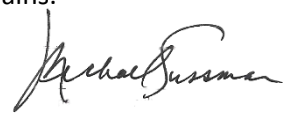
"People in and out of government are tired of working on reports and studies that are rarely read again, let alone applied to the real issues and opportunities of the day. This document introduces the innovation at the heart of the groundbreaking 2021 Nevada State Rail Plan (NVSRP). Based on three decades of fieldwork, these principles and tools resulted in a sustainable, freight-based economic development action plan for Nevada. You are strongly encouraged to learn more and make your unique contribution to this critical shift from reports to results in your region, state, or industry. Together we can transform our industrial supply chains."



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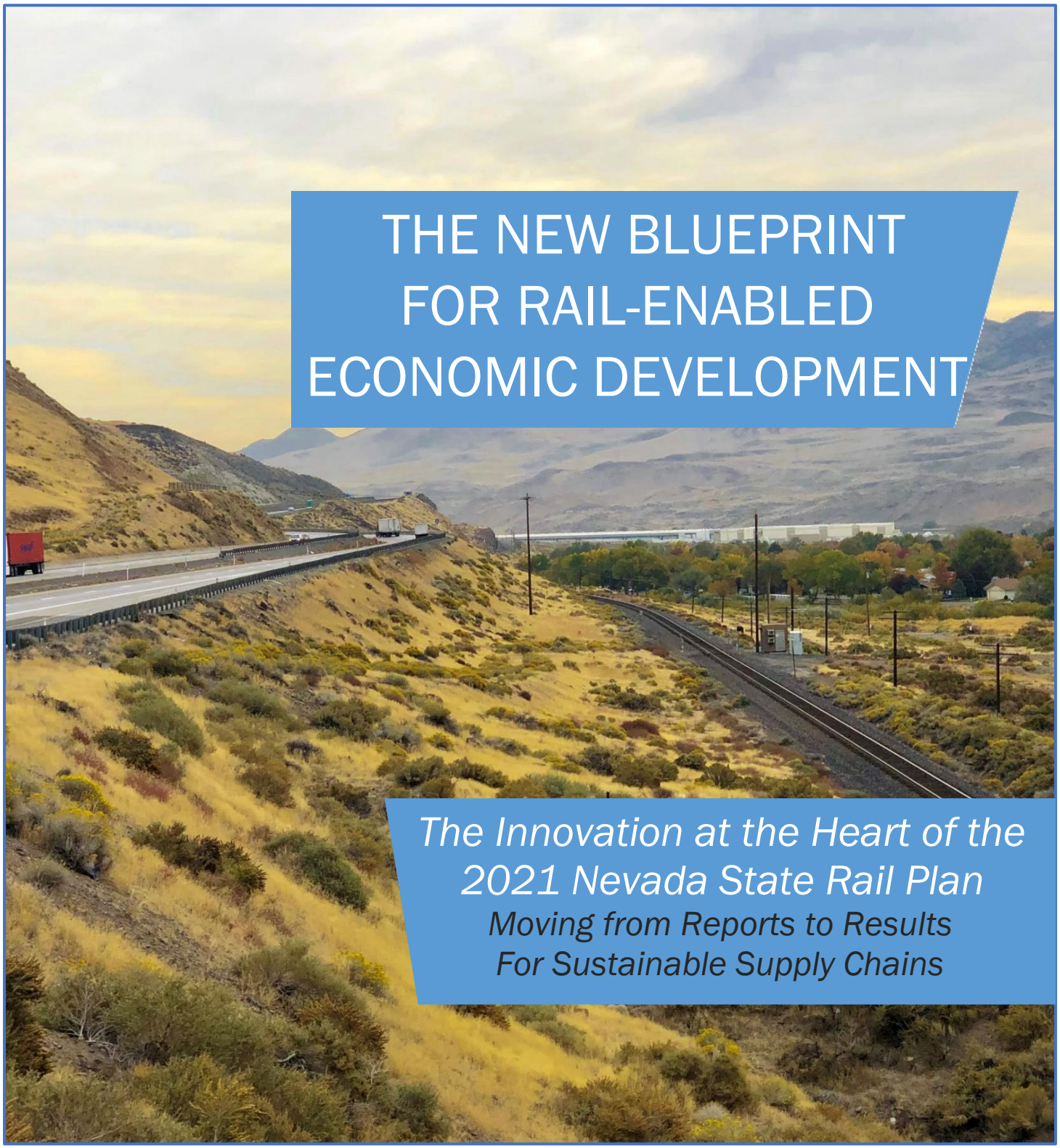

THE NEW BLUEPRINT FOR RAIL-ENABLED ECONOMIC DEVELOPMENT

The Innovation at the Heart of the 2021 Nevada State Rail Plan

Moving from Reports to Results
For Sustainable Supply Chains

Preface

For nearly three decades as trusted advisors to railroads and communities, Strategic Rail Finance (SRF) and its affiliate NGO, OnTrackNorthAmerica (OTNA), have advanced a reconception of public-private sector planning and investment. This new set of principles, practices, and tools, introduced here, constitutes a breakthrough for improving a state or region's rail infrastructure and economy while addressing looming environmental and congestion issues.

