by decreased transportation activities. The increase in purchased services in 2018 was largely the result of the absence of the benefit from the 2017 tax adjustments, higher intermodal volume-related costs, additional transportation and engineering activities as well as higher technology costs.

Equipment rents, which includes our cost of using equipment (mostly freight cars) owned by other railroads or private owners less the rent paid to us for the use of our equipment, decreased in 2019, but increased in 2018. In 2019, the decrease was largely due to improved network velocity and the absence of short-term locomotive resource costs incurred in the prior year. In 2018, the rise was due to the absence of the benefits from the 2017 tax adjustments, the impact of slower network velocity, the cost of additional short-term locomotive resources as well as growth in volume.

Fuel expense, which includes the cost of locomotive fuel as well as other fuel used in railway operations, decreased in 2019, but increased in 2018. The change in both years was principally due to locomotive fuel prices (down 8% in 2019 and up 25% in 2018) which decreased expenses \$82 million in 2019 but increased expenses \$208 million in 2018. Locomotive fuel consumption decreased 4% in 2019, but increased 3% in 2018. We consumed

approximately 451 million gallons of diesel fuel in 2019, compared with 472 million gallons in 2018 and 458 million gallons in 2017.

Depreciation expense increased in both periods, a reflection of growth in our roadway and equipment capital base as we continue to invest in our infrastructure and rolling stock, and technology.

Materials and other expenses increased in 2019 but decreased in 2018 as shown in the following table.

	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
	<i>(\$ in millions)</i>			<i>(% change)</i>	
Materials	\$ 327	\$ 362	\$ 348	(10%)	4%
Casualties and other claims	193	176	145	10%	21%
Other	220	117	248	88%	(53%)
Total	\$ 740	\$ 655	\$ 741	13%	(12%)

Materials expense decreased in 2019, due primarily to lower locomotive repair costs as a result of fewer locomotives in service. In 2018, the increase was primarily a result of higher locomotive repair costs.

Casualties and other claims expenses include the estimates of costs related to personal injury, property damage, and environmental matters. The 2019 expense increased, primarily the result of higher costs related to environmental remediation matters and higher personal injury costs. The 2018 expense increased, primarily the result of higher derailment-related costs.

Other expense increased in 2019 but decreased in 2018, largely a result of gains from sales of operating properties. Gains from operating property sales amounted to \$64 million, \$158 million, and \$79 million in 2019, 2018, and 2017, respectively. In 2019, the increase was additionally impacted by the write-off of a \$32 million receivable as a result of a legal dispute. In 2018, the decline was also impacted by the inclusion of net rental income from operating property previously included in “Other income – net” of \$78 million, partially offset by increased costs as a result of the relocation of our train dispatchers to Atlanta, Georgia.

Other income – net

Other income – net increased in 2019 but decreased in 2018. The increase in 2019 was driven by higher returns on corporate-owned life insurance (COLI) investments and increased gains on sales of non-operating property, which more than offset a \$49 million impairment loss related to our natural resource assets that we are actively marketing to sell. The decline in 2018 was driven by the absence of net rental income as discussed above and unfavorable returns from COLI investments.

Income Taxes

The effective income tax rate was 22.0% in 2019, compared with 23.1% in 2018 and negative 72.8% in 2017. Both 2019 and 2018 benefited from favorable reductions in deferred taxes for state tax law changes and certain business tax credits, while 2019 and 2017 benefited from higher returns from COLI. Income taxes in 2018 benefited from the effects of the enactment of tax reform in late 2017 that lowered the federal corporate income tax rate. Income taxes in 2017 included a benefit of \$3,331 million related to the effects of the enactment of tax reform from the reduction in our net deferred tax liabilities driven by the change in the federal rate. All three years benefited from favorable tax benefits associated with stock-based compensation.

For 2020, we expect the effective income tax rate to range from 23% to 24%.

FINANCIAL CONDITION, LIQUIDITY, AND CAPITAL RESOURCES

Cash provided by operating activities, our principal source of liquidity, was \$3.9 billion in 2019, \$3.7 billion in 2018, and \$3.3 billion in 2017. The increases in both 2019 and 2018 were primarily the result of improved operating results. We had working capital deficits of \$219 million and \$729 million at December 31, 2019, and 2018, respectively. Cash, cash equivalents, and restricted cash totaled \$580 million and \$446 million at December 31, 2019, and 2018, respectively. We expect cash on hand combined with cash provided by operating activities will be sufficient to meet our ongoing obligations.

Contractual obligations at December 31, 2019, include interest on fixed-rate long-term debt, long-term debt (Note 9), unconditional purchase obligations (Note 17), operating leases (Note 10), long-term advances from Conrail and agreements with Consolidated Rail Corporation (CRC) (Note 6), and unrecognized tax benefits (Note 4):

	Total	2020	2021 - 2022	2023 - 2024	2025 and Subsequent	Other
	<i>(\$ in millions)</i>					
Interest on fixed-rate long-term debt	\$ 15,285	\$ 568	\$ 1,070	\$ 988	\$ 12,659	\$ —
Long-term debt principal	13,005	316	1,189	1,000	10,500	—
Unconditional purchase obligations	1,225	499	521	82	123	—
Operating leases	630	110	183	131	206	—
Long-term advances from Conrail	280	—	—	—	280	—
Agreements with CRC	176	40	80	56	—	—
Unrecognized tax benefits*	24	—	—	—	—	24
Total	\$ 30,625	\$ 1,533	\$ 3,043	\$ 2,257	\$ 23,768	\$ 24

* This amount is shown in the Other column because the year of settlement cannot be reasonably estimated.

Off balance sheet arrangements consist primarily of unrecognized obligations, including unconditional purchase obligations and future interest payments on fixed-rate long-term debt, which are included in the table above. In addition, we entered into a synthetic lease during 2019 which is discussed further in Note 10.

Cash used in investing activities was \$1.8 billion in 2019, compared with \$1.7 billion in 2018, and \$1.5 billion in 2017. In 2019, increased corporate owned life insurance activity and higher property additions were partially offset by increased proceeds from property sales. In 2018, higher property additions drove the increase.

Capital spending and track and equipment statistics can be found within the “Railway Property” section of Part I of this report on Form 10-K. For 2020, we expect capital spending to approximate 16% to 18% of revenues.

Cash used in financing activities was \$2.0 billion in 2019, compared with \$2.3 billion in 2018, and \$2.0 billion in 2017. Both year-over-year comparisons reflect higher debt repayments and increased dividends. In 2019, the decrease was also impacted by fewer repurchases of common stock. In 2018, the increase was also impacted by increased repurchases of common stock, but tempered by increased proceeds from borrowings.

Share repurchases totaled \$2.1 billion in 2019, \$2.8 billion in 2018, and \$1.0 billion in 2017 for the purchase and retirement of 11.3 million, 17.1 million (including 7.0 million shares repurchased for \$1.2 billion under the Accelerated Share Repurchase (ASR) program), and 8.2 million shares, respectively. As of December 31, 2019, 28.0 million shares remain authorized by our Board of Directors for repurchase. The timing and volume of future

share repurchases will be guided by our assessment of market conditions and other pertinent factors. Any near-term purchases under the program are expected to be made with internally generated cash, cash on hand, or proceeds from borrowings.

In May 2019, we issued \$200 million of 3.80% senior notes due 2028, \$400 million of 4.10% senior notes due 2049, and \$200 million of 5.10% senior notes due 2118. In November 2019, we issued \$400 million of 2.55% senior notes due 2029, and \$400 million of 3.40% senior notes due 2049.

In May 2019, we also renewed and amended our accounts receivable securitization program, increasing our maximum borrowing capacity from \$400 million to \$450 million with a term expiring in May 2020. We had no amounts outstanding at both December 31, 2019 and 2018.

We discuss our credit agreement and our accounts receivable securitization program in Note 9, and we have authority from our Board of Directors to issue an additional \$1.6 billion of debt or equity securities through public or private sale, all of which provide for access to additional liquidity should the need arise. Our debt-to-total capitalization ratio was 44.5% at December 31, 2019, compared with 42.0% at December 31, 2018.

Upcoming annual debt maturities are disclosed in Note 9. Overall, our goal is to maintain a capital structure with appropriate leverage to support our business strategy and provide flexibility through business cycles.

APPLICATION OF CRITICAL ACCOUNTING POLICIES

The preparation of financial statements in accordance with GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenue and expenses during the reporting period. These estimates and assumptions may require judgment about matters that are inherently uncertain, and future events are likely to occur that may require us to make changes to these estimates and assumptions. Accordingly, we regularly review these estimates and assumptions based on historical experience, changes in the business environment, and other factors we believe to be reasonable under the circumstances. The following critical accounting policies are a subset of our significant accounting policies described in Note 1.

Pensions and Other Postretirement Benefits

Accounting for pensions and other postretirement benefit plans requires us to make several estimates and assumptions (Note 12). These include the expected rate of return from investment of the plans' assets and the expected retirement age of employees as well as their projected earnings and mortality. In addition, the amounts recorded are affected by changes in the interest rate environment because the associated liabilities are discounted to their present value. We make these estimates based on our historical experience and other information that we deem pertinent under the circumstances (for example, expectations of future stock market performance). We utilize an independent actuarial consulting firm's studies to assist us in selecting appropriate actuarial assumptions and valuing related liabilities.

In recording our net pension benefit, we assumed a long-term investment rate of return of 8.25%, which was supported by the long-term total rate of return on plan assets since inception, as well as our expectation of future returns. A one-percentage point change to this rate of return assumption would result in a \$23 million change in pension expense. We review assumptions related to our defined benefit plans annually, and while changes are likely to occur in assumptions concerning retirement age, projected earnings, and mortality, they are not expected to have a material effect on our net pension expense or net pension liability in the future. The net pension liability is recorded at net present value using discount rates that are based on the current interest rate environment in light of the timing of expected benefit payments. We utilize analyses in which the projected annual cash flows from the pension and postretirement benefit plans are matched with yield curves based on an appropriate universe of high-quality corporate bonds. We use the results of the yield curve analyses to select the discount rates that match the payment streams of the benefits in these plans. A one-percentage point change to this discount rate assumption would result in about an \$18 million change in pension expense.

Properties and Depreciation

Most of our assets are long-lived railway properties (Note 7). “Properties” are stated principally at cost and are depreciated using the group method whereby assets with similar characteristics, use, and expected lives are grouped together in asset classes and depreciated using a composite depreciation rate. See Note 1 for a more detailed discussion of the assumptions and estimates in this area.

Expenditures, including those on leased assets, that extend an asset’s useful life or increase its utility are capitalized. Expenditures capitalized include those that are directly related to a capital project and may include materials, labor, and other direct costs, in addition to an allocable portion of indirect costs that relate to a capital project. A significant portion of our annual capital spending relates to the replacement of self-constructed assets. Costs related to repairs and maintenance activities that, in our judgment, do not extend an asset’s useful life or increase its utility are expensed when such repairs are performed.

Depreciation expense for 2019 totaled \$1.1 billion. Our composite depreciation rates for 2019 are disclosed in Note 7; a one year increase (or decrease) in the estimated average useful lives of depreciable assets would have resulted in an approximate \$40 million decrease (or increase) to depreciation expense.

Personal Injury

Casualties and other claims expense, included in “Materials and other” in the Consolidated Statements of Income, includes our accrual for personal injury liabilities.

To aid in valuing our personal injury liability and determining the amount to accrue with respect to such claims during the year, we utilize studies prepared by an independent consulting actuarial firm. The actuarial firm studies our historical patterns of reserving for claims and subsequent settlements, taking into account relevant outside influences. We adjust the liability quarterly based upon our assessment and the results of the study. Our estimate is subject to inherent limitation given the difficulty of predicting future events and as such the ultimate loss sustained may vary from the estimated liability recorded.

For a more detailed discussion of the assumptions and estimates in accounting for personal injury see Note 17.

Income Taxes

Our net deferred tax liability totaled \$6.8 billion at December 31, 2019 (Note 4). This liability is estimated based on the expected future tax consequences of items recognized in the financial statements. After application of the federal statutory tax rate to book income, judgment is required with respect to the timing and deductibility of expenses in our income tax returns. For state income and other taxes, judgment is also required with respect to the apportionment among the various jurisdictions. A valuation allowance is recorded if we expect that it is more likely than not that deferred tax assets will not be realized. We have a \$54 million valuation allowance on \$513 million of deferred tax assets as of December 31, 2019, reflecting the expectation that almost all of these assets will be realized.

OTHER MATTERS

Labor Agreements

Approximately 80% of our railroad employees are covered by collective bargaining agreements with various labor unions. Pursuant to the Railway Labor Act, these agreements remain in effect until new agreements are reached, or until the bargaining procedures mandated by the Railway Labor Act are completed. We largely bargain nationally in concert with other major railroads, represented by the National Carriers Conference Committee. Moratorium provisions in the labor agreements govern when the railroads and unions may propose changes to the agreements.

The next round of bargaining commenced on November 1, 2019 with both management and the unions serving their formal proposals for changes to the collective bargaining agreements.

Market Risks

At December 31, 2019, we had no outstanding debt subject to interest rate fluctuations. Market risk for fixed-rate debt is estimated as the potential increase in fair value resulting from a one percentage point decrease in interest rates as of December 31, 2019, and amounts to an increase of approximately \$2.1 billion to the fair value of our debt at December 31, 2019. We consider it unlikely that interest rate fluctuations applicable to these instruments will result in a material adverse effect on our financial position, results of operations, or liquidity.

New Accounting Pronouncements

For a detailed discussion of new accounting pronouncements, see Note 1.

Inflation

In preparing financial statements, GAAP requires the use of historical cost that disregards the effects of inflation on the replacement cost of property. As a capital-intensive company, we have most of our capital invested in long-lived assets. The replacement cost of these assets, as well as the related depreciation expense, would be substantially greater than the amounts reported on the basis of historical cost.

FORWARD-LOOKING STATEMENTS

Certain statements in Management’s Discussion and Analysis of Financial Condition and Results of Operations are “forward-looking statements” within the meaning of the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995, as amended. These statements relate to future events or our future financial performance and involve known and unknown risks, uncertainties, and other factors that may cause our actual results, levels of activity, performance, or our achievements or those of our industry to be materially different from those expressed or implied by any forward-looking statements. In some cases, forward-looking statements can be identified by terminology such as “may,” “will,” “could,” “would,” “should,” “expect,” “plan,” “anticipate,” “intend,” “believe,” “estimate,” “project,” “consider,” “predict,” “potential,” “feel,” or other comparable terminology. We have based these forward-looking statements on our current expectations, assumptions, estimates, beliefs, and projections. While we believe these expectations, assumptions, estimates, beliefs, and projections are reasonable, such forward-looking statements are only predictions and involve known and unknown risks and uncertainties, many of which involve factors or circumstances that are beyond our control. These and other important factors, including those discussed in Item 1A “Risk Factors,” may cause actual results, performance, or achievements to differ materially from those expressed or implied by these forward-looking statements. The forward-looking statements herein are made only as of the date they were first issued, and unless otherwise required by applicable securities laws, we disclaim any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

The information required by this item is included in Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” under the heading “Market Risks.”

Item 8. Financial Statements and Supplementary Data

INDEX TO FINANCIAL STATEMENTS

	Page
<u>Report of Management</u>	<u>K31</u>
<u>Reports of Independent Registered Public Accounting Firm</u>	<u>K32</u>
<u>Consolidated Statements of Income</u> <u>Years ended December 31, 2019, 2018, and 2017</u>	<u>K36</u>
<u>Consolidated Statements of Comprehensive Income</u> <u>Years ended December 31, 2019, 2018, and 2017</u>	<u>K37</u>
<u>Consolidated Balance Sheets</u> <u>At December 31, 2019 and 2018</u>	<u>K38</u>
<u>Consolidated Statements of Cash Flows</u> <u>Years ended December 31, 2019, 2018, and 2017</u>	<u>K39</u>
<u>Consolidated Statements of Changes in Stockholders' Equity</u> <u>Years ended December 31, 2019, 2018, and 2017</u>	<u>K40</u>
<u>Notes to Consolidated Financial Statements</u>	<u>K41</u>
<u>Index to Consolidated Financial Statement Schedule in Item 15</u>	<u>K79</u>

Report of Management

February 6, 2020

To the Stockholders
Norfolk Southern Corporation:

Management is responsible for establishing and maintaining adequate internal control over financial reporting. In order to ensure that Norfolk Southern Corporation's internal control over financial reporting is effective, management regularly assesses such controls and did so most recently as of December 31, 2019. This assessment was based on criteria for effective internal control over financial reporting described in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this assessment, management has concluded that the Corporation maintained effective internal control over financial reporting as of December 31, 2019.

KPMG LLP, independent registered public accounting firm, has audited the Corporation's financial statements and issued an attestation report on the Corporation's internal control over financial reporting as of December 31, 2019.

/s/ James A. Squires

James A. Squires
Chairman, President and
Chief Executive Officer

/s/ Mark R. George

Mark R. George
Executive Vice President – Finance
and Chief Financial Officer

/s/ Jason A. Zampi

Jason A. Zampi
Vice President and
Controller

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Norfolk Southern Corporation:

Opinion on Internal Control Over Financial Reporting

We have audited Norfolk Southern Corporation and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, cash flows, and changes in stockholders' equity for each of the years in the three-year period ended December 31, 2019, and the related notes and financial statement schedule of valuation and qualifying accounts as listed in Item 15(A)2 (collectively, the consolidated financial statements), and our report dated February 6, 2020 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Report of Management. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP
KPMG LLP
Atlanta, Georgia
February 6, 2020

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Norfolk Southern Corporation:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Norfolk Southern Corporation and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, cash flows, and changes in stockholders' equity for each of the years in the three-year period ended December 31, 2019, and the related notes and financial statement schedule of valuation and qualifying accounts as listed in Item 15(A)2 (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 6, 2020 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company has changed its method of accounting for leases as of January 1, 2019, due to the adoption of Accounting Standards Update 2016-02, Leases (Topic 842) and related amendments.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgment. The communication of a critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Assessment of capitalization of property expenditures

As discussed in Note 1 to the consolidated financial statements, expenditures that extend an asset's useful life or increase its utility are capitalized. The Company has recorded \$31,614 million in net book value of properties at December 31, 2019 and has recorded \$2,019 million in property additions for the year ended December 31, 2019. Expenditures capitalized include those that are directly related to a capital project and may include materials, labor and other direct costs, in addition to an allocable portion of indirect costs that relate to a capital project. A significant portion of the Company's annual capital spending relates to the replacement of self-constructed assets. Costs related to repair and maintenance activities, that in the Company's judgment, do not extend an asset's useful life or increase its utility are expensed when such repairs are performed.

We identified the assessment of capitalization of property expenditures as a critical audit matter. A higher degree of auditor judgment was required in determining procedures and evaluating audit results related to the capitalization or expense treatment of purchased services and compensation due to their usage for both self-constructed assets and repairs and maintenance.

The primary procedures we performed to address this critical audit matter included the following. We tested certain internal controls over the Company's capitalization process, including controls that establish whether a project is a capital or repair expenditure and the appropriateness of accumulated charges to capitalized projects. We selected a sample of capital projects and assessed the capital nature of the project. We obtained support for a sample of property addition expenditures and tested the classification of the related expenditure as capital, which included inquiry with Company personnel regarding the relevance of the sampled expenditure to the capital project.

/s/ KPMG LLP
KPMG LLP

We have served as the Company's auditor since 1982.

