Virginia Rail Policy Institute
5101 Monument Ave.
Richmond, VA 23230
804-649-1405
www.varpi.org

Virginia Rail Policy Institute
National Freight Strategic Plan Critique
February 16, 2021

The U.S. Department of Transportation released its *National Freight Strategic Plan* (NFSP) in September, 2020 with a minimum of fanfare. A draft of this plan was first released in 2015, followed by a lengthy public comment period that ran until April 2016. Given the rather long gestation period of the NFSP, the recent release is a significant disappointment.

While the document does a capable job characterizing the nation's freight movement system, it is not a ***plan***. It is what one would expect from a ***survey*** of how things stand today. The data and tables in the report provide useful information on topics such as market shares, principal commodities, and volume trends. But this does not constitute a ***plan.*** A plan necessarily deals with how we want the future to look, and what we need to do to make that happen. In short, ***what needs to change and how?***

Topics highlighted in former Secretary of Transportation Chao's cover letter instead feature academic discussions such as urban congestion, workforce development, a double-digit increase in e-commerce, wireless connectivity, artificial intelligence, tracking freight movements, blockchain technology, delivery drones, and three-dimensional printing. Leadership is needed to meet challenges posed by these trends, according to Secretary Chao.

These are worthwhile considerations, but the plan for achieving them is missing.

The NFSP was a requirement of the Fixing America's Surface Transportation (FAST) Act, and it was intended to implement the policy objectives of the FAST Act. It sets out goals in three areas:

1. improving safety and security of the national freight system
2. modernizing infrastructure to ensure economic growth and competitiveness; and
3. innovation in data, technology, and workforce capabilities.

Like much earlier research and studies, NFSP projects rail's share of freight tonnage to decline by 2045 compared to trucking. Table 3 shows rail tonnage is projected to grow 25.3% over the 25-year forecast period versus and increase of 32.2% in trucking tonnage. Because trucking volume currently is already 6.9 times greater than rail, by 2045 it will be 7.3 times greater due to higher growth. Nowhere in NFSP is there any sign of alarm or even concern at this projection.

This evolution in market share should be a major cause for concern. There are clear societal benefits to moving freight off the highways, but this is not discussed, one might say ignored, in our opinion. A strategic freight plan might be expected to examine the implications of such an imbalance, and to address whether anything needs to be done to ameliorate its impacts or forestall its development.

This omission is the focus of the remainder of this critique, in which we examine the implications of continued erosion of rail market share and growth of trucking, and what can or should be done to deal with it.

Impracticality of Highway Dependence

- Financial, environmental, and logistical obstacles preclude construction of thousands of new highway lane-miles to support continued growth of mid- to long-distance trucking.
- Interstate highways are aging, and in the next 25 years substantial costs will be incurred repairing roads and bridges have that are approaching 70 to 90 years old. Higher truck volumes will make such needs even more acute. State and federal highway budgets will be burdened by these ever-increasing maintenance demands, with less and less funds available for new construction.

- Permitting of new highways is becoming more difficult. Environmentalists, historic preservationists, social justice activists, community members, and other members of the public are more aggressively opposing new highway projects due to increasing awareness of the damage they can cause, such as the vast amounts of land required for such expansions, the pollution they produce, the health costs of emissions, and the social impacts of disrupting neighborhoods.
- In many areas there is simply no room for expanding highways.

Decarbonization

- A strong movement to reduce carbon emissions nationally will have an increased impact on transportation. The transportation sector is the largest source of pollution in the United States, ….and greenhouse gas impact on climate change. Over the next 25 years we can expect growing opposition to fossil fuel combustion in vehicles and a demand for electric cars and trucks, instead. California is already proposing to prohibit sale of internal combustion vehicles after 2035, and often what starts in California is a harbinger for policy changes elsewhere.
- Current, and projected, trucking volumes might be impractical if diesel engines are banned. Batteries and hydrogen fuel cells work, but will drive up costs and sharply limit range, hindering growth in the trucking mode.

Mode Shift

- Encouraging more mid- to long-distance freight to move by rail would be a reasonable policy for consideration in a strategic freight plan, as it could reduce the need for new highway capacity, and carbon emissions, as well.
- Railroad electrification is commonplace throughout the world except in North America. It is a proven technology, available today without expensive and extensive development. Rail transport is already over three times more energy efficient per ton-mile than over-the-road trucking, without electrification. Electrification of United States railroad mainlines could *double* that advantage.
- Vast sums are being spent by government on promotion of electric vehicle development.
- Ironically, but unfortunately, the focus has been on vehicles that operate relatively few daily miles, such as urban trash trucks and school buses. But railroads, where electrification is possibly the easiest and operate day-in and day-out over tens of thousands of miles, have so far escaped any consideration.
- An infrastructure goal of the NFSP is economic competitiveness. Other countries around the world are enhancing their ability to compete by utilizing their rail systems more fully and productively* than here in the United States. A true ***plan*** could reasonably be expected to address steps to be taken to close this gap.
  *The EU has designated 2021 as the European Year of Rail to promote the use of trains as a safe and sustainable transport.