This innovation was applied at the heart of the groundbreaking 2021 Nevada State Rail Plan (NVSRP), authored by SRF and OTNA. Solving the problems of our day requires this new approach to empowering business, government, and community leaders to collaborate for results, not more studies and reports. Widespread adoption will facilitate private-sector capitalization of expanded rail service, leading to the balanced transport system and efficient supply chains that all states deserve.

Introduction: Why Innovate, and Why Now?

For decades, railroads have been engines of growth, especially across the West, where vast distances placed a premium on efficient transportation. However, rail has been eclipsed over time by the subsidized convenience of vast road networks.

Rail route mileage in the United States peaked in 1916 at 254,000 miles.[1] After a steady retreat over the following hundred years, the active network shrunk to 137,000 miles in 2020.[2] For close to 80% of the nation's towns and cities, trucks are the only surface freight transportation mode.[3] In Nevada, for example, of all freight moving in, out, and through the state, only 4% is hauled by rail to or from a Nevada business.[4] Despite highway congestion and air quality issues that could be alleviated by the energy, capital, and space efficiency of moving freight by rail, the United States continues to bear the costs and consequences of more and more trucks.

It is crucial that we grasp this: These negative trends are *not inevitable*. They are simply the extension of unaddressed flaws in supply chain planning, design, and investment. Acknowledging those flaws and assessing their actual societal costs are the first steps to reversing them.

Why have state rail plans and infrastructure investment failed to shift the ongoing imbalance in surface transportation modal share between trucks and trains?

Before any public sector-led planning endeavor can transform a marketplace dynamic, previous attempts must be evaluated with an open mind. While America's over-reliance on cars for passenger transport is often discussed, the parallel and ongoing expansion of truck-centric supply chains is rarely examined. Though the United States has perhaps the most robust freight rail system in the world, attracting revenue of about $90 billion a year, trucking is a $900 billion-a-year industry.

Despite the earnest efforts of knowledgeable staff within departments of transportation in every state and the federal government, the cost to our society of this growing imbalance remains unaddressed by the marketplace or public policy.

Truck service has become ubiquitous because road infrastructure is provided as a public service. Almost any new industrial project with a logistics need is instantly accommodated, as if roads were a fundamental economic right. On the other hand, freight rail service requires education, coordination, and private-sector investment to connect each shipper and receiver.

Federal and state freight transportation plans narrowly focus on individual modes and projects and assume modal competition will deliver system efficiencies. Although this principle may have worked well enough in a vast frontier with seemingly unlimited natural resources, its shortsightedness is now apparent. Based on this outmoded viewpoint, the government's role has simply been to ensure that growing volumes are met with ever-increasing public sector funding to address chokepoints and maintenance. Instead, a new strategy that intelligently optimizes the benefits of each mode is desperately needed.

Despite its outsized importance to the economy, freight transportation is too often an afterthought in supply chain planning. Production, distribution, and warehousing facilities are sited through an indiscriminate series of commercial land transactions, ignoring the impacts of moving material to and from these locations. Consider the

[1] RailServe.com: source link, accessed July 10, 2020.
[2] Federal Railroad Administration, source link, accessed July 10, 2020.
[3] Source: Darren Roth, American Trucking Association, Interviewed by Author, September 27, 2019.
[4] STB Waybill Sample 2018; TRANSEARCH® Truck Data 2018

biofuel facilities in Nevada that receive their feedstock from California by truck and then ship their product back to California by truck, all the while receiving California Low Carbon Fuels Standard tax credits. Or Tesla's movement of 60 tractor-trailers per day of auto components from Sparks, NV to Fremont, CA, despite both facilities having adjacent rail lines.

Given California's large population and economy and the vast amount of freight passing through California ports to the rest of North America, the explosive growth of warehouses in Nevada is understandable yet problematic. The unfortunate results have been increasing truck traffic and congestion and a diminished quality of life in both states. Given railroads' ability to move freight with far greater efficiency than trucks, why is only one of the 137 warehouses in Nevada using rail?