Atlanta, Georgia
February 6, 2020

Norfolk Southern Corporation and Subsidiaries
Consolidated Statements of Income

	Years ended December 31,		
	2019	2018	2017
	<i>(\$ in millions, except per share amounts)</i>		
Railway operating revenues	\$ 11,296	\$ 11,458	\$ 10,551
Railway operating expenses:			
Compensation and benefits	2,751	2,925	2,979
Purchased services and rents	1,725	1,730	1,414
Fuel	953	1,087	840
Depreciation	1,138	1,102	1,055
Materials and other	740	655	741
	<u>7,307</u>	<u>7,499</u>	<u>7,029</u>
Income from railway operations	3,989	3,959	3,522
Other income – net	106	67	156
Interest expense on debt	604	557	550
	<u>3,491</u>	<u>3,469</u>	<u>3,128</u>
Income before income taxes	3,491	3,469	3,128
Income taxes	769	803	(2,276)
Net income	<u>\$ 2,722</u>	<u>\$ 2,666</u>	<u>\$ 5,404</u>
Earnings per share:			
Basic	\$ 10.32	\$ 9.58	\$ 18.76
Diluted	10.25	9.51	18.61

See accompanying notes to consolidated financial statements.

Norfolk Southern Corporation and Subsidiaries
Consolidated Statements of Comprehensive Income

	Years ended December 31,		
	2019	2018	2017
	<i>(\$ in millions)</i>		
Net income	\$ 2,722	\$ 2,666	\$ 5,404
Other comprehensive income (loss), before tax:			
Pension and other postretirement benefits	101	(148)	155
Other comprehensive income (loss) of equity investees	(4)	(9)	19
Other comprehensive income (loss), before tax	97	(157)	174
Income tax benefit (expense) related to items of other comprehensive income (loss)	(25)	38	(43)
Other comprehensive income (loss), net of tax	72	(119)	131
Total comprehensive income	\$ 2,794	\$ 2,547	\$ 5,535

See accompanying notes to consolidated financial statements.

Norfolk Southern Corporation and Subsidiaries
Consolidated Balance Sheets

At December 31,

2019 2018

(\$ in millions)

Assets

Current assets:

Cash and cash equivalents	\$ 580	\$ 358
Accounts receivable – net	920	1,009
Materials and supplies	244	207
Other current assets	337	288
Total current assets	2,081	1,862

Investments

3,428 3,109

Properties less accumulated depreciation of \$11,982 and
\$12,374, respectively

31,614 31,091

Other assets

800 177

Total assets

\$ 37,923 \$ 36,239

Liabilities and stockholders' equity

Current liabilities:

Accounts payable	\$ 1,428	\$ 1,505
Income and other taxes	229	255
Other current liabilities	327	246
Current maturities of long-term debt	316	585
Total current liabilities	2,300	2,591

Long-term debt

11,880 10,560

Other liabilities

1,744 1,266

Deferred income taxes

6,815 6,460

Total liabilities

22,739 20,877

Stockholders' equity:

Common Stock \$1.00 per share par value, 1,350,000,000 shares authorized; outstanding 257,904,956 and 268,098,472 shares, respectively, net of treasury shares	259	269
Additional paid-in capital	2,209	2,216
Accumulated other comprehensive loss	(491)	(563)
Retained income	13,207	13,440
Total stockholders' equity	15,184	15,362

Total liabilities and stockholders' equity

\$ 37,923 \$ 36,239

See accompanying notes to consolidated financial statements.

Norfolk Southern Corporation and Subsidiaries
Consolidated Statements of Cash Flows

Years ended December 31,

2019 **2018** **2017**

(\$ in millions)

Cash flows from operating activities:

Net income	\$ 2,722	\$ 2,666	\$ 5,404
Reconciliation of net income to net cash provided by operating activities:			
Depreciation	1,139	1,104	1,059
Deferred income taxes	330	173	(2,859)
Gains and losses on properties	(42)	(171)	(92)
Changes in assets and liabilities affecting operations:			
Accounts receivable	87	(70)	(41)
Materials and supplies	(37)	15	35
Other current assets	(4)	(46)	(71)
Current liabilities other than debt	(185)	223	135
Other – net	(118)	(168)	(317)
Net cash provided by operating activities	<u>3,892</u>	<u>3,726</u>	<u>3,253</u>

Cash flows from investing activities:

Property additions	(2,019)	(1,951)	(1,723)
Property sales and other transactions	377	204	202
Investment purchases	(18)	(10)	(7)
Investment sales and other transactions	(104)	99	47
Net cash used in investing activities	<u>(1,764)</u>	<u>(1,658)</u>	<u>(1,481)</u>

Cash flows from financing activities:

Dividends	(949)	(844)	(703)
Common Stock transactions	27	40	89
Purchase and retirement of Common Stock	(2,099)	(2,781)	(1,012)
Proceeds from borrowings – net of issuance costs	2,192	2,023	290
Debt repayments	(1,188)	(750)	(702)
Other	23	—	—
Net cash used in financing activities	<u>(1,994)</u>	<u>(2,312)</u>	<u>(2,038)</u>
Net increase (decrease) in cash, cash equivalents, and restricted cash	134	(244)	(266)

Cash, cash equivalents, and restricted cash:

At beginning of year	<u>446</u>	<u>690</u>	<u>956</u>
At end of year	<u>\$ 580</u>	<u>\$ 446</u>	<u>\$ 690</u>

Supplemental disclosures of cash flow information:

Cash paid during the year for:			
Interest (net of amounts capitalized)	\$ 555	\$ 496	\$ 528
Income taxes (net of refunds)	543	519	705

See accompanying notes to consolidated financial statements.

Norfolk Southern Corporation and Subsidiaries
Consolidated Statements of Changes in Stockholders' Equity

	Common Stock	Additional Paid-in Capital	Accum. Other Comprehensive Loss	Retained Income	Total
<i>(\$ in millions, except per share amounts)</i>					
Balance at December 31, 2016	\$ 292	\$ 2,179	\$ (487)	\$ 10,425	\$ 12,409
Comprehensive income:					
Net income				5,404	5,404
Other comprehensive income			131		131
Total comprehensive income					5,535
Dividends on Common Stock, \$2.44 per share				(703)	(703)
Share repurchases	(8)	(59)		(945)	(1,012)
Stock-based compensation	1	134		(5)	130
Balance at December 31, 2017	285	2,254	(356)	14,176	16,359
Comprehensive income:					
Net income				2,666	2,666
Other comprehensive loss			(119)		(119)
Total comprehensive income					2,547
Dividends on Common Stock, \$3.04 per share				(844)	(844)
Share repurchases	(17)	(125)		(2,639)	(2,781)
Stock-based compensation	1	87		(7)	81
Reclassification of stranded tax effects			(88)	88	—
Balance at December 31, 2018	269	2,216	(563)	13,440	15,362
Comprehensive income:					
Net income				2,722	2,722
Other comprehensive income			72		72
Total comprehensive income					2,794
Dividends on Common Stock, \$3.60 per share				(949)	(949)
Share repurchases	(11)	(88)		(2,000)	(2,099)
Stock-based compensation	1	81		(6)	76
Balance at December 31, 2019	<u>\$ 259</u>	<u>\$ 2,209</u>	<u>\$ (491)</u>	<u>\$ 13,207</u>	<u>\$ 15,184</u>

See accompanying notes to consolidated financial statements.

Norfolk Southern Corporation and Subsidiaries **Notes to Consolidated Financial Statements**

The following Notes are an integral part of the Consolidated Financial Statements.

1. Summary of Significant Accounting Policies

Description of Business

Norfolk Southern Corporation is a Virginia-based holding company engaged principally in the rail transportation business, operating approximately 19,500 route miles primarily in the East and Midwest. These consolidated financial statements include Norfolk Southern and its majority-owned and controlled subsidiaries (collectively, NS, we, us, and our). Norfolk Southern's major subsidiary is NSR. All significant intercompany balances and transactions have been eliminated in consolidation.

NSR and its railroad subsidiaries transport raw materials, intermediate products, and finished goods classified in the following commodity groups (percent of total railway operating revenues in 2019): intermodal (25%); chemicals (17%); coal (15%); agriculture products (14%); metals and construction (13%); automotive (9%); and, forest and consumer (7%). Although most of our customers are domestic, ultimate points of origination or destination for some of the products transported (particularly coal bound for export and some intermodal shipments) may be outside the U.S. Approximately 80% of our railroad employees are covered by collective bargaining agreements with various labor unions.

Use of Estimates

The preparation of financial statements in accordance with GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. We periodically review our estimates, including those related to the recoverability and useful lives of assets, as well as liabilities for litigation, environmental remediation, casualty claims, income taxes and pension and other postretirement benefits. Changes in facts and circumstances may result in revised estimates.

Revenue Recognition

Transportation revenue is recognized proportionally as a shipment moves from origin to destination, and related expenses are recognized as incurred. Certain of our contract refunds (which are primarily volume-based incentives) are recorded as a reduction to revenues on the basis of management's best estimate of projected liability, which is based on historical activity, current shipment counts and expectation of future activity. Certain accessorial services may be provided to customers under their transportation contracts such as switching, demurrage and other incidental service revenues. These are distinct performance obligations that are recognized at a point in time when the services are performed or as contractual obligations are met.

Cash Equivalents

"Cash equivalents" are highly liquid investments purchased three months or less from maturity.

Allowance for Doubtful Accounts

Our allowance for doubtful accounts was \$9 million and \$7 million at December 31, 2019 and 2018, respectively. To determine our allowance for doubtful accounts, we evaluate historical loss experience (which has not been significant), the characteristics of current accounts, and general economic conditions and trends.

Materials and Supplies

“Materials and supplies,” consisting mainly of items for maintenance of property and equipment, are stated at the lower of average cost or net realizable value. The cost of materials and supplies expected to be used in property additions or improvements is included in “Properties.”

Investments

Investments in entities over which we have the ability to exercise significant influence but do not control the entity are accounted for using the equity method, whereby the investment is carried at the cost of the acquisition plus our equity in undistributed earnings or losses since acquisition.

Properties

“Properties” are stated principally at cost and are depreciated using the group method whereby assets with similar characteristics, use, and expected lives are grouped together in asset classes and depreciated using a composite depreciation rate. This methodology treats each asset class as a pool of resources, not as singular items. We use approximately 75 depreciable asset classes. “Depreciation” in the Consolidated Statements of Cash Flows includes both depreciation and depletion on operating and nonoperating properties.

Depreciation expense is based on our assumptions concerning expected service lives of our properties as well as the expected net salvage that will be received upon their retirement. In developing these assumptions, we utilize periodic depreciation studies that are performed by an independent outside firm of consulting engineers and approved by the STB. Our depreciation studies are conducted about every three years for equipment and every six years for track assets and other roadway property. The frequency of these studies is consistent with guidelines established by the STB. We adjust our rates based on the results of these studies and implement the changes prospectively. The studies may also indicate that the recorded amount of accumulated depreciation is deficient (or in excess) of the amount indicated by the study. Any such deficiency (or excess) is amortized as a component of depreciation expense over the remaining service lives of the affected class of property, as determined by the study. Key factors that are considered in developing average service life and salvage estimates include:

- statistical analysis of historical retirement data and surviving asset records;
- review of historical salvage received and current market rates;
- review of our operations including expected changes in technology, customer demand, maintenance practices and asset management strategies;
- review of accounting policies and assumptions; and
- industry review and analysis.

The composite depreciation rate for rail in high density corridors is derived based on consideration of annual gross tons as compared to the total or ultimate capacity of rail in these corridors. Our experience has shown that traffic density is a leading factor in the determination of the expected service life of rail in high density corridors. In developing the respective depreciation rate, consideration is also given to several rail characteristics including age, weight, condition (new or second-hand) and type (curved or straight).

We capitalize interest on major projects during the period of their construction. Expenditures, including those on leased assets, that extend an asset’s useful life or increase its utility are capitalized. Expenditures capitalized include those that are directly related to a capital project and may include materials, labor, and other direct costs, in addition to an allocable portion of indirect costs that relate to a capital project. A significant portion of our annual capital spending relates to the replacement of self-constructed assets. Removal activities occur in conjunction with replacement and are estimated based on the average percentage of time employees replacing assets spend on removal functions. Costs related to repairs and maintenance activities that, in our judgment, do not extend an asset’s useful life or increase its utility are expensed when such repairs are performed.

When depreciable operating road and equipment assets are sold or retired in the ordinary course of business, the cost of the assets, net of sale proceeds or salvage, is charged to accumulated depreciation, and no gain or loss is recognized in earnings. Actual historical cost values are retired when available, such as with most equipment assets. The use of estimates in recording the retirement of certain roadway assets is necessary based on the impracticality of tracking individual asset costs. When retiring rail, ties and ballast, we use statistical curves that indicate the relative distribution of the age of the assets retired. The historical cost of other roadway assets is estimated using a combination of inflation indices specific to the rail industry and those published by the U.S. Bureau of Labor Statistics. The indices are applied to the replacement value based on the age of the retired assets. These indices are used because they closely correlate with the costs of roadway assets. Gains and losses on disposal of operating land are included in “Materials and other” expenses. Gains and losses on disposal of nonoperating land and nonrail assets are included in “Other income – net” since such income is not a product of our railroad operations.

A retirement is considered abnormal if it does not occur in the ordinary course of business, if it relates to disposition of a large segment of an asset class and if the retirement varies significantly from the retirement profile identified through our depreciation studies, which inherently consider the impact of normal retirements on expected service lives and depreciation rates. Gains or losses from abnormal retirements would be recognized in income from railway operations.

We review the carrying amount of properties whenever events or changes in circumstances indicate that such carrying amount may not be recoverable based on future undiscounted cash flows. Assets that are deemed impaired as a result of such review are recorded at the lower of carrying amount or fair value.

New Accounting Pronouncements

The FASB issued ASU 2014-09, “*Revenue from Contracts with Customers*,” and related amendments, which are jointly referred to as Accounting Standards Codification (ASC) Topic 606. This standard replaced most existing revenue recognition guidance in GAAP and requires entities to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. A performance obligation is defined as a promise in a contract to transfer a distinct good or service to the customer. A contract’s transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. We adopted the provisions of this standard on January 1, 2018, using the modified retrospective method. There was no cumulative effect of initially applying the standard, nor was there any material difference in revenue for the year ended December 31, 2018, as compared with GAAP that was in effect prior to January 1, 2018. See Note 2 for additional information.

In March 2017, the FASB issued ASU 2017-07, “*Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*.” This update requires segregation of net benefit costs between operating and nonoperating expenses and requires retrospective application. We adopted the standard on January 1, 2018. Under the new standard, only the service cost component of defined benefit pension cost and postretirement benefit cost are reported within “Compensation and benefits” and all other components of net benefit cost are presented in “Other income – net” on the Consolidated Statements of Income, whereas under the previous standard all components were included in “Compensation and benefits.” The retrospective application resulted in an increase to “Compensation and benefits” expense and an offsetting increase to “Other income – net” on the Consolidated Statements of Income of \$64 million for the year ended December 31, 2017, with no impact on “Net income.”

In February 2018, the FASB issued ASU 2018-02, “*Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*.” This update is intended to reclassify the stranded tax effects resulting from tax reform from accumulated other comprehensive income (AOCI) to retained earnings. The amount of the reclassification is the difference between the amount initially charged or credited directly to other comprehensive income at the previously enacted U.S. federal corporate income tax rate that remains in AOCI and the amount that would have been charged or credited directly to other comprehensive income using the newly enacted U.S. federal corporate income tax rate. In the first quarter of 2018, we adopted the provisions of ASU 2018-02 resulting in an increase to

“Accumulated other comprehensive loss” of \$88 million and a corresponding increase to “Retained income,” with no impact on “Total stockholders’ equity.”

In February 2016, the FASB issued ASU 2016-02, “*Leases (Topic 842)*,” and subsequent amendments, which replaced existing lease guidance in GAAP. We adopted the standard on January 1, 2019 using the modified retrospective method and used the effective date as our date of initial application. See Note 10 for additional information.

In June 2016, the FASB issued ASU 2016-13, “*Credit Losses - Measurement of Credit Losses on Financial Instruments*,” which replaces the current incurred loss impairment method with a method that reflects expected credit losses. We adopted the standard on January 1, 2020. Because credit losses associated from our trade receivables have historically been insignificant, we do not expect this standard to have a material effect on our financial statements.

In December 2019, the FASB issued ASU 2019-12, “*Simplifying the Accounting for Income Taxes*,” which adds new guidance to simplify the accounting for income taxes, changes the accounting for certain income tax transactions, and makes other minor changes. The new standard is effective as of January 1, 2021, and early adoption is permitted for any interim period for which financial statements have not been issued. We do not expect this standard to have a material effect on our financial statements. We will not adopt the standard early.

2. Railway Operating Revenues

The following table disaggregates our revenues by major commodity group:

	<u>2019</u>	<u>2018</u>
	<i>(\$ in millions)</i>	
Merchandise:		
Chemicals	\$ 1,874	\$ 1,858
Agriculture products	1,567	1,514
Metals and construction	1,522	1,539
Automotive	994	991
Forest and consumer	846	842
Merchandise	<u>6,803</u>	<u>6,744</u>
Intermodal	2,824	2,893
Coal	<u>1,669</u>	<u>1,821</u>
Total	<u>\$ 11,296</u>	<u>\$ 11,458</u>

At the beginning of 2019, we recategorized certain commodities within Merchandise major commodity groups to better align with how we internally manage these commodities. Prior period amounts have been reclassified to conform to the current presentation with no net impact to overall Merchandise revenue or total railway operating revenues. Specifically, certain commodities were shifted between chemicals, agriculture products, metals and construction, and forest and consumer.

We recognize the amount of revenue we expect to be entitled to for the transfer of promised goods or services to customers. A performance obligation is created when a customer under a transportation contract or public tariff submits a bill of lading to NS for the transport of goods. These performance obligations are satisfied as the shipments move from origin to destination. As such, transportation revenue is recognized proportionally as a shipment moves, and related expenses are recognized as incurred. These performance obligations are generally short-term in nature with transit days averaging approximately one week or less for each commodity group. The customer has an unconditional obligation to pay for the service once the service has been completed. Estimated revenue associated with in-process shipments at period-end is recorded based on the estimated percentage of service

completed to total transit days. We had no material remaining performance obligations at December 31, 2019 and 2018.

Revenue related to interline transportation services that involve another railroad is reported on a net basis. Therefore, the portion of the amount that relates to another party is not reflected in revenue.

Under the typical payment terms of our freight contracts, payment for services is due within fifteen days of billing the customer, thus there are no significant financing components. “Accounts receivable – net” on the Consolidated Balance Sheets includes both customer and non-customer receivables as follows:

	December 31,	
	2019	2018
	<i>(\$ in millions)</i>	
Customer	\$ 682	\$ 740
Non-customer	238	269
	<u>920</u>	<u>1,009</u>
Accounts receivable – net	<u>\$ 920</u>	<u>\$ 1,009</u>

Non-customer receivables include non-revenue-related amounts due from other railroads, governmental entities, and others. “Other assets” on the Consolidated Balance Sheets includes non-current customer receivables of \$23 million and \$55 million at December 31, 2019 and 2018, respectively. In 2019, we wrote off a \$32 million non-current customer receivable resulting from a legal dispute and this expense is included in “Materials and other” on the Consolidated Statements of Income. We do not have any material contract assets or liabilities at December 31, 2019 and 2018.

Certain accessorial services may be provided to customers under their transportation contracts such as switching, demurrage and other incidental service revenues. These are distinct performance obligations that are recognized at a point in time when the services are performed or as contractual obligations are met. This revenue is included within each of the commodity groups and represents approximately 5% and 4% of total “Railway operating revenues” on the Consolidated Statements of Income for the years ended December 31, 2019 and 2018, respectively.

