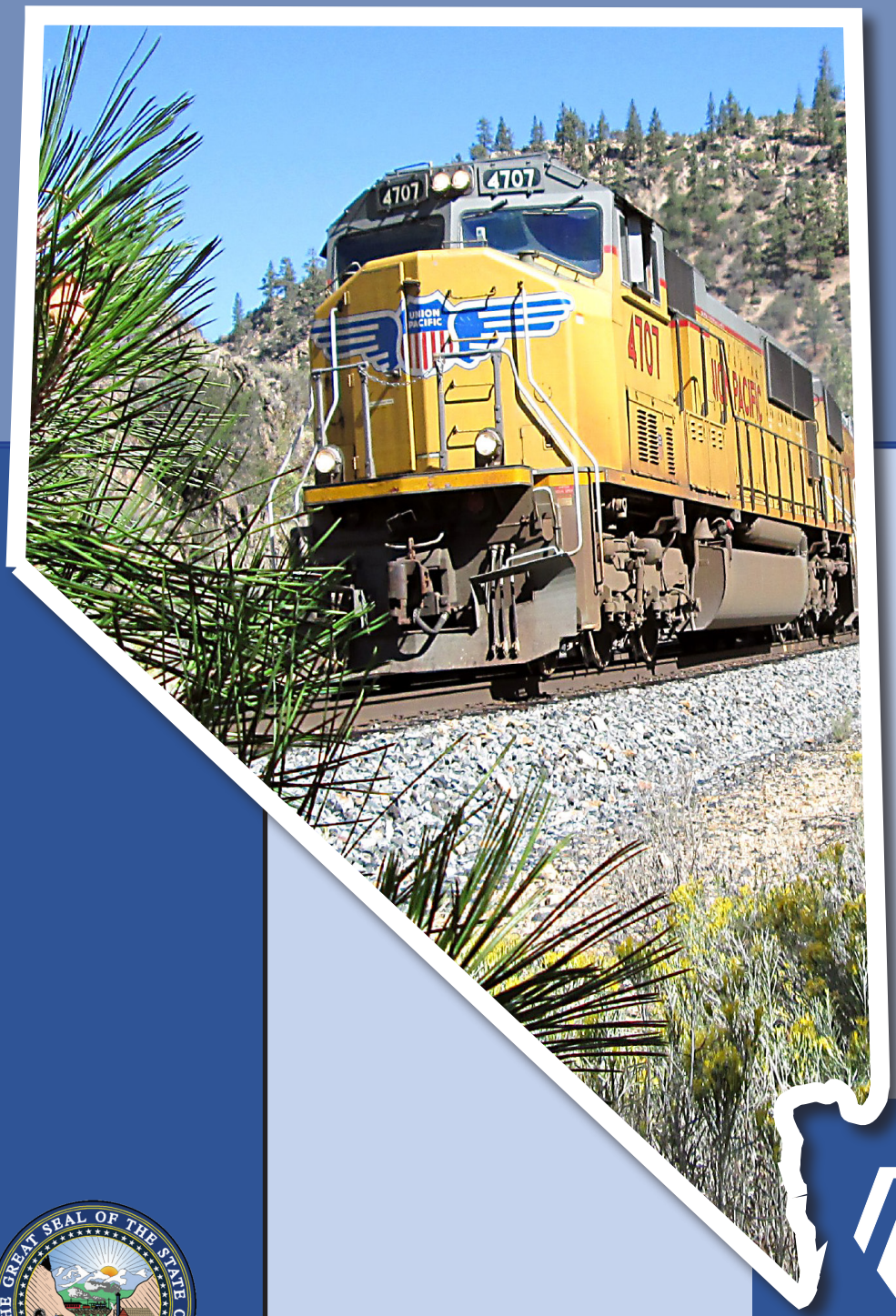
NEVADA STATE RAIL PLAN



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List of Abbreviations

Acronym	Definition
AAR	Association of American Railroads
3PL	Third-Party Logistics
ABS	Automatic Block Signals
ADA	Americans with Disabilities Act of 1990
ARRA	American Recovery and Reinvestment Act of 2009
BLM	U.S. Bureau of Land Management
BNSF	Burlington Northern Santa Fe Railway
BTS	Bureau of Transportation Statistics
BTU	British Thermal Unit
CBP	U.S. Customs and Border Protection
CCJPA	Capitol Corridor Joint Powers Authority in California
CFS	Commodity Flow Survey
COFC	Container on Flat Car
CRA	Community Reinvestment Act
CSI	Customer Service Index
CTC	Centralized Traffic Control
DC	Distribution Centers
DOD	U.S. Department of Defense
EPA	Environmental Protection Agency
FAC	Nevada Freight Advisory Committee
FAF	Freight Analysis Framework
FCA	Fernley Catchment Area
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GDP	Gross Domestic Product
HDL	Hoover Dam Limited
HVDC	High Voltage Direct Current
ICTF	Intermodal Container Transfer Facility
IMCTF	Integrated Multimodal Cargo Transfer Facility
IRS	Internal Revenue Service
LRTP	Long-Range Transportation Plan
LTL	Less-than-Truckload freight
METS	Mining Equipment, Technology and Services
MPO	Metropolitan Planning Organization
MTMC	Military Traffic Management Command
NDOT	Nevada Department of Transportation
NNDA	Northern Nevada Development Agency
NNRDA	Northeastern Nevada Regional Development Authority
NNRY	Nevada Northern Railway

Acronym	Definition
NRS	Nevada Revised Statutes
NTSB	National Transportation Safety Board
NVSRP	Nevada State Rail Plan
O/D	Origin - Destination
OTP	On Time Performance
P3s	Public-Private Partnerships
PABs	Private Activity Bonds
PFC	Passenger Facility Charges
PGA	Partnering Governing Agencies
PIP	Performance Improvement Plan
PRIIA	Passenger Railroad Investment and Improvement Act of 2008
PSR	Precision Scheduled Railroading
PTC	Positive Train Control
RailPAC	Rail Passenger Association of California and Nevada
REC	Rail Electrification Council
ReTRAC	Reno Transportation Rail Access Corridor
ROIC	Return on Invested Capital
RONIC	Return on New Invested Capital
RPA	Regional Planning Association
RSIP	Rail Service and Investment Program
RTC	Regional Transportation Commission
SLUPAC	Nevada State Land Use Planning Advisory Council
SPTC	Southern Pacific Transportation Company
SRPAA	State Rail Plan Approval Authority
SRTAA	State Rail Transportation Authority
STCC	Standard Transportation Commodity Code
STIP	Statewide Transportation Improvement Program
STP	State Transportation Plan
STRACNET	Strategic Rail Corridor Network - Dept of Defense
STTAC	Statewide Transportation Technical Advisory Committee
SWARS	Southwest Association of Rail Shippers
TIP	Transportation Improvement Program
TNC	Transportation Network Company (Rideshares)
TOD	Transit Oriented Development
TOFC	Trailer on Flat Car
TRIC	Tahoe Reno Industrial Center (former name of Innovation Park)
TWC	Track Warrant Control
U.S.C.	United States Code
UPRR	Union Pacific Railroad
USDA	U.S. Department of Agriculture
VCA	Value Capture Assessment
VMT	Vehicle Miles Traveled

Acronym	Definition
WASHTO	Western Association of State Highway and Transportation Officials
WSFC	Western States Freight Coalition

Glossary of Terms

Term	Definition
Automatic Block System (ABS)	Signal system that controls the movement of trains between segments of track (blocks) with automatic signals
Beneficiation	creating additional local jobs and economic activity in subsequent stages of the value chain of an existing business sector
Branch Line	a long RR-owned and maintained track off of a main line that reaches sidetracks
Centralized Traffic Control (CTC)	Train signal system that consolidates train movement decisions in a centralized train dispatching office
Class I Railroad	US common carrier RR with over $448 million in annual revenue (goes up annually)
Class II Railroad	US common carrier RR with $36-to-$448 million in annual revenue (goes up annually)
Class III Railroad	US common carrier railroad with less than $36 million in annual revenue (goes up annually)
Common Carrier	a railroad certified for operation by the STB that is subject to FRA safety regulations
FRA	Federal Railroad Administration--the federal agency with rail safety authority (rail OSHA)
Freight Analysis Framework (FAF)	Freight statistics produced by a partnership of the Bureau of Transportation Statistics (BTS) and the Federal Highway Administration (FHWA)
Industrial Lead Track	a short RR-owned and maintained track off of a main line that reaches sidetracks
Intermodal Trains	freight train of flatcars loaded with containers and trailers at specialized intermodal yards
Local Train	train of mixed freight based in a serving yard to pick up and drop off cars at private sidetracks
Main Line	long RR-owned and maintained track(s) that extend between major metropolitan areas or major yards
Manifest Train	train of mixed freight with blocks of cars destined for different classification yards
Nevada Revised Statutes (NRS)	Current codified laws of the State of Nevada
Nevada SIB	Nevada State Infrastructure Bank
Positive Train Control (PTC)	automatically stops trains to prevent excessive speeds, collisions, and derailments
Precision Scheduled Railroading (PSR)	Improving operating ratios by operating fewer trains with the greatest number of cars and tonnage possible on schedules that minimize intermediate switching events
Rails to Trails	Abandoned railroads converted to trails for recreational use
Regional Railroad	informal term for a railroad of medium size in customers, network miles and carload volumes

Term	Definition
Restricted Access main line	Union Pacific Railroad term for a major main line off of which new sidetracks are restricted
Shortline Railroad	informal term for a railroad of small size
Sidetrack	a track that is not used to reach other tracks or to switch cars, but to load/unload cars
Standard Transportation Commodity Code (STCC)	a publication, with seven-digit numeric codes for each commodity, containing specific product information used on waybills and other shipping documents
STB	Surface Transportation Board--the federal regulatory agency with authority over railroads
Team Track	a RR-owned & maintained track that is open to use by the general public under RR rules
Track Warrant Control (TWC)	Verbal authorization for a train to operate on un-signaled track between two designated locations
Transit Oriented Communities	Residential communities developed around a transit facility
Transit Oriented Development (TOD)	Commercial, Residential, Retail development built adjacent to or as part of transit facilities
Unit Train	freight train of one car type carrying one commodity between large handling facilities

Executive Summary

Introduction

Nevada, like many states, has railroads at the heart of its modern development, with Reno, Sparks, Las Vegas, Caliente, Winnemucca, and many other towns founded with the arrival of rail. While railroads are hardly top of mind in the 21st century, reconnecting with their value to a well-working, sustainable society is key to Nevada's future.

When people in the United States are asked about railroads the almost universal response proceeds down a dual path. One is that people immediately think about passenger rail, not freight rail, wondering aloud why the U.S. doesn't have beautiful trains like Europe or Asia. The second path is where they share their latent enthusiasm for trains in general. While the paucity of passenger train service in the U.S. provides one impression of rail in our country, people are usually surprised to learn that the U.S. freight rail system, unlike our passenger rail system, is a global leader.

Yet, in spite of this leadership, North America shares a dynamic with the rest of the world, wherein freight railroads' market share of land transportation lags problematically behind truck transport.[1] The early 20th century saw the U.S., which already benefited from a privately owned rail network of 254,000 miles, choose to make direct public investments toward a system of roads for both passengers and freight. While this road network has supported massive population and industrial growth, its public subsidization has been a major influence on the rail system's contraction to 134,000 route miles. The Nevada rail system has receded from its 1914 peak of 2,422 miles to its current 1,193 miles while the state's population and industrial activity continue to expand.

The Nevada State Rail Plan (NVSRP) has been created in support of Nevada's commitment to creating a balanced transportation system that moves goods and people sustainably.

Purpose of this Plan

The Nevada Department of Transportation (NDOT) determined in 2019 to commission a new Nevada State Rail Plan that exceeds basic federal requirements. NDOT's goal was to update the state rail plan by meeting the FRA requirement of assessing Nevada's current rail system and highlighting what an efficient freight and passenger transportation system could do when aligned with these goals of the One Nevada Transportation Plan:

Enhance Safety: Expanded use of rail will improve safety due to the inherently safer mode of rail transportation.

Preserve Infrastructure: Less freight traffic by truck will reduce wear and tear and maintenance expense of state and federal highways.

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[1] North American Transborder Freight Data. (2018, March 16). (source link)

Optimize Mobility: Utilizing and planning for an efficient rail infrastructure will optimize mobility of people and goods.

Transform Economies: As local communities around the state expand industrial development a rail plan will add to the success of their economies.

Foster Sustainability: Creating an efficient transportation system will help limit emissions and improve air quality.

Connect Communities: Illuminating rail options throughout the state enables both passenger and freight connectivity between communities.

The NVSRP updates the 2012 Nevada state rail plan with a new approach to public-sector transportation planning that:

- Engages with the economic development community and the private sector from the outset to create and implement commercially relevant plans
- Addresses the marketplace dynamics that have led to a shrinking rail network and service in Nevada
- Identifies growth opportunities for freight rail that the private-sector business and investment community are attracted to fund
- Builds on existing rail assets and private-sector initiatives to grow passenger rail transportation
- Supports the sustainability of Nevada's industrial development and transportation

The NVSRP has been created with the input of over 270 Nevada stakeholders from government, industry, and the community. It is a strategic plan that will be continuously refined and advanced with ongoing input from these stakeholders.

Goals of the 2021 Nevada State Rail Plan

- Integrate rail and truck transportation for logistics services that capitalize on the strategic location of the state and its businesses
- Mitigate the negative transportation impacts of industrial development and population growth on the environment and communities
- Integrate freight transportation with strategic land-use planning
- Develop options for the efficient transportation and distribution of minerals and bio-resources and their return logistics for recycling, reuse, and re-manufacturing
- Improve the safety of freight rail transportation
- Explore how the state can leverage private-sector passenger rail initiatives and expand Amtrak service
- Provide a structure for ongoing rail project support
- Establish a public/private funding mechanism for new rail infrastructure

Key Findings

Traditional rail plans are packed with freight rail data. Counter-intuitively, it is trucking data that is most useful in a rail plan. Truck shipment data provides critical visibility into the bulk of a region's freight activity, illuminating the path toward an ideal truck-rail balance. The 2021 Nevada State Rail Plan is informed by a thorough analysis of rail and truck freight data.

Data Has to be Analyzed and Applied, Not Just Charted

Data must be analyzed for commercial relevance to identify specific logistics opportunities and consequently the new markets that can be reached for distribution and sourcing of goods and materials. The NVSRP shares these insights with the stakeholders who can most effectively utilize the information — economic development agencies, land developers, shippers, planners, and transportation providers. These key stakeholders can then apply the insights to advance their business growth opportunities.

Key Data Findings

- Currently, there is only one warehouse in Nevada actively using a rail siding
- 77% of freight tonnage is carried by trucks
- 70% of trucks in the entire state are moving to or from CA
- 4% of ground freight moving in the state is by rail to or from Nevada businesses
- Most shippers located along rail rights of way do not use rail
    - 41.4% of privately owned sidetracks are not used
    - 96.4% of Union Pacific Railroad (UP) owned sidetracks not needed for linehaul or switching operations are not used
    - 139 truckload shippers located *adjacent to* a UP track could readily build a private sidetrack but have not done so
    - 500+ truckload-quantity shippers *near* rail lines do not use rail

Key Observations

- Rail routes consist of three east-west main lines, a few branch lines, and no shortlines.
- Intermodal and carload rail service between Nevada and California is limited.
- Intermodal and carload rail service between Nevada and the rest of the country is limited.
- Rail service between Nevada businesses is practically non-existent at just 644 railcars a year.
- There is no regional passenger rail service in Reno or Las Vegas.
- Rail infrastructure and service in Nevada is not keeping up with the growth in warehousing, distribution, and industrial development.
- Rail service in Nevada is 83% through traffic and primarily serves commerce outside the state, except for a few large shippers in the state.

- Since 70% of the trucks moving in and out of Nevada are coming from or going to California, and the boom in warehousing and manufacturing is occurring north and east of Las Vegas and north and east of Reno, increasing truck traffic through the two most populated areas in the state on I-15 and I-80 is problematic.

- Land developers and economic development executives who have not typically focused on the importance of rail logistics are enthusiastically considering passenger and freight rail.

Primary Opportunities

The NVSRP has been organized to facilitate eight rail-development regions and teams. Strategies for each region are listed below. Eighty (80) rail expansion projects offering an investment opportunity of $7.8B are listed in *Chapter 5, The State's Rail Service and Investment Program*. These projects involve both passenger rail and freight rail, and horizons of either near-term (1-4 years) or long-term (5-20 years).

- **Region 1. (**Clark County) Redevelop Black Mountain Industrial Center as a rail-served heavy-industry site, connect existing truckload shippers to rail, support land developers in orienting around rail, and develop new regional passenger rail services.
- **Region 2**. (Lincoln County) Establish transload facility for Pozzolan and other commodities.
- **Region 3**. (Ely-North to W. Wendover [White Pine County; some Elko County]) Aggregate shipper needs into a viable redevelopment strategy for the Nevada Northern Railway.
- **Region 4**. (I-80 Corridor, Lovelock to W. Wendover) Create corridor-wide, rail-based land development strategy for I-80 communities, establish freight rail connections with California market and ports, and expand Amtrak services.
- **Region 5**. (TRIC-Fernley-Hazen-Fallon-Silver Springs) Support private-sector freight-rail served developments including investment in an integrated multimodal cargo transfer facility in the Fernley area, and establish public transportation service between Reno, Sparks, and the Tahoe-Reno Industrial Center.
- **Region 6**. (Reno-Sparks-Stead) Focus on connecting existing truckload shippers to rail service.
- **Region 7**. (South of Silver Springs to Beatty) Reestablish civilian freight-rail service to Hawthorne Army Depot, build a truck-to-rail transload facility at Hawthorne, and address the need for local rail service with a transload facility in the Yerington/Wabuska area.
- **Region 8**. (South of Beatty) Set the stage for rebuilding the rail line from Hawthorne to Clark County by strengthening rail service south from Hazen to Hawthorne and then integrating the freight needs of existing and prospective mines between Hawthorne and southern Nevada into a viable rail service plan.
- **Regions 1-8**. Implement the Mining Materials Supply Chain Logistics Strategy for all regions, then for all nine primary Nevada commodity groups.

Recommendations

The NVSRP's Recommendations are designed to be implemented in their entirety, in a coordinated, integrated sequence. The following 17 recommendations comprise a systematic solution to the challenge of optimizing the use of rail for Nevada's economic expansion and environmental improvement. It is more productive and efficient to transform a system all at once. Each recommendation is accompanied by a link to its coverage in the NVSRP. (Note: Links will be live in final document)

	Recommendation	Page Location	Agency
1	Expand Nevada freight rail service to and from California and points east	Blueprint for Action Approach #12,xxvii	NDOT/GOED
2	Initiate and expand new intermodal services	Chapter 4, p28	NDOT/GOED
3	Facilitate shippers' early-stage use of the rail network	Chapter 4, p28	RDA
4	Preserve and utilize existing rail assets, including branch lines / industrial lead tracks	Chapter 4, p28	RDA
5	Develop rail operating plans that serve local Nevada	Blueprint for Action Approach #5, vii	RDA
6	Balance long-term project planning with near-term improvements for existing shippers	Chapter 4, p30	RDA
7	Aggregate shippers' needs into corridor plans through the state freight plan	Blueprint for Action Approach #11, xi	GOED/RDA
8	Co-locate new rail shippers in industrial parks when sensible	Chapter 4, p58	RDA
9	Provide rail-informed expertise to shippers and land developers	Chapter 4, p23	RDA
10	Provide financing solutions for all-size rail infrastructure	Chapter 4, p23	GOED/RDA
11	Evaluate freight movement data for meaningful commercial opportunities	Blueprint for Action Approach #4, xxvii	RDA
12	Facilitate collaborative dialogue among suppliers, customers, transportation providers, developers, and citizens	Blueprint for Action Approach #2, v	RDA
13	Initiate rail-served supply chain planning and add to the state freight plan	Chapter 4, p8	NDOT /GOED/RDA
14	Enact freight transportation land use strategies	Chapter 4, p30	State Lands
15	Establish Partnership with UPRR and BNSF	Blueprint for Action Approach #12, xxvii	NDOT/GOED
16	Support BNSF expansion in Nevada	Chapter 4, p31	RDA
17	Fundamental Performance Measures for Improving Nevada's Rail System	Chapter 4, p32	NDOT/GOED

Implementation

The NVSRP tackles the chronic challenges to state rail plan implementation:

1) Funding for rail infrastructure
2) Follow-up organizational structure and commitment
3) Regional marketplace dynamics that throttle rail expansion

The balance of this Executive Summary highlights the elements of the NVSRP that address these implementation challenges. The sections are: Funding Perspectives, and the California-Nevada Supply Chain Alliance.

Funding Perspectives

Freight

NDOT, in commissioning this production of the NVSRP, recognizes that freight-rail development is essentially a private-sector activity. Producing results as a public-sector agency is a function of facilitation, not capitalization. Fortunately, plentiful funding is available from the private sector that stands to gain from rail development. The NVSRP and its stakeholders have positioned rail development as an attractive investment opportunity at a time when global investors are actively seeking investments in North American rail infrastructure. The NVSRP is a guide for responding to that interest. Nevada is ideally poised to support the new national imperatives to re-shore manufacturing and shorten supply chains. Investors will be attracted to fund rail construction as well as the business developments served by this new infrastructure.

The State's Rail Service and Improvement Program for freight as presented in Chapter 5, lists $740,300,000 as the total costs of connecting rail infrastructure to 53 currently identified rail growth projects. Where limited public dollars must be responsibly stewarded to address multiple community needs, an amount of this magnitude is typically viewed as a cost, rather than as an opportunity. The NVSRP, recognizing that there is ample private-sector capital for all rail growth projects in Nevada, relates to this funding need as an attractive set of business investment opportunities, rather than as a burden.

Passenger

As described in Chapter 3, passenger rail services can reduce traffic congestion, energy consumption, and pollution while improving Nevada's economy and employment opportunities. While most of the freight-rail expansion projects can be funded with private investment, passenger-rail expansion requires significant commitment of public support in all forms.

Public financing from both state and federal sources have traditionally funded rail-passenger projects around the United States. More recently there has been a re-awakening of private financing for passenger rail at levels not seen since the early 20th century. The Brightline West high-speed rail service to be built between Las Vegas and Southern California deploys over $5B in private financing justified by ticket revenues from a projected ridership of over 10 million passengers a year.

The use of existing infrastructure in other rail-passenger projects proposed in the NVSRP lowers capital outlay. Successful implementation of these lower-cost projects can be achieved by utilizing three key financial strategies:

- **Public-Private Partnerships (or P3s)** to plan, finance, design, construct, improve, maintain, operate, or acquire the rights of way for a transportation facility using private financing and matching public funding.
- **State Infrastructure Bank -** The enabling legislation for the Nevada State Infrastructure Bank ("Nevada SIB") was signed into law June 2017 (NV AB-399)2; however, the Bank has not been capitalized. Capitalization of the Nevada SIB would aid the development of rail infrastructure in Nevada.

California-Nevada Supply Chain Alliance

The NVSRP focuses on the supply chain relationships between Nevada and California that must be addressed to make meaningful improvements in Nevada. NDOT can step into a key leadership role in establishing the *California-Nevada Supply Chain Alliance*.

The California-Nevada Supply Chain Alliance deploys an organizational model for businesses, governments, and communities throughout a region to engage in whole-systems transportation and land-use planning and investment. Following is the rationale for this alliance:

- California is the 5th largest economy in the world, after the U.S., China, Japan, and Germany.
- Truck traffic is increasing in both states as California's supply chain has expanded into Nevada for warehousing, distribution, and production.
- Currently, 70% of all trucks traveling in Nevada are coming from or going to California.
- There are many commercial and economic opportunities that can best be cultivated with an informed redesign of the land transport system between the two states of Nevada and California.
- Currently, aggregates and non-metallic minerals are the two largest commodities trucked from Nevada to California, generating over 500,000 empty return truckloads a year.
- One of the most valuable logistics opportunities for both states is the development of a Fernley-area facility to transload farm and food products from domestic trucks traveling primarily on I-15 through Las Vegas from other states to the Ports of Los Angeles and Long Beach into international containers and then moved by rail to the Port of Oakland, addressing many California issues.
- Improving the stability and profitability of the trucking industry along with the quality of professional and personal life of its drivers is a key opportunity.

[2]Nevada Assembly Bill 399, source link, effective June 2017.

- Rail rights of way between the two states may be useful for connecting new electric generation in Nevada to the California marketplace.
- Neither the marketplace nor government alone has the power to implement this new level of supply-chain coordination.
- Supply chains are shortening. Local and regional supply chains enabled by rail are needed to add resilience and mitigate the environmental impact of freight movement.
- These large-scale strategies for stable, whole-systems investment will be extremely attractive to major infrastructure investors.

Welcome to the 2021 Nevada State Rail Plan.

THE NEW BLUEPRINT FOR RAIL-ENABLED ECONOMIC DEVELOPMENT

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

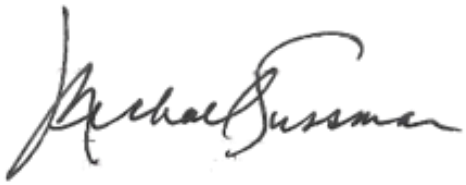
Moving from Reports to Results for Sustainable Supply Chains

Preface

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

This innovation formed the foundation of SRF and OTNA's groundbreaking 2021 Nevada State Rail Plan (NVSRP). Solving our current problems requires this new approach, which empowers business, government, and community leaders to collaborate for results rather than simply generating more studies and reports. Widespread adoption will facilitate the private-sector capitalization of expanded rail service, leading to a balanced transportation system and efficient supply chains that all states deserve.

You're invited to discover how this proven approach can work in your community, industry, or region—and why the time for transformation is now.



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Introduction: Why Innovate, and Why Now?

For decades, railroads have served as engines of growth across America, particularly in the West, where vast distances demanded efficient transportation. Yet today, we are facing a transportation crisis that is hiding in plain sight, impacting every American through higher prices, congested highways, and declining air quality.

The Scale of the Problem

The numbers tell a stark story. In 1916, the United States' rail route mileage reached its peak at 254,000 miles.[1] After a steady decline over the past century, the active network has receded to just 137,000 miles in 2020.[2] Today, trucks are the sole land freight option for nearly 80% of the nation's towns and cities.[3]

The result? Despite America having the world's most robust freight rail system, which generates approximately $95 billion in annual revenue, the trucking industry generates significantly more at $950 billion annually. This imbalance incurs enormous costs. Transportation has become our nation's largest source of harmful greenhouse gases, with freight transportation the fastest-growing contributor to pollution. As trucking consumes two to five times more fuel than rail for the same freight movement, continuing this trend will suffocate the nation under the weight of its logistics.

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[1] American Short Line and Regional Railroad Association, source link, accessed May 14, 2025.

[2] Federal Railroad Administration, source link, accessed July 10, 2020.

[3] Source: Darren Roth, American Trucking Association, Interviewed by Author, September 27, 2019

Why Current Approaches Fail

These negative trends aren't inevitable—they persist because of unaddressed flaws in how we plan, design, and invest in supply chains. While America's excessive reliance on cars for passenger transport is often decried, the ongoing expansion of truck-centric supply chains is rarely examined.

The root cause is structural. Truck service has become ubiquitous because road infrastructure is provided as a public service—almost every new industrial project is instantly accommodated as if roads were a fundamental economic right. In contrast, freight rail service requires education, coordination, and private-sector investment to connect each shipper and receiver.

Federal and state freight transportation plans exacerbate the issue by concentrating narrowly on individual modes and projects. This strategy may have been effective when the frontier was expansive and resources appeared limitless, but that shortsightedness is now evident. Governments have mistakenly believed that market competition alone can generate efficient systems, confining their role to merely providing increased public funding for highway bottlenecks and maintenance.