Supply chain systems have profound societal implications. Transportation is the country's largest emitter of poisonous greenhouse gases, with freight transportation the fastest-growing polluter, which, if unconstrained, will literally choke the nation. Transportation has a considerable cost to our treasury and all Americans. We must move as much freight by rail as possible to meet our environmental and supply chain needs.

Moving from Reports to Results

The Nevada Department of Transportation (NDOT), by engaging SRF, chose to forge a new path in state rail planning that not only meets federal requirements but immediately begins advancing economic opportunities in Nevada. From the outset, the commitment was to create a new future, not simply a moment-in-time report.

SRF prepared for this new approach by analyzing over 100 state rail plans while overseeing the funding of rail projects in 42 states over the last thirty years.

At this moment of near-crisis challenges, the model advanced in Nevada can be scaled up across the continent. All supply chain components must be considered in concert. Industrial activity, freight transportation, land use, and their inter-relationship can be reconceived to create efficient and sustainable supply chains, not simply to move an ever-increasing volume of goods. Infrastructure investors worldwide are ready to fund these innovative, commercially relevant rail growth plans.

On the Road to Sustainable Supply Chains

1. Design for Action and Be Prepared to Implement
2. Radical Inclusion Amasses Synergy and Attracts Capital
3. The Right Tools Make the Right Data Actionable
4. Rail and Roads are One System
5. Focus on Whole Supply Chains, not Just Individual Projects
6. Railroads and Supply Chains Do Not Begin or End at State Lines
7. Smart Logistics Drives Sustainable Economic Development
8. Freight Transportation Should Be Inseparable from Land-Use Planning
9. Present Transportation Providers with a Compelling Action Plan
10. Government Does Not Have to Fund Freight Rail Development

1. Design for Action and Be Prepared to Implement

Create dynamic plans that can be updated and enhanced over time

One of the distinctive features of this state rail plan is that stakeholders have been engaged to collaborate and contribute to the document's ongoing evolution and implementation. This is contrary to typical plans that produce a document fixed in time and thus outdated even before submission. In essence, we are designing an action plan for moving forward, not just a report on data about the past. Therefore, this process prioritizes staying informed, nimble, and learning from our partners as real-life needs and conditions change. These inevitable changes can then be integrated into the plan and communicated to stakeholders. This ensures that planned transportation and infrastructure projects are continually synched with new economic and marketplace data and shifting priorities related to climate and community.

This approach necessitates a structure for plan implementation that extends beyond the plan submission to USDOT. In the case of the NVSRP, the Nevada Governor's Office of Economic Development (GOED) provided a bridge contract with OTNA to initiate the implementation phase. OTNA has been focused on enrolling public- and private-sector stakeholders in the state to ensure continued implementation.

2. Radical Inclusion Amasses Synergy and Attracts Capital

Bring together all regions, shippers, properties, projects, and communities

Effective statewide transportation investment must account for as many stakeholders and projects as possible. And, given transportation's outsized impact on communities and the environment, it is important to include stakeholders impacted by the system, not just those directly using it.

The NVSRP process began with a commitment to include the entire state in the effort. Indeed, this has proven to be not only achievable but practical. This commitment led to in-depth interviews with 375 (and counting) stakeholders and an additional 141 shippers. In contrast with typical stakeholder engagement—which is often limited to the perfunctory sending and collecting of questionnaires— our team of interviewers in Nevada is comprised of rail industry veterans, knowledgeable in politics and organizational nuance, and capable of engaging interviewees as collaborators. These interactions provide a vista of the supply chain network that opens a window to pragmatic and valuable marketplace opportunities, which otherwise remain unseen in the typical planning process.

This first-hand research was augmented by extensive satellite imagery and in-the-field inspection of the entire state's rail network. With a critical mass of on-the-ground intelligence, economic development plans can be based on actual pragmatic business opportunities that can be challenging to serve by rail independently but, when aggregated, provide the volume on which to base successful infrastructure investments and service.

Because public funding for transportation infrastructure is limited, accepted logic has called for state rail plans to prioritize only the most valuable projects and regions, as if there isn't enough capital for *all* sensible projects. Decision-making within this scarcity mindset understandably deploys ranking, comparing, and voting as decision-making practices. When then, are the "lesser" ranked projects and their communities supported and funded?

Given that ample private-sector capital is available for all worthwhile freight rail infrastructure investments, <u>all</u> projects, communities, and regions should be included. The NVSRP is grounded in the understanding that transportation is a system best served when all parts are included in comprehensive growth and improvement plans. In fact, the viability of local rail operations is enhanced by the number and diversity of customers, large and small. Inclusion of all opportunities improves the feasibility and, therefore, the fundability of rail development plans.