3. Other Income – Net

	2019	2018	2017
	<i>(\$ in millions)</i>		
Corporate-owned life insurance – net	\$ 69	\$ (10)	\$ 33
Net pension and other postretirement benefit cost (Note 12)	63	61	64
Rental income	4	5	87
Other	<u>(30)</u>	<u>11</u>	<u>(28)</u>
Total	<u>\$ 106</u>	<u>\$ 67</u>	<u>\$ 156</u>

4. Income Taxes

	<u>2019</u>	<u>2018</u>	<u>2017</u>
	<i>(\$ in millions)</i>		
Current:			
Federal	\$ 356	\$ 499	\$ 500
State	83	131	83
Total current taxes	<u>439</u>	<u>630</u>	<u>583</u>
Deferred:			
Federal	280	156	(2,924)
State	50	17	65
Total deferred taxes	<u>330</u>	<u>173</u>	<u>(2,859)</u>
Income taxes	<u>\$ 769</u>	<u>\$ 803</u>	<u>\$ (2,276)</u>

Reconciliation of Statutory Rate to Effective Rate

“Income taxes” on the Consolidated Statements of Income differs from the amounts computed by applying the statutory federal corporate tax rate as follows:

	<u>2019</u>		<u>2018</u>		<u>2017</u>	
	<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>
	<i>(\$ in millions)</i>					
Federal income tax at statutory rate	\$ 733	21.0	\$ 728	21.0	\$ 1,095	35.0
State income taxes, net of federal tax effect	110	3.1	120	3.5	88	2.8
Equity in earnings related to tax reform	—	—	—	—	(38)	(1.2)
Tax reform	—	—	—	—	(3,331)	(106.5)
Excess tax benefits on stock-based compensation	(29)	(0.8)	(22)	(0.7)	(39)	(1.2)
Other, net	<u>(45)</u>	<u>(1.3)</u>	<u>(23)</u>	<u>(0.7)</u>	<u>(51)</u>	<u>(1.7)</u>
Income Taxes	<u>\$ 769</u>	<u>22.0</u>	<u>\$ 803</u>	<u>23.1</u>	<u>\$ (2,276)</u>	<u>(72.8)</u>

Tax reform, enacted in 2017, lowered the Federal corporate tax rate from 35% to 21% and made numerous other tax law changes. GAAP requires companies to recognize the effect of tax law changes in the period of enactment. As a result, in 2017, “Purchased services and rents” included a \$151 million benefit for earnings generated from reductions to net deferred tax liabilities at certain equity investees and “Income taxes” included a \$3,331 million benefit primarily due to the remeasurement of our net deferred tax liabilities to reflect the lower rate.

Deferred Tax Assets and Liabilities

Certain items are reported in different periods for financial reporting and income tax purposes. Deferred tax assets and liabilities are recorded in recognition of these differences. The tax effects of temporary differences that give rise to significant portions of the deferred tax assets and deferred tax liabilities are as follows:

	December 31,	
	2019	2018
	<i>(\$ in millions)</i>	
Deferred tax assets:		
Compensation and benefits, including postretirement benefits	\$ 222	\$ 284
Accruals, including casualty and other claims	89	69
Other	202	72
Total gross deferred tax assets	<u>513</u>	<u>425</u>
Less valuation allowance	(54)	(50)
Net deferred tax assets	<u>459</u>	<u>375</u>
Deferred tax liabilities:		
Property	(6,714)	(6,422)
Other	(560)	(413)
Total deferred tax liabilities	<u>(7,274)</u>	<u>(6,835)</u>
Deferred income taxes	<u>\$ (6,815)</u>	<u>\$ (6,460)</u>

Except for amounts for which a valuation allowance has been provided, we believe that it is more likely than not that the results of future operations will generate sufficient taxable income to realize the deferred tax assets. The valuation allowance at the end of each year primarily relates to subsidiary state income tax net operating losses and state investment tax credits that may not be utilized prior to their expiration. The total valuation allowance increased by \$4 million in 2019, \$6 million in 2018, and \$5 million in 2017.

Uncertain Tax Positions

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

	December 31,	
	2019	2018
	<i>(\$ in millions)</i>	
Balance at beginning of year	\$ 21	\$ 17
Additions based on tax positions related to the current year	4	5
Lapse of statutes of limitations	<u>(1)</u>	<u>(1)</u>
Balance at end of year	<u>\$ 24</u>	<u>\$ 21</u>

Included in the balance of unrecognized tax benefits at December 31, 2019 are potential benefits of \$19 million that would affect the effective tax rate if recognized. Unrecognized tax benefits are adjusted in the period in which new information about a tax position becomes available or the final outcome differs from the amount recorded.

The statute of limitations on Internal Revenue Service examinations has expired for all years prior to 2015. We have amended our 2012 income tax return to request a refund of \$46 million, which is not included in the above balance of unrecognized tax benefits. We would recognize a tax benefit of around \$18 million if the refund is allowed. State income tax returns generally are subject to examination for a period of three to four years after filing of the return. In addition, we are generally obligated to report changes in taxable income arising from federal income tax examinations to the states within a period of up to two years from the date the federal examination is final. We have various state income tax returns either under examination, administrative appeal, or litigation.

5. Fair Value Measurements

FASB ASC 820-10, “Fair Value Measurements,” established a framework for measuring fair value and a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels, as follows:

Level 1 Inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets that we have the ability to access.

Level 2 Inputs to the valuation methodology include:

- quoted prices for similar assets or liabilities in active markets;
- quoted prices for identical or similar assets or liabilities in inactive markets;
- inputs other than quoted prices that are observable for the asset or liability;
- inputs that are derived principally from or corroborated by observable market data by correlation or other means.

If the asset or liability has a specified (contractual) term, the Level 2 input must be observable for substantially the full term of the asset or liability.

Level 3 Inputs to the valuation methodology are unobservable and significant to the fair value measurement.

The asset or liability’s fair value measurement level within the hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

Fair Values of Financial Instruments

The fair values of “Cash and cash equivalents,” “Accounts receivable – net,” and “Accounts payable,” approximate carrying values because of the short maturity of these financial instruments. The carrying value of COLI is recorded at cash surrender value and, accordingly, approximates fair value. There are no other assets or liabilities measured at fair value on a recurring basis at December 31, 2019 or 2018. The carrying amounts and estimated fair values, based on Level 1 inputs, of long-term debt consisted of the following at December 31:

	2019		2018	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
	<i>(\$ in millions)</i>			
Long-term debt, including current maturities	\$ (12,196)	\$ (14,806)	\$ (11,145)	\$ (12,203)

6. Investments

	December 31,	
	2019	2018
	<i>(\$ in millions)</i>	
Long-term investments:		
Equity method investments:		
Conrail Inc.	\$ 1,387	\$ 1,337
TTX Company	749	692
Meridian Speedway LLC	271	271
Pan Am Southern LLC	154	155
Other	85	77
Total equity method investments	<u>2,646</u>	<u>2,532</u>
Corporate-owned life insurance at net cash surrender value	767	556
Other investments	<u>15</u>	<u>21</u>
Total long-term investments	<u><u>\$ 3,428</u></u>	<u><u>\$ 3,109</u></u>

Investment in Conrail

Through a limited liability company, we and CSX jointly own Conrail, whose primary subsidiary is CRC. We have a 58% economic and 50% voting interest in the jointly owned entity, and CSX has the remainder of the economic and voting interests. We are amortizing the excess of the purchase price over Conrail's net equity using the principles of purchase accounting, based primarily on the estimated useful lives of Conrail's depreciable property and equipment, including the related deferred tax effect of the differences in book and tax accounting bases for such assets, as all of the purchase price at acquisition was allocable to Conrail's tangible assets and liabilities.

At December 31, 2019, based on the funded status of Conrail's pension plans, we decreased our proportional investment in Conrail by \$3 million. This resulted in a loss of \$3 million recorded to "Other comprehensive loss".

At December 31, 2018, based on the funded status of Conrail's pension plans, we decreased our proportional investment in Conrail by \$11 million. This resulted in a loss of \$10 million recorded to "Other comprehensive loss" and a combined federal and state deferred tax liability of \$1 million.

At December 31, 2019, the difference between our investment in Conrail and our share of Conrail's underlying net equity was \$497 million. Our equity in the earnings of Conrail, net of amortization, included in "Purchased services and rents," which offsets the costs of operating the Shared Assets Areas, was \$53 million for 2019, \$55 million for 2018, and \$75 million for 2017 (including \$33 million related to the enactment of tax reform – see Note 4). Equity in earnings are included in the "Other – net" line item within operating activities in the Consolidated Statements of Cash Flows.

CRC owns and operates certain properties (the Shared Assets Areas) for the joint and exclusive benefit of NSR and CSX Transportation, Inc. (CSXT). The costs of operating the Shared Assets Areas are borne by NSR and CSXT based on usage. In addition, NSR and CSXT pay CRC a fee for access to the Shared Assets Areas. "Purchased services and rents" and "Fuel" include expenses payable to CRC for operation of the Shared Assets Areas totaling \$149 million in 2019, \$150 million in 2018, and \$141 million in 2017. Future payments for access fees due to CRC under the Shared Assets Areas agreements are as follows: \$40 million in each of 2020 through 2023 and \$16 million thereafter. We provide certain general and administrative support functions to Conrail, the fees for which are billed in accordance with several service-provider arrangements and approximate \$6 million annually.

“Accounts payable” includes \$264 million at December 31, 2019, and \$202 million at December 31, 2018, due to Conrail for the operation of the Shared Assets Areas. “Other liabilities” includes \$280 million at both December 31, 2019 and 2018 for long-term advances from Conrail, maturing in 2044, that bear interest at an average rate of 2.9%.

Investment in TTX

NS and eight other North American railroads jointly own TTX Company (TTX). NS has a 19.65% ownership interest in TTX, a railcar pooling company that provides its owner-railroads with standardized fleets of intermodal, automotive, and general use railcars at stated rates.

Amounts paid to TTX for use of equipment are included in “Purchased services and rents.” This amounted to \$244 million, \$262 million, and \$237 million of expense, respectively, for the years ended December 31, 2019, 2018 and 2017. Our equity in the earnings of TTX, which offset the costs and are also included in “Purchased services and rents,” totaled \$58 million for 2019, \$61 million for 2018, and \$158 million for 2017 (including \$115 million related to the enactment of tax reform – see Note 4).

7. Properties

December 31, 2019	Cost	Accumulated Depreciation <i>(\$ in millions)</i>	Net Book Value	Depreciation Rate ⁽¹⁾
Land	\$ 2,385	\$ —	\$ 2,385	—
Roadway:				
Rail and other track material	7,024	(1,905)	5,119	2.30%
Ties	5,536	(1,496)	4,040	3.37%
Ballast	2,868	(723)	2,145	2.72%
Construction in process	360	—	360	—
Other roadway	14,261	(3,786)	10,475	2.71%
Total roadway	<u>30,049</u>	<u>(7,910)</u>	<u>22,139</u>	
Equipment:				
Locomotives	5,973	(2,112)	3,861	3.66%
Freight cars	2,988	(1,148)	1,840	2.45%
Computers and software	732	(355)	377	9.68%
Construction in process	291	—	291	—
Other equipment	1,082	(388)	694	4.89%
Total equipment	<u>11,066</u>	<u>(4,003)</u>	<u>7,063</u>	
Other property	<u>96</u>	<u>(69)</u>	<u>27</u>	1.05%
Total properties	<u>\$ 43,596</u>	<u>\$ (11,982)</u>	<u>\$ 31,614</u>	

December 31, 2018	Cost	Accumulated Depreciation	Net Book Value	Depreciation Rate ⁽¹⁾
		<i>(\$ in millions)</i>		
Land	\$ 2,337	\$ —	\$ 2,337	—
Roadway:				
Rail and other track material	6,888	(1,951)	4,937	2.29%
Ties	5,346	(1,448)	3,898	3.36%
Ballast	2,759	(676)	2,083	2.70%
Construction in process	442	—	442	—
Other roadway	14,072	(3,737)	10,335	2.64%
Total roadway	<u>29,507</u>	<u>(7,812)</u>	<u>21,695</u>	
Equipment:				
Locomotives	5,870	(2,262)	3,608	3.77%
Freight cars	3,183	(1,288)	1,895	2.47%
Computers and software	623	(365)	258	10.65%
Construction in process	437	—	437	—
Other equipment	1,071	(380)	691	4.94%
Total equipment	<u>11,184</u>	<u>(4,295)</u>	<u>6,889</u>	
Other property	<u>437</u>	<u>(267)</u>	<u>170</u>	0.78%
Total properties	<u>\$ 43,465</u>	<u>\$ (12,374)</u>	<u>\$ 31,091</u>	

⁽¹⁾ Composite annual depreciation rate for the underlying assets, excluding the effects of the amortization of any deficiency (or excess) that resulted from our depreciation studies.

“Other current assets” on the Consolidated Balance Sheets at December 31, 2019 includes natural resource assets of \$88 million, reflecting their status as held for sale. In 2019, we recorded a \$49 million impairment loss related to our natural resource assets that we are actively marketing to sell. The impairment loss is reflected in “Gains and losses on properties” in the Consolidated Statements of Cash Flows for the year ended December 31, 2019. At December 31, 2018, these assets were reflected in other property within “Properties” on the Consolidated Balance Sheets, reflecting costs of obtaining rights to natural resources of \$336 million, with associated accumulated depletion of \$200 million.

Capitalized Interest

Total interest cost incurred on debt was \$620 million, \$574 million, and \$570 million during 2019, 2018 and 2017, respectively, of which \$16 million, \$17 million, and \$20 million were capitalized during 2019, 2018, and 2017, respectively.

8. Current Liabilities

	December 31,	
	2019	2018
	<i>(\$ in millions)</i>	
Accounts payable:		
Accounts and wages payable	\$ 710	\$ 828
Due to Conrail (Note 6)	264	202
Casualty and other claims (Note 17)	212	213
Vacation liability	136	140
Other	106	122
	<u>1,428</u>	<u>1,505</u>
Total	<u>\$ 1,428</u>	<u>\$ 1,505</u>
Other current liabilities:		
Interest payable	\$ 149	\$ 139
Current operating lease liability (Note 10)	97	—
Pension benefit obligations (Note 12)	18	18
Other	63	89
	<u>327</u>	<u>246</u>
Total	<u>\$ 327</u>	<u>\$ 246</u>

9. Debt

Debt with weighted average interest rates and maturities is presented below:

	December 31,	
	2019	2018
	<i>(\$ in millions)</i>	
Notes and debentures:		
4.22% maturing to 2024	\$ 2,497	\$ 3,082
4.35% maturing 2025 to 2031	3,265	2,665
4.38% maturing 2037 to 2052	5,904	5,104
5.79% maturing 2097 to 2118	1,331	1,131
Financing leases	8	2
Discounts, premiums, and debt issuance costs	(809)	(839)
Total debt	<u>12,196</u>	<u>11,145</u>
Less current maturities	<u>(316)</u>	<u>(585)</u>
Long-term debt excluding current maturities	<u>\$ 11,880</u>	<u>\$ 10,560</u>

Long-term debt maturities subsequent to 2020 are as follows:

2021	\$ 586
2022	603
2023	600
2024	400
2025 and subsequent years	<u>9,691</u>
Total	<u><u>\$ 11,880</u></u>

In May 2019, we issued \$200 million of 3.80% senior notes due 2028, \$400 million of 4.10% senior notes due 2049, and \$200 million of 5.10% senior notes due 2118. In November 2019, we issued \$400 million of 2.55% senior notes due 2029 and \$400 million of 3.40% senior notes due 2049.

In May 2019, we also renewed and amended our accounts receivable securitization program, increasing the program's maximum borrowing capacity from \$400 million to \$450 million with a term expiring in May 2020. Under this facility, NSR sells substantially all of its eligible third-party receivables to a subsidiary, which in turn may transfer beneficial interests in the receivables to various commercial paper vehicles. Under this facility, we received \$600 million in 2019 and \$50 million in 2018, and paid \$600 million and \$150 million during 2019 and 2018, respectively. We had no amounts outstanding at both December 31, 2019 and 2018, and our available borrowing capacity was \$429 million and \$400 million, respectively.

The January 1, 2019 and December 31, 2018 "Cash, cash equivalents, and restricted cash" line item in the Consolidated Statements of Cash Flows includes restricted cash of \$88 million which reflects deposits held by a third-party bond agent as collateral for certain debt obligations, which matured on October 1, 2019. The restricted cash balance is included as part of "Other current assets" on the Consolidated Balance Sheets at December 31, 2018.

Credit Agreement and Debt Covenants

We have in place and available a \$750 million, five-year credit agreement which expires in May 2021 and provides for borrowings at prevailing rates and includes covenants. We had no amounts outstanding under this facility at both December 31, 2019 and 2018, and we are in compliance with all of its covenants.

10. Leases

In February 2016, the FASB issued ASU 2016-02, "*Leases (Topic 842)*," and subsequent amendments, which replaced existing lease guidance in GAAP and requires lessees to recognize ROU assets and lease liabilities on the balance sheet for leases greater than twelve months and disclose key information about leasing arrangements. We adopted the standard on January 1, 2019 using the modified retrospective method and used the effective date as our date of initial application. Financial information will not be updated and the disclosures required under the new standard will not be provided for dates and periods before January 1, 2019. Upon adoption of the standard, we recognized ROU assets and corresponding lease liabilities of \$586 million on the Consolidated Balance Sheets as of January 1, 2019. There were no adjustments to "Retained income" on adoption.

The new standard provides a number of optional practical expedients for transition. We elected the package of practical expedients under the transition guidance which permitted us not to reassess under the new standard our prior conclusions for lease identification and lease classification on expired or existing contracts and whether initial direct costs previously capitalized would qualify for capitalization under FASB ASC 842. We also elected the practical expedient related to land easements, which allowed us to not reassess our current accounting treatment for existing agreements on land easements, which are not accounted for as leases. We did not elect the hindsight practical expedient to determine the reasonably certain lease term for existing leases.

The new standard also provides practical expedients and recognition exemptions for an entity's ongoing accounting policy elections. We elected the short-term lease recognition exemption for all leases that qualify. This means, for those leases that qualify, we do not recognize ROU assets or lease liabilities. We also elected the practical expedient not to separate lease and non-lease components for all of our leases.

We are committed under long-term lease agreements for equipment, lines of road, and other property. Some of these agreements contain variable payment provisions that depend on an index or rate, initially measured using the index or rate at the lease commencement date, and are therefore not included in our future minimum lease payments. These variable lease agreements include usage-based payments for equipment under service contracts, lines of road, and other property. Our long-term lease agreements do not contain any material restrictive covenants.

Our equipment leases have remaining terms of less than 1 year to 9 years and our lines of road and land leases have remaining terms of less than 1 year to 138 years. Some of these leases include options to extend the leases for up to 99 years and some include options to terminate the leases within 30 days. Because we are not reasonably certain to exercise these renewal options, the options are not considered in determining the lease term, and associated payments are excluded from future minimum lease payments.

Leases with an initial term of twelve months or less are not recorded on the balance sheet. We recognize lease expense for these leases on a straight-line basis over the lease term.

Operating lease amounts included on the Consolidated Balance Sheet were as follows:

		December 31, 2019
		<i>(\$ in millions)</i>
Assets	Classification	
ROU assets	Other assets	\$ 539
Liabilities		
Current lease liabilities	Other current liabilities	\$ 97
Non-current lease liabilities	Other liabilities	441
Total lease liabilities		\$ 538

The components of total lease expense, primarily included in "Purchased services and rents," were as follows:

		December 31, 2019
		<i>(\$ in millions)</i>
Operating lease expense		\$ 114
Variable lease expense		57
Short-term lease expense		5
Total lease expense		\$ 176

At December 31, 2019, we do not have any material finance lease assets or liabilities, nor do we have any material subleases.