The Consequences of Fragmented Planning

The results are clear upon further examination. In Nevada, only 4% of freight moving in, out, and through the state travels by rail to or from a Nevada business.[4] Biofuel facilities transport feedstock from California by truck and send their products back to California by truck, despite both states' environmental concerns. Tesla ships 60 tractor-trailers of auto components daily from Sparks, Nevada, to Fremont, California—even though both facilities have adjacent rail lines.

[4] STB Waybill Sample 2018; TRANSEARCH® Truck Data 2018

Production, distribution, and warehousing facilities are located through random commercial land transactions without considering transportation implications. The explosive growth of warehouses in Nevada to serve California's ports exemplifies this problem, increasing truck traffic and congestion while diminishing the quality of life in both states. Of Nevada's 137 warehouses, only one utilizes rail.

Moving from Reports to Results

These challenges require a fundamentally different approach. When the Nevada Department of Transportation engaged SRF, they opted to forge a new path that fulfills federal requirements while simultaneously advancing economic opportunities. From the very beginning, we committed to shaping a new future rather than producing another moment-in-time report.

Our preparation was thorough: we analyzed more than 100 state rail plans while overseeing rail project funding in 44 states over 30 years. This experience revealed that at this near-crisis moment, the model we advanced in Nevada must be scaled across the continent.

The solution requires rethinking industrial activity, freight transportation, and land use as interconnected systems that create efficient, sustainable supply chains—moving beyond simply transporting ever-increasing volumes of goods. Infrastructure investors worldwide are ready to fund innovative, commercially viable rail growth plans when positioned as the backbone of comprehensive industrial system investments.

On the Road to Sustainable Supply Chains—Contents

1. Design for Action and Prepare 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 and Land-Use Planning Must Be Inseparable
9. Present Transportation Providers with a Compelling Growth Plan
10. Government Does Not Have to Fund Freight Rail Development

1. Design for Action and Prepare to Implement

Create dynamic plans that can be updated and enhanced over time.

A distinctive feature of this state rail plan is that stakeholders are engaged in a collaborative effort to contribute to its ongoing evolution and implementation. This contrasts with typical plans fixed in time and outdated as soon as they are submitted. We have developed an action plan for moving forward, rather than merely presenting a report based on past data. As real-life needs and conditions change, they can be integrated into the plan and communicated to stakeholders. This ensures that transportation networks and infrastructure projects continuously align with new economic and market data and shifting climate and community priorities.

This approach necessitates a structured implementation plan that extends beyond the plan submission to USDOT. In the case of the NVSRP, the Nevada Governor's Office of Economic Development (GOED) entered into a next-phase contract with OTNA for implementation.

2. Radical Inclusion Amasses Synergy and Attracts Capital

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

Effective statewide transportation investment must embrace as many stakeholders and projects as possible. Given transportation's outsized relevance to 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 achievable and productive. This commitment led to in-depth interviews with 375 (and counting) stakeholders and an additional 141 shippers. In contrast to typical stakeholder engagement, which is often limited to the perfunctory sending and collecting of questionnaires, our team engaged interviewees in down-to-earth, one-on-one conversations. These interactions surface valuable marketplace opportunities, which otherwise remain unseen in the typical planning process.

This firsthand research was bolstered by comprehensive satellite imagery and field inspections of the entire state's rail network. With this critical mass of on-the-ground data, business opportunities and economic development plans can be based on accurate knowledge of the physical characteristics that determine where rail goes, where it has been, and where it can now extend to existing and new commercial areas.

Due to limited public funding for transportation infrastructure, accepted logic suggests that state rail plans should prioritize certain projects while excluding others, based on the assumption that there isn't enough capital for all projects. Decision-making within this scarcity mindset then relies on ranking, comparing, and voting. Unfortunately, this raises a significant question: When are the "lesser" ranked projects and their communities supported and funded?

Given that ample private-sector capital exists for all worthwhile freight rail infrastructure investments, all projects, communities, and regions should be included. The NVSRP is based on the understanding that transportation operates most effectively when all its components are

part of comprehensive growth and improvement plans. Including all opportunities increases the feasibility and, therefore, the fundability of rail development plans. In fact, the viability of local rail operations is enhanced by the number and diversity of customers.

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

The NVSRP database categorizes Nevada into eight regions, distinguished by geography, governing districts, and the operational characteristics of the rail network. By segmenting the state's rail system and relevant data into eight logical regions, stakeholders can collaborate in teams focused on local rail development. Statewide discussions can also be convened effectively because all roles are clearly identified. The 550+ stakeholders cataloged within the database are organized by region, industry, and/or public service role, facilitating group discussions with the most suitable stakeholder representatives. This specificity respects stakeholders' time and energy, fosters trust and participation, and promotes long-term engagement.

We have developed comprehensive methods and tools to enhance this large-scale coordination and collaboration. Our inquiry-based methodology, IntelliSynthesis®, establishes a new framework for collaborative thinking that promotes meaningful exchanges of ideas and information among diverse stakeholders. IntelliSynthesis makes regional and statewide teamwork enormously productive. In addition to individual and group dialogues, stakeholders use our online platform, which conveniently accommodates contributions from their individual locations and schedules. IntelliSynthesis also turns any virtual or in-person stakeholder summit into a powerful opportunity for collective input and intelligence gathering.

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 that is made accessible and applicable is another. The NVSRP's objectives were achieved by integrating findings from data research and direct outreach into a multi-layer web map. This innovative tool provides stakeholders access to critical information not available in standard planning exercises, facilitating the insights and decisions necessary for building efficient and sustainable supply chains.

Accurate geographic representation is fundamental to the SRF/OTNA Mapping System. Below are some of the datasets we developed and mapped:

- All active and non-active rail sidings in Nevada
- 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

The NVSRP's pioneering 12-layer digital mapping system displays the location, ownership, and contact information for each data category listed above, along with the precise routing of the entire rail network in relation to existing properties, buildings, topography, and landscape features. The mapping system provides access to a wide array of cataloged datasets, enabling stakeholders to further develop innovative uses for this comprehensive information.

Sharing data and practical insights with those who can use the information most effectively—economic development agencies, land developers, shippers, and transportation providers—empowers them to pinpoint business growth opportunities as well as new tenants and businesses that can take advantage of these opportunities.

By integrating traditional rail plan data with commercially relevant supply chain data, planners and stakeholders can identify new markets for distributing and sourcing goods and materials.

This transforms the fundamental concept of state rail plans—from accepting the inevitability of a future based on the past to creating a new future. Already, this tool has guided the routing of new rail lines in Nevada to provide service to key industrial properties and regions.

To advance transportation plans into this new era of relevance, it is crucial to acknowledge the fundamental shortcomings of the free, federally provided Freight Analysis Framework (FAF) data. This data offers geographic information only at the level of the 50 U.S. states and 173 BEA regional zones. In contrast, S&P Global's Transearch data reports at the level of over 3,000 U.S. counties.

FAF only reports freight commodity flows by tonnage, while Transearch data provides information on tonnage and the number of truck units. During the development of the 2021 NVSRP, SRF analyzed over 10.5 million truck trip records using multiple data sources. Approximately 4.1 million, or 40%, of these truck trips were empty return moves or secondary moves between warehouses and distribution centers. This statistically significant insight could not have been achieved through the exclusive use of FAF data, a common practice in public sector transportation plans.

While aspects of FAF data are helpful, producing results, not just reports, requires a more comprehensive set of private-sector data sources, such as Transearch Trucking, FreightWaves Sonar, and Panjiva.

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

Traditional rail plans are filled with freight rail data. However, this data reflects currently successful rail freight movements with routings, frequency, and rates that work for shippers. Can this information reveal areas for improvement within a state's rail network? Minimally. Surprisingly, it is truck data that is most valuable in a rail plan. Truck shipment data offers a crucial insight into the bulk of a region's freight activity, guiding beneficial truck-to-rail conversion and enhancing modal balance. The 2021 Nevada State Rail Plan is based on a thorough analysis of 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 connecting rail stations was necessary. However, the emerging trucking industry and the established rail sector were made to compete for commercial and policy focus, rather than collaborate for efficiency. Since then, little progress has been made toward establishing a balanced and symbiotic relationship between our rail and highway freight systems. Our country continues to face the consequences of that failure, as the U.S. rail network transports only 38.2% of the land freight ton-miles.

According to the USDOT Bureau of Transportation Statistics, the United States moved 17.8 billion tons of freight across all modes in 2015, with only 10% transported by rail and 65% by truck.

By 2045, U.S. freight transport is expected to increase by 40%, reaching 25 billion tons annually. Overreliance on truck transportation for this increased volume will heighten pollution and traffic congestion proportionately. Our goal is to enable as much future rail freight service as possible without limiting the viability or success of the trucking industry. 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. Truck transportation is a critical component of goods movement that must be optimally integrated with railroads.

Considering the relative impact of each mode of transportation on energy consumption, emissions, highway congestion, safety, road maintenance costs, noise, light pollution, and land use, effective planning is essential. Achieving a new sustainable balance will require thoughtful integration of productive collaboration with constructive competition. The only way to foster this level of shared productivity between trucking and railroading is through cooperation between all parties. Incorporating diverse perspectives leads to informed public policies and sustainable commercial practices. With that intention at its core , OTNA collaborates with the trucking industry to explore how improved rail service can enhance both the stability and profitability of trucking companies and the quality of life for truck drivers.

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

Collaborate boldly across businesses, agencies, and industries.

During the extensive expansion of the national rail network in the 19th and early 20th centuries, individual local projects were developed within corridor and regional supply chain strategies. For instance, in 1878, James J. Hill, the esteemed railroad builder of the Great Northern Railway, envisioned a comprehensive supply chain system when assessing the opportunity to develop 1,600 miles of untapped forest and mineral resources between St. Paul, MN, and the Pacific Ocean. His supply chain-oriented approach to railroad development, typical of the era's rail leaders, has long been replaced by a narrow focus on individual projects and short-term results.

Nevada's early rail line development was also influenced by this emphasis on supply chains, from mine to factory and from farm to table. OTNA's freight system planning reintroduces regional supply chain strategies for the 21st century.

Case in Point: The Mining Materials Logistics Strategy

Nevada's mining industry is experiencing growth, yet it is underutilizing rail transportation, significantly limiting the viability of associated processing and manufacturing facilities that could be co-located in the state to enhance the industry's economic benefits.

Nevada's rail network has decreased from its 1914 peak of 2,418 route miles to its current 1,190 route miles. This track is almost entirely mainline along I-80 and I-15, with only a few minor branch lines. Like nearly all industries, the Nevada mining sector comprises entities that primarily operate independently. However, these enterprises can

achieve substantial economic efficiencies by collaborating on logistics planning for incoming and outgoing materials as part of a comprehensive supply chain system.

Designing rail infrastructure based on the needs and opportunities of individual businesses while integrating those needs into comprehensive plans can significantly improve transportation efficiency, business profitability, and supply chain sustainability. Adopting a rail-enabled logistics strategy for extracting, producing, and transporting strategic minerals and products will generate a high return on investment in Nevada. This logistics strategy is detailed in Chapter 4 of the NVSRP.

The NVSRP team developed the Mining Materials Logistics Strategy with input from the Nevada Mining Association, the Nevada Bureau of Mines, the Mackay School of Earth Sciences and Engineering at the University of Nevada, and the top mining companies in the state. All parties are interested in exploring this logical strategy.

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 highlighted the inefficiencies stemming from haphazard or nonexistent multi-state planning. Commercial land development for warehouse and distribution facilities in Nevada, which primarily serve California, has resulted in only one out of 137 warehouses in Nevada utilizing rail transportation. 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.

Because this truck-centric growth predominantly occurs just east and south of Las Vegas and east and north of Reno-Sparks, the resulting increase in California-related traffic exacerbates highway congestion, safety concerns, and air quality issues in Nevada's two major metropolitan areas. Additionally, snow on I-80 at the Donner Pass—the only east-west truck route through the Sierra Mountains—frequently delays and reroutes truck movements, adding uncertainty and freight transportation costs for businesses in both states.

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

Nevada's rail-enabled economic development can only progress through fruitful collaboration across state lines with California, Utah, and Arizona's public agencies, port authorities, economic developers, businesses, communities, and transportation providers.

SRF and OTNA established the Southwest Supply Chain Coalition to support the multistate implementation of the NVSRP. This process started with identifying, cataloging, and engaging stakeholders from both the public and private sectors in all four states, including Caltrans, the Port of Long Beach, the Port of Oakland, and the Utah Inland Port Authority.

The SSCC would assume responsibility for:

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

7. Smart Logistics Drives Sustainable Economic Development

Integrate rail planning with economic development.

Across the country, transportation departments and economic development agencies often work independently on issues that co-influence rail development. Specialized education that integrates knowledge of railroads, supply chains, and economic development is seldom available in academia, professional training, or the marketplace. Consequently, logistics-oriented economic growth has stagnated, and transportation efficiency has declined. This shortcoming is at the root of countless missed opportunities, yet it presents an ideal opening for historic rail-enabled economic progress. How many industries have a complete infrastructure of public sector agencies dedicated to their success? Almost every state and the federal government have a rail department tasked with supporting rail industry service and safety. Now is the time for a new era of commercially astute, public-private collaboration among these transportation departments, economic development agencies, local planners, transportation providers, shippers, and communities.

Service Through the State Is Different than Service to the State

Gaps in public policy and pressure from Wall Street have inadvertently fostered a Class I railroad business model thar prioritizes long-haul rail traffic, resulting in limited local pickup and delivery. Shortline and regional rail companies operating parts of the rail network in many states have partially bridged this local rail service gap. However, Nevada lacks Class II (Regional) or III (Shortline) rail providers. As a

result, 83% of all rail traffic in Nevada passes through the state without stopping. This pass-through dynamic is prevalent in most states.

While ensuring that long-haul rail traffic navigates Nevada safely and efficiently is crucial, it is equally essential for businesses and communities within the state to benefit from more local and direct rail connections and transloading opportunities. Union Pacific Railroad and BNSF, the two rail carriers managing this long-haul traffic, operate responsibly while contributing millions in property and fuel taxes to the state. That said, to develop a rail system that better serves the state, the NVSRP concentrates on projects that assist local shippers and land developers.

8. Freight Transportation and Land-Use Planning Must Be Inseparable

Site selection must consider transportation to and from properties.

Land available for development is now recognized as a valuable resource in short supply. Nevadans quickly point out that the federal government owns approximately 86% of the state through the Bureau of Land Management, the Department of Defense, the Department of the Interior, and the U.S. Forest Service. Continuous population and economic growth necessitate the optimization of limited private land and the space required for transporting goods and people. Given the significant difference in the amount of space needed to move goods on highways compared to railroads (27 miles of trucks are necessary to move the same goods as a one-mile train), a balanced and efficient system demands land-use planning that accounts for externalized impacts. Since freight-oriented development stimulates the long-distance movement of goods and workers, land-use planning must

concentrate on travel to and from a property as well as the activities occurring 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 land use for roads. Effective land-use planning will reduce the community and environmental impact of moving goods.

For instance, it makes sense for land along rail rights-of-way to be preserved for rail-served commercial development. This is similar to municipal regulations that communities enact to protect 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 recognized the strategic value of integrating road and rail infrastructure, industrial and logistics facilities, and energy production and distribution. The aim 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
- Address the need for new energy distribution corridors
- Maximize accessibility to the most efficient freight transport mode for the state’s communities and businesses.

9. Present Transportation Providers with a Compelling Growth Plan

Offer Class I railroads a timely business opportunity.

This is the most crucial element of the Nevada State Rail Plan. We must continue to promote a statewide, business-friendly approach to modern rail development that is financially attractive to Union Pacific Railroad and BNSF. By consolidating opportunities into comprehensive state, regional, and corridor rail development plans, Union Pacific and BNSF will be better equipped to provide the flexibility necessary to enhance local and regional service.

Class I's openness to rail development aligns with current rail industry dynamics and global affairs. These companies have a renewed focus on 1) revenue growth, 2) catering to the expanding North American consumer economy,[5] 3) supporting the reshoring of U.S. manufacturing,[6] and 4) contributing to a more balanced market share with trucks. The rail industry's previous emphasis on longer haul lengths has led to reduced service between California and Nevada; however, it is now adapting to incorporate shorter hauls in viable lanes.

Nevada's rapid industrial growth, along with its warehouses, strategic minerals, bioresources, sustainable energy, and proximity to California, presents a significant opportunity for expanding rail service. Increasing export volumes are driving transloading practices—transferring international container contents into domestic trailers before inland transit to ensure a faster return of scarce 40-foot containers. Both Union Pacific and BNSF are exploring new intermodal "inland ports"

[5] Railway Age Podcast: "The Future of Freight" with CN's JJ Ruest, source link, published May 29, 2020.
[6] Reshoring Initiative, Reshoring Initiative 2018 Data Report, page 1, source link, accessed May 14, 2025.

with shuttle trains to and from West Coast ports, positioning Nevada and other Southwest states favorably to establish these inland logistics hubs.

However, rail business development requires a thorough education program for shippers, landowners, and economic development leaders, often beginning with basic railroading principles. Without this foundation, decision-makers tend to default to increased reliance on trucks when faced with the complexities and uncertainties of rail. The significant attention railroads once dedicated to local business development can be revitalized through the Southwest Supply Chain Coalition model. Presenting citizens and communities with the NVSRP's comprehensive rail-enabled economic development strategy fosters the crucial support needed for expanding rail service.

10. Government Does Not Have to Fund Freight Rail Development

Attract private investment with comprehensive regional and corridor strategies.

Railroads and shippers are income-generating enterprises that attract private-sector funding. Investment in any state's rail projects becomes viable when infrastructure development supports a coherent aggregation of projects and customers across a region or corridor. Infrastructure investors and lenders managing hundreds of billions in capital will eagerly finance individual projects within the NVSRP's commercially relevant planning framework.

By carefully reimagining infrastructure investment, progress can be aligned with the goals of both the private and public sectors. Public-private partnerships that integrate policy, planning, and funding

improvements are essential for developing infrastructure that delivers a high return for all stakeholders. Rather than relying on typical infrastructure strategies applied to publicly owned roads and highways, limited public sector funds can be combined with private capital to turn infrastructure “costs” into investment opportunities. The NVSRP team identified over 50 private-sector rail growth investment projects, including significant mining, agricultural, and land development.

The NVSRP focuses on regional and corridor rail-enabled economic development plans because the marketplace alone doesn’t foster the necessary collaboration. However, discussions regarding collaboration with individual project sponsors have yielded overwhelmingly positive feedback. The concept of sharing new proprietary rail facilities with businesses across various industries has been met with enthusiasm. Public planners and economic developers also value collaborating with other agencies, towns, and counties to support shared interests. Stakeholders from across the political and commercial spectrum are eager to participate in this collaborative success.

Conclusion

Nothing in the 190-year history of railroading in the United States has made it any less essential to a strong economy and thriving communities. No new technologies are on the horizon, including autonomous trucks, that could replace railroads as the low-impact, sustainable method for transporting heavy loads over land. America's early 20th-century shift to roads as the primary focus of transportation investment has not diminished railroads' enduring efficiency.

OTNA is promoting the NVSRP model as a catalyst for rail-enabled economic development across the continent. Society faces an urgent need to significantly reduce the negative environmental impacts of industrial activity while continuing to expand economic opportunities. Transforming the supply chain is crucial for Nevada and North America. The NVSRP provides a blueprint for this change. Furthermore, it shows that the government does not need to be the primary funder of new rail infrastructure. When transportation providers embrace this comprehensive growth strategy, private investors are ready to finance rail service expansion. Achieving sustainable progress is possible by applying this common-sense approach to our planning and investment strategies.

Your knowledge, perspectives, and accountabilities likely render you a stakeholder in applying these principles to Nevada or another region. We invite and welcome your feedback and inquiries. Thank you for considering this commitment to logic, sustainability, and railroads.

Sustainability Commitment

- We believe the return-on-investment analysis of economic development must account for all environmental and community impacts.
- We acknowledge that some projects generate a degree of negative impact, often unavoidable to achieve a positive net contribution.
- We support investments in projects that enable the transition from the overuse of fossil fuels, petrochemicals, and water, while acknowledging the pragmatic challenges on the journey to a cleaner economy. We guide our clients to align their investment horizons with the evolution of these markets.
- We advise clients to relate proactively with community stewards, whose influence on advancing or blocking projects makes them valuable partners.
- Including everyone who benefits from or is impacted by a project is critical to the successful design and implementation.

There are four steps to evaluating every project for alignment with these values.

1. The commodities, activities, and impacts of each project are cataloged.
2. For nuanced and complex projects, we conduct research to gain a full 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 properly 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

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."

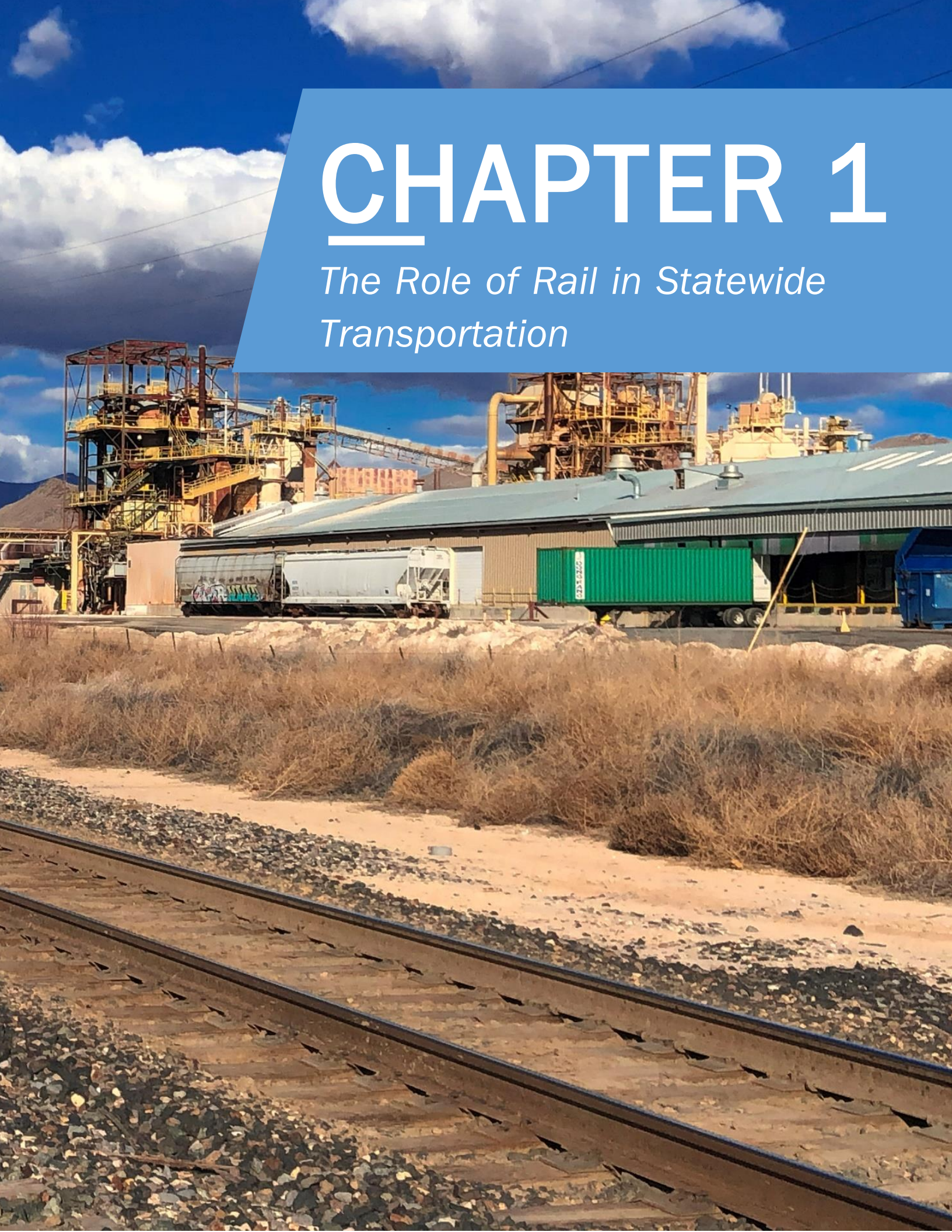
~ Kris Sanchez, Deputy Director
Nevada Governor's Office of Economic Development

"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."

~ Steve Sisolak, Nevada Governor

CHAPTER 1

The Role of Rail in Statewide Transportation



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Chapter 1 The Role of Rail in Statewide Transportation (Overview)

A. Introduction

Nevada is one of the nation's fastest growing states as measured by population and economic activity. This is the result of successful state and local government policies to attract residents and businesses to the employment, quality of life, and economic opportunities offered by the Silver State. Economic and population growth brings many benefits to the state's residents. An increased tax base supports urban and rural development, improving health, housing, and economic opportunity for all Nevadans. These benefits fuel a virtuous circle attracting ever more residents and businesses to the state and increasing revenues which in turn supports the development of a sustainable and inclusive economy.

As Nevada's residents and businesses have benefited economically and socially from this expansion the growth has brought new challenges for the state to address. Increasing road traffic is contributing to higher levels of traffic congestion and lower air quality. The state's air quality is challenged by weather patterns like drought and events like wildfires, which are increasing in frequency and intensity in many areas due to climate change. Nevada has the 46th lowest overall air quality in the nation[1] and Clark County/Las Vegas is regularly cited for its poor air quality.[2] Polling during the 2020 Nevada Caucus identified healthcare as the number one concern of the state's citizens and the environment as number two.[3]

Governor Sisolak's Executive Order 2019-22 issued in November 2019 addresses this issue, focusing on reducing carbon pollution to combat climate change caused by greenhouse gas emissions and improving the quality of air Nevadans breathe.

The new Nevada State Rail Plan (NVSRP) focuses on the contribution rail offers for economic development and personal mobility, and how rail mitigates these environmental and congestion challenges. On average, railroads are three to four times more fuel efficient than trucks, so moving freight by rail instead of truck lowers greenhouse gas emissions by up to 75%.[4] Rail investments uniquely deliver a 'double benefit' by meeting development objectives while addressing congestion and environmental challenges.

The Nevada Department of Transportation has embarked on an ambitious effort to have its state rail plan and its subsequent implementation contribute to an improved economy and quality of life for Nevada's citizens.

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[1] America's Health Rankings - United Health Foundation, "Air Pollution By State, 2019 Annual Report", source link. *Note: This ranking is based on the average exposure of the general public to particulate matter of 2.5 microns or less measured in micrograms per cubic meter (3-year estimate), sourced from U.S. Environmental Protection Agency; U.S. Census Bureau, Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2018.*

[2] American Lung Association, "State of the Air – Most Polluted Cities" page, source link, accessed August 6, 2020.

[3] CBS 8 News Now Las Vegas, "8 News Now/Emerson College poll shows health care, environment are important issues with voters" article, source link, published February 21, 2020.

[4] Association of American Railroads, "Freight Rail & Preserving the Environment" report, source link, published July 2020.

B. The State's Goals for the Multimodal Transportation System

The Nevada Department of Transportation (NDOT) in its 2020 *One Nevada Transportation Plan* expresses these six key goal areas, which have informed the new Nevada State Rail Plan (NVSRP):

- **Enhance safety** by building, maintaining, and operating the safest transportation system possible.
- **Preserve infrastructure** to support economic vitality, visitor experience, and travel safety.
- **Optimize mobility** to provide convenient and reliable movement of people and goods across all modes.
- **Transform economies** by supporting an innovative transportation framework.
- **Foster sustainability** by lowering long-term maintenance costs, promoting fiscal responsibility, and reducing greenhouse gas emissions from the transportation sector.
- **Connect communities** to local resources and amenities and collaborate with partners to best serve our communities.

