

BEFORE THE
SURFACE TRANSPORTATION BOARD

DOCKET NO. FD 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
—CONTROL—
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN
RAILWAY COMPANY

VERIFIED STATEMENT

OF

MATTHEW GRAHAM

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VERIFIED STATEMENT

OF

MATTHEW GRAHAM

1. My name is Matthew Graham. I am the General Director of Environmental Management at Union Pacific Railroad Company (“UP”). I have held this position since January 2022.

2. I have worked at UP since 2022, and I have been in the railroad industry for my entire career of more than 28 years. I started out as a locomotive engineer before joining BNSF Railway’s environmental team in 2000. I hold a Bachelor of Science degree from the University of Nebraska, as well as an MBA from Bellevue University.

3. In my role at UP, I am chiefly responsible for the railroad’s environmental compliance efforts, site remediation, and environmental program development.

4. Since this docket’s opening, I have overseen UP’s environmental review and analysis and worked with the Surface Transportation Board’s Office of Environmental Analysis (“OEA”) regarding this merger’s potential environmental implications.

5. I am submitting this statement to describe UP’s and Norfolk Southern’s (“NS’s”) environmental commitments, the proposed transaction’s environmental benefits, and Applicants’ process for assessing the transaction’s potential environmental impacts.

I. UP's Commitment to the Environment

6. Environmental protection is an important part of what we do at UP. That means we continuously evaluate and improve our environmental management system, our environmental infrastructure, and the way we use technology to reduce risk. These efforts help us to shrink our environmental footprint and improve our efficiency. Today, we use a programmatic management system, informed by ISO 14001 elements, to standardize work, to support and improve day-to-day operations, and to ensure compliance with environmental laws and regulations. In addition, the lessons we learn by operating in some of the country's most challenging environments drive continual improvement.

7. The nature of our business supports sustainability. Railroads are among the least environmentally intensive ways to transport goods. Just one UP double-stacked, high-priority intermodal train can replace more than 500 trucks¹—and, according to the Association of American Railroads, “railroads are three to four times more fuel efficient than trucks.”² This means that if just 25 percent of the freight that currently moves via truck for at least 750 miles were diverted to railroads, it would

¹ A 17,000-foot intermodal train, the longest train UP currently operates, contains approximately 550 intermodal boxes. Each box is equivalent to one truckload.

² Ass'n Am. R.Rs., *The Positive Environmental Effects of Increased Freight by Rail Movements in America* 3 (2020), <https://www.aar.org/wp-content/uploads/2020/06/AAR-Positive-Environmental-Effects-of-Freight-Rail-White-Paper-62020.pdf>.

save about 1.2 billion gallons of fuel annually.³ That fuel efficiency means less air pollution.

8. Well over 90 percent of UP's fuel use and air emissions are attributable to UP's locomotives. To protect the environment and reduce costs for our customers, UP has long sought to improve fuel efficiency. To accomplish this, we have made significant technology investments. For example, we are close to installing an advanced Energy Management System ("EMS") on our entire fleet of AC road locomotives. EMS helps to adjust locomotive throttling and braking to optimize fuel usage. In 2023, when EMS was installed on about 83 percent of active locomotives, the system saved UP more than 18 million gallons of fuel. That much fuel would have produced approximately 2,800 tons of NO_x, 83 tons of particulate matter, and 246,000 metric tons of CO_{2e} emissions.⁴ We also use automatic shutdown technology on almost 100 percent of our locomotives, which saves money and reduces pollution by preventing unneeded idling. These investments and others are paying off: Our fuel consumption rate has fallen from 1.388 gallons per thousand gross ton-miles in 2000 to 1.072 in 2025, which adds up to 4.9 billion gallons in fuel savings.⁵ We estimate that this 28 percent fuel consumption improvement is associated with emissions

³ *Id.*

⁴ See Workpaper "Railroad Emission Data Inventory.xlsx," Tab "2023 EMS Emission Savings," Cells B13:B17. "CO_{2e}" means carbon dioxide equivalent.

⁵ See *id.*, Tab "UP Emission Savings Since 2000," Cells B8, B33, and B35.

reductions of about 55 thousand tons of NO_x, 1,600 tons of particulate matter, and 3.7 million metric tons of CO_{2e}.⁶

9. Improving our efficiency and reducing our environmental impact is an ongoing project. That is why our Mechanical Department, in partnership with railway technology company ZTR, built a hybrid switching locomotive. Hybrid locomotives use both a diesel engine and battery power. Just like a hybrid car, this dual motive-power system saves money on diesel fuel and reduces emissions—by up to 80 percent compared to traditional switching locomotives. This pilot project will expand to six hybrid locomotives, which we will test in a working rail yard.