In March 2019, we entered into a non-cancellable lease for an office building with an estimated construction cost of \$550 million. The lease will commence upon completion of the construction (for which we are a construction agent) of the office building which is expected to be in 2021. The initial term of the lease is five years with options to renew, purchase, or sell the office building at the end of the lease term. Upon lease commencement, the ROU asset and lease liability will be determined and recorded. The lease also contains a residual value guarantee of up to ninety percent of the total construction cost.

Other information related to operating leases was as follows:

	<u>December 31, 2019</u>
Weighted-average remaining lease term (years) on operating leases	8.25
Weighted-average discount rates on operating leases	3.52%

As the rates implicit in most of our leases are not readily determinable, we use a collateralized incremental borrowing rate based on the information available at the lease commencement date in determining the present value of future payments. We use the portfolio approach and group leases into short, medium, and long-term categories, applying the corresponding incremental borrowing rates to these categories of leases.

During 2019, ROU assets obtained in exchange for new operating lease liabilities were \$49 million. During 2019, cash paid for amounts included in the measurement of lease liabilities was \$114 million and is included in operating cash flows. During 2019, cash proceeds from a sale and leaseback transaction were \$82 million and the gain on the transaction was \$15 million.

Future minimum lease payments under non-cancellable operating leases were as follows:

	<u>December 31, 2019</u>	
	<i>(\$ in millions)</i>	
2020	\$	110
2021		104
2022		79
2023		70
2024		61
2025 and subsequent years		206
Total lease payments		<u>630</u>
Less: Interest		<u>92</u>
Present value of lease liabilities	\$	<u><u>538</u></u>

Undiscounted future minimum lease payments under non-cancellable operating leases accounted for under ASC 840 “Leases” were as follows:

	December 31, 2018	
	<i>(\$ in millions)</i>	
2019	\$	101
2020		95
2021		88
2022		75
2023		69
2024 and subsequent years		<u>267</u>
Total	<u>\$</u>	<u>695</u>

Operating lease expense accounted for under ASC 840 “Leases” was as follows:

	2018		2017	
	<i>(\$ in millions)</i>			
Minimum rents	\$	102	\$	96
Contingent rents		<u>102</u>		<u>54</u>
Total	<u>\$</u>	<u>204</u>	<u>\$</u>	<u>150</u>

Contingent rents are primarily comprised of usage-based payments for equipment under service contracts.

11. Other Liabilities

	December 31,			
	2019	2018		
	<i>(\$ in millions)</i>			
Non-current operating lease liability (Note 10)	\$	441	\$	—
Net pension benefit obligations (Note 12)		302		278
Net other postretirement benefit obligations (Note 12)		287		308
Long-term advances from Conrail (Note 6)		280		280
Casualty and other claims (Note 17)		171		158
Deferred compensation		104		106
Other		<u>159</u>		<u>136</u>
Total	<u>\$</u>	<u>1,744</u>	<u>\$</u>	<u>1,266</u>

12. Pensions and Other Postretirement Benefits

We have both funded and unfunded defined benefit pension plans covering principally salaried employees. We also provide specified health care and life insurance benefits to eligible retired employees; these plans can be amended or terminated at our option. Under our self-insured retiree health care plan, for those participants who are not Medicare-eligible, certain health care expenses are covered for retired employees and their dependents, reduced by any deductibles, coinsurance, and, in some cases, coverage provided under other group insurance policies. Those participants who are Medicare-eligible are not covered under the self-insured retiree health care plan, but instead are provided with an employer-funded health reimbursement account which can be used for reimbursement of health insurance premiums or eligible out-of-pocket medical expenses.

Pension and Other Postretirement Benefit Obligations and Plan Assets

	Pension Benefits		Other Postretirement Benefits	
	2019	2018	2019	2018
	(\$ in millions)			
Change in benefit obligations:				
Benefit obligation at beginning of year	\$ 2,371	\$ 2,541	\$ 466	\$ 510
Service cost	35	39	6	7
Interest cost	93	83	17	15
Actuarial losses (gains)	235	(149)	28	(24)
Plan amendment	—	—	(18)	—
Benefits paid	(146)	(143)	(42)	(42)
Benefit obligation at end of year	<u>2,588</u>	<u>2,371</u>	<u>457</u>	<u>466</u>
Change in plan assets:				
Fair value of plan assets at beginning of year	2,105	2,373	158	201
Actual return on plan assets	485	(143)	34	(19)
Employer contribution	18	18	20	18
Benefits paid	(146)	(143)	(42)	(42)
Fair value of plan assets at end of year	<u>2,462</u>	<u>2,105</u>	<u>170</u>	<u>158</u>
Funded status at end of year	<u>\$ (126)</u>	<u>\$ (266)</u>	<u>\$ (287)</u>	<u>\$ (308)</u>
Amounts recognized in the Consolidated Balance Sheets:				
Other assets	\$ 194	\$ 30	\$ —	\$ —
Other current liabilities	(18)	(18)	—	—
Other liabilities	(302)	(278)	(287)	(308)
Net amount recognized	<u>\$ (126)</u>	<u>\$ (266)</u>	<u>\$ (287)</u>	<u>\$ (308)</u>
Amounts included in accumulated other comprehensive loss (before tax):				
Net loss	\$ 781	\$ 895	\$ 29	\$ 21
Prior service cost (benefit)	1	2	(253)	(259)

Our accumulated benefit obligation for our defined benefit pension plans is \$2.3 billion and \$2.2 billion at December 31, 2019 and 2018, respectively. Our unfunded pension plans, included above, which in all cases have no assets, had projected benefit obligations of \$320 million and \$296 million at December 31, 2019 and 2018, respectively, and had accumulated benefit obligations of \$292 million and \$263 million at December 31, 2019 and 2018, respectively.

Pension and Other Postretirement Benefit Cost Components

	2019	2018	2017
	(\$ in millions)		
<i>Pension benefits:</i>			
Service cost	\$ 35	\$ 39	\$ 38
Interest cost	93	83	80
Expected return on plan assets	(179)	(177)	(172)
Amortization of net losses	43	57	51
Amortization of prior service cost	1	—	1
	<u>1</u>	<u>—</u>	<u>1</u>
Net cost (benefit)	<u>\$ (7)</u>	<u>\$ 2</u>	<u>\$ (2)</u>
<i>Other postretirement benefits:</i>			
Service cost	\$ 6	\$ 7	\$ 7
Interest cost	17	15	15
Expected return on plan assets	(14)	(15)	(15)
Amortization of prior service benefit	(24)	(24)	(24)
	<u>(24)</u>	<u>(24)</u>	<u>(24)</u>
Net benefit	<u>\$ (15)</u>	<u>\$ (17)</u>	<u>\$ (17)</u>

Other Changes in Plan Assets and Benefit Obligations Recognized in Other Comprehensive Income

	2019	
	Pension Benefits	Other Postretirement Benefits
	(\$ in millions)	
Net loss (gain) arising during the year	\$ (71)	\$ 8
Prior service effect of plan amendment	—	(18)
Amortization of net losses	(43)	—
Amortization of prior service (cost) benefit	(1)	24
	<u>(1)</u>	<u>24</u>
Total recognized in other comprehensive income	<u>\$ (115)</u>	<u>\$ 14</u>
Total recognized in net periodic cost and other comprehensive income	<u>\$ (122)</u>	<u>\$ (1)</u>

Net gains arising during the year for pension benefits were due primarily to higher actual returns on plan assets, partially offset by a decrease in discount rates. Net losses arising during the year for other postretirement benefits were due primarily to a decrease in discount rates, partially offset by higher actual returns on plan assets.

The estimated net losses for the pension plans that will be amortized from accumulated other comprehensive loss into net periodic cost over the next year are \$52 million. The estimated prior service benefit for the other postretirement benefit plans that will be amortized from accumulated other comprehensive loss into net periodic benefit over the next year is \$25 million.

Pension and Other Postretirement Benefits Assumptions

Costs for pension and other postretirement benefits are determined based on actuarial valuations that reflect appropriate assumptions as of the measurement date, ordinarily the beginning of each year. The funded status of the plans is determined using appropriate assumptions as of each year end. A summary of the major assumptions follows:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
<i>Pension funded status:</i>			
Discount rate	3.38%	4.33%	3.74%
Future salary increases	4.21%	4.21%	4.21%
<i>Other postretirement benefits funded status:</i>			
Discount rate	3.13%	4.18%	3.57%
<i>Pension cost:</i>			
Discount rate - service cost	4.55%	4.01%	4.31%
Discount rate - interest cost	3.99%	3.33%	3.43%
Return on assets in plans	8.25%	8.25%	8.25%
Future salary increases	4.21%	4.21%	4.21%
<i>Other postretirement benefits cost:</i>			
Discount rate - service cost	4.39%	3.83%	4.17%
Discount rate - interest cost	3.83%	3.13%	3.14%
Return on assets in plans	8.00%	8.00%	8.00%
Health care trend rate	6.50%	6.30%	6.56%

To determine the discount rates used to measure our benefit obligations, we utilize analyses in which the projected annual cash flows from the pension and other postretirement benefit plans were matched with yield curves based on an appropriate universe of high-quality corporate bonds. We use the results of the yield curve analyses to select the discount rates that match the payment streams of the benefits in these plans.

We use a spot rate approach to estimate the service cost and interest cost components of net periodic benefit cost for our pension and other postretirement benefit plans.

Health Care Cost Trend Assumptions

For measurement purposes at December 31, 2019, increases in the per capita cost of pre-Medicare covered health care benefits were assumed to be 6.25% for 2020. It is assumed the rate will decrease gradually to an ultimate rate of 5.0% for 2025 and remain at that level thereafter.

Assumed health care cost trend rates affect the amounts reported in the consolidated financial statements. To illustrate, a one-percentage point change in the assumed health care cost trend would have the following effects:

	One-percentage point	
	Increase	Decrease
	<i>(\$ in millions)</i>	
Increase (decrease) in:		
Total service and interest cost components	\$ 1	\$ (1)
Postretirement benefit obligation	8	(7)

Asset Management

Eleven investment firms manage our defined benefit pension plans' assets under investment guidelines approved by our Benefits Investment Committee that is composed of members of our management. Investments are restricted to domestic and international equity securities, domestic and international fixed income securities, and unleveraged exchange-traded options and financial futures. Limitations restrict investment concentration and use of certain derivative investments. The target asset allocation for equity is 75% of the pension plans' assets. Fixed income investments must consist predominantly of securities rated investment grade or higher. Equity investments must be in liquid securities listed on national exchanges. No investment is permitted in our securities (except through commingled pension trust funds).

Our pension plans' weighted average asset allocations, by asset category, were as follows:

	Percentage of plan assets at December 31,	
	2019	2018
Domestic equity securities	50%	49%
International equity securities	24%	23%
Debt securities	24%	25%
Cash and cash equivalents	2%	3%
Total	<u>100%</u>	<u>100%</u>

The other postretirement benefit plan assets consist primarily of trust-owned variable life insurance policies with an asset allocation at December 31, 2019 of 67% in equity securities and 33% in debt securities compared with 64% in equity securities and 36% in debt securities at December 31, 2018. The target asset allocation for equity is between 50% and 75% of the plan's assets.

The plans' assumed future returns are based principally on the asset allocations and historical returns for the plans' asset classes determined from both actual plan returns and, over longer time periods, expected market returns for those asset classes. For 2020, we assume an 8.25% return on pension plan assets.

Fair Value of Plan Assets

The following is a description of the valuation methodologies used for pension plan assets measured at fair value.

Common stock: Shares held by the plan at year end are valued at the official closing price as defined by the exchange or at the most recent trade price of the security at the close of the active market.

Common collective trusts: The readily determinable fair value is based on the published fair value per unit of the trusts. The common collective trusts hold equity securities, fixed income securities and cash and cash equivalents.

Fixed income securities: Valued based on quotes received from independent pricing services or at an estimated price at which a dealer would pay for the security at year end using observable market-based inputs.

Commingled funds: The readily determinable fair value is based on the published fair value per unit of the funds. The commingled funds hold equity securities.

Cash and cash equivalents: Short-term Treasury bills or notes are valued at an estimated price at which a dealer would pay for the security at year end using observable market-based inputs; money market funds are valued at the closing price reported on the active market on which the funds are traded.

The following table sets forth the pension plans' assets by valuation technique level, within the fair value hierarchy. There were no level 3 valued assets at December 31, 2019 or 2018.

	December 31, 2019		
	Level 1	Level 2	Total
	<i>(\$ in millions)</i>		
Common stock	\$ 1,329	\$ —	\$ 1,329
Common collective trusts:			
International equity securities	—	377	377
Debt securities	—	303	303
Fixed income securities:			
Government and agencies securities	—	172	172
Corporate bonds	—	84	84
Mortgage and other asset-backed securities	—	26	26
Commingled funds	—	121	121
Cash and cash equivalents	50	—	50
Total investments	<u>\$ 1,379</u>	<u>\$ 1,083</u>	<u>\$ 2,462</u>

	December 31, 2018		
	Level 1	Level 2	Total
	<i>(\$ in millions)</i>		
Common stock	\$ 1,106	\$ —	\$ 1,106
Common collective trusts:			
International equity securities	—	314	314
Debt securities	—	287	287
Fixed income securities:			
Government and agencies securities	—	89	89
Corporate bonds	—	83	83
Mortgage and other asset-backed securities	—	62	62
Commingled funds	—	92	92
Cash and cash equivalents	72	—	72
	<u>72</u>	<u>—</u>	<u>72</u>
 Total investments	 <u>\$ 1,178</u>	 <u>\$ 927</u>	 <u>\$ 2,105</u>

The following is a description of the valuation methodologies used for other postretirement benefit plan assets measured at fair value.

Trust-owned life insurance: Valued at our share of the net assets of trust-owned life insurance issued by a major insurance company. The underlying investments of that trust consist of a U.S. stock account and a U.S. bond account but may retain cash at times as well. The U.S. stock account and U.S. bond account are valued based on readily determinable fair values.

The other postretirement benefit plan assets consisted of trust-owned life insurance with fair values of \$170 million and \$158 million at December 31, 2019 and 2018, respectively, and are valued under level 2 of the fair value hierarchy. There were no level 1 or level 3 valued assets.

Contributions and Estimated Future Benefit Payments

In 2020, we expect to contribute approximately \$18 million to our unfunded pension plans for payments to pensioners and approximately \$37 million to our other postretirement benefit plans for retiree health and death benefits. We do not expect to contribute to our funded pension plan in 2020.

Benefit payments, which reflect expected future service, as appropriate, are expected to be paid as follows:

	Pension Benefits	Other Postretirement Benefits
	<i>(\$ in millions)</i>	
2020	\$ 144	\$ 37
2021	144	36
2022	144	34
2023	144	33
2024	144	32
Years 2025 – 2029	719	148

Other Postretirement Coverage

Under collective bargaining agreements, Norfolk Southern and certain subsidiaries participate in a multi-employer benefit plan, which provides certain postretirement health care and life insurance benefits to eligible union employees. Premiums under this plan are expensed as incurred and totaled \$31 million in 2019, \$35 million in 2018, and \$44 million in 2017.

Section 401(k) Plans

Norfolk Southern and certain subsidiaries provide Section 401(k) savings plans for employees. Under the plans, we match a portion of employee contributions, subject to applicable limitations. Our matching contributions, recorded as an expense, under these plans were \$22 million in 2019 and \$23 million in both 2018 and 2017.

13. Stock-Based Compensation

Under the stockholder-approved Long-Term Incentive Plan (LTIP), the Compensation Committee (Committee), which is made up of nonemployee members of the Board of Directors, or the Chief Executive Officer (when delegated authority by such Committee), may grant stock options, stock appreciation rights (SARs), restricted stock units (RSUs), restricted shares, performance share units (PSUs), and performance shares, up to a maximum of 104,125,000 shares of our Common Stock, of which 9,294,726 remain available for future grants as of December 31, 2019.

The number of shares remaining for issuance under the LTIP is reduced (i) by 1 for each award granted as a stock option or stock-settled SAR, or (ii) by 1.61 for an award made in the form other than a stock option or stock-settled SAR. Under the Board-approved Thoroughbred Stock Option Plan (TSOP), the Committee may grant stock options up to a maximum of 6,000,000 shares of Common Stock. We use newly issued shares to satisfy any exercises and awards under the LTIP and the TSOP.

The LTIP also permits the payment, on a current or a deferred basis and in cash or in stock, of dividend equivalents on shares of Common Stock covered by stock options, RSUs, or PSUs in an amount commensurate with regular quarterly dividends paid on Common Stock. With respect to stock options, if employment of the participant is terminated for any reason, including retirement, disability, or death, we have no further obligation to make any dividend equivalent payments. Regarding RSUs, we have no further obligation to make any dividend equivalent payments unless employment of the participant is terminated as a result of qualifying retirement or disability. Should an employee terminate employment, they are not required to forfeit dividend equivalent payments already received. Outstanding PSUs do not receive dividend equivalent payments.

The Committee granted stock options, RSUs and PSUs pursuant to the LTIP and granted stock options pursuant to the TSOP for the last three years as follows:

	2019		2018		2017	
	Granted	Weighted Average Grant-Date Fair Value	Granted	Weighted Average Grant-Date Fair Value	Granted	Weighted Average Grant-Date Fair Value
Stock options:						
LTIP	47,360	\$ 45.74	40,960	\$ 41.70	341,120	\$ 37.73
TSOP	—	—	—	—	144,440	31.33
Total	<u>47,360</u>		<u>40,960</u>		<u>485,560</u>	
RSUs	219,710	164.47	217,290	148.37	83,330	120.16
PSUs	102,250	160.97	92,314	147.47	300,334	88.56

Beginning in 2018, recipients of certain RSUs and PSUs pursuant to the LTIP who retire prior to October 1st will forfeit awards received in the current year. Receipt of certain LTIP awards is contingent on the recipient having executed a non-compete agreement with the company.

We account for our grants of stock options, RSUs, PSUs, and dividend equivalent payments in accordance with FASB ASC 718, “*Compensation - Stock Compensation.*” Accordingly, all awards result in charges to net income while dividend equivalent payments, which are all related to equity classified awards, are charged to retained income. Compensation cost for the awards is recognized on a straight-line basis over the requisite service period for the entire award. Related compensation costs and tax benefits during the year were:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
	<i>(\$ in millions)</i>		
Stock-based compensation expense	\$ 53	\$ 47	\$ 45
Total tax benefit	37	33	54

Stock Options

Option exercise prices will be at least the higher of (i) the average of the high and low prices at which Common Stock is traded on the grant date, or (ii) the closing price of Common Stock on the grant date. All options are subject to a vesting period of at least one year, and the term of the option will not exceed ten years. Holders of the options granted under the LTIP who remain actively employed receive cash dividend equivalent payments for four years in an amount equal to the regular quarterly dividends paid on Common Stock. Dividend equivalent payments are not made on the TSOP options.

For all years, options granted under the LTIP and the TSOP may not be exercised prior to the fourth and third anniversaries of the date of grant, respectively, or if the optionee retires or dies before that anniversary date, may not be exercised before the later of one year after the grant date or the date of the optionee’s retirement or death.

The fair value of each option awarded in 2019 and 2018 was measured on the date of grant using the Black-Scholes valuation model. The fair value of each option awarded in 2017 was measured on the date of grant using a binomial lattice-based option valuation model. Expected volatility is based on implied volatility from traded options on, and historical volatility of, Common Stock. Historical data is used to estimate option exercises and employee terminations within the valuation model. For the 2019 and 2018 grant years, historical exercise data is used to estimate the average expected option term. For the 2017 grant year, the average expected option term is derived from the output of the valuation model and represents the period of time that all options granted are expected to be outstanding, including the branches of the model that result in options expiring unexercised. The average risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant. A dividend yield of zero was used for the LTIP options during the vesting period. For 2019, 2018, and 2017, a dividend yield of 2.06%, 1.94%, and 2.04%, respectively, was used for all vested LTIP options and all TSOP options.

