

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, DC 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, 2018**

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:

<u>Title of each class</u>	<u>Name of each exchange on which registered</u>
Norfolk Southern Corporation Common Stock (Par Value \$1.00)	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 (X) 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 (X)

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. (X)

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 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 (X) Accelerated filer () Non-accelerated filer () Smaller reporting company () Emerging growth company ()

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

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

The aggregate market value of the voting common equity held by non-affiliates at June 30, 2018 was \$42,224,842,213 (based on the closing price as quoted on the New York Stock Exchange on June 29, 2018).

The number of shares outstanding of each of the registrant's classes of common stock, at January 31, 2019: 267,455,326 (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.

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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.

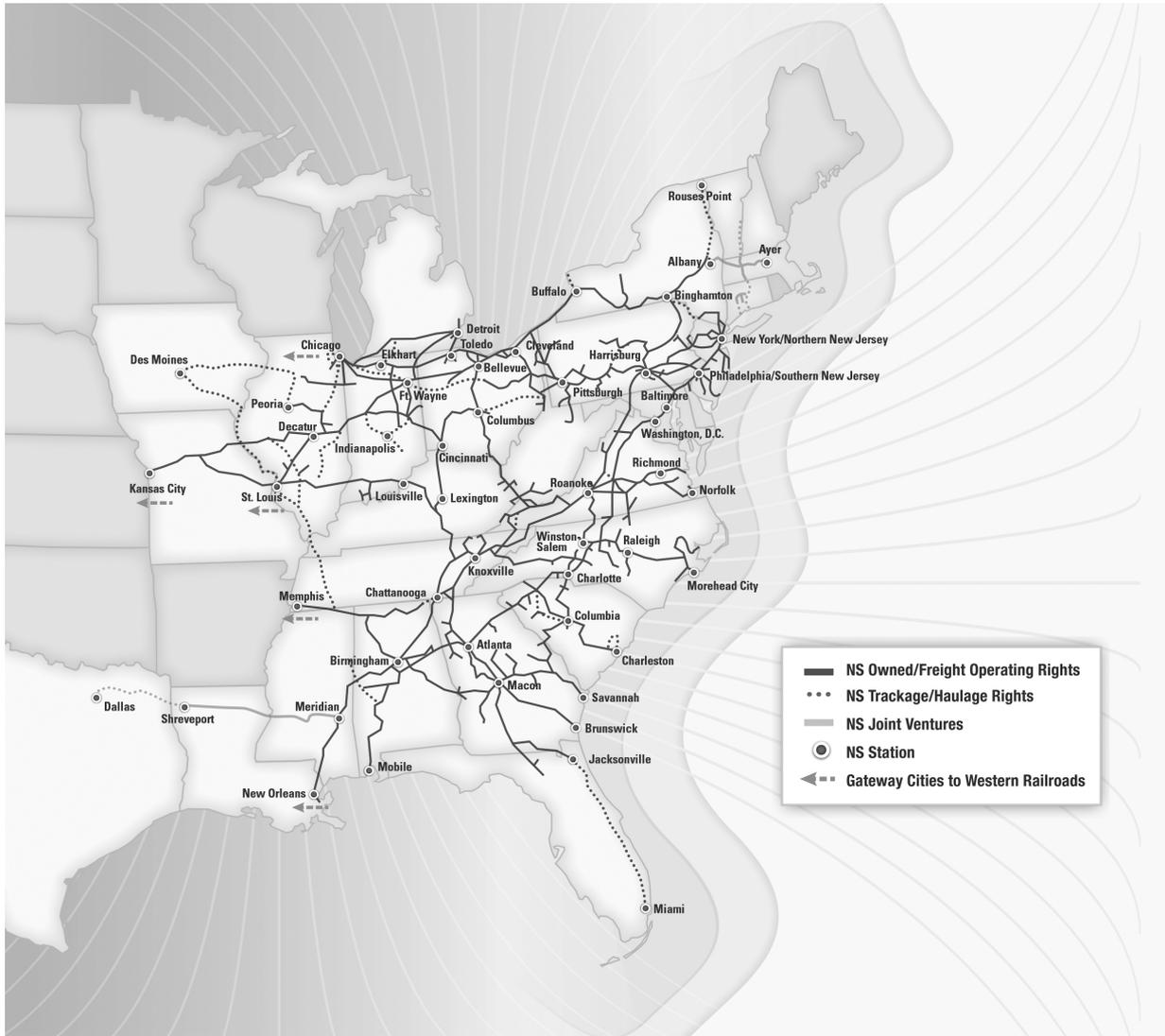
We are primarily engaged in the rail transportation of raw materials, intermediate products, and finished goods primarily in the Southeast, East, and Midwest and, via interchange with rail carriers, to and from the rest of the United States. We also transport overseas freight through several Atlantic 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, 2018, 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, 2018				Total
	Route Miles	Second and Other Main Track	Passing Track, Crossovers and Turnouts	Way and Yard Switching	
Owned	14,664	2,755	1,949	8,319	27,687
Operated under lease, contract or trackage rights	4,756	1,943	398	834	7,931
Total	19,420	4,698	2,347	9,153	35,618

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,				
	2018	2017	2016	2015	2014
Revenue ton miles (billions)	207	201	191	200	205
Revenue per thousand revenue ton miles	\$ 55.25	\$ 52.38	\$ 51.91	\$ 52.63	\$ 56.70
Revenue ton miles (thousands) per railroad employee	7,822	7,474	6,838	6,645	7,054
Ratio of railway operating expenses to railway operating revenues (Railway operating ratio)	65.4%	66.6% ²	69.6% ²	72.8% ²	69.4% ²
Railway operating ratio, excluding the effects of the 2017 tax adjustments (non-GAAP)	65.4%	68.1% ^{1,2}	69.6% ²	72.8% ²	69.4% ²

¹ See reconciliation to U.S. Generally Accepted Accounting Principles (GAAP) in Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations."

² We adopted Financial Accounting Standards Board (FASB) Accounting Standards Update (ASU) 2017-07 on January 1, 2018. The retrospective application resulted in an increase in "Railway operating expenses" and therefore an increase to the "Railway operating ratio" for all years presented prior to 2018. See additional details in Item 8 "Financial Statements and Supplementary Data" in Note 1.

RAILWAY OPERATING REVENUES – Total railway operating revenues were \$11.5 billion in 2018. Following is an overview of our three major commodity groups. See the discussion of merchandise revenues by 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, consumer products, and government includes soybeans, wheat, corn, fertilizer, livestock and poultry feed, food oils, flour, beverages, canned goods, sweeteners, consumer products, ethanol, transportation equipment, and items for the U.S. military.
- Metals and construction includes steel, aluminum products, machinery, scrap metals, cement, aggregates, sand, and minerals.
- Automotive includes finished motor vehicles and automotive parts.
- Paper, clay and forest products includes lumber and wood products, pulp board and paper products, wood fibers, wood pulp, scrap paper, and clay.

Merchandise carloads handled in 2018 were 2.5 million, the revenues from which accounted for 59% 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, truckers, and other shippers. Intermodal units handled in 2018 were 4.4 million, the revenues from which accounted for 25% of our total railway operating revenues.

COAL – Revenues from coal accounted for 16% of our total railway operating revenues in 2018. We handled 115 million tons, or 1.0 million carloads, in 2018, 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 70 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 \$31 billion on a historical cost basis.

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

	2018	2017	2016	2015	2014
	<i>(\$ in millions)</i>				
Road and other property	\$ 1,276	\$ 1,210	\$ 1,292	\$ 1,514	\$ 1,406
Equipment	675	513	595	658	712
Delaware & Hudson acquisition	—	—	—	213	—
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	<u>\$ 1,951</u>	<u>\$ 1,723</u>	<u>\$ 1,887</u>	<u>\$ 2,385</u>	<u>\$ 2,118</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, 2018, we owned or leased the following units of equipment:

	<u>Owned</u>	<u>Leased</u>	<u>Total</u>	<u>Capacity of Equipment</u>
Locomotives:				(Horsepower)
Multiple purpose	3,900	76	3,976	15,229,400
Auxiliary units	178	—	178	—
Switching	43	—	43	64,050
Total locomotives	<u>4,121</u>	<u>76</u>	<u>4,197</u>	<u>15,293,450</u>
Freight cars:				(Tons)
Gondola	24,768	4,048	28,816	3,205,609
Hopper	11,001	—	11,001	1,244,016
Covered hopper	8,323	85	8,408	932,767
Box	7,125	1,251	8,376	726,694
Flat	1,685	1,608	3,293	312,537
Other	1,597	4	1,601	73,203
Total freight cars	<u>54,499</u>	<u>6,996</u>	<u>61,495</u>	<u>6,494,826</u>
Other:				
Chassis	33,865	—	33,865	
Containers	17,664	—	17,664	
Work equipment	7,117	258	7,375	
Vehicles	3,591	133	3,724	
Miscellaneous	2,381	—	2,381	
Total other	<u>64,618</u>	<u>391</u>	<u>65,009</u>	

The following table indicates the number and year built for locomotives and freight cars owned at December 31, 2018:

	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2009- 2013</u>	<u>2004- 2008</u>	<u>2003 & Before</u>	<u>Total</u>
Locomotives:									
No. of units	15	55	66	8	83	242	564	3,088	4,121
% of fleet	—%	1%	2%	—%	2%	6%	14%	75%	100%
Freight cars:									
No. of units	—	470	775	2,091	897	6,464	4,080	39,722	54,499
% of fleet	—%	1%	1%	4%	2%	12%	7%	73%	100%

The following table shows the average age of our owned locomotive and freight car fleets at December 31, 2018, and information regarding 2018 retirements:

	<u>Locomotives</u>	<u>Freight Cars</u>
Average age – in service	25.2 years	28.7 years
Retirements	37 units	2,748 units
Average age – retired	42.9 years	44.7 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 83% 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 47% of our lines, excluding rail operated pursuant to trackage rights, carried 20 million or more gross tons per track mile during 2018.

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

	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Track miles of rail installed	416	466	518	523	507
Miles of track surfaced	4,594	5,368	4,984	5,074	5,248
Crossties installed (millions)	2.2	2.5	2.3	2.4	2.7

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>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Average number of employees	26,662	27,110	28,044	30,456	29,482
Average wage cost per employee	\$ 83,000	\$ 79,000	\$ 76,000	\$ 77,000	\$ 76,000
Average benefit cost per employee	\$ 39,000	\$ 42,000	\$ 35,000	\$ 32,000	\$ 35,000

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 2019. 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 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 as a terrorist threat 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 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 certain metropolitan areas and each of the six facilities we operate 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. Similarly, we follow guidance from DHS and DOT regarding rail corridors in High Threat Urban Areas (HTUA). Particular attention is aimed at reducing risk in 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) substantially 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.

In 2018, through participation in the Transportation Community Awareness and Emergency Response Program, we provided rail accident response training to approximately 6,300 emergency responders, such as local police and fire personnel. Our other training efforts throughout 2018 included participation in drills 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 have met the December 31, 2018 deadline under the PTC laws and regulations to install all hardware and to implement PTC on some of those rail lines. The PTC laws and regulations also require us 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 472 million gallons of diesel fuel in 2018. 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 findings are subject to appeal. 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.

Executive Officers of the Registrant

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, 2019, relating to our officers.

Name, Age, Present Position	Business Experience During Past Five Years
James A. Squires, 57, 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.
Cynthia C. Earhart, 57, Executive Vice President – Finance and Chief Financial Officer	Present position since August 15, 2017. Served as Executive Vice President – Administration and Chief Information Officer from October 1, 2015 to August 15, 2017. Served as Executive Vice President – Administration from June 1, 2013 to October 1, 2015.
John M. Scheib, 47, Executive Vice President – Law and Administration and Chief Legal Officer	Present position since March 1, 2018. 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, 51, 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, 56, 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, 44, 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. Served as Director Forecast and Performance Measures from March 16, 2011 to May 1, 2014.

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 24,475 stockholders of record as of December 31, 2018, and is traded on the New York Stock Exchange under the symbol “NSC.”

ISSUER PURCHASES OF EQUITY SECURITIES

Period	Total Number of Shares (or Units) Purchased⁽¹⁾	Average Price Paid per Share (or Unit)	Total Number of Shares (or Units) Purchased as Part of Publicly Announced Plans or Programs⁽²⁾⁽³⁾	Maximum Number (or Approximate Dollar Value) of Shares (or Units) that may yet be Purchased under the Plans or Programs⁽³⁾
October 1-31, 2018	874,580	\$ 171.45	874,580	42,783,417
November 1-30, 2018	1,145,256	168.48	1,145,256	41,638,161
December 1-31, 2018	2,271,418	166.72	2,270,242	39,367,919
Total	<u>4,291,254</u>		<u>4,290,078</u>	

⁽¹⁾ Of this amount, 1,176 represents shares tendered by employees in connection with the exercise of stock options under the stockholder-approved Long-Term Incentive Plan.

⁽²⁾ Total number of shares purchased as part of publicly announced plans or programs includes 1.3 million shares purchased under the accelerated stock repurchase program (ASR) (see Note 15).

⁽³⁾ 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, 2018, 39.4 million shares remain authorized for repurchase.

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

	2018	2017	2016	2015	2014
	(\$ in millions, except per share amounts)				
RESULTS OF OPERATIONS					
Railway operating revenues	\$ 11,458	\$ 10,551	\$ 9,888	\$ 10,511	\$ 11,624
Railway operating expenses	7,499	7,029	6,879	7,656	8,066
Income from railway operations	3,959	3,522	3,009	2,855	3,558
Other income – net	67	156	136	132	121
Interest expense on debt	557	550	563	545	545
Income before income taxes	3,469	3,128	2,582	2,442	3,134
Income taxes	803	(2,276)	914	886	1,134
Net income	\$ 2,666	\$ 5,404	\$ 1,668	\$ 1,556	\$ 2,000
PER SHARE DATA					
Basic earnings per share	\$ 9.58	\$ 18.76	\$ 5.66	\$ 5.13	\$ 6.44
Diluted earnings per share	9.51	18.61	5.62	5.10	6.39
Dividends	3.04	2.44	2.36	2.36	2.22
Stockholders' equity at year end	57.30	57.57	42.73	40.93	40.26
FINANCIAL POSITION					
Total assets	\$ 36,239	\$ 35,711	\$ 34,892	\$ 34,139	\$ 33,033
Total debt	11,145	9,836	10,212	10,093	8,985
Stockholders' equity	15,362	16,359	12,409	12,188	12,408
OTHER					
Property additions	\$ 1,951	\$ 1,723	\$ 1,887	\$ 2,385	\$ 2,118
<hr/>					
Average number of shares outstanding (thousands)	277,708	287,861	293,943	301,873	309,367
Number of stockholders at year end	24,475	25,737	27,288	28,443	29,575
Average number of employees:					
Rail	26,512	26,955	27,856	30,057	29,063
Nonrail	150	155	188	399	419
Total	26,662	27,110	28,044	30,456	29,482

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: The retrospective application of FASB ASU 2017-07 resulted in an increase to "Compensation and benefits" expense within "Railway operating expenses" and an offsetting increase to "Other income – net" of \$64 million, \$65 million, \$29 million, and \$17 million for the years ended 2017, 2016, 2015, and 2014, respectively, with no impact on "Net income." See additional details in Item 8 "Financial Statements and Supplementary Data" in Note 1.

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, the railroad operates the most extensive intermodal network in the East and is a principal carrier of coal, automobiles, and automotive parts.

We achieved 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, the result of significant revenue growth, partially offset by increased operating expenses. Progress on our strategic initiatives established in 2015 has created a sustainable platform positioning us for the continued execution of transformational changes that will provide greater long-term value for our shareholders.

SUMMARIZED RESULTS OF OPERATIONS

	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	<i>(\$ in millions, except per share amounts)</i>			<i>(% change)</i>	
Income from railway operations	\$ 3,959	\$ 3,522	\$ 3,009	12%	17%
Net income	\$ 2,666	\$ 5,404	\$ 1,668	(51%)	224%
Diluted earnings per share	\$ 9.51	\$ 18.61	\$ 5.62	(49%)	231%
Railway operating ratio	65.4	66.6	69.6	(2%)	(4%)

On December 22, 2017, the Tax Cuts and Jobs Act (“tax reform”) was signed into law. As a result of the enactment of this law, in 2017, “Purchased services and rents” 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.” The 2017 operating ratio was favorably impacted by 1.5 percentage points. For more information on the impact of tax reform, see Note 4.

The following table adjusts our 2017 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	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.

	2018	Adjusted 2017 (non-GAAP)	2016	2018 vs. Adjusted 2017 (non-GAAP)	Adjusted 2017 (non-GAAP) vs. 2016
	<i>(\$ in millions, except per share amounts)</i>			<i>(% change)</i>	
Income from railway operations	\$ 3,959	\$ 3,371	\$ 3,009	17%	12%
Net income	\$ 2,666	\$ 1,922	\$ 1,668	39%	15%
Diluted earnings per share	\$ 9.51	\$ 6.61	\$ 5.62	44%	18%
Railway operating ratio	65.4	68.1	69.6	(4%)	(2%)

Income from railway operations rose in both comparisons resulting from higher railway operating revenues that more than offset higher expenses. Revenue growth of 9% and 7% in 2018 and 2017, respectively, was tempered by increased adjusted operating expenses of 4% in both periods. 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 programs in both years 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 commodity group.

	Revenues			2018	2017
	2018	2017	2016	vs. 2017	vs. 2016
	(\$ in millions)			(% change)	
Merchandise:					
Chemicals	\$ 1,808	\$ 1,668	\$ 1,648	8%	1%
Agr./consumer/gov't.	1,674	1,547	1,548	8%	—
Metals/construction	1,462	1,426	1,267	3%	13%
Automotive	991	955	975	4%	(2%)
Paper/clay/forest	809	761	744	6%	2%
Merchandise	6,744	6,357	6,182	6%	3%
Intermodal	2,893	2,452	2,218	18%	11%
Coal	1,821	1,742	1,488	5%	17%
Total	\$ 11,458	\$ 10,551	\$ 9,888	9%	7%

	Units			2018	2017
	2018	2017	2016	vs. 2017	vs. 2016
	(in thousands)			(% change)	
Merchandise:					
Chemicals	498.0	467.2	475.7	7%	(2%)
Agr./consumer/gov't.	614.4	589.0	601.2	4%	(2%)
Metals/construction	715.7	727.5	685.8	(2%)	6%
Automotive	403.9	423.1	440.5	(5%)	(4%)
Paper/clay/forest	287.1	284.6	284.0	1%	—
Merchandise	2,519.1	2,491.4	2,487.2	1%	—
Intermodal	4,375.7	4,074.1	3,870.4	7%	5%
Coal	1,033.5	1,046.0	902.1	(1%)	16%
Total	7,928.3	7,611.5	7,259.7	4%	5%

	Revenue per Unit			2018	2017
	2018	2017	2016	vs. 2017	vs. 2016
	(\$ per unit)			(% change)	
Merchandise:					
Chemicals	\$ 3,631	\$ 3,571	\$ 3,465	2%	3%
Agr./consumer/gov't.	2,724	2,627	2,575	4%	2%
Metals/construction	2,042	1,960	1,847	4%	6%
Automotive	2,453	2,257	2,213	9%	2%
Paper/clay/forest	2,819	2,673	2,620	5%	2%
Merchandise	2,677	2,552	2,486	5%	3%
Intermodal	661	602	573	10%	5%
Coal	1,762	1,665	1,650	6%	1%
Total	1,445	1,386	1,362	4%	2%

Revenues increased \$907 million and \$663 million in 2018 and 2017, respectively, compared to the prior years. As reflected in the table below, higher 2018 revenues were 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 rise in 2017 was largely the result of increased volume, particularly in our coal and intermodal markets, coupled with pricing gains. The table below reflects the components of the revenue change by major commodity group.

	2018 vs. 2017			2017 vs. 2016		
	Increase (Decrease)			Increase		
	(\$ in millions)					
	Merchandise	Intermodal	Coal	Merchandise	Intermodal	Coal
Volume	\$ 71	\$ 182	\$ (21)	\$ 10	\$ 117	\$ 237
Fuel surcharge revenue	119	159	20	35	78	10
Rate, mix and other	197	100	80	130	39	7
Total	\$ 387	\$ 441	\$ 79	\$ 175	\$ 234	\$ 254

Most of our contracts include negotiated fuel surcharges, typically tied to either On-Highway Diesel (OHD) or West Texas Intermediate Crude Oil. Approximately 90% of our revenue base is covered by these negotiated fuel surcharges, with almost 75% tied to OHD. For both 2018 and 2017, contracts tied to OHD accounted for about 90% of our fuel surcharge revenue. Revenues associated with fuel surcharges totaled \$657 million, \$359 million, and \$236 million in 2018, 2017, and 2016, respectively.

MERCHANDISE revenues increased in both 2018 and 2017 compared with the prior years. 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, agriculture, and paper, clay, and forest products were partially offset by declines in automotive and metals and construction traffic. Revenue growth in 2017 was a result of higher average revenue per unit, the result of price improvements. Volume was relatively flat compared to the prior year, as gains in the metals and construction group were offset by declines in automotive, agriculture, and chemicals traffic.

For 2019, merchandise revenues are expected to increase, primarily the result of pricing gains.

Chemicals revenues rose in 2018 compared to a modest increase in 2017. 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, and plastics, partially offset by a decrease in coal ash shipments. The increase in 2017 was due to higher average revenue per unit, a result of favorable mix and price improvements, which outweighed declines in volume. Volume declines were the result of fewer shipments of crude oil from the Bakken oil fields, lower shipments of coal ash, partially offset by an increase in shipments of plastics.

For 2019, chemicals revenues are anticipated to increase, as average revenue per unit is expected to be higher, the effect of overall pricing gains. We expect carloads to be relatively flat year-over-year, as declines in liquefied petroleum gas are expected to be offset by gains in crude oil.

Agriculture, consumer products, and government revenues increased in 2018 and were flat in 2017 compared to the prior years. Growth in 2018 was due to higher volume and higher average revenue per unit, a result of pricing gains and higher fuel surcharge revenues. Higher ethanol and fertilizer shipments more than offset declines in soybean and corn shipments. In 2017, lower traffic volume was offset by higher revenue per unit, driven by pricing gains. Volume declines in ethanol and soybeans, reflecting reduced market demand, more than offset increases in fertilizer.

For 2019, agriculture, consumer products, and government revenues are expected to increase, driven by increased average revenue per unit, primarily a result of pricing gains. We expect volumes to decrease due to lower fertilizer shipments.

Metals and construction revenues grew in both periods, more significantly so in 2017. In 2018, higher average revenue per unit, the result of pricing gains and higher fuel surcharge revenue, more than offset volume declines. Volume declines in aggregates, cement, aluminum, and iron and steel were partially offset by increases in frac sand shipments for use in natural gas drilling in the Marcellus and Utica regions. In 2017, higher volume and average revenue per unit contributed to the rise in revenues. Volume growth was a result of more frac sand shipments for use in natural gas drilling in the Marcellus and Utica regions and more iron and steel shipments driven by continued improvement in construction activity. These increases were partially offset by a decline in coil steel traffic due to customer sourcing changes. Revenue per unit growth in 2017 was driven by favorable changes in traffic mix.

For 2019, metals and construction revenues are expected to rise, a result of increased revenue per unit driven by pricing gains, and volume growth is expected in aggregates and coil steel traffic.

Automotive revenues rose in 2018, but declined in 2017 compared to the prior years. 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. The drop in volume in 2017 was driven mainly by decreases in U.S. light vehicle production, as well as temporary shutdowns for retooling of several NS-served facilities. Average revenue per unit increased for the year, primarily the result of higher fuel surcharge revenue.

For 2019, automotive revenues are expected to increase as a result of higher volumes, reflecting increased demand at NS-served plants, and higher average revenue per unit driven by price increases.

Paper, clay and forest products revenues rose in both 2018 and 2017 compared to the prior years. In 2018, higher average revenue per unit, the result of pricing gains and higher fuel surcharge revenue, and volume gains drove the increase. Gains in pulpboard and municipal waste shipments, a result of tightened truck capacity and growth with existing customers, respectively, were partially offset by decreases in pulp, woodchip, and graphic paper traffic. The increase in 2017 was due to higher average revenue per unit, a result of pricing gains and changes in the traffic mix. Traffic was flat for the year as increases in waste and pulp shipments were offset by losses in woodchip volume due to customer sourcing changes.

For 2019, paper, clay, and forest products revenues are anticipated to increase, reflecting pricing gains. We expect volume to decline slightly, as gains in lumber traffic are expected to be offset by declines in wood chips and graphic paper.

INTERMODAL revenues increased considerably in both 2018 and 2017 compared to the prior years. 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. Growth in 2017 was the result of higher volume and higher average revenue per unit, due to higher fuel surcharge revenue and pricing gains.

For 2019, we expect intermodal revenues to rise, the result of increased domestic volumes and higher average revenue per unit, driven by rate increases.

Intermodal units by market were as follows:

	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	<i>(units in thousands)</i>			<i>(% change)</i>	
Domestic	2,801.1	2,585.0	2,416.2	8%	7%
International	1,574.6	1,489.1	1,454.2	6%	2%
Total	<u>4,375.7</u>	<u>4,074.1</u>	<u>3,870.4</u>	7%	5%

Domestic volume increased in both periods. 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. In 2017, continued highway conversions and growth from existing accounts drove the increase.

For 2019, we expect higher domestic volumes driven by continued highway conversions and growth from existing accounts.

International volume increased in both years reflecting increased demand from existing customers.

For 2019, we expect continued growth in our international volume largely driven by more traffic from existing customers.

COAL revenues increased in 2018 and significantly so in 2017 compared with the prior years. 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. The increase in 2017 was a result of higher volume, primarily in the export market, and higher revenue per unit, driven by higher fuel surcharge revenue and pricing gains.

For 2019, coal revenues are expected to remain relatively flat year-over-year. Higher export and domestic metallurgical volumes are expected to be offset by lower revenue per unit, primarily the result of lower pricing in our export market.