10. UP is also a steward for the land and natural resources in our care. We follow habitat conservation plans designed to protect ecosystems and endangered species on our property and along our right of way. We work with government agencies, nonprofit organizations, and community members to mitigate environmental harms and protect resources. We review projects to assess and minimize environmental impacts, and may change site selection and make design modifications to help protect wetlands and other sensitive habitats. During our planning and review, we apply the following mitigation hierarchy for operations near critical biodiversity: (1) avoid impact; (2) minimize impact; (3) rehabilitate or restore; or (4) when necessary, offset impacts elsewhere.

11. We have taken many practical steps to protect environmental resources. For example, when we replaced three bridges near the Pacific Ocean, we funded a

⁶ See *id.*, Cells B54:B58, and G54.

program to help eradicate Cape Ivy—an invasive species that harms native vegetation and disrupts ecosystems. Between 2019 and 2023, we produced environmental and biodiversity impact assessments for more than a thousand bridges and other facilities to help guide our future activities. In 2021, we rescheduled work at a particular site to avoid disturbing roosting northern long-eared bats. We also implemented work restrictions to protect pallid sturgeon.

12. UP also supports conservation efforts through its Community Ties Giving Program. Under the Program’s Environmental Sustainability pillar, UP helps to fund projects led by nonprofits and community-based organizations. For example, UP has worked with The Nature Conservancy to restore prairies in North Texas, to rewild unused farmland in the California Central Valley, and to conserve grassland in Nebraska.

13. There is always room for innovation at UP, which is why we encourage our employees to identify ways the business can get better at environmental protection. “Planet Tracks,” a sustainability-focused business resource group, helps our employees follow through on the railroad’s environmental commitments. The group brings together colleagues with an interest in sustainability, helping them to collaborate on environmental stewardship initiatives.

II. NS’s Commitment to the Environment

14. From its LEED-certified headquarters to its award-winning sustainability program, NS has long considered environmental stewardship to be a core business principle. It promotes this culture through its “Our World Our Choice” environmental reference manual. The manual provides employees with guidance and

protocols on how to conduct NS's business functions while operating safely and protecting the environment.

15. NS utilizes an environmental management system that incorporates the major elements of ISO 14001. The system helps NS manage its environmental responsibilities and ensure compliance with environmental laws and regulations. NS has also established an "Environmental Policy Council." This body of senior executives from across the corporation reports directly to the CEO, and oversees and monitors corporate environmental policy.

16. Like UP, NS has worked to reduce air emissions by improving its fuel efficiency. For example, between 2023 and 2025, NS improved its gallons-per-gross ton-mile ("GTM") rate from 1.11 to 1.03.⁷ NS continues to modernize its locomotive fleet by installing more fuel-efficient diesel engines and more powerful AC traction motors. As of September 2025, NS had converted one thousand road locomotives from DC to AC traction. Also, in partnership with Alstom, NS is developing battery-diesel hybrid technology. That technology will be used to convert two locomotives, delivering quieter, lower-emission operations—with an estimated 90 percent fewer emissions and 30 percent more pulling capacity than traditional diesel engines.⁸

⁷ See *id.*, Tab "NS C-Rate Data," Cells E5:E7.

⁸ See Norfolk Southern, *Norfolk Southern to launch cutting-edge hybrid locomotive project through Alstom partnership, federal support* (Nov. 12, 2024), <https://www.norfolksouthern.com/en/newsroom/news-releases/norfolk-southern-to-launch-cutting-edge-hybrid-locomotive-projec>.

17. NS has also modernized its intermodal facilities to make the facilities cleaner and more sustainable. Through 2024, NS has invested in 27 diesel-electric hybrid cranes and 7 fully electric wide-span cranes.

18. Protecting the natural beauty and health of NS's surroundings is also a core mission. For example, NS owns and operates the 14,400-acre Brosnan Forest. The Forest contains over 13,000 acres protected by a conservation easement, over 800 acres of wetlands, and 6 miles of streams. NS also recently won the Best Sustainability Program award from the U.S. Chamber of Commerce for its work restoring a shoreline at its Lamberts Point Terminal in Norfolk, Virginia. The project involved building a "living shoreline" that uses native plants, oysters, and sustainable grading techniques to stabilize the shoreline. This design protects the Chesapeake Bay by preventing nutrients like nitrogen, phosphorus, and sediment from entering the watershed. The project earned a substantial tradable nutrient-credit grant from the Commonwealth of Virginia.