The Nevada Freight Plan, published in January of 2017, identifies these goals which further inform the new NVSRP:

1. **Economic Competitiveness:** Improve the contribution of the freight transportation system to economic efficiency, productivity, and competitiveness.
2. **Safety:** Improve the safety of the freight transportation system
3. **Advanced Innovative Technology:** Use advanced technology, innovation, competition, and accountability in operating and maintaining the freight transportation system.
4. **Sustainable Funding:** Fully fund the operations, maintenance, renewal, and expansion of the freight transportation system.
5. **Mobility and Reliability:** Provide an efficient and reliable multimodal freight transportation system for shippers and receivers across the state.
6. **Infrastructure Preservation:** Maintain and improve essential multimodal infrastructure within the state.
7. **Environmental Sustainability & Livability:** Reduce adverse environmental and community impacts of the freight transportation system.
8. **Collaboration, Land Use and Community Values:** Establish an ongoing freight planning process to coordinate the freight transportation system and ensure consistency with local land use decisions and community values.

The process of creating the new Nevada State Rail Plan aligns with the vision of statewide collaboration expressed by NDOT's Executive Director, Kristina Swallow, in the *One Nevada Transportation Plan*:

> *"Delivering the transportation system, we have collectively envisioned requires a unified effort from NDOT and our partner agencies in both the urban centers and rural areas of the state. From updating our data systems to effectively prioritizing investments and measuring performance against goals, to making effective change in greenhouse gas emissions, collaboration is the catalyst for success. This plan provides the foundation and allows us to adapt in a dynamic environment of technology advances, user needs and preferences, and funding sources and levels."*

NDOT has adopted these specific goals for the NVSRP:

- Enhance rail logistics to optimize the strategic location of the state and its businesses
- Mitigate negative impact of freight logistics on the environment and communities
- Improve passenger mobility through rail passenger projects that utilize existing infrastructure
- Establish smart freight-transportation land use protocols for sustainable economic development
- Improve the safety of rail transportation
- Provide a structure for ongoing rail knowledge and development support
- Establish a public/private funding mechanism for new rail infrastructure and improvements
- Develop options for efficient transportation and distribution of minerals and bio-resources and their return logistics for recycling, reuse, and remanufacturing

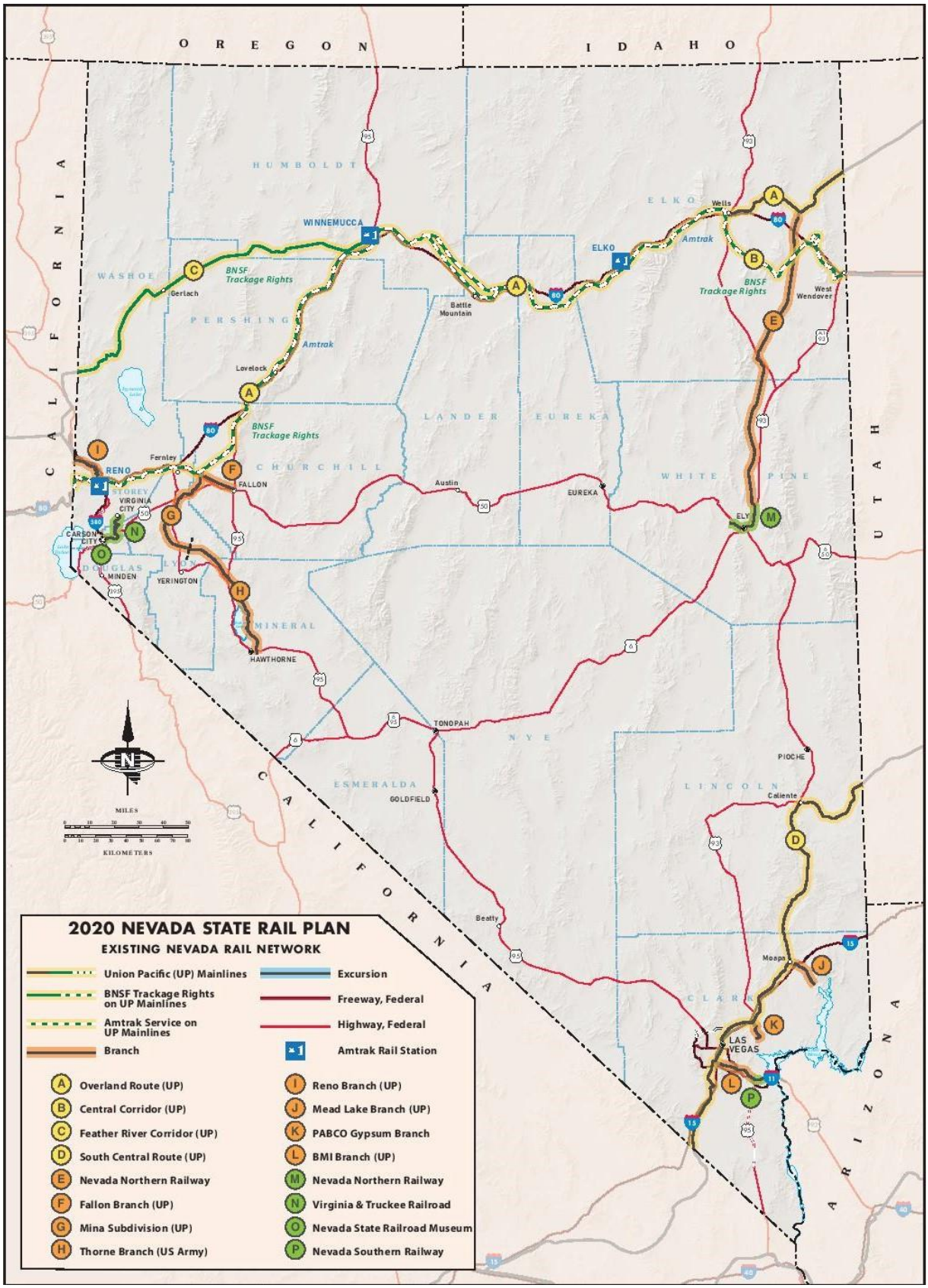
C. Nevada's Rail Transportation System Overview

Nevada's geography and historic development patterns have resulted in two primary rail corridors, which generally run east-west across the state, along with a few supplemental branch lines. The Union Pacific Railroad (UPRR) operates both the northern and the southern east-west corridors, as a result of mergers; BNSF Railway (BNSF) has trackage rights on nearly three-quarters of UPRR's Nevada trackage as a condition of the mergers. The two-route northern corridor serves Reno, as well as other northern Nevada communities, and connects with Salt Lake City and Denver to the east and with Sacramento and the San Francisco area to the west. Amtrak operates once-a-day passenger rail service in each direction across this northern Nevada corridor; I-80 generally parallels the rail lines in this corridor. The southern corridor serves Las Vegas and connects it with Salt Lake City to the northeast and with Los Angeles to the southwest. Amtrak discontinued providing service in this corridor some 23 years ago; I-15 generally parallels the single-track rail line in this corridor. The state lacks north-south through rail or interstate highway linkages; thus, Las Vegas is not connected to Reno or with nearby Phoenix to the southeast.

In addition to Nevada's freight and intercity passenger rail services, four tourist railroads operate in the state:

- Virginia & Truckee Railroad
- V&T Railway Commission
- Nevada Northern Railway
- Nevada State Railroad Museum, Boulder City

Figure 1-1: Nevada Rail Network



The NVSRP embraces many of the perspectives expressed in the 2017 Nevada Freight Plan (P 1-7):

> *"As in most urban centers in the United States, Las Vegas and Reno have a scattered and fragmented pattern of air, rail, trucking, customs, and other freight service functions, and have never emerged as major freight centers. There are extremely modest intermodal yards in Reno and Las Vegas, as well as a few bulk transloading facilities throughout the state. Although there is major through-railroad activity in Nevada, the trains do not stop in the state and they do not create cost and congestion relief advantages for Nevada shippers going east and west. This fragmented pattern of logistics forces trucks involved in freight movements and transfers through heavily urbanized areas results in conflicts and inefficiencies. This is a major inhibitor to a development-positive rail system that will be needed to further unite the state into the global economy and to increase its logistic function within its western U.S. context."*

There are no Class II or Class III freight railroads in Nevada. Thus, Nevada's role is one of supporting, coordinating, and enhancing the services of the Union Pacific (UPRR), BNSF, and Amtrak. For example, NDOT commits staff resources to work with state and local highway officials, UPRR personnel, and other key stakeholders to identify needed rail-highway grade crossing projects each year and improve the selected crossings, using federal dollars and a UPRR local match. NDOT's primary objective with this program is to improve the state's quality of life, safety, and environmental/economic sustainability.

A full description of Nevada's railroads follows in Chapter 2.

D. Institutional Governance Structure of the State Rail Program

D-1. Nevada Department of Transportation

The Nevada Department of Transportation (NDOT) is responsible for coordinating the overall state transportation improvement strategy. The department is primarily responsible for rail planning and project development activities, including development of this State Rail Plan. NDOT's headquarters is in Carson City, Nevada.

NDOT is Nevada's State Rail Transportation Authority (SRTA) and (SRPAA). Furthermore, Nevada follows the requirements of 49 U.S.C. §22102, which stipulates eligibility requirements for the FRA rail freight grant assistance program pertaining to state planning and administration.

NDOT is the primary rail planning agency within the state of Nevada. However, NDOT has limited funding authority for rail. It participates in the railroad abandonment process and offers comment on federal rail legislation and rulemaking.

The following are those divisions under the jurisdiction of NDOT which have existing or potential rail-related responsibilities.

Rail Planning Section

The Rail Planning Section has the primary responsibility for rail planning in Nevada DOT. The office administers various rail-related programs, including:

- Rail policy and legislation development
- Information and communications
- Passenger and freight rail planning

Railroad Safety Program

- Highway/railroad crossing agreements
- Crossing safety and inspections
- Crossing equipment and road surface maintenance

Nevada Freight Advisory Committee (FAC)

The FAC is housed within NDOT and made up of representatives from private sector companies and public agencies. Together, the Committee discusses topics that impact freight transport in Nevada and provide NDOT with guidance. Meetings are held in video conference rooms across the state with a webinar link available to those not conveniently located near a meeting site.

The Transportation Public Advisory Committee (TPAC) will review and advise on adopting the state rail plan; and the Nevada State Transportation Board has final state rail plan approval authority for Nevada. The Federal Railroad Administration (FRA) will accept the document for the federal government.

E. The State's Authority for Grant, Loan, and Public/Private Partnership Financing

E-1. State Infrastructure Bank

The enabling legislation for Nevada State Infrastructure Bank ("Nevada SIB") was signed into law June 2017 (NV AB-399)[5]; however, the Bank has not been capitalized, as required, to "carry out the business of the Nevada State Infrastructure Bank". See quote below from legislation creating the Nevada SIB in 2017. Absent capitalization of the Nevada SIB by the State of Nevada, the enabling legislation passed in 2017 is not useful for aiding the development of rail infrastructure in Nevada, by any party, public or private.

If the Nevada SIB were indeed 'capitalized' by the State, eligible projects would include "Transportation Facilities. Nevada Revised Statutes ("NRS") NRS 408.55066[6] define "Transportation facility" as:

"Transportation facility" means any existing, enhanced, upgraded or new facility that is used or useful for the safe transport of people, information, or goods via one or more modes of transport, including, without limitation, any of the following:

1. *A road, railroad, bridge, tunnel, overpass, airport, mass transit, light or commuter rail, conduit, ferry, boat, vessel, parking facility, intermodal or multimodal system or any other mode of transport, including, without limitation, those utilizing autonomous technology, and any rights of way necessary for any eligible transportation facility.*
2. *Related or ancillary to, or used or useful to provide, operate, maintain or generate revenue for, a facility described in subsection 1, including, without limitation, administrative buildings and other*

[5]Nevada Assembly Bill 399, source link, effective June 2017.
[6]Nevada Revised Statutes 408.55066, source link, effective 2017.

buildings, structures, rest areas, maintenance yards, rail yards, ports of entry or storage facilities, vehicles, rolling stock, energy systems, control, communications and information systems, parking facilities and similar commercial facilities used for the support of or the transportation of persons, information or goods or other related equipment, items or property, including, without limitation, any other property that is needed to operate the facility.

3. *All improvements, including equipment necessary to the full utilization of a transportation facility, including, without limitation, site preparation, roads and streets, sidewalks, water supply, outdoor lighting, belt line railroad sidings and lead tracks, bridges, causeways, terminals for railroad, automotive and air transportation and transportation facilities incidental to the project.*

E-2. Public-Private Partnerships ("P3s")

The Nevada Senate Bill SB 448[7] explicitly added P3s to the Nevada statutory framework of applicable laws in July 2017 which was codified as the following:

NRS 338.1587 Public-private partnership: Authority to enter; authorized provisions.

1. *A public body may enter into a public-private partnership to plan, finance, design, construct, improve, maintain, operate, or acquire the rights-of-way for, or any combination thereof, a transportation facility.*
2. *A public-private partnership may include, without limitation:*
    a. *A predevelopment agreement leading to another implementing agreement for a transportation facility as described in this subsection.*
    b. *A design-build contract.*
    c. *A design-build contract that includes the financing, maintenance or operation, or any combination thereof, of the transportation facility.*
    d. *A contract involving a construction manager at risk.*
    e. *A concession, including, without limitation, a toll concession, and an availability payment concession.*
    f. *A construction agreement that includes the financing, maintenance or operation, or any combination thereof, of the transportation facility.*
    g. *An operation and maintenance agreement for a transportation facility.*
    h. *Any other method or agreement for completion of the transportation facility that the public body determines will serve the public interest; or*
    i. *Any combination of paragraphs (a) to (h), inclusive.*

Since the enabling legislation was enacted in 2017, there has not yet been a P3 financing structure deployed for an infrastructure project. Nevada DOT identifies the USA Parkway Interchange project in 2007-2008 as a successful P3 funding example.

[7]Nevada Senate Bill 448, source link, effective July 2017.

E-3. Private Activity Bonds

Nevada is the 7th largest state in size, but only the 32nd largest in population (2019 population of 3.08M). Population determines the allocation of a host of United States federal benefits and allocations. In the case of Private Activity Bonds (PABs), the Internal Revenue Service (IRS) most recently established each State's per capita 'PAB Volume Cap' and small state minimum levels in November 2019 (see Rev. Proc 2019-44). In 2020, The per capita PAB Volume Cap will be $105 per capita, the same amount as in 2019, but the small state minimum for PAB Volume Cap will increase to $321,775,000 per year from $316,745,000. With a population of 3.08M, Nevada's PAB Volume Cap is approximately $323M, a relatively small amount of bond authority to deploy for transportation and other eligible projects carried forward by a private entity in Nevada.

PABs are an important tool, as can be seen from the case of the Brightline West high-speed passenger rail project which will hopefully soon break ground on the rail infrastructure to carry passengers from Victorville, CA to Las Vegas, NV and back. Brightline West just received (July 2020) an allocation of $200M in PAB issuance authority from the Nevada State Board of Finance. California, with a far greater PAB Volume Cap, was able to provide $600M in allocation to Brightline West in April 2020.

F. Nevada's Freight and Passenger Rail Agencies, Initiatives, and Plans

F-1. Transportation Agencies

Nevada Department of Transportation

Rail planning functions at NDOT are located within the Department's Rural Programs Section. This Section is part of the Transportation/Multimodal Planning Division, which reports to the Assistant Director for Planning, one of four assistant directors under NDOT's Director and two Deputy Directors. The Section is fully integrated into NDOT's administrative structure and interacts effectively with the other operating units at NDOT. The Section is currently staffed with a division chief and separate program managers over the transit, aviation, freight, and rail programs. This multimodal division is tasked with oversight of passenger and freight rail system improvements within the state as well as updating the state freight and rail plans.

Nevada revised statutes (NRS) authorize and direct NDOT to engage in rail planning and development in the state. NRS 705.421 directs NDOT to prepare and implement a state plan for rail service in cooperation with Nevada's Public Utilities Commission (NPUC), including projects to preserve rail lines, rehabilitate rail lines to improve service, and restore or improve freight service on rail lines that are potentially subject to abandonment. NRS 705.423 gives NDOT the power to accept federal, state, local, and private money to develop and implement the state rail plan with state legislative approval to expend funds to implement the plan; to enter into agreements for railroad purposes; and to act as the agent for counties and cities for railroad purposes. NRS 705.425 provides for a state program to preserve lines where service has been discontinued; NRS 705.427 permits NDOT to acquire and operate track and other railroad property that is the subject of abandonment or discontinuation of service. NRS 705.428 authorizes NDOT to contract for construction, improvement, or rehabilitation of any trackage or rail line property, provided state

legislative approval authorizes the expenditure of any funds. NDOT has been coordinating and communicating with the PUC throughout the state rail plan process.

F-2. Regional and Local Public Entities

Nevada's transportation agencies, besides NDOT, include Metropolitan Planning Organizations (MPOs) and Regional Planning Associations (RPAs). MPOs, RPAs, as well as Economic Development Entities are identified and described in this section.

Metropolitan Planning Organizations

Metropolitan Planning Organizations (MPOs) are federally mandated and funded transportation policy-making organizations composed of local government and transportation officials. The formation of an MPO is required for any urbanized area with a population greater than 50,000.

MPOs are required to maintain and continually update a Long-Range Transportation Plan (LRTP) as well as a Transportation Improvement Program (TIP), which is a multi-year program of transportation projects to be funded with federal and other transportation funding sources. As MPO planning activities have evolved to address the movement of freight as well as passengers, they have included consideration of multimodal solutions, improved intermodal connections, and more specific rail and rail-related project solutions. MPOs must work cooperatively with area transportation stakeholders to understand and anticipate the area's travel needs and to develop the aforementioned documents.

There are three MPOs in Nevada:

- Carson Area Metropolitan Planning Organization
- Regional Transportation Commission (RTC) of Washoe County
- Regional Transportation Commission of Southern Nevada
- Tahoe Metropolitan Planning Organization

Regional Economic Development Entities

Nevada has several regional public economic development entities which recruit industries and businesses based on their location, available labor force, room for growth, and access to rail and other transportation assets. These entities often employ incentives such as tax incentives, infrastructure assistance, and other support to attract businesses to locate in the state. Although these entities do not generally work directly with freight railroad operators, they do have a vested interest in the level of rail services and rail assistance programs available to supplement their incentives for attracting and serving area businesses.

The following Nevada economic development entities were engaged in the NVSRP process:

- Economic Development Authority of Western Nevada
- Las Vegas Global Economic Alliance
- Northeastern Nevada Regional Development Authority
- Northern Nevada Development Authority
- Storey County Economic Development Office

F-3. Nevada Transportation Plans

Nevada State Freight Plan

Nevada's latest state freight plan[8] was completed in 2017. The primary purpose of the Nevada Freight Plan is to serve as a statewide long-range freight planning document, fully integrated with other state planning initiatives. The State Freight Plan will align with the National Freight Goals to:

- Improve the contribution of the freight transportation system to economic efficiency, productivity, and competitiveness.
- Reduce congestion on the freight transportation system.
- Improve the safety, security, and resilience of the freight transportation system.
- Improve the state of good repair of the freight transportation system.
- Use advanced technology, performance management, innovation, competition, and accountability in operating and maintaining the freight transportation system.
- Reduce adverse environmental and community impacts of the freight system.

One Nevada Transportation Plan

One Nevada Transportation Plan[9] builds on Nevada's success with a previous long-range transportation plan and provides direction for all transportation modes in the state, including rail and public transit. The document was adopted and approved in 2018. The One Nevada Transportation Plan projects the demand for transportation infrastructure and services to the year 2040 and considers the social and economic changes that are expected to occur in the state between 2018 and 2040. The One Nevada Transportation Plan underscores the idea that Nevada's economy, quality of life, and competitiveness will require a transportation system that is developed with these changes in mind.

Nevada's adopted guiding principles as the basis for decision-making and investment actions covering all transportation modes, are**:**

- Enhance Safety
- Preserve Infrastructure
- Optimize Mobility
- Transform Economies
- Foster Sustainability
- Connect Communities

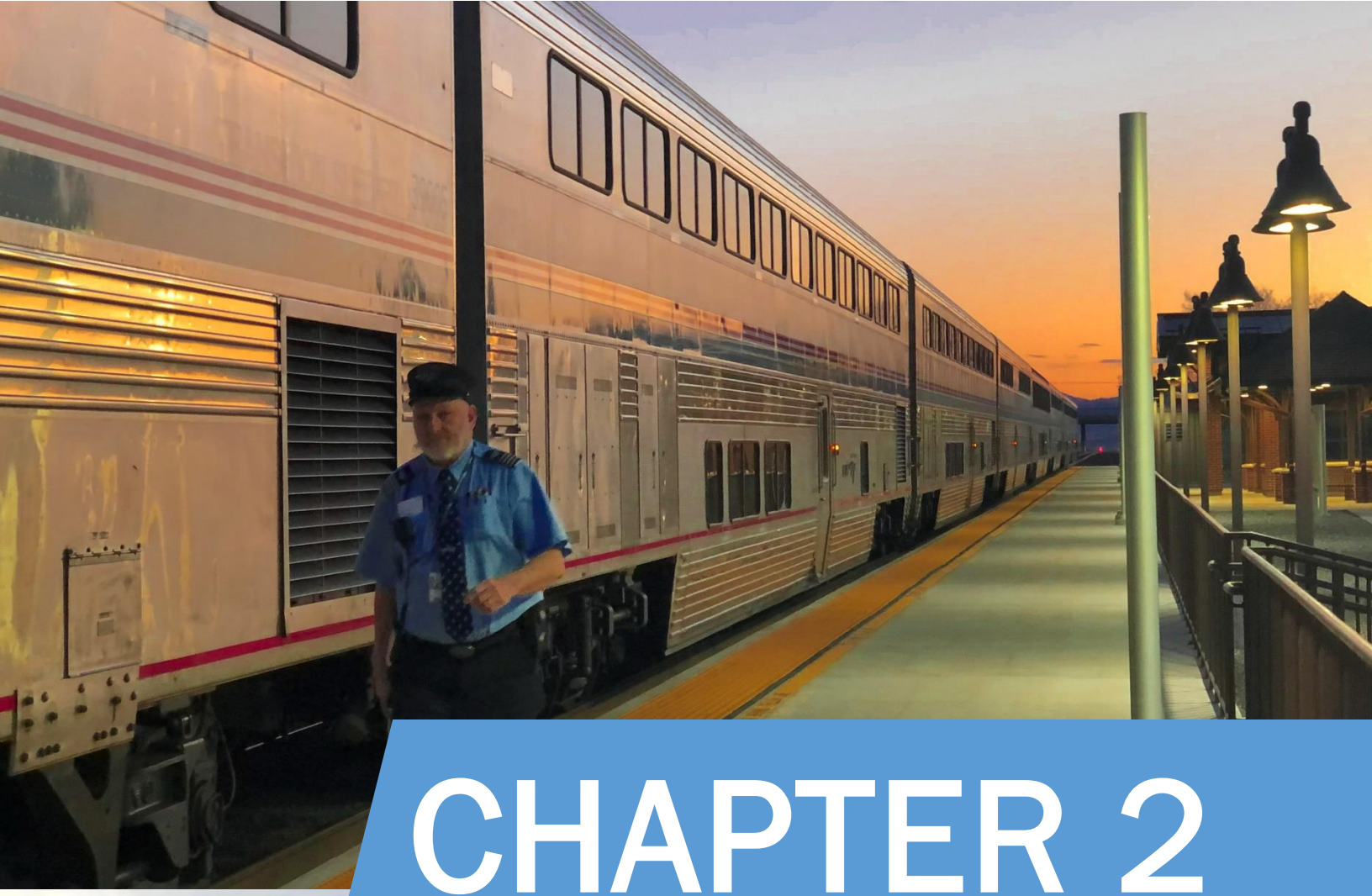
Nevada Statewide Transportation Improvement Program

The Statewide Transportation Improvement Program 2016-2019 Draft (STIP)[10] is a federally required systematic listing of projects for which federal-aid funding is proposed. This document grows out of the STP and outlines NDOT's funding objectives to maintain a globally competitive and attractive climate for businesses and people, and to ensure that the transportation system contributes to a productive and

[8] Nevada Department of Transportation (NDOT), "Nevada State Freight Rail Plan", source link, published January 2017.
[9] NDOT, "One Nevada Transportation Plan", source link, published November 2018.
[10] NDOT website, "2019 Statewide Transportation Improvement Program (STIP)" projects list page, source link, accessed August 13, 2020.

efficient economy. Nevada's rail network is a key asset in attaining these objectives. The STIP identifies projects funded by the Federal Highway Administration (FHWA), including highway-railroad grade crossing safety projects, and the Federal Transit Administration (FTA) programs. These projects may have a potential intersection with the Nevada railroad network. Rail projects in the state have also been added to the STIP in the past for illustrative purposes to support applications for federal grant funding.

A detailed description of Nevada's rail system, including freight data for rail and truck movements, is covered in Chapter 2.



CHAPTER 2

Existing Nevada Rail System

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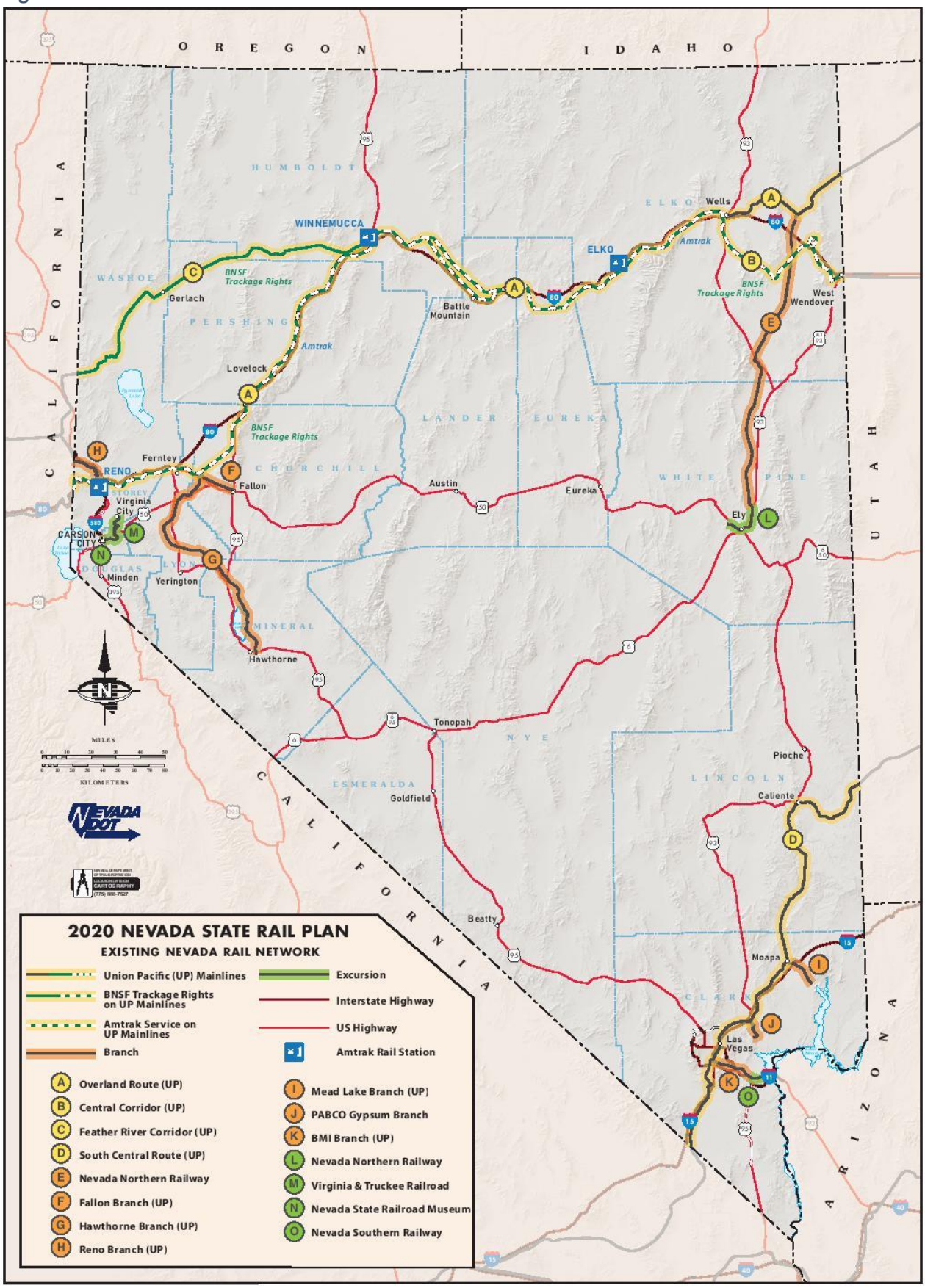
Chapter 2 Existing Nevada Rail System

BNSF Locomotive

Figure 2-1 shows the main, branch, and excursion rail lines currently used for passenger and freight service in the state of Nevada. The following sections describe in more detail the rail service that these lines provide.