As shown in the following table, total tonnage decreased slightly in 2018, but increased in 2017.

	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	<i>(tons in thousands)</i>			<i>(% change)</i>	
Utility	65,688	67,899	65,033	(3%)	4%
Export	28,046	26,460	14,608	6%	81%
Domestic metallurgical	15,500	15,675	13,884	(1%)	13%
Industrial	5,410	5,545	6,152	(2%)	(10%)
Total	<u>114,644</u>	<u>115,579</u>	<u>99,677</u>	(1%)	16%

Utility coal tonnage declined in 2018, driven by lower network velocity, decreased coal supply, inclement weather in the first quarter, and plant outages. Tonnage rose in 2017, driven by market share gains, partially offset by limited coal burn due to milder weather. Both periods were negatively impacted by sustained lower natural gas prices.

For 2019, we expect utility tonnage to be relatively flat year-over-year, the result of continued pressure from natural gas prices and continued expected growth in renewable and natural gas capacity.

Export coal tonnage increased in both periods due to strong seaborne pricing that resulted in higher demand for U.S. coal. Volume through Norfolk was up 2.3 million tons, or 15%, in 2018 and 5.5 million tons, or 57%, in 2017. Volume through Baltimore declined 0.8 million tons, or 7%, in 2018, but rose 6.4 million tons, or 129%, in 2017.

For 2019, we expect export coal tonnage to rise due to continued demand for U.S. coal.

Domestic metallurgical coal tonnage was down slightly in 2018, but up in 2017. The decline in 2018 was a reflection of customer sourcing changes. In 2017, the increase was a result of market share gains.

For 2019, domestic metallurgical coal tonnage is expected to grow due to increased demand in domestic steel production.

Industrial coal tonnage decreased in both years. In 2018, the decrease reflected customer sourcing changes and pressure from natural gas conversions. The drop in 2017 was a result of plant outages, natural gas conversions, and decreased coal burn.

For 2019, industrial coal tonnage is expected to decrease as a result of continued pressure from natural gas conversions and customer sourcing changes.

Railway Operating Expenses

Railway operating expenses summarized by major classifications were as follows:

	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	<i>(\$ in millions)</i>			<i>(% change)</i>	
Compensation and benefits	\$ 2,925	\$ 2,979	\$ 2,808	(2%)	6%
Purchased services and rents	1,730	1,414	1,548	22%	(9%)
Fuel	1,087	840	698	29%	20%
Depreciation	1,102	1,055	1,026	4%	3%
Materials and other	655	741	799	(12%)	(7%)
	<u>\$ 7,499</u>	<u>\$ 7,029</u>	<u>\$ 6,879</u>	7%	2%

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 property sales. In 2017, we experienced an overall increase in expense compared to the prior year, reflecting higher fuel expense, incentive compensation, inflationary increases, and volume-related costs, partially offset by improved productivity and increased equity in earnings of certain investees as a result of the enactment of tax reform.

Compensation and benefits decreased in 2018, reflecting 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), and
- overtime and reworks (up \$58 million).

In 2017, compensation and benefits increased, a result of changes in:

- incentive and stock-based compensation (up \$125 million),
- higher health and welfare benefit rates for agreement employees (up \$62 million),
- pay rates (up \$43 million),
- increased overtime (up \$24 million), and
- employment levels (down \$81 million).

Our employment averaged 26,662 in 2018, compared with 27,110 in 2017, and 28,044 in 2016.

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. As previously discussed, 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.

	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	<i>(\$ in millions)</i>			<i>(% change)</i>	
Purchased services	\$ 1,367	\$ 1,233	\$ 1,242	11%	(1%)
Equipment rents	363	181	306	101%	(41%)
Total	\$ 1,730	\$ 1,414	\$ 1,548	22%	(9%)

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. In addition to the tax reform impacts discussed above, the remaining increase in purchased services expense in 2017 was a result of higher intermodal volume-related 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, increased in 2018, but decreased in 2017. 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. In 2017, in addition to the benefit from the 2017 tax adjustments, the decline was a result of lower automotive volume.

Fuel expense, which includes the cost of locomotive fuel as well as other fuel used in railway operations, increased in both periods. The change in both years was principally due to locomotive fuel prices (up 25% in 2018 and up 22% in 2017) which increased expenses \$208 million and \$143 million, respectively. Locomotive fuel consumption increased 3% in 2018, but declined 1% in 2017. We consumed approximately 472 million gallons of diesel fuel in 2018, compared with 458 million gallons in 2017 and 462 million gallons in 2016.

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.

Materials and other expenses decreased in both periods as shown in the following table.

	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	<i>(\$ in millions)</i>			<i>(% change)</i>	
Materials	\$ 362	\$ 348	\$ 364	4%	(4%)
Casualties and other claims	176	145	150	21%	(3%)
Other	117	248	285	(53%)	(13%)
Total	\$ 655	\$ 741	\$ 799	(12%)	(7%)

Materials expense increased in 2018, due primarily to higher locomotive repair costs. In 2017, the decline was a result of lower freight car repairs.

Casualties and other claims expenses include the estimates of costs related to personal injury, property damage, and environmental matters. The 2018 expense increased, primarily the result of higher derailment-related costs. The decrease in 2017 was the result of lower loss and damage, offset in part by unfavorable developments in personal injury cases.

Other expense decreased in both periods, largely a result of higher gains from sales of operating properties, up \$79 million and \$42 million in 2018 and 2017, respectively, compared to the prior periods. In 2018, the decline was additionally 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 decreased in 2018, following an increase in 2017. The decline was driven by the absence of net rental income as discussed above and unfavorable returns from corporate-owned life insurance (COLI) investments. In 2017, the rise was mainly the result of favorable returns on COLI investments.

Income Taxes

The effective income tax rate was 23.1% in 2018, compared with negative 72.8% in 2017 and 35.4% in 2016. 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. Both 2018 and 2016 benefited from favorable reductions in deferred taxes for state tax law changes and certain business tax credits, while 2017 and 2016 benefited from higher returns from corporate-owned life insurance.

The statute of limitations on Internal Revenue Service (IRS) examinations has expired for all years prior to 2015. Our consolidated federal income tax return for 2015 is currently being audited by the IRS. We do not expect that the resolution of the examination will have a material effect on our financial position, results of operations, or liquidity.

FINANCIAL CONDITION, LIQUIDITY, AND CAPITAL RESOURCES

Cash provided by operating activities, our principal source of liquidity, was \$3.7 billion in 2018, \$3.3 billion in 2017, and \$3.0 billion in 2016. The increases in both 2018 and 2017 were primarily the result of improved

operating results. We had working capital deficits of \$729 million and \$396 million at December 31, 2018, and 2017, respectively. Cash, cash equivalents, and restricted cash totaled \$446 million and \$690 million at December 31, 2018, and 2017, 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, 2018, were comprised of 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, agreements with Consolidated Rail Corporation (CRC) (Note 6), and unrecognized tax benefits (Note 4):

	Total	2019	2020 - 2021	2022 - 2023	2024 and Subsequent	Other
	(\$ in millions)					
Interest on fixed-rate long-term debt	\$ 13,742	\$ 545	\$ 1,001	\$ 907	\$ 11,289	\$ —
Long-term debt principal	11,984	585	898	1,200	9,301	—
Unconditional purchase obligations	1,206	611	408	187	—	—
Operating leases	695	101	183	144	267	—
Long-term advances from Conrail	280	—	—	—	280	—
Agreements with CRC	206	38	76	76	16	—
Unrecognized tax benefits*	21	—	—	—	—	21
Total	\$ 28,134	\$ 1,880	\$ 2,566	\$ 2,514	\$ 21,153	\$ 21

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

Off balance sheet arrangements consist of obligations related to operating leases, which are included in the table of contractual obligations above and disclosed in Note 10.

Cash used in investing activities was \$1.7 billion in 2018, compared with \$1.5 billion in 2017, and \$1.8 billion in 2016. In 2018, higher property additions drove the increase. The decline in 2017 was a reflection of lower cash outflows for property additions and a drop in corporate-owned life insurance investments.

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 2019, we expect capital spending to approximate 16% to 18% of revenues.

Cash used in financing activities was \$2.3 billion in 2018, compared with \$2.0 billion in 2017, and \$1.3 billion in 2016. Both year-over-year comparisons reflect increased repurchases of common stock and higher debt repayments. In 2018, the increase was also impacted by higher dividend payments, but tempered by increased proceeds from borrowings. In 2017, lower proceeds from borrowings also contributed to the rise.

Share repurchases totaled \$2.8 billion in 2018, \$1.0 billion in 2017, and \$803 million in 2016 for the purchase and retirement of 17.1 million (including 7.0 million shares repurchased for \$1.2 billion under the ASR program, see Note 15), 8.2 million, and 9.2 million shares, respectively. As of December 31, 2018, 39.4 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 February of 2018, we issued \$500 million of 4.15% senior notes due 2048. In August of 2018, we issued \$300 million of 3.65% senior notes due 2025, \$400 million of 3.80% senior notes due 2028, \$200 million of 4.15% senior notes due 2048, and \$600 million of 5.10% senior notes due 2118 (see Note 9).

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 \$1.2 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 42.0% at December 31, 2018, compared with 37.5% at December 31, 2017.

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 \$22 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.

Properties and Depreciation

Most of our assets are long-lived railway properties (Note 7). As disclosed in Note 1, the primary depreciation method for our asset base is group life. See Note 1 for a more detailed discussion of the assumptions and estimates in this area.

Depreciation expense for 2018 totaled \$1.1 billion. Our composite depreciation rates for 2018 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 \$6.5 billion at December 31, 2018 (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 \$50 million valuation allowance on \$425 million of deferred tax assets as of December 31, 2018, 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 2015 bargaining round is now complete with finalized agreements in place with all employees. All of the newly negotiated agreements have moratorium provisions that will reopen the agreements for negotiation beginning January 1, 2020.

Market Risks

At December 31, 2018, 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, 2018, and amounts to an increase of approximately \$1.4 billion to the fair value of our debt at December 31, 2018. 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. Copies of our press releases and additional information about us is available at www.norfolksouthern.com, or you can contact our Investor Relations Department by calling 757-629-2861.

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

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Report of Management

February 8, 2019

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, 2018. 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, 2018.

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, 2018.

/s/ James A. Squires

James A. Squires
Chairman, President and
Chief Executive Officer

/s/ Cynthia C. Earhart

Cynthia C. Earhart
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 Board of Directors and Stockholders
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, 2018, 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, 2018, 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, 2018 and 2017, 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, 2018, 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 8, 2019 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
Norfolk, Virginia
February 8, 2019

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders
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, 2018 and 2017, 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, 2018, 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, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2018, 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, 2018, 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 8, 2019 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

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.

/s/ KPMG LLP
KPMG LLP

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

Norfolk, Virginia
February 8, 2019

Norfolk Southern Corporation and Subsidiaries
Consolidated Statements of Income

	Years ended December 31,		
	2018	2017	2016
	(\$ in millions, except per share amounts)		
Railway operating revenues	\$ 11,458	\$ 10,551	\$ 9,888
Railway operating expenses:			
Compensation and benefits	2,925	2,979	2,808
Purchased services and rents	1,730	1,414	1,548
Fuel	1,087	840	698
Depreciation	1,102	1,055	1,026
Materials and other	655	741	799
	<hr/>	<hr/>	<hr/>
Total railway operating expenses	7,499	7,029	6,879
	<hr/>	<hr/>	<hr/>
Income from railway operations	3,959	3,522	3,009
Other income – net	67	156	136
Interest expense on debt	557	550	563
	<hr/>	<hr/>	<hr/>
Income before income taxes	3,469	3,128	2,582
Income taxes	803	(2,276)	914
	<hr/>	<hr/>	<hr/>
Net income	<u>\$ 2,666</u>	<u>\$ 5,404</u>	<u>\$ 1,668</u>
Earnings per share:			
Basic	\$ 9.58	\$ 18.76	\$ 5.66
Diluted	9.51	18.61	5.62

See accompanying notes to consolidated financial statements.

Norfolk Southern Corporation and Subsidiaries
Consolidated Statements of Comprehensive Income

	Years ended December 31,		
	2018	2017	2016
	(\$ in millions)		
Net income	\$ 2,666	\$ 5,404	\$ 1,668
Other comprehensive income (loss), before tax:			
Pension and other postretirement benefits	(148)	155	(74)
Other comprehensive income (loss) of equity investees	(9)	19	5
	<u>(157)</u>	<u>174</u>	<u>(69)</u>
Other comprehensive income (loss), before tax			
Income tax benefit (expense) related to items of other comprehensive income (loss)	38	(43)	27
	<u>(119)</u>	<u>131</u>	<u>(42)</u>
Other comprehensive income (loss), net of tax			
	<u>(119)</u>	<u>131</u>	<u>(42)</u>
 Total comprehensive income	 <u>\$ 2,547</u>	 <u>\$ 5,535</u>	 <u>\$ 1,626</u>

See accompanying notes to consolidated financial statements.

Norfolk Southern Corporation and Subsidiaries
Consolidated Balance Sheets

	At December 31,	
	2018	2017
	<i>(\$ in millions)</i>	
Assets		
Current assets:		
Cash and cash equivalents	\$ 358	\$ 690
Accounts receivable – net	1,009	955
Materials and supplies	207	222
Other current assets	288	282
Total current assets	1,862	2,149
Investments	3,109	2,981
Properties less accumulated depreciation of \$12,374 and \$11,909, respectively	31,091	30,330
Other assets	177	251
Total assets	\$ 36,239	\$ 35,711
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	\$ 1,505	\$ 1,401
Short-term debt	—	100
Income and other taxes	255	211
Other current liabilities	246	233
Current maturities of long-term debt	585	600
Total current liabilities	2,591	2,545
Long-term debt	10,560	9,136
Other liabilities	1,266	1,347
Deferred income taxes	6,460	6,324
Total liabilities	20,877	19,352
Stockholders' equity:		
Common Stock \$1.00 per share par value, 1,350,000,000 shares authorized; outstanding 268,098,472 and 284,157,187 shares, respectively, net of treasury shares	269	285
Additional paid-in capital	2,216	2,254
Accumulated other comprehensive loss	(563)	(356)
Retained income	13,440	14,176
Total stockholders' equity	15,362	16,359
Total liabilities and stockholders' equity	\$ 36,239	\$ 35,711

See accompanying notes to consolidated financial statements.

Norfolk Southern Corporation and Subsidiaries
Consolidated Statements of Cash Flows

	Years ended December 31,		
	2018	2017	2016
	(\$ in millions)		
Cash flows from operating activities:			
Net income	\$ 2,666	\$ 5,404	\$ 1,668
Reconciliation of net income to net cash provided by operating activities:			
Depreciation	1,104	1,059	1,030
Deferred income taxes	173	(2,859)	227
Gains and losses on properties	(171)	(92)	(46)
Changes in assets and liabilities affecting operations:			
Accounts receivable	(70)	(41)	23
Materials and supplies	15	35	42
Other current assets	(46)	(71)	82
Current liabilities other than debt	223	135	158
Other – net	(168)	(317)	(150)
Net cash provided by operating activities	3,726	3,253	3,034
Cash flows from investing activities:			
Property additions	(1,951)	(1,723)	(1,887)
Property sales and other transactions	204	202	130
Investment purchases	(10)	(7)	(123)
Investment sales and other transactions	99	47	48
Net cash used in investing activities	(1,658)	(1,481)	(1,832)
Cash flows from financing activities:			
Dividends	(844)	(703)	(695)
Common Stock transactions	40	89	57
Purchase and retirement of Common Stock	(2,781)	(1,012)	(803)
Proceeds from borrowings – net of issuance costs	2,023	290	694
Debt repayments	(750)	(702)	(600)
Net cash used in financing activities	(2,312)	(2,038)	(1,347)
Net decrease in cash, cash equivalents, and restricted cash	(244)	(266)	(145)
Cash, cash equivalents, and restricted cash:			
At beginning of year	690	956	1,101
At end of year	\$ 446	\$ 690	\$ 956
Supplemental disclosures of cash flow information:			
Cash paid during the year for:			
Interest (net of amounts capitalized)	\$ 496	\$ 528	\$ 543
Income taxes (net of refunds)	519	705	593

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, 2015	\$ 299	\$ 2,143	\$ (445)	\$ 10,191	\$ 12,188
Comprehensive income:					
Net income				1,668	1,668
Other comprehensive loss			(42)		(42)
Total comprehensive income					1,626
Dividends on Common Stock, \$2.36 per share				(695)	(695)
Share repurchases	(9)	(63)		(731)	(803)
Stock-based compensation	2	99		(6)	95
Other				(2)	(2)
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

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 2018): intermodal (25%); coal (16%); chemicals (16%); agriculture, consumer products, and government (14%); metals and construction (13%); automotive (9%); and, paper, clay, and forest products (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 containers) 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. Switching, demurrage and other incidental service revenues 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 \$7 million at both December 31, 2018 and 2017. 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 equipment, in addition to an allocable portion of indirect costs that relate to a capital project. A significant portion of 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 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 is 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.

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 and \$65 million for the years ended December 31, 2017 and December 31, 2016, respectively, 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 and requires lessees to recognize right-of-use (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.

The new standard provides a number of optional practical expedients for transition. We elected the package of practical expedients under the transition guidance which permits us not to reassess under the new standards 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 ASC 842. We also elected the practical expedient related to land easements, allowing 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 will 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 expect that adoption of the standard will result in recognition of lease liabilities of approximately \$600 million as of January 1, 2019, with corresponding ROU assets of the same amount based on the present value of the remaining minimum rental payments under current leasing standards for existing operating leases. There will be no adjustment to “Retained income” on adoption.

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. The new standard is effective as of January 1, 2020, and early adoption is permitted as of January 1, 2019. 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. We will not adopt the standard early.

2. Railway Operating Revenues

The following table disaggregates our revenues by commodity group:

	2018
	<i>(\$ in millions)</i>
Merchandise:	
Chemicals	\$ 1,808
Agriculture, consumer products, and government	1,674
Metals and construction	1,462
Automotive	991
Paper, clay, and forest products	809
Merchandise	<u>6,744</u>
Intermodal	2,893
Coal	<u>1,821</u>
	<u><u>\$ 11,458</u></u>

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 as of December 31, 2018.

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,	
	2018	2017
	<i>(\$ in millions)</i>	
Customer	\$ 740	\$ 703
Non-customer	269	252
Accounts receivable – net	<u>\$ 1,009</u>	<u>\$ 955</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 \$55 million and \$39 million at December 31, 2018 and December 31, 2017, respectively. We do not have any material contract assets or liabilities.

Certain of our contracts contain refunds (which are primarily volume-based incentives) that are recorded as a reduction to revenue. Refunds are recorded 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. This revenue is included within each of the commodity groups and represents approximately 4% of total "Railway operating revenues" on the Consolidated Statements of Income.

3. Other Income – Net

	2018	2017	2016
	<i>(\$ in millions)</i>		
Net pension and other postretirement benefit cost (Note 12)	\$ 61	\$ 64	\$ 65
Rental income	5	87	93
External advisor costs	—	—	(20)
Other	1	5	(2)
Total	<u>\$ 67</u>	<u>\$ 156</u>	<u>\$ 136</u>

4. Income Taxes

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. In 2017, reasonable estimates were made based on our analysis of tax reform that could have required provisional amounts to be adjusted when additional information was obtained. No material adjustments to our provisional amounts were made in 2018.

	2018	2017	2016
	(\$ in millions)		
Current:			
Federal	\$ 499	\$ 500	\$ 612
State	131	83	75
Total current taxes	<u>630</u>	<u>583</u>	<u>687</u>
Deferred:			
Federal	156	(2,924)	206
State	17	65	21
Total deferred taxes	<u>173</u>	<u>(2,859)</u>	<u>227</u>
Income taxes	<u>\$ 803</u>	<u>\$ (2,276)</u>	<u>\$ 914</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:

	2018		2017		2016	
	Amount	%	Amount	%	Amount	%
	(\$ in millions)					
Federal income tax at statutory rate	\$ 728	21.0	\$ 1,095	35.0	\$ 904	35.0
State income taxes, net of federal tax effect	120	3.5	88	2.8	70	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	(22)	(0.7)	(39)	(1.2)	(17)	(0.7)
Other, net	(23)	(0.7)	(51)	(1.7)	(43)	(1.7)
Income taxes	<u>\$ 803</u>	<u>23.1</u>	<u>\$ (2,276)</u>	<u>(72.8)</u>	<u>\$ 914</u>	<u>35.4</u>

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,	
	2018	2017
	<i>(\$ in millions)</i>	
Deferred tax assets:		
Compensation and benefits, including postretirement benefits	\$ 284	\$ 235
Accruals, including casualty and other claims	69	64
Other	72	67
Total gross deferred tax assets	<u>425</u>	<u>366</u>
Less valuation allowance	<u>(50)</u>	<u>(44)</u>
Net deferred tax assets	<u>375</u>	<u>322</u>
Deferred tax liabilities:		
Property	(6,422)	(6,212)
Other	<u>(413)</u>	<u>(434)</u>
Total deferred tax liabilities	<u>(6,835)</u>	<u>(6,646)</u>
Deferred income taxes	<u>\$ (6,460)</u>	<u>\$ (6,324)</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 \$6 million in 2018, \$5 million in 2017, and \$4 million in 2016.

Uncertain Tax Positions

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

	December 31,	
	2018	2017
	<i>(\$ in millions)</i>	
Balance at beginning of year	\$ 17	\$ 27
Additions based on tax positions related to the current year	5	4
Additions for tax positions of prior years	—	2
Reductions for tax positions of prior years	—	(2)
Settlements with taxing authorities	—	(11)
Lapse of statutes of limitations	<u>(1)</u>	<u>(3)</u>
Balance at end of year	<u>\$ 21</u>	<u>\$ 17</u>

Included in the balance of unrecognized tax benefits at December 31, 2018 are potential benefits of \$17 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 IRS 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. 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’s 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,” “Accounts payable,” and “Short-term debt” approximate carrying values because of the short maturity of these financial instruments. The carrying value of corporate-owned life insurance 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, 2018 or 2017. The carrying amounts and estimated fair values, based on Level 1 inputs, of long-term debt consisted of the following at December 31:

	2018		2017	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
	(\$ in millions)			
Long-term debt, including current maturities	\$ (11,145)	\$ (12,203)	\$ (9,736)	\$ (11,771)

6. Investments

	December 31,	
	2018	2017
	<i>(\$ in millions)</i>	
Long-term investments:		
Equity method investments:		
Conrail Inc.	\$ 1,337	\$ 1,293
TTX Company	692	629
Meridian Speedway LLC	271	272
Pan Am Southern LLC	155	154
Other	77	77
Total equity method investments	<u>2,532</u>	<u>2,425</u>
Corporate-owned life insurance at net cash surrender value	556	530
Other investments	<u>21</u>	<u>26</u>
Total long-term investments	<u>\$ 3,109</u>	<u>\$ 2,981</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, 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 asset of \$1 million.

At December 31, 2017, based on the funded status of Conrail's pension plans, we increased our proportional investment in Conrail by \$19 million. This resulted in income of \$17 million recorded to "Other comprehensive income" and a combined federal and state deferred tax liability of \$2 million.

At December 31, 2018, the difference between our investment in Conrail and our share of Conrail's underlying net equity was \$511 million. Our equity in the earnings of Conrail, net of amortization, included in "Purchased services and rents" was \$55 million for 2018, \$75 million for 2017 (including \$33 million related to the enactment of tax reform – see Note 4), and \$47 million for 2016. 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 \$150 million in 2018, \$141 million in 2017, and \$151 million in 2016. Future payments for access fees due to CRC under the Shared Assets Areas agreements are as follows: \$38 million in each of 2019 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 \$7 million annually.

“Accounts payable” includes \$202 million at December 31, 2018, and \$146 million at December 31, 2017, due to Conrail for the operation of the Shared Assets Areas. “Other liabilities” includes \$280 million at both December 31, 2018 and 2017 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 \$262 million, \$237 million, and \$229 million of expense, respectively, for the years ended December 31, 2018, 2017 and 2016. Our equity in the earnings of TTX, also included in “Purchased services and rents,” totaled \$61 million for 2018, \$158 million (including \$115 million related to the enactment of tax reform – see Note 4) for 2017, and \$26 million for 2016.

7. Properties

December 31, 2018	Cost	Accumulated Depreciation	Net Book Value	Depreciation Rate ⁽¹⁾
	(\$ in millions)			
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	29,507	(7,812)	21,695	
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	11,184	(4,295)	6,889	
Other property	437	(267)	170	0.78%
Total properties	\$ 43,465	\$ (12,374)	\$ 31,091	

December 31, 2017	Cost	Accumulated Depreciation	Net Book Value	Depreciation Rate ⁽¹⁾
	(\$ in millions)			
Land	\$ 2,342	\$ —	\$ 2,342	—
Roadway:				
Rail and other track material	6,730	(1,961)	4,769	2.28%
Ties	5,181	(1,374)	3,807	3.37%
Ballast	2,654	(624)	2,030	2.71%
Construction in process	447	—	447	—
Other roadway	13,636	(3,523)	10,113	2.59%
Total roadway	<u>28,648</u>	<u>(7,482)</u>	<u>21,166</u>	
Equipment:				
Locomotives	5,658	(2,158)	3,500	3.77%
Freight cars	3,256	(1,286)	1,970	2.48%
Computers and software	610	(334)	276	10.61%
Construction in process	247	—	247	—
Other equipment	1,004	(366)	638	5.06%
Total equipment	<u>10,775</u>	<u>(4,144)</u>	<u>6,631</u>	
Other property	<u>474</u>	<u>(283)</u>	<u>191</u>	0.77%
Total properties	<u>\$ 42,239</u>	<u>\$ (11,909)</u>	<u>\$ 30,330</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 property includes the costs of obtaining rights to natural resources of \$336 million at both December 31, 2018 and 2017, with accumulated depletion of \$200 million at both dates.