The assumptions for the LTIP and TSOP grants for the last three years are shown in the following table:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
Average expected volatility	23%	24%	26%
Average risk-free interest rate	2.56%	2.55%	2.51%
Average expected option term LTIP	7.2 years	7.2 years	8.6 years
Average expected option term TSOP	—	—	8.3 years

A summary of changes in stock options is presented below:

	<u>Stock Options</u>	<u>Weighted Avg. Exercise Price</u>
Outstanding at December 31, 2018	3,419,644	\$ 86.66
Granted	47,360	168.36
Exercised	(770,597)	74.39
Forfeited	<u>(18,958)</u>	105.28
Outstanding at December 31, 2019	<u><u>2,677,449</u></u>	91.51

The aggregate intrinsic value of options outstanding at December 31, 2019 was \$275 million with a weighted average remaining contractual term of 5 years. Of these options outstanding, 1,856,019 were exercisable and had an aggregate intrinsic value of \$196 million with a weighted average exercise price of \$88.48 and a weighted average remaining contractual term of 2.9 years.

The following table provides information related to options exercised for the last three years:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
	<i>(\$ in millions)</i>		
Options exercised	770,597	840,175	1,789,939
Total intrinsic value	\$ 86	\$ 72	\$ 114
Cash received upon exercise	53	58	104
Related tax benefits realized	18	16	35

At December 31, 2019, total unrecognized compensation related to options granted under the LTIP and the TSOP was \$2 million, and is expected to be recognized over a weighted-average period of approximately 1.6 years.

Restricted Stock Units

Beginning in 2018, RSUs granted primarily have a four-year ratable restriction period and will be settled through the issuance of shares of Common Stock. RSUs granted prior to 2018 have a five-year restriction period and will also be settled through the issuance of shares of Common Stock. Certain RSU grants include cash dividend equivalent payments during the restriction period in an amount equal to regular quarterly dividends paid on Common Stock.

	<u>2019</u>	<u>2018</u>	<u>2017</u>
	<i>(\$ in millions)</i>		
RSUs vested	166,197	160,200	137,200
Common Stock issued net of tax withholding	119,346	99,968	81,318
Related tax benefit realized	\$ 2	\$ 3	\$ 3

A summary of changes in RSUs is presented below:

	<u>RSUs</u>	<u>Weighted-Average Grant-Date Fair Value</u>
Nonvested at December 31, 2018	637,035	\$ 111.87
Granted	219,710	164.47
Vested	(166,197)	111.79
Forfeited	<u>(24,376)</u>	152.17
Nonvested at December 31, 2019	<u><u>666,172</u></u>	127.77

At December 31, 2019, total unrecognized compensation related to RSUs was \$25 million, and is expected to be recognized over a weighted-average period of approximately 2.6 years.

Performance Share Units

PSUs provide for awards based on the achievement of certain predetermined corporate performance goals at the end of a three-year cycle and are settled through the issuance of shares of Common Stock. All PSUs will earn out based on the achievement of performance conditions and some will also earn out based on a market condition. The market condition fair value was measured on the date of grant using a Monte Carlo simulation model.

	<u>2019</u>	<u>2018</u>	<u>2017</u>
	<i>(\$ in millions)</i>		
PSUs earned	331,099	154,189	171,080
Common Stock issued net of tax withholding	221,241	94,399	99,805
Related tax benefit realized	\$ 9	\$ 3	\$ 1

A summary of changes in PSUs is presented below:

	<u>PSUs</u>	<u>Weighted-Average Grant-Date Fair Value</u>
Balance at December 31, 2018	1,426,826	\$ 66.35
Granted	102,250	160.97
Earned	(331,099)	42.70
Unearned	(735,048)	60.02
Forfeited	<u>(6,419)</u>	126.92
Balance at December 31, 2019	<u><u>456,510</u></u>	114.04

At December 31, 2019, total unrecognized compensation related to PSUs granted under the LTIP was \$6 million, and is expected to be recognized over a weighted-average period of approximately 1.7 years.

Shares Available and Issued

Shares of Common Stock available for future grants and issued in connection with all features of the LTIP and the TSOP at December 31, were as follows:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
Available for future grants:			
LTIP	9,294,726	8,644,108	8,774,768
TSOP	434,401	422,973	410,895
Issued:			
LTIP	852,869	820,746	1,679,547
TSOP	258,315	213,796	291,515

14. Stockholders' Equity

Common Stock

Common Stock is reported net of shares held by our consolidated subsidiaries (Treasury Shares). Treasury Shares at December 31, 2019 and 2018 amounted to 20,320,777, with a cost of \$19 million at both dates.

Accumulated Other Comprehensive Loss

The components of "Other comprehensive income (loss)" reported in the Consolidated Statements of Comprehensive Income and changes in the cumulative balances of "Accumulated other comprehensive loss" reported in the Consolidated Balance Sheets consisted of the following:

	<u>Balance at Beginning of Year</u>	<u>Net Income (Loss)</u>	<u>Reclassification of Stranded Tax Effects</u>	<u>Reclassification Adjustments</u>	<u>Balance at End of Year</u>
	<i>(\$ in millions)</i>				
Year ended December 31, 2019					
Pensions and other postretirement liabilities	\$ (497)	\$ 61	\$ —	\$ 15	\$ (421)
Other comprehensive loss of equity investees	(66)	(4)	—	—	(70)
Accumulated other comprehensive loss	<u>\$ (563)</u>	<u>\$ 57</u>	<u>\$ —</u>	<u>\$ 15</u>	<u>\$ (491)</u>
Year ended December 31, 2018					
Pensions and other postretirement liabilities	\$ (300)	\$ (136)	\$ (86)	\$ 25	\$ (497)
Other comprehensive loss of equity investees	(56)	(8)	(2)	—	(66)
Accumulated other comprehensive loss	<u>\$ (356)</u>	<u>\$ (144)</u>	<u>\$ (88)</u>	<u>\$ 25</u>	<u>\$ (563)</u>

The adoption of FASB ASU 2018-02 (see Note 1) resulted in an increase to “Accumulated other comprehensive loss” of \$88 million and a corresponding increase to “Retained income,” with no impact on “Total stockholders’ equity.”

Other Comprehensive Income (Loss)

“Other comprehensive income (loss)” reported in the Consolidated Statements of Comprehensive Income consisted of the following:

	<u>Pretax Amount</u>	<u>Tax (Expense) Benefit</u>	<u>Net-of-Tax Amount</u>
	<i>(\$ in millions)</i>		
<i>Year ended December 31, 2019</i>			
Net gain arising during the year:			
Pensions and other postretirement benefits	\$ 81	\$ (20)	\$ 61
Reclassification adjustments for costs included in net income	<u>20</u>	<u>(5)</u>	<u>15</u>
Subtotal	101	(25)	76
Other comprehensive loss of equity investees	<u>(4)</u>	<u>—</u>	<u>(4)</u>
Other comprehensive income	<u>\$ 97</u>	<u>\$ (25)</u>	<u>\$ 72</u>
<i>Year ended December 31, 2018</i>			
Net gain (loss) arising during the year:			
Pensions and other postretirement benefits	\$ (181)	\$ 45	\$ (136)
Reclassification adjustments for costs included in net income	<u>33</u>	<u>(8)</u>	<u>25</u>
Subtotal	(148)	37	(111)
Other comprehensive loss of equity investees	<u>(9)</u>	<u>1</u>	<u>(8)</u>
Other comprehensive loss	<u>\$ (157)</u>	<u>\$ 38</u>	<u>\$ (119)</u>
<i>Year ended December 31, 2017</i>			
Net gain arising during the year:			
Pensions and other postretirement benefits	\$ 127	\$ (32)	\$ 95
Reclassification adjustments for costs included in net income	<u>28</u>	<u>(9)</u>	<u>19</u>
Subtotal	155	(41)	114
Other comprehensive income of equity investees	<u>19</u>	<u>(2)</u>	<u>17</u>
Other comprehensive income	<u>\$ 174</u>	<u>\$ (43)</u>	<u>\$ 131</u>

15. Stock Repurchase Programs

We repurchased and retired 11.3 million, 17.1 million (7.0 million shares under the ASR and 10.1 million shares under our ongoing open-market program), and 8.2 million shares of Common Stock under our stock repurchase programs in 2019, 2018, and 2017, respectively, at a cost of \$2.1 billion, \$2.8 billion, and \$1.0 billion, respectively.

On September 26, 2017, our Board of Directors authorized the repurchase of up to an additional 50 million shares of Common Stock through December 31, 2022. As of December 31, 2019, 28.0 million shares remain authorized for repurchase. Since the beginning of 2006, we have repurchased and retired 196.9 million shares at a total cost of \$16.2 billion.

16. Earnings Per Share

The following table sets forth the calculation of basic and diluted earnings per share:

	Basic			Diluted		
	2019	2018	2017	2019	2018	2017
	<i>(\$ in millions except per share amounts, shares in millions)</i>					
Net income	\$ 2,722	\$ 2,666	\$ 5,404	\$ 2,722	\$ 2,666	\$ 5,404
Dividend equivalent payments	(5)	(6)	(4)	—	(1)	(2)
Income available to common stockholders	\$ 2,717	\$ 2,660	\$ 5,400	\$ 2,722	\$ 2,665	\$ 5,402
Weighted-average shares outstanding	263.3	277.7	287.9	263.3	277.7	287.9
Dilutive effect of outstanding options and share-settled awards				2.3	2.5	2.4
Adjusted weighted-average shares outstanding				265.6	280.2	290.3
Earnings per share	<u>\$ 10.32</u>	<u>\$ 9.58</u>	<u>\$ 18.76</u>	<u>\$ 10.25</u>	<u>\$ 9.51</u>	<u>\$ 18.61</u>

In each year, dividend equivalent payments were made to holders of stock options and RSUs. For purposes of computing basic earnings per share, dividend equivalent payments made to holders of stock options and RSUs were deducted from net income to determine income available to common stockholders. For purposes of computing diluted earnings per share, we evaluate on a grant-by-grant basis those stock options and RSUs receiving dividend equivalent payments under the two-class and treasury stock methods to determine which method is more dilutive for each grant. For those grants for which the two-class method was more dilutive, net income was reduced by dividend equivalent payments to determine income available to common stockholders. The dilution calculations exclude options having exercise prices exceeding the average market price of Common Stock of zero for the years ended December 31, 2019 and 2018, and 0.2 million for the year ended December 31, 2017.

17. Commitments and Contingencies

Lawsuits

We and/or certain subsidiaries are defendants in numerous lawsuits and other claims relating principally to railroad operations. When we conclude that it is probable that a liability has been incurred and the amount of the liability can be reasonably estimated, it is accrued through a charge to earnings. While the ultimate amount of liability incurred in any of these lawsuits and claims is dependent on future developments, in our opinion, the recorded liability is adequate to cover the future payment of such liability and claims. However, the final outcome of any of

these lawsuits and claims cannot be predicted with certainty, and unfavorable or unexpected outcomes could result in additional accruals that could be significant to results of operations in a particular year or quarter. Any adjustments to the recorded liability will be reflected in earnings in the periods in which such adjustments become known.

In 2007, various antitrust class actions filed against us and other Class I railroads in various Federal district courts regarding fuel surcharges were consolidated in the District of Columbia by the Judicial Panel on Multidistrict Litigation. In 2012, the court certified the case as a class action. The defendant railroads appealed this certification, and the Court of Appeals for the District of Columbia vacated the District Court's decision and remanded the case for further consideration. On October 10, 2017, the District Court denied class certification. The decision was upheld by the Court of Appeals on August 16, 2019. Since that decision, various individual cases have been filed in multiple jurisdictions. We believe the allegations in the complaints are without merit and intend to vigorously defend the cases. We do not believe the outcome of these proceedings will have a material effect on our financial position, results of operations, or liquidity.

Casualty Claims

Casualty claims include employee personal injury and occupational claims as well as third-party claims, all exclusive of legal costs. To aid in valuing our personal injury liability and determining the amount to accrue with respect to such claims during the year, we utilize studies prepared by an independent consulting actuarial firm. Job-related personal injury and occupational claims are subject to FELA, which is applicable only to railroads. FELA's fault-based tort system produces results that are unpredictable and inconsistent as compared with a no-fault workers' compensation system. The variability inherent in this system could result in actual costs being different from the liability recorded. While the ultimate amount of claims incurred is dependent on future developments, in our opinion, the recorded liability is adequate to cover the future payments of claims and is supported by the most recent actuarial study. In all cases, we record a liability when the expected loss for the claim is both probable and reasonably estimable.

Employee personal injury claims – The largest component of casualties and other claims expense is employee personal injury costs. The independent actuarial firm engaged by us provides quarterly studies to aid in valuing our employee personal injury liability and estimating personal injury expense. The actuarial firm studies our historical patterns of reserving for claims and subsequent settlements, taking into account relevant outside influences. The actuarial firm uses the results of these analyses to estimate the ultimate amount of liability. We adjust the liability quarterly based upon our assessment and the results of the study. Our estimate of the liability is subject to inherent limitation given the difficulty of predicting future events such as jury decisions, court interpretations, or legislative changes. As a result, actual claim settlements may vary from the estimated liability recorded.

Occupational claims – Occupational claims include injuries and illnesses alleged to be caused by exposures which occur over time as opposed to injuries or illnesses caused by a specific accident or event. Types of occupational claims commonly seen allege exposure to asbestos and other claimed toxic substances resulting in respiratory diseases or cancer. Many such claims are being asserted by former or retired employees, some of whom have not been employed in the rail industry for decades. The independent actuarial firm provides an estimate of the occupational claims liability based upon our history of claim filings, severity, payments, and other pertinent facts. The liability is dependent upon judgments we make as to the specific case reserves as well as judgments of the actuarial firm in the quarterly studies. The actuarial firm's estimate of ultimate loss includes a provision for those claims that have been incurred but not reported. This provision is derived by analyzing industry data and projecting our experience. We adjust the liability quarterly based upon our assessment and the results of the study. However, it is possible that the recorded liability may not be adequate to cover the future payment of claims. Adjustments to the recorded liability are reflected in operating expenses in the periods in which such adjustments become known.

Third-party claims – We record a liability for third-party claims including those for highway crossing accidents, trespasser and other injuries, property damage, and lading damage. The actuarial firm assists us with the calculation

of potential liability for third-party claims, except lading damage, based upon our experience including the number and timing of incidents, amount of payments, settlement rates, number of open claims, and legal defenses. We adjust the liability quarterly based upon our assessment and the results of the study. Given the inherent uncertainty in regard to the ultimate outcome of third-party claims, it is possible that the actual loss may differ from the estimated liability recorded.

Environmental Matters

We are subject to various jurisdictions' environmental laws and regulations. We record a liability where such liability or loss is probable and reasonably estimable. Environmental specialists regularly participate in ongoing evaluations of all known sites and in determining any necessary adjustments to liability estimates.

Our Consolidated Balance Sheets include liabilities for environmental exposures of \$56 million at December 31, 2019, and \$55 million at December 31, 2018, of which \$15 million is classified as a current liability at the end of both 2019 and 2018. At December 31, 2019, the liability represents our estimates of the probable cleanup, investigation, and remediation costs based on available information at 110 known locations and projects compared with 114 locations and projects at December 31, 2018. At December 31, 2019, sixteen sites accounted for \$40 million of the liability, and no individual site was considered to be material. We anticipate that much of this liability will be paid out over five years; however, some costs will be paid out over a longer period.

At eleven locations, one or more of our subsidiaries in conjunction with a number of other parties have been identified as potentially responsible parties under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 or comparable state statutes that impose joint and several liability for cleanup costs. We calculate our estimated liability for these sites based on facts and legal defenses applicable to each site and not solely on the basis of the potential for joint liability.

With respect to known environmental sites (whether identified by us or by the Environmental Protection Agency or comparable state authorities), estimates of our ultimate potential financial exposure for a given site or in the aggregate for all such sites can change over time because of the widely varying costs of currently available cleanup techniques, unpredictable contaminant recovery and reduction rates associated with available cleanup technologies, the likely development of new cleanup technologies, the difficulty of determining in advance the nature and full extent of contamination and each potential participant's share of any estimated loss (and that participant's ability to bear it), and evolving statutory and regulatory standards governing liability.

The risk of incurring environmental liability for acts and omissions, past, present, and future, is inherent in the railroad business. Some of the commodities we transport, particularly those classified as hazardous materials, pose special risks that we work diligently to reduce. In addition, several of our subsidiaries own, or have owned, land used as operating property, or which is leased and operated by others, or held for sale. Because environmental problems that are latent or undisclosed may exist on these properties, there can be no assurance that we will not incur environmental liabilities or costs with respect to one or more of them, the amount and materiality of which cannot be estimated reliably at this time. Moreover, lawsuits and claims involving these and potentially other unidentified environmental sites and matters are likely to arise from time to time. The resulting liabilities could have a significant effect on financial position, results of operations, or liquidity in a particular year or quarter.

Based on our assessment of the facts and circumstances now known, we believe we have recorded the probable and reasonably estimable costs for dealing with those environmental matters of which we are aware. Further, we believe that it is unlikely that any known matters, either individually or in the aggregate, will have a material adverse effect on our financial position, results of operations, or liquidity.

Insurance

We obtain on behalf of ourself and our subsidiaries insurance for potential losses for third-party liability and first-party property damages. With limited exceptions, we are currently insured above \$75 million and below \$1.1 billion (\$1.5 billion for specific perils) per occurrence and/or policy year for bodily injury and property damage to third parties and above \$25 million and below \$200 million per occurrence and/or policy year for property owned by us or in our care, custody, or control.

Purchase Commitments

At December 31, 2019, we had outstanding purchase commitments totaling approximately \$1.2 billion for locomotives, track material, long-term service contracts, track and yard expansion projects in connection with our capital programs as well as freight cars and containers through 2024.

Change-In-Control Arrangements

We have compensation agreements with certain officers and key employees that become operative only upon a change in control of Norfolk Southern, as defined in those agreements. The agreements provide generally for payments based on compensation at the time of a covered individual's involuntary or other specified termination and for certain other benefits.

Indemnifications

In a number of instances, we have agreed to indemnify lenders for additional costs they may bear as a result of certain changes in laws or regulations applicable to their loans. Such changes may include impositions or modifications with respect to taxes, duties, reserves, liquidity, capital adequacy, special deposits, and similar requirements relating to extensions of credit by, deposits with, or the assets or liabilities of such lenders. The nature and timing of changes in laws or regulations applicable to our financings are inherently unpredictable, and therefore our exposure in connection with the foregoing indemnifications cannot be quantified. No liability has been recorded related to these indemnifications.

NORFOLK SOUTHERN CORPORATION AND SUBSIDIARIES
QUARTERLY FINANCIAL DATA
(Unaudited)

	Three Months Ended			
	March 31	June 30	September 30	December 31
	<i>(\$ in millions, except per share amounts)</i>			
<u>2019</u>				
Railway operating revenues	\$ 2,840	\$ 2,925	\$ 2,841	\$ 2,690
Income from railway operations	966	1,065	996	962
Net income	677	722	657	666
Earnings per share:				
Basic	2.53	2.72	2.50	2.56
Diluted	2.51	2.70	2.49	2.55
<u>2018</u>				
Railway operating revenues	\$ 2,717	\$ 2,898	\$ 2,947	\$ 2,896
Income from railway operations	835	1,026	1,020	1,078
Net income	552	710	702	702
Earnings per share:				
Basic	1.94	2.52	2.54	2.59
Diluted	1.93	2.50	2.52	2.57

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

Not applicable.