Every region, town, business, and project counts and should be identified, cataloged, and included, as was done in Nevada.

3. The Right Tools Make the Right Data Actionable

Provide a complete set of rail development tools

Raw data that informs is one level of usefulness; data made accessible and applicable is another. The NVSRP's ambitious objectives were made possible by integrating the findings from data research and direct outreach into a multi-layer web map. This innovative tool provides stakeholders with access to critical information unavailable in standard planning exercises, facilitating the grounded insights and decisions needed for building efficient and sustainable supply chains.

Here are some of the datasets we built and mapped:

- All active and non-active rail sidings in the state
- All truckload shippers in the state
- All truckload shippers located adjacent to a rail line
- All commercial projects that could benefit from expanded rail service
- Opportunity zones
- Private-sector rail construction projects under consideration

By augmenting conventional data approaches with commercially relevant supply chain data, planners and stakeholders can identify new markets that can be reached for the distribution and sourcing of goods and materials. This transforms the fundamental notion of state rail plans -- from accepting the inevitability of a future based on the past to designing a new future.

When we share the data and resulting pragmatic insights with those who can most effectively utilize the information—economic development agencies, land developers, shippers, and transportation providers—these stakeholders can more readily identify potential tenants and business growth opportunities.

Accurate geographical representation is a core component of the OTNA "Mapping System." Rail lines extend for miles across political jurisdictions, topographical features, and geographic elements that form the basis for organizing information around geography and maps. The NVSRP's first-of-its-kind 10-layer digital mapping system displays the location, ownership, and contact information for each data category listed above, plus the exact routing of the entire rail network in relation to existing properties, buildings, topography, and landscape features. The mapping system provides access to the wide array of datasets that have been cataloged, allowing stakeholders to further invent productive uses of the comprehensive information. Already, this tool has informed where new rail lines in Nevada can be routed to provide rail service to important industrial properties and regions. The data organization, reliability, and transparency provide a robust platform for stakeholder engagement and subsequent add-on layers.

To move transportation plans into a new era of relevance, it is critically important to recognize the fundamental shortcoming of the free, federally provided Freight Analysis Framework (FAF) data, which only offers geographic information to the level of the 50 U.S. States and 173 BEA[5] Regional Zones. By contrast, for example, Transearch™

[5]Bureau of Economic Analysis (US Department of Commerce)

data reports to the level of more than 3000 U.S. Counties. FAF only reports freight commodity flows by tonnage, while Transearch™ data reports both by tonnage and the number of truck units. During the creation of the 2021 NVSRP, SRF analyzed over 10.5 million truck trip records using multiple data sources. 4.1 million, or 40% of these truck trips, were empty return moves and secondary moves between warehouse and distribution centers. This highly relevant and statistically significant insight would not have been possible from the sole use of FAF data, a commonplace practice in public sector transportation plans.

Producing results, not just reports, requires a fuller set of data sources. While aspects of FAF data are useful, supply chain analysis must be informed by alternative private-sector data sources, including IHS Markit's Transearch™ Trucking, FreightWaves Sonar, and Panjiva.

Truck Data is More Valuable than Rail Data in a Rail Plan

Traditional rail plans are packed with freight rail data. But this data represents freight movements already successfully moving by rail, with routings, frequency, and rates that work for shippers. Are there improvements for a state's rail network to which this rail data points? Perhaps, but not many. Counter-intuitively, it is trucking data that is most useful in a rail plan. Truck shipment data provides a critical window into the bulk of a region's freight activity, illuminating the path toward productive truck-to-rail conversion and an improved modal balance. The 2021 Nevada State Rail Plan is informed by a deep dive into rail and truck freight data.

4. Rail and Roads Are One System

Integrate to make the optimal use of each mode

When rail mileage in the United States peaked in 1916 at 254,000 route miles, it became clear that an expanded road network to and from rail stations was needed.[6] However, the nascent trucking and highly developed rail industries were made to compete rather than cooperate for commercial and policy attention. Little effort to establish a symbiotic relationship between rail and highway carriers has been put forth in the United States. Our country continues to pay the price of that failure, as the U.S. rail system only carries 38.2% of the land freight ton-miles.[7] According to the USDOT Bureau of Transportation Statistics, of the 17.8 billion tons of freight transported by all modes within the United States in 2015, only 10% were carried by rail, while 65% were carried by truck. By 2045, U.S. freight transport is expected to grow 40% to 25 billion tons annually.[8] Over-reliance on truck transportation for this new volume will proportionally increase pollution and traffic congestion.