Figure 2-1: Nevada Rail Network



A. Passenger Rail Infrastructure and Operations

A-1. Passenger Service Objectives and Performance

The Passenger Railroad Investment and Improvement Act (PRIIA), which Congress passed in 2008, created a set of metrics that Amtrak was to use in managing and measuring performance and service quality on its intercity passenger rail routes. PRIIA Section 207 outlined the service standards that Amtrak was to achieve by the end of FY14; these standards include cost recovery, passenger miles per train mile, on-time performance, train delays, and customer satisfaction.

Table 2-1 lists the PRIIA performance metrics achieved on Amtrak's long-haul routes, including the *California Zephyr*, which is the only Amtrak rail route currently operating in Nevada. Section 207 mandated that all Amtrak long-haul routes must achieve an on-time performance measure of 85 percent and an overall Customer Service Index (CSI) of 90 percent by the end of FY14. The Federal Railroad Administration (FRA) was given the responsibility of preparing a quarterly report on Amtrak's progress and achievements.

Table 2-1: PRIIA Section 207 Performance Metrics for Amtrak Long-Haul Routes

On-Time Performance (OTP)	**Standard (FY14)**
Endpoint OTP	85%
All Station OTP	85%
Train Delays	**Standard (FY14)**
Amtrak-responsible delays per 10,000 train miles	325 minutes/10,000 train miles
Host-responsible delays per 10,000 train miles	900 minutes/10,000 train miles
Customer Service Index (CSI)	**Standard (FY14)**
Percent of customers "Very Satisfied" with	90%
Overall service	90%
Amtrak personnel	90%
Information given	90%
On-board comfort	90%
On-board cleanliness	90%
On-board food service	90%
Financial/Operating	**Standard (FY14)**
Short-term operating cost recovery	Continuous year-over-year improvement on eight-quarter moving average
Fully allocated operating cost recovery	
Long-term avoidable operating loss per passenger-mile	
Passenger miles per train mile	

The On-Time Performance (OTP) protections afforded by PRIIA were struck down by the D.C. Court of Appeals in 2014, bowing to a suit brought by the Association of American Railroads (AAR). A subsequent D.C. Court of Appeals ruling in July of 2018[1] again granted Amtrak and the FRA the ability to determine on-time performance metrics and standards. In June of 2019, the Supreme Court denied an AAR petition for a *writ of certiorari*[2], thus affirming Amtrak and the FRA's ability to determine appropriate performance metrics and standards which, as of writing, are still being drafted.

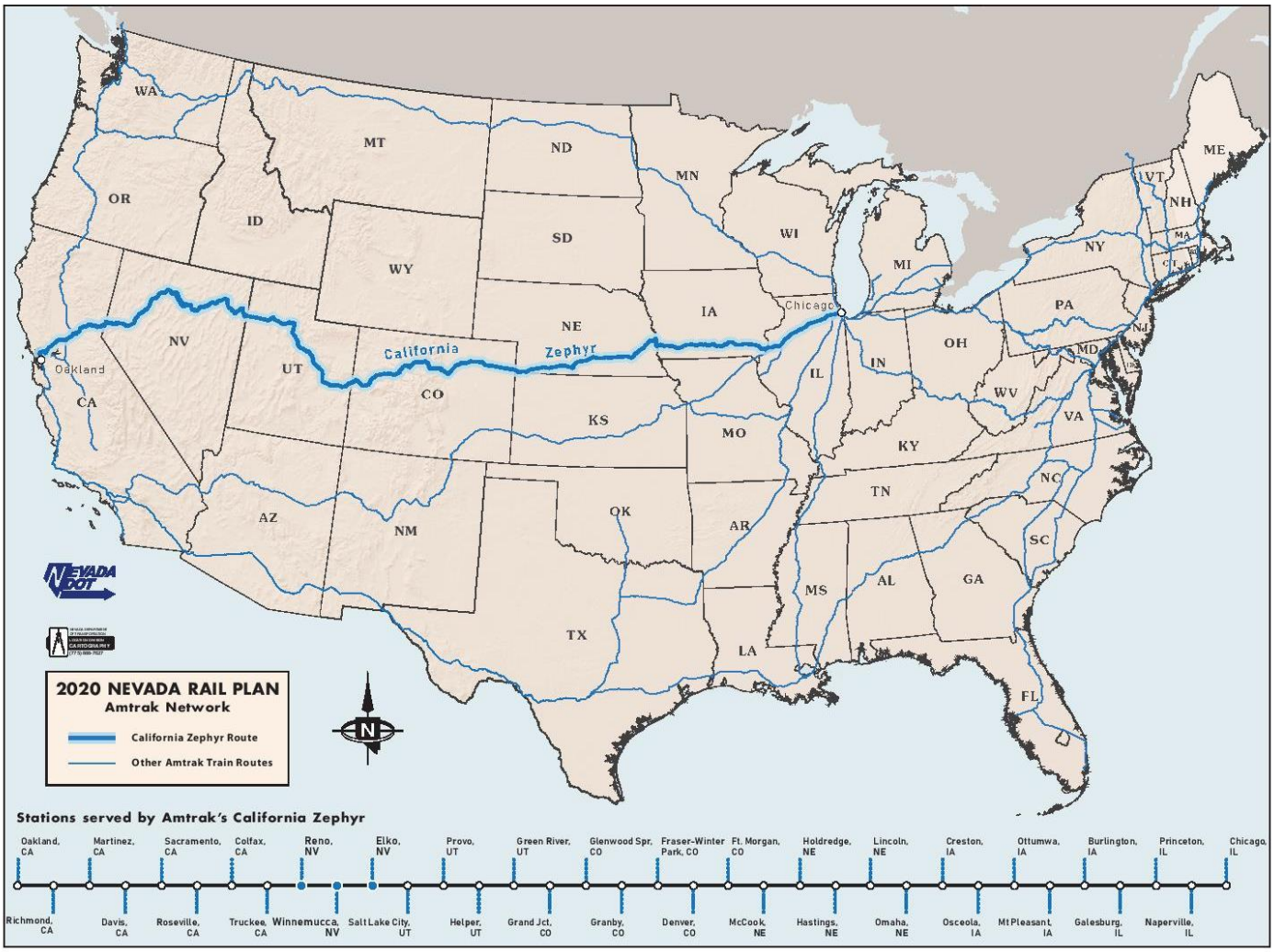
[1] Amtrak, "General and Legislative Annual Report & Fiscal Year 2020 Grant Request", page 34, source link.
[2] US Supreme Court, "AAR v. Department of Transportation et al.", source link, accessed June 9, 2020.

The *California Zephyr* currently ranks in the bottom third of Amtrak routes in on-time performance, achieving only a 38.1% on-time performance in the latest available Amtrak Monthly Performance Report. The host railroad in Nevada, Union Pacific, does not appear to be responsible because most delays appear to occur on BNSF lines hosting the train east of Denver to Chicago. Amtrak created a Performance Improvement Plan (PIP) in September 2010 to improve the *California Zephyr*'s on-time performance through better coordination with host railroads and improving customer service through a Customer Excellence Program, which emphasizes staff training and employee incentives. The *California Zephyr*'s overall Customer Satisfaction Index (CSI) of 87.5 percent in FY19, closely approaches the goal of a 90 percent CSI rating.

A-2. Passenger Rail Service

Figure 2-2 shows the *California Zephyr* route and the complete Amtrak network in the US.

Figure 2-2: California Zephyr and Amtrak System[3]



Current passenger rail service in Nevada consists of Amtrak's *California Zephyr* route, which travels 2,438 miles between Chicago and the San Francisco Bay area. The route began service in 1949 as a joint operation of the Chicago Burlington and Quincy Railroad, Denver and Rio Grande Western Railroad and Western Pacific Railroad. The line experienced various route and name changes over the next 34 years

[3] Amtrak website, source link, accessed June 9, 2020.

until Amtrak created the current alignment in 1983. Notably, the train in the pre-Amtrak era used its unusually spectacular scenery as a selling point, and recent indicators from Amtrak management[4] suggest that the route will have staying power into the future because of its scenery. The following section summarizes the operational characteristics of Amtrak service in Nevada. Until FY2018, Amtrak also contracted with a tour operator, Key Holidays, to operate special "Fun Trains" and "Snow Trains", which carried thousands of passengers in between the San Francisco Bay area and Reno during the winter months when other modes of transportation are often incapacitated by adverse weather.

Amtrak's California Zephyr

The *California Zephyr* is a cross-country intercity passenger rail operation that Amtrak operates with one trip daily in each direction between Chicago and Emeryville, CA. The route passes through Illinois, Iowa, Nebraska, Colorado, Utah, Nevada, and California.

Table 2-2: California Zephyr Route Characteristics

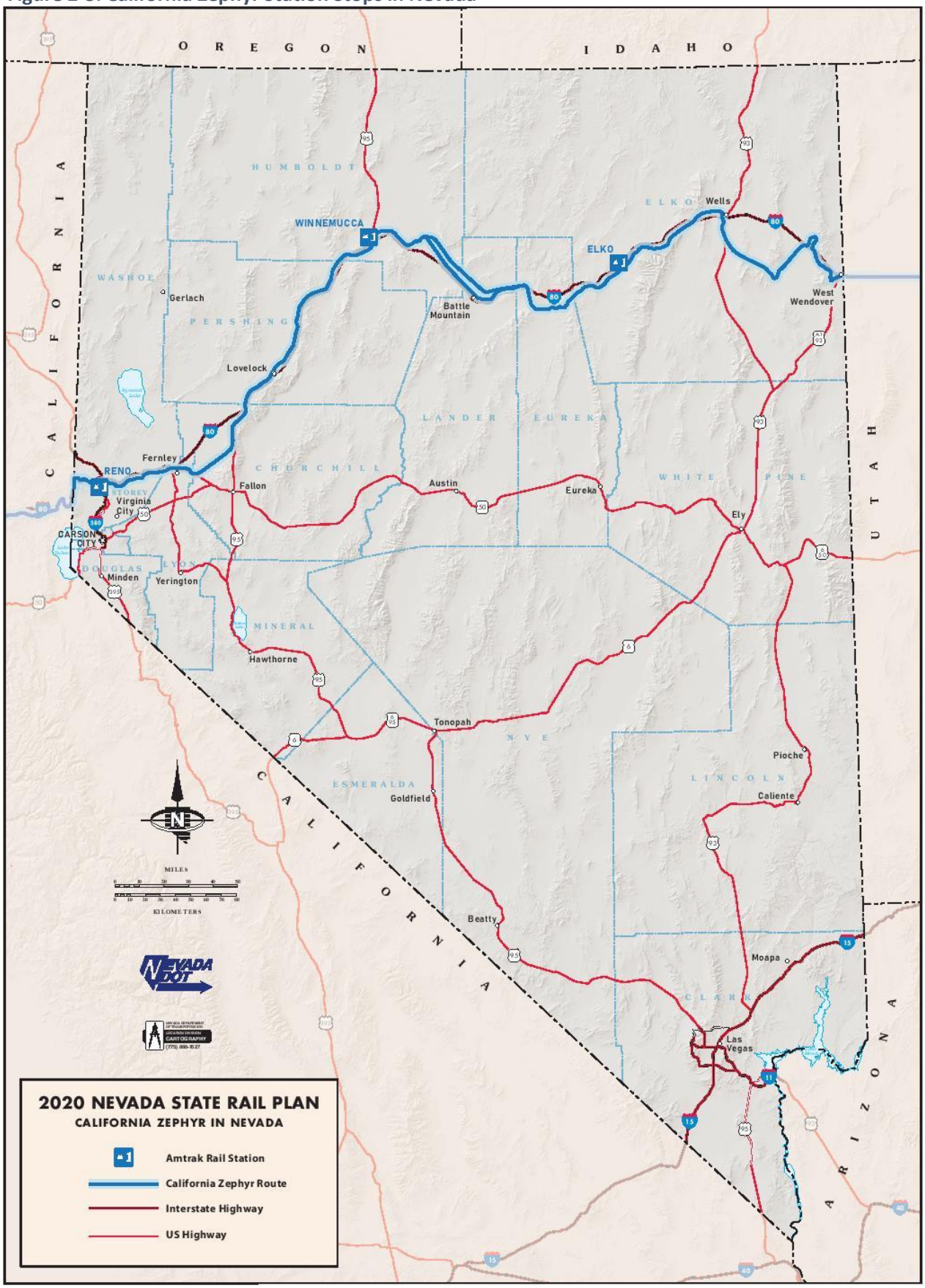
***California Zephyr* Route Characteristics**	
Daily Round Trips	1[5]
Equipment	Superliner Coaches & Sleepers
Number of Stops	34
Distance Travelled	2,438
Stops in Nevada	Reno, Winnemucca, Elko
2019 Total Train Ridership	418,203[6]
2019 On Time Performance	39.80%[7]
2019 CSI Score	87.50%
2019 Annual Nevada Ridership	88,960[8]
2019 NV Automotive VMT Saved	17.8 Million

The *California Zephyr* is a full-service, Superliner-equipped train, which typically includes three Superliner sleeping cars, three Superliner coaches, a sightseer lounge car, and a dining car. During off-peak months, "right sizing" is undertaken by Amtrak, reducing the train by one sleeper and one coach car. **Table 2-2** summarizes the *California Zephyr* operating characteristics and will be further elaborated in the text. **Figure 2-3** presents the existing *California Zephyr* route in Nevada.

The train operates over 427 miles of UPRR-owned track in Nevada where it stops in the cities of Elko, Winnemucca, and Reno. UPPR owns the Elko and Winnemucca Amtrak stations while the city of Reno owns the Reno Amtrak station. A station in Sparks was discontinued in 2009 because of operating constraints at the terminal within the UPRR intermodal yard.

[4] Bloomberg Businessweek, "Amtrak CEO Has a Plan for Profitability, and You Won't Like It" article, source link, published November 20, 2019.
[5] Amtrak *California Zephyr* Timetable, source link, as of March 16, 2020.
[6] Rail Passengers Association, "Amtrak fact sheet: California Zephyr service", source link, accessed June 9, 2020.
[7] Amtrak, "Host Railroad Report", accessed June 9, 2020.
[8] Rail Passengers Association, "Fact sheet: Amtrak in Nevada", source link, accessed June 9, 2020.

Figure 2-3: California Zephyr Station Stops in Nevada



Amtrak employed 29 Nevada residents in FY17 (the last year with publicly available data)[9] with total annual wages of $2,627,457 while Amtrak spent $4,799,494 on goods and services in the state in FY17, including $4,598,260 specifically in Reno. Amtrak invested $2MM in accessibility improvements at the Elko and Winnemucca stations, and a new shelter and platform in Winnemucca using American Recovery and Reinvestment Act (ARRA) program funding in 2009. The Reno station was relocated to a new full-service facility in 2006 as part of the Reno Transportation Rail Access Corridor (ReTRAC) project, which depressed two miles of UPRR main line track through downtown Reno, eliminating all grade crossings. In contrast, the Amtrak station in Elko, NV remains by far the most dysfunctional intercity passenger rail facility in the state; there is a difficult three-quarter-mile distance between its eastbound and westbound platforms (*see Chapter 2, Section 5: Intermodal Connections*). The City of West Wendover, NV, on the border of Utah is, as of this writing, in talks with Amtrak and Union Pacific about adding a station stop .[10]

Passenger Activity and Travel Times

The *California Zephyr* carried a total of 418,203 passengers[11] in 2019. Of those passengers, 88,960 used Nevada as an origin or destination. 78,921 travelled in coach an average of 377 miles and 10,039 of them were in sleeping cars, travelling an average of 817 miles. Using the most recent Nevada-specific data available[12] from Amtrak, 47 percent of those passengers would have driven, 23 percent would have flown, 28 percent would not have travelled at all, and 2 percent would have travelled by bus. Using these numbers, about 41,800 passengers would have driven a combined average of 427 miles each, meaning that the *California Zephyr* saved about 17.8 million Vehicle Miles Traveled (VMT) in 2019 alone. Also important to note, is that about 25,000 passengers would not have travelled at all. In other words, 25,000 trips were created by the availability of the train. Nationally, only 8 percent of Amtrak passengers would not travel were it not for the train service, so the *California Zephyr,* at 28 percent, creates an outsized benefit to the residents of Northern Nevada.

Passenger activity (boardings and alightings) on the *California Zephyr* route in Nevada has fluctuated over the last decade, after experiencing significant growth in the 2000s, with ridership more than doubling at Elko and Winnemucca over the decade and with more modest increases at Reno. Amtrak experienced the highest ridership total in its history in 2019 with 32.5M passengers. Nevada ridership experienced a peak in 2013 at 91,016 passengers,[13] but has been in a state of flux since. **Table 2-3** shows passenger usage by station in Nevada since the 2012 Nevada State Rail Plan was issued, in context with local population numbers. In Elko and Winnemucca, the train makes an outsized impact, with ridership in Winnemucca representing almost 70 percent of the town's population in 2019. The train also has a big effect in Reno, with a ridership number equal to about a third of its population.

Two of the ten busiest trip segments the *California Zephyr* serves across seven states include Reno as an origin and destination. The fourth largest travel market on the line is between Sacramento and Reno, while the seventh largest travel market on the route is between Emeryville and Reno. The market between Reno and Northern California benefits from attractive travel times in both directions, with all stations from Reno to Emeryville served between the daylight hours of 8:00 am and 5:00 pm.

[9] Amtrak, "Amtrak Fact Sheet, Fiscal Year 2017 State of Nevada", source link, accessed June 9, 2020.
[10] Amtrak, "Amtrak Fact Sheet, Fiscal Year 2018 State of Nevada", source link, accessed June 9, 2020.
[11] Rail Passengers Association, "Amtrak fact sheet: California Zephyr service", accessed June 9, 2020.
[12] Amtrak, "Amtrak's Contributions to Nevada", source link, accessed June 9, 2020.
[13] Rail Passengers Association, "Fact sheet: Amtrak in Nevada", accessed June 9, 2020.

Table 2-3: California Zephyr Ridership in Context with Nevada Stations 2013-2019

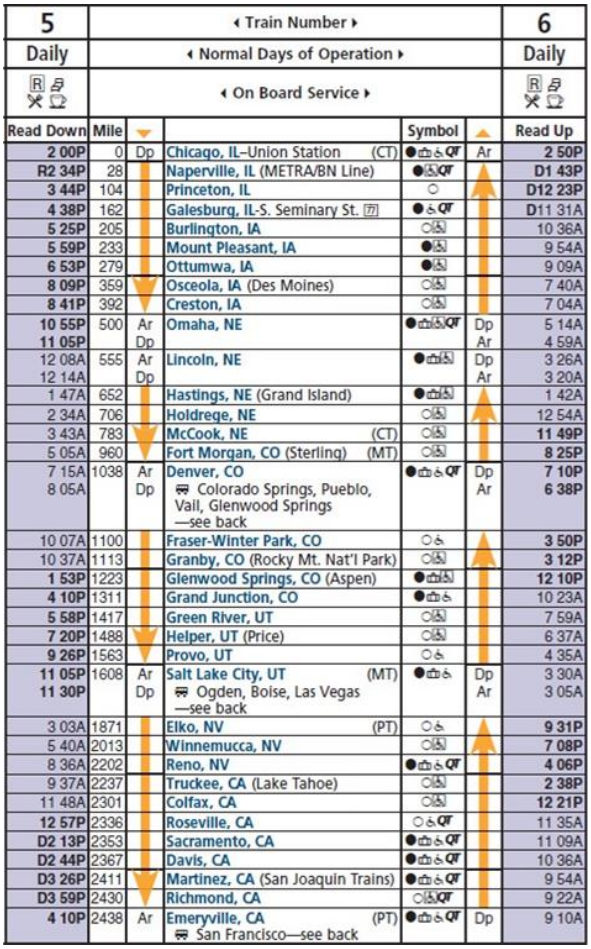
Fiscal Year		2019	2018	2017	2016	2015	2014	2013
Elko	Train Passengers	8,360	8,656	7,219	7,550	8,050	9,436	9,657
	Population*[14]	20,452	20,341	20,339	20,276	20,108	20,149	19,237
	% Population	41%	43%	35%	37%	40%	47%	50%
Winnemucca	Train Passengers	5,203	4,540	4,146	4,050	3,617	4,660	4,481
	Population*	7,754	7,763	7,727	7,771	7,834	7,932	7,753
	% Population	67%	58%	54%	52%	46%	59%	58%
Reno	Train Passengers	75,397	70,518	69,904	69,297	56,318	63,029	76,878
	Population*	250,998	247,106	242,476	234,301	231,161	229,069	227,160
	% Population	30%	29%	29%	30%	24%	28%	34%

Elko and Winnemucca have less convenient service with trains departing between 7:00 pm and 9:30 pm eastbound and between 3:00 am and 5:00 am westbound. The total travel time from one side of the state to the other (Elko to Reno) is about five-and-a-half hours. **Figure 2-4** provides Amtrak's complete *California Zephyr* schedule.

The state of Nevada does not contract with Amtrak to provide any additional passenger service to supplement the California Zephyr route. Fifteen states, including the neighboring states of California and Oregon, provide operating and capital funding to obtain additional service. These include the *Cascades* route in Oregon and the *Capitol Corridor*, *San Joaquin* and *Pacific Surfliner* routes in California. The California routes offer timed connections to Nevada via Thruway Bus service (*see Chapter 2, Section 5: Intermodal Connections*).

Greyhound discontinued its route along Nevada's northern tier in February 2018, rendering Amtrak's *California Zephyr* the only public transportation across northern Nevada east of Reno. In place of busses, Greyhound now interlines with Amtrak service. Booking a trip from Reno to Chicago on Greyhound now buys a passenger a train trip from Reno to Salt Lake City, where a passenger then transfers to a Greyhound bus for the rest of the trip (which is less expensive compared with an all-Amtrak ride to Chicago.)

Figure 2-4: California Zephyr 2020 Timetable[15]



5	‹ Train Number ›				6
Daily	‹ Normal Days of Operation ›				Daily
R	‹ On Board Service ›				R
Read Down	Mile			Symbol	Read Up
2 00P	0	Dp	Chicago, IL–Union Station (CT)		2 50P
R2 34P	28		Naperville, IL (METRA/BN Line)		D1 43P
3 44P	104		Princeton, IL		D12 23P
4 38P	162		Galesburg, IL-S. Seminary St. [7]		D11 31A
5 25P	205		Burlington, IA		10 36A
5 59P	233		Mount Pleasant, IA		9 54A
6 53P	279		Ottumwa, IA		9 09A
8 09P	359		Osceola, IA (Des Moines)		7 40A
8 41P	392		Creston, IA		7 04A
10 55P 11 05P	500	Ar Dp	Omaha, NE	Dp Ar	5 14A 4 59A
12 08A 12 14A	555	Ar Dp	Lincoln, NE	Dp Ar	3 26A 3 20A
1 47A	652		Hastings, NE (Grand Island)		1 42A
2 34A	706		Holdrege, NE		12 54A
3 43A	783		McCook, NE (CT)		11 49P
5 05A	960		Fort Morgan, CO (Sterling) (MT)		8 25P
7 15A 8 05A	1038	Ar Dp	Denver, CO Colorado Springs, Pueblo, Vail, Glenwood Springs —see back	Dp Ar	7 10P 6 38P
10 07A	1100		Fraser-Winter Park, CO		3 50P
10 37A	1113		Granby, CO (Rocky Mt. Nat'l Park)		3 12P
1 53P	1223		Glenwood Springs, CO (Aspen)		12 10P
4 10P	1311		Grand Junction, CO		10 23A
5 58P	1417		Green River, UT		7 59A
7 20P	1488		Helper, UT (Price)		6 37A
9 26P	1563		Provo, UT		4 35A
11 05P 11 30P	1608	Ar Dp	Salt Lake City, UT (MT) Ogden, Boise, Las Vegas —see back	Dp Ar	3 30A 3 05A
3 03A	1871		Elko, NV (PT)		9 31P
5 40A	2013		Winnemucca, NV		7 08P
8 36A	2202		Reno, NV		4 06P
9 37A	2237		Truckee, CA (Lake Tahoe)		2 38P
11 48A	2301		Colfax, CA		12 21P
12 57P	2336		Roseville, CA		11 35A
D2 13P	2353		Sacramento, CA		11 09A
D2 44P	2367		Davis, CA		10 36A
D3 26P	2411		Martinez, CA (San Joaquin Trains)		9 54A
D3 59P	2430		Richmond, CA		9 22A
4 10P	2438	Ar	Emeryville, CA (PT) San Francisco—see back	Dp	9 10A

[14] ** denotes statistics pulled from U.S. Census Bureau*

[15] Amtrak website, source link, accessed June 9, 2020.

Less than 10 percent of *California Zephyr* passengers travel more than 2,000 miles[16], evinced by the top city-pairs on the train by ridership including Reno and Salt Lake City, UT as well as Sacramento, CA and Emeryville, CA (San Francisco, CA region). **Table 2-4** provides a sample of travel times by mode from Nevada stations to these nearby population centers on the *California Zephyr* route. Amtrak offers no time savings over driving, but it is important to note that it facilitates many trip pairs that are only otherwise possible by private automobile.

Table 2-4: Modal Travel Times on Major Corridors from California Zephyr Served Stations in Nevada

Origin	Destination	*California Zephyr*	Airline[17]	Bus	Automobile
Reno, NV	Winnemucca, NV	3 hours	N/A	N/A	2.5 hours
	Elko, NV	5 hours	N/A	N/A	4 hours
	Sacramento, CA	5 hours	5 hours[18]	3.5 hours	2.5 hours
	Emeryville, CA	7 hours	2.5 hours	6 hours	4 hours
	Salt Lake City, UT	11 hours	3 hours	N/A	8 hours
Winnemucca, NV	Reno, NV	3 hours	N/A	N/A	2.5 hours
	Elko, NV	2.5 hours	N/A	N/A	2 hours
	Sacramento, CA	8.5 hours	N/A	N/A	4.5 hours
	Emeryville, CA	10.5 hours	N/A	N/A	6 hours
	Salt Lake City, UT	7 hours	N/A	N/A	5 hours
Elko, NV	Winnemucca, NV	2.5 hours	N/A	N/A	2 hours
	Reno, NV	5 hours	N/A	N/A	5 hours
	Sacramento, CA	11 hours	N/A	N/A	7 hours
	Emeryville, CA	13 hours	N/A	N/A	8.5 hours
	Salt Lake City, UT	4.5 hours	N/A	N/A	3.5 hours

Desert Wind

The *Desert Wind* service between Chicago and Los Angeles was discontinued in 1997 because of budget cuts in the Amtrak system. *Desert Wind* served Las Vegas and Caliente, NV and provided direct trips to Salt Lake City and Los Angeles. Southern Nevada has not had any direct passenger rail service since the elimination of the route, and its only connection to the national passenger rail network is made possible via Amtrak's Thruway Bus service.