III. Environmental Benefits of the UP/NS Transaction

19. Combining the UP and NS networks will result in direct environmental benefits by improving the efficiency of existing rail operations. And, because the combination improves the competitiveness and reach of rail transportation, the transaction will reduce pollution by diverting freight truck traffic from public roads.

A. Reduced Emissions of Criteria Air Pollutants and CO_{2e}

20. Combining the UP and NS networks and optimizing the new railroad's operating plan will improve efficiency and drive direct environmental benefits. An optimized, combined network means more direct routes that reduce train miles,

locomotive unit miles, GTMs, car miles, and intermediate rail-to-truck handlings—all of which contribute to lower emissions. Altogether, we expect reductions of over 2 billion GTMs under the optimized plan, which we estimate will reduce emissions by approximately 389 tons of NO_x, 12 tons of particulate matter, and 35,000 metric tons of CO_{2e}.⁹ Although NS's rate of fuel consumption per GTM is already lower than UP's, further improvement is possible. By implementing our fuel efficiency initiatives on the NS network and leveraging our best operating practices for locomotive idling, we will deliver additional emission reductions by cutting annual consumption of fuel by as much as 16 million gallons.¹⁰ That adds up to reductions of approximately 2,513 tons of NO_x, 75 tons of particulate matter, and 169,000 metric tons of CO_{2e}.¹¹

Table 1
Approximate Criteria Pollutant & CO_{2e} Benefits

	CO_{2e} Metric Tons	NO_x Tons	PM Tons
Optimized Operating Plan	35,000	389	12
Fuel Initiatives	169,000	2,513	75
Total	201,000	5,660	85

21. Trains operate more efficiently—and therefore emit less air pollution—when they keep moving. When trains must stop, idle, or slow, they consume more fuel

⁹ See Operating Plan Workpaper “C-Operating Plan Metrics vFinal.xlsx,” Tab “Growth Plan,” Cell D4; Workpaper “Railroad Emission Data Inventory.xlsx,” Tab “Optimized Plan Emissions,” Cells B24:B27.

¹⁰ See Janke VS Workpaper “Synergies Transportation - Operating.xlsx,” Tab “Fuel Use Merger Initiatives,” Cell C66.

¹¹ See Workpaper “Railroad Emission Data Inventory.xlsx,” Tab “Fuel Use Merger Initiatives,” Cells B15:B18.

and release more pollution. The UP/NS merger offers major opportunities to improve service and efficiency by eliminating interchanges between the two railroads. Reduced interchanges allow traffic to move faster, and more reliably, while reducing the need for hand-offs and intermediate railcar handling. These are significant energy drains in the rail network today. This merger will reduce all three of these energy drains at interchange points like Chicago, St. Louis, Memphis, and New Orleans.

22. The merged network will be optimized, enabling larger, more contiguous territory for the new UP operations. Unified planning will consolidate traffic on more direct and fuel-efficient corridors, allow longer and heavier trains that no longer must stop in yards to change carriers, and deploy the best available locomotives over longer, uninterrupted routes. For example, as explained in the Operating Plan, we expect to route a new California-to-Northeast intermodal train through Kansas City, Missouri, Springfield, Illinois, and Sidney, Illinois—instead of exchanging cars in the congested Chicago hub. The route will be up to 252 miles shorter and hours faster than the existing route—and will keep trains out of Chicago. These types of routing efficiencies deliver improved service as well as meaningful emissions reductions. We estimate that approximately 65,000 daily car miles will be eliminated because of this transaction, helping to save on fuel consumption and therefore to reduce air pollution across the country.¹²

¹² See Am. App., Vol. 2, Operating Plan § 1.3.

23. The combined railroad will have more resources, such as staff and locomotives, with which to work. That will allow for improved railcar utilization through more single-line service. And improved railcar utilization means a reduction in empty railcar miles—changes that will improve cycle times, allowing the railroad to schedule crews and locomotives more efficiently. Also, because the combined network will have more efficient sidings, trains can be longer and stops for passing can be shorter. By unlocking these efficiencies, the combined railroad will further reduce miles of travel and related emissions and fuel usage.