Our goal is not to limit the viability or success of the trucking industry—but to enable as much future rail freight service as practical. To this end, neither Nevada nor any other state can afford to pit highway, air, pipeline, and railway transport modes against each other in public policy or the marketplace. The goal is not to "take trucks off the road," as is often expressed unnecessarily. Truck transportation is a critical component of goods movement that should be integrated with its complementary transportation partner—railroads.

Given each mode's relative impact on energy consumption, emissions, highway congestion, safety, road maintenance costs, noise, light pollution, and land use—sensible planning is now critical. Achieving a new sustainable balance will require thoughtful integration alongside helpful competition. The only way to advance this level of shared productivity between trucking and railroading is to create it together. Including all perspectives leads to wise public policies and sustainable commercial activity. With that intention, OTNA continues to engage with the

[6] Bureau of Transportation Statistics, source link, accessed July 10, 2020.
[7] Bureau of Transportation Statistics, source link, accessed July 10, 2020.
[8] Bureau of Transportation Statistics, source link, accessed July 10, 2020.

trucking industry to explore how improved rail service can also enhance the stability and profitability of trucking companies and the quality of work-life for truck drivers.

5. Focus on Whole Supply Chains, not Just Individual Projects

Collaborate boldly across businesses, agencies, and industries

During the vast build-out of the national rail network in the 19th century and early 20th century, individual local projects were conceived within corridor and regional supply chain systems. For example, in 1878, James J. Hill, the respected railroad builder of the Great Northern Railway, envisioned a complete supply chain approach when evaluating the opportunity of 1600 miles of undeveloped forest and mineral resources between St. Paul, MN, and the Pacific Ocean. His supply chain approach to railroad development, typical of the era's rail leaders, has long been supplanted by a narrow focus on individual projects and short-term results. Nevada's early rail line development was also informed by this focus on supply chains, from mine to factory and farm to table. OTNA's rail planning protocol reinstitutes regional supply chain strategies for the 21st century.

Case in Point: The Mining Materials Logistics Strategy

Nevada's mining industry is surging while under-utilizing rail transportation, severely limiting the viability of associated processing and manufacturing facilities that could be co-located instate to expand the economic beneficiation of the mining industry. Nevada's rail network has contracted from its 1914 peak of 2,418 route miles to its current 1,190 route miles. This track is almost exclusively main line along I-80 and I-15 with just a few branch lines. Like nearly all industries, the mining industry in Nevada comprises entities that primarily operate independently. However, significant economic efficiencies for these enterprises can be gained by collaboratively planning the logistics of incoming and outgoing materials as a complete supply chain system. And, with the critical opportunity of producing environmentally attractive, strategic minerals and products, the return on investment from a rail-enabled logistics strategy in Nevada is substantial.

Conceiving rail infrastructure around the needs and opportunities of individual businesses and then integrating those needs into comprehensive plans can significantly advance transportation efficiency, business profitability, and supply-chain sustainability. This logistics strategy is presented thoroughly in Chapter 4 of the NVSRP. The NVSRP team has explored the creation of this Mining Materials Logistics Strategy with the Nevada Mining Association, the Nevada Bureau of Mines, the University of Nevada Mackay School of Earth Sciences and Engineering, and leading mining companies in the state. All parties have seemed open-minded to building a successful strategy.

The NVSRP database organizes Nevada into eight regions distinguished by a combination of geography, governing jurisdictions, and the operating characteristics of the rail network. Segmenting the state's rail system and relevant data into eight logical regions enables stakeholders to focus their efforts as a team on local rail development. Statewide dialogues can also be convened effectively because all roles are identified. The 550+ stakeholders cataloged within the database are organized by region, industry, and/or public service role, enabling group dialogues with the most appropriate stakeholder representatives. This specificity demonstrates respect for stakeholders' time and energy, engenders trust and participation, and facilitates long-term engagement. New tools have been developed to facilitate this coordination and collaboration.

Regional and statewide teamwork is made practical by a unique platform designed to optimize meaningful exchanges of ideas and information between large numbers of diverse stakeholders. This methodology, called IntelliSynthesis™, puts into practice cutting-edge research in civil discourse and large-group engagement. The platform accommodates participants on their own schedules from the convenience of their remote locations and

features an inquiry-based dialogue methodology developed by OTNA. IntelliSynthesis™ transforms any virtual or live stakeholder summit into a powerful gathering of collective input and intelligence.