Southwest Chief

The *Southwest Chief* travels 2,256 miles between Chicago and Los Angeles with 31 interim stops, including Kansas City, Albuquerque, and Flagstaff. The route operates one trip daily in each direction and passes through the states of Illinois, Iowa, Missouri, Kansas, Colorado, New Mexico, Arizona, and California. The route travels through northern Arizona along the I-40 corridor within 30 miles of southern Nevada. Amtrak Thruway Buses connect the Kingman, AZ station with Laughlin, NV, and Las Vegas. A total of 334,415 passengers rode the *Southwest Chief* in FY2019[19].

[16] Rail Passengers Association, "Amtrak fact sheet: California Zephyr service", accessed June 9, 2020.
[17] *Includes additional 1.5 hours for airport travel and security lines*
[18] *No direct flights are offered as of writing*
[19] Rail Passengers Association, "Amtrak fact sheet: Southwest Chief service", source link, accessed June 7, 2020.

A-3. Amtrak Thruway Bus Service

Amtrak Thruway Bus operates six routes in the state of Nevada connecting to four different train routes including the *California Zephyr* and the *Southwest Chief*, plus the *Capitol Corridor* and the *San Joaquin* services in California. The *Southwest Chief* route, which operates between Chicago and Los Angeles, is the closest Amtrak route to southern Nevada. A map of the Thruway Bus service is shown in **Figure 2-5**. An overview of the Amtrak Thruway Bus service in Nevada is provided in **Table 2-5**.

The Thruway Bus service provides connections between Las Vegas and the cities of Salt Lake City, Kingman, AZ, Los Angeles, and Bakersfield, CA. Service to and from Reno connects to the Sacramento Amtrak station with transfer opportunities to and from San Francisco on the *Capitol Corridor* route. Various private motor coach lines also provide service in the I-80 corridor with daily casino trips between Sacramento and the San Francisco Bay area, and Reno and Sparks. Other Nevada communities with Thruway Bus connections include Stateline, Sparks, and Laughlin.

Figure 2-5: Connecting Amtrak Thruway Bus Service with Nevada

Table 2-5: Amtrak Thruway Bus Service Overview

Train Service Connection	Trips Provided	2019 NV Ridership	Thruway Route	Stations in Nevada
***Capitol Corridor* & *San Joaquin* via Sacramento, CA**	3 roundtrips daily to Reno, NV 2 roundtrips daily to Sparks, NV 1 daily round trip to Stateline, NV (Lake Tahoe)	19,493	Sacramento to Reno & Sparks	Reno Amtrak Station & the Nugget in Sparks
***San Joaquin* via Bakersfield, CA**	1 daily round trip to Las Vegas, NV	11,980	Bakersfield to Las Vegas	Las Vegas Greyhound Station
***Southwest Chief* via Kingman, AZ**	1 trip daily inbound to Las Vegas, NV	3,489	Kingman to Laughlin, NV and Las Vegas	Tropicana Express in Laughlin & McCarran Airport in Las Vegas
***Southwest Chief* via Los Angeles, CA**	1 daily round trip to Las Vegas, NV	3,287	Los Angeles to Las Vegas (Greyhound)	Kingsbury Transit Center in Stateline
***California Zephyr* via Salt Lake City, UT**	1 daily round trip to Las Vegas, NV	276	Salt Lake City to Las Vegas (Greyhound)	Las Vegas Greyhound Station
	Total	***38,568***		

A-4. Amtrak Facts in Nevada

Amtrak's operation in Nevada provides a number of employment and tax revenue benefits to the State of Nevada. **Table 2-6** provides a summary of Amtrak's impact in Nevada**:**

Table 2-6: Amtrak Facts in Nevada

Amtrak Facts in Nevada	
Passenger Miles Served[20]	17,847,679
Annual Payroll[21]	$4,629,000
In-State Spending by Amtrak tourists (24,000)[22]	$28,071,429
Employees[23]	100
Passengers Served[24]	85,315
Local Amtrak Ticket Revenue[25]	$3,221,563
State and Local Tax Revenues from Amtrak tourists[26]	$1,804,592

[20] Amtrak website, 2016 Amtrak's Contributions to Nevada Fact Sheet, source link, accessed August 27, 2020.
[21] Amtrak website, 2016 Amtrak's Contributions to Nevada Fact Sheet, source link, accessed August 27, 2020.
[22] Nevada Tourism and Cultural Affairs, Nevada Division of Tourism (TravelNevada) Strategic Plan FY18 – 19, source link, accessed August 27, 2020.
[23] Amtrak website, 2016 Amtrak's Contributions to Nevada Fact Sheet, source link, accessed August 27, 2020.
[24] Amtrak website, Amtrak Fact Sheet Fiscal Year 2018 State of Nevada, source link, accessed August 27, 2020.
[25] Nevada Tourism and Cultural Affairs, Nevada Division of Tourism (TravelNevada) Strategic Plan FY18 – 19, source link, accessed August 27, 2020.
[26] Nevada Tourism and Cultural Affairs, Nevada Division of Tourism (TravelNevada) Strategic Plan FY18 – 19, source link, accessed August 27, 2020.

A-5. Excursion and Tourist Railroads

Five excursion railroads operate in the state of Nevada:

1. Nevada Northern Railway
2. Virginia & Truckee (V&T) Railroad Company
3. Virginia & Truckee (V&T) Railway Commission
4. Nevada State Railroad Museum
5. Nevada Southern Railway

Nevada Southern Railway Steam Locomotive

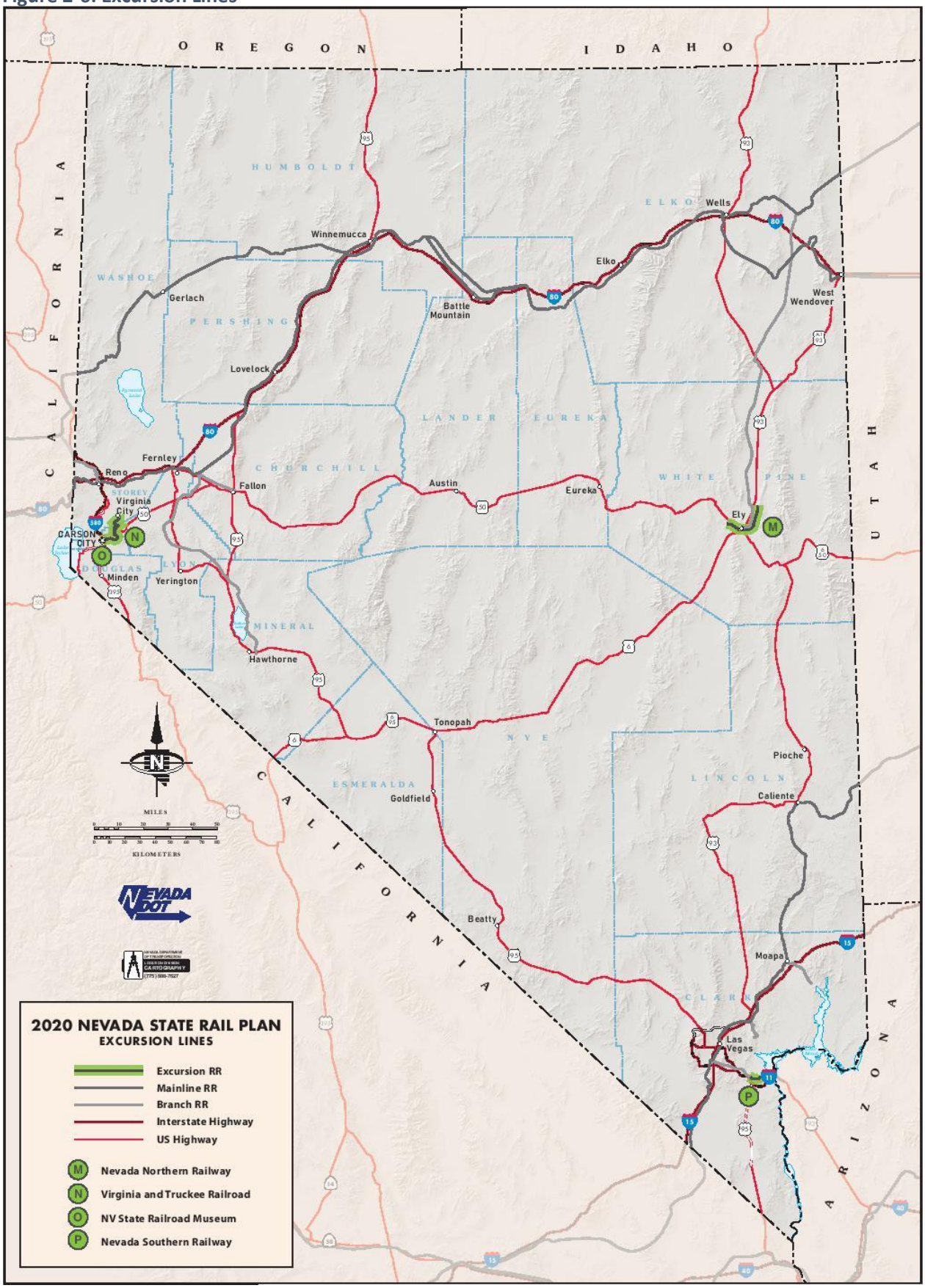
Combined, the five railroads operate on 53 miles of track and can carry over 150,000 passengers annually. The five excursion railroads address a notable component of the state's tourism industry. **Table 2-7** presents an overview of the tourist and excursion lines.

Figure 2-6 (next page) shows the locations of excursion services in the state.

Table 2-7: Excursion and Tourist Railroad Characteristics

Railroad	Total Route Miles	Annual Ridership
Nevada Northern Railway	30	13,000 to 16,000
V&T Railroad Company	3	40,000 to 70,000
V&T Railway Commission	14	25,000
Nevada State Railroad Museum	1	17,000 to 25,000
Nevada Southern Railway	5	50,000

Figure 2-6: Excursion Lines



Nevada Northern Railway

The 149-mile-long railroad line was initially built to haul copper ore and was operated in this capacity from 1906 to 1983, when the Kennecott Minerals Company donated the line and related facilities to the White Pine Historical Railroad Foundation. The Nevada Northern Railway Museum and the White Pine Historical Railroad Foundation operate steam and diesel locomotive excursion service throughout the year on a 30-mile-long segment of the historic route. The opening of its Hiline Branch, which runs parallel to the east of its McGill Junction Route on a more circuitous and scenic route, nearly doubled its operational mileage from what was reported in the 2012 State Rail Plan.[27]

Today, the Nevada Northern Railway Museum provides a 56-acre historic railroad complex with a museum, historic depot, and 68 other buildings and structures, including a roundhouse, machine shops and yards. These assets together form a unique time capsule of American industrial history, which owes its survival to its remote location. The excursion line operation employs a staff of nine full-time and two part-time workers.

The Nevada Northern Railway operates two routes from its depot in Ely on weekends from April to September and weekdays from Memorial Day to Labor Day. The two routes make one to two trips per service day, depending on the time of year. In addition, the railway offers special event train rides throughout the year, including Polar Express trains in the winter and haunted ghost trains on Halloween. Ridership on the two lines ranges from 13,000 to 16,000 passengers annually.

Northern Southern Railway Boulder City Station

[27] Source: Mark Basset, Nevada Northern Railway, Interview by Author, April 2020.

V&T Railroad Company and V&T Railway Commission

The V&T Railroad was completed in 1870 to haul gold and silver ore from the famous Comstock Lode mines in the Virginia City area to Carson City and Reno. The line was operated continuously for 80 years until freight service was discontinued in 1950 after the line lost market share to highway truck traffic.

Today the operable sections of the V&T are used by two separate entities: the private V&T Railroad (V&TRR) and the publicly owned V&T Railway Commission (V&TRRY Commission). The two entities are distinct yet interrelated. The V&TRR has operated on a three-mile section between Virginia City and Gold Hill since 1976, effectively preserving historic elements of the railroad through an era when much was lost elsewhere. Building on the success of the V&TRR, the formation of the V&TRRY Commission made possible the rehabilitation of the 14-mile V&TRRY Commission extension of the V&TRR in the late 2000s. The V&TRR acts as an operator and maintenance contractor of the V&TRRY Commission's trains.

The V&TRR[28] has undergone several capital improvements since the 2012 Nevada State Rail Plan[29], including refurbishment of its 1870s-era depot, a diesel shop extension, a new car shed in Virginia City, and currently the installation of a turntable. Seventy-five-pound rail has been replaced with 90-pound rail for its three-mile run. Tunnel number four has been repaired and extended by 30 feet.

The V&TRRY Commission operates two excursion trains on sections of the original right-of-way from May to October. The Sisters in History Route provides diesel and steam trains on weekends, offering two to three trips between Carson City and Virginia City. The route traverses 14 miles and lasts one-and-a-half hours in each direction. In 2019, the route carried 25,200 passengers, a significant increase from the 13,000 reported in the last state rail plan. The V&TRRY Commission spent $140,000 on advertising in 2019, in part to differentiate itself from the shorter V&TRR service.

The V&TRR operates seven trips daily on the three-mile segment between Virginia City and Gold Hill. The V&TRR also operates special event trains throughout the year, including the Comstock Christmas train and the Polar Express. Ridership ranges from 40,000 to 70,000 annually.

Nevada State Railroad Museum

The Nevada State Railroad Museum in Carson City operates excursion service six days a week on a one-mile loop around the museum property from May to October with special holiday service in December. The museum operates a steam engine one weekend per month and motor car service the other weekends with 7 to 14 trips per day. Annual ridership on the line ranges from 17,000 to 25,000 annually. The museum is currently in the process of adding a third rail to its mile-long loop track to accommodate its collection of narrow-gauge equipment.[30]

Nevada Southern Railway - Boulder City

The Nevada Southern Railway operates from the Nevada State Railroad Museum's Yucca Street Station in Boulder City (the State Railroad Museum's southern counterpart) along 4.5 miles of track to Railroad Pass. The railway was originally built in the 1930s as a UPRR branch line to transport equipment and supplies for construction of the Hoover Dam.

Annual ridership on the Nevada Southern Railway has increased by 36 percent from 2010 to an annual average of 50,000 riders per year, as of 2019. This was accomplished through a successful promotion

[28] Source: Tom Grey, V&T Railroad Company, Interview by Author, May 2020.
[29] Source: Elaine Barkdull-Spencer, V&T Railway Commission, Interview by Author, April 2020.
[30] Source: Dan P. Thielen, Nevada State Railroad Museum, Carson City, Interview by Author, June 2020

campaign and a partnership with "Rail Explorers", offering joint excursions with rail bicycles followed by trains using rigorous safety protocols.[31]

As of this writing, the Nevada Southern Railway is starting service on a half-mile extension, for a total of five miles of railroad in service. The extension, afforded by a highway grade-separation project, reconnects the railroad to the industrial spur owned by the City of Henderson and UPRR. The extension crests a hill, granting Nevada Southern trains spectacular views of the Las Vegas Strip.

As the Nevada Southern is a volunteer-operated, non-insular tourist railroad, it falls under FRA "Lite" regulations, which require double derails at its new interchange with UPRR. This effectively prevents it from interchanging between the two railroads within the city of Henderson and preserves its reduced regulation requirements.

A-6. Multimodal Passenger Connections

This section provides an overview of the multi-modal transportation connections available within the eight Nevada cities that currently are served by either Amtrak rail or Thruway Bus service. The section highlights non-automobile modes with a focus on transit and regional intercity connections; additional linkages might be developed in conjunction with new passenger rail service provided to any of these cities. Walk, bike, and transit scores associated with each of the Amtrak-served stations in these eight cities have been reported where available. All Amtrak rail and Thruway Bus departure and arrival times are based on the June 2018 Full System Timetable. Significantly, in Northern Nevada, Greyhound discontinued all service east of Reno to Salt Lake City in February 2018. Instead, Greyhound arranged for its passengers to travel via Amtrak. This decision by Greyhound has rendered Amtrak's *California Zephyr* as the only common carrier passenger service in the corridor and the sole intercity public transit connection to Elko, Winnemucca, and Reno, to and from points further east to Northern Nevada. **Figure 2-7** shows the 2019 Greyhound System Map, showing the lack of service to Nevada. **Table 2-8** displays a summary of the modes available in each Amtrak served city.

[31] Source: Randall C. Hees, Director, Nevada State Railroad Museum, interview by author, Boulder City, March 2020.

Figure 2-7: 2019 Greyhound System Map[32]

Table 2-8: Multimodal Connections Serving Amtrak Stations in Nevada Cities Ranked by Size

City	Amtrak Rail	Amtrak Thruway Bus	Greyhound	Intracity Transit	Regional Transit	Airport Shuttles	Taxi	Rental Car
Las Vegas		X	X	X	X	X	X	X
Reno	X	X	X	X	X	X	X	X
Elko	X			X			X	X
Winnemucca	X						X	
Sparks		X		X	X	X	X	X
Laughlin		X	X	X	X	X	X	X
Stateline / South Lake Tahoe		X		X	X	X	X	X

Las Vegas

Nevada's largest city, Las Vegas, has not been served by intercity passenger rail trains since the termination of Amtrak's *Desert Wind* in 1997, which linked Las Vegas and Salt Lake City and Los Angeles with a stop in Caliente, NV. Las Vegas currently is served by four Amtrak Thruway Bus lines with direct service to Salt Lake City; Kingman, AZ, where it connects with Amtrak's *Southwest Chief*; Los Angeles; and Bakersfield, CA. All Amtrak Thruway service operates out of the downtown Greyhound Station at 200

[32] Greyhound, 2019 Greyhound Network Map, source link, accessed June 7 2020.

South Main Street, except for the Kingman, AZ line, which stops at McCarran International Airport. **Figure 2-8** shows the locations of the multimodal passenger connections in Las Vegas.

Connections to/from the *California Zephyr* via Salt Lake City

The Thruway service interlines with Greyhound between Las Vegas and the *California Zephyr* route in Salt Lake City. The route operates one round trip per day between Las Vegas and Salt Lake City. The eastbound bus departs Las Vegas at 7:55 am and arrives in Salt Lake City at 5:05 pm. The westbound bus departs from Salt Lake City at 7:45 am and arrives at the Las Vegas Greyhound station at 2:55 pm. Neither trip provides convenient connections to the *California Zephyr*; trains depart Salt Lake City at 11:30 pm in the westbound direction and 3:30 am in the eastbound direction. This means that passengers face an over six-hour wait to catch the train in Salt Lake City after having arrived from Las Vegas, and a 5.5-hour wait in Salt Lake City for the bus connection to Las Vegas after having detrained at 3:30 am.

Connections to/from the *Southwest Chief* via Kingman, AZ

Amtrak operates one Thruway Bus trip per day in each direction between Las Vegas McCarran International Airport and Kingman's Amtrak Station, connecting with the *Southwest Chief*. The bus departs Las Vegas at 9:30 pm and arrives in Kingman at 1:00 am. It makes the return trip from Kingman at 11:50 pm and arrives at 3:10 am in Las Vegas. The *Southwest Chief* is scheduled *to* stop in Kingman daily at 11:46 pm westbound and 1:33 am eastbound. Effectively, this thruway service exclusively works for passengers originating from East of Kingman, AZ, aboard the *Southwest Chief* as passengers departing from or to the west would face a 24-hour wait for a bus or train connection. Passengers from the west therefore are served by Thruway service originating from Los Angeles Union Station.

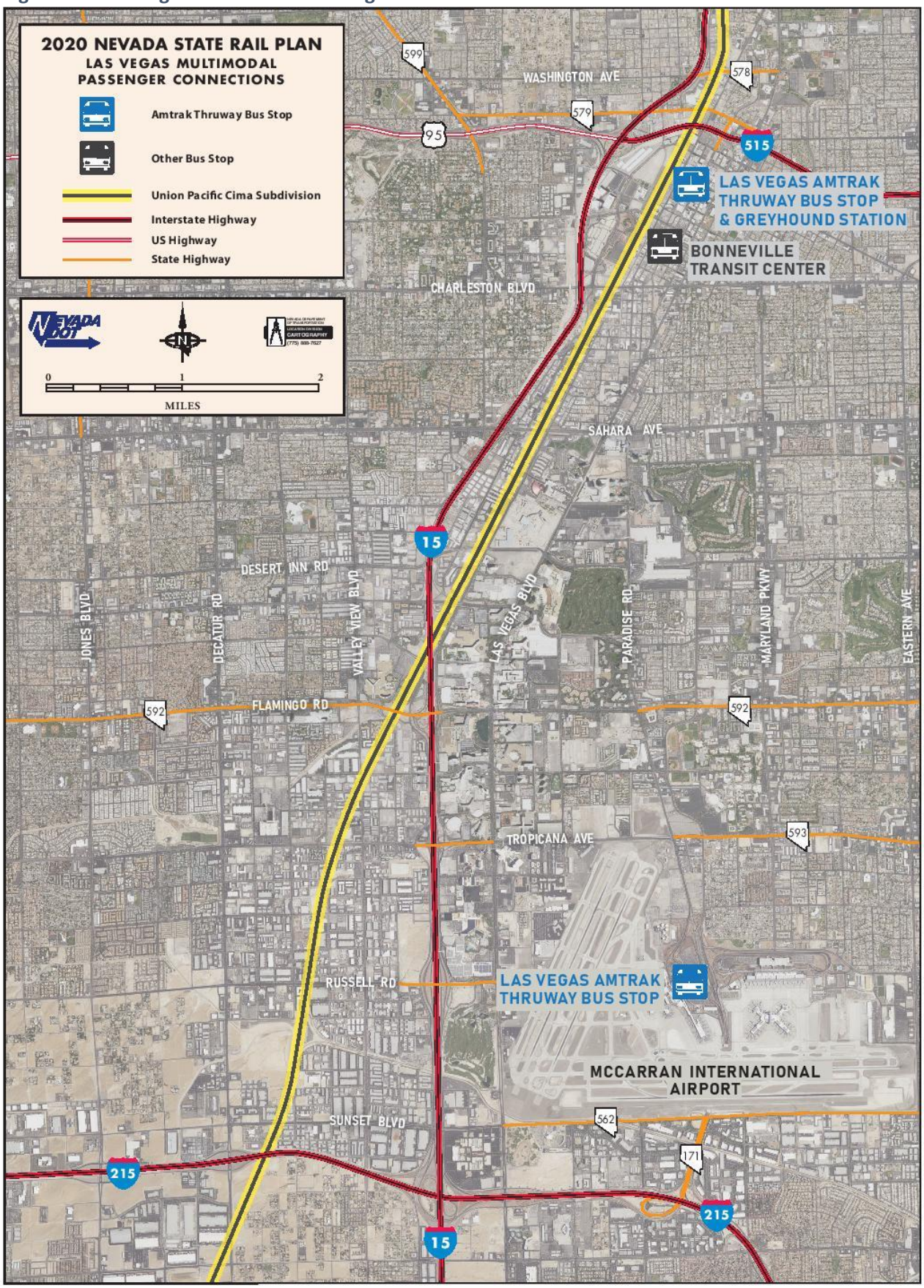
Connections to the *Southwest Chief* via Los Angeles

Amtrak interlines with Greyhound to operate two trips daily from Los Angeles to Las Vegas and one trip per day from Las Vegas to Los Angeles. Trips from Los Angeles depart at 10:25 am and 4:00 pm and arrive in Las Vegas at 5:10 pm and 8:45 pm respectively. Trips from Las Vegas depart at 8:00 am and arrive in Los Angeles at 1:15pm. The *Southwest Chief* departs Los Angeles at 6:15 pm daily with service to Chicago and arrives from Chicago at 8:15 am two days later.

Connections to/from the *San Joaquin* via Bakersfield, CA

Amtrak Thruway Buses operate one trip per day between Las Vegas and Bakersfield with connections to the *San Joaquin* line. The *San Joaquin* travels through California's Central Valley between Sacramento, Stockton, and Bakersfield. Thruway Bus service connects Las Vegas with Bakersfield once per day in both directions. The bus departs Las Vegas at 9:25 am and arrives in Bakersfield at 3:55 pm. It then departs from Bakersfield at 4:05 pm and arrives in Las Vegas at 8:40 pm. San Joaquin Trains 712 and 717 directly connect to the Las Vegas-bound Thruway Bus.

Figure 2-8: Las Vegas Multimodal Passenger Connections



Greyhound

In addition to the specific cases where it interlines with Amtrak in Northern Nevada (see Reno, Elko, and Winnemucca in this section), Greyhound provides direct service from Las Vegas to Utah, Arizona, and Southern California. Connections between Greyhound and the Amtrak Thruway Bus line to Bakersfield can be made within the Greyhound terminal at 200 South Main Street in downtown Las Vegas.

Transit

Regional Transportation Commission of Southern Nevada (RTC)

RTC operates 41 routes, serving Las Vegas and the surrounding area, with 12 routes offering 24-hour service[33]. Three bus routes directly serve the Amtrak Thruway Bus stop at the Greyhound station while numerous other routes provide service within a six-block walk at the Bonneville Transit Center at 101 East Bonneville Avenue at Casino Center Boulevard. Three bus routes serve the Amtrak bus stop located at McCarran International Airport, including 15-minute service to and from downtown via RTC route 109 and the Westcliff Airport Express (WAX) line, which operates every 30 to 60 minutes between the airport, the Strip, downtown, and the Westcliff Transit Center.

Las Vegas Monorail

The Las Vegas Monorail, a private transit operating company, provides service along a 3.9-mile line east of the Las Vegas Strip between the MGM Grand Hotel and the Sahara Hotel, with interim stations at Bally's/Paris Las Vegas, Flamingo/Caesar's Palace, Harrah's/Imperial Palace, Las Vegas Convention Center, and the Las Vegas Hilton. The monorail line does not currently link with any Amtrak bus stops; the Las Vegas Monorail company previously entertained the idea of extending its line south from the MGM Grand Hotel to the McCarran International Airport, a plan that was officially abandoned in favor of an extension to the Mandalay Bay Convention Center on the south strip in 2015.[34]

Las Vegas Monorail at Westgate Station

Other Modes

A full range of transportation connecting services is available in Las Vegas, a major tourist destination, including shuttles, taxis, rideshare, and rental cars. The Las Vegas Greyhound Station merits a walk score of 77 ("Very Walkable") a transit score of 69 ("good transit"), and a bike score of 67 ("flat as a pancake,

[33] Regional Transportation Commission of Southern Nevada, "Transit Map Effective December 8, 2019", source link.
[34] Las Vegas Sun, article "Report: Future of Las Vegas transportation includes light rail under Strip, monorail extension", source link, published May 27, 2015.

good bike lanes"). Las Vegas McCarran Airport earned a walk score of 36 ("Car-Dependent"), a transit score of 42 ("Some Transit") and a bike score of 40 ("flat as a pancake, minimal bike lanes").[35]

Reno

Figure 2-9 shows the locations of the multimodal passenger connections in Reno. Amtrak's *California Zephyr* provides one trip daily to Reno. Eastbound trains to Chicago stop in Reno at 4:06 pm and westbound trains headed to Emeryville, CA stop at 8:36 am. The Capitol Corridor Joint Powers Authority (CCJPA) contracts with Amtrak Thruway Buses to operate three buses per day in each direction to and from Reno. Two of three eastbound buses terminate at The Nugget Casino and Hotel in Sparks while westbound buses travel to Sacramento for direct connections to the *Capitol Corridor* route. Reno at 5:45 pm and 9:40 pm while westbound buses depart at 8:00 am, 11:25 am and 2:45 pm. CCJPA business plans listed extending Capitol Corridor passenger rail service from Sacramento to Reno, electing not to pursue the extension in 2005 following UPRR's capacity determination that separate rights of way requiring costly new trackage would be needed on the Donner Pass route. Both Amtrak rail and bus services operate out of the full-service Amtrak station located in downtown Reno at 280 North Center Street, which opened in 2006 as part of the ReTRAC project.