24. Technology investment and standardization will also unleash new economies of scale. This includes advanced fuel management technologies, modernized locomotive fleets, data analytics for optimal routing, speed control, energy management, and deployment of best practices learned from coast-to-coast operations. We will drive continuous improvement by implementing best practices as we build on our institutional knowledge. These improvements are shown in the GTM efficiencies noted above.

25. The combined network will also drive environmental benefits by reducing truck traffic. A transcontinental railway will be more competitive with long-haul trucking: It is cheaper and faster to ship goods on one unified railroad than on two separate railroads. Transporting freight via rail is three to four times more fuel efficient than by truck¹³ and also reduces road traffic in communities. Long-haul

¹³ Ass'n Am. R.R.s., *The Positive Environmental Effects of Increased Freight by Rail Movements in America* 3 (2020), <https://www.aar.org/wp->

trucks are loud and adversely affect health, quality of life, and the environment of the communities they operate in. Reducing the number of trucks on American roads means less vibration and noise pollution in rural and urban communities. Reduction of these environmental factors will benefit communities with quieter highways and streets and make them more livable.

26. The optimized UP/NS network will be well positioned to grow and support the economy by diverting long-haul truck shipments to rail. By diverting approximately 2.1 million long-haul shipments from America's highways, the combined railroad is estimated to save over 3.8 million metric tons of CO_{2e} annually by the end of year three.¹⁴ In addition, as explained in the Operating Plan, the combined network will allow UP to eliminate approximately 355 daily "rubber tire interchanges" mostly in the Chicago area—transfers by truck of containers between intermodal terminals.¹⁵ This decrease in Chicago-area truck traffic is expected to achieve reductions of approximately 5,900 metric tons of CO_{2e} and 15 tons of NO_x emissions annually.¹⁶

content/uploads/2020/06/AAR-Positive-Environmental-Effects-of-Freight-Rail-White-Paper-62020.pdf.

¹⁴ See Am. App., Vol. 2, Verified Statement of David T. Hunt at Exhibit 2-5 (Estimated total truckloads and truck-miles removed from roadways (excludes local drayage mileage for intermodal diversions)); Workpaper "Railroad Emissions Data Inventory.xlsx," Tab "Diversions from Long-haul Truck," Cell B28.

¹⁵ See Am. App., Vol. 2, Operating Plan § 4.2.

¹⁶ See Workpaper, "Railroad Emission Data Inventory.xlsx," Tab "Rubber Tire Interchange Close," Cells B20:B21.

B. Reduced Highway Use

27. The movement from road to rail will result in less congestion and less wear and tear on the nation's roads. Rail networks handle heavy loads efficiently, reducing the need for highway repairs—which improves long-term infrastructure resilience. This will save taxpayer dollars slated for road maintenance, improve safety across the nation, and reduce emissions from idling.

C. Reduced Vibration and Noise Pollution

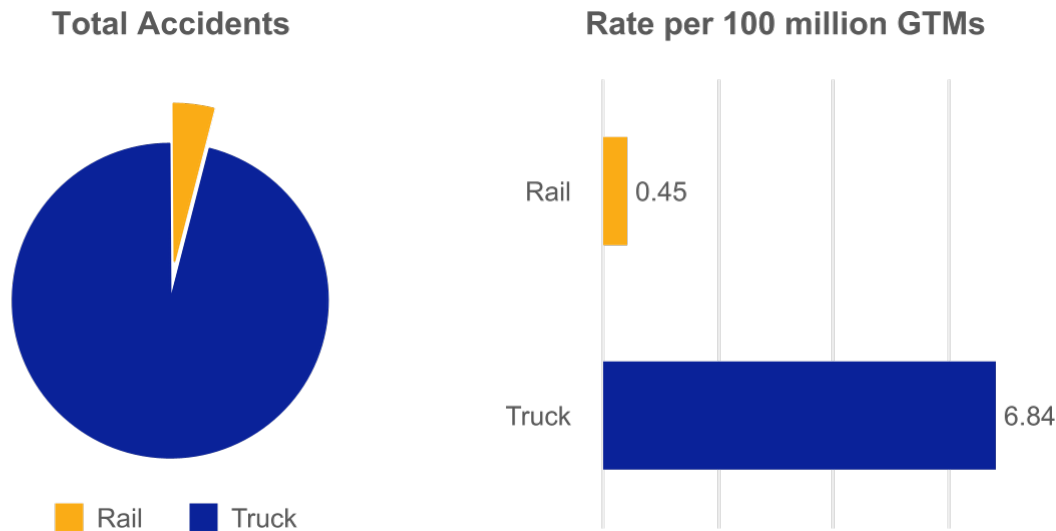
28. Long-haul trucks are loud and affect the quality of life of the communities in which they operate. Reducing the number of trucks on American roads means less vibration and noise pollution. Every community where the UP/NS transcontinental railroad takes trucks off roads will benefit from quieter streets and highways, and the health benefits of reduced noise-related stress and sleep disruption.