Capitalized Interest

Total interest cost incurred on debt was \$574 million in 2018, \$570 million in 2017, and \$583 million in 2016, of which \$17 million in 2018 and \$20 million in both 2017 and 2016 was capitalized.

8. Current Liabilities

	December 31,	
	2018	2017
	<i>(\$ in millions)</i>	
Accounts payable:		
Accounts and wages payable	\$ 828	\$ 822
Casualty and other claims (Note 17)	213	187
Due to Conrail (Note 6)	202	146
Vacation liability	140	133
Other	122	113
	<u>1,505</u>	<u>1,401</u>
Total	<u>\$ 1,505</u>	<u>\$ 1,401</u>
Other current liabilities:		
Interest payable	\$ 139	\$ 115
Pension benefit obligations (Note 12)	18	17
Other	89	101
	<u>246</u>	<u>233</u>
Total	<u>\$ 246</u>	<u>\$ 233</u>

9. Debt

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

	December 31,	
	2018	2017
	<i>(\$ in millions)</i>	
Notes and debentures:		
4.68% maturing to 2023	\$ 2,682	\$ 3,282
4.57% maturing 2024 to 2031	3,065	2,365
4.49% maturing 2037 to 2052	5,104	4,404
5.90% maturing 2097 to 2118	1,131	531
Securitization borrowings and capital leases	2	102
Discounts, premiums, and debt issuance costs	(839)	(848)
Total debt	<u>11,145</u>	<u>9,836</u>
Less current maturities and short-term debt	<u>(585)</u>	<u>(700)</u>
Long-term debt excluding current maturities and short-term debt	<u>\$ 10,560</u>	<u>\$ 9,136</u>

Long-term debt maturities subsequent to 2019 are as follows:

2020	\$	314
2021		584
2022		600
2023		600
2024 and subsequent years		<u>8,462</u>
Total	\$	<u>10,560</u>

In February of 2018, we issued \$500 million of 4.15% senior notes due 2048.

In August of 2018, we issued \$300 million of 3.65% senior notes due 2025, \$400 million of 3.80% senior notes due 2028, \$200 million of 4.15% senior notes due 2048, and \$600 million of 5.10% senior notes due 2118.

In June of 2018, we renewed our accounts receivable securitization program for a 364-day term expiring in May 2019. We also increased the program's capacity from \$350 million to \$400 million. 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. Amounts received under the facility are accounted for as borrowings. Under this facility, we received \$50 million in 2018, and paid \$150 million and \$100 million during 2018 and 2017, respectively. We had no amounts outstanding under this program at December 31, 2018 and \$100 million (at an average variable interest rate of 3.21%) at December 31, 2017, which is included within "Short-term debt." At December 31, 2018 and 2017, the receivables included in "Accounts receivable – net" serving as collateral for these borrowings totaled \$793 million and \$751 million, respectively. Borrowings under this program are supported by our \$750 million credit agreement.

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

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 December 31, 2018 and 2017, and we are in compliance with all of its covenants.

10. Lease Commitments

We are committed under long-term lease agreements for equipment, lines of road and other property. Future minimum lease payments and operating lease expense are as follows:

Future Minimum Lease Payments

	Operating Leases
	<i>(\$ in millions)</i>
2019	\$ 101
2020	95
2021	88
2022	75
2023	69
2024 and subsequent years	267
	<hr/>
Total	\$ 695

Operating Lease Expense

	2018	2017	2016
	<i>(\$ in millions)</i>		
Minimum rents	\$ 102	\$ 96	\$ 97
Contingent rents	102	54	51
	<hr/>	<hr/>	<hr/>
Total	\$ 204	\$ 150	\$ 148

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

11. Other Liabilities

	December 31,	
	2018	2017
	<i>(\$ in millions)</i>	
Net other postretirement benefit obligations (Note 12)	\$ 308	\$ 309
Long-term advances from Conrail (Note 6)	280	280
Net pension benefit obligations (Note 12)	278	296
Casualty and other claims (Note 17)	158	179
Deferred compensation	106	113
Other	136	170
	<hr/>	<hr/>
Total	\$ 1,266	\$ 1,347

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, a defined percentage of health care expenses is 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	
	2018	2017	2018	2017
	(\$ in millions)			
Change in benefit obligations:				
Benefit obligation at beginning of year	\$ 2,541	\$ 2,420	\$ 510	\$ 528
Service cost	39	38	7	7
Interest cost	83	80	15	15
Actuarial losses (gains)	(149)	143	(24)	6
Benefits paid	(143)	(140)	(42)	(46)
Benefit obligation at end of year	<u>2,371</u>	<u>2,541</u>	<u>466</u>	<u>510</u>
Change in plan assets:				
Fair value of plan assets at beginning of year	2,373	2,073	201	182
Actual return on plan assets	(143)	423	(19)	40
Employer contribution	18	17	18	25
Benefits paid	(143)	(140)	(42)	(46)
Fair value of plan assets at end of year	<u>2,105</u>	<u>2,373</u>	<u>158</u>	<u>201</u>
Funded status at end of year	<u>\$ (266)</u>	<u>\$ (168)</u>	<u>\$ (308)</u>	<u>\$ (309)</u>
Amounts recognized in the Consolidated				
Balance Sheets:				
Noncurrent assets	\$ 30	\$ 145	\$ —	\$ —
Current liabilities	(18)	(17)	—	—
Noncurrent liabilities	(278)	(296)	(308)	(309)
Net amount recognized	<u>\$ (266)</u>	<u>\$ (168)</u>	<u>\$ (308)</u>	<u>\$ (309)</u>
Amounts included in accumulated other comprehensive				
loss (before tax):				
Net loss	\$ 895	\$ 781	\$ 21	\$ 11
Prior service cost (benefit)	2	2	(259)	(283)

Our accumulated benefit obligation for our defined benefit pension plans is \$2.2 billion and \$2.3 billion at December 31, 2018 and December 31, 2017, respectively. Our unfunded pension plans, included above, which in all cases have no assets, had projected benefit obligations of \$296 million and \$313 million at December 31, 2018 and December 31, 2017, respectively, and had accumulated benefit obligations of \$263 million and \$267 million at December 31, 2018 and December 31, 2017, respectively.

Pension and Other Postretirement Benefit Cost Components

	2018	2017	2016
	(\$ in millions)		
Pension benefits:			
Service cost	\$ 39	\$ 38	\$ 36
Interest cost	83	80	82
Expected return on plan assets	(177)	(172)	(173)
Amortization of net losses	57	51	51
Amortization of prior service cost	—	1	—
	<u>2</u>	<u>(2)</u>	<u>(4)</u>
Net cost (benefit)	<u>\$ 2</u>	<u>\$ (2)</u>	<u>\$ (4)</u>
Other postretirement benefits:			
Service cost	\$ 7	\$ 7	\$ 7
Interest cost	15	15	16
Expected return on plan assets	(15)	(15)	(17)
Amortization of prior service benefit	(24)	(24)	(24)
	<u>(17)</u>	<u>(17)</u>	<u>(18)</u>
Net benefit	<u>\$ (17)</u>	<u>\$ (17)</u>	<u>\$ (18)</u>

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

	2018	
	Pension Benefits	Other Postretirement Benefits
	(\$ in millions)	
Net loss arising during the year	\$ 171	\$ 10
Amortization of net losses	(57)	—
Amortization of prior service benefit	—	24
	<u>114</u>	<u>34</u>
Total recognized in other comprehensive income	<u>\$ 114</u>	<u>\$ 34</u>
Total recognized in net periodic cost and other comprehensive income	<u>\$ 116</u>	<u>\$ 17</u>

Net actuarial losses arising during the year for pension and other postretirement benefits were due primarily to lower actual returns on plan assets, partially offset by an increase in discount rates.

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 \$44 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 \$24 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>2018</u>	<u>2017</u>	<u>2016</u>
<i>Pension funded status:</i>			
Discount rate	4.33%	3.74%	4.05%
Future salary increases	4.21%	4.21%	4.21%
<i>Other postretirement benefits funded status:</i>			
Discount rate	4.18%	3.57%	3.83%
<i>Pension cost:</i>			
Discount rate - service cost	4.01%	4.31%	4.64%
Discount rate - interest cost	3.33%	3.43%	3.51%
Return on assets in plans	8.25%	8.25%	8.25%
Future salary increases	4.21%	4.21%	4.50%
<i>Other postretirement benefits cost:</i>			
Discount rate - service cost	3.83%	4.17%	4.36%
Discount rate - interest cost	3.13%	3.14%	3.15%
Return on assets in plans	8.00%	8.00%	8.00%
Health care trend rate	6.30%	6.56%	6.30%

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, 2018, increases in the per capita cost of pre-Medicare covered health care benefits were assumed to be 6.5% for 2019. 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
	(\$ in millions)	
Increase (decrease) in:		
Total service and interest cost components	\$ 1	\$ (1)
Postretirement benefit obligation	9	(8)

Asset Management

Eleven investment firms manage our defined benefit pension plans' assets under investment guidelines approved by our Benefits Investment Committee that is comprised 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,	
	2018	2017
Domestic equity securities	49%	49%
International equity securities	23%	25%
Debt securities	25%	24%
Cash and cash equivalents	3%	2%
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, 2018 of 64% in equity securities and 36% in debt securities compared with 67% in equity securities and 33% in debt securities at December 31, 2017. 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 2019, we assume an 8.25% return on pension plan assets.

Fair Value of Plan Assets

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 a 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 a 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 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).

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

	December 31, 2017		
	Level 1	Level 2	Total
	(\$ in millions)		
Common stock	\$ 1,154	\$ —	\$ 1,154
Common collective trusts:			
International equity securities	—	397	397
Debt securities	—	562	562
Fixed income securities:			
Government and agencies securities	—	4	4
Commingled funds	—	233	233
Cash and cash equivalents	23	—	23
	<hr/>	<hr/>	<hr/>
Total investments	<u>\$ 1,177</u>	<u>\$ 1,196</u>	<u>\$ 2,373</u>

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 \$158 million and \$201 million at December 31, 2018 and December 31, 2017, 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 2019, we expect to contribute approximately \$18 million to our unfunded pension plans for payments to pensioners and approximately \$41 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 2019.

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

	Pension Benefits	Other Postretirement Benefits
	(\$ in millions)	
2019	\$ 142	\$ 41
2020	143	40
2021	144	38
2022	145	37
2023	146	36
Years 2024 – 2028	733	165

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 \$35 million in 2018, \$44 million in 2017, and \$37 million in 2016.

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 \$23 million in both 2018 and 2017 and \$21 million in 2016.

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 8,644,108 remain available for future grants as of December 31, 2018.

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:

	2018		2017		2016	
	Granted	Weighted Average Grant-Date Fair Value	Granted	Weighted Average Grant-Date Fair Value	Granted	Weighted Average Grant-Date Fair Value
Stock options:						
LTIP	40,960	\$ 41.70	341,120	\$ 37.73	694,290	\$ 19.92
TSOP	—	—	144,440	31.33	302,320	14.75
Total	<u>40,960</u>		<u>485,560</u>		<u>996,610</u>	
RSUs	217,290	148.37	83,330	120.16	136,250	70.44
PSUs	92,314	91.60	300,334	88.56	1,042,628	52.75

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:

	2018		2017		2016
	<i>(\$ in millions)</i>				
Stock-based compensation expense	\$	47	\$	45	\$ 42
Total tax benefit		33		54	31

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 2018 was measured on the date of grant using the Black-Scholes valuation model. The fair value of each option awarded in 2017 and 2016 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 2018 grant year, historical exercise data is used to estimate the average expected option term. For the 2017 and 2016 grant years, 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 2018, 2017, and 2016, a dividend yield of 1.94%, 2.04%, and 3.37%, 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>2018</u>	<u>2017</u>	<u>2016</u>
Average expected volatility	24%	26%	27%
Average risk-free interest rate	2.55%	2.51%	2.00%
Average expected option term LTIP	7.2 years	8.6 years	8.9 years
Average expected option term TSOP	—	8.3 years	8.6 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, 2017	4,234,067	\$ 83.17
Granted	40,960	149.58
Exercised	(840,175)	72.08
Forfeited	(15,208)	89.57
	<u>3,419,644</u>	<u>86.66</u>
Outstanding at December 31, 2018		

The aggregate intrinsic value of options outstanding at December 31, 2018 was \$215 million with a weighted average remaining contractual term of 5.7 years. Of these options outstanding, 1,908,864 were exercisable and had an aggregate intrinsic value of \$175 million with a weighted average exercise price of \$57.81 and a weighted average remaining contractual term of 3.0 years.

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

	<u>2018</u>	<u>2017</u>	<u>2016</u>
	<i>(\$ in millions)</i>		
Options exercised	840,175	1,789,939	1,466,721
Total intrinsic value	\$ 72	\$ 114	\$ 60
Cash received upon exercise	58	104	74
Related tax benefits realized	16	35	13

At December 31, 2018, total unrecognized compensation related to options granted under the LTIP and the TSOP was \$5 million, and is expected to be recognized over a weighted-average period of approximately 1.6 years.

Restricted Stock Units

RSUs granted in 2018 primarily have a four-year ratable restriction period and will be settled through the issuance of shares of Common Stock. RSUs granted in 2017 and 2016 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.

	2018	2017	2016
	<i>(\$ in millions)</i>		
RSUs vested	160,200	137,200	175,500
Common Stock issued net of tax withholding	99,968	81,318	103,936
Related tax benefit realized	\$ 3	\$ 3	\$ 1

A summary of changes in RSUs is presented below:

	RSUs	Weighted-Average Grant-Date Fair Value
Nonvested at December 31, 2017	588,405	\$ 87.40
Granted	217,290	148.37
Vested	(160,200)	69.83
Forfeited	(8,460)	143.24
Nonvested at December 31, 2018	<u>637,035</u>	111.87

At December 31, 2018, total unrecognized compensation related to RSUs was \$17 million, and is expected to be recognized over a weighted-average period of approximately 2.9 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.

	2018	2017	2016
	<i>(\$ in millions)</i>		
PSUs earned	154,189	171,080	406,038
Common Stock issued net of tax withholding	94,399	99,805	241,757
Related tax benefit realized	\$ 3	\$ 1	\$ 3

A summary of changes in PSUs is presented below:

	PSUs	Weighted-Average Grant-Date Fair Value
Balance at December 31, 2017	1,748,752	\$ 63.36
Granted	92,314	91.60
Earned	(154,189)	46.08
Unearned	(256,981)	87.01
Forfeited	(3,070)	77.26
	<u>1,426,826</u>	
Balance at December 31, 2018	<u>1,426,826</u>	62.77

At December 31, 2018, total unrecognized compensation related to PSUs granted under the LTIP was \$5 million, and is expected to be recognized over a weighted-average period of approximately 1.5 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:

	2018	2017	2016
Available for future grants:			
LTIP	8,644,108	8,774,768	9,385,674
TSOP	422,973	410,895	544,217
Issued:			
LTIP	820,746	1,679,547	1,511,645
TSOP	213,796	291,515	300,769

14. Stockholders' Equity

Common Stock

Common Stock is reported net of shares held by our consolidated subsidiaries (Treasury Shares). Treasury Shares at December 31, 2018 and 2017 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:

	Balance at Beginning of Year	Net Income (Loss)	Reclassification of Stranded Tax Effects	Reclassification Adjustments	Balance at End of Year
<i>(\$ in millions)</i>					
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>
Year ended December 31, 2017					
Pensions and other postretirement liabilities	\$ (414)	\$ 95	\$ —	\$ 19	\$ (300)
Other comprehensive income of equity investees	(73)	17	—	—	(56)
Accumulated other comprehensive loss	<u>\$ (487)</u>	<u>\$ 112</u>	<u>\$ —</u>	<u>\$ 19</u>	<u>\$ (356)</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:

	Pretax Amount	Tax (Expense) Benefit	Net-of-Tax Amount
	(\$ in millions)		
Year ended December 31, 2018			
Net gain (loss) arising during the year:			
Pensions and other postretirement benefits	\$ (181)	\$ 45	\$ (136)
Reclassification adjustments for costs included in net income	33	(8)	25
Subtotal	(148)	37	(111)
Other comprehensive loss of equity investees	(9)	1	(8)
Other comprehensive loss	<u>\$ (157)</u>	<u>\$ 38</u>	<u>\$ (119)</u>
Year ended December 31, 2017			
Net gain arising during the year:			
Pensions and other postretirement benefits	\$ 127	\$ (32)	\$ 95
Reclassification adjustments for costs included in net income	28	(9)	19
Subtotal	155	(41)	114
Other comprehensive income of equity investees	19	(2)	17
Other comprehensive income	<u>\$ 174</u>	<u>\$ (43)</u>	<u>\$ 131</u>
Year ended December 31, 2016			
Net gain (loss) arising during the year:			
Pensions and other postretirement benefits	\$ (101)	\$ 37	\$ (64)
Reclassification adjustments for costs included in net income	27	(10)	17
Subtotal	(74)	27	(47)
Other comprehensive income of equity investees	5	—	5
Other comprehensive loss	<u>\$ (69)</u>	<u>\$ 27</u>	<u>\$ (42)</u>

15. Stock Repurchase Programs

We repurchased and retired 17.1 million (7.0 million shares under the ASR and 10.1 million shares under our ongoing open-market program), 8.2 million, and 9.2 million shares of Common Stock under our stock repurchase programs in 2018, 2017, and 2016, respectively, at a cost of \$2.8 billion, \$1.0 billion, and \$803 million, respectively. We entered into an ASR on August 2, 2018 with two financial institutions to repurchase Common Stock, at which time we made a payment of \$1.2 billion to the financial institutions and received an initial delivery of 5.7 million shares valued at \$960 million. In December 2018, the remaining balance was settled through the receipt of 1.3 million additional shares.

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, 2018, 39.4 million shares remain authorized for repurchase. Since the beginning of 2006, we have repurchased and retired 185.6 million shares at a total cost of \$14.1 billion.

16. Earnings Per Share

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

	Basic			Diluted		
	2018	2017	2016	2018	2017	2016
	<i>(\$ in millions except per share amounts, shares in millions)</i>					
Net income	\$ 2,666	\$ 5,404	\$ 1,668	\$ 2,666	\$ 5,404	\$ 1,668
Dividend equivalent payments	(6)	(4)	(5)	(1)	(2)	(4)
Income available to common stockholders	\$ 2,660	\$ 5,400	\$ 1,663	\$ 2,665	\$ 5,402	\$ 1,664
Weighted-average shares outstanding	277.7	287.9	293.9	277.7	287.9	293.9
Dilutive effect of outstanding options and share-settled awards				2.5	2.4	2.1
Adjusted weighted-average shares outstanding				280.2	290.3	296.0
Earnings per share	\$ 9.58	\$ 18.76	\$ 5.66	\$ 9.51	\$ 18.61	\$ 5.62

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, 0.2 million, and 1.3 million for the years ended December 31, 2018, 2017 and 2016, respectively.

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 findings are subject to appeal. 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, exposure to repetitive motion resulting in various musculoskeletal disorders, and exposure to excessive noise resulting in hearing loss. 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, automobile liability, 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 \$55 million at December 31, 2018, and \$58 million at December 31, 2017, of which \$15 million is classified as a current liability at the end of both 2018 and 2017. At December 31, 2018, the liability represents our estimates of the probable cleanup, investigation, and remediation costs based on available information at 114 known locations and projects compared with 127 locations and projects at December 31, 2017. At December 31, 2018, fifteen sites accounted for \$37 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. We are currently self-insured up to \$50 million and above \$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 up to \$25 million and above \$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, 2018, 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 2023.

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>			
2018				
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
2017				
Railway operating revenues	\$ 2,575	\$ 2,637	\$ 2,670	\$ 2,669
Income from railway operations	757	872	895	998
Net income	433	497	506	3,968
Earnings per share:				
Basic	1.49	1.72	1.76	13.91
Diluted	1.48	1.71	1.75	13.79

Note 1: In the fourth quarter of 2017, as a result of the enactment of tax reform, “Income from railway operations” included a \$151 million benefit and income taxes included a \$3,331 million benefit, which added \$3,482 million to “Net income,” \$12.21 to “Earnings per share – basic,” and \$12.10 to “Earnings per share – diluted.”

Note 2: The retrospective application of FASB ASU 2017-07 resulted in an increase to “Compensation and benefits” expense within “Railway operating expenses” and an offsetting increase to “Other income – net” of \$16 million in each of the quarters of 2017. This resulted in a decrease to “Income from railway operations” as presented for each of the quarters of 2017.

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

None.

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, 2018. Based on such evaluation, our officers have concluded that, at December 31, 2018, 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, 2018. 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 2018, 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 “Section 16(a) Beneficial Ownership Reporting Compliance,” under the caption “Corporate Governance and the Board,” 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 2019 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 “Executive Officers of the Registrant.”

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 “Corporate Governance and the Board”, including “Compensation of Directors” and “Non-Employee Director Compensation;”
- appearing under the caption “Executive Compensation” for executives, including the “Compensation Discussion and Analysis,” the information appearing in the “Summary Compensation Table” and the “2018 Grants of Plan-Based Awards” table, including the narrative to such tables, the “Outstanding Equity Awards at Fiscal Year-End 2018” and “Option Exercises and Stock Vested in 2018” 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 2019 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 2019 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, 2018)

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⁾	5,048,649 ⁽⁴⁾	\$ 85.10 ⁽⁵⁾	8,644,108
Equity compensation plans not approved by securities holders	733,502 ⁽³⁾	84.23	422,973 ⁽⁶⁾
Total	5,782,151		9,067,081

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

⁽²⁾ LTIP.

⁽³⁾ TSOP and the Directors' Restricted Stock Plan.

⁽⁴⁾ Includes options, RSUs and PSUs granted under LTIP that will be settled in shares of stock.

⁽⁵⁾ Calculated without regard to 2,362,507 outstanding RSUs and PSUs at December 31, 2018.

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

Norfolk Southern Corporation Long-Term Incentive Plan (LTIP)

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 stock appreciation right, or (ii) by 1.61 for an award made in the form other than an option or stock-settled stock appreciation right. 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, stock appreciation rights, 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 2018 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. For the 2018 RSU awards, RSUs will be settled in shares of Common Stock.

Norfolk Southern Corporation Thoroughbred Stock Option Plan (TSOP)

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 2019 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 2019 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	K 32
	Reports of Independent Registered Public Accounting Firm	K 33
	Consolidated Statements of Income, Years ended December 31, 2018, 2017, and 2016	K 36
	Consolidated Statements of Comprehensive Income, Years ended December 31, 2018, 2017, and 2016	K 37
	Consolidated Balance Sheets at December 31, 2018 and 2017	K 38
	Consolidated Statements of Cash Flows, Years ended December 31, 2018, 2017, and 2016	K 39
	Consolidated Statements of Changes in Stockholders' Equity, Years ended December 31, 2018, 2017, and 2016	K 40
	Notes to Consolidated Financial Statements	K 41
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	K 91
	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)

- (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 February 6, 2019, are incorporated by reference to Exhibit 3\(ii\) to Norfolk Southern Corporation’s Form 8-K filed on February 8, 2019. \(SEC File No. 001-08339\)](#)
- (iii) [The Bylaws of Norfolk Southern Corporation, as amended January 23, 2019, effective February 10, 2019, are incorporated by reference to Exhibit 3\(iii\) to Norfolk Southern Corporation’s Form 8-K filed on January 25, 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 (SEC File 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. \(SEC File No. 001-08339\)](#)

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 September 26, 2000, is incorporated by reference to Exhibit 10\(n\) to Norfolk Southern Corporation's Form 10-K filed on March 5, 2001. \(SEC File No. 001-08339\)](#)
- (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.](#)
- (z)* [The description of Norfolk Southern Corporation's executive physical reimbursement for non-employee directors and certain executives is incorporated by reference to Norfolk Southern Corporation's Form 8-K filed on July 28, 2005; but no reimbursements will be made for physical examinations performed for non-employee directors after July 30, 2016. \(SEC File No. 001-08339\)](#)
- (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, and November 27, 2018.](#)
- (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\(mm\) 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) [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. \(SEC File No. 001-08339\)](#)
- (tt) [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 \(Exhibits, annexes and schedules omitted. The Registrant will furnish supplementary copies of such materials to the SEC upon request\). \(SEC File No. 001-08339\)](#)
- (uu) [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. \(SEC File No. 001-08339\)](#)

- (vv)* [Directors' Deferred Fee Plan of Norfolk Southern Corporation, adopted June 1, 1982 and as amended and restated effective October 3, 2014, is incorporated by reference to Exhibit 10 to Norfolk Southern Corporation's Form 10-Q filed on October 22, 2014. \(SEC File No. 001-08339\)](#)
- (ww)*, ** [Norfolk Southern Corporation Executives' Deferred Compensation Plan, as amended and restated effective January 1, 2019.](#)
- (xx)* [Amendment to Norfolk Southern Corporation Officers' Deferred Compensation Plan, effective January 1, 2008, is incorporated by reference to Exhibit 10.03 to Norfolk Southern Corporation's Form 8-K filed on July 24, 2008. \(SEC File No. 001-08339\)](#)
- (yy)* [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. \(SEC File No. 001-08339\)](#)
- (zz)* [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. \(SEC File No. 001-08339\)](#)
- (aaa) [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 \(exhibits, annexes, and schedules omitted – the Registrant will furnish supplementary copies of such materials to the SEC upon request\). \(SEC File No. 001-08339\)](#)
- (bbb)* [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. \(SEC File No. 001-08339\)](#)
- (ccc)* [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. \(SEC File No. 001-08339\)](#)
- (ddd)* [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. \(SEC File No. 001-08339\)](#)
- (eee)* [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. \(SEC File No. 001-08339\)](#)
- (fff)* [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. \(SEC File No. 001-08339\)](#)

- (ggg) Performance Criteria for bonuses payable in 2020 for the 2019 incentive year. On November 26, 2018, the Compensation Committee of the Norfolk Southern Corporation Board of Directors adopted the following performance criteria for determining bonuses payable in 2020 for the 2019 incentive year under the Norfolk Southern Corporation Executive Management Incentive Plan: 60% based on operating income, and 40% based on operating ratio.
- (hhh) [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. \(SEC File No. 001-08339\)](#)
- (iii)* [Form of Amendment to Amended and Restated Change in Control Agreements between Norfolk Southern Corporation and the Corporation's Chairman, President and Chief Executive Officer, and each of the Corporation's Executive Vice Presidents, to eliminate the excise tax gross-up provision in the Agreements, is incorporated by reference to Exhibit 10.1 to Norfolk Southern Corporation's Form 8-K filed on January 23, 2013. \(SEC File No. 001-08339\)](#)
- (jjj)* [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. \(SEC File No. 001-08339\)](#)
- (kkk) [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. \(SEC File No. 001-08339\)](#)
- 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.](#)
- 99** [Annual CEO Certification pursuant to NYSE Rule 303A.12\(a\).](#)
- 101** The following financial information from Norfolk Southern Corporation's Annual Report on Form 10-K for the year ended December 31, 2018, formatted in Extensible Business Reporting Language (XBRL) includes: (i) the Consolidated Statements of Income of each of the years ended December 31, 2018, 2017, and 2016; (ii) the Consolidated Statements of Comprehensive Income for each of the years ended December 31, 2018, 2017, and 2016; (iii) the Consolidated Balance Sheets at December 31, 2018 and 2017; (iv) the Consolidated Statements of Cash Flows for each of the years ended December 31, 2018, 2017, and 2016; (v) the Consolidated Statements of Changes in Stockholders' Equity for each of the years ended December 31, 2018, 2017, and 2016; 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, 32, and 99 are included in copies assembled for public dissemination. All

exhibits are included in the 2018 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**

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Item 16. Form 10-K Summary.