Item 9A. Controls and Procedures

Disclosure Controls and Procedures

Our Chief Executive Officer and Chief Financial Officer, with the assistance of management, evaluated the effectiveness of our disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (Exchange Act)) at December 31, 2019. Based on such evaluation, our officers have concluded that, at December 31, 2019, our disclosure controls and procedures were effective to ensure that information required to be disclosed in our reports under the Exchange Act is recorded, processed, summarized, and reported, within the time period specified in the SEC's rules and forms, and that such information is accumulated and communicated to management, including the Chief Executive Officer and the Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control Over Financial Reporting

We are responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control over financial reporting includes those policies and procedures that pertain to our ability to record, process, summarize, and report reliable financial data. We recognize that there are inherent limitations in the effectiveness of any internal control over financial reporting, including the possibility of human error and the circumvention or overriding of internal control. Accordingly, even effective internal control over financial reporting can provide only reasonable assurance with respect to financial statement preparation. Further, because of changes in conditions, the effectiveness of internal control over financial reporting may vary over time.

Our Board of Directors, acting through its Audit Committee, is responsible for the oversight of our accounting policies, financial reporting, and internal control. The Audit Committee of our Board of Directors is comprised of outside directors who are independent of management. The independent registered public accounting firm and our internal auditors have full and unlimited access to the Audit Committee, with or without management, to discuss the adequacy of internal control over financial reporting, and any other matters which they believe should be brought to the attention of the Audit Committee.

We have issued a report of our assessment of internal control over financial reporting, and our independent registered public accounting firm has issued an attestation report on our internal control over financial reporting at December 31, 2019. These reports appear in Item 8 of this report on Form 10-K.

Changes in Internal Control Over Financial Reporting

During the fourth quarter of 2019, we have not identified any changes in internal control over financial reporting that have materially affected, or are reasonably likely to materially effect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

NORFOLK SOUTHERN CORPORATION AND SUBSIDIARIES

Item 10. Directors, Executive Officers and Corporate Governance

In accordance with General Instruction G(3), information called for by Part III, Item 10, is incorporated herein by reference from the information appearing under the caption “Election of Directors,” under the caption “Delinquent Section 16(a) Reports,” under the caption “Committees of the Board,” under the caption “Shareholder Recommendations and Nominations,” and under the caption “The Thoroughbred Code of Ethics” in our definitive Proxy Statement for our 2020 Annual Meeting of Stockholders, which definitive Proxy Statement will be filed electronically with the SEC pursuant to Regulation 14A. The information regarding executive officers called for by Item 401 of Regulation S-K is included in Part I hereof beginning under “Information about our Executive Officers.”

Item 11. Executive Compensation

In accordance with General Instruction G(3), information called for by Part III, Item 11, is incorporated herein by reference from the information:

- under the caption “Compensation of Directors;”
- appearing under the caption “Compensation Discussion and Analysis,” the information appearing in the “Summary Compensation Table” and the “2019 Grants of Plan-Based Awards” table, including the narrative to such tables, the “Outstanding Equity Awards at Fiscal Year-End 2019” and “Option Exercises and Stock Vested in 2019” tables, and the tabular and narrative information appearing under the subcaptions “Retirement Benefits,” “Deferred Compensation,” and “Potential Payments Upon a Change in Control or Other Termination of Employment;” and
- appearing under the captions “Compensation Committee Interlocks and Insider Participation,” “Compensation Policy Risk Assessment,” and “Compensation Committee Report,”

in each case included in our definitive Proxy Statement for our 2020 Annual Meeting of Stockholders, which definitive Proxy Statement will be filed electronically with the SEC pursuant to Regulation 14A.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

In accordance with General Instruction G(3), information on security ownership of certain beneficial owners and management called for by Part III, Item 12, is incorporated herein by reference from the information appearing under the caption “Beneficial Ownership of Stock” in our definitive Proxy Statement for our 2020 Annual Meeting of Stockholders, which definitive Proxy Statement will be filed electronically with the SEC pursuant to Regulation 14A.

Equity Compensation Plan Information (at December 31, 2019)

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans ⁽¹⁾
	(a)	(b)	(c)
Equity compensation plans approved by securities holders ⁽²⁾	3,577,895 ⁽³⁾	\$ 91.86 ⁽⁵⁾	9,294,726
Equity compensation plans not approved by securities holders	<u>463,759 ⁽⁴⁾</u>	89.81	<u>434,401 ⁽⁶⁾</u>
Total	<u><u>4,041,654</u></u>		<u><u>9,729,127</u></u>

⁽¹⁾ Excludes securities reflected in column (a).

⁽²⁾ LTIP.

⁽³⁾ Includes options, RSUs and PSUs granted under LTIP that will be settled in shares of stock.

⁽⁴⁾ TSOP.

⁽⁵⁾ Calculated without regard to 1,364,205 outstanding RSUs and PSUs at December 31, 2019.

⁽⁶⁾ Reflects shares remaining available for grant under TSOP.

Norfolk Southern Corporation Long-Term Incentive Plan

Established on June 28, 1983, and approved by our stockholders at their Annual Meeting held on May 10, 1984, LTIP was adopted to promote the success of our company by providing an opportunity for non-employee Directors, officers, and other key employees to acquire a proprietary interest in the Corporation. The Board of Directors amended LTIP on January 23, 2015, which amendment was approved by shareholders on May 14, 2015, to include the reservation for issuance of an additional 8,000,000 shares of authorized but unissued Common Stock.

The amended LTIP adopted a fungible share reserve ratio so that, for awards granted after May 13, 2010, the number of shares remaining for issuance under the amended LTIP will be reduced (i) by 1 for each award granted as an option or stock-settled SAR, or (ii) by 1.61 for an award made in the form other than an option or stock-settled SAR. Any shares of Common Stock subject to options, PSUs, restricted shares, or RSUs which are not issued as Common Stock will again be available for award under LTIP after the expiration or forfeiture of an award.

Non-employee Directors, officers, and other key employees residing in the United States of America or Canada are eligible for selection to receive LTIP awards. Under LTIP, the Committee, or the Corporation's chief executive officer to the extent the Committee delegates award-making authority pursuant to LTIP, may grant incentive stock options, nonqualified stock options, SARs, RSUs, restricted shares, PSUs, and performance shares. In addition, dividend equivalent payments may be awarded for options, RSUs, and PSUs. Awards under LTIP may be made subject to forfeiture under certain circumstances and the Committee may establish such other terms and conditions for the awards as provided in LTIP.

For options granted after May 13, 2010, the option price will be at least the higher of (i) the average of the high and low prices at which Common Stock is traded on the date of grant, or (ii) the closing price of Common Stock on the date of the grant. All options are subject to a vesting period of at least one year, and the term of the option will not exceed ten years. LTIP specifically prohibits option repricing without stockholder approval, except that adjustments may be made in the event of changes in our capital structure or Common Stock.

PSUs entitle a recipient to receive performance-based compensation at the end of a three-year cycle based on our performance during that period. For the 2019 PSU awards, corporate performance will be based directly on return on average capital invested, with total return to stockholders serving as a modifier, and will be settled in shares of Common Stock. In 2016, the Committee also granted an "accelerated turnaround incentive" award in the form of a PSU with a three-year performance that was based on equally weighted standards established by the Committee for operating ratio and earnings per share. We did not meet the performance criteria for operating ratio and therefore no payout for the accelerated turnaround incentive award was achieved.

RSUs are payable in cash or in shares of Common Stock at the end of a restriction period. During the restriction period, the holder of the RSUs has no beneficial ownership interest in the Common Stock represented by the RSUs and has no right to vote the shares represented by the units or to receive dividends (except for dividend equivalent payment rights that may be awarded with respect to the RSUs). The Committee at its discretion may waive the restriction period, but settlement of any RSUs will occur on the same settlement date as would have applied absent a waiver of restrictions, if no performance goals were imposed. RSUs will be settled in shares of Common Stock.

Norfolk Southern Corporation Thoroughbred Stock Option Plan

Our Board of Directors adopted TSOP on January 26, 1999, to promote the success of our company by providing an opportunity for nonagreement employees to acquire a proprietary interest in our company and thereby to provide an additional incentive to nonagreement employees to devote their maximum efforts and skills to the advancement, betterment, and prosperity of our company and our stockholders. Under TSOP there were 6,000,000 shares of authorized but unissued Common Stock reserved for issuance. TSOP has not been and is not required to have been approved by our stockholders.

Active full-time nonagreement employees residing in the United States of America or Canada are eligible for selection to receive TSOP awards. Under TSOP, the Committee, or the Corporation's chief executive officer to the extent the Committee delegates award-making authority pursuant to TSOP, may grant nonqualified stock options subject to such terms and conditions as provided in TSOP.

The option price may not be less than the average of the high and low prices at which Common Stock is traded on the date of the grant. All options are subject to a vesting period of at least one year, and the term of the option will not exceed ten years. TSOP specifically prohibits repricing without stockholder approval, except for capital adjustments.

Norfolk Southern Corporation Directors' Restricted Stock Plan (Plan)

The Plan was adopted on January 1, 1994, and was designed to increase ownership of Common Stock by our non-employee Directors so as to further align their ownership interest in our company with that of our stockholders. The Plan has not been and is not required to have been approved by our stockholders.

Effective January 23, 2015, the Board amended the Plan to provide that no additional awards will be made under the Plan. Prior to that amendment, only non-employee Directors who are not and never have been employees of our company were eligible to participate in the Plan. Upon becoming a Director, each eligible Director received a one-time grant of 3,000 restricted shares of Common Stock. No additional shares may be granted under the Plan. No individual member of the Board exercised discretion concerning the eligibility of any Director or the number of shares granted.

The restriction period applicable to restricted shares granted under the Plan begins on the date of the grant and ends on the earlier of the recipient's death or the day after the recipient ceases to be a Director by reason of disability or retirement. During the restriction period, shares may not be sold, pledged, or otherwise encumbered. Directors forfeit the restricted shares if they cease to serve as a Director of our company for reasons other than their disability, retirement, or death.

Item 13. Certain Relationships and Related Transactions, and Director Independence

In accordance with General Instruction G(3), information called for by Part III, Item 13, is incorporated herein by reference from the information appearing under the caption "Related Persons Transactions" and under the caption "Director Independence" in our definitive Proxy Statement for our 2020 Annual Meeting of Stockholders, which definitive Proxy Statement will be filed electronically with the SEC pursuant to Regulation 14A.

Item 14. Principal Accounting Fees and Services

In accordance with General Instruction G(3), information called for by Part III, Item 14, is incorporated herein by reference from the information appearing under the caption "Ratification of Appointment of Independent Registered Public Accounting Firm" in our definitive Proxy Statement for our 2020 Annual Meeting of Stockholders, which definitive Proxy Statement will be filed electronically with the SEC pursuant to Regulation 14A.

PART IV

NORFOLK SOUTHERN CORPORATION AND SUBSIDIARIES

Item 15. Exhibits, Financial Statement Schedules

		Page
(A)	The following documents are filed as part of this report:	
1.	Index to Financial Statements	
	Report of Management	K31
	Reports of Independent Registered Public Accounting Firm	K32
	Consolidated Statements of Income, Years ended December 31, 2019, 2018, and 2017	K36
	Consolidated Statements of Comprehensive Income, Years ended December 31, 2019, 2018, and 2017	K37
	Consolidated Balance Sheets at December 31, 2019 and 2018	K38
	Consolidated Statements of Cash Flows, Years ended December 31, 2019, 2018, and 2017	K39
	Consolidated Statements of Changes in Stockholders' Equity, Years ended December 31, 2019, 2018, and 2017	K40
	Notes to Consolidated Financial Statements	K41
2.	Financial Statement Schedule:	
	The following consolidated financial statement schedule should be read in connection with the consolidated financial statements:	
	Index to Consolidated Financial Statement Schedule	
	Schedule II – Valuation and Qualifying Accounts	K91
	Schedules other than the one listed above are omitted either because they are not required or are inapplicable, or because the information is included in the consolidated financial statements or related notes.	
3.	Exhibits	
Exhibit Number	Description	
2.1	Distribution Agreement, dated as of July 26, 2004, by and among CSX Corporation, CSX Transportation, Inc., CSX Rail Holding Corporation, CSX Northeast Holdings Corporation, Norfolk Southern Corporation, Norfolk Southern Railway Company, CRR Holdings LLC, Green Acquisition Corp., Conrail Inc., Consolidated Rail Corporation, New York Central Lines LLC, Pennsylvania Lines LLC, NYC Newco, Inc., and PRR Newco, Inc., is incorporated by reference to Exhibit 2.1 to Norfolk Southern Corporation's Form 8-K filed on September 2, 2004. (SEC File No. 001-08339)	
3	Articles of Incorporation and Bylaws –	
(i)(a)	The Restated Articles of Incorporation of Norfolk Southern Corporation are incorporated by reference to Exhibit 3(i) to Norfolk Southern Corporation's 10-K filed on March 5, 2001. (SEC File No. 001-08339)	
(i)(b)	An amendment to the Articles of Incorporation of Norfolk Southern Corporation is incorporated by reference to Exhibit 3(i) to Norfolk Southern Corporation's Form 8-K filed on May 18, 2010. (SEC File No. 001-08339)	
(ii)	The Bylaws of Norfolk Southern Corporation, as amended September 24, 2019, are incorporated by reference to Exhibit 3(ii) to Norfolk Southern Corporation's Form 8-K filed on September 24, 2019. (SEC File No. 001-08339)	

- 4 Instruments Defining the Rights of Security Holders, Including Indentures:
- (a) Indenture, dated as of January 15, 1991, from Norfolk Southern Corporation to First Trust of New York, National Association, as Trustee, is incorporated by reference to Exhibit 4.1 to Norfolk Southern Corporation's Registration Statement on Form S-3 (No. 33-38595).
 - (b) [First Supplemental Indenture, dated May 19, 1997, between Norfolk Southern Corporation and First Trust of New York, National Association, as Trustee, related to the issuance of notes in the principal amount of \\$4.3 billion, is incorporated by reference to Exhibit 1.1\(d\) to Norfolk Southern Corporation's Form 8-K filed on May 21, 1997. \(SEC File No. 001-08339\)](#)
 - (c) [Fourth Supplemental Indenture, dated as of February 6, 2001, between Norfolk Southern Corporation and U.S. Bank Trust National Association, as Trustee, related to the issuance of notes in the principal amount of \\$1 billion, is incorporated by reference to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed on February 7, 2001. \(SEC File No. 001-08339\)](#)
 - (d) [Indenture, dated August 27, 2004, among PRR Newco, Inc., as Issuer, and Norfolk Southern Railway Company, as Guarantor, and The Bank of New York, as Trustee, is incorporated by reference to Exhibit 4\(1\) to Norfolk Southern Corporation's Form 10-Q filed on October 28, 2004. \(SEC File No. 001-08339\)](#)
 - (e) [First Supplemental Indenture, dated August 27, 2004, among PRR Newco, Inc., as Issuer, and Norfolk Southern Railway Company, as Guarantor, and The Bank of New York, as Trustee, related to the issuance of notes in the principal amount of approximately \\$451.8 million, is incorporated by reference to Exhibit 4\(m\) to Norfolk Southern Corporation's Form 10-Q filed on October 28, 2004. \(SEC File No. 001-08339\)](#)
 - (f) [Ninth Supplemental Indenture, dated as of March 11, 2005, between Norfolk Southern Corporation and U.S. Bank Trust National Association, as Trustee, related to the issuance of notes in the principal amount of \\$300 million, is incorporated by reference to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed on March 15, 2005. \(SEC File No. 001-08339\)](#)
 - (g) [Tenth Supplemental Indenture, dated as of May 17, 2005, between Norfolk Southern Corporation and U.S. Bank Trust National Association, as Trustee, related to the issuance of notes in the principal amount of \\$366.6 million, is incorporated by reference to Exhibit 99.1 to Norfolk Southern Corporation's Form 8-K filed on May 18, 2005. \(SEC File No. 001-08339\)](#)
 - (h) [Eleventh Supplemental Indenture, dated as of May 17, 2005, between Norfolk Southern Corporation and U.S. Bank Trust National Association, as Trustee, related to the issuance of notes in the principal amount of \\$350 million, is incorporated by reference to Exhibit 99.2 to Norfolk Southern Corporation's Form 8-K filed on May 18, 2005. \(SEC File No. 001-08339\)](#)
 - (i) [Twelfth Supplemental Indenture, dated as of August 26, 2010, between Norfolk Southern Corporation and U.S. Bank Trust National Association, as Trustee, related to the issuance of notes in the principal amount of \\$250 million, is incorporated by reference to Exhibit 4.2 to Norfolk Southern Corporation's Form 8-K filed on August 26, 2010. \(SEC File No. 001-08339\)](#)
 - (j) [Indenture, dated as of June 1, 2009, between Norfolk Southern Corporation and U.S. Bank Trust National Association, as Trustee, is incorporated by reference to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed on June 1, 2009. \(SEC File No. 001-08339\)](#)
 - (k) [First Supplemental Indenture, dated as of June 1, 2009, between Norfolk Southern Corporation and U.S. Bank Trust National Association, as Trustee, related to the issuance of notes in the principal amount of \\$500 million, is incorporated by reference to Exhibit 4.2 to Norfolk Southern Corporation's Form 8-K filed on June 1, 2009. \(SEC File No. 001-08339\)](#)
 - (l) [Second Supplemental Indenture, dated as of May 23, 2011, between the Registrant and U.S. Bank Trust National Association, as Trustee, related to the issuance of notes in the principal amount of \\$400 million, is incorporated by reference to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed on May 23, 2011. \(SEC File No. 001-08339\)](#)