D. Fewer Accidents

29. Moving from road to rail will also have significant safety benefits. Specifically, it will avoid a significant number of collisions because, when standardized for freight volume, trains are involved in significantly fewer collisions than trucks. Based on statistics from the Department of Transportation, when compared to shipping by train, trucking has 15.3 times as many accidents, 15 times as many injuries, and 4.8 times as many fatalities.¹⁷

¹⁷ See Workpaper “Freight Safety and Volume Trucking vs. Rail (2023).xlsx,” Tab “Safety Statistics,” Cells F7:F9.

Figure 1¹⁸
2023 Freight Safety



30. Those safety benefits will add up across the 3.589 billion truck miles that are estimated to be diverted from truck to rail.¹⁹ Applying the Federal Motor Carrier Safety Administration’s 2022 national rate of 48.3 persons injured in large-truck crashes per 100 million large-truck vehicle miles traveled,²⁰ removing 3.589 billion truck miles from the national highway system would be associated with approximately 1,750 fewer injuries from large-truck accidents, assuming injuries decline proportionally. (And using the 2022 national rate of 1.79 fatalities in large-

¹⁸ See *id.*, Cells B7:E7.

¹⁹ See Am. App., Vol. 2, Verified Statement of David T. Hunt at Exhibit 2-5 (Estimated total truckloads and truck-miles removed from roadways (excludes local drayage mileage for intermodal diversions)).

²⁰ Fed. Motor Carrier Safety Admin., *2024 Pocket Guide to Large Truck and Bus Statistics*, 35 (July 2025), <https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/2025-09/FMCSA%20Pocket%20Guide%202024-v6%20508%20.pdf>.

truck crashes per 100 million vehicle miles,²¹ removing 3.589 billion truck miles from the highway system would be associated with approximately 65 fewer fatalities per year.) Put in context, this is the equivalent to preventing injuries to roughly five people every day from highway collisions with large trucks.

31. In addition, hazardous-material releases are less likely when those materials are transported by rail instead of by truck. According to the Association of American Railroads, 99.99 percent of hazardous-material shipments by rail arrive without a train-accident-caused release.²² Also, as the Federal Railroad Administration has recognized, rail transportation of hazardous materials is “the safest land-based method of moving large quantities of chemicals over long distances.”²³ Applicants describe their specific plans for rigorous, post-merger hazardous material safety in the Safety Integration Plan.

IV. UP and NS Are Participating in the Board’s Environmental Review Process

32. UP and NS have engaged with the Board’s OEA.

33. UP engaged an independent third-party consultant selected by OEA, Vanasse Hangen Brustlin, Inc., to assist the Board in the preparation of environmental documents.

²¹ *Id.*

²² Ass’n Am. R.Rs., *Freight Rail Hazmat Safety* 1 (2020), <https://www.aar.org/wp-content/uploads/2020/10/AAR-Hazmat-Fact-Sheet.pdf>.

²³ Fed. R.R. Admin., *Hazardous Materials Transportation* (last updated Mar. 8, 2023), <https://railroads.dot.gov/research-development/program-areas/hazmat-transportation/hazardous-materials-transportation>.

34. UP has received several information requests from OEA asking for information. UP provided detailed responses to OEA's requests.

35. UP and NS will continue to respond to any questions or requests from OEA. As OEA and the third-party consultant conduct the environmental review process, UP and NS will remain engaged with OEA to ensure that the office is able to complete its review accurately and promptly.

36. Applicants recognize that new and rerouted freight traffic on the combined network may have localized impacts. Applicants will work with OEA to mitigate impacts as appropriate. The combined network will attract shippers with improved freight transportation options. Much of this increased rail traffic on the new UP/NS network will be offset by less traffic on nearby public roads or other rail networks. Applicants believe that the transaction-related traffic changes will have relatively minor negative localized environmental impacts that will be largely offset by the transaction's substantial environmental benefits.

VERIFICATION

I, Matthew P. Graham, declare under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this statement.

Executed this 29th day of April, 2026.