Not applicable.

POWER OF ATTORNEY

Each person whose signature appears on the next page under SIGNATURES hereby authorizes John M. Scheib and Cynthia C. Earhart, 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 John M. Scheib and Cynthia C. Earhart, 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 8th day of February, 2019.

/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 8th day of February, 2019, 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/ Cynthia C. Earhart</u> (Cynthia C. Earhart)	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/ Martin H. Nesbitt</u> (Martin H. Nesbitt)	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, 2018, 2017, and 2016****(\$ in millions)**

	<u>Beginning Balance</u>	<u>Additions charged to:</u>			<u>Deductions</u>	<u>Ending Balance</u>
		<u>Expenses</u>	<u>Other Accounts</u>			
Year ended December 31, 2018						
Current portion of casualty and other claims included in accounts payable	\$ 187	\$ 32	\$ 145 ⁽²⁾	\$ 151 ⁽⁴⁾	\$ 213	
Casualty and other claims included in other liabilities	179	85 ⁽¹⁾	—	106 ⁽³⁾	158	
Year ended December 31, 2017						
Current portion of casualty and other claims included in accounts payable	\$ 192	\$ 17	\$ 124 ⁽²⁾	\$ 146 ⁽⁴⁾	\$ 187	
Casualty and other claims included in other liabilities	178	83 ⁽¹⁾	—	82 ⁽³⁾	179	
Year ended December 31, 2016						
Current portion of casualty and other claims included in accounts payable	\$ 174	\$ 25	\$ 101 ⁽²⁾	\$ 108 ⁽⁴⁾	\$ 192	
Casualty and other claims included in other liabilities	191	68 ⁽¹⁾	—	81 ⁽³⁾	178	

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

NORFOLK SOUTHERN CORPORATION
LONG-TERM INCENTIVE PLAN

AS APPROVED BY SHAREHOLDERS MAY 14, 2015,
AS AMENDED JULY 29, 2016, NOVEMBER 29, 2016, NOVEMBER 28, 2017 AND NOVEMBER 27, 2018

The terms of this amended plan, as set forth below, were approved by the separate vote of the holders of a majority of the shares of Common Stock present or represented and entitled to vote at a meeting of the stockholders of the Corporation at which a quorum was present for the proposal on May 14, 2015. The Board of Directors of the Corporation subsequently amended the Plan: on July 29, 2016 to clarify that an Award may include conditions such as continued employment, passage of time, the provisions of a Retention Agreement, attainment of age and/or service requirements, and/or the achievement of Performance Goals; on November 29, 2016 to revise the definition of "Retirement" with respect to a Participant who is not eligible to participate in a retirement plan of the Corporation or a Subsidiary Company and to specifically include work as a director for purposes of the non-compete under Section 14; on November 28, 2017, to revise the definition of "Restriction Period" from three years to ratable restriction periods over three years and grant the Committee authority to award up to 25,000 shares per year with a one-year restriction period; and on November 27, 2018, to revise the definition of "Award Date" regarding the effective date of an Award made during a blackout period.

Section 1. PURPOSE

The purpose of the Long-Term Incentive Plan ("Plan"), as amended, is to promote the success of Norfolk Southern Corporation (the "Corporation") and to provide an opportunity for non-employee directors, officers and other employees of the Corporation and its Subsidiary Companies (as hereinafter defined) to acquire or increase a proprietary interest in the Corporation and thereby to provide an additional incentive to devote their maximum efforts and skills to the advancement, betterment, and prosperity of the Corporation and its stockholders. The Plan provides for the grant of incentive stock options, non-qualified stock options, stock appreciation rights, performance share units, performance shares, restricted shares, and restricted stock units, in accordance with the terms and conditions set forth below. The Corporation intends that the Plan comply with the requirements of Internal Revenue Code Section 162(m) and applicable treasury regulations thereunder and intends that compensation paid under the Plan qualify as performance-based compensation under Code Section 162(m). Notwithstanding the preceding sentence, the Corporation reserves the right to pay compensation under the Plan that does not qualify as performance-based compensation under Code Section 162(m), as circumstances may warrant. The Plan, as amended, is intended, and shall be construed, to comply with the requirements of Code Section 409A.

Section 2. DEFINITIONS

The terms used herein shall have the following meanings unless otherwise specified or unless a different meaning is clearly required by the context:

Award	Any one or more of the following: Incentive Stock Option; Non-qualified Stock Option; Stock Appreciation Right; Restricted Shares; Restricted Stock Units; Performance Share Units; and Performance Shares.
Award Agreement	A written agreement, made in a form approved by the Committee and consistent with the terms of the Plan, that specifies the terms, conditions and limitations of each Award.
Award Date	The date on which the Committee or the chief executive officer (to the extent as may be delegated by the Committee) grants an Award or, if granted during a blackout period that precedes the release of the Corporation's financial information for the preceding calendar quarter, the first day on which the Corporation's common stock is traded after a full trading day has elapsed following the release of the Corporation's financial information for the preceding calendar quarter.
Beneficiary	The person or persons designated in writing by the Participant as his Beneficiary in respect of Awards or, in the absence of such a designation or if the designated person or persons predecease the Participant, the person or persons who shall acquire the Participant's rights in respect of Awards by bequest or inheritance in accordance with the applicable laws of descent and distribution. In order to be effective, a Participant's designation of a Beneficiary must be on file with the Corporation before the Participant's death. Any such designation may be revoked and a new designation substituted for the revoked designation by the Participant at any time before his death without the consent of the previously designated Beneficiary.
Board of Directors	The Board of Directors of the Corporation.
Cash-Settled Stock Appreciation Rights	Stock Appreciation Rights settled in cash.
Code	The Internal Revenue Code of 1986, as amended from time to time.
Committee	The Compensation Committee or any other committee of the Board of Directors which is authorized to grant Awards under this Plan. It is intended that each member of the Committee shall qualify as (a) a "non-employee director" under Rule 16b-3 of the Securities Exchange Act of 1934, (b) an "outside director" under Code Section 162(m), and (c) an "independent director" under the rules of the New York Stock Exchange. If it is later determined that one or more members of the Committee do not qualify as a "non-employee director" under Rule 16b-3 of the Securities Exchange Act of 1934, actions taken by the Committee prior to such determination shall be valid despite such failure to qualify.
Common Stock	The Common Stock of the Corporation.

Disability	<p>A disability that has enabled the Participant to receive a disability benefit under the Long-Term Disability Plan of the Corporation or a long-term disability plan of a Subsidiary Company (whichever is applicable), as amended from time to time, for a period of at least three months.</p> <p>For a Participant who is a non-employee director, “Disability” means any medically determinable physical or mental impairment that is expected to result in death or to last for a continuous period of not less than 12 months and which prevents a Participant from continuing to serve as a non-employee director.</p>
Dividend Equivalent	An amount equal to the regular quarterly dividend paid in accordance with the Corporation’s normal dividend payment practice as may be determined by the Committee, in its sole discretion, and granted pursuant to Section 13 of the Plan.
Executive Officers	Officers designated by the Board of Directors as “Executive Officers” for purposes of Section 16 of the Securities Exchange Act of 1934.
Exercise Gain Shares	With respect to a Stock Appreciation Right, all of the shares of Common Stock received upon exercise of the Stock Appreciation Right. With respect to an Option, the portion of the shares of Common Stock received upon exercise of the Option equal to the excess of the Fair Market Value, as of the exercise date, over the Option price, multiplied by the number of shares purchased under the Option on the exercise date, divided by such Fair Market Value, and rounded down to the nearest whole number of shares.
Fair Market Value	The value of Common Stock on a particular date as measured by the mean of the high and low prices at which it is traded on such date as reported in the Composite Transactions for such date by Bloomberg L.P., or its successor, on its internet-based service, or, if Common Stock was not traded on such date, on the next preceding day on which Common Stock was traded.
Incentive Stock Option	An Option that complies with the terms and conditions set forth in Section 422(b) of the Code and is designated by the Committee as an Incentive Stock Option.
Non-Qualified Stock Option	An Option granted under the Plan other than an Incentive Stock Option.
Option	Any option to purchase Common Stock granted pursuant to the provisions of Section 6 or Section 7 of the Plan.
Optionee	A Participant who is the holder of an Option.
Participant	A person eligible to participate in the Plan who is granted and accepts an Award under the Plan.
Performance Cycle	The period of time, designated by the Committee but not less than one year, over which Performance Shares may be earned.

Performance Criteria	One or more, or any combination, of the following business criteria, selected by the Committee, which may be applied on a corporate, department or division level, and which may be measured on an absolute or relative basis, or established as a measure of growth: earnings measures (including net income, earnings per share, income from continuing operations, income before income taxes, income from railway operations); return measures (including net income divided by total assets, return on shareholder equity, return on average invested capital); cash flow measures (including operating cash flow and free cash flow); productivity measures (including total operating expense per thousand gross ton miles or revenue ton miles, total operating revenue per employee, total operating expense per employee, gross ton miles or revenue ton miles per employee, carloads per employee, revenue ton miles per mile of road operated, total operating expense per carload, revenue ton miles per carload, gross ton miles or revenue ton miles per train hour, percent of loaded-to-total car miles, network performance); fair market value of shares of the Corporation's Common Stock; revenue measures; expense measures; operating ratio measures; customer satisfaction measures; working capital measures; cost control measures; total shareholder return measures; economic value added measures; and safety measures.
Performance Criteria Weighting Percentage	The percentage weighting accorded to each Performance Criterion (or each combination thereof) selected by the Committee. The total of the Performance Criteria Weighting Percentages for any type of Award shall equal one hundred percent (100%).
Performance Goal	The specific target set by the Committee for each selected Performance Criterion (or each combination thereof) the outcome of which must be substantially uncertain at the time it is established. A Performance Goal may be set solely with respect to the Corporation's performance, or as compared to the performance of a published or special index deemed applicable by the Committee, including but not limited to the Standard & Poor's 500 Stock Index or an index based on a group of comparative companies. If a Performance Goal is based on the Corporation's common stock, then in the event of a recapitalization, stock split, stock dividend, exchange, combination, or reclassification of shares, merger, consolidation, reorganization, or other change in or affecting the capital structure or capital stock of the Corporation (other than a normal cash dividend), the Committee shall make or provide for such adjustments in performance goals as the Committee in its sole discretion may in good faith determine to be equitably required in order to prevent dilution or enlargement of the rights of participants.
Performance Shares	Shares of Common Stock granted pursuant to Section 11 of the Plan, which may be made subject to the restrictions and other terms and conditions prescribed in Section 11 of the Plan.
Performance Share Units	Contingent rights to receive Performance Shares pursuant to Section 11 of the Plan.
Restricted Shares	Shares of Common Stock granted pursuant to Section 9 of the Plan and subject to the restrictions and other terms and conditions set forth therein.

Restricted Stock Unit	Contingent rights, granted pursuant to Section 10 of the Plan, to receive Restricted Stock Unit Shares or cash payment for the Fair Market Value of shares of Common Stock, subject to the restrictions and other conditions set forth herein. Each Restricted Stock Unit shall equal the Fair Market Value of one share of Common Stock.
Restricted Stock Unit Shares	Shares of Common Stock issued as payment for Restricted Stock Units pursuant to Section 10 of the Plan, which may be made subject to the restrictions and other terms and conditions prescribed in Section 10 of the Plan.
Restriction Period	<p>A period of time during which the restrictions imposed by paragraphs (b) and (c) of Section 9 or paragraphs (b) and (c) of Section 10 of the Plan shall apply. At the time that the Restricted Shares or Restricted Stock Units are granted, the Committee shall impose a Restriction Period and determine the length of the Restriction Period.</p> <p>For non-employee directors, the Restriction Period shall not be less than twelve (12) months.</p> <p>For officers and employees, the Restriction Period for at least one-third of the total number of Restricted Shares or Restricted Stock Units for each Award shall be not less than thirty-six months, at least one-third not less than twenty-four months, and not more than one-third shall have a minimum Restriction Period of twelve months. Notwithstanding this provision, the Committee may grant up to 25,000 Restricted Shares or Restricted Stock Units, in aggregate, in any calendar year with a minimum Restriction Period of twelve (12) months.</p> <p>Such Restriction Period, if any, shall be incorporated in the Award Agreement setting forth the grant. Under Sections 9 and 10 of this Plan, the Committee may, in its discretion, specify when the Award is granted that the Restriction Period shall expire upon the earlier achievement of Performance Goals.</p>
Retention Agreement	An agreement entered into pursuant to Section 12 of the Plan.

Retirement	<p>Retirement from the Corporation and all Subsidiary Companies pursuant to the provisions of the Retirement Plan of the Corporation or a defined benefit retirement plan of a Subsidiary Company (whichever is applicable), as amended from time to time.</p> <p>For a Participant who is employed by the Corporation or a Subsidiary Company but who is not eligible to participate in the Corporation's Retirement Plan or a defined benefit retirement plan of a Subsidiary Company, "Retirement" means the Participant's voluntary termination of employment from the Corporation or a Subsidiary Company, or involuntary termination of employment if the Participant is offered severance under the Norfolk Southern Corporation Severance Pay Plan, in either case after the participant: (a) attains age 55 and has been employed with the Corporation and/or a Subsidiary Company for 10 years, or (b) attains age 60 and has been employed with the Corporation and/or a Subsidiary Company for 5 years, or (c) attains age 62.</p> <p>For a Participant who is a non-employee director, "Retirement" means termination of service as a director of the Corporation.</p>
Stock Appreciation Right	<p>The right, granted pursuant to the provisions of Section 8 of the Plan, to receive Exercise Gain Shares or a cash payment equal to the excess, if any, of the Fair Market Value of Common Stock on the exercise date over the Fair Market Value of the Common Stock on the Award Date, as specified in Section 8 of the Plan.</p>
Stock-Settled Stock Appreciation Rights	<p>Stock Appreciation Rights paid out in Exercise Gain Shares.</p>
Subsidiary Company	<p>A corporation of which at least fifty percent (50%) of the total combined voting power of all classes of stock entitled to vote is owned, directly or indirectly, by the Corporation.</p>

Section 3. ADMINISTRATION

The Plan shall be administered by the Committee, which, subject to the limitations set forth herein, shall have the full and complete authority and sole discretion, except as may be delegated to the Corporation's chief executive officer as provided herein, to construe and interpret the Plan; to select the Participants who shall be granted Awards under the Plan; to determine the type, size, terms, and conditions of the Award or Awards to be granted to each such Participant; to authorize the grant of such Awards pursuant to the Plan; in connection with the merger or consolidation of the Corporation (and subject to any applicable requirements of Code Section 409A), to give a Participant an election to surrender an Award in exchange for the grant of a new Award; to adopt, amend and rescind rules and regulations relating to the Plan; and to make all other determinations and take all other actions it may deem necessary or advisable for the implementation and administration of the Plan.

If the Committee makes an Award to non-employee directors in a calendar year, and after such Award is made and in the same year an individual is elected by the Board to be a non-employee director of the Corporation, then the newly appointed director shall automatically be granted an Award under the same terms as was granted to the other non-employee directors

earlier that year. The Award granted to the newly appointed director shall be prorated based on the number of days remaining in the calendar year of the individual's appointment as a director, and effective as of the date the individual became a director or, if the individual became a director during a blackout period, effective on the first day of the subsequent trading window during which officers of the Corporation and Subsidiary Companies are permitted to trade in Norfolk Southern Corporation Common Stock under the Corporation's insider trading policy.

The Committee in its sole discretion may delegate authority to the Corporation's chief executive officer to select as Participants the officers and employees who shall be granted Awards under the Plan (provided, however, that only the Committee shall grant Awards to the chief executive officer and Executive Officers); to determine the type, size, terms, and conditions of the Award or Awards to be granted to each such Participant; and to authorize the grant of such Awards pursuant to the Plan.

The Committee, or the chief executive officer to the extent as may be delegated by the Committee (hereinafter, the term "Committee" shall include reference to the chief executive officer to the extent of any such delegation), may authorize the grant of more than one type of Award, and Awards subject to differing terms and conditions, to any eligible Participant. The Committee's decision to authorize the grant of an Award to a Participant at any time shall not require the Committee to authorize the grant of an Award to that Participant at any other time or to any other Participant at any time; nor shall its determination with respect to the size, type, or terms and conditions of the Award to be granted to a Participant at any time require it to authorize the grant of an Award of the same type or size or with the same terms and conditions to that Participant at any other time or to any other Participant at any time. The Committee shall not be precluded from authorizing the grant of an Award to any eligible Participant solely because the Participant previously may have been granted an Award of any kind under the Plan.

The grant, retention, vesting and/or settlement of any Award shall be subject to such terms and conditions as determined by the Committee and specified in the Award Agreement, which may include conditions based on continued employment, passage of time, the provisions of a Retention Agreement, attainment of age and/or service requirements, and/or the achievement of Performance Goals.

All determinations of the Committee shall be by a majority of its members and shall be final, conclusive and binding. Each member of the Committee, while serving as such, shall be considered to be acting in his capacity as a director of the Corporation, and no member of the Committee shall be liable for any action taken or decision made in good faith with respect to the implementation or administration of the Plan.

Section 4. ELIGIBILITY

To be eligible to be a Participant in the Plan, an individual must on the date on which the Award is made be a full-time nonagreement officer or employee who is a participant in the Norfolk Southern Corporation Executive Management Incentive Plan or Management Incentive Plan, or a full-time nonagreement employee of the Corporation or of a Subsidiary Company who can make an appreciable contribution to the attainment of the Corporation's overall business objectives as determined in the sole discretion of the Committee, and must reside in the United States or Canada. A non-employee director shall be eligible to participate in the Plan if he or she

is a director of the Corporation and is not a full-time salaried employee of the Corporation or a Subsidiary Company.

Section 5. SHARES AVAILABLE

Since the Plan's establishment in 1983, up to a maximum of 90,978,604 shares of Common Stock (104,125,000 shares as adjusted for October 10, 1997, 3-for-1 stock split) have been authorized for issuance under the Plan. Awards that are made in a form other than Options or Stock-Settled Stock Appreciation Rights and that are granted under the Plan after May 13, 2010, shall be counted against the share limit set forth in the previous sentence as 1.61 shares for every one share issued in connection with such Award. Such shares shall be provided from shares of Common Stock authorized but not issued. Stock-Settled Stock Appreciation Rights shall be counted in full against the number of shares available for award under the Plan, regardless of the number of Exercise Gain Shares issued upon settlement of the Stock Appreciation Right.

If any shares of Common Stock subject to an Award are forfeited, cancelled, exchanged or surrendered or if an Award otherwise terminates or expires without a distribution of shares to the Participant (including by reason of such Award being settled in cash), the shares with respect to such Award shall, to the extent of any such forfeiture, cancellation, exchange, surrender, termination or expiration, again be available for Awards under the Plan; provided, however, in the case of a stock-based Award that is not an Option or Stock Appreciation Right and that was made after May 13, 2010, 1.61 shares for each share underlying such Award shall again be available for Awards under the Plan. Notwithstanding the foregoing, the following shares of Common Stock may not again be made available for award under the Plan: (i) shares of Common Stock not issued or delivered as a result of the net settlement of an outstanding Stock Appreciation Right or Option; (ii) shares of Common Stock used to pay the exercise price or withholding taxes related to an outstanding award, or (iii) shares of Common Stock repurchased on the open market with proceeds of an Option exercise.

Notwithstanding any other provision to the contrary, no Participant may be awarded a grant in any one year, which, when added to any other grant of Options, Stock Appreciation Rights, Restricted Shares, Restricted Stock Units and Performance Share Units in the same year, shall exceed 1,000,000 shares of Common Stock. A Stock Appreciation Right granted in connection with an option is treated as a single Award for purpose of the preceding sentence. If an Option is canceled, the canceled Option continues to count against the maximum number of shares for which Options may be granted to a Participant in any year. Notwithstanding the foregoing, the aggregate grant date fair value of shares of Common Stock that may be granted during any year to any non-employee director shall not exceed \$500,000.

Section 6. INCENTIVE STOCK OPTIONS

(a) General – The Committee may authorize the grant of Incentive Stock Options subject to the terms and conditions set forth in this Section 6. The grant of an Incentive Stock Option shall be evidenced by a written Award Agreement between the Corporation and the Optionee, setting forth the number of shares of Common Stock subject to the Incentive Stock Option evidenced thereby and the terms, conditions, and restrictions applicable thereto. The issuance of shares of Common Stock pursuant to an Incentive Stock Option also shall be

subject to the provisions of any Retention Agreement that may be required by the Committee under Section 12 of the Plan.

Except for adjustments pursuant to Section 15 of the Plan, the Option Price for any outstanding Option granted under the Plan may not be decreased after the date the Option is granted, nor may an outstanding Option be modified or replaced if the effect would be to reduce the Option Price, nor may an outstanding Option be cancelled in exchange for cash or another Award, unless such repricing, modification or replacement is approved by the vote of a majority of the shares of Common Stock present or represented and entitled to vote at a meeting of the stockholders of the Corporation at which a quorum is present.

(b) Option Price - The Committee shall determine the Option price for each share of Common Stock purchased under an Option, but, subject to the provisions of Section 15 of the Plan, in no event shall the Option price be less than the greater of (i) one hundred percent (100%) of the Fair Market Value of the Common Stock on the Award Date, or (ii) the price at which the Corporation's Common Stock was last sold in the principal United States market for such Common Stock on the Award Date.

(c) Duration of Options - The Committee shall fix the term or duration of Options, provided that such term shall not exceed ten (10) years from the Award Date, and that such term shall be subject to earlier termination pursuant to the provisions of paragraph (g) of this Section 6.

(d) Non-Transferability of Options - Options may be exercised during the lifetime of the Optionee only by him, and following his death only by his Beneficiary. If a Beneficiary dies after the Optionee, but before the Option is exercised and before such rights expire, such rights shall become assets of such Beneficiary's estate. Except as provided in this paragraph, Options may not be assigned or alienated, whether voluntarily or involuntarily.

(e) Exercise of Options - The Committee shall determine the time or times at which Options may be exercised; provided that such time or times shall not occur before the latest of:

(i) the first anniversary of the Award Date; and

(ii) the effectiveness of any registration statement required to be filed under the Securities Act of 1933 for the registration of the Common Stock to be issued upon exercise of the Option.

(f) Payment of Option Price - The purchase price of Common Stock upon exercise of an Option shall be paid in full to the Corporation at the time of the exercise of the Option in cash or, at the discretion of the Committee and subject to any limitations or requirements that the Committee may adopt, by the surrender to the Corporation of shares of previously acquired Common Stock, which have been held by the Optionee for at least six (6) months and which shall be valued at Fair Market Value on the date that the Option is exercised, or, at the discretion of the Committee, by a combination of cash and such Common Stock.

(g) Termination of Options - No Option shall be exercisable after it expires. Each Option shall expire upon the earliest of:

(i) the expiration of the term for which the Option was granted;

(ii) (A) Except as otherwise provided by the Committee in the Award Agreement, in the case of an Optionee whose employment with the Corporation or a Subsidiary Company is terminated due to Retirement, Disability or death, the expiration of the term for which the Option was granted, or

(B) in the case of an Optionee whose employment with the Corporation or a Subsidiary Company is terminated for any reason other than Retirement, Disability, or death, at the close of business on the last day of active service by the Optionee with the Corporation or a Subsidiary Company, or

(C) in the case of an Optionee who is granted a leave of absence, if the Optionee's employment with the Corporation or a Subsidiary Company terminates at any time during or at the end of the leave of absence, at the close of business on the last day of employment with the Corporation or a Subsidiary Company, or

(iii) in connection with a merger or consolidation of the Corporation, with the Optionee's consent, the grant of a new Award to replace the Option.

(h) Limitation on Exercisability - The aggregate Fair Market Value (determined as of the Award Date) of the Common Stock with respect to which Incentive Stock Options (granted on or after January 1, 1987) are exercisable for the first time by the Optionee during any calendar year shall not exceed \$100,000, as adjusted under Code Section 422(d)(1) and corresponding Treasury Regulations.