- (m) [Indenture, dated as of September 14, 2011, between the Registrant and U.S. Bank Trust National Association, as Trustee, related to the issuance of notes in the principal amount of \\$595,504,000, is incorporated by reference to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed on September 15, 2011. \(SEC File No. 001-08339\)](#)
- (n) [Third Supplemental Indenture, dated as of September 14, 2011, between the Registrant and U.S. Bank Trust National Association, as Trustee, related to the issuance of notes in the principal amount of \\$4,492,000, is incorporated by reference to Exhibit 4.2 to Norfolk Southern Corporation's Form 8-K filed on September 15, 2011. \(SEC File No. 001-08339\)](#)
- (o) [Fourth Supplemental Indenture, dated as of November 17, 2011, between the Registrant and U.S. Bank Trust National Association, as Trustee, related to the issuance of two series of notes, one in the principal amount of \\$500 million and one in the principal amount of \\$100 million, is incorporated by reference to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed on November 17, 2011. \(SEC File No. 001-08339\)](#)
- (p) [Indenture, dated as of March 15, 2012, between the Registrant and U.S. Bank Trust National Association, as Trustee, is incorporated by reference to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed on March 15, 2012. \(SEC File No. 001-08339\)](#)
- (q) [First Supplemental Indenture, dated as of March 15, 2012, between the Registrant and U.S. Bank Trust National Association, as Trustee, is incorporated by reference to Exhibit 4.2 to Norfolk Southern Corporation's Form 8-K filed on March 15, 2012. \(SEC File No. 001-08339\)](#)
- (r) [Indenture, dated as of August 20, 2012, between the Registrant and U.S. Bank Trust National Association, as Trustee, is incorporated by reference to Exhibit 4.1 to the Registrant's Form 8-K filed on August 21, 2012. \(SEC File No. 001-08339\)](#)
- (s) [Second Supplemental Indenture, dated as of September 7, 2012, between the Registrant and U.S. Bank Trust National Association, as Trustee, is incorporated by reference to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed on September 7, 2012. \(SEC File No. 001-08339\)](#)
- (t) [Third Supplemental Indenture, dated as of August 13, 2013, between the Registrant and U.S. Bank Trust National Association, as Trustee, related to the issuance of notes in the principal amount of \\$500,000,000, is incorporated by reference to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed on August 13, 2013. \(SEC File No. 001-08339\)](#)
- (u) [Fourth Supplemental Indenture, dated as of November 21, 2013, between the Registrant and U.S. Bank Trust National Association, as Trustee, related to the issuance of notes in the principal amount of \\$400,000,000, is incorporated by reference to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed on November 21, 2013. \(SEC File No. 001-08339\)](#)
- (v) [Indenture, dated as of June 2, 2015, between Registrant and U.S. Bank National Association, as Trustee, is incorporated by reference to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed on June 2, 2015. \(SEC File No. 001-08339\)](#)
- (w) [First Supplemental Indenture, dated as of June 2, 2015, between the Registrant and U.S. Bank National Association, as Trustee, is incorporated by reference to Exhibit 4.2 to Norfolk Southern Corporation's Form 8-K filed on June 2, 2015. \(SEC File No. 001-08339\)](#)
- (x) [Second Supplemental Indenture, dated as of November 3, 2015, between the Registrant and U.S. Bank National Association, as Trustee, is incorporated by reference to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed on November 3, 2015. \(SEC File No. 001-08339\)](#)
- (y) [Third Supplemental Indenture, dated as of June 3, 2016, between the Registrant and U.S. Bank National Association, as Trustee, is incorporated by reference to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed on June 3, 2016. \(SEC File No. 001-08339\)](#)
- (z) [Fourth Supplemental Indenture, dated as of May 31, 2017, between the Registrant and U.S. Bank National Association, as Trustee, is incorporated by reference to Exhibit 4.1 to the Corporation's Form 8-K filed May 31, 2017. \(SEC File No. 001-08339\)](#)
- (aa) [Indenture, dated as of August 15, 2017, between the Registrant and U.S. Bank National Association, as Trustee, is incorporated by reference herein to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed August 15, 2017. \(SEC File No. 001-08339\)](#)

- (bb) [Indenture, dated as of November 16, 2017, between the Registrant and U.S. Bank National Association, as Trustee, is incorporated by reference herein to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed November 16, 2017. \(SEC File No. 001-08339\)](#)
- (cc) [Indenture, dated as of February 28, 2018 between the Registrant and U.S. Bank National Association, as Trustee. The Indenture is incorporated by reference herein to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed February 28, 2018. \(SEC File No. 001-08339\)](#)
- (dd) [First Supplemental Indenture, dated as of February 28, 2018, between the Registrant and U.S. Bank National Association, as Trustee. The Indenture is incorporated by reference herein to Exhibit 4.2 to Norfolk Southern Corporation's Form 8-K filed February 28, 2018. \(SEC File No. 001-08339\)](#)
- (ee) [Second Supplemental Indenture, dated as of August 2, 2018, between the Registrant and U.S. Bank National Association, as Trustee. The Indenture is incorporated by reference herein to Exhibit 4.1 to Norfolk Southern Corporation's Form 8-K filed August 2, 2018. \(SEC File No. 001-08339\)](#)
- (ff) [Third Supplemental Indenture, dated as of May 8, 2019, between the Registrant and U.S. Bank National Association, as Trustee, is incorporated by reference to Exhibit 4.1 to the Registrant's Form 8-K filed on May 8, 2019.](#)
- (gg) [Fourth Supplemental Indenture, dated as of October 24, 2019, between the Registrant and U.S. Bank National Association, as Trustee, is incorporated by reference to Exhibit 4.1 to the Registrant's Form 8-K filed on November 4, 2019.](#)
- (hh)** [Description of the Registrant's Common Stock Registered Under Section 12 of the Securities Exchange Act of 1934.](#)

In accordance with Item 601(b)(4)(iii) of Regulation S-K, copies of other instruments of Norfolk Southern Corporation and its subsidiaries with respect to the rights of holders of long-term debt are not filed herewith, or incorporated by reference, but will be furnished to the Commission upon request.

10 Material Contracts -

- (a) [The Transaction Agreement, dated as of June 10, 1997, by and among CSX and CSX Transportation, Inc., Registrant, Norfolk Southern Railway Company, Conrail Inc., Consolidated Rail Corporation, and CRR Holdings LLC, with certain schedules thereto, previously filed, is incorporated by reference to Exhibit 10\(a\) to Norfolk Southern Corporation's Form 10-K filed on February 24, 2003. \(SEC File No. 001-08339\)](#)
- (b) [Amendment No. 1 dated as of August 22, 1998, to the Transaction Agreement, dated as of June 10, 1997, by and among CSX Corporation, CSX Transportation, Inc., Norfolk Southern Corporation, Norfolk Southern Railway Company, Conrail, Inc., Consolidated Rail Corporation, and CRR Holdings LLC, is incorporated by reference from Exhibit 10.1 to Norfolk Southern Corporation's Form 10-Q filed on August 11, 1999. \(SEC File No. 001-08339\)](#)
- (c) [Amendment No. 2 dated as of June 1, 1999, to the Transaction Agreement, dated June 10, 1997, by and among CSX Corporation, CSX Transportation, Inc., Norfolk Southern Corporation, Norfolk Southern Railway Company, Conrail, Inc., Consolidated Rail Corporation, and CRR Holdings LLC, is incorporated by reference from Exhibit 10.2 to Norfolk Southern Corporation's Form 10-Q filed on August 11, 1999. \(SEC File No. 001-08339\)](#)
- (d) [Amendment No. 3 dated as of June 1, 1999, and executed in April 2004, to the Transaction Agreement, dated June 10, 1997, by and among CSX Corporation, CSX Transportation, Inc., Norfolk Southern Corporation, Norfolk Southern Railway Company, Conrail, Inc., Consolidated Rail Corporation, and CRR Holdings LLC, is incorporated by reference from Exhibit 10\(dd\) to Norfolk Southern Corporation's Form 10-Q filed on July 30, 2004. \(SEC File No. 001-08339\)](#)
- (e) [Amendment No. 5 to the Transaction Agreement, dated as of August 27, 2004, by and among CSX Corporation, CSX Transportation, Inc., Norfolk Southern Corporation, Norfolk Southern Railway Company, Conrail, Inc., Consolidated Rail Corporation, and CRR Holdings LLC, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 8-K filed on September 2, 2004. \(SEC File No. 001-08339\)](#)

- (f) [Amendment No. 6 dated as of April 1, 2007, to the Transaction Agreement, dated June 10, 1997, by and among CSX Corporation, CSX Transportation, Inc., Norfolk Southern Railway Company, Conrail, Inc., Consolidated Rail Corporation, and CRR Holdings LLC, is incorporated by reference to Exhibit 10.5 to Norfolk Southern Corporation's Form 10-Q filed on July 27, 2007. \(SEC File No. 001-08339\)](#)
- (g) [Shared Assets Area Operating Agreement for North Jersey, dated as of June 1, 1999, by and among Consolidated Rail Corporation, CSX Transportation, Inc., and Norfolk Southern Railway Company, with exhibit thereto, is incorporated by reference from Exhibit 10.4 to Norfolk Southern Corporation's Form 10-Q filed on August 11, 1999. \(SEC File No. 001-08339\)](#)
- (h) [Shared Assets Area Operating Agreement for Detroit, dated as of June 1, 1999, by and among Consolidated Rail Corporation, CSX Transportation, Inc., and Norfolk Southern Railway Company, with exhibit thereto, is incorporated by reference from Exhibit 10.6 to Norfolk Southern Corporation's Form 10-Q filed on August 11, 1999. \(SEC File No. 001-08339\)](#)
- (i) [Shared Assets Area Operating Agreement for South Jersey/Philadelphia, dated as of June 1, 1999, by and among Consolidated Rail Corporation, CSX Transportation, Inc., and Norfolk Southern Railway Company, with exhibit thereto, is incorporated by reference from Exhibit 10.5 to Norfolk Southern Corporation's Form 10-Q filed on August 11, 1999. \(SEC File No. 001-08339\)](#)
- (j) [Amendment No. 1, dated as of June 1, 2000, to the Shared Assets Area Operating Agreements for North Jersey, South Jersey/Philadelphia, and Detroit, dated as of June 1, 1999, by and among Consolidated Rail Corporation, CSX Transportation, Inc., and Norfolk Southern Railway Company, with exhibits thereto, is incorporated by reference to Exhibit 10\(h\) to Norfolk Southern Corporation's Form 10-K filed on March 5, 2001. \(SEC File No. 001-08339\)](#)
- (k) [Amendment No. 2, dated as of January 1, 2001, to the Shared Assets Area Operating Agreements for North Jersey, South Jersey/Philadelphia, and Detroit, dated as of June 1, 1999, by and among Consolidated Rail Corporation, CSX Transportation, Inc., and Norfolk Southern Railway Company, with exhibits thereto, is incorporated by reference to Exhibit 10\(j\) to Norfolk Southern Corporation's Form 10-K filed on February 21, 2002. \(SEC File No. 001-08339\)](#)
- (l) [Amendment No. 3, dated as of June 1, 2001, and executed in May of 2002, to the Shared Assets Area Operating Agreements for North Jersey, South Jersey/Philadelphia, and Detroit, dated as of June 1, 1999, by and among Consolidated Rail Corporation, CSX Transportation, Inc., and Norfolk Southern Railway Company, with exhibits thereto, is incorporated by reference to Exhibit 10\(k\) to Norfolk Southern Corporation's Form 10-K filed on February 24, 2003. \(SEC File No. 001-08339\)](#)
- (m) [Amendment No. 4, dated as of June 1, 2005, and executed in late June 2005, to the Shared Assets Area Operating Agreements for North Jersey, South Jersey/Philadelphia, and Detroit, dated as of June 1, 1999, by and among Consolidated Rail Corporation, CSX Transportation, Inc., and Norfolk Southern Railway Company, with exhibits thereto, is incorporated by reference to Exhibit 99 to Norfolk Southern Corporation's Form 8-K filed on July 1, 2005. \(SEC File No. 001-08339\)](#)
- (n) [Monongahela Usage Agreement, dated as of June 1, 1999, by and among CSX Transportation, Inc., Norfolk Southern Railway Company, Pennsylvania Lines LLC, and New York Central Lines LLC, with exhibit thereto, is incorporated by reference from -Exhibit 10.7 to Norfolk Southern Corporation's Form 10-Q filed on August 11, 1999. \(SEC File No. 001-08339\)](#)
- (o) [The Agreement, entered into as of July 27, 1999, between North Carolina Railroad Company and Norfolk Southern Railway Company, is incorporated by reference from Exhibit 10\(i\) to Norfolk Southern Corporation's Form 10-K filed on March 6, 2000. \(SEC File No. 001-08339\)](#)
- (p) [Second Amendment, dated December 28, 2009, to the Master Agreement dated July 27, 1999, by and between North Carolina Railroad Company and Norfolk Southern Railway Company, is incorporated by reference to Exhibit 10\(q\) to Norfolk Southern Corporation's Form 10-K filed on February 17, 2010 \(Exhibits, annexes and schedules omitted. The Registrant will furnish supplementary copies of such materials to the SEC upon request\). \(SEC File No. 001-08339\)](#)
- (q) [The Supplementary Agreement, entered into as of January 1, 1987, between the Trustees of the Cincinnati Southern Railway and The Cincinnati, New Orleans and Texas Pacific Railway Company \(the latter a wholly owned subsidiary of Norfolk Southern Railway Company\) – extending and amending a Lease, dated as of October 11, 1881 – is incorporated by reference to Exhibit 10\(k\) to Norfolk Southern Corporation's Form 10-K filed on March 5, 2001. \(SEC File No. 001-08339\)](#)

- (r)* [Norfolk Southern Corporation Executive Management Incentive Plan, as approved by shareholders May 14, 2015, and as amended effective March 27, 2018, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 10-Q filed on April 25, 2018. \(SEC File No. 001-08339\)](#)
- (s)* [The Norfolk Southern Corporation Officers' Deferred Compensation Plan, as amended effective July 26, 2019, is incorporated by reference to Exhibit 10.2 to Norfolk Southern Corporation's Form 10-Q filed on October 23, 2019. \(SEC File No. 001-08339\)](#)
- (t)* [The Norfolk Southern Corporation Directors' Restricted Stock Plan, adopted January 1, 1994, and amended and restated effective as of January 23, 2015, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 10-Q filed on October 25, 2017. \(SEC File No. 001-08339\)](#)
- (u)* [Supplemental Benefit Plan of Norfolk Southern Corporation and Participating Subsidiary Companies, adopted June 1, 1982, as amended and restated effective as of June 26, 2015, is incorporated by reference to Exhibit 10.2 to Norfolk Southern Corporation's Form 10-Q filed on October 25, 2017. \(SEC File No. 001-08339\)](#)
- (v)* [Retirement Plan of Norfolk Southern Corporation and Participating Subsidiary Companies effective June 1, 1982, as amended and restated effective January 1, 2016, is incorporated by reference to Exhibit 10\(hh\) to Norfolk Southern Corporation's Form 10-K filed on February 6, 2017. \(SEC File No. 001-08339\)](#)
- (w)* [The Norfolk Southern Corporation Directors' Charitable Award Program, as amended effective July 2007, is incorporated by reference to Exhibit 10.6 to Norfolk Southern Corporation's Form 10-Q filed on July 27, 2007. \(SEC File No. 001-08339\)](#)
- (x) [The Norfolk Southern Corporation Thoroughbred Stock Option Plan, as amended effective July 22, 2013, is incorporated by reference to Exhibit 10.2 to Norfolk Southern Corporation's Form 10-Q filed on July 24, 2013. \(SEC File No. 001-08339\)](#)
- (y)* [The Norfolk Southern Corporation Executive Life Insurance Plan, as amended and restated effective December 1, 2018, is incorporated by reference to Exhibit 10\(y\) to Norfolk Southern Corporation's Form 10-K filed on February 8, 2019. \(SEC File No. 001-08339\)](#)
- (z)* [The description of Norfolk Southern Corporation's optional executive physical reimbursement program, as amended effective July 26, 2019, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 10-Q filed on October 23, 2019. \(SEC File No. 001-08339\)](#)
- (aa)*,** [The Norfolk Southern Corporation Long-Term Incentive Plan, as approved by shareholders May 14, 2015, and as amended July 29, 2016, November 29, 2016, November 28, 2017, November 27, 2018, and November 19, 2019.](#)
- (bb) [The Transaction Agreement, dated as of December 1, 2005, by and among Norfolk Southern Corporation, The Alabama Great Southern Railroad Company, Kansas City Southern, and The Kansas City Southern Railway Company, is incorporated by reference to Exhibit 10\(II\) to Norfolk Southern Corporation's Form 10-K filed on February 23, 2006 \(Exhibits, annexes, and schedules omitted. The Registrant will furnish supplementary copies of such materials to the SEC upon request\). \(SEC File No. 001-08339\)](#)
- (cc) [Amendment No. 1, dated as of January 17, 2006, by and among Norfolk Southern Corporation, The Alabama Great Southern Railroad Company, Kansas City Southern, and The Kansas City Southern Railroad, is incorporated by reference to Exhibit 10\(mmm\) to Norfolk Southern Corporation's Form 10-K filed on February 23, 2006. \(SEC File No. 001-08339\)](#)
- (dd) [Amendment No. 2, dated as of May 1, 2006, to the Transaction Agreement, dated as of December 1, 2005, by and among Norfolk Southern Corporation, The Alabama Great Southern Railroad Company, Kansas City Southern, and The Kansas City Southern Railway Company is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 8-K filed on May 4, 2006. \(SEC File No. 001-08339\)](#)
- (ee) [Limited Liability Agreement of Meridian Speedway, LLC, dated as of May 1, 2006, by and among the Alabama Great Southern Railroad Company and Kansas City Southern, is incorporated by reference to Exhibit 10.2 to Norfolk Southern Corporation's Form 8-K filed on May 4, 2006. \(SEC File No. 001-08339\)](#)

- (ff) [Transfer and Administration Agreement dated as of November 8, 2007, is incorporated by reference to Exhibit 99 to Norfolk Southern Corporation's Form 8-K filed on November 14, 2007. \(SEC File No. 001-08339\)](#)
- (gg) [Amendment No. 1 to Transfer and Administration Agreement dated as of November 8, 2007, and effective as of October 22, 2008, is incorporated by reference to Exhibit 99 to Norfolk Southern Corporation's Form 8-K filed on October 23, 2008. \(SEC File No. 001-08339\)](#)
- (hh) [Amendment No. 2, dated as of May 19, 2009, to Transfer and Administration Agreement dated as of November 8, 2007, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 10-Q filed on July 31, 2009. \(SEC File No. 001-08339\)](#)
- (ii) [Amendment No. 3, dated as of August 21, 2009, to Transfer and Administration Agreement dated as of November 8, 2007, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 10-Q filed on October 30, 2009. \(SEC File No. 001-08339\)](#)
- (jj) [Amendment No. 4, dated as of October 22, 2009, to Transfer and Administration Agreement dated as of November 8, 2007, is incorporated by reference to Exhibit 99 to Norfolk Southern Corporation's Form 8-K filed on October 22, 2009. \(SEC File No. 001-08339\)](#)
- (kk) [Amendment No. 5, dated as of January 5, 2010, to Transfer and Administration Agreement dated as of November 8, 2007, is incorporated by reference to Exhibit 10\(xx\) to Norfolk Southern Corporation's Form 10-K filed on February 17, 2010. \(SEC File No. 001-08339\)](#)
- (ll) [Amendment No. 6, dated as of August 30, 2010, to Transfer and Administration Agreement dated as of November 8, 2007, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 10-Q filed on October 29, 2010. \(SEC File No. 001-08339\)](#)
- (mm) [Amendment No. 7, dated as of October 21, 2010, to Transfer and Administration Agreement dated as of November 8, 2007, is incorporated by reference to Exhibit 99 to Norfolk Southern Corporation's Form 8-K filed on October 22, 2010. \(SEC File No. 001-08339\)](#)
- (nn) [Amendment No. 8, dated as of October 20, 2011, to Transfer and Administration Agreement dated as of November 8, 2007, is incorporated by reference to Exhibit 99 to Norfolk Southern Corporation's Form 8-K filed on October 20, 2011. \(SEC File No. 001-08339\)](#)
- (oo) [Amendment No. 9, dated as of October 18, 2012, to Transfer and Administration Agreement dated as of November 8, 2007, is incorporated by reference to Exhibit 99 to Norfolk Southern Corporation's Form 8-K filed on October 22, 2012. \(SEC File No. 001-08339\)](#)
- (pp) [Amendment No. 10, dated as of October 17, 2013, to Transfer and Administration Agreement dated as of November 8, 2007, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 8-K filed on October 18, 2013. \(SEC File No. 001-08339\)](#)
- (qq) [Amendment No. 11 to Transfer and Administration Agreement dated as of October 16, 2014, is hereby incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 8-K filed on October 17, 2014. \(SEC File No. 001-08339\)](#)
- (rr) [Amendment No. 12 to Transfer and Administration Agreement dated as of June 3, 2016 \(Schedules III and IV omitted. The Registrant will furnish supplementary copies of such materials to the SEC upon request\), is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 8-K filed on June 6, 2016. \(SEC File No. 001-08339\)](#)
- (ss) [Amendment No. 13 to Transfer and Administration Agreement dated as of June 1, 2018 is hereby incorporated by reference to Exhibit 10.1 to the Registrant's Form 8-K filed on June 4, 2018 \(SEC File No. 001-8339\)](#)
- (tt) [Amendment No. 14 to Transfer and Administration Agreement dated as of May 31, 2019 is hereby incorporated by reference to Exhibit 10.1 to the Registrant's Form 8-K filed on June 3, 2019 \(SEC File No. 001-8339\)](#)
- (uu) [Omnibus Amendment, dated as of March 18, 2008, to the Transfer and Administration Agreement dated as of November 8, 2007, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 10-Q filed on April 23, 2008. \(SEC File No. 001-08339\)](#)