6. Railroads and Supply Chains Do Not Begin or End at State Lines

A new model that accounts for interstate supply chain dynamics is critical

The expanding economic relationship between Nevada and California has amplified the inefficiencies that result from haphazard or non-existent multi-state planning. Commercial land development for warehouse and distribution facilities in Nevada that primarily serve California has led to only one warehouse in Nevada utilizing rail.[9] The California-Nevada commerce driving this demand has become so robust that 70% of all trucks moving in Nevada are coming from or going to California on that trip. Since this truck-centric growth predominantly occurs east and south of Las Vegas and east and north of Reno-Sparks, the resulting increase in California-related traffic passing through these two major metropolitan areas exacerbates highway congestion, safety concerns, and air quality challenges. Additionally, snow on I-80 at the Donner Pass—the only east-west truck route through the Sierra Mountains—often delays truck movements, adding to the uncertainty and costs of freight transportation for businesses in both states.

Regional and Corridor Planning Beyond State Lines: The Southwest Supply Chain Coalition as a Model

Nevada rail-based economic development can advance sustainably if informed by productive engagement across state lines with California, Utah, and Arizona's public agencies, port authorities, economic developers, businesses, communities, and transportation providers.

OnTrackNorthAmerica has conceived and positioned the Southwest Supply Chain Coalition, awaiting state leadership to embrace and fund its implementation. OTNA has prepared for this implementation by identifying, cataloging, and engaging stakeholders across the public and private sectors in all four states, including Caltrans, Port of Long Beach, Port of Oakland, and the Utah Inland Port Authority.

The SSCC would assume responsibility for:

- Convening and facilitating stakeholders as partners
- Educating and guiding stakeholders for maximum effectiveness
- Leading the vision for progressive rail development
- Managing the elements of plan execution
- Delivering logistics and railroad advisory services
- Maintaining a large set of community and commercial relationships
- Establishing the SSCC Industrial Rail Development Fund
- Facilitating corridor and regional development strategies
- Recruiting and managing specialized experts

[9]Sourced from current Google Earth data, accessed May 2020.

7. Smart Logistics Drives Sustainable Economic Development

Integrate rail planning with economic development

Across the country, transportation departments and economic development agencies work independently on matters that co-influence rail development. The gap between their efforts has widened even further due to the reduced Class I railroad staff assigned to coordinate with these public-sector entities. Rail-served economic development has consequently been overlooked, with transportation efficiency suffering as a result. This dynamic is at the root of untold missed opportunities yet presents an ideal opening for significant rail-enabled economic development growth. How many industries have an entire infrastructure of public sector agencies established to support their successes? Nearly every state's department of transportation, as well as the U.S. government, has "rail departments" charged with supporting rail industry service and safety. Now is the time for a new era of coordination and collaboration among these transportation departments, economic development agencies, local planners, transportation providers, shippers, and communities. While the COVID-19 pandemic highlighted the critical importance of efficient medical supply chains, ongoing environmental issues demand that we develop lower-impact goods movement for all commodities.

Service Through the State is Different than Service to the State

Gaps in public policy combined with Wall Street pressure have inadvertently encouraged a Class I railroad business model that focuses on long-haul goods movement with limited local pick-up and delivery. In many states, this local rail service gap has been partially addressed by shortline and regional rail companies that have acquired parts of the rail network from Class I operators. Nevada has no such Class II or III rail providers. Consequently, of all the rail traffic in Nevada, 83% passes through the state without stopping. This pass-thru dynamic is similar in every state.

While it is critical to ensure that this long-haul rail traffic transits Nevada safely and efficiently, it is vitally important that businesses and communities in the state benefit from more direct rail connections and transloading opportunities. Union Pacific Railroad and BNSF, the two rail carriers of this long-haul traffic, operate responsibly while paying the state millions in property and fuel taxes. That said, to move toward a rail system that better serves the state, the NVSRP focuses on projects that benefit shippers and land developers in the state.

8. Freight Transportation Should be Inseparable from Land Use Planning

Site selection must consider transportation to and from properties

Developable land is now recognized as a valuable resource in short supply. Nevadans quickly point out that the federal government owns 86% of the state through the Bureau of Land Management, Department of Defense, Department of the Interior, or the U.S. Forest Service. Continued population and economic growth necessitate making the best use of limited private land and space for moving goods and people. Given the compelling differential in the amount of space it takes to move goods on highways versus railroads (27 miles of trucks are needed to move the same goods as a one-mile train), a balanced, efficient system requires land-use planning that recognizes externalized impacts.[10] Since freight-oriented development stimulates the long-distance movement of

[10] *A mile-long train contains about 81 railcars, each with a 200K pound tare weight, totaling 16.2 million pounds. Tractor trailer tare weights are typically 40K pounds, requiring 405 trucks to carry the same weight. 65 MPH equates to 95 feet per second, requiring 617 feet of safe following distance per truck (1 second per 10 MPH), plus the typical tractor trailer length of 65 feet = 682.5 total feet per truck, times 405 trucks = 276,412 total feet = 52 miles of safely spaced trucks. Adjusting for typical driving habits, using 285 feet following distance, or 350 feet including rig length x 405 trucks = 27 miles*; See "The Rule of Seconds – Calculating Safe Following Distances" by Allen, Allen, Allen, & Allen, source link.

goods and employees, the focus of land-use planning needs to be as much on travel to and from a property as on the activities at the property.