Section 7. NON-QUALIFIED STOCK OPTIONS

The Committee may authorize the grant of Non-Qualified Stock Options subject to the terms and conditions specified in this Section 7. The grant of a Non-Qualified Stock Option shall be evidenced by a written Award Agreement between the Corporation and the Optionee, setting forth the number of shares of Common Stock subject to the Non-Qualified Stock Option evidenced thereby and the terms, conditions, and restrictions applicable thereto. Non-Qualified Stock Options granted pursuant to the provisions of this Section 7 shall be subject to the terms, conditions, and restrictions set forth in paragraphs (a) through (g) of Section 6 of the Plan. The limitations set forth in paragraph (h) of Section 6 of the Plan shall not apply to Non-Qualified Stock Options. The issuance of shares of Common Stock pursuant to a Non-Qualified Stock Option also shall be subject to the provisions of any Retention Agreement that may be required by the Committee under Section 12 of the Plan.

Section 8. STOCK APPRECIATION RIGHTS

(a) General - The Committee may grant a Stock Appreciation Right to a Participant in connection with an Option, or portion thereof, or on a stand alone basis, as determined by the Committee, subject to the terms and conditions set forth in this Section 8. If granted in connection with an Option, the Stock Appreciation Right may be granted at the time of grant of the related Option and shall be subject to the same terms and conditions as the related Option, except as this Section 8 may otherwise provide. If granted in connection with an Option, the Stock Appreciation Right shall be evidenced by provisions in the Award Agreement evidencing or identifying the related Option, specifying the number of shares of Common Stock subject thereto and setting forth the terms and conditions applicable to the Stock Appreciation Right. If granted on a stand alone basis, the Stock Appreciation Right shall be evidenced by provisions

of a written Award Agreement between the Corporation and the Participant. The Committee may grant Cash-Settled Stock Appreciation Rights or Stock-Settled Stock Appreciation Rights as shall be set forth in an Award Agreement.

Except for adjustments pursuant to Section 15 of the Plan, the terms of an outstanding Stock Appreciation Right may not be amended to reduce the exercise price of the Stock Appreciation Right, nor may an outstanding Stock Appreciation Right be modified or replaced if the effect would be to reduce the exercise price, nor may an outstanding Stock Appreciation Right be cancelled in exchange for cash or another Award, unless such repricing, modification or replacement is approved by the vote of a majority of the shares of Common Stock present or represented and entitled to vote at a meeting of the stockholders of the Corporation at which a quorum is present.

(b) Exercise Price and Duration - The Committee shall determine the exercise price for any Stock Appreciation Right granted on a stand alone basis but, subject to the provisions of Section 15 of the Plan, in no event shall the exercise price be less than the greater of (i) one hundred percent (100%) of the Fair Market Value of the Common Stock on the Award Date, or (ii) the price at which the Corporation's Common Stock was last sold in the principal United States market for such Common Stock on the Award Date. The Committee shall fix the term or duration of Stock Appreciation Rights, provided that such term shall not exceed ten (10) years from the Award Date, and that such term shall be subject to earlier termination pursuant to the provisions of paragraph (e) of this Section 8.

(c) Exercise – If granted in connection with an Option, a Stock Appreciation Right shall be exercisable only at such time or times, to such extent, and by such persons, as the Option to which it relates shall be exercisable. If granted on a stand alone basis, a Stock Appreciation Right shall be exercisable only at such time or times, to such extent, and by such persons, as shall be set forth in the Award Agreement.

Stock Appreciation Rights shall be subject to the following restrictions:

(i) the Stock Appreciation Right may not be exercised before the expiration of one (1) year from the Award Date; provided, however, that this subparagraph (i) shall not apply if the death or Disability of the Optionee occurs within one (1) year after the Award Date; and,

(ii) a Stock Appreciation Right granted in connection with an Incentive Stock Option may not be exercised on any date on which the Fair Market Value of a share of Common Stock is less than or equal to the Option price per share under the related Incentive Stock Option.

A Stock Appreciation Right shall be exercised by providing the Corporation with a written notice in such form and containing such information (including the number of shares of Common Stock with respect to which the Stock Appreciation Right is being exercised) as the Committee may specify. If the Stock Appreciation Right was granted in connection with an Option, the Participant must surrender the related Option, or the portion thereof pertaining to the shares with respect to which the Stock Appreciation Right is exercised, and the date on which the Corporation receives such notice shall be the date on which the related Option, or portion thereof, shall be deemed surrendered and the Stock Appreciation Right shall be deemed exercised.

(d) Payment - Upon the proper exercise of a Stock-Settled Stock Appreciation Right granted on a stand alone basis, a Participant shall be entitled to receive Exercise Gain Shares equal to the number of shares of Common Stock that have an aggregate Fair Market Value on the exercise date equal to the amount by which the Fair Market Value of a share of Common Stock on the exercise date exceeds the exercise price for the Stock Appreciation Right established on the Award Date, multiplied by the number of Stock-Settled Stock Appreciation Rights surrendered in connection with the exercise of the Stock Appreciation Right.

Upon the proper exercise of a Stock-Settled Stock Appreciation Right granted in connection with an Option, an Optionee shall be entitled to receive Exercise Gain Shares equal to the number of shares of Common Stock that have an aggregate Fair Market Value on the exercise date equal to the amount by which the Fair Market Value of a share of Common Stock on the exercise date exceeds the Option price per share of the related Option, multiplied by the number of shares covered by the related Option, or portion thereof, surrendered in connection with the exercise of the Stock Appreciation Right. The Exercise Gain Shares shall be subject to the provisions of any Retention Agreement that may be required by the Committee under Section 12 of the Plan.

Upon the proper exercise of a Cash-Settled Stock Appreciation Right granted on a stand alone basis, a Participant shall be entitled to receive cash equal to the value of the number of shares of Common Stock that have an aggregate Fair Market Value on the exercise date equal to the amount by which the Fair Market Value of a share of Common Stock on the exercise date exceeds the exercise price for the Stock Appreciation Right established on the Award Date, multiplied by the number of Cash-Settled Stock Appreciation Rights surrendered for settlement.

Upon the proper exercise of a Cash-Settled Stock Appreciation Right granted in connection with an Option, an Optionee shall be entitled to receive cash equal to the value of the number of shares of Common Stock that have an aggregate Fair Market Value on the exercise date equal to the amount by which the Fair Market Value of a share of Common Stock on the exercise date exceeds the Option price per share of the related Option, multiplied by the number of shares covered by the related Option, or portion thereof, surrendered in connection with the exercise of the Stock Appreciation Right.

(e) Termination of Right - A Stock Appreciation Right granted in connection with an Option shall expire, unless previously exercised or canceled, upon the expiration of an Option to which it relates, or upon such time as may be set forth in an Award Agreement. A Stock Appreciation Right granted on a stand alone basis shall be subject to the termination provisions set forth in paragraph (g) of Section 6 for Options and shall expire, unless previously exercised or cancelled, at such time as may be set forth in an Award Agreement.

(f) Effect of Exercise - A Stock Appreciation Right shall be canceled when, and to the extent that, it or a related Option is exercised, and an Option shall be canceled when, and to the extent that, the Option is surrendered to the Corporation upon the exercise of a related Stock Appreciation Right.

Section 9. RESTRICTED SHARES

(a) General - The Committee, in its sole discretion, may from time to time authorize the grant of Restricted Shares to a Participant pursuant to an Award Agreement. A certificate or certificates representing the number of Restricted Shares granted shall be registered in the name of the Participant or held in uncertificated form through a direct registration system or the number of Restricted Shares shall be delivered by electronic delivery to a brokerage account established for the Participant's benefit at a financial/brokerage firm selected by the Corporation. Until the expiration of the Restriction Period or the lapse of restrictions in the manner provided in paragraph (g) of this Section 9, any certificate or certificates shall be held by the Corporation for the account of the Participant, and any Restricted Shares held through direct registration or in a brokerage account shall be blocked from sale or transfer. Restricted Shares shall be subject to such restrictions as the Committee may establish in the Award Agreement (including, without limitation, any limitation on the right to vote Restricted Shares or the right to receive any dividend or other right), which restrictions may lapse separately or in combination at such time or times, in such installments or otherwise, as the Committee may deem appropriate; provided that dividends on Restricted Shares subject to a specified Performance Goal or Goals shall be payable only to the extent the Performance Goal(s) are achieved with respect to such Restricted Shares.

(b) Performance Goal Requirement – The Committee may determine, in its sole discretion, that a Participant's entitlement to Restricted Shares shall be subject to achievement of a specified Performance Goal or Goals during the Restriction Period. If so, the Committee shall select the Performance Criterion or each combination thereof, the Performance Goal for each Performance Criterion or each combination thereof, and the Performance Criteria Weighting Percentage for each Performance Criterion or each combination thereof within ninety (90) days of the commencement of the Restriction Period. The Committee may also determine that the Restriction Period shall expire upon achievement of established Performance Goals prior to the established end of the Restriction Period. In determining whether Performance Goals have been achieved, special charges, restructuring charges and unusual or infrequent accounting adjustments which are significant, and restatements or reclassifications, all as determined in accordance with Generally Accepted Accounting Principles, which would have the effect of reducing the percentage of Performance Goals achieved shall be excluded, and which would have the effect of increasing the percentage of Performance Goals achieved shall be included, unless the Committee, in its discretion, determines otherwise. At such time as the Committee certifies that the Performance Goals have been achieved, the Committee shall authorize delivery of Restricted Shares (or such percentage of the Restricted Shares as equal the Percentage of Performance Goals that have been achieved) for which the Restriction Period has expired. If the Restricted Shares are subject to the achievement of Performance Goals, such Restricted Shares shall be forfeited to the extent Performance Goals are not achieved before the established end of the Restriction Period.

(c) Restrictions – Until the expiration of the Restriction Period or the lapse of restrictions in the manner provided in paragraph (g) of this Section 9, Restricted Shares shall be subject to the following restrictions and any additional restrictions that the Committee, in its sole discretion, may from time to time deem desirable in furtherance of the objectives of the Plan:

(i) the Participant shall not be entitled to receive the certificate or certificates representing the Restricted Shares, or exercise any ownership over any Restricted Shares held through direct registration or in a brokerage account;

(ii) the Restricted Shares may not be sold, transferred, assigned, pledged, conveyed, hypothecated, or otherwise disposed of; and

(iii) the Restricted Shares may be forfeited as provided in paragraphs (b) or (e) of this Section 9, subject to the provisions of paragraph (f) and (g) of this Section 9.

(d) Distribution of Restricted Shares – If a Participant to whom Restricted Shares have been granted remains in the continuous employment of the Corporation or a Subsidiary Company during the entire Restriction Period, or, in the case of a Participant who is a non-employee director, who remains a non-employee director during the entire Restriction Period, upon the expiration of the Restriction Period all restrictions applicable to the Restricted Shares shall lapse. When the restrictions applicable to the Restricted Shares lapse, either:

(i) the certificate or certificates representing the shares of Common Stock that were earned pursuant to paragraph (b) of this Section 9 shall be delivered to the Participant or,

(ii) if the shares were delivered by electronic delivery to a brokerage account established for the Participant's benefit or by direct registration and held in uncertificated form, the restrictions on the sale or transfer of any shares that were earned pursuant to paragraph (b) of this Section 9 shall lapse.

(e) Termination of Employment - If the employment of a Participant is terminated for any reason other than the Retirement, Disability, or death of the Participant in service before the expiration of the Restriction Period, the Restricted Shares shall be forfeited immediately and all rights of the Participant with respect to such shares shall terminate immediately without further obligation on the part of the Corporation or any Subsidiary Company. If the Participant is granted a leave of absence before the expiration of the Restriction Period, the Participant shall not forfeit any rights with respect to any Restricted Shares subject to the Restriction Period, unless the Participant's employment with the Corporation or a Subsidiary Company terminates at any time during or at the end of the leave of absence for any reason other than Retirement, Disability, or death, at which time the shares shall be forfeited immediately and all rights of the Participant with respect to such shares shall terminate immediately without further obligation on the part of the Corporation or any Subsidiary Company.

(f) Retirement, Disability or Death - Except with respect to continued employment requirements or as otherwise specified in the Award Agreement, if the Participant's employment is terminated by reason of the Retirement or Disability of the Participant before the expiration of the Restriction Period and no Performance Goals have been imposed, the restrictions on the Restricted Shares shall lapse upon the expiration of the Restriction Period and delivery of the Restricted Shares shall be made to the Participant, as described in paragraph (d) of this Section 9; provided, however, that if the Participant dies after Retirement or Disability and before the expiration of the Restriction Period, the restrictions on the Restricted Shares shall lapse and delivery shall be made to the Participant's Beneficiary. If the Participant's employment is terminated by reason of the Participant's death in service before the expiration of the Restriction Period, the restrictions on the Restricted Shares shall lapse and delivery of the Restricted Shares shall be made to the Participant's Beneficiary. Except with respect to continued employment requirements or as otherwise specified in the Award Agreement, if the Participant's

employment is terminated by reason of the Retirement, Disability, or death of the Participant before the expiration of the Restriction Period and Performance Goals have been imposed, the restrictions on the Restricted Shares shall lapse upon the expiration of the Restriction Period and to the extent that the Committee certifies that Performance Goals have been achieved and delivery of the Restricted Shares shall be made to the Participant, or the Participant's Beneficiary in the event of the Participant's death, in accordance with paragraphs (b) and (d) of this Section 9.

(g) Waiver of Restrictions - The Committee, in its sole discretion, may waive any or all restrictions with respect to Restricted Shares.

Section 10. RESTRICTED STOCK UNITS

(a) General - The Committee, in its sole discretion, may from time to time authorize the grant of Restricted Stock Units ("Units") to a Participant pursuant to an Award Agreement. Such Units shall be recorded in individual memorandum accounts maintained by the Committee or its agent. The grant of Restricted Stock Units shall entitle the Participant to payment in Restricted Stock Unit Shares or cash, as provided for in the Award Agreement. The Participant shall have no beneficial ownership interest in the Common Stock represented by the Units prior to expiration of the Restriction Period and achievement of any Performance Goals. The Participant shall have no right to vote the Common Stock represented by the Units or to receive dividends (except for any Dividend Equivalents which may be awarded by the Committee in connection with such Units) on the Common Stock represented by the Units. The grant of Units shall be evidenced by an Award Agreement between the Corporation or Subsidiary Company and the Participant, identifying the number of Units awarded, and setting forth the terms and conditions applicable to the Units.

(b) Performance Goal Requirement – The Committee may determine, in its sole discretion, that a Participant's entitlement to payment in cash or Restricted Stock Unit Shares for Restricted Stock Units shall be subject to achievement of a specified Performance Goal or Goals over the duration of the Restriction Period. If so, the Award shall specify when it is granted that the Participant's entitlement to payment is subject to the achievement of the Performance Goal or Goals, and the Committee shall select the Performance Criterion or each combination thereof, the Performance Goals for each Performance Criterion or each combination thereof, and the Performance Criteria Weighting Percentage for each Performance Criterion or each combination thereof within ninety (90) days after the commencement of the Restriction Period.

The Committee may specify, when the Award is granted, that the Restriction Period shall expire upon achievement of the established Performance Goals prior to the established end of the Restriction Period. In determining whether Performance Goals have been achieved, special charges, restructuring charges and unusual or infrequent accounting adjustments which are significant, and restatements or reclassifications, all as determined in accordance with Generally Accepted Accounting Principles, which would have the effect of reducing the percentage of Performance Goals achieved shall be excluded, and which would have the effect of increasing the percentage of Performance Goals achieved shall be included, unless the Committee, in its discretion, determines otherwise. For Restricted Stock Units subject to the achievement of Performance Goals, the Committee shall certify in writing the extent to which the Performance Goals have been achieved, and shall authorize settlement of Units in cash or Restricted Stock

Unit Shares. The Units shall be settled within two and one half months after the end of the year in which the Performance Goals are achieved. Such settlement shall be based on the Fair Market Value on the date all applicable restrictions lapse (or such percentage of the value of the Restricted Stock Units as equal the percentage of Performance Goals that have been achieved) for which the Restriction Period has expired. If the settlement of Restricted Stock Units is subject to the achievement of Performance Goals, such Restricted Stock Units shall be forfeited to the extent Performance Goals are not achieved before the established end of the Restriction Period.

(c) Restrictions - Until the expiration of the Restriction Period and the lapse of any Retention Agreement provided in Section 12, Units shall be subject to the following restrictions and any additional restrictions that the Committee, in its sole discretion, may from time to time deem desirable in furtherance of the objectives of the Plan:

(i) the grant of Units to a Participant shall not entitle a Participant to receive cash payment or Restricted Stock Unit Shares;

(ii) the Units may not be sold, transferred, assigned, pledged, conveyed, hypothecated, or otherwise disposed of; and,

(iii) all or a portion of the Units may be forfeited immediately as provided in paragraph (b) or (e) of this Section 10, subject to the provisions of paragraphs (f) and (g) of this Section 10.

(d) Distribution of Restricted Stock Units - If a Participant to whom Units have been granted remains in the continuous employment of the Corporation or a Subsidiary Company during the entire Restriction Period or, in the case of a Participant who is a non-employee director, who remains a non-employee director during the entire Restriction Period, upon the expiration of the Restriction Period and the further expiration of any Retention Agreement applicable to such Units, all restrictions applicable to the Units shall lapse, and the Units shall be settled in cash or in Restricted Stock Unit Shares, based on Fair Market Value on the later of the date all applicable restrictions lapse or any Retention Agreement lapses. Settlement in cash in a single sum or issuance of Restricted Stock Unit Shares shall be made within thirty (30) days following the later of the expiration of the Restriction Period or any Retention Agreement applicable to such Units. The Participant may not, directly or indirectly, designate the taxable year of the settlement.

(e) Termination of Employment - If the employment of a Participant is terminated for any reason other than the Retirement, Disability, or death of the Participant in service before the expiration of the Restriction Period, the Units shall be forfeited immediately and all rights of the Participant with respect to such Units shall terminate immediately without further obligation on the part of the Corporation or any Subsidiary Company. If the Participant is granted a leave of absence before the expiration of the Restriction Period, the Participant shall not forfeit all rights with respect to any Units subject to the Restriction Period, unless the Participant's employment with the Corporation or a Subsidiary Company terminates at any time during or at the end of the leave of absence for any reason other than Retirement, Disability, or death, at which time all rights of the Participant with respect to such Units shall terminate immediately without further obligation on the part of the Corporation or any Subsidiary Company.

(f) Retirement, Disability or Death – Except with respect to continued employment requirements or as otherwise specified in the Award Agreement, if the Participant's employment is terminated by reason of the Retirement or Disability of the Participant before the expiration of the Restriction Period and no Performance Goals have been imposed, the restrictions on the Restricted Stock Units shall lapse upon the expiration of the Restriction Period and settlement of Restricted Stock Units shall be made at the end of the Restriction Period to the Participant as described in paragraph (d) of this Section 10; provided, however, if the Participant dies after Retirement or Disability and before the expiration of the Restriction Period, the restrictions on the Restricted Stock Units shall lapse and delivery shall be made to the Participant's Beneficiary. If the Participant's employment is terminated by reason of the Participant's death in service before the expiration of the Restriction Period, the restrictions on the Restricted Stock Units shall lapse and delivery of the Restricted Stock Units shall be made to the Participant's Beneficiary. Settlement of the Restricted Stock Units shall be made within thirty (30) days following the expiration of the Restriction Period. The Participant or Beneficiary may not, directly or indirectly, designate the taxable year of the settlement.

Except with respect to continued employment requirements or as otherwise specified in the Award Agreement, if the Participant's employment is terminated by reason of the Retirement, Disability, or death of the Participant before the expiration of the Restriction Period and Performance Goals have been imposed, the restrictions on the Restricted Stock Units shall lapse if the Committee certifies that Performance Goals have been achieved, and settlement of the Restricted Stock Units shall be made to the Participant, or the Participant's Beneficiary in the event of the Participant's death, in accordance with paragraphs (b) and (d) of this Section 10.

(g) Waiver of Restrictions - The Committee, in its sole discretion, may waive any or all restrictions with respect to Units. If no Performance Goals have been imposed, settlement of the Units shall be made on the same settlement date that would have applied absent the waiver of restrictions. If Performance Goals have been imposed, settlement of the Units shall be made within two and one half months after the end of the year in which all restrictions are either waived or satisfied.

Section 11. PERFORMANCE SHARES

(a) General - The Committee, in its sole discretion, may from time to time authorize the grant of Performance Share Units to a Participant pursuant to an Award Agreement. Performance Share Units shall entitle the Participant to Performance Shares (or cash in lieu thereof) upon the achievement of Performance Goals. The Committee shall select the Performance Criteria, set the Performance Goals and assign Performance Criteria Weighting Percentages to each Performance Criterion or each combination thereof within ninety (90) days of the commencement of the Performance Cycle. Performance Share Units may not be sold, transferred, assigned, pledged, conveyed, or hypothecated.

After the end of the Performance Cycle, the Committee shall certify in writing to what extent the Performance Goals have been achieved. In determining whether Performance Goals have been achieved, special charges, restructuring charges and unusual or infrequent accounting adjustments which are significant, and restatements or reclassifications, all as determined in accordance with Generally Accepted Accounting Principles, which would have the

effect of reducing the percentage of Performance Goals achieved shall be excluded, and which would have the effect of increasing the percentage of Performance Goals achieved shall be included, unless the Committee, in its discretion, determines otherwise. The Committee shall thereafter authorize the payment of such percentage of the value of the Performance Share Units as equal the percentage of Performance Goals that have been achieved to the Participant, or the Participant's Beneficiary in the event of the Participant's death after the end of the Performance Cycle, of (i) cash in lieu of Performance Shares, or (ii) either (1) the issuance of Performance Shares registered in the name of the Participant or (2) the electronic delivery of Performance Shares to a brokerage account established for the Participant's benefit at a financial/brokerage firm selected by the Corporation, subject to the provisions of any Retention Agreement that may be required by the Committee under Section 12 of the Plan, or (iii) both. Settlement in cash or issuance of Performance Shares shall be made within two and one half months after the end of the year in which the Performance Goals are achieved.

(b) Distribution or Forfeiture of Performance Shares - If the Participant's employment with the Corporation or a Subsidiary Company is terminated before the end of a Performance Cycle for any reason other than Retirement, Disability, or death, the Participant shall forfeit all rights with respect to any Performance Shares that were being earned during the Performance Cycle. If the Participant is granted a leave of absence before the end of a Performance Cycle, the Participant shall not forfeit all rights with respect to any Performance Shares that were being earned during the Performance Cycle, unless the Participant's employment with the Corporation or a Subsidiary Company terminates at any time during or at the end of the leave of absence, at which time the Participant shall forfeit all rights with respect to any Performance Shares that were being earned during the Performance Cycle. Except with respect to continued employment requirements or as otherwise specified in the Award Agreement, if the Participant's employment is terminated before the end of a Performance Cycle by reason of Retirement, Disability, or death, the Participant's rights with respect to any Performance Shares being earned during the Performance Cycle shall, subject to the other provisions of this Section 11, continue as if the Participant's employment had continued through the end of the Performance Cycle.

Section 12. RETENTION AGREEMENTS

(a) General - The Committee, in its sole discretion, may require as a condition of a grant, exercise, settlement or payment with respect to any Award under the Plan that the Participant and the Corporation enter into a Retention Agreement, which shall provide, (1) with respect to an Award of Restricted Stock Units, that the settlement of the Restricted Stock Units in Restricted Stock Unit Shares or cash shall not occur until the event specified in the Retention Agreement that is part of the Award, or (2) with respect to any portion of any Exercise Gain Shares, Restricted Shares, Restricted Stock Unit Shares, or Performance Shares, that (i) the certificate or certificates representing any such Awards, when issued, shall be held by the Secretary of the Corporation for the benefit of the Participant until such time as the retention period specified by the Retention Agreement has expired or has been waived by the Committee, whichever occurs first, or (ii) that any such Award, when delivered by electronic delivery to a brokerage account established for the Participant's benefit at a financial/brokerage firm selected by the Corporation or by direct registration and held in uncertificated form, shall not be permitted to be transferred or sold until such time as the retention period specified by the Retention Agreement has expired or has been waived by the Committee, whichever occurs first.

Any dividends payable on shares subject to a Retention Agreement shall be paid to the Participant in cash on the date declared by the Board of Directors. Each Retention Agreement may include some or all of the terms, conditions and restrictions set forth in paragraphs (b) through (e) of this Section 12.

(b) Retention Period - Shares that are subject to the Retention Agreement may not be sold, transferred, assigned, pledged, conveyed, hypothecated or otherwise disposed of within such period of time of not less than twenty-four (24) months following the exercise date (in the case of Exercise Gain Shares) or the date of issuance (in the case of Restricted Shares, Restricted Stock Unit Shares, or Performance Shares), as shall be prescribed by the Committee.

(c) Termination of Employment - If a Participant's employment with the Corporation or a Subsidiary Company is terminated for any reason other than Retirement, Disability, or death, shares subject to the Retention Agreement shall continue to be held, following the Participant's termination of employment, until the expiration of the retention period specified by the Retention Agreement. If the Participant's employment is terminated by reason of Retirement or Disability, shares then held subject to the Retention Agreement shall continue to be held until the expiration of the applicable retention period following termination of employment, but any such retention period shall cease upon the earlier of the Participant's attainment of age 65 or the expiration of two (2) years after the Participant's Retirement or Disability, if either of those events occurs before the expiration of the applicable retention period. If the Participant dies while shares are subject to a retention period under the Retention Agreement, such retention period shall expire immediately at the time of death.

(d) Leave of Absence - If a Participant is granted a leave of absence, shares subject to the Retention Agreement shall continue to be held during the leave of absence, until the expiration of the retention period specified by the Retention Agreement.

(e) Change in Control - Upon a Change in Control, the retention periods specified by all Retention Agreements shall immediately expire; provided, however, that any such waiver shall not accelerate the settlement of any Restricted Stock Units in a manner that would violate the requirements of Code Section 409A.