- (vv) [Transaction Agreement \(Pan Am Transaction Agreement\), dated May 15, 2008, by and among Norfolk Southern Railway Company, Pan Am Railways, Inc., Boston and Maine Corporation, and Springfield Terminal Railway Company, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 10-Q filed on July 24, 2008 \(Exhibits, annexes and schedules omitted. The Registrant will furnish supplementary copies of such materials to the SEC upon request\). \(SEC File No. 001-08339\)](#)
- (ww) [Letter Agreement, dated October 21, 2008, by and among Norfolk Southern Railway Company, Pan Am Railways, Inc., Boston and Maine Corporation, and Springfield Terminal Railway Company amending certain terms of the Pan Am Transaction Agreement, is incorporated by reference to Exhibit 10\(rrr\) to Norfolk Southern Corporation's Form 10-K filed on February 18, 2009. \(SEC File No. 001-08339\)](#)
- (xx)*, ** [Directors' Deferred Fee Plan of Norfolk Southern Corporation, adopted June 1, 1982 and as amended and restated effective December 1, 2019.](#)
- (yy)* [Norfolk Southern Corporation Executives' Deferred Compensation Plan, as amended and restated effective January 1, 2019, is incorporated by reference to Exhibit 10\(ww\) to Norfolk Southern Corporation's Form 10-K filed on February 8, 2019. \(SEC File No. 001-08339\)](#)
- (zz)* [Stock Unit Plan of Norfolk Southern Corporation dated as of July 24, 2001, as amended on August 21, 2008, with an effective date of January 1, 2009, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 10-Q filed on October 24, 2008. \(SEC File No. 001-08339\)](#)
- (aaa)* [Form of Amended and Restated Change in Control Agreement between Norfolk Southern Corporation and certain executive officers \(including "named executive officers" identified in the Corporation's Proxy Statement for the 2019 annual Meeting of Stockholders who entered into change in control agreements before 2016\), is incorporated by reference to Exhibit 10\(aaaa\) to Norfolk Southern Corporation's Form 10-K filed on February 18, 2009. \(SEC File No. 001-08339\)](#)
- (bbb) [Limited Liability Company Agreement of Pan Am Southern LLC, dated as of April 9, 2009, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 8-K filed on April 9, 2009 \(exhibits, annexes, and schedules omitted – the Registrant will furnish supplementary copies of such materials to the SEC upon request\). \(SEC File No. 001-08339\)](#)
- (ccc)* [Form of Norfolk Southern Corporation Long-Term Incentive Plan, Award Agreement for Outside Directors as approved by the Compensation Committee on November 28, 2016, is incorporated by reference to Exhibit 10\(ggg\) to Norfolk Southern Corporation's Form 10-K filed on February 6, 2017. \(SEC File No. 001-08339\)](#)
- (ddd)*, ** [Form of Norfolk Southern Corporation Long-Term Incentive Plan, Award Agreement for Outside Directors for restricted stock units and deferral election form as approved by the Compensation Committee on December 4, 2019.](#)
- (eee)* [Form of Norfolk Southern Corporation Long-Term Incentive Plan, Award Agreement for performance share units approved by the Compensation Committee on November 27, 2017, is incorporated by reference to Exhibit 10\(ddd\) to Norfolk Southern Corporation's Form 10-K filed on February 5, 2018. \(SEC File No. 001-08339\)](#)
- (fff)* [Form of Norfolk Southern Corporation Long-Term Incentive Plan, Award Agreement for non-qualified stock options approved by the Compensation Committee on November 27, 2017, is incorporated by reference to Exhibit 10\(eee\) to Norfolk Southern Corporation's Form 10-K filed on February 5, 2018. \(SEC File No. 001-08339\)](#)
- (ggg)* [Form of Norfolk Southern Corporation Long-Term Incentive Plan, Award Agreement for restricted stock units approved by the Compensation Committee on November 27, 2017, is incorporated by reference to Exhibit 10\(fff\) to Norfolk Southern Corporation's Form 10-K filed on February 5, 2018. \(SEC File No. 001-08339\)](#)
- (hhh)* [Form of Norfolk Southern Corporation Long-Term Incentive Plan, Non-Compete Agreement Associated with Award Agreement, approved by the Compensation Committee on November 28, 2016, is incorporated by reference to Exhibit 10\(kkk\) to Norfolk Southern Corporation's 10-K filed on February 6, 2017. \(SEC File No. 001-08339\)](#)

- (iii)* Performance Criteria for bonuses payable in 2021 for the 2020 incentive year. On January 27, 2020, the Compensation Committee of the Norfolk Southern Corporation Board of Directors adopted the following performance criteria for determining bonuses payable in 2021 for the 2020 incentive year under the Norfolk Southern Corporation Executive Management Incentive Plan: 40% based on operating income, and 60% based on operating ratio.
- (jjj) [Omnibus Amendment, dated as of January 17, 2011, to Pan Am Transaction Agreement dated as of May 15, 2008, and Limited Liability Company Agreement of Pan Am Southern LLC dated as of April 9, 2009, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 10-Q filed on April 27, 2012. \(SEC File No. 001-08339\)](#)
- (kkk)* [Form of Amendment to Amended and Restated Change in Control Agreement between Norfolk Southern Corporation and the Corporation's Chairman, President and Chief Executive Officer, to eliminate the excise tax gross-up provision in the Agreement, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 8-K filed on January 23, 2013. \(SEC File No. 001-08339\)](#)
- (lll)* [Form of Change in Control Agreement between Norfolk Southern Corporation and executive officers who did not enter into a change in control agreement before 2016, is incorporated by reference to Exhibit 10\(ooo\) to Norfolk Southern Corporation's Form 10-K filed on February 8, 2016. \(SEC File No. 001-08339\)](#)
- (mmm) [Credit Agreement dated as of May 26, 2016, establishing a 5-year, \\$750 million, unsecured revolving credit facility of the Registrant, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 8-K filed on May 27, 2016. \(SEC File No. 001-08339\)](#)
- (nnn)* [Form of Norfolk Southern Corporation Long-Term Incentive Plan, Off-Cycle Award Agreement for Non-Qualified Stock Options as approved by the Compensation Committee on April 23, 2019, in incorporated by reference to Exhibit 10.5 to Norfolk Southern Corporation's Form 10-Q filed on April 24, 2019. \(SEC File No. 001-08339\)](#)
- (ooo)* [Form of Norfolk Southern Corporation Long-Term Incentive Plan, Off-Cycle Award Agreement for Performance Share Units as approved by the Compensation Committee on April 23, 2019, in incorporated by reference to Exhibit 10.6 to Norfolk Southern Corporation's Form 10-Q filed on April 24, 2019. \(SEC File No. 001-08339\)](#)
- (ppp)* [Form of Norfolk Southern Corporation Long-Term Incentive Plan, Off-Cycle Award Agreement for Restricted Stock Units as approved by the Compensation Committee on April 23, 2019, in incorporated by reference to Exhibit 10.7 to Norfolk Southern Corporation's Form 10-Q filed on April 24, 2019. \(SEC File No. 001-08339\)](#)
- (qqq)* [Offer Letter for Mark R. George, dated August 26, 2019, is incorporated by reference to Exhibit 99.1 to Norfolk Southern Corporation's Form 8-K filed on August 28, 2019. \(SEC File No. 001-08339\)](#)
- (rrr)* [Norfolk Southern Corporation Long-Term Incentive Plan Inducement Award Agreement for Performance-Based Restricted Stock Units is incorporated by reference to Exhibit 99.2 to Norfolk Southern Corporation's Form 8-K filed on August 28, 2019. \(SEC File No. 001-08339\)](#)
- (sss)* [Norfolk Southern Corporation Long-Term Incentive Plan Inducement Award Agreement for Restricted Stock Units is incorporated by reference to Exhibit 99.3 to Norfolk Southern Corporation's Form 8-K filed on August 28, 2019. \(SEC File No. 001-08339\)](#)
- (ttt)* [Norfolk Southern Corporation Long-Term Incentive Plan Inducement Award Agreement for Non-Qualified Stock Options is incorporated by reference to Exhibit 99.4 to Norfolk Southern Corporation's Form 8-K filed on August 28, 2019. \(SEC File No. 001-08339\)](#)
- (uuu) [A Construction Agency Agreement, dated March 1, 2019, between Norfolk Southern Railway Company \("NSRC"\) and BA Leasing BSC, LLC. This Agreement is incorporated by reference herein to Exhibit 10.1 to Norfolk Southern Corporation's Form 8-K filed March 5, 2019. \(See SEC File No. 001-08339\).](#)
- (vvv) [A Lease Agreement, dated March 1, 2019, between NSRC and BA Leasing BSC, LLC. This Agreement is incorporated by reference herein to Exhibit 10.2 to Norfolk Southern Corporation's Form 8-K filed March 5, 2019. \(See SEC File No. 001-08339\).](#)

- (www) [A Participation Agreement, dated March 1, 2019, between NSRC, BA Leasing BSC, LLC, Bank of America, N.A. as Administrative Agent, and each of the Rent Assignees listed on Schedule II thereto. This Agreement is incorporated by reference herein to Exhibit 10.3 to Norfolk Southern Corporation's Form 8-K filed March 5, 2019. \(See SEC File No. 001-08339\).](#)
- (xxx) [Guaranty of NSRC's obligations under the Participation Agreement, Construction Agency Agreement, Lease Agreement and related documents by Norfolk Southern Corporation. This Agreement is incorporated by reference herein to Exhibit 10.4 to Norfolk Southern Corporation's Form 8-K filed March 5, 2019. \(See SEC File No. 001-08339\).](#)
- 21** [Subsidiaries of the Registrant.](#)
- 23** [Consent of Independent Registered Public Accounting Firm.](#)
- 31-A** [Rule 13a-14\(a\)/15d-014\(a\) CEO Certification.](#)
- 31-B** [Rule 13a-14\(a\)/15d-014\(a\) CFO Certification.](#)
- 32** [Section 1350 Certifications.](#)
- 101** The following financial information from Norfolk Southern Corporation's Annual Report on Form 10-K for the year ended December 31, 2019, formatted in Inline Extensible Business Reporting Language (iXBRL) includes: (i) the Consolidated Statements of Income for each of the years ended December 31, 2019, 2018, and 2017; (ii) the Consolidated Statements of Comprehensive Income for each of the years ended December 31, 2019, 2018, and 2017; (iii) the Consolidated Balance Sheets at December 31, 2019 and 2018; (iv) the Consolidated Statements of Cash Flows for each of the years ended December 31, 2019, 2018, and 2017; (v) the Consolidated Statements of Changes in Stockholders' Equity for each of the years ended December 31, 2019, 2018, and 2017; and (vi) the Notes to Consolidated Financial Statements.

* *Management contract or compensatory arrangement.*

** *Filed herewith.*

(B) Exhibits.

The Exhibits required by Item 601 of Regulation S-K as listed in Item 15(A)3 are filed herewith or incorporated by reference.

(C) Financial Statement Schedules.

Financial statement schedules and separate financial statements specified by this Item are included in Item 15(A)2 or are otherwise not required or are not applicable.

Exhibits 23, 31, and 32 are included in copies assembled for public dissemination. All exhibits are included in the 2019 Form 10-K posted on our website at www.norfolksouthern.com under "Invest in NS" and "SEC Filings" or you may request copies by writing to:

**Office of Corporate Secretary
Norfolk Southern Corporation
Three Commercial Place
Norfolk, Virginia 23510-9219**

Item 16. Form 10-K Summary

Not applicable.

POWER OF ATTORNEY

Each person whose signature appears on the next page under SIGNATURES hereby authorizes Vanessa Allen Sutherland and Mark R. George, or any one of them, to execute in the name of each such person, and to file, any amendments to this report, and hereby appoints Vanessa Allen Sutherland and Mark R. George, or any one of them, as attorneys-in-fact to sign on his or her behalf, individually and in each capacity stated below, and to file, any and all amendments to this report.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, Norfolk Southern Corporation has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on this 6th day of February, 2020.

/s/ James A. Squires

By: James A. Squires
(Chairman, President and Chief Executive Officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below on this 6th day of February, 2020, by the following persons on behalf of Norfolk Southern Corporation and in the capacities indicated.

Signature	Title
<u>/s/ James A. Squires</u> (James A. Squires)	Chairman, President and Chief Executive Officer and Director (Principal Executive Officer)
<u>/s/ Mark R. George</u> (Mark R. George)	Executive Vice President – Finance and Chief Financial Officer (Principal Financial Officer)
<u>/s/ Jason A. Zampi</u> (Jason A. Zampi)	Vice President and Controller (Principal Accounting Officer)
<u>/s/ Thomas D. Bell, Jr.</u> (Thomas D. Bell, Jr.)	Director
<u>/s/ Daniel A. Carp</u> (Daniel A. Carp)	Director
<u>/s/ Mitchell E. Daniels, Jr.</u> (Mitchell E. Daniels, Jr.)	Director
<u>/s/ Marcela E. Donadio</u> (Marcela E. Donadio)	Director
<u>/s/ Thomas C. Kelleher</u> (Thomas C. Kelleher)	Director
<u>/s/ Steven F. Leer</u> (Steven F. Leer)	Director
<u>/s/ Michael D. Lockhart</u> (Michael D. Lockhart)	Director
<u>/s/ Amy E. Miles</u> (Amy E. Miles)	Director
<u>/s/ Claude Mongeau</u> (Claude Mongeau)	Director
<u>/s/ Jennifer F. Scanlon</u> (Jennifer F. Scanlon)	Director
<u>/s/ John R. Thompson</u> (John R. Thompson)	Director

Norfolk Southern Corporation and Subsidiaries
Valuation and Qualifying Accounts
Years ended December 31, 2019, 2018, and 2017
(\$ in millions)

	<u>Additions charged to:</u>				<u>Ending Balance</u>
	<u>Beginning Balance</u>	<u>Expenses</u>	<u>Other Accounts</u>	<u>Deductions</u>	
<i>Year ended December 31, 2019</i>					
Current portion of casualty and other claims included in accounts payable	\$ 213	\$ 22	\$ 131 ⁽²⁾	\$ 154 ⁽³⁾	\$ 212
Casualty and other claims included in other liabilities	158	89 ⁽¹⁾	—	76 ⁽⁴⁾	171
<i>Year ended December 31, 2018</i>					
Current portion of casualty and other claims included in accounts payable	\$ 187	\$ 32	\$ 145 ⁽²⁾	\$ 151 ⁽³⁾	\$ 213
Casualty and other claims included in other liabilities	179	85 ⁽¹⁾	—	106 ⁽⁴⁾	158
<i>Year ended December 31, 2017</i>					
Current portion of casualty and other claims included in accounts payable	\$ 192	\$ 17	\$ 124 ⁽²⁾	\$ 146 ⁽³⁾	\$ 187
Casualty and other claims included in other liabilities	178	83 ⁽¹⁾	—	82 ⁽⁴⁾	179

⁽¹⁾ Includes adjustments for changes in estimates for prior years' claims.

⁽²⁾ Includes revenue refunds and overcharges provided through deductions from operating revenues and transfers from other accounts.

⁽³⁾ Payments and reclassifications to/from other liabilities.

⁽⁴⁾ Payments and reclassifications to/from accounts payable.

Intentionally Left Blank

SHAREHOLDER INFORMATION

COMMON STOCK

Ticker symbol: NSC

Our common stock is listed and traded on the New York Stock Exchange.

DIVIDENDS

At its January 2020 meeting, our board of directors declared a quarterly dividend of 94 cents per share on the company's common stock, payable on March 10, 2020, to shareholders of record on Feb. 7, 2020.

We usually pay quarterly dividends on our common stock on or about March 10, June 10, Sept. 10, and Dec. 10, when and if declared by our board of directors to shareholders of record. We have paid 150 consecutive quarterly dividends since our inception in 1982.

ACCOUNT ASSISTANCE

For assistance with lost stock certificates, transfer requirements, the INVESTORS CHOICE Plan, address changes, dividend checks, and direct deposit of dividends, contact:

*American Stock Transfer
& Trust Company LLC
6201 15th Avenue
Brooklyn, N.Y. 11219
877.864.4750*

INVESTORS CHOICE

Our transfer agent, American Stock Transfer & Trust Company LLC (AST), offers the INVESTORS CHOICE Plan for investors wishing to purchase or sell Norfolk Southern Corporation common stock. This plan is available to both present shareholders of record and individual investors wishing to make an initial purchase of Norfolk Southern Corporation common stock. Once enrolled in the plan, you can invest cash dividends when paid and make optional cash investments simply and conveniently.

To take advantage of the INVESTORS CHOICE Plan, contact AST at 877.864.4750 or visit <http://astfinancial.mobular.net/amstock/NSC/> to access information about the INVESTORS CHOICE Plan.

PUBLICATIONS

The following reports and publications are available on our website at www.norfolksouthern.com and, upon written request, will be furnished in printed form to shareholders free of charge:

- Annual Reports on Form 10-K
- Quarterly Reports on Form 10-Q
- Corporate Governance Guidelines
- Board Committee Charters
- Thoroughbred Code of Ethics
- Code of Ethical Conduct for Senior Financial Officers
- Categorical Independence Standards for Directors
- Norfolk Southern Corporation Bylaws

Shareholders desiring a printed copy of one or more of these reports and publications should send their request to our corporate secretary:

*Denise W. Hutson
Corporate Secretary
Norfolk Southern Corporation
Three Commercial Place
Norfolk, Va. 23510
757.823.5567*

A notice and proxy statement for the annual meeting of shareholders are furnished to shareholders in advance of the meeting.

Amendments to or waivers of the Thoroughbred Code of Ethics and/or the Code of Ethical Conduct for Senior Financial Officers that are required to be disclosed pursuant to Item 5.05 of the current report on Form 8-K will be disclosed on our website.

ETHICS & COMPLIANCE HOTLINE

High ethical standards always have been key to our success. Anyone who may be aware of a violation of our corporation's Thoroughbred Code of Ethics is encouraged to contact our Ethics & Compliance Hotline at 800.732.9279.

FINANCIAL INQUIRIES

*Mark R. George
Executive Vice
President Finance and
Chief Financial Officer
Norfolk Southern Corp.
1200 Peachtree St., N.E.
Atlanta, Ga. 30309
470.867.4833*

INVESTOR INQUIRIES

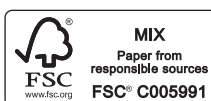
*Peter V. Sharbel
Director Investor Relations
Norfolk Southern Corp.
1200 Peachtree St., N.E.
Atlanta, Ga. 30309
470.867.4807*

CORPORATE OFFICE

*Executive Offices
Norfolk Southern Corp.
Three Commercial Place
Norfolk, Va. 23510
757.629.2600
855.NORFOLK or
855.667.3655*

REGIONAL OFFICE

*Norfolk Southern Corp.
1200 Peachtree St., N.E.
Atlanta, Ga. 30309*





NORFOLK SOUTHERN
Three Commercial Place
Norfolk, Virginia 23510
www.norfolksouthern.com