Land-use planning guided by zoning regulations and codes has long been accepted in residential and commercial development and transit. There is much to be gained by instituting a parallel set of land-use practices for industrial development and freight transportation. Doing so will maximize commercial productivity while minimizing the use of land for roads. Effective land-use planning will ultimately decrease the impact of goods movement on the environment.

For instance, it makes common sense that land along rail rights-of-way should be preserved for rail-served commercial development. This is analogous to municipal regulations that communities enact to preserve land along beautiful lakefronts for appropriate uses. The NVSRP team engaged extensively with the Nevada State Land Use Planning Advisory Council and its county representatives, who appreciated the strategic intent of integrating industrial, logistics, and transportation facilities with existing and new road and rail infrastructure. The purpose of this strategy is to:

- Make the best use of land for moving goods while limiting industrial sprawl
- Expand freight capacity while lessening transport congestion
- Lower the carbon footprint of goods movement
- Minimize noise and visual pollution
- Maximize accessibility to the most efficient freight transport mode for the state's communities and businesses.

9. Present Transportation Providers with a Compelling Action Plan

Offer the Class I railroads a timely business opportunity

This is the most crucial element of the Nevada State Rail Plan. We must continue to advance a statewide, business-savvy plan for modern rail development that is financially attractive to Union Pacific Railroad and BNSF. The high level of attention that railroads once gave to local business development can now be reinstituted with the assistance of the Southwest Supply Chain Coalition model. Nevada's surging development of industry, warehouses, strategic minerals, bio-resources, and sustainable energy and its adjacency to California represents a significant rail logistics opportunity. However, robust and efficient rail development requires a deeper education of shippers, landowners, and economic development leaders, often beginning with the fundamental aspects of railroading. Otherwise, faced with rail's complexities and mysteries, these decision-makers will automatically default to the ever-increasing use of trucks. By aggregating the opportunities into coherent state, regional, and corridor rail development plans, Union Pacific and BNSF will more readily engage with the flexibility required to revive local and regional service.

Class I openness to rail development resonates with current rail-industry dynamics and world affairs. These enterprises have a renewed interest in 1) revenue growth, 2) serving the growing North American consumer economy[11], 3) supporting the reshoring of U.S. manufacturing[12], and 4) contributing to a better-balanced market

[11] Railway Age Podcast: 'The Future of Freight' with CN's JJ Ruest, source link, published May 29, 2020.
[12] Reshoring Initiative, Reshoring Initiative 2018 Data Report, page 2, source link, accessed July 10, 2020.
Excerpt: *"2018 the combined reshoring and related foreign direct investment (FDI) announcements remained strong, adding more than 145,000 jobs, with an additional 36,000 in revisions to the years 2010 through 2017. This brings the total number*

share with trucks. Their adoption of Precision Scheduled Railroading presents new possibilities for adding less-than-unit-train freight volumes to scheduled manifest (mixed freight) trains. Additionally, the rail industry's focus on longer haul lengths that has led to diminished service between California and Nevada is shifting back to including shorter lengths of haul in feasible lanes. Both Union Pacific and BNSF are exploring the development of new intermodal "inland ports" with shuttle trains to and from west coast ports. Growing export volumes are also increasing the practice of transloading the contents of international containers into domestic trailers before inland transit, ensuring the quicker return of scarce 40-foot containers. Nevada and other states in the southwest are ideal for locating these inland logistics hubs.

10. Government Does Not Have to Fund Freight Rail Development

Attract private investment with comprehensive regional and corridor strategies

Railroads and shippers are engaged in income-producing enterprises that can attract private-sector funding. Infrastructure investors and lenders now holding hundreds of billions of dollars in investment capital will enthusiastically fund individual projects within the NVSRP's commercially relevant planning approach. Investment in any state's individual freight rail projects is made feasible when the infrastructure build-out is planned to serve a coherent aggregation of projects and customers across a region or corridor. The NVSRP team has identified over fifty private-sector business projects that require enhanced rail service for their success. These initiatives include substantial new or expanding mining and agriculture operations and major land development projects. Rather than applying the same approaches necessary for funding publicly owned roads and highways, limited public-sector dollars can be leveraged with private capital to foster the success of these rail-served businesses.