As a European example, Switzerland's constitution *mandates* maximum truck diversion to trains through the Alps. Following the completion of the Gotthard Base (rail) Tunnel, the equivalent of 121 mile-long trains per day can be handled at speeds between a 60-mph and a 100-mph. Companies such as Hupac, RAlpin, and Ökombi operate scores of midrange intermodal trains every day between their numerous European terminals. The trains are dispatched and hauled on government-run railroads, sharing the same tracks with passenger trains that operate at speeds up to 150-mph. Clearly the concept works, but it has never been tried in North America.

Public Policy affecting Private Carriers

- Infrastructure investment across modes ideally would occur where the return on such investment is greatest. But the question of who enjoys the benefits is ignored. It is assumed that if the carriers receive the investment, increasing their capacity and/or efficiency, will benefit society. But this is not necessarily the case.
- A primary reason why public-sector transportation policy fails to make greater use of America's railroads seems to stem from their being private companies. On the one hand, public investment in infrastructure tends to go to publicly owned facilities. On the other hand, privately owned entities tend to avoid public investment to avoid public oversight. That does raise unique and sometimes difficult issues, but a strategic ***plan*** might well spend some time considering how those investments might be managed, to the benefit of the public. If the rail mode is excluded simply because it is private, infrastructure investment will go elsewhere, causing diminishing returns.

- Avoiding public investment in private rail infrastructure is typically justified by such concerns as enriching shareholders or executives. Too often these are simply handy excuses. Public funding is channeled to benefit private companies in other modes on a regular basis without the barrier of similar fears. For example, highway dollars are routinely spent on truck climbing lanes, truck parking areas, and truck messaging signs. Beneficiaries are private truckers. The Army Corps of Engineers regularly allocates billions of dollars for lock maintenance on our inland waterways, directly benefiting private barge operators. But the public benefits are also clear, and investing in public infrastructure is accepted, even if private entities benefit as well.

Public/private partnerships can be structured with railroads to avoid unfairness concerns. Public benefits from enhancing the capabilities of underfunded rail systems to High-Performance Rail (HPR) standards can enable railroads to shoulder a larger share of the nation's freight traffic. In key corridors, public/private partnerships can be formed with joint ownership of facilities and joint participation in new revenues. Public investment can represent an appropriate ownership share, and the private industry's existing investment in right-of-way and equipment can buy in at its relevant share. But experience has shown that they will not. A way must be found to incentivize private railroads to willingly accept additional traffic to remove it from the highways.

Rail Industry Posture

Working with the rail industry to take on a larger freight transportation role may be difficult, even with the inducement of government funding. Currently the industry is in the grip of Wall Street investors whose only concern seems to be preserving dividends. Because of the magnitude of the infrastructure, larger railroad earnings can be achieved by reducing costs more easily than by growing business, and increasingly the industry is locked on this goal.

- Downsizing and disinvestment are paramount. Getting rid of employees, miles of track, classification yards, locomotives, and freight cars reduces cost and lowers the operating ratio, delighting investors, but it also reduces industry capabilities. Each new wave of such system rationalization renders the nation's Class I railroads less able to cope with future growth.
- The concept of a “common carrier,” holding itself out to accept any freight offered to it has been lost in a cloud of deregulation. Deregulation has allowed railroads to become selective in what they carry, to maximize profit. As the trains get longer, shipments of one, or a few cars become “inconvenient.” So, rates are set high enough to drive the traffic away, to the trucks. This might be considered an admirable business strategy, but it serves the public poorly.
- A legislated unfunded mandate got Positive Train Control implemented and built, but it was hugely unpopular and arguably unfair.

A *National Freight Strategic Plan* needs to address this critical freight transportation roadblock. The rail mode offers compelling energy, economic, and environmental benefits that are now being denied to the public and to the nation's shippers because the privately-owned railroads apparently find it more profitable, or so it seems in our opinion, to restrict the traffic they accept.