Greyhound

Greyhound now interlines with Amtrak along the I-80 corridor, only offering bus trips from Reno to points east. To illustrate this point, booking purely bus-only service from Sparks to Salt Lake City requires a 46-hour bus route through Portland, OR. Direct service east along I-80 is provided via interlined tickets aboard Amtrak's *California Zephyr*, if tickets are booked originating at the Reno Amtrak Station. Travel from Reno to points west (Sacramento and the San Francisco Bay area) are served regularly by Greyhound busses. Greyhound serves the Amtrak station as well as the Sparks Transit Center located at 1421 Victorian Avenue.

Transit

Reno's RTC Ride transit system provides service throughout the region on 33 bus lines, including express service to Carson City. RTC's 4th Street Transit Center is located downtown at 4th Street and Evans Avenue, three blocks from the Amtrak Station. Amtrak patrons enjoy multiple transit options, including the high-capacity RTC Rapid Virginia line which operates 24 hours a day, providing direct connections between Amtrak and other areas of downtown Reno and the Virginia Street corridor. Regional transit entities also provide service from Reno, including Eastern Sierra Transit Authority to Bishop, CA, South Tahoe Express to South Lake Tahoe, and Modoc Sage Stage to Alturas and Susanville, CA.

Other Modes

Numerous private charter coach lines operate along the I-80 corridor between Reno and Sacramento and the San Francisco Bay area year-round, taking passengers to casino destinations. Rental cars, taxis, and rideshare services are readily available in downtown Reno near the Amtrak station. The Amtrak Reno Station merits a walk score of 97 ("Walker's Paradise"), a transit score of 65 ("Good Transit"), and a bike score of 88 ("Very Bikeable").[36]

[35] Walk Score, source link, accessed June 7, 2020.
[36] Walk Score, source link, accessed June 7, 2020.

Figure 2-9: Reno Multimodal Passenger Connections

Elko

Amtrak's *California Zephyr* passenger rail line makes one trip daily in each direction to Elko. The westbound train arrives in Elko at 3:03 am and the eastbound train arrives at 9:31 pm. Elko's Amtrak station is located at 1300 Water Street about one-half mile northeast of downtown (see **Figure 2-10**). The station is comprised of an eastbound and westbound platform shelter and bench, with no Amtrak staff on the premises. The Elko Station is highly unusual and dysfunctional in nature given that there is no legal passage across the Union Pacific main line in Elko. Instead, travel between the eastbound and westbound platforms is made possible only via a passage three-quarters of a mile long using public streets and a grade-separated overpass. This arrangement was reported to have caused passenger confusion in the previous 2012 rail plan and persists today.

Figure 2-10: Elko Amtrak Passenger Station

Greyhound

Greyhound discontinued its route between Salt Lake City, UT and Reno in 2018, ending Greyhound service to Elko. Greyhound now interlines with Amtrak's *California Zephyr,* leaving it as the sole public transportation provider to the city.

Transit

The Elko County "Blue Line Flex Route" bus service does not officially serve the Amtrak station directly, though riders are advised that they may "flag the flex" at any point along its route, which runs on an

intersecting street near the Amtrak platforms during its operational hours of 6:30 am to 5:30 pm on weekdays. The service does not operate at the times Amtrak stops in Elko.

Other Modes

Connections between Amtrak and other destinations in Elko can be made through the Elko Taxi service, which operates 24 hours per day. Rental cars are available through Enterprise Rent-A-Car at the Elko airport. Rideshare services are not available in Elko. The Elko Amtrak Station merits a walk score of 49 ("Car-Dependent") and a bike score of 47 ("Somewhat Bikeable").[37]

Amtrak's California Zephyr at Winnemucca Station

Winnemucca

Winnemucca is in the northern part of the state on I-80 about two-and-a-half hours (170 miles) east of Reno. Winnemucca currently is exclusively served by Amtrak's *California Zephyr* given Greyhound's cancellation of its route in 2018, between Reno and Salt Lake City, UT. The eastbound *California Zephyr* stops in Winnemucca daily at 7:08 pm while the westbound *California Zephyr* stops in Winnemucca at 5:40 am. Amtrak's unstaffed Winnemucca station is located at 209 Railroad Street. It was upgraded with an ADA-compliant platform and a traditional railroad shelter featuring an enclosed waiting room constructed in 2012 (see **Figure 2-11**).

[37] Walk Score, source link, accessed June 7, 2020.

Greyhound

Greyhound interlines with Amtrak's *California Zephyr* to serve Winnemucca to Salt Lake City and to Reno.

Transit and Other Modes

Winnemucca Taxi provides 24-hour service to the Amtrak station. Transit, shuttle, and rental car services are not available in Winnemucca, nor are Uber, Lyft or other TNC services. The Winnemucca Amtrak Station has a walk score of 70 ("Very Walkable") and a bike score of 50 ("Bikeable").[38]

[38] Walk Score, source link, accessed June 7,2020.

Figure 2-11: Winnemucca Amtrak Passenger Station

Sparks

Amtrak discontinued *California Zephyr* service to Sparks in 2009, although Amtrak Thruway Bus service continues to operate between Sparks, Reno, and Sacramento with connections to the *Capitol Corridor* route. Buses stop at John Ascuaga's Nugget Hotel and Casino at 1100 Nugget Avenue (see **Figure 2-12**). Eastbound buses arrive in Sparks at 6:05 pm and 10:00 pm while westbound buses depart from Sparks at 7:40 am and 11:05 am.

Greyhound

Greyhound serves the Amtrak station in Reno as well as the Sparks Transit Center located at 1421 Victorian Avenue.

Transit

Sparks is part of the RTC Ride service area with seven routes operating out of the RTC Centennial Plaza transit center connecting downtown Sparks with the greater Reno metropolitan area. RTC does not provide direct bus service to the Amtrak Thruway Bus stop; the transit center is located within a 10-minute walk of the Amtrak Thruway Bus stop.

Other Modes

Sparks and Reno have numerous shuttle, taxi, rental car, and rideshare services available. The Nugget Hotel and Casino has a walk score of 67 ("Somewhat Walkable") and a bike score of 69 ("Bikeable").[39]

[39] Walk Score, source link, accessed June 7, 2020.

Figure 2-12: Sparks Multimodal Passenger Connections

Laughlin

The city of Laughlin is located two hours southeast of Las Vegas via US93 and US163 on the Arizona border. Amtrak's Thruway Bus service, connecting Las Vegas' McCarran International Airport to the *Southwest Chief* route in Kingman, AZ, stops in Laughlin once a day at the Tropicana Express Hotel, located at 2121 South Casino Drive (see **Figure 2-13**). Northbound buses arrive in Laughlin at 12:50 am while southbound buses arrive at 12:01 am.

Greyhound

Greyhound provides multiple trips per day to Las Vegas, Phoenix, and Flagstaff from the Bullhead City stop at 1000 Highway 95, which is located 2.5 miles from the Amtrak stop in Laughlin (see **Figure 2-13**).

Transit

Silver Rider transit operates two one-way loop bus routes that circulate throughout the city of Laughlin, providing hourly service to the Amtrak bus stop in Laughlin. Route 777 operates 24 hours per day in a counterclockwise direction and Route 888 operates 19 hours per day in a clockwise direction.

Other Modes

Several shuttle operators provide daily trips between Laughlin and McCarran International Airport in Las Vegas. Taxi and rental car services are also available in Laughlin, as well as limited rideshare coverage. The Tropicana Express Hotel merits a walk score of 25 ("Car Dependent").[40]

[40] Walk Score, source link, accessed June 7, 2020.

Figure 2-13: Laughlin Multimodal Passenger Connections

Stateline

The small community of Stateline, NV is located at the California border directly across from South Lake Tahoe. It is a recreation destination with skiing in the winter and lake-oriented activities and hiking the rest of the year. Amtrak's Thruway Bus service operates one trip per day in each direction from Stateline's Kingsbury Transit Center to Sacramento with direct connections to the *Capitol Corridor*. (See **Figure 2-14**.) The bus departs Stateline at 2:00 pm for trips to Sacramento aboard *Capitol Corridor* Trains 547 and 747 and arrives in Stateline from Sacramento at 12:35 pm on weekdays and 12:55 pm on weekends for connections with *Capitol Corridor* trains 524 and 720, respectively.

Greyhound

Greyhound does not serve the Stateline/South Lake Tahoe area.

Transit

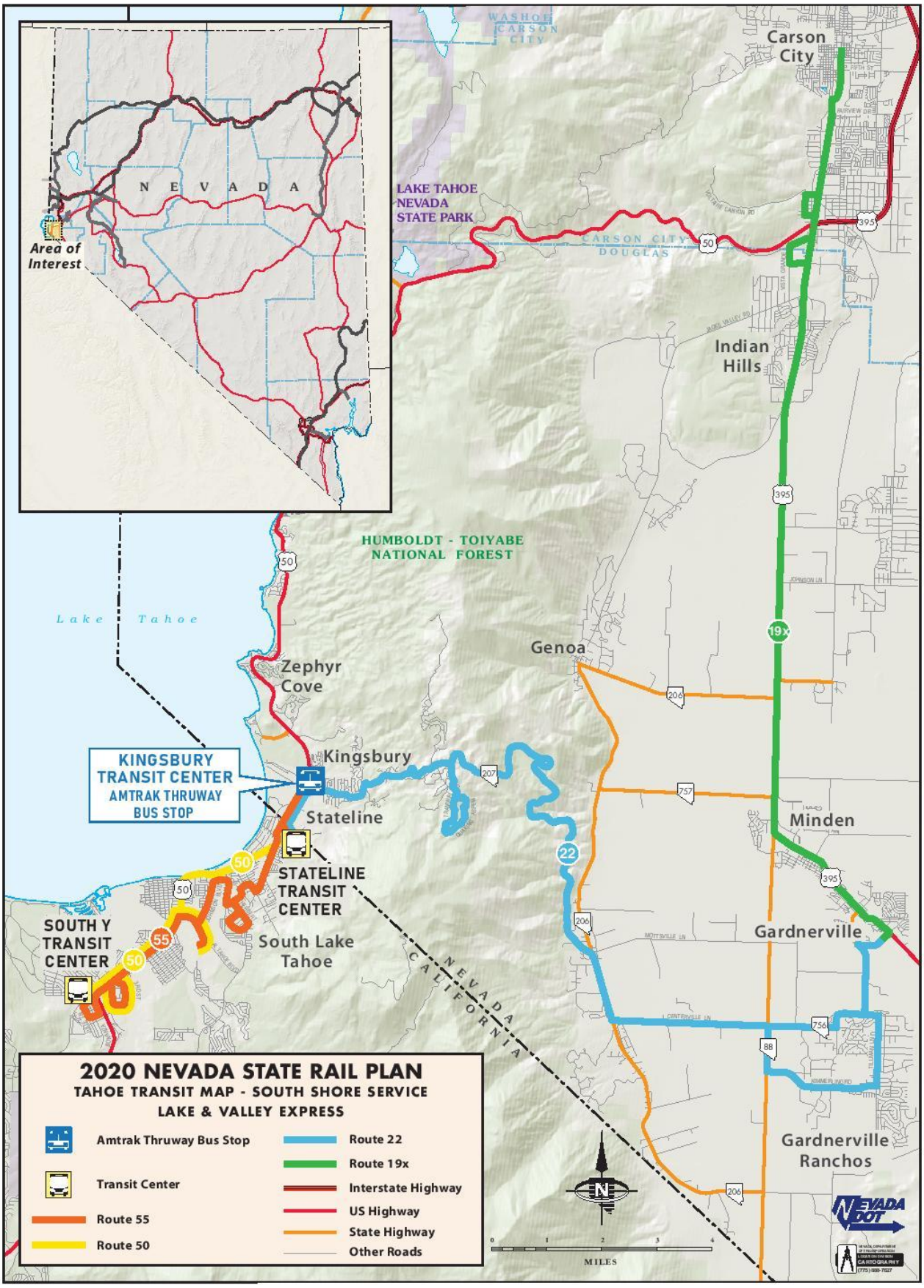
Lake Tahoe's BlueGo Transit operates five routes in Stateline with service to the Kingsbury Transit Center for direct connections to Amtrak buses. The routes provide service to the surrounding area, as well connections to Carson City (see **Figure 2-14**).

Other Modes

Shuttles are available for trips between the Tahoe area and Reno. South Lake Tahoe and Stateline also have numerous taxi, rental car, and rideshare services available. The Kingsbury Transit Center merits a walk score of 38 ("Car-Dependent") and a bike score of 58 ("Bikeable").[41]

[41] Walk Score, source link, accessed June 7, 2020.

Figures 2-14 and 2-14.1: Stateline Multimodal Passenger Connections


N E V A D A
Area of Interest
WASHOE
CARSON CITY
Carson City
LAKE TAHOE NEVADA STATE PARK
CARSON CITY
DOUGLAS
50
395
Indian Hills
HUMBOLDT - TOIYABE NATIONAL FOREST
Lake Tahoe
Genoa
Zephyr Cove
KINGSBURY TRANSIT CENTER
AMTRAK THRUWAY BUS STOP
Kingsbury
Stateline
STATELINE TRANSIT CENTER
SOUTH Y TRANSIT CENTER
South Lake Tahoe
NEVADA
CALIFORNIA
Minden
Gardnerville
Gardnerville Ranchos
19x
22
55
206
207
757
756
88
2020 NEVADA STATE RAIL PLAN
TAHOE TRANSIT MAP - SOUTH SHORE SERVICE
LAKE & VALLEY EXPRESS
Amtrak Thruway Bus Stop
Transit Center
Route 55
Route 50
Route 22
Route 19x
Interstate Highway
US Highway
State Highway
Other Roads
MILES
NEVADA DOT

Primm

Primm, NV no longer has a connection to the national rail network via Amtrak Thruway Bus service. The connection disappeared from Amtrak timetables in 2014.

Union Pacific Locomotives in North Las Vegas

B. Freight Rail Infrastructure and Operations

This section describes all of the active and inactive freight rail lines and facilities, including intermodal facilities, in the state of Nevada. The description of each active railroad includes key characteristics, such as route miles, weight restrictions, track classifications, and maximum operating speeds.

Table 2-9: FRA Track Classification and Maximum Operating Speeds

Track Class	Maximum Freight Operating Speed (mph)
Excepted Track	10
Class 1 Track	10
Class 2 Track	25
Class 3 Track	40
Class 4 Track	60
Class 5 Track	80
Class 6 Track	110

Table 2-9 gives the maximum operating speeds that the Federal Railroad Administration (FRA) permits for freight traffic on various classifications of track. These speed restrictions are imposed to ensure safe operating conditions.

B-1. Main Lines

Two Class I transcontinental railroads: Union Pacific Railroad (UPRR) and Burlington Northern Santa Fe (BNSF) operate within the state of Nevada. The UPRR is the largest carrier in Nevada and owns all 1,193 main line and branch line route miles in the state (1,131 miles of single track and 62 miles of double track, not including parallel main lines run unidirectionally as double track: 178 miles of former Western Pacific and 183 miles of former Southern Pacific between Alazon and Weso). BNSF has trackage rights on 798 route miles or 67 percent of the freight rail line in the state; BNSF does not own any trackage in Nevada. BNSF gained its trackage rights as a result of the Surface Transportation Board's (STB) approval of the 1996 UPRR merger with the Southern Pacific Transportation Company (SPTC).

BNSF was granted the following access rights to maintain pre-merger competition:

- the right to access all customers on the UPRR and former Southern Pacific main lines between Weso and Alazon (where BNSF has opted to serve only 16 of 29 private sidetracks);
- the right to establish exclusive intermodal, automotive, and transload facilities in the Reno-Sparks area (where BNSF has never exercised its rights for intermodal or automotive purposes and has unofficially terminated its transloading operation);
- the right to interchange directly with the Nevada Northern Railway (former BHP Nevada Railroad) at Shafter (where BNSF has never exercised its interchange rights with a car storage concessionaire, S&S Shortline Leasing, in operation since 2009); and
- the right to access all customers who locate on the BNSF trackage lines after the merger (which BNSF has opted to do for only 13 new private sidetracks).

UPRR employed 448 people living as residents in the state of Nevada with an annual payroll of $39.7M million in 2019; BNSF uses UPRR operating crews to move BNSF freight in the state by agreement with UPRR.

Combined, these two railroads hauled about 44 million net tons of freight through Nevada in 2018. Through-traffic comprised 83 percent of freight railroad traffic in the state. Traffic originating outside of Nevada with destinations in the state accounted for 5.3 million tons, including coal, clay, concrete, chemical products. The UPRR and BNSF shipped 2.3 million tons of freight originating in Nevada to destinations outside the state, which included commodities such as chemical or allied products, intermodal, and non-metallic minerals.

UPRR freight rail traffic in Nevada has declined from 92,921 rail cars terminating in Nevada in 2007 to 84,223 carloads in 2019, a decrease of nine percent. Rail cars originating in Nevada have moderately increased from 30,905 in 2007 to 32,782 in 2019, or 6 percent.

The UPRR main lines operate east-west across Nevada, connecting Salt Lake City and other destinations to the east, including Denver and Chicago with northern and southern California. The state does not have any north-south lines connecting its two largest regions: Reno and Las Vegas.

Nevada's freight rail system is comprised of three UPRR main lines in northern Nevada (Overland Route, Central Corridor, and Feather River Corridor) and one in southern Nevada, the South Central Route. **Table 2-11** provides an overview of the freight rail routes and mileage, and **Table 2-12** displays route operating characteristics. **Figure 2-15** shows the main line routes and trackage right routes in Nevada; **Figure 2-16** shows key UPRR and BNSF mainline routes in adjacent states.

Union Pacific in Nevada

Table 2-10: Union Pacific in Nevada[42]

Union Pacific Facts in Nevada	
Miles of Track	1,193
Annual Payroll	$39.7MM
In-State Purchases	$9MM
Capital Investment	$50.7MM
Employees	488
U.S. Job Supported[43]	4,392

Union Pacific's operation in Nevada provides a number of employment and tax revenue benefits in the State of Nevada. **Table 2-10** provides a summary of UP's impact in Nevada.

Northern Nevada Main Lines

Overland Route (Historic Southern Pacific Route)

The Overland Route is a principal UPRR cross-country line, connecting Chicago, IL to Oakland, CA. The Overland Route travels 446 miles across the northern part of the state of Nevada, passing through the cities of Wells, Elko, Winnemucca, Hazen, Fernley, Sparks, Reno, and Verdi. The route runs east from Nevada connecting the states of Utah, Wyoming, Colorado, Nebraska, Iowa, and Illinois. The route runs west from Nevada crossing the Sierra Nevada Range over Donner Pass, linking Nevada with Roseville, Sacramento, and Oakland, CA. The Overland Route connects in Roseville to UPRR's I-5 Corridor with service to the San Joaquin Valley, Southern California, and north to Oregon and Washington. The Overland Route connects in Oakland to the San Francisco Bay area and to the UPRR's Coast Line, which runs south to Los Angeles.

The Overland Route operates predominantly as a single-track mainline with only 53 miles (12 percent) of the 446-mile route operating as a double–track mainline. The standard double-tracked segments include Reno to Vista (11 miles), Alazon to Moor (14 miles), and Valley Pass to Tecoma near the Utah border (28 miles). Automatic Block Signals (ABS) are used to control traffic along the eastern part of the route between Verdi and Reno, Winnemucca and Moor, and Valley Pass and the Utah border. Centralized Traffic Control (CTC) is used to control traffic on the section of the railroad between Reno and Winnemucca and between Moor and Valley Pass. The maximum authorized freight speed is 79 miles per hour (mph), which is classified as Class 5 track under FRA Track Safety Standards. The track along the route is comprised primarily of 132- and 136-pound continuous welded rail. As mandated by Congress and the FRA, train operations on the Overland Route are protected by Positive Train Control (PTC).

[42] Union Pacific Railroad website, Union Pacific in Nevada, source link, accessed August 27, 2020.

[43] *Each American freight rail job supports 9 jobs elsewhere in the U.S. economy. (Association of American Railroads)*

Table 2-11: Main Line Rail Routes and Mileage

Route	Description	Route Miles in Nevada	BNSF Trackage Rights (miles)
Overland Route	Oakland, CA to Chicago via Reno and Ogden, UT (formerly Southern Pacific)	446	377
Central Corridor	Winnemucca to Denver via Salt Lake City (formerly Western Pacific)	273	273
Feather River Corridor	Sacramento to Winnemucca (formerly Western Pacific)	154	154
South Central Route	Los Angeles-Long Beach, CA to Salt Lake City via Las Vegas	212	0
	Total Miles	1,085	804

Table 2-12: Nevada UPRR Main Line Freight Operating Characteristics

Operating Characteristic	Overland Route	Central Corridor	Feather River Corridor	South Central Route
Operator	UPRR, BNSF	UPRR, BNSF	UPRR, BNSF	UPRR
Speed (mph)	70-79	70-79	70	70-79
Track Class	5	5	5	5
Track Type (Single or Double Track)	Single track with double track segments at MP 238 to 249 (Reno to Vista), MP 603 to 617 (Alazon to Moor), MP 641 to 669 (Valley Pass to Tecoma)	Single Track	Single Track	Single track with double track segment at MP 326 to 335 (Woodbury Beltway to Owens Ave in Las Vegas)
Type of Control	Automatic Block Signal (ABS) - Verdi to Reno, Winnemucca to Moor, Valley Pass to Utah border. CTC - Reno to Winnemucca and Moor to Valley Pass. PTC Equipped	ABS - Weso to Wells. CTC - Wells to Utah border. PTC Equipped	Centralized Traffic Control (CTC) and Positive Train Control (PTC)	CTC and PTC
Rail Main (pounds)	Mostly 132 and 136	Mostly 133	Mostly 133	Mostly 133
Subdivision	Roseville, Nevada, Elko, Shafter, Lakeside	Winnemucca Elko, Shafter	Winnemucca	Cima and Caliente
Division	Roseville and Utah	Roseville and Utah	Roseville	Los Angeles and Utah

Figure 2-15: Nevada Main Lines

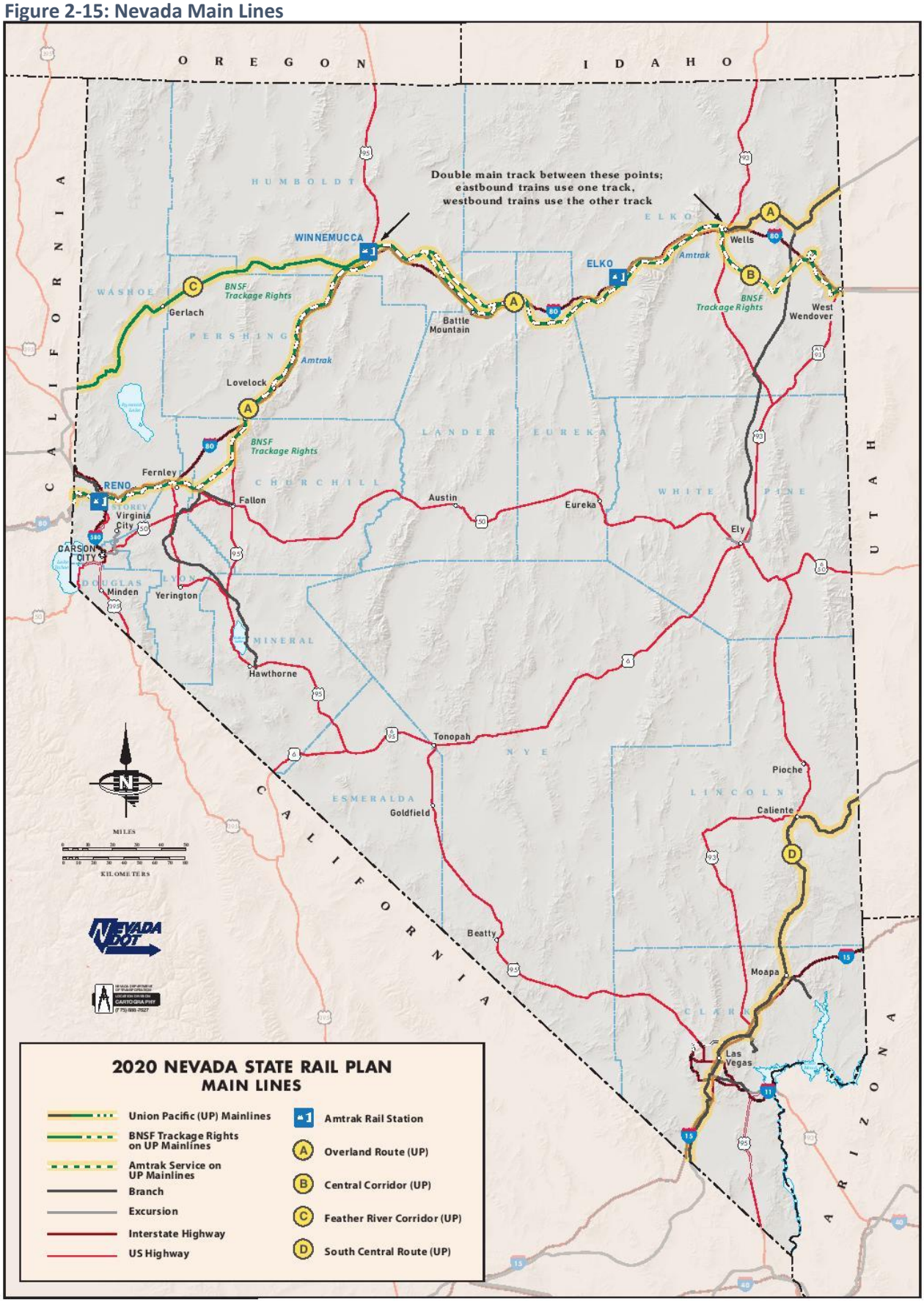


Figure 2-16: Major Line Network in Adjoining States

The Overland Route parallels the Central Corridor route for 183 of its miles between Weso and Alazon, where the two routes run within the same valley and share similar alignments. All eastbound traffic operates on the Central Corridor and westbound trains operate on the Overland Route. The Overland Route connects to the Feather River Corridor in Weso and to the Fallon, Mina, and Thorne branch lines in Hazen. UPRR's highest car volumes in Nevada occur on the segment of the shared Overland Route/Central Corridor segment between Alazon and Weso.

The Overland Route is part of UPRR's Utah and Roseville service units and travels through the UPRR Lakeside, Elko, Nevada, and Roseville subdivisions.

BNSF obtained trackage rights on the 377-mile Verdi-to-Alazon segment of the Overland Route in Nevada after the UPRR and SPTC merged in 1996. The SPTC owned the Overland Route prior to the merger, and the STB required that a second Class I railroad carrier be granted trackage rights in the state to preserve pre-merger competition in areas where it previously existed. BNSF was granted the right to serve some existing and all new customers along segments of the line.

UPRR changed its operations following the merger. UPRR had historically operated the Central Corridor across Nevada and west to Oakland over the Feather River branch. After the merger, UPRR split the

Central Corridor into two lines at Weso, designating the line west of Weso as the Feather River Corridor and the trackage east of Weso as the Central Corridor. The changes were made to reduce redundancy and improve operational efficiency on the overall UPRR system.

Central Corridor (Historic Western Pacific Route)

The UPRR's Central Corridor travels 273 miles across northern Nevada, linking Winnemucca and northwestern Nevada with Salt Lake City and Denver. The Central Corridor runs through West Wendover, Shafter, Wells, Elko, and Carlin in Nevada. The Central Corridor parallels the Overland Route between Wells and Winnemucca, a distance of 178 miles where the two lines are situated within the same valley and operate with all eastbound traffic on the Central Corridor track and westbound trains on the Overland Route.