The NVSRP is focused on building these regional and corridor rail-enabled economic development plans because the marketplace itself does not foster the required collaboration. Yet, when discussing the idea of collaboration with individual project sponsors, the response has been thoroughly positive. Even the idea of sharing new proprietary rail facilities with other businesses in the same or different industries has been received with great interest. Public planners and economic developers also appreciate the opportunity to collaborate with other agencies, towns, and counties to support their shared interests. Folks across the political and commercial spectrum are anxious to explore and contribute to the effectiveness of collaboration.

of announced manufacturing jobs brought to the U.S. from offshore to over 757,000 since the manufacturing employment low of 2010."

Sustainability Commitment

At OnTrackNorthAmerica, we devote rigorous attention to the ultimate environmental and community impact of our activities and the activities of those we advise. At the heart of our stand is that all current or looming environmental threats and resource limitations must be surfaced consciously. That is what it now takes for industrial activity to be smart activity.

This is an invitation to our commitment that we believe should be shared by all:

- We believe that return on investment analysis of economic development should account for all environmental and community impacts.
- We acknowledge that some projects generate a degree of negative impact as an unavoidable element in realizing a net positive contribution.
- We support investments in projects that enable the transition from fossil fuels, petrochemicals, and overuse of water while acknowledging the pragmatic challenges on the journey to a cleaner economy. We guide others to align their investment horizons with the evolution of these markets.
- We advise stakeholders to relate proactively with community stewards whose influence to advance or block projects makes them valuable partners.
- Including everyone benefiting from or being impacted by a project is critical to successful design and implementation.
- Just as we level with clients if a project is not economically viable, we also advise them when the best interests of the community or the environment are not being served.

Four steps to evaluating every project for alignment with these values:

1. Each project's commodities, activities, and impacts are cataloged.
2. For nuanced and complex projects, we conduct research to complete our understanding of environmental and community impacts.
3. We share our findings with the team and the client to invite all perspectives.
4. Together, we decide how to influence the project's sustainability.

We hold ourselves accountable to future generations by working only on projects that align with a sustainable environment and healthy communities.

We will turn our vulnerability into stability by facing the realities and aligning our commercial activities with local and global sustainability.

Thank you for your consideration of this Sustainability Commitment.

Conclusion

Nothing in the 190-year history of railroading in the United States has rendered it less vital to a sound economy and healthy communities. No new technologies are on the horizon, including autonomous trucks, for replacing railroads as a low-impact, sustainable method of moving heavy weight over land. America's early 20th-century adoption of roads as the primary focus of transportation investment has not diminished railroads' enduring efficiency.

Society's urgent need to significantly reduce the negative environmental impacts of industrial activity while expanding economic opportunity for a growing population appears, at first, to be a conundrum of opposing objectives. However, sustainable progress is possible by applying this new level of multidimensional yet common sense thinking in our planning and investment strategies. Moving from reports to results for sustainable supply chains will contribute to our environmental restoration *and* economic vitality.

Supply chain transformation is imperative for Nevada, the region, and the world. The NVSRP is built on three decades of in-the-field R&D across the country. OTNA is advancing the NVSRP model as a catalyst for this global transformation.

As a reader of this New Blueprint for Rail Planning, your knowledge, perspectives, and accountabilities likely render you a stakeholder in applying these principles to Nevada or another state. Your feedback and inquiries are invited and welcomed.

Views on the 2021 Nevada State Rail Plan from State Leaders…

"Now is the time to better utilize rail to make Nevada a leading center for intelligent logistics and commerce, resulting in economic prosperity and sustainability for every Nevadan."

~ Perry Ursem, VP of Business Retention and Expansion
Las Vegas Global Economic Alliance

"And most importantly, I want to say how much I appreciate that NNRDA has been allowed to provide so much input in this process."

~ Sheldon Mudd, Executive Director
Northeastern Nevada Regional Development Authority

"Supply chains extend beyond individual companies, beyond individual industries, and beyond state borders. Strategic Rail Finance has pinpointed how the supply chains of California, Nevada, Utah, and Arizona are inextricably linked and yet growing chaotically."

~ Kris Sanchez, Deputy Director
Nevada Governor's Office of Economic Development

"While traditional economic development practices often create competition amongst states to win the next deal, we believe that through focused and thoughtful partnerships, greater sustainable economic vitality can be achieved."

~ Nevada Governor Steve Sisolak