A Change in Control shall occur if:

(i) any person, other than the Corporation or a Subsidiary Company or any employee benefit plan sponsored by the Corporation or a Subsidiary Company, shall become the beneficial owner of, or obtain voting control over, 20% or more of the Corporation's outstanding Common Stock;

(ii) (A) any consolidation or merger of the Corporation occurs in which the Corporation is not the continuing or surviving corporation or pursuant to which shares of Common Stock would be converted into cash, securities, or other property, other than a merger of the Corporation in which holders of Common Stock immediately prior to the merger have the same proportionate ownership of common stock of the surviving corporation immediately after the merger as immediately before, or (B) any sale, lease, exchange, or other transfer (in one transaction or a series of related transactions) of all or substantially all the assets of the Corporation occurs; or

(iii) there shall have been a change in the composition of the Board of Directors such that within any period of two (2) consecutive years or less individuals who at the beginning of such period constituted such Board, together with any new directors whose election, or nomination for election by the Corporation's stockholders, was approved by a vote of at least two-thirds of the directors then in office who were directors at the beginning of such period, shall for any reason no longer constitute a majority of the directors of the Corporation.

(g) Waiver of Requirements - The Committee, in its sole discretion, may waive any or all retention periods or other restrictions in the Share Retention Agreement, provided that the waiver of restrictions does not accelerate the payment of any Restricted Stock Units in a manner that would violate the requirements of Code Section 409A.

(f) Distribution of Shares and Restricted Stock Units - The Corporation shall cause the shares subject to a Retention Agreement to be distributed to the Participant, or the Participant's Beneficiary in the event of the Participant's death, upon expiration of the retention period or other termination or waiver of the restrictions under this Section 12. The Corporation shall cause the Restricted Stock Units subject to a Retention Agreement to be distributed to the Participant upon the expiration of the retention period or to the Participant's Beneficiary in the event of the Participant's death.

Section 13. DIVIDEND EQUIVALENT PAYMENTS

The Committee may authorize the immediate payment, in cash or in Common Stock, of Dividend Equivalents on some or all of the shares of Common Stock covered by Options or Stock Appreciation Rights, as specified in the Award Agreement required under Section 6(a), Section 7 or Section 8(a) of the Plan. Dividend Equivalents payable on options may be paid in cash or Common Stock, at the discretion of the Committee.

The Committee may authorize the immediate or deferred payment of Dividend Equivalents on some or all of the shares of Common Stock covered by Restricted Stock Units that are not subject to Performance Goals, as specified in the Award Agreement required under Section 10 of the Plan. Dividend Equivalents payable on Restricted Stock Units may be paid in cash or converted to additional Restricted Stock Units, at the discretion of the Committee and as specified in the Award Agreement.

The Committee may authorize the deferred payment of Dividend Equivalents on some or all of the shares of Common Stock covered by Restricted Stock Units that are subject to Performance Goals, or by Performance Share Units, as specified in the Award Agreement described in Sections 10 or 11 of the Plan. Deferred Dividend Equivalents shall be paid only to the extent Performance Goals are achieved with respect to such Performance Share Units or Restricted Stock Units, and shall be distributed at the same time as the underlying Performance Shares, Restricted Stock Unit Shares, or cash equivalents thereto. Deferred Dividend Equivalents payable on Performance Share Units or on Restricted Stock Units that are subject to a Performance Goal may be paid in cash, or converted to additional Performance Shares or Restricted Stock Unit Shares (as applicable), at the discretion of the Committee and as specified in the Award Agreement.

Notwithstanding the above, Dividend Equivalents shall not be made or accumulated during a Participant's leave of absence. If Dividend Equivalents provided under this section are

to be paid immediately, the Dividend Equivalents shall be paid in cash on the date declared by the Board of Directors for the payment of dividends on Common Stock. If Dividend Equivalents provided under this section are to be deferred, the deferred Dividend Equivalents shall be paid or forfeited when the underlying Award is paid or forfeited.

Section 14. NON-COMPETE COVENANT

The Committee, in its sole discretion, may require as a condition of a grant of any Award under the Plan that the Participant execute a non-compete, non-solicitation and confidentiality agreement, which agreement shall require that such individual (i) not Engage in Competing Employment (as defined in this Section 14 of the Plan) nor solicit any employee of the Corporation or a Subsidiary Company to Engage in Competing Employment for a specified term following termination of employment (including Retirement), (ii) not solicit customers of the Corporation or a Subsidiary Company for a specified term following termination of employment (including Retirement), and (iii) maintain the Corporation's and each Subsidiary Company's confidential information in strict confidence, in accordance with the provisions of the agreement. The Committee, in its sole discretion, may further require as a condition of a grant, exercise, settlement or payment with respect to any Award under the Plan that the Award shall be subject to immediate forfeiture, and all rights of the Participant to such Award shall terminate immediately without further obligation on the part of the Corporation or any Subsidiary Company, if the Participant Engages in Competing Employment for a specified period of time following termination of employment. The terms of such a non-compete covenant shall be as set forth in the agreement or grant providing the terms of an Award and are incorporated herein by reference. A non-compete covenant shall not apply to the settlement or payment of any Option (although it may apply to the grant or exercise of an Option). Settlement or payment of any other Award that is subject to a non-compete covenant shall occur upon the expiration of the Restriction Period, Performance Cycle, Retention Agreement, or other date upon which the Award would be settled and paid if the Participant had not terminated employment.

For purposes of the provision, "Engages in Competing Employment" shall mean to work for or provide services for any Competitor, on the Participant's own behalf or in the service of or on behalf of others, including, but not limited to, as a consultant, independent contractor, director, owner, officer, partner, joint venturer, or employee, at any time during the specified period commencing on the date of his or her termination of employment (including Retirement). "Competitor" shall mean any entity in the same line of business as the Corporation in North American markets in which the Corporation competes, including, but not limited to, any North American Class I rail carrier, any other rail carrier competing with the Corporation (including without limitation a holding or other company that controls or operates or is otherwise affiliated with any rail carrier competing with the Corporation), and any other provider of transportation services competing with Corporation, including motor and water carriers.

Section 15. CAPITAL ADJUSTMENTS

In the event of a recapitalization, stock split, stock dividend, exchange, combination, or reclassification of shares, merger, consolidation, reorganization, or other change in or affecting the capital structure or capital stock of the Corporation, the Board of Directors, upon the recommendation of the Committee, may make appropriate adjustments in the number of shares of Common Stock authorized for the Plan and in the annual limitation imposed by Section 5 of

this Plan; and the Committee may make appropriate adjustments in the number of shares subject to outstanding Options, Stock Appreciation Rights, Restricted Shares, Restricted Stock Units, or Performance Share Unit grants, and in the Option price of any then outstanding Options, as it deems equitable, in its absolute discretion, to prevent dilution or enlargement of the rights of Participants.

Section 16. REGULATORY APPROVALS

The exercise of each Option and Stock Appreciation Right, and the grant or distribution of Restricted Shares, Restricted Stock Units and Performance Shares, shall be subject to the condition that if at any time the Corporation shall determine in its discretion that the satisfaction of withholding tax or other tax liabilities, or the listing, registration, or qualification of any shares of Common Stock upon any securities exchange or under any Federal or state law, or the consent or approval of any regulatory body, is necessary or desirable as a condition of, or in connection with, such exercise, grant, or distribution, then in any such event such exercise, grant, or distribution shall not be effective unless such liabilities have been satisfied or such listing, registration, qualification, consent, or approval shall have been effected or obtained free of any conditions not acceptable to the Corporation.

Section 17. TERM OF THE PLAN

Awards may be granted from time to time under the terms and conditions of the Plan, but no Incentive Stock Option may be granted after the expiration of ten (10) years from the date of adoption of the Plan, as amended on May 14, 2015, by the Board of Directors; provided, that any future amendment to the Plan that is approved by the stockholders of the Corporation in the manner provided under Section 18 of this Plan shall be regarded as creating a new Plan, and an Incentive Stock Option may be granted under such new Plan until the expiration of ten (10) years from the earlier of the approval by the Board of Directors, or the approval by the stockholders of the Corporation, of such new Plan. Incentive Stock Options theretofore granted may extend beyond the expiration of that ten-year period, and the terms and conditions of the Plan shall continue to apply thereto and to shares of Common Stock acquired upon the subsequent exercise of an Incentive Stock Option or related Stock Appreciation Right.

Section 18. AMENDMENT OR TERMINATION OF THE PLAN

The Corporation may at any time and from time to time alter or amend, in whole or in part, any or all of the provisions of the Plan, or may at any time suspend or terminate the Plan, through resolution of its Board of Directors, provided that no change in any Awards theretofore granted to any Participant may be made which would impair or diminish the rights of the Participant without the Participant's consent, and provided further, that no alteration or amendment may be made without the approval of the holders of a majority of the Common Stock then outstanding and entitled to vote if (a) such stockholder approval is necessary to comply with the requirements of any rules promulgated under Section 16 of the Securities Exchange Act of 1934 or such other Federal or state laws or regulations as may be applicable, (b) the amendment materially increases the benefits accruing to Participants under the Plan, (c) materially increases the number of securities that may be issued under the Plan, or (d) materially modifies the requirements for participation in the Plan.

Section 19. FORFEITURE AND RECOUPMENT EVENTS

The Committee may specify in an Award Agreement that the Participant's rights, payments, and benefits with respect to an Award shall be subject to reduction, forfeiture, or recoupment upon the occurrence of certain specified events, in addition to any otherwise applicable vesting or performance conditions of an Award.

Any Award to a Participant under this Plan is subject to reduction, forfeiture, or recoupment to the extent provided under Section 304 of the Sarbanes-Oxley Act of 2002, Section 954 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, or as may be provided under any other applicable law.

Section 20. MISCELLANEOUS

(a) Fractional Shares - The Corporation shall not be required to issue or deliver any fractional share of Common Stock upon the exercise of an Option or Stock Appreciation Right, the award of Performance Shares, the payment of a dividend equivalent in Common Stock pursuant to Section 13 of the Plan or the withholding of shares of Common Stock for payment of taxes required to be withheld, but may pay, in lieu thereof, an amount in cash equal to the Fair Market Value of such fractional share.

(b) Withholding - The Corporation and its Subsidiary Companies shall have the right, to the extent permitted by law, to deduct from any payment of any kind otherwise due to a Participant any Federal, state or local taxes of any kind required by law to be withheld with respect to Awards under the Plan, and to the extent any such withholding requirements are not satisfied, each Participant shall pay to the Corporation any Federal, state or local taxes of any kind required by law to be withheld with respect to Awards under the Plan. The Corporation shall have the right to withhold shares of Common Stock, including fractional shares, from payment as necessary to satisfy any withholding obligations, but may only withhold the minimum number of shares necessary to do so. If fractional shares are withheld, any remaining fractional shares shall be paid in cash to the Participant as provided under paragraph (a) of this Section 20. The Participant or Beneficiary shall remain responsible at all times for paying any Federal, state or local taxes of any kind with respect to Awards under the Plan. In no event shall the Corporation or the Committee be liable for any interest or penalty that a Participant or Beneficiary incurs by failing to make timely payments of tax.

(c) Acceleration of Payments to Avoid Conflicts of Interest - To the extent permitted by Code Section 409A and not prohibited by Section 6(a) of the Plan, the Committee may, in its sole discretion and with the consent of a Participant or Beneficiary, accelerate the time or schedule of a payment under the Plan, or make a substitute cash payment upon cancellation of a Participant's Award, in either case to the extent reasonably necessary for a Participant or Beneficiary to avoid the violation of an applicable Federal, state, local or foreign ethics law or conflicts of interest law (including where such payment is reasonably necessary to permit the Participant or Beneficiary to participate in activities in the normal course of his or her position in which the Participant or Beneficiary would otherwise not be able to participate under an applicable rule). The Corporation's chief executive officer may exercise the authority granted to

the Committee in this paragraph with respect to any Participant or Beneficiary who is neither a current or former director of the Corporation nor a current Executive Officer of the Corporation.

(d) Stockholder Rights - No person shall have any rights of a stockholder by virtue of an Option, Stock Appreciation Right, or Performance Share Unit except with respect to shares of Common Stock actually issued to him, and the issuance of shares of Common Stock shall confer no retroactive right to dividends. A Participant's right to receive Dividend Equivalents shall not, by itself, confer upon the Participant the rights or privileges of a stockholder.

(e) No Contract of Employment - This Plan shall not be deemed to be an employment contract between the Corporation or any Subsidiary Company and any Participant or other employee. Nothing contained herein, or in any agreement, certificate or other document evidencing, providing for, or setting forth the terms and conditions applicable to any Awards shall be deemed to confer upon any Participant or other employee a right to continue in the employment of the Corporation or any Subsidiary Company, or to interfere with the right of the Corporation or any Subsidiary Company to terminate the employment of such Participant or employee at any time.

(f) Unfunded Plan - Except as may otherwise be provided in the Plan, the Plan shall be unfunded. Neither the Corporation nor any Subsidiary Company shall be required to segregate any assets that may be represented by Options, Stock Appreciation Rights, Performance Share Units, or Restricted Stock Units, and neither the Corporation nor any Subsidiary Company shall be deemed to be a trustee of any amounts to be paid under an Option, Stock Appreciation Right, Performance Share Unit, or Restricted Stock Unit. Any liability of the Corporation to pay any Participant or Beneficiary with respect to an Option, Stock Appreciation Right, Performance Share Unit, or Restricted Stock Unit shall be based solely upon any contractual obligations created pursuant to the provisions of the Plan; no such obligation shall be deemed to be secured by any pledge or encumbrance on any property of the Corporation or a Subsidiary Company.

(g) Applicable Law - The Plan, its validity, interpretation, and administration, and the rights and obligations of all persons having an interest therein, shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia, except to the extent that such laws may be preempted by Federal law.

(h) Gender and Number - Wherever used in the Plan, words in the masculine form shall be deemed to refer to females as well as to males, and words in the singular or plural shall be deemed to refer also to the plural or singular, respectively, as the context may require.

(i) Code Section 409A - The Plan is intended, and shall be construed, to comply with the requirements of Code Section 409A. The Corporation does not warrant that the Plan will comply with Code Section 409A with respect to any Participant or with respect to any payment, however. In no event shall the Corporation or the Committee be liable for any additional tax, interest, or penalty incurred by a Participant or Beneficiary as a result of the Plan's failure to satisfy the requirements of Code Section 409A, or as a result of the Plan's failure to satisfy any other applicable requirements for the deferral of tax.

**NORFOLK SOUTHERN CORPORATION
EXECUTIVES' DEFERRED COMPENSATION PLAN
as amended and restated effective January 1, 2019**

ARTICLE I. NAME AND PURPOSE OF THE PLAN.

The name of the plan is the Norfolk Southern Corporation Executives' Deferred Compensation Plan (the Plan), which for deferrals on or after January 1, 2001, is the successor to the Norfolk Southern Corporation Officers' Deferred Compensation Plan. The purpose of the Plan is to provide benefits to those officers of Norfolk Southern Corporation (the Corporation) or a Participating Subsidiary who elect to participate in the Plan. The Plan was last amended and restated effective as of January 1, 2019.

ARTICLE II. DEFINITIONS.

Account. The total of the amount of Deferrals by a Participant together with Earnings as provided in Article V. The Account shall be utilized solely as a device for the measurement of amounts to be paid to the Participant under the Plan. The Account shall not constitute or be treated as an escrow, trust fund, or any other type of funded account for ERISA or Internal Revenue Code purposes and, moreover, contingent amounts credited thereto shall not be considered "plan assets" for ERISA purposes. The Account merely provides a record of the bookkeeping entries relating to the contingent benefits that the Corporation intends to provide to Participant and thus reflects a mere unsecured promise to pay such amounts in the future.

Agreement. The "Deferral Agreement" between each Participant and the Corporation.

Beneficiary. The person or persons designated as Beneficiary pursuant to Article XII.

Board of Directors. The Board of Directors of the Corporation.

Change in Control. A Change in Control occurs upon any of the following circumstances or events:

- (1) The Corporation consummates a merger or other similar control-type transaction or transactions (however denominated or effectuated) with another Corporation or other Person (including any "affiliate" or "associate" of any Person, all as defined in the Securities Exchange Act of 1934, as amended, or any rules and regulations promulgated thereunder) (Combination), and immediately thereafter less than eighty percent (80%) of the combined voting power of the then-outstanding securities of such corporation or Person is held in the aggregate by the holders of securities entitled, immediately prior to

such Combination, to vote generally in the election of directors of the Corporation (Voting Stock);

(2) The Corporation consummates any stockholder-approved consolidation or dissolution (however denominated or effectuated) pursuant to a recommendation of the Board of Directors;

(3) At any time, Continuing Directors (as herein defined) shall not constitute a majority of the members of the Board of Directors ("Continuing Director" means (i) each individual who has been a director of the Corporation for at least twenty-four consecutive months before such time and (ii) each individual who was nominated or elected to be a director of the Corporation by at least two thirds of the Continuing Directors at the time of such nomination or election);

(4) The Corporation sells all or substantially all of its assets to any other corporation or other Person, and less than eighty percent (80%) of the combined voting power of the then-outstanding securities of such corporation or Person immediately after such transaction is held in the aggregate by the holders of Voting Stock immediately prior to such sale;

(5) A report is filed on Schedule 13D or Schedule 14D-1 (or any successor schedule, form or report), pursuant to the Securities Exchange Act of 1934, as amended, disclosing that any Person has become the Beneficial Owner (any Person who, under the Securities Exchange Act of 1934 or any rules or regulations promulgated thereunder, would be deemed beneficially to own Voting Stock) of twenty (20) or more percent of the voting power of Voting Stock; or

(6) The Board of Directors determines by a majority vote that, because of the occurrence, or the threat of imminence of the occurrence, of another event or situation in import or effects similar to the foregoing, those who have accepted an agreement providing certain rights and benefits upon termination of employment following a Change in Control are entitled to its protections.

Notwithstanding the provisions of the foregoing, unless otherwise determined in a specific case by majority vote of the Board of Directors, a Change in Control for purposes of this Plan shall not be deemed to have occurred solely because (a) the Corporation, (b) an entity of which the Corporation is the direct or indirect Beneficial Owner of 50 or more percent of the voting securities or (c) any Corporation-sponsored employee stock ownership plan or any other employee benefit plan of the Corporation either files or becomes obligated to file a report or a proxy statement under or in response to Schedule 13D, Schedule 14D-1, Form 8-K, or Schedule 14A (or any successor schedule, form or report or item therein) under the Exchange Act, disclosing beneficial ownership by it of shares of Voting Stock, whether in excess of 20 percent or otherwise, or because the Corporation reports that a change in control of the Corporation has or may have occurred or will or may occur in the future by reason of such beneficial ownership.

Committee. The Compensation Committee of the Board of Directors.

Compensation. The fixed salary payable in the form of cash (including vacation pay) of the Participant before any reduction (1) for pre-tax contributions to the Thrift and Investment Plan of Norfolk Southern Corporation and Participating Subsidiary Companies, (2) for contributions to the Pre-Tax Transportation Plan of Norfolk Southern Corporation and Participating Subsidiary Companies, (3) for pre-tax contributions to the Norfolk Southern Corporation Comprehensive Benefits Plan, and (4) for any deferrals under this Plan.

Deferral. A Deferred Bonus and/or deferred Compensation for each Plan Year which is “credited” to a Participant’s Account.

Deferred Bonus. That amount set forth in the Agreement which shall be deferred from a Participant’s MIP incentive award (and any other cash incentive award payable to participants in MIP) or EMIP incentive award (and any other cash incentive award approved by the Board of Directors and payable to participants in EMIP), or the bonus program of a Participating Subsidiary, if the deferral of such incentive award or bonus under the Plan is authorized by the Corporation.

Disability. A medically determinable physical or mental impairment which can be expected to result in death or can be expected to last for a continuous period of not less than 12 months and which

- (i) renders the Participant unable to engage in any substantial gainful activity; or
- (ii) enables the Participant to be eligible for a disability benefit under the Long-Term Disability Plan of Norfolk Southern Corporation and Participating Subsidiaries, as amended from time to time, or under any such similar plan of a Participating Subsidiary, provided that the Participant has received benefit payments under such plan for a period of not less than 3 months.

Election Deadline. A date specified by the Plan Administrator.

Eligible Employee. Any employee of the Corporation or a Participating Subsidiary who is not covered by a collective bargaining agreement and who is eligible to participate in the MIP, the EMIP, or any authorized bonus program of a Participating Subsidiary.

EMIP. Norfolk Southern Corporation Executive Management Incentive Plan or successor plan.

Hypothetical Investment Options. Investment funds or benchmarks as may be selected from time to time, and made available to Participants solely for purposes of valuing Deferrals. The Hypothetical Investment Options shall be selected by a Benefits Investment Committee comprised of the Corporation’s chief financial officer, chief legal officer and chief human resources officer.

MIP. Norfolk Southern Corporation Management Incentive Plan or successor plan.

Participant. Any Eligible Employee of the Corporation or a Participating Subsidiary who elects to make a Deferral under Article IV of the Plan.

Participating Subsidiary. Each subsidiary or affiliated company of the Corporation which adopts the Plan and is approved for participation in the Plan as provided in Article XVIII.

Plan Administrator. The Vice President - Human Resources of the Corporation, or the successor officer who performs substantially similar duties.

Plan Year. Any calendar year during which deferrals under this Plan are made.

Separation from Service. A Participant's "separation from service" within the meaning of Section 409A of the Internal Revenue Code and the regulations thereunder.

Trust. A grantor trust of the type commonly referred to as a "rabbi trust" created to assist the Corporation and the Participating Subsidiaries to accumulate assets that can be used to pay benefits under the Plan.

ARTICLE III. ADMINISTRATION.

The Plan Administrator shall administer, construe, and interpret this Plan and, from time to time, adopt such rules and regulations and make such recommendations to the Committee concerning Plan changes as are deemed necessary to ensure effective implementation of this Plan. The administration, construction, and interpretation by the Plan Administrator may be appealed to the Committee, and the decision of the Committee shall be final and conclusive, except that any claim for benefits with respect to a Participant shall be subject to the claims procedure set forth in Section 503 of the Employee Retirement Income Security Act of 1974. The Plan Administrator may correct errors and, so far as practicable, may adjust any benefit or payment or credit accordingly. Neither the Plan Administrator nor any member of the Committee shall be liable for any act done or determination made in good faith.

ARTICLE IV. ELECTIONS.

(a) Deferral Elections. Any Eligible Employee shall be eligible to participate in the Plan. A Participant may elect to defer up to 50% of his monthly Compensation. An Eligible Employee who elects to become a Participant in the Plan and defer a portion of his Compensation thereby consents to the reduction in his Compensation as specified in the Agreement. An Eligible Employee may elect to defer a minimum of 10% and a maximum of 100% in increments of one percent (1%), of any eligible incentive bonus which may be awarded to him pursuant to MIP, EMIP or any authorized bonus program of a Participating Subsidiary. A Participant who elects to defer any of his incentive bonus thereby consents to a reduction in his bonus by the Deferred Bonus as specified in the Agreement.

Any deferral election with respect to monthly Compensation must be made in the manner prescribed by the Plan Administrator and in no event later than the Election Deadline. Any deferral election with respect to a Deferred Bonus must be made in the manner prescribed by the Plan Administrator and at the time specified in the plan under which the incentive bonus is awarded, but in no event later than the Election Deadline. If the Participant fails to make an election prior to the Election Deadline, then the Participant will not be eligible to defer his Compensation or any portion of his incentive bonus earned during the Plan Year.

(b) Distribution Elections. No later than the Election Deadline, the Participant must elect among the following two distribution options in such proportions as determined by the Participant (in increments of one percent (1%) of the Deferral in each distribution option selected by the Participant, if the Participant selects to participate in both distribution options set forth below). The Participant must elect to have the benefit distributed (i) at the earlier of Separation from Service or Disability, or (ii) at the earliest of Separation from Service, Disability, or a specified date at least five (5) years after the Plan Year has ended (a "Specified Date"). For distribution elections made on or after October 1, 2011, a Participant's Specified Date election shall only be made by reference to a month and year of distribution and the Specified Date shall be deemed to be the first day of the specified month. Any benefit which the Participant elects to receive upon the earlier of Separation from Service or Disability, will be distributed in one lump sum payment or annual installment payments over a period of five (5), ten (10), or fifteen (15) years as elected by the Participant. For purposes of Section 409A of the Internal Revenue Code, a series of installment payments will be considered a single payment. Any benefit which a Participant elects to receive on the earliest of Separation from Service, Disability, or a Specified Date, and for which the Specified Date is the distribution event, will be distributed in one lump sum or in annual installment payments over a period of up to five (5) years, as elected by the Participant, or in one lump sum in the event of Separation from Service or Disability. However, for any benefit which the Participant elects to receive in annual installments on the earliest of Separation from Service, Disability, or a Specified Date, and for which the Specified Date is the earliest distribution event, annual installments will continue to be paid regardless of whether the Participant incurs a Separation from Service or Disability following the Specified Date. If the Participant fails to elect the time and form of distribution of his Deferral before the Election Deadline, the Participant's distribution will be made at the earlier of Separation from Service or Disability in one lump sum. If a distribution is being made due to Separation from Service, to the extent the distribution is attributable to Deferrals of amounts earned or vested after December 31, 2004, no distribution may be made before the date which is six months after the date of Separation from Service.

(c) Election Deadline. A Participant must file a deferral election and distribution election for each year's Deferral. The Participant must make each election by the Election Deadline. The Election Deadline must satisfy the following requirements:

(1) Performance-Based Compensation. To the extent that an incentive bonus qualifies as "performance-based compensation" as defined in Section 409A of the Internal Revenue Code, the Election Deadline shall not be later than the date that is six

months before the end of the performance period, provided that no deferral election may be made with respect to any portion of the compensation that has become readily ascertainable.

(2) Other Compensation. For deferrals of Compensation or an incentive bonus that is not described in subparagraphs (1), above, the Election Deadline shall be no later than December 31 preceding the Plan Year in which begins the period of service for which the Compensation or incentive bonus is earned.