The Central Corridor diverges from the Overland Route at Wells and travels southeast to Salt Lake City. The Alazon-to-Weso track segment that the Central Corridor shares with the Overland Route has UPRR's highest car volumes in Nevada. The Central Corridor connects with the Feather River Corridor to the west at Weso.

The Central Corridor is a single-track main line with a maximum operating speed of 79 mph (Class 5 track). The track consists primarily of 133-pound continuous welded rail. CTC is used to control traffic between the Utah border and Wells, and ABS is used between Wells and Weso. The Central Corridor is part of UPRR's Utah and Roseville service units and the UPRR Shafter and Elko subdivisions. BNSF has trackage rights on the Central Corridor.

As mandated by Congress and the FRA, train operations on the Central Corridor are protected by Positive Train Control (PTC).

Feather River Corridor (Historic Western Pacific Route)

The Feather River Corridor is a 154-mile-long UPRR line, connecting Weso to Sacramento. The line follows the Feather River through Ronda, Gerlach, and Flanigan west of Winnemucca and through Portola, Keddie, and Oroville in eastern California before reaching Sacramento. The line connects in Sacramento to the I-5 Corridor with service to Oregon and Washington to the north, and the San Joaquin Valley and Southern California to the south, and to the San Francisco Bay Area via the Overland Route. Connections can be made in Weso to both the Central Corridor (Salt Lake City and Denver) and the Overland Route (Chicago).

The single-track Feather River Corridor line is CTC-controlled and has a maximum authorized operating speed of 70 mph over Class 5 track. The track consists of mostly 133- and 136-pound continuous welded rail. The Feather River Corridor is part of UPRR's Roseville service unit and the Winnemucca subdivision. BNSF has operating rights to serve new customers on the Feather River Corridor. As mandated by Congress and the FRA, train operations on the Feather River Corridor are protected by Positive Train Control (PTC).

UPRR shifted most traffic from the slower Feather River Corridor to the more direct Donner Pass route in 2009 after the completing a tunnel-notching project to allow for double-stacked container shipments. The Feather River Corridor is now used primarily for bulk commodities and as an alternate route during winter storms.

Southern Nevada Main Lines

South Central Route

The UPRR main line across southern Nevada travels 212 miles through the state, connecting Salt Lake City and points east with Los Angeles-Long Beach. The line passes through the Nevada cities of Caliente,

Moapa, Las Vegas, Jean, and Calada. Connections can be made in Colton, CA to UPRR's Sunset Route which serves Arizona, New Mexico, Texas, and Louisiana, and to the I-5 Corridor, which serves northern California, Oregon, and Washington. BNSF does not have operating rights on the South Central Route.

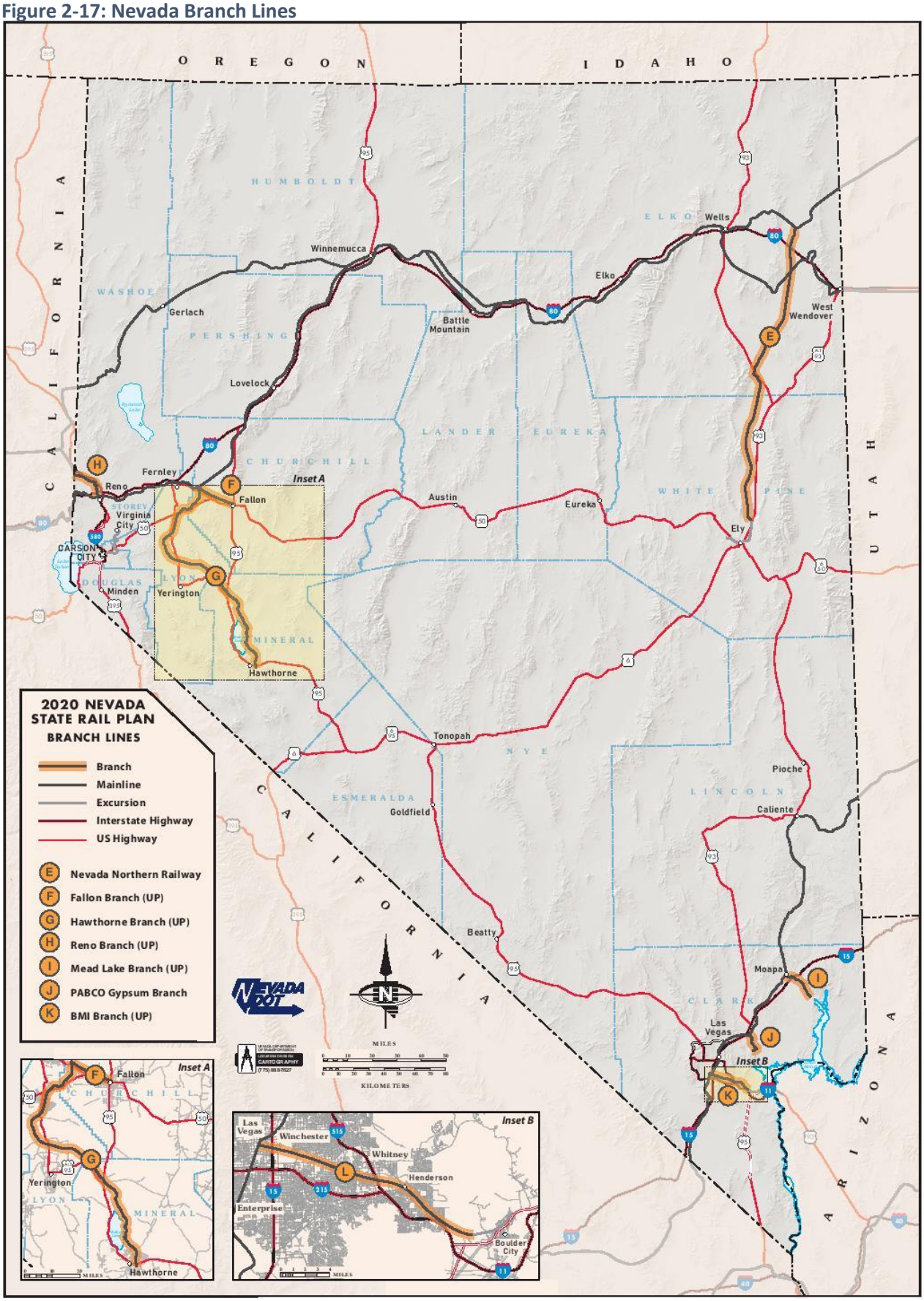
UPRR plans to maintain some traffic on the South Central Route, although the railroad has reduced traffic on this line. UPRR has shifted east-west traffic from the South Central Route to the Sunset Route, which travels between Los Angeles and El Paso. The railroad has invested heavily in upgrading the Sunset Route, which is mostly double-tracked. The Sunset Route offers a more favorable route to Chicago and points east using the Golden State Route between El Paso and Kansas City and BNSF trackage rights from Kansas City to Chicago. The Sunset Route has advantages over the South Central Route through Salt Lake City and Omaha to Chicago and points east as it avoids the slower speeds and higher fuel consumption of operating through the heart of the Rocky Mountains east of Salt Lake City.

The South Central Route is predominantly a single-track main line, except for a nine-mile-long double-tracked section in Las Vegas between Owens Avenue in North Las Vegas and Bruce Woodbury Beltway west of McCarran International Airport. The line is CTC-controlled and operates at a maximum authorized speed of 79 mph (Class 5 track). The track is comprised of primarily 133-pound continuous welded rail. The route is part of UPRR's Utah and Los Angeles service units and the Caliente and Cima subdivisions. As mandated by the FRA, train operations on the Southern Central Route are protected by Positive Train Control (PTC).

B-2. Branch and Short Lines

Nevada has 368 railroad route miles of freight track on six UP branch lines of four or more miles, six UP industrial leads of one or two miles, and five privately owned freight lines of five or more miles. Of the 368 route miles, only 198 miles are in service for commercial freight railroad operations. Out of service are the Nevada Northern Railway (164 miles), and the Empire Mining Company's branch to Empire (five miles). The entire network of branch and short lines is single-tracked, consisting of Class 1 and 2 tracks. **Figure 2-17** shows the locations of the larger branch and private lines, which are described in the following paragraphs in east-to-west order first in northern and then in southern Nevada.

Figure 2-17: Nevada Branch Lines



Northern Nevada Branch and Short Lines

The longer northern Nevada branch and private lines are the Nevada Northern Railway and the Fallon, Mina, and Thorne branches.

Table 2-13: Northern Nevada Branch and Short Line Operating Characteristics

Operating Characteristic	Nevada Northern Railway	Fallon Branch	Mina Branch	Thorne Branch	Reno Branch
Owner	White Pine RR Foundation	UPRR	UPRR	US Army	UPRR
Operator	NA	UPRR	UPRR	US Army	UPRR
NV Route Miles	149	16	43	53	18
Speed (mph)	25	10	25	10	20
Track Class	2	FRA Excepted	2	1	1
Track Type (Single or Double)	Single Track	Single Track	Single Track	Single Track	Single Track
Type of Control	TWC	TWC	TWC	TWC	TWC
Rail Main (pounds)	60	80	Mostly 133	Mostly 132 and 136	Mostly 100 and 110
Subdivision	NA	Fallon	Mina	Mina	Reno
Division	Roseville	Roseville	Roseville	Roseville	Roseville
Mile Posts	0 - 149	288 - 304	288 - 331	331 - 384	11 - 29

Nevada Northern Railway

The Nevada Northern Railway consists of 148 route miles between the Overland Route main line in Cobre and mine property west of Ely. The White Pine Historical Railroad Foundation purchased the first 145 miles and two branch lines in the vicinity of McGill in 2004 from BHP Copper North America, which used the line to serve its copper mine in White Pine County. BHP discontinued service on the line in 1999 when the copper mines closed.

White Pine Historical Railroad Foundation granted a car storage concession to S&S Shortline Leasing in 2009, but that concession is being contested due to failure to perform. S&S Shortline installed safety ties over 43 miles of the line between Shafter (MP 18.5) and Currie (MP 62), but most of the line has not been used since 2009. The route consists of 60-pound rail produced in 1906, far too light and old to accommodate line-haul service. The White Pine Historical Railroad Foundation also granted a successful concession south of milepost 128.5 to an excursion train line in Ely.

Fallon Branch

The UPRR's Fallon Branch, which was once part of the SPTC, extends 16 miles from the Overland Route main line in Hazen southeast to Fallon. Freight shipments on the Fallon line consist primarily of magnesium oxide, which is shipped from Fallon to the main line in Hazen. Premier Magnesia ships the materials by trucks operated by the SS Hert Trucking Company from mines in Gabbs (Nye County) to Fallon, where it is transferred to rail cars at their facility in the Fallon Yard.

The maximum authorized speed is 10 mph (FRA Excepted Track) over 80-pound rail. The entire line is single-tracked and TWC-controlled. The Fallon Branch is part of UPRR's Fallon subdivision within the Roseville service unit.

Mina Branch

UPRR also owns and operates the Mina Branch, which was formerly part of the SPTC system. The line connects to the Overland Route main line in Hazen and extends 43 miles south to Fort Churchill near Wabuska. The line formerly served Nevada Energy's Geothermal Power Plant two miles east of Wabuska. The maximum authorized speed on the line is 25 mph (Track Class 2), and the rail consists of mostly 133-pound continuous welded rail. The Mina Branch is single-tracked and TWC- controlled. The Mina Branch is part of UPRR's Mina subdivision within the Roseville service unit.

Thorne Branch

The Thorne Branch is the continuation of the Mina Branch south of Fort Churchill to the Hawthorne Army Depot. The federal government owns and operates this 54-mile branch line and uses it for classified military shipments. The maximum authorized speed on the single-track line is 10 mph (FRA Excepted Track). The track consists of mostly 132- and 136-pound continuous welded rail and is TWC-controlled.

US Army's Thorne Branch

Reno Branch

The Reno Branch connects the Feather River Corridor to the Overland Route in Reno. The branch line operates from the Reno Yard in North Reno to a customer at milepost 11 and to a connection with the four-mile Leareno Industrial Lead at milepost 22. UPRR serves some industries on the Reno Branch and its Leareno Industrial Lead and maintains the line for operational redundancy when weather or other conditions require alternate routes.

The maximum authorized speed on the line is 20 mph (Track Class 2), and the rail consists of mostly 110-pound continuous welded rail. The Reno Branch is single-tracked and TWC-controlled. The Reno Branch is part of UPRR's Reno subdivision within the Roseville service unit.

Southern Nevada Branch and Private Lines

The southern Nevada branch and private lines include: Mead Lake, Pabco Gypsum, and BMI, and City of Henderson branches.

Table 2-14: Southern Nevada Branch and Short Line Operating Characteristics

Operating Characteristic	Mead Lake Branch	PABCO Gypsum	BMI Branch	City of Henderson
Owner	UPRR	Pabco	UPRR	Henderson
Operator	UPRR	Pabco	UPRR	UPRR
NV Route Miles	18	12	11	7
Speed (mph)	25	20	10	10
Track Class	2	1	1	1
Track Type (single or double track)	Single Track	Single Track	Single Track	Single Track
Type of Control	TWC	TWC	TWC	TWC
Rail Main (pounds)	Mostly 90 and 133	131	133	90
Subdivision	Mead Lake	NA	BMI	BMI
Division	Utah	Utah	Utah	Utah
Mile Posts	0 - 18	0 - 12	0 - 11	11 – 18

Mead Lake Branch

UPRR owns and operates the 18-mile single-track Mead Lake Branch, making two to three round trips per week between Moapa and Lake Mead, serving Simplot Cement. The maximum authorized speed on the line is 25 mph (Track Class 2). The line is TWC-controlled and is comprised mostly of 90- and 133-pound rail. The Mead Lake Branch is part of UPRR's Mead Lake subdivision within the Utah service unit.

Pabco Gypsum Branch

The Pabco Gypsum Branch (also known as the Nevada Industrial Switch) is the only private freight railroad still operating in Nevada. It is a 12-mile-long single-track line between the UPRR main line at Moapa and the Pabco gypsum wallboard plant north of Lake Mead. The maximum authorized speed on the line is 20 mph (Track Class 2) and it is TWC-controlled.

BMI (Basic Magnesium Inc.) Branch

Three different owners control the 22-mile-long Basic Magnesium Inc. (aka Black Mountain Industrial, and BMI) line. The branch was originally built to Boulder City in 1931 by the Union Pacific to support construction of the Hoover Dam. During World War II it was a critical supply line for the production of magnesium at BMI in Henderson.

The Nevada State Railroad Museum owns the most easterly 4.6 miles of the BMI Branch and operates excursion trains on the trackage from the Boulder City Depot. A complete description of this service is included in the excursion line section.

Approaching End of Operations at Henderson on the Nevada Southern Railway

The city of Henderson owns the middle seven miles of the BMI Branch that includes a spur to serve the Henderson Industrial Park (from mile post 11 to mile post 18). The primary commodities shipped on the line are consumer goods, plastics, and chemicals for companies, such as Ocean Spray, Lhoist North America, Berry Global, and Poly-West. The city of Henderson added new crossties, replaced rail, and added ballast to the line in 2009 to increase its operating speed to 25 mph (Track Class 2). The line is single-tracked, TWC-controlled, and comprised of 90-pound rail.

The UPRR owns and operates the 11-mile single-track western segment from the Boulder Highway and Railroad Pass crossing in the city of Henderson to Boulder Junction. The maximum speed on this segment is 10 mph (FRA Excepted Track), and it is TWC-controlled on mostly 133-pound rail. The BMI Branch is part of UPRR's Utah service unit and BMI subdivision.

B-3. Freight Rail Facilities

Nevada serves as a major warehouse and distribution center in the western United States, providing as a transition hub between California, Utah, and points east. The warehousing industry in the state has grown considerably over the past 20 years with the development of large-scale industrial parks in the Reno-Sparks, Fernley, and Las Vegas areas. Intermodal traffic serving these industrial parks and other facilities is comprised primarily of high-value, low-density commodities, such as consumer goods. Rail freight originating and terminating in Nevada is predominantly bulk commodities such as coal, minerals, chemicals, glass, stone, and petroleum. In addition to the intermodal facilities and industrial parks, UPRR operates classification, maintenance, storage, and switching yards at select locations within the state. BNSF also operates a transload facility in Sparks to support freight operations.

Figure 2-18 shows the locations of the freight rail facilities in the state. BNSF owns a proprietary transload facility in Sparks and has invested in trackage in Fernley to support its customer's volume. BNSF may use the UPRR's Sparks Intermodal Facility and can establish its own automotive, intermodal, or transload facilities in Reno.

Intermodal Facilities

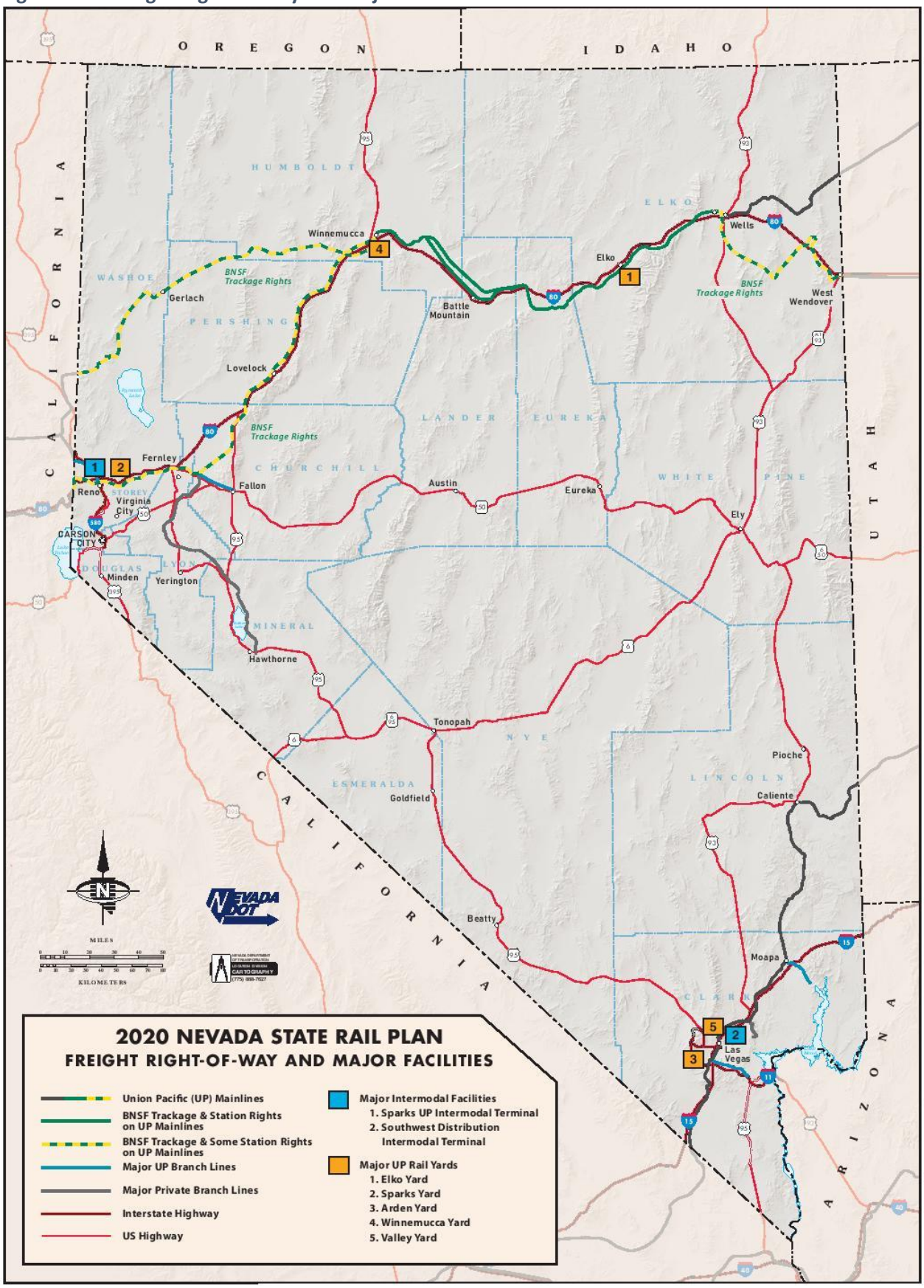
Nevada has two freight intermodal facilities where trailer-on-flat car (TOFC) or container-on-flat car (COFC) can be transferred between rail cars and/or trucks. The facilities include the UPRR Sparks Intermodal Facility in northern Nevada and the UPRR Las Vegas Intermodal Facility in North Las Vegas.

UPRR Sparks Intermodal Facility

The intermodal facility in Sparks is located at 1151 Nugget Avenue and is part of a larger general classification yard. The intermodal facility operates a side loader one shift per day between 6:00 am and 2:00 pm. Sparks is the only terminal in the state that includes both TOFC and COFC.

Donner Pass improvements allow double-stack containers to travel through the tunnels between Roseville and Truckee, which has allowed UPRR to shift traffic from the Feather River Corridor to its Overland Route to Salt Lake City and Chicago. There is currently no intermodal service offered between Sparks and California.

Figure 2-18: Freight Right-of-Way and Major Facilities in Nevada



UPRR Las Vegas Intermodal Facility (Valley Yard)

The Las Vegas Intermodal Facility is located at 4740 Tropical Parkway in North Las Vegas near US15 and the Bruce Woodbury Beltway. The UPRR owns the yard, which includes an intermodal (COFC only) and auto carload facility operated by Southwest Transload & Distribution. The Las Vegas facility contains four tracks, two for auto unloading/loading and two for intermodal. Each track accommodates about 16 cars. Storage capacity is sufficient for about 80 trailers and containers. Traffic includes paper products, autos, and building materials.

UPRR traffic at the Las Vegas Intermodal facility has declined due to UPRR's shifting of traffic from its South Central Route through southern Nevada to its Sunset Route through Arizona. UPRR has made major improvements in the former SPTC Sunset Route (Los Angeles to New Orleans) following the UPRR/SPTC merger to accommodate more traffic because of the Sunset Route's more favorable grades and alignment.

Classification Yards

Classification yards are facilities used to separate and organize rail cars into groups or unit trains of shipments bound for the same destination. UPRR has three classification yards in Nevada. The Elko Yard on the Central Corridor line and the Sparks Yard on the Overland Route serve industries in the northern part of the state. The Arden Yard on the South Central Route serves the southern part of the state.

Elko, Sparks, and Arden Yards

The Elko Yard has nine double-ended classification tracks and three receiving/departure tracks. It serves as a key UPRR refueling facility and crew change location along the main line. Increased fuel capacity was added and installation of a direct-to-train fueling pad was completed in October 2011 at the Elko Yard; it can accommodate four trains with four separate fueling stations.

The Sparks Yard has two receiving/departure tracks and fifteen double-ended classification tracks and a small repair facility.

The Arden Yard has two receiving/departure tracks and five double-ended classification tracks. It handles the switching requirements for Las Vegas as well as BMI Branch traffic. The UPRR Arden Yard is used for drop-off and pick-up of traffic for southern Nevada, rail staging, switching, and as a crew change location for the Cima subdivision.

UP Intermodal Train Operating Through Arden Yard, Las Vegas

Rail-Served Businesses and Industrial Parks

Industrial leads are tracks connecting industrial parks, business parks, and individual companies directly to the main or branch line. Industrial lead facilities are mostly used for shipping, transloading, and warehousing. The following section provides an overview of the larger industrial facilities currently in use in Nevada.

Northeastern Nevada Regional Railport (NNRR)

NNRR opened in 2010 as part of a public-private revenue-sharing agreement between Elko County and Savage Services. This 60-acre intermodal transloading facility is located on the eastern edge of Elko adjacent to the UPRR Elko Yard. The facility includes rail-to-truck and truck-to-rail capabilities, as well as rail-car switching, storage, and warehousing.

Fernley

Fernley has two industrial spurs off the main line: the 1.5-mile Fernley Industrial Lead in east Fernley near Nevada Pacific Parkway and Newlands Road, and the one-mile Louisiana Pacific Lead in west Fernley near I-80 and West Main Street. The former serves the Nevada Cement Company. The latter serves companies such as Johns Manville, Deceuninck, Sherwin-Williams, and Trex.

Tahoe Reno Industrial Center near Reno

The Tahoe Reno Industrial Center (TRIC) is a 107,000-acre industrial park located in Storey County about 25 miles east of Reno. The park has 7.5 miles of private track with access to BNSF and UPRR service on the Overland Route. Rail-served companies located at TRIC include Golden Gate Petroleum, PPG, Truckee Tahoe Lumber, and Hardie Building Products. A 2.5-mile right-of-way extension exists that could serve Tesla's huge Gigafactory.

Industrial Leads in Sparks

There are four major industrial leads of one- to two-mile lengths each in Sparks: a running track south of the yard, the Purina Lead, the Meiser Drill, and the GM Lead. Together they reach nine active sidetracks and 27 inactive sidetrack customers.

Industrial Leads in North Las Vegas

There are three major industrial leads of one- to two-mile lengths each in North Las Vegas: Las Vegas Industrial Park, the Golden Triangle Industrial Track, and the Nellis Industrial Lead. Together they reach 15 active and seven inactive sidetrack customers.

Statewide Sidetrack Statistics

As of mid-2020, cumulative Nevada totals for facilities served by sidetracks are as follows:

- 139 active sidetracks serving manufacturing or bulk commodity facilities
- 51 inactive sidetracks serving manufacturing or bulk commodity facilities
- 1 active sidetrack serving warehouses or distribution facilities
- 48 inactive serving warehouses or distribution facilities
- 2 active intermodal (COFC/TOFC) facilities
- 83 UP sidetracks suitable for lease to/for use by transloaders
- 324 total sidetracks for existing or potential freight facilities

An inventory of Nevada businesses with sidetracks can be found in the Appendix.

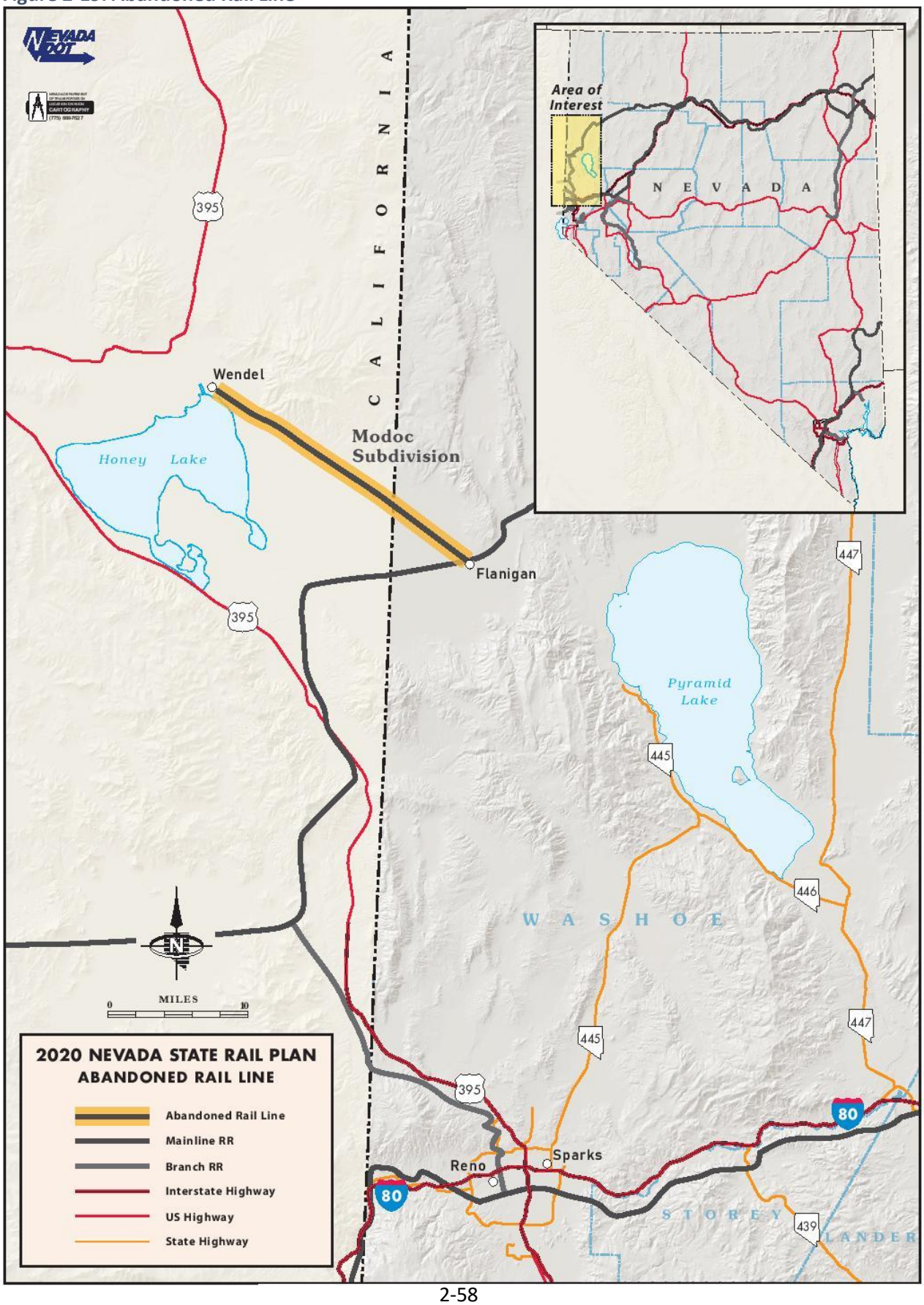
B-4. Rail Line Abandonments and Land-Banked Track

There have been no new rail abandonments in Nevada since the 2012 state rail plan was published.