How They Got There-The Loss of Railroad Market Share

The railroad system once handled everything, from small shipments to trainloads. The development of the highway system caused a shift to trucks. Smaller shipments, of less than a carload (LCL) disappeared from the market around 1960. Coincident with that, the concept of unit trains, where one shipment constitutes the entire train, was established, initially for minerals and grain. The rise of worldwide manufacturing and the introduction of containerization added significant additional trainload traffic. Today, carload shippers are discouraged by both high rates and unreliable and unpredictable service.

Concurrently, the vast reduction in passengers service allowed for a significant reduction in train movement capacity, as precise timing of arrivals and departures became less important. Many main lines received improved signaling at the expense of the elimination of one of the two tracks, the theory being a single track, with long passing sidings, could handle most of the traffic almost as well. With the implementation of “Precision Scheduled Railroading”—a marketing term, if there ever was one—trains have gotten exceedingly long. The “long” sidings are no longer long enough, and substantial operating delays are sustained. Strategies, like “fleeting” the trains in one direction for a period of time, delays the opposing trains. Some mainlines have been abandoned, if a diversion to a parallel line could be affected, despite an increase in mileage, which might be in the hundreds.

This industry's rationalization produced significant operating economies that resulted in a reduction in the quality and the range of service, leaving out the smaller shippers. But capacity is strained, largely is a result of excessive rationalization of the fixed plant (tracks). Consequently, railroads are perceived by naive market analysts as successful, because they struggle to handle the traffic that comes to them. As long as the analysts are without knowledge of the capacity they once had, the railroads have little incentive to do more.

The industry's current claims of massive investment are dwarfed by the real needs that would benefit the greater society. In the meantime, the public suffers from too many trucks on the highways, while they bear the cost of repairing those highways, and providing more capacity. The beneficiaries of this lack of a policy are the railroad stockholders, not the public.

Possible Alternatives

> One possibility might be open access, where any entity can bring its own train and operate it over the system. But this will not protect the smaller shippers, and it raises safety concerns. Trains are much larger and heavier than trucks, and their stopping distance is far greater than what the engineer can see ahead of him or her. Unlike trucks, trains are operated by engineers who are intimately familiar with a given territory, and how a long train will act and react over that particular terrain. A driver can take a truck anywhere, over territory sight unseen. Additionally, the size of trains, and the need to keep them safely spaced, calls for a level of central control over movements that is not present in highway transportation. Allowing access needs to be carefully controlled and monitored. Allowing access by unqualified operators can be disastrous, to a much greater degree than on the highways. An errant train can do a lot more damage than a truck. Whether sufficient monitoring and control is feasible and fundable is open to question. Enhanced Positive Train Control (PTC 2.0) may offer new operational options.

> Another strategy might be regulating the railroads as public utilities. Given that mergers have virtually eliminated shippers' access to competing railroads, this might be particularly appropriate. What is carried, and who is served can be dictated by a regulatory body. Rates could be set to fairly compensate the railroad for the services it offers, and levels and types of service can be defined and overseen by a public agency. Just like a gas supplier or an electric power generator, the services would be required to be comprehensive, to serve the entire market, and the prices set, to be reasonably profitable. Rates for less desirable traffic would be commensurate with the cost of providing the service, providing disadvantaged shippers a cost-effective alternative to trucks that also would be price-adequate to the railroad.

The public utility model could overcome the railroads' resistance to public investment in its infrastructure. Infrastructure enhancements, enabling the Class I railroads to handle an increased share of the nation's freight, might be funded with public dollars, just like infrastructure in other transport modes. But the experience in Virginia has shown that the private railroads will decline the funds, to avoid public oversight. They have preferred to continue as they are, selectively attracting traffic that is most easily handled and declining traffic that is not, through their freedom to set rates. The public utility model would make it happen, as a matter of public policy.

Summary

It is time, in the context of a strategic national freight plan, to do far more than look at the way things are, and note where they will be in 25 years, without assuming any significant changes take place. The *status quo* is inadequate in significant ways. We need to postulate significant changes and examine probable outcomes. Reliance on over-the-road trucking on an expanded national highway network might not be achievable. Vital focus on getting the rail industry to take a larger role is needed. And serious discussion needs to ensue on how to make that happen.

Although the private ownership model arbitrarily restricts the availability of capacity, neither the public nor disadvantaged shippers have leverage or recourse to fix the problem under the current system of regulation and public policy. It is clear the railroads themselves lack insight and incentive for change. Only the government can do the job, and USDOT needs to recognize this. A true ***plan*** would tackle this dilemma, suggesting possible actions and evaluating their feasibility and effectiveness.

The USDOT needs to take the lead.