A Participant may change or revoke the deferral election by filing a new election form with the Plan Administrator at any time before the Election Deadline. The Participant's deferral election and distribution election in effect on the Election Deadline shall be irrevocable. Until a valid deferral election is made by an Eligible Employee, the Eligible Employee shall be deemed to have elected to receive Compensation and any incentive bonus on the regular payment date, without deferral.

(d) Modifications Subsequent to Initial Election. A Participant may modify an election for Deferrals of Compensation earned and vested after December 31, 2004, and related earnings thereon by filing a modification election in the manner specified by the Plan Administrator. A modification election that does not meet the Plan Administrator's procedures, the requirements of the Plan or which fails to clearly identify the Deferral to which it applies is void. Modification elections are subject to the following rules:

- (1) Initial Election Is Earlier of Separation from Service or Disability. A Participant who has elected to receive a distribution upon the earlier of Separation from Service or Disability may modify the payment election with respect to all such deferrals that have the same payment commencement date and the same form of distribution by (i) delaying the payment commencement date upon Separation from Service by five (5) years or (ii) by specifying one of the permissible payment schedules described in paragraph (c), above, and, in the case of a Separation from Service, delaying the payment commencement date by five (5) years. Modification elections may be revoked or modified up to 12 months prior to the Participant's payment commencement date following Separation from Service or Disability. Modifications filed less than 12 months prior to the Participant's payment commencement date following Separation from Service or Disability will be disregarded.
- (2) Initial Election is Earliest of Separation from Service, Disability or Specified Date. A Participant who has elected to receive a Deferral upon the earliest of Separation from Service, Disability or a Specified Date may modify the Specified Date payment election with respect to all such deferrals that have the same payment commencement date and the same form of distribution by (i) selecting a new Specified Date that is not less than five (5) years after the current Specified Date or (ii) by selecting one of the permissible payment

schedules described in paragraph (c), above, and selecting a new Specified Date not less than five (5) years after the current Specified Date. Subject to the requirements of this section IV(d), a modification election filed under this section (d)(2) must be filed not less than 12 months prior to the current Specified Date, is irrevocable upon receipt by the Plan Administrator and shall become effective 12 months after receipt. A Participant may file an unlimited number of modification elections with respect to a Deferral. In such a case, the minimum five year delay for each such election shall be determined with respect to the payment commencement date contained in the immediately preceding modification election.

ARTICLE V. EARNINGS EQUIVALENT.

(a) Adjustment of Participant Accounts. Unless otherwise stated herein or determined by the Board of Directors, an amount equivalent to earnings or losses ("Earnings") shall accrue on or be deducted from all Deferrals in accordance with the Participant's selection of Hypothetical Investment Options. For purposes of calculating the appropriate Earnings only, the Deferred Bonus is deemed to be invested in the Hypothetical Investment Options on the date on which the related incentive bonus is paid. Earnings shall be determined based upon the Hypothetical Investment Option(s) elected by the Participant. If a Participant does not elect Hypothetical Investment Options for the Deferrals, then Earnings shall be determined based on such Hypothetical Investment Options as may be designated by the Plan Administrator to apply in the absence of an election. Participants will be required to elect one or more Hypothetical Investment Options at the time each Deferral election is made. Participants will be permitted at any time prior to the complete pay out of their Account balances to elect to change their Hypothetical Investment Option(s) with respect to all or part of their Account balances effective as soon as practicable following such election. The procedure for electing to change a Hypothetical Investment Option(s) will be established by the Plan Administrator. An election to change a Hypothetical Investment Option for part of an Account balance must be made in increments of 1% of the Account balance or a specified dollar amount.

While a Participant's Account does not represent the Participant's ownership of, or any ownership interest in, any particular assets, the Participant's Account shall be adjusted in accordance with the Hypothetical Investment Options chosen by the Participant. Any Earnings generated under a Hypothetical Investment Option (such as interest and cash dividends and distributions) shall be deemed to be reinvested in that Hypothetical Investment Option. All notional acquisitions and dispositions of Hypothetical Investment Options which occur within a Participant's Account, pursuant to the terms of the Plan, shall be deemed to occur at such times as the Plan Administrator shall determine to be administratively feasible in its sole discretion and the Participant's Account shall be adjusted accordingly. In the event of a Change in Control, the practices and procedures for determining any Earnings credited to any Participants' Accounts following a Change in Control shall be made in a manner no less favorable to Participants than the practices and procedures employed under the Plan, or otherwise in effect, as of the date of the Change in Control.

In lieu of an entitlement to receive payments under the terms of this Plan, in the event of a Change in Control, any deferred compensation equivalent payment made pursuant to a Change in Control Agreement that was entered into before such Change in Control shall be determined by projecting the Earnings a Participant would have received had the Participant worked until normal retirement age at age 65 or, if greater, had the Participant retired on his or her Termination Date (as defined in the applicable Change in Control Agreement). The rate of return for such projected Earnings shall be determined in accordance with the schedule below, based on the Participant's age immediately preceding the Termination Date, and shall be applied to the Participant's Account balance on the Termination Date (as defined in the applicable Change in Control Agreement):

<u>Age</u>	<u>Rate</u>
up to 45	7%
45-54	10%
55-60	11%
over 60	12%

(b) Vesting. The Participant shall at all times be one hundred percent (100%) vested in his or her Account, as well as in any appreciation (or depreciation) specifically attributable to such Account due to Earnings.

ARTICLE VI. BENEFITS

(a) Distribution at the Earlier of Separation from Service or Disability: For each Deferral for which the Participant elected to have the benefit distributed in this manner, the Participant shall be paid the amount in his or her Account either in a lump sum or in installments as the Participant elected under Article IV.

For lump sum distributions, except as provided in the following sentence, the Participant shall be paid on the first day of the calendar year following Separation from Service or Disability, the portion of his or her Account which is attributable to Deferrals for which the Participant elected lump sum distribution at Separation from Service or Disability. If the Participant defers an incentive bonus and Separates from Service or becomes Disabled in the year before the year such incentive bonus would be paid in the absence of such deferral, then the lump sum distribution with respect to such bonus shall be paid on the first day of the second calendar year following the Separation from Service or Disability. Notwithstanding the foregoing, if a distribution is being made due to Separation from Service, to the extent the amount in a Participant's Account is attributable to Deferrals of amounts earned or vested after December 31, 2004, and related earnings thereon, the distribution shall be made on the later of the date which is six months after the date of Separation from Service or the applicable date specified in the first two sentences of this paragraph. Distributions described in this paragraph shall be valued as of the day preceding the day on which the distribution is scheduled to occur.

For distributions other than lump sum distributions, except as provided in the following sentence, payments shall commence on the first day of the calendar year following such Separation from Service or Disability and shall be made in annual installments on January 1 of each year for each applicable Deferral over the elected pay out period for that Deferral. If the Participant defers an incentive bonus and Separates from Service or becomes Disabled in the year before the year such incentive bonus would be paid in the absence of such deferral, then the installment payments with respect to such bonus shall commence on the first day of the second calendar year following the Separation from Service or Disability, and shall be made in annual installments on January 1 of each year thereafter over the elected pay period for that Deferral. Notwithstanding the foregoing, if a distribution is being made due to Separation from Service, to the extent the amount in a Participant's Account is attributable to Deferrals of amounts earned or vested after December 31, 2004, and related earnings thereon, the initial distribution shall be made on the later of the date which is six months after the date of Separation from Service or the applicable date specified in the first two sentences of this paragraph. The annual installment payment for each applicable Deferral shall be an amount equal to the remaining balance in the Participant's Account for the Deferral, valued as of the day preceding the day on which such distribution is scheduled to occur, with the amount determined by dividing the remaining number of annual payments not yet distributed for that Deferral.

Deferrals subject to a valid modification election described in Article IV(d) shall be paid on the payment commencement date described in such election, with the payment commencement dates specified in this section VI(a) as a reference point for determining the five-year delay.

(b) Distribution at the Earliest of Separation from Service, Disability or a Specified Date: For each Deferral earned and vested prior to January 1, 2005 (and the related earnings thereon) for which the Participant elected to have the benefit distributed on the earliest of Separation from Service, Disability, or a Specified Date the Participant shall be paid the amount in his or her Account for that Deferral in a lump sum on the first business day after the earliest of the Specified Date, Separation from Service, or Disability.

For each Deferral earned and vested after December 31, 2004 (and the related earnings thereon) for which the Participant elected to have the benefit distributed on the earliest of Separation from Service, Disability, or a Specified Date the Participant shall be paid the amount in his or her Account for that Deferral as elected in the event of payment on a Specified Date and in a lump sum in the event of Separation from Service or Disability, with payment commencing on the first business day after the earliest of the Specified Date, Separation from Service, or Disability. If a distribution is being made due to Separation from Service, the distribution shall be made on the date which is six months after the date of Separation from Service. Notwithstanding anything in this Plan to the contrary, amounts being paid in installments to a Participant who subsequently Separates from Service or becomes Disabled shall continue to be paid in installments.

For all initial Deferral elections under this Plan, if the Participant defers an incentive bonus and elects to have the benefit distributed at the earliest of Separation from Service, Disability or a Specified Date, and the Participant Separates from Service or becomes Disabled in the year before the year such incentive bonus would be paid in the absence of such Deferral, then the distribution with respect to such initial Deferral election shall be made on the first day of the second calendar year following the Separation from Service or Disability.

Amounts payable under this Article VI(b) shall be valued as of the day preceding the day on which the distribution is scheduled to occur. Amounts payable under this Article VI(b) that are distributed in annual installments following the Specified Date shall be valued as of the day preceding the day on which such distribution is scheduled to occur, with the amount to be distributed determined as the remaining balance in the Participant's Account for the Deferral divided by the number of annual payments not yet distributed for that Deferral.

(c) Death: If a Participant dies either while in active service or after Separation from Service or Disability, the Corporation shall pay the amount of the Participant's Account to the Participant's Beneficiary in a single lump sum on the first day of the calendar month following the date of death. Amounts payable under this Article VI(c) shall be valued as of the day preceding the Participant's death.

(d) Lump Sum or Other Settlement: Notwithstanding the foregoing provisions of this Article VI, the Plan Administrator, in his sole discretion, may authorize and direct the Corporation to distribute the amount in a Participant's Account (other than the Plan Administrator's Account) in a lump sum or over a period other than that provided for in this Article VI, and to charge such payments against the Participant's Account. Such accelerated distribution may be made only in the event of an unforeseeable financial emergency resulting from an illness or accident of the Participant, the Participant's spouse, the Participant's Beneficiary, or a dependent (as defined in Section 152 of the Internal Revenue Code, without regard to section 152(b)(1), (b)(2) or (d)(1)(B)) of the Participant, loss of the Participant's property due to casualty, or other similar extraordinary and unforeseeable circumstances arising as a result of events beyond the control of the Participant. Such an accelerated distribution shall be permitted only to the extent that the financial emergency is not and may not be relieved by reimbursement or compensation from insurance or otherwise, by liquidation of the Participant's assets (to the extent the liquidation would not cause severe financial hardship), or by the cessation of deferrals under the Plan, and only in an amount reasonably necessary to satisfy the financial emergency; provided, that all amounts due to a Participant or Beneficiary under this Plan shall in all events be paid to the Participant or Beneficiary by the end of the appropriate period referred to in this Article VI.

(e) Administrative Adjustments in Payment Date. A payment is treated as being made on the date when it is due under the Plan if the payment is made on the due date specified by the Plan, or on a later date that is either (i) in the same calendar year (for a payment whose specified due date is on or before September 30), or (ii) by the 15th day of the third calendar month following the date specified by the Plan (for a payment whose specified due date is on or after

October 1). A payment is also treated as being made on the date when it is due under the Plan if the payment is made not more than 30 days before the due date specified by the Plan, provided that a payment that is delayed until six months after the Participant's Separation from Service shall not be made earlier than such date. A Participant or Beneficiary may not, directly or indirectly, designate the taxable year of a payment made in reliance on the administrative rules in this paragraph.

ARTICLE VII. NATURE AND SOURCE OF PAYMENTS

The obligation to pay benefits under Article VI with respect to each Participant shall constitute a liability of the Corporation to the Participant and, after the Participant's death, to any Beneficiaries in accordance with the terms of the Plan. The Corporation may establish one or more Trusts within the United States to which the Corporation may transfer such assets as the Corporation determines in its sole discretion to assist in meeting its obligations under the Plan. The provisions of the Plan and the Agreement shall govern the rights of a Participant to receive distributions pursuant to the Plan. While the Corporation generally reserves the right to establish or fund any Trust at any time, it shall not fund such Trust in connection with an adverse change in the financial health of the Corporation or a Participating Subsidiary to the extent that such funding would not comply with the requirements of Section 409A of the Internal Revenue Code. The provisions of the Trust shall govern the rights of the Corporation, Participants and the creditors of the Corporation to the assets transferred to the Trust. The Corporation's obligations under the Plan may be satisfied with Trust assets distributed pursuant to the terms of the Trust, and any such distribution shall reduce the Corporation's obligations under this Plan.

Participants and Beneficiaries shall stand in the position of unsecured creditors of the Corporation, the Plan constitutes a mere promise by the employer to make benefit payments in the future, and all rights hereunder and under any Trust are subject to the claims of creditors of the Corporation.

ARTICLE VIII. EXPENSES OF ADMINISTRATION

All expenses of administering the Plan shall be borne by the Corporation, and no part thereof shall be charged against the benefit of any Participant, except the costs of the Hypothetical Investment Options, which shall be charged against the value of Deferrals measured against those funds.

ARTICLE IX. AMENDMENT TO AND TERMINATION OF PLAN

The Corporation reserves the right at any time through written action of its chief executive officer or by a resolution duly adopted by its Board of Directors to amend this plan in any manner or to terminate it at any time, except that no such amendment or termination shall deprive a Participant or his Beneficiary of any rights hereunder theretofore legally accrued, and

no such termination shall be effective for the year in which such resolution is adopted. In no event shall a termination of the Plan accelerate the distribution of amounts deferred under the Plan in calendar year 2005 and succeeding years, except to the extent permitted in regulations or other guidance under Section 409A of the Internal Revenue Code and expressly provided in the resolution terminating the Plan.

ARTICLE X. RECALCULATION EVENTS

The Corporation's commitment to accrue and pay Earnings as provided in Article V may be facilitated by the purchase of corporate-owned life insurance on the lives of eligible Participants. If the Board of Directors, in its sole discretion, determines that any change whatsoever in Federal, State, or local law, or in its application or interpretation, has materially affected, or will materially affect, the ability of the Corporation to recover the cost of providing the benefits otherwise payable under the Plan, then, if the Board of Directors so elects, a Recalculation Event shall be deemed to have occurred. If a Recalculation Event occurs, then Earnings shall be recalculated and restated using a lower rate of Earnings determined by the Board of Directors, but which shall be not less than the lesser of one half (1/2) the rate of Earnings provided for in Article V or 7%.

ARTICLE XI. GOVERNING LAW

This Plan and the Agreements are subject to the laws of the Commonwealth of Virginia.

ARTICLE XII. DESIGNATION OF BENEFICIARY

For the purpose of this Plan, a Beneficiary shall be either (1) the named Beneficiary of the Participant in the Norfolk Southern Corporation Officers Deferred Compensation Plan or Beneficiaries subsequently designated as hereinafter provided for by the Participant, or (2) in the absence of any such designation, his or her estate. A Participant may designate both primary and contingent Beneficiaries. A Participant may revoke or change any designation. To be effective, the designation of a named Beneficiary or Beneficiaries, or any change in or revocation of any designation, must be on a form provided by the Plan Administrator, signed by the Participant and filed with the Plan Administrator prior to the death of such Participant. Any such designation, change or revocation shall not invalidate any cash payment made or other action taken by the Corporation pursuant to the Plan prior to its receipt by the Corporation.

The person or persons entitled to receive any and all payments arising from the Deferrals held for the Participant's Account at death shall be determined as of the date of the Participant's death as follows: If one or more persons designated as primary Beneficiaries survive the Participant, then such person or persons shall be entitled to receive any and all payments in the percentages designated by the Participant or, in the absence of such designation, in equal shares. If none of the persons designated as primary Beneficiaries survive the Participant, then those persons designated as contingent Beneficiaries who survive the Participant, if any, shall be

entitled to receive any and all payments in the percentages designated by the Participant or, in the absence of such designation, in equal shares. If none of the persons named as primary Beneficiaries or contingent Beneficiaries survive the Participant, then the payments from the Account shall be paid to the Participant's estate.

If any person entitled to a payment of benefits as a primary Beneficiary or contingent Beneficiary is a minor at the time of such payment, the Corporation may, in its sole discretion, make the payment to the minor, to the guardian of such minor, to any person who may be the statutory custodian for the benefit of such minor under the Uniform Gifts to Minors Act or similar legislation then in effect, or to any competent adult person with whom such minor may be residing, and in any event, the recipient's receipt shall be sufficient discharge of the Corporation.

The right of a Beneficiary to receive a payment hereunder, once fixed upon the Participant's death, shall continue irrespective of whether the person survives until the date such benefits are paid. If such person dies before all benefits have been paid, then the right to receive the remaining payments shall become an asset of such person's estate.

Any Beneficiary may disclaim all benefits under the Plan to which such Beneficiary would otherwise be entitled by filing a written disclaimer with the Plan Administrator before payment of such benefit is to be made. Such a disclaimer shall be made in a form satisfactory to the Plan Administrator and shall be irrevocable when filed. The benefit disclaimed shall be payable from the Plan in the same manner as if the Beneficiary who filed the disclaimer had predeceased the individual whose death caused the disclaimant to become a Beneficiary.

The determination by the Corporation of a Beneficiary or Beneficiaries, or the identity thereof, or evidence satisfactory to the Corporation shall be conclusive as to the liability of the Corporation and any payment made in accordance therewith shall discharge the Corporation of all its obligations under the Plan for such payment.

ARTICLE XIII. SUCCESSORS, MERGERS, CONSOLIDATIONS

The terms and conditions of this Plan and each Agreement shall inure to the benefit of and bind the Corporation, the Participants, their successors, assigns, and personal representatives. If substantially all the assets of the Corporation are acquired by another corporation or entity or if the Corporation is merged into, or consolidated with, another corporation or entity, then the obligations created hereunder and as a result of the Corporation's acceptance of Agreements shall be obligations of the successor corporation or entity.

ARTICLE XIV. WITHHOLDING FOR TAXES

The Participant agrees as a condition of participation hereunder that the Corporation may withhold applicable Federal, State, and local income taxes and Social Security, Medicare, or

Railroad Retirement taxes from any distribution or benefit paid hereunder. In addition, the Participant agrees as a condition of participation hereunder that the Corporation may withhold from a Participant's nondeferred compensation any applicable payroll taxes that may be due at the time any Deferral is made under the Plan.

ARTICLE XV. NON-ALIENATION OF BENEFITS

No benefit under the Plan shall be subject in any manner to anticipation, alienation, sale, transfer, assignment, pledge, encumbrance or charge, and any attempt at such shall be void; nor shall any such benefit be in any way subject to the debts, contracts, liabilities, engagements, or torts of the person who shall be entitled to such benefit; nor shall it be subject to attachment or legal process for or against such person.

ARTICLE XVI. FACILITY OF PAYMENT

If the Plan Administrator shall find that any individual to whom any amount is payable under the Plan is unable to care for his affairs because of illness or accident, or is a minor or other person under legal disability, any payment due such individual (unless a prior claim therefore shall have been made by a duly appointed guardian, committee, or other legal representative) may be paid to the spouse, a child, a parent, or a brother or sister of such individual or to any other person deemed by the Plan Administrator to have incurred expenses of such individual, in such manner and proportions as the Plan Administrator may determine. Any such payment shall be a complete discharge of the liabilities of the Corporation with respect thereto under the Plan or the Agreement.

ARTICLE XVII. CONTINUED EMPLOYMENT

Nothing contained herein or in an Agreement shall be construed as conferring upon any Participant the right nor imposing upon him the obligation to continue in the employment of the Corporation or a Participating Subsidiary in any capacity.

ARTICLE XVIII. PARTICIPATION BY SUBSIDIARY COMPANIES

Conditional upon prior approval by the Corporation, any company which is a subsidiary of or affiliated with the Corporation may adopt and participate in this Plan as a Participating Subsidiary. Each Participating Subsidiary shall make, execute and deliver such instruments as the Corporation and/or Plan Administrator shall deem necessary or desirable, and shall constitute the Corporation and/or the Plan Administrators as its agents to act for it in all transactions in which the Corporation and/or the Plan Administrators believe such agency will facilitate the administration of this Plan.

ARTICLE XIX. MISCELLANEOUS

Whenever used in the Plan, words in the masculine form shall be deemed to refer to females as well as to males, and words in the singular or plural shall be deemed to refer also to the plural or singular, respectively, as the context may require.

ARTICLE XX. STATUS OF PLAN

The Plan is intended to be a plan that is not qualified within the meaning of Section 401(a) of the Internal Revenue Code and that “is unfunded and is maintained by an employer primarily for the purpose of providing deferred compensation for a select group of management or highly compensated employees” within the meaning of ERISA. The Plan shall be administered and interpreted to the extent possible in a manner consistent with that intent. All Participant Accounts and all credits and other adjustments to such Participant Accounts shall be bookkeeping entries only and shall be utilized solely as a device for the measurement and determination of amounts to be paid under the Plan. No Participant Accounts, Earnings, credits or other adjustments under the Plan shall be interpreted as an indication that any benefits under the Plan are in any way funded.

ARTICLE XXI. EFFECTIVE DATE

The effective date of the Plan is January 1, 2001. The Plan, as hereby amended and restated, is effective with respect to amounts that were not earned and vested (within the meaning of Section 409A of the Internal Revenue Code) before January 1, 2005, and any earnings on such amounts. Amounts earned and vested (within the meaning of Section 409A of the Internal Revenue Code) before January 1, 2005, and earnings on such amounts (collectively, “Grandfathered Amounts”), remain subject to the terms of the Plan as in effect on October 3, 2004. For recordkeeping purposes, the Corporation will account separately for Grandfathered Amounts.

ARTICLE XXII. INTERNAL REVENUE CODE SECTION 409A

The Plan is intended, and shall be construed, to comply with the requirements of Section 409A of the Internal Revenue Code. The Corporation does not warrant that the Plan will comply with Section 409A of the Internal Revenue Code with respect to any Participant or with respect to any payment, however. In no event shall the Corporation, its officers, directors, employees, parents, subsidiaries (including Participating Subsidiaries), or affiliates be liable for any additional tax, interest, or penalty incurred by a Participant or Beneficiary as a result of the Plan’s failure to satisfy the requirements of Section 409A of the Internal Revenue Code, or as a result of the Plan’s failure to satisfy any other applicable requirements for the deferral of tax.

NORFOLK SOUTHERN CORPORATION

EXECUTIVE LIFE INSURANCE PLAN

As amended and restated effective December 1, 2018

I - Establishment of Plan, Purpose and Effective Date

Establishment of Plan. Norfolk Southern Corporation ("Corporation") established the Executive Life Insurance Plan ("Plan" or "Program") effective January 1, 1989, for certain of its nonagreement employees and nonagreement employees of certain of the Corporation's subsidiary or affiliated companies becoming eligible for benefits under the Plan after January 1, 1989 and before January 1, 2003.

Purpose. The purpose of the Plan is to provide certain key employees of the Employer with contributions made on their behalf into a life insurance product which will be owned by the executives. The executives will apply or have applied for the life insurance, will have full ownership rights to the life insurance contract, and will be able to exercise all ownership rights without involvement by the Employer other than those rights specifically agreed to by the parties as described in this Program. This Plan is intended to provide benefits equal to those provided under the Norfolk Southern Corporation Executive Life Insurance Plan as in effect immediately prior to January 1, 2009.

Type of Plan. This Program is intended to provide a welfare benefit through current compensation. For certain individuals, the Program will provide for compensation to be paid after separation from service. For those individuals, that portion of the program will constitute a plan of deferred compensation, and to the extent applicable, this Program is intended to comply with the requirements of Section 409A of the Internal Revenue Code of 1986, as amended, and all applicable guidance.

Effective Date. The Plan is amended and restated effective as of December 1, 2018, to clarify the language regarding withholding obligations. The Plan was previously last amended and restated effective November 1, 2009.

II - Definitions

For the purposes of this Plan, the following terms will have the meanings indicated unless the context clearly indicates otherwise:

Administrator. "Administrator" means the Vice President – Human Resources of the Corporation.

Adverse Benefit Determination. "Adverse Benefit Determination" means a denial, reduction, or a failure to provide or make payment (in whole or in part) for the benefits provided under the Plan.

Beneficiary(ies). "Beneficiary" or "Beneficiaries" means the person, persons or entity as designated by the Participant, entitled to receive benefits payable from the Insurance Policy upon the Participant's death. If the Participant does not designate a Beneficiary prior to the Participant's death, then the Beneficiary or Beneficiaries shall be determined according to terms of the Insurance Policy.

Code. "Code" means the Internal Revenue Code of 1986, as may be amended from time to time. Any reference in this Plan to "applicable guidance", "further guidance" or other similar term shall include any proposed, temporary or final regulations, or any other guidance, promulgated by the U.S. Department of Treasury or the Internal Revenue Service.

Compensation. "Compensation" means the annualized base salary payable by the Employer to the Participant as compensation for services for that calendar year and, for purposes of this Agreement, "Compensation" shall include any amounts deferred by the Participant pursuant to any plan maintained by the Employer pursuant to Sections 401(a) and 401(k) of the Code, or deferred pursuant to any elective non-qualified plan maintained by the Employer.

Disability. "Disability" means a disability that enables a Participant to be eligible for and receive income replacement benefits for a period of not less than three (3) months under the Long Term Disability Plan of Norfolk Southern Corporation and Participating Subsidiary Companies by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than 12 months.

Employer. "Employer" means Norfolk Southern Corporation, a Virginia corporation, and its affiliated or subsidiary companies designated by the Administrator, or any successor to the business thereof.

Insurance Carrier. "Insurance Carrier" means one or more life insurance companies chosen by Employer to provide life insurance coverage through specific life insurance policies.

Life Insurance Product. "Life Insurance Product" means the life insurance product issued by an Insurance Carrier on the life of a Participant, to which the Employer will make annual premium payments on behalf of the Participant. The Life Insurance Product will be owned by the Participant and the Employer will have no interest in the Life Insurance Product other than those rights specifically agreed to in the application for such Life Insurance Product.

Participant. "Participant" means any employee who is eligible, under Section III, below, to participate in this Plan, and who elects to participate by completion of the insurance application as well as any Participation Agreement(s) or required forms necessary to issue or, exchange Life Insurance Products as needed from time to time, and whose insurance application has been accepted by the Insurance Carrier with premium rates acceptable to Employer (at the sole discretion of the Administrator) and whose life insurance coverage from this Program is in force. Participant may also be referred to as the "Insured" when the context is appropriate.

Participation Agreement. "Participation Agreement" means the agreement filed by a Participant and approved by the Administrator pursuant to Section III, below.

Retirement. "Retirement" means the Participant's Separation from Service following the Participant's attainment of age 55 with 10 years of service with the Employer.

Separation from Service. "Separation from Service", or any other similar such phrase means a Participant's "separation from service" with the Employer, for any reason, within the meaning of Section 409A of the Code, and Treas. Reg. §1.409A-1(h) and other applicable guidance.

Specified Employee. "Specified Employee" means an officer of the Employer with annual compensation greater than \$130,000 (indexed), a five percent (5%) owner of the Employer, or a one percent (1%) owner of the Employer with annual compensation greater than \$150,000 (not indexed), determined in each case in accordance with Code section 409A. If the Employer has more than 50 officers whose annual compensation exceeds \$130,000 (indexed), only the 50 officers with the greatest annual compensation shall be considered "Specified Employees." If an individual meets the definition of "Specified Employee" on December 31, the individual shall be a "Specified Employee" during the 12-month period commencing on the following April 1. For purposes of this definition, annual compensation shall be determined on the basis of Internal Revenue Service Form W-2, Wage and Tax Statement, excluding foreign compensation.

Targeted Death Benefit. "Targeted Death Benefit" is an amount of death benefits to be provided under a Life Insurance Product described in the Participation Agreement, on which Employer Contributions under this Program are to be estimated. The Participation Agreement may provide for different Targeted Death Benefits prior to and after Retirement.

III - Participation

Eligibility. A key employee is eligible to participate in this Plan only if the employee was eligible for benefits under the Plan as in effect prior to January 1, 2009. No employees became eligible to participate in the Plan after December 31, 2002.

Participation. An employee's participation in the Plan will be effective when the Life Insurance Product becomes effective and in force. Subject to the next two paragraphs, participation in the Plan will continue until the earliest of the date that the Participant separates from service with the Employer, until such time as Employer Contributions are no longer provided for by the terms of this Program, or as may otherwise be provided in the Program, including the Participant's Participation Agreement.

Requirement of Cooperation. As a condition for Participation in this Program, the Participant shall be required to comply with all normal and reasonable requests deemed necessary to apply for and obtain the Life Insurance Product, including but not limited to: providing such information as the Insurance Carrier may require for completion of the insurance application and related forms and documents; taking such physical examinations and supplying medical history as may be requested by the Insurance Carrier; signing the application for the Insurance Policy as the insured; and performing any other act to comply with the underwriting and policy issuance requirements which may reasonably be requested by the Insurance Carrier or the Employer. If, in the sole determination of the Administrator, the Participant has failed to adequately cooperate in the issuance of the Insurance Product, the Employer's obligations under this Plan shall cease immediately; if the Insurance Carrier is unable to issue a Life Insurance Product in the specified amount at standard rates or at a rate otherwise acceptable to the Employer, the Employer's obligations under this Plan shall cease immediately.

Change in Employment Status. Unless otherwise determined by the Administrator, in the Administrator's sole discretion, participation herein and eligibility to receive future contributions under this Plan will cease upon the termination of a Participant's eligibility to participate in the Corporation's Management Incentive Plan, the Executive Management Incentive Plan, or any successor plans thereto (other than by reason of death, Disability or Retirement).

IV - Targeted Death Benefit

Basic Formula. The contribution, as set forth in Section V, below, will be based on the Targeted Death Benefit. The Targeted Death Benefit will be as follows:

- **During Employment** – an amount equal to three (3) times Compensation reduced by \$50,000 plus the amounts set forth in the Participation Agreement.
- **After Retirement** – the amount set forth in a Participant's Participation Agreement as the post-retirement benefit amount.
- **During a period of Disability** – an amount equal to three (3) times Compensation reduced by \$50,000 plus the amounts set forth in the Participation Agreement, all as determined as of the date of Disability.

Limitations. The Targeted Death Benefit may be limited by factors other than those provided in the formula above and in such events shall be reduced as provided below:

- **Maximum Face Amount** – The Targeted Death Benefit may be limited by the maximum face amount permitted by the Insurance Carrier without underwriting, as may be agreed upon by the Employer and the Insurance Carrier from time to time.
- **Underwriting Criteria** – The Targeted Death Benefit may be reduced by the results of medical or other underwriting imposed by the Insurance Carrier and is limited to the amount of death benefit which can be provided by the Life Insurance Product, assuming preferred or standard rates.

V - Contributions

Employer Contributions. Employer will make contribution(s) to the Life Insurance Product on behalf of the Participant; the amount of such contribution(s) will be as follows:

- **During Employment and Disability** - an amount deemed necessary by the Employer, to provide the Targeted Death Benefit assuming level premium payments are made through age 64 (but no less than 10 years), and based on the reasonable financial assumptions determined as of the time of the Employer Contribution set forth in the attached Exhibit A. To the extent the Targeted Death Benefit is a function of Compensation, the Employer Contribution will be recalculated each year as of December 1, and based on the annualized Compensation as of December 1.
- **After Retirement** – Upon Retirement, the Employer shall continue to make Employer Contributions in an amount deemed necessary by the Employer to provide the Targeted Death Benefit in the minimum number of level annual premiums allowable without causing the Life Insurance Product to violate IRC section 7702, the definition of life insurance, and based on the other reasonable financial assumptions set forth in the attached Exhibit A. Any Employer Contributions to be made after Separation from Service shall be fixed as of the date of separation. To the extent that the amounts so determined would exceed the maximum permissible premium and cause the Policy to violate IRC section 7702, the definition of life insurance, in any subsequent year, such excess amounts will be paid in cash to the Participant at the time of separation.

Additional Employer Contributions. Employer will make an additional annual payment to Participants in an amount equal to the tax due on: (i) the amount of the Employer Contribution provided in the first paragraph of this Article which is in excess of the value of the coverage provided as measured using the Insurance Carrier's alternative term rates in effect as of January 1, 2009; and (ii) the amount of the Additional Employer Contributions under this paragraph. In calculating the portion of such additional payments each year attributable to the taxes due, it shall be assumed

that the Participant is subject to a combined marginal tax rate of 32.2%. Anything to the contrary notwithstanding, a Participant who holds a position at the level of Executive Vice President (or any successor position) or above at the time an Employer Contribution is made shall not be entitled to the Additional Employer Contributions described in this paragraph. The Administrator specifically reserves the right to alter or change the manner in which this additional bonus is to be calculated or paid, including but not limited to altering the applicable tax rate to be assumed under this paragraph.

Cessation of Employer Contributions. Employer Contributions will cease upon the earliest of the following events:

- Death
- Participant's separation from service with the Employer prior to Retirement;
- Participant partially or completely surrenders, attempts to take a loan from, or withdraws cash value from the Life Insurance Policy, or adjusts the face amount of the Life Insurance Policy other than as provided under the Target Death Benefit prior to Retirement;
- Participant makes a contribution to the Life Insurance Product prior to Retirement, except as may be permitted herein; and
- Participant has a Change in Employment Status as described above.

Nothing contained herein shall limit the Employer's ability to terminate Employer Contributions for any Participant prior to Retirement or Disability, or for all Participants upon the termination or amendment of this Plan in the sole discretion of the Employer.

Timing of Employer Contributions. Except as provided in Withholding; Payroll Taxes below, Employer Contributions to the Life Insurance Product will be made on an annual basis on January 15 of each year. A contribution is treated as being made on the date when it is due under the Plan if the payment is made on the due date specified by the Plan, or on a later date that is in the same calendar year. A payment also is treated as being made on the date when it is due under the Plan if the payment is made not more than 30 days before the due date specified by the Plan.

Delay in Payment for Specified Employees. Notwithstanding anything else to the contrary, contributions to be made by the Employer following a Separation from Service (other than by reason of death or Disability) of a Participant who is determined to meet the definition of Specified Employee at the time of Separation from Service shall be payable as otherwise provided, except that the initial payment shall be made no earlier than six (6) months following the date of the Separation from Service.

Participant Contributions. A Participant may not make additional contributions directly into the Life Insurance Product prior to Retirement. Employer will not have the responsibility to monitor or report such contributions.

Withholding; Payroll Taxes. The amount of the Employer Contributions and Additional Employer Contributions, if any, will be treated as current compensation, and as such, Employer shall withhold any taxes required to be withheld with respect to such amounts under local, state or federal law. Such withholding will be made to the greatest extent possible from other Compensation paid to the Participant, and to the extent other Compensation is insufficient to cover the required withholding, the Participant shall reimburse the Employer the amount necessary to meet its withholding obligation. If the Participant does not reimburse the Employer the amount necessary to meet its withholding obligation, then the Employer shall provide the Employer Contribution over the minimum period sufficient to permit the Employer to recover its withholding obligation from other compensation paid to the Participant, but in no event will the Employer Contribution and Additional Employer Contribution be made later than two and one-half months after the close of the calendar year for which the Employer Contribution was otherwise due.

VI - Benefits

Employer Contributions. The sole benefit to be provided by the Employer under this Program is the annual Employer Contributions described in Section V above, as determined by the Administrator based on the Targeted Death Benefit.

Ownership Of Life Insurance Product. Each Participant shall be named as the owner of the Life Insurance Product, and shall have all rights, privileges and duties of an owner as set forth in the Life Insurance Product. Such rights may include, without limitation, the right to name a Beneficiary to receive any death benefits due under the terms of the Life Insurance Policy, the right to request and make withdrawals from the product, including a complete surrender of the Life Insurance Product. All rights as owner of the Life Insurance Product will be exercisable without the consent or involvement of the Employer, except as may be limited in this Plan Document. Notwithstanding the foregoing, the Participant's exercise of the foregoing rights prior to Retirement may result in a termination of Employer Contributions as specified in Section V, above.

Death Benefits. This Program does not promise any particular level of death benefit, but only an annual contribution, as described herein, which may be based on the costs of providing certain levels of death benefit under a particular Life Insurance Product. The Employer does not guarantee any level of death benefits or that payment will be made by the Insurance Carrier. The Participant's rights to death benefits, if any, shall solely be as the owner of the Life Insurance Product described herein.

VII - Administration

Administrator; Duties. The primary duty of the Employer with respect to this Plan will be to calculate and make Employer Contributions into the Life Insurance Product on behalf of the Participants. The Administrator will also coordinate with Insurance carrier(s) to effect changes in the death benefit needed to maintain targeted benefit levels subject to the acceptance of the additional risk by the insurance carrier(s). The Administrator will have the authority to make, amend, interpret, and enforce all appropriate rules and regulations for the administration of the Plan and decide or resolve any and all questions, including interpretations of the Plan, as may arise in such administration. The Employer will not have any responsibility regarding the operation of the Life Insurance Product or the exercise of any ownership rights of the Life Insurance Product, which are exercisable solely by the Participant without any involvement from the Employer, except as may be specifically agreed upon.

Binding Effect of Decisions. The decision or action of the Administrator with respect to any question arising out of or in connection with the administration, interpretation and application of the Plan will be final, conclusive and binding upon all persons having any interest in the Plan.

VIII- Termination, Suspension or Amendment

Termination, Suspension or Amendment of Plan. The Corporation expressly reserves the right, in its sole discretion, to cease or suspend Employer Contributions under the Plan at any time, in whole or in part. The Corporation expressly reserves the right, in its sole discretion, to amend or terminate the Plan at any time by an appropriate written instrument executed by its Vice President – Human Resources. Any amendment may provide different amounts of Employer Contributions from those herein set forth. However, no such termination, suspension or amendment will adversely affect either the amount of Employer Contributions which have been made on behalf of the Participant prior to the date of such amendment or termination of this Plan or Employer Contributions scheduled to be paid on behalf of any Participant whose Retirement or Disability occurred before the date of such amendment or termination of this Plan.

IX - Claims Procedure

Claim. Any person or entity claiming the benefit of annual Employer Contributions described in Section V above, requesting an interpretation or ruling under the Plan, or requesting information under the Plan (hereinafter referred to as "Claimant") shall present the request in writing to the Administrator. Benefit claim determinations will be made in accordance with the terms of the Plan and will be applied consistently with respect to similarly situated claimants.

Denial of Claim. The Administrator shall provide a written explanation of any Adverse Benefit Determination within 90 days, unless special circumstances require an extension of time for processing the claim, in which case the Administrator will provide the Participant recipient with written notice of the extension before expiration of the 90-day period. The notice of the extension will indicate the special circumstances requiring an extension of time and the date by which the Administrator expects to render a decision. The extension will not exceed 90 days from the end of the initial period.

If the Administrator issues an Adverse Benefit Determination, claim or request is denied, the written notice shall state:

- a) The reason for the Adverse Benefit Determination, with specific reference to the Plan provisions on which the determination is based;
- b) A description of any additional material or information required and an explanation of why it is necessary; and
- c) An explanation of the Plan's claims review procedure and the applicable time limits, including a statement of the right to bring a civil action following an Adverse Benefit Determination on review.

Review of Claim. Any Claimant who receives an Adverse Benefit Determination or who has not received a response within sixty (60) days may request a review by notice given in writing to the Administrator. Such request must be made within sixty (60) days after receipt by the Claimant of the written notice of Adverse Benefit Determination, or in the event Claimant has not received a response sixty (60) days after receipt by the Administrator of Claimant's claim or request. The claim or request shall be reviewed by the Administrator which may, but shall not be required to, grant the Claimant a hearing. On review, the Claimant may have representation, examine pertinent documents, and submit issues and comments in writing relating to the claim for benefits.

Final Decision. The Administrator's review will take into account all comments, documents, records, and other information submitted, without regard to whether such information was submitted or considered in the initial benefit determination. The Administrator will render a decision within 60 days after receipt of written request for review, unless the Administrator determines that special circumstances require an extension of time for processing the claim, in which case the Administrator will provide the Participant with written notice of the extension before the expiration of the initial 60-day period. The notice will indicate the special circumstances requiring an extension of time and the date by which the Administrator expects to render a decision. The extension will not exceed 120 days from receipt of a request for review by the Administrator.

The Administrator will notify the Participant of its benefit determination on review. In the case of an Adverse Benefit Determination, the notice will include the specific reason or reasons for the Adverse Benefit Determination, reference to the specific Plan provisions on which the determination is based, and a statement that the Participant or

alternate recipient is entitled to receive, upon request and free of charge, reasonable access to and copies of all documents, records and other information relevant to the claim. The notice will also include a statement that the Plan does not have any additional mandatory appeal procedures and that the Participant has the right to bring a civil action under Section 502(a) of the Employee Retirement Income Security Act (ERISA). All decisions on review shall be final and bind all parties concerned.

X - Miscellaneous

Code Section 409A. To the extent applicable, the Plan is intended, and shall be construed, to comply with the requirements of Section 409A of the Code. The Corporation does not warrant that the Plan will comply with Section 409A of the Code with respect to any Participant or with respect to any payment, however. In no event shall the Corporation, its officers, directors, employees, parents, subsidiaries (including any Employer), or affiliates be liable for any additional tax, interest, or penalty incurred by a Participant or Beneficiary as a result of the Plan's failure to satisfy the requirements of Section 409A of the Code, or as a result of the Plan's failure to satisfy any other applicable requirements for the deferral of tax.

Not a Contract of Employment. This Plan will not constitute a contract of employment between Employer and the Participant. Nothing in this Plan will give a Participant the right to be retained in the service of Employer or to interfere with the right of Employer to discipline or discharge a Participant at any time.

Protective Provisions. A Participant will cooperate with Employer by furnishing any and all information requested by Employer in order to facilitate the Employer Contributions as provided for in this Plan, and by taking such physical examinations as Employer may deem necessary and by taking such other action as may be requested by Employer.

Governing Law. The provisions of this Plan shall be construed and interpreted according to federal law and, to the extent not preempted by federal law, according to the laws of the Commonwealth of Virginia.

Validity. If any provision of this Plan will be held illegal or invalid for any reason, said illegality or invalidity shall not affect the remaining parts hereof, but this Plan shall be construed and enforced as if such illegal and invalid provision had never been inserted herein.

Notice. Any notice or filing required or permitted under the Plan will be sufficient if in writing and hand delivered or sent by registered or certified mail. Such notice will be deemed given as of the date of delivery or, if delivery is made by mail, as of the date shown on the postmark on the receipt for registration or certification. Mailed notice to the Administrator will be directed to the Employer's address. Mailed notice to a Participant will be directed to the individual's last known address in Employer's records.

Successors. The provisions of this Plan shall bind and inure to the benefit of Employer and its successors and assigns. The term successors as used herein includes any corporate or other business entity which shall, whether by merger, consolidation, purchase or otherwise acquire all or substantially all of the business and assets of Employer, and successors of any such corporation or other business entity.

NORFOLK SOUTHERN CORPORATION

By: _____
Vice President – Human Resources

Date: _____

Exhibit A
NORFOLK SOUTHERN CORPORATION

Cash Value Target	Level Premiums solved to provide enough cash value immediately after assumed termination of employment at age 65 to continue the Targeted Death Benefit and endow at age 95. If employment extends past age 65, termination is assumed to occur the following year.
Death Benefit:	Targeted Death Benefit as provided by the Program.
Salary Scale	5% during employment to age 65
Premiums	During employment, payable annually through age 64 but no less than 10 years of premium payments; upon Retirement, payable for the minimum number of years permitted without violation of §7702 of the Code.
Cost of Insurance Charges	Actual COI charges up to date of resolve; thereafter, insurance carrier's current COI rates for the product as of the date of resolve.
Interest Crediting Rate:	Actual policy crediting rates up to date of resolve; thereafter, insurance carrier's current general account crediting rate for the product as of the date of resolve.
Premium Duration:	As provided by the Program

CONSOLIDATED (MORE THAN 50% OWNED AND CONTROLLED) SUBSIDIARIES
OF NORFOLK SOUTHERN CORPORATION AND STATES OF INCORPORATION
AS OF JANUARY 31, 2019

	<u>STATE OR COUNTRY OF INCORPORATION</u>
Atlantic Investment Company	Delaware
General American Insurance Company	Vermont
General Security Insurance Company, Ltd.	Bermuda
Norfolk Southern Properties, Inc.	Virginia
Norfolk Southern Railway Company	Virginia
NS Fiber Optics, Inc.	Virginia
PDC Timber LLC	Delaware
Pennsylvania Investment Company, Inc.	Delaware
PLC Timber LLC	Delaware
Pocahontas Development Corporation	Kentucky
Pocahontas Land Corporation	Virginia
Pocahontas Surface Interests, Inc.	Virginia
T-Cubed of North America, LLC	Delaware
Thoroughbred Technology and Telecommunications, LLC	Virginia
 <u>Norfolk Southern Railway Company Subsidiaries</u>	
Airforce Pipeline, Inc.	North Carolina
Alabama Great Southern LLC	Virginia
Alabama Great Southern Railroad Company, The	Alabama
Camp Lejeune Railroad Company	North Carolina
Carolina and Northwestern Railway Company	Delaware
Central of Georgia LLC	Virginia
Central of Georgia Railroad Company	Georgia
Chesapeake Western Railway	Virginia
Cincinnati, New Orleans and Texas Pacific Railway Company, The	Ohio
Citico Realty Company	Virginia
CNOTP LLC	Ohio
Georgia Southern and Florida Railway Company	Georgia
GSFR LLC	Georgia
High Point, Randleman, Asheboro and Southern Railroad Company	North Carolina
HPRASR LLC	North Carolina
Interstate Railroad Company	Virginia
Lamberts Point Barge Company, Inc.	Virginia
Mobile and Birmingham Railroad Company	Alabama
Norfolk and Portsmouth Belt Line Railroad Company	Virginia
Norfolk Southern International, Inc.	Virginia
Norfolk Southern - Mexico, LLC	Virginia
NorfolkSouthernMexicana, S. de R.L. de C.V.	Mexico
North Carolina Midland Railroad Company, The	North Carolina
NS Spectrum Corporation	Virginia
PLS Investment, LLC	Virginia

STATE OR COUNTRY
OF INCORPORATION

Norfolk Southern Railway Company Subsidiaries (continued)

Rail Investment Company	Delaware
Reading Company, LLC [Virginia]	Virginia
RIC LLC	Delaware
South Western Rail Road Company, The	Georgia
Southern Rail Terminals, Inc.	Georgia
Southern Rail Terminals of North Carolina, Inc.	North Carolina
Southern Region Materials Supply, Inc.	Georgia
State University Railroad Company	North Carolina
S-VA Corporation	Virginia
TCV, Inc.	Delaware
Tennessee, Alabama & Georgia Railway Company	Delaware
Tennessee Railway Company	Tennessee
Thoroughbred Direct Intermodal Services, Inc.	Pennsylvania
Thoroughbred Emissions Research, LLC	Virginia
Thoroughbred Funding, Inc.	Virginia
Thoroughbred Logistics Services, Inc.	Virginia
Transworks Company	Indiana
Transworks Inc.	Virginia
Transworks of Indiana, Inc.	Indiana
Triple Crown Services Company	Delaware
Virginia and Southwestern Railway Company	Virginia
Wheelersburg Terminal LLC	Virginia
Yadkin Railroad Company	North Carolina
Yadkin Railroad Investment LLC	North Carolina

Norfolk Southern Properties, Inc. Subsidiaries

Alexandria-Southern Properties, Inc.	Virginia
Arrowood-Southern Company	North Carolina
Charlotte-Southern Hotel Corporation	North Carolina
Lambert's Point Docks, Incorporated	Virginia
Nickel Plate Improvement Company, Inc., The	Indiana
NS Transportation Brokerage Corporation	Virginia
Sandusky Dock Corporation	Virginia
Southern Region Industrial Realty, Inc.	Georgia
SRIR Timber LLC	Delaware
Virginia Holding Corporation	Virginia
Westlake Land Management, Inc.	Florida

In addition, NS owns direct or indirect equity interest in:

Conrail Inc.
Consolidated Rail Corporation and its consolidated subsidiaries
CRR Holdings LLC
Delaware Otsego Corporation
DOCP Acquisition, LLC
Green Acquisition Corp.

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Norfolk Southern Corporation:

We consent to the incorporation by reference in registration statement numbers 333-71321, 333-205880 and 333-207640 on Form S-8 and 333-222869 on Form S-3 of Norfolk Southern Corporation of our reports dated February 8, 2019, with respect to the consolidated balance sheets of Norfolk Southern Corporation as of December 31, 2018 and 2017, 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, 2018, 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 the effectiveness of internal control over financial reporting as of December 31, 2018, which reports appear in the December 31, 2018 annual report on Form 10-K of Norfolk Southern Corporation.

/s/ KPMG LLP
KPMG LLP
Norfolk, Virginia
February 8, 2019

CERTIFICATIONS

I, James A. Squires, certify that:

1. I have reviewed this Annual Report on Form 10-K of Norfolk Southern Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: February 8, 2019

/s/ James A. Squires

James A. Squires

Chairman, President, and Chief Executive Officer

CERTIFICATIONS

I, Cynthia C. Earhart, certify that:

1. I have reviewed this Annual Report on Form 10-K of Norfolk Southern Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: February 8, 2019

/s/ Cynthia C. Earhart

Cynthia C. Earhart

Executive Vice President Finance and Chief Financial Officer

CERTIFICATIONS OF CEO AND CFO REQUIRED BY RULE 13a-14(b) OR RULE
15d-14(b) AND SECTION 1350 OF CHAPTER 63 OF TITLE 18 OF THE U.S. CODE

I certify, to the best of my knowledge, that the Annual Report on Form 10-K for the period ended December 31, 2018, of Norfolk Southern Corporation fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of Norfolk Southern Corporation.

Signed: /s/ James A. Squires
James A. Squires
Chairman, President and Chief Executive Officer
Norfolk Southern Corporation

Dated: February 8, 2019

I certify, to the best of my knowledge, that the Annual Report on Form 10-K for the period ended December 31, 2018, of Norfolk Southern Corporation fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of Norfolk Southern Corporation.

Signed: /s/ Cynthia C. Earhart
Cynthia C. Earhart
Executive Vice President Finance and Chief Financial Officer
Norfolk Southern Corporation

Dated: February 8, 2019

NYSE REGULATION

Domestic Company Section 303A Annual CEO Certification

As the Chief Executive Officer of Norfolk Southern Corporation (NSC), and as required by Section 303A.12(a) of the New York Stock Exchange Listed Company Manual, I hereby certify that as of the date hereof I am not aware of any violation by the Company of NYSE's corporate governance listing standards, other than has been notified to the Exchange pursuant to Section 303A.12(b) and disclosed on Exhibit H to the Company's Domestic Company Section 303A Annual Written Affirmation.

This certification is:

- Without qualification
or
 With qualification

By: /s/ James A. Squires

Print Name: James A. Squires

Title: Chairman, President and Chief Executive Officer

Date: Jun 05, 2018

Note: THE NYSE WILL NOT ACCEPT IF RETYPED, MODIFIED OR IF ANY TEXT IS DELETED.

If you have any questions regarding applicability to your Company's circumstances, please call the Corporate Compliance department prior to submission.