Only one rail line has been abandoned in the last 20 years in Nevada[44] — the Modoc Subdivision, shown in **Figure 2-19**. The line ran for seven miles in Washoe County and an additional 21 miles into northern California, terminating in Wendel, CA. The line used to serve a California power plant and lumber mill. UPRR reclassified the line to an Industrial Lead and sold it to the Lassen Valley Railway LLC on December 3, 2009 when the tracks were last used. STB authorized abandoning the line on August 8, 2011 and the American Trails Association, Inc. consummated a trail use/rail banking agreement for the right of way on October 1, 2011.

[44] Surface Transportation Board, Abandoned and Railbanked Rail Lines Map, source link, accessed July 22, 2020.

Figure 2-19: Abandoned Rail Line

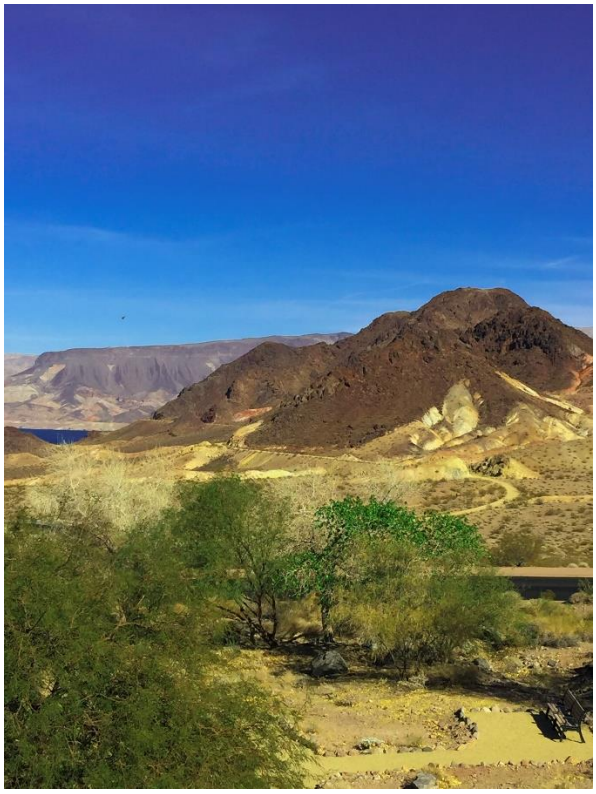


B-5. Rails-to-Trails and Rails-with-Trails

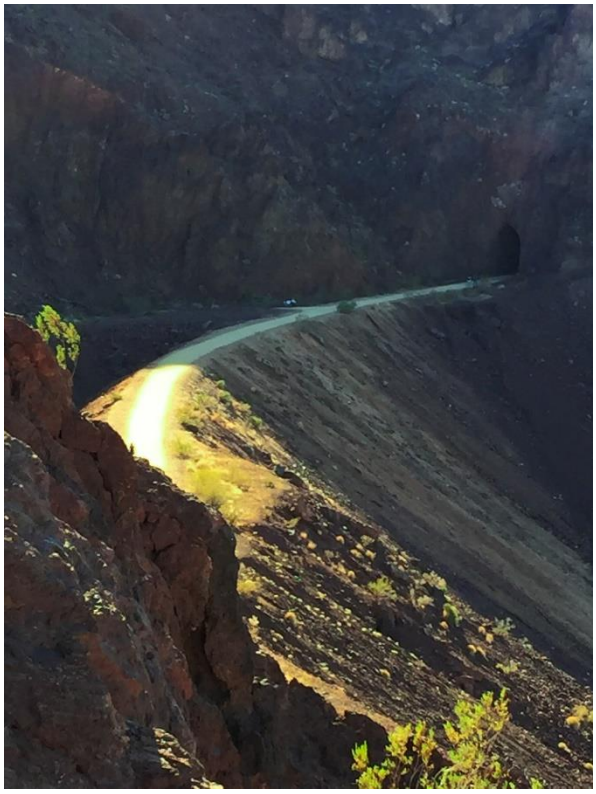
More than 23,000 miles of abandoned rail lines in the US have been converted to multi-use bicycle and pedestrian trails in the last 35 years through the Rails-to-Trails program.[45]

Communities have also used Rails-with-Trails in recent years as another way to secure land for recreational trails. The Rails-with-Trails program is defined as a shared-use path located on or adjacent to an active railroad.

The Rails-to-Trails Conservancy and other organizations have helped develop six Rails-to-Trails projects in Nevada: the Historic Virginia and Truckee Trail (1.9 miles) on an abandoned segment of the V&T Railroad; the Historic Railroad Trail (3.7 miles) near Boulder City; the River Mountains Loop Trail (35.3 miles) near Henderson and the Hoover Dam; the Union Pacific Railroad Trail (7.3 miles) near Henderson; the Goodsprings Trail (2.2 miles) completed in 2019, forty miles southwest of Las Vegas; and the Tahoe-Pyramid Bikeway (49.6 miles) near the Reno & Pyramid Lake area with a three-mile segment on a former railroad corridor. [46] The Tahoe-Pyramid Bikeway is still in development, though the majority of the trail is largely complete as of this writing.



Historic Rail Trail Boulder City to the Hoover Dam



Historic Rail Trail and Tunnel near Hoover Dam

[45] Rails-To-Trails Conservancy, About Page, source link, accessed July 22, 2020.
[46] TrailLink website, source link, accessed July 22, 2020.

C. Freight Commodities

C-1. Overview of Data Sources

The 2021 Nevada State Rail Plan utilized a variety of data sources to determine the estimated road and rail traffic that impact the State of Nevada's surface-based freight transportation network. The intent is to fully document the cargo unit volumes and commodities tonnage that comprise Nevada's freight movement and to illustrate the degree to which Nevada's transportation infrastructure serves as a critical origin or pass-through for cargo destined to other states.

Rail-based cargo flow data from the Surface Transportation Board (STB), combined with the truck-based flows provided by TRANSEARCH®, capture the unit volume, commodity descriptions, and tonnage. This enables detailed analysis of the full scope of Nevada's surface transportation network and potential opportunities for modal conversion and other strategies for more efficient freight movement.

The Data Sources:

1. The Surface Transportation Board's (STB) 2018 stratified rail carload waybill sampling
2. The Freight Analysis Framework (FAF-4.51) for 2018 and 2045 is produced through a partnership between the Bureau of Transportation Statistics (BTS) and the Federal Highway Administration (FHWA)
3. IHS-Markit TRANSEARCH® Truck Freight Flows

The STB Waybill Sampling of Rail Data

The STB waybill sampling is a stratified sample of carload waybills (usually 1-3%) for all U.S. rail traffic submitted by those rail carriers terminating 4,500 or more revenue carloads annually. The data provided was for the most current year available of 2018. Waybill data has broad applications and is used by transportation practitioners as a primary source of information for the development of state transportation plans. In the case of the 2021 Nevada State Rail Plan, the dataset was transmitted to TRANSEARCH® where it was processed and formatted in a Microsoft Access database and transmitted to Strategic Rail Finance for analysis and reporting.

For the reporting period of 2017 and onward, the STB implemented a new methodology for processing waybill samples, specifically, Waybill Miling Methodology, which modifies how waybills are routed for through traffic. This new methodology has had a material impact on the reporting of Nevada's rail through-traffic reporting. Therefore, direct comparative analysis of both total and through-traffic reporting prior to and after 2017, is no longer possible. It should also be noted that this change in methodology has not impacted rail cargo inflow, outflow, or intrastate rail traffic.[47]

Freight Analysis Framework Truck and Rail Data

The Freight Analysis Framework (FAF), produced through a partnership between BTS and FHWA, integrates data from a variety of sources to create a comprehensive picture of freight movement among states and major metropolitan areas by all modes of transportation. Starting with data from the 2012

[47] Verification of the changes in through-traffic was confirmed in writing with TRANSEARCH®, where a reconciliation of flow patterns established the integrity of the dataset. Furthermore, additional correspondences with the STB verified that the current STB waybill processing methodology has led to variances in current through-traffic reporting versus prior periods.

Commodity Flow Survey (CFS) and international trade data from the Census Bureau, FAF incorporates data from agriculture, extraction, utility, construction, service, and other sectors.

The data source utilized in this analysis is the latest version FAF-4.5.1. Released on December 19, 2019, FAF-4.5.1 includes 2018 actual estimates. Thus, for the purpose of this report, all tabular data representations are based upon 2018 freight flows, and future estimated forecasts are based upon the latest available forecast year of 2045.

TRANSEARCH® Truck Data

Developed by IHS Global Insight, TRANSEARCH® is an extensive database of North American freight flows, compiled from more than a hundred industry, commodity, and proprietary data exchange sources. The truck data provided was for the most current year available of 2018. TRANSEARCH® combines primary shipment data obtained from some of the nation's largest truck freight carriers with information from public, commercial, and proprietary sources to generate a base year estimate of freight flows at the county level. Furthermore, TRANSEARCH® establishes market-specific production tonnages by industry or commodity, drawn mostly from IHS Global Insight's Business Markets Insights (BMI) database.

Commodity Code Descriptions

Both the STB Waybill Sampling and the TRANSEARCH® truck data classify and report using the Standard Transportation Commodity Code (STCC) scheme. STCC is a publication containing specific product information used on waybills and other shipping documents. A STCC code is a seven-digit numeric code representing and consolidating into 38 commodity groupings (STCC2) on which this Plan reports. Assignment of a STCC Code is associated with a commodity description developed to conform with exact descriptions in freight transportation classifications of rail and motor carriers. Accompanying a STCC code are two corresponding codes, a Harmonized Commodity Description Coding System (HS) and a Standard Classification of Transported Goods (SCTG) category.

The SCTG is the commodity reporting scheme employed in the Freight Analysis Framework (FAF), to which this report relies upon for forecasting purposes. While there is no direct correlation between the two schemes, there exists a sufficient commonality between the two schemes to allow for general forecasting of commodity trends into the future.

Reporting Features and Enhancements

Where possible, the tables have been structured to create side-by-side comparisons with the previous 2012 Nevada State Rail Plan. This enables ready comparison and serves to compress the narrative.

The updated 2021 report includes additional data-reporting refinements. These enhancements include the following:

1. Unit volume reporting for rail-based carload and intermodal activity
2. Commodity values for all trade flows
3. Trade type reporting, i.e., Domestic, Import, Export and NAFTA trade flows
4. General Rail Equipment reporting of intermodal and railcars

C-2. Nevada Freight Flows Overview: 2018 Rail and Truck Traffic

The 2021 Nevada State Rail Plan incorporates the latest available freight data that reports traffic and commodity flows across Nevada's freight rail ecosystem. In addition, this document includes a summary

reporting of truck traffic, which provides the State with context relative to the two transit modes and to serve as a basis for future planning.

In 2018, Nevada freight flows across the State's road and rail infrastructure approached 190 million tons of cargo. From **Table 2-15** below, there is a significant concentration of overall truck flows relative to its rail counterpart. Total rail flows account for 23% of the cargo freight volume (43.7 million tons) versus truck-based cargo freight volume of 77% (145.3 million tons).

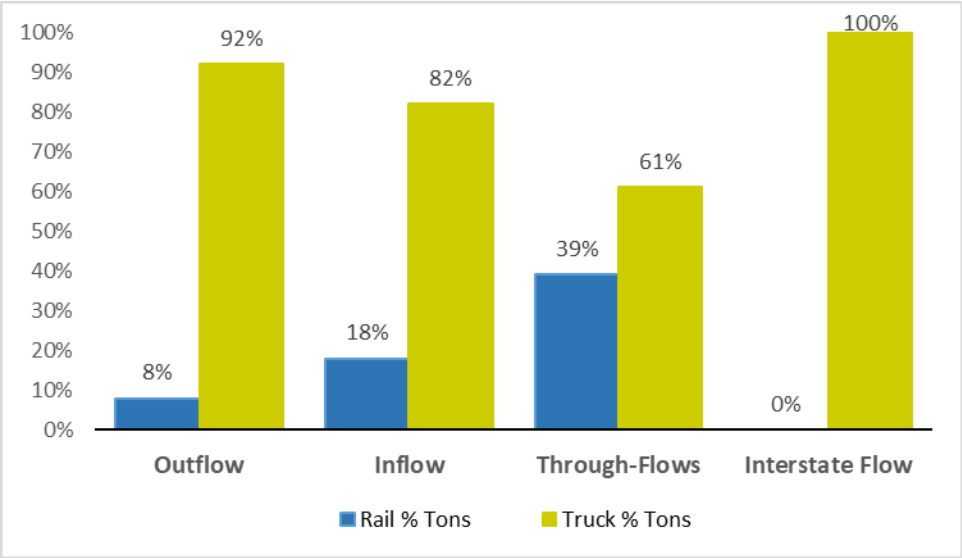
Also noteworthy is that over 92 million tons of total cargo flow was classified as through traffic that neither originated nor terminated in Nevada; through-traffic volume accounted for nearly 50% of the 189 million tons of all modes of freight transport.

Table 2-15: 2018 Nevada Freight Flow Matrix: Distribution of Transit Modes and Freight Flows[48]

Mode/Flow Type	Rail (Tons)*	Rail Car Units*	Truck (Tons)**	Truck Units**	Total (Tons)	Rail Tons	% Truck Tons
Nevada Outflows	2,254,185	44,564	25,149,322	1,831,180	27,403,507	8%	92%
Nevada Inflows	5,279,174	78,456	24,439,479	2,015,119	29,718,653	18%	82%
Nevada Intrastate	62,628	644	39,660,227	3,857,820	39,722,855	0%	100%
Through Traffic	36,086,935	1,128,538	56,034,539	2,874,243	92,121,474	39%	61%
Totals	**43,682,922**	**1,252,202**	**145,286,567**	**10,578,362**	**188,966,489**	**23%**	**77%**

Figure 2-20, as seen below, illustrates the modal distribution of road and rail traffic and flows in all directions. With the exception of through traffic, which is nearly balanced between road and rail, the disproportional modal mix is clearly evident. This is especially true with interstate cargo flows, where almost 100% of freight traffic is conducted by truck traffic only.

Figure 2-20: 2018 Nevada Modal Distribution of Road & Rail Across All Freight Flows[49]



[48] *Source: STB Waybill Sample 2018; ** Source: TRANSEARCH® Truck Data 2018
[49]STB Waybill Sample 2018; TRANSEARCH® Truck Data 2018

2018 and 2009 Summary of Total Rail Freight Flows and Commodities

The new Waybill Miling Methodology has had the following impacts on the reporting of 2009 and 2018 rail traffic data:

- Total of all rail traffic flows as reported in 2009 was 192 million tons of freight, versus 44 million tons in 2018. This represents a reduction of 148 million tons in total reported volume.
- Through-traffic reporting for 2009 was 183 million tons, versus 36 million tons in 2018. This represents a reduction or under-reporting of 147 million tons of through-traffic volume.
- There is no evidence that the STB change in methodology has impacted inflow, outflow, or intrastate rail traffic reporting.

Table 2-16: 2009 & 2018 Top Five Nevada Commodities: All Rail Flow Traffic[50]

STCC2	STCC Name	2009 % of Total	2018 % of Total
20	Food or Kindred Products	12%	18%
46	Intermodal and FAK	29%	16%
11	Coal	6%	16%
1	Farm Products	22%	14%
28	Chemicals or Allied Products	7%	11%
	All Others	24%	25%
	Total	**100%**	**100%**

As evidenced by **Table 2-16**, the total concentration of rail-based commodities has remained consistent over the reporting periods of 2018 and 2009, where approximately 75% of all commodities moved by rail are represented by five top commodities. The primary difference between the reporting periods is that the top five in 2018 are generally more evenly distributed than in 2009.

Figure 2-21: 2009 Nevada Total Distribution of Rail Traffic Flows[51]

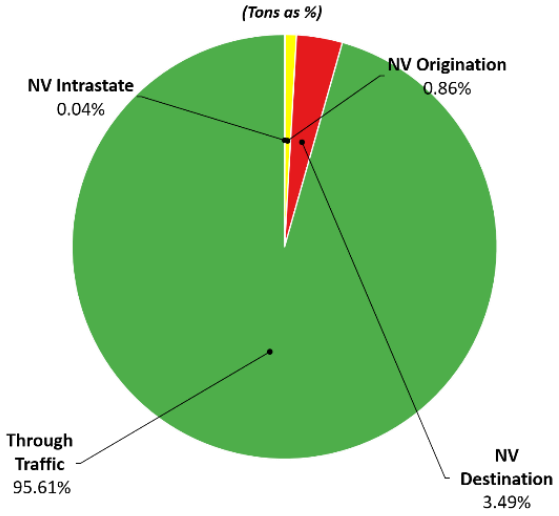
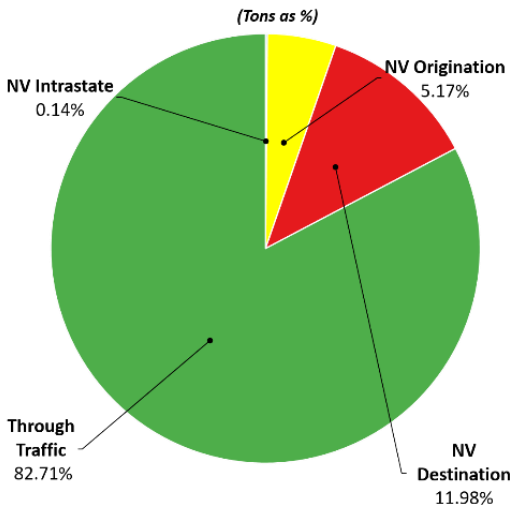


Figure 2-22: 2018 Nevada Total Distribution of Rail Traffic Flows[52]



[50] STB Waybill Sample 2018 & 2009
[51] STB Waybill Sample 2018
[52] STB Waybill Sample 2009 Nevada Total Distribution of Rail Traffic Flows

Figure 2-21 depicts the 2009 distribution of rail freight flows impacting the State of Nevada with **Figure 2-22**, the 2018 distribution of rail flows. Aside from the change in methodologies between reporting periods, there has been no material difference in flow patterns. In 2018, nearly 83 percent of rail cargo flow is through traffic, followed by freight terminating in Nevada (12%); the remaining five percent of rail cargo flows are Nevada intrastate and Nevada origination traffic flows.

Figure 2-23: 2018 Nevada Total Distribution by Rail Modes[53]

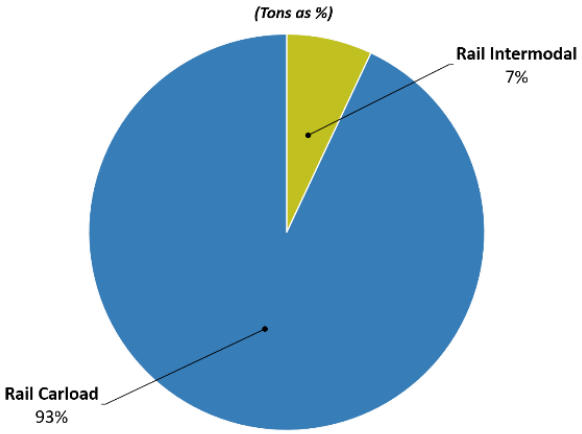


Figure 2-24: 2018 Nevada Total Distribution by Rail Traffic Type[54]

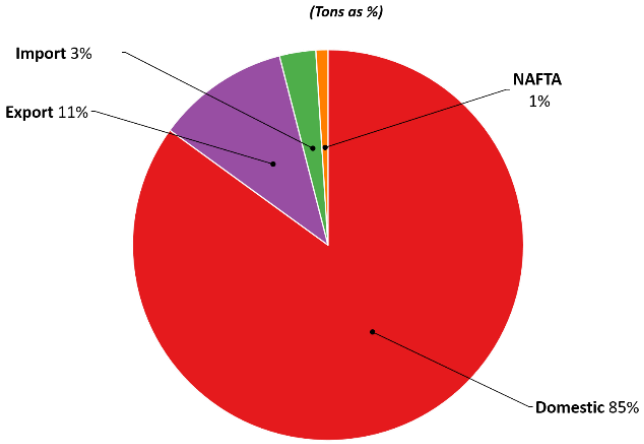


Figure 2-23 presents the 2018 distribution of rail equipment modes for Nevada across all freight flows. Expressed as a percentage of total tonnage, carload volumes represent 71% of the total volume while intermodal volumes are only 29%. **Figure 2-24** presents the distribution of rail traffic type across all flows; domestic freight destinations are 85% of all rail freight traffic.

Nevada Rail Outflows (Nevada Originations)

In 2018, over 2,254,000 tons and 33,564 carloads of rail cargo originated in the state of Nevada. This represents over 5% of the total rail flow impacting the State. This cargo volume also represents a 38% increase from the reported inflow tonnage for 2009. Below, **Table 2-17** ranks the top five commodities originating in the State of Nevada alongside data from the 2009 STB Waybill Sample.

Table 2-17: 2009 & 2018 Top 5 Nevada Commodities: Rail Outflow Traffic[55]

Based on 2009 STB Waybill				Based on 2018 STB Waybill			
STCC2	**Description**	**Tons**	**% Total**	**STCC2**	**Description**	**Tons**	**% Total**
28	Chemicals or Allied Products	401,069	51.50%	14	Nonmetallic Minerals	839,640	37.25%
18	Nonmetallic Minerals	345,346	12.80%	32	Clay, Concrete, Glass, or Stone	750,573	33.30%
32	Clay, Concrete, Glass, or Stone	320,047	11.80%	40	Waste or Scrap Materials	291,076	12.91%
40	Waste or Scrap Materials	243,596	11.10%	46	Intermodal/Freight All Kinds	104,400	4.63%
46	Intermodal/Freight All Kinds	126,792	3.50%	28	Chemicals or Allied Products	83,320	3.70%
	All Others	194,099	9.30%		All Others	185,176	8.21%
	Total	**1,630,949**	**100.00%**		**Total**	**2,254,185**	**100.00%**

[53] STB Waybill Sample 2018
[54] STB Waybill Sample 2018
[55] STB Waybill Sample 2018 & 2009

It should be noted that there have been several significant increases in certain commodity flows between the periods. Most notably is the significant increase in the outbound shipments of Nonmetallic Minerals and clay, concrete, glass, or stone, with an increase of 143% or nearly 500 thousand tons and an increase of 135% or over 430 thousand tons, respectively. These gains in commodity shipments were partially offset by a significant decrease (79% or 318 thousand tons) in the shipments of Chemicals or Allied Products. The overall net effect of these changes account for nearly the entire increase in total commodity outflows between the periods of 2009 and 2018.

Table 2-18: 2018 Nevada Commodities Ranked by Value: Rail Outflow Traffic[56]

STCC2	STCC Name	Value	Value % of Total	Total Tons	Total Units
46	Intermodal/Freight All Kinds	$534,882,272	43.39%	104,400	6,440
32	Clay, Concrete, Glass, or Stone	$175,921,869	14.30%	750,573	7,348
37	Transportation Equipment	$90,786,380	7.38%	17,440	996
33	Primary Metal Products	$75,717,056	6.16%	17,000	200
40	Waste or Scrap Materials	$72,302,376	5.88%	291,076	3,296
29	Petroleum or Coal Products	$60,320,554	4.90%	74,240	960
14	Nonmetallic Minerals	$45,137,861	3.67%	839,640	9,396
28	Chemicals or Allied Products	$43,239,907	3.52%	83,320	1,200
35	Machinery	$29,110,615	2.37%	2,120	120
23	Apparel or Related Products	$25,191,181	2.05%	3,120	240
	All Others	$77,322,139	6.29%	71,256	3,368
	Total	**$1,229,932,210**	**100.00%**	**2,254,185**	**33,564**

Table 2-18 ranks the top ten commodity outflow in terms of value shipped. As with rail freight inflows, it is important to note the degree of commodity concentration in terms of value for rail cargo outflows. Of particular interest are the top value shipments of Mixed Freight/Intermodal, which represents over 43% of the total value of rail cargo outflows and is entirely intermodal loads. The top three commodities shipped represented 65% of the total value, and the top ten commodities account for over 94% of the value. All remaining commodities ("All Others") account for 6%.

Table 2-19: 2009 & 2018 Nevada Top Destination Ranking: Rail Outflow Traffic[57]

Based on 2009 STB Waybill			Based on 2018 STB Waybill		
State	**Total Tonnage**	**% Total**	**State**	**Total Tonnage**	**% Total**
California	700,078	42.92%	California	1,194,373	52.98%
Illinois	218,655	13.41%	Utah	188,360	8.36%
Utah	111,558	6.84%	Illinois	149,004	6.61%
Wyoming	85,334	5.23%	Wyoming	93,360	4.14%
Nevada	81,439	4.99%	Washington	82,604	3.66%
Colorado	55,994	3.43%	Colorado	79,460	3.52%
Oregon	45,908	2.81%	Pennsylvania	61,280	2.72%
Washington	45,733	2.80%	Oregon	58,048	2.58%
Arizona	42,372	2.60%	North Dakota	41,880	1.86%

[56] STB Waybill Sample 2018
[57] STB Waybill Sample 2018 & 2009

Based on 2009 STB Waybill			Based on 2018 STB Waybill		
State	**Total Tonnage**	**% Total**	**State**	**Total Tonnage**	**% Total**
Pennsylvania	38,266	2.35%	Louisiana	40,200	1.78%
All Others	205,612	12.61%	All Others	265,616	11.78%
Total	**1,630,949**	**100.00%**	**Total**	**2,254,185**	**100.00%**

Table 2-19 represents the top ten rail-based trading partners with cargo outflows originating in the State of Nevada. As the table demonstrates, while the State of California remains the top destination state partner, cargo flows to California have also increased over 70% or nearly 500 thousand tons. Other than California, the table demonstrates moderate changes in state rankings and modest changes in cargo volumes, and the overall increase in flow is primarily attributed to the state of California. **Figure 2-25** illustrates the concentration of Nevada rail freight outflows nationwide.

Figure 2-25: Destination of Rail Traffic Originating in Nevada (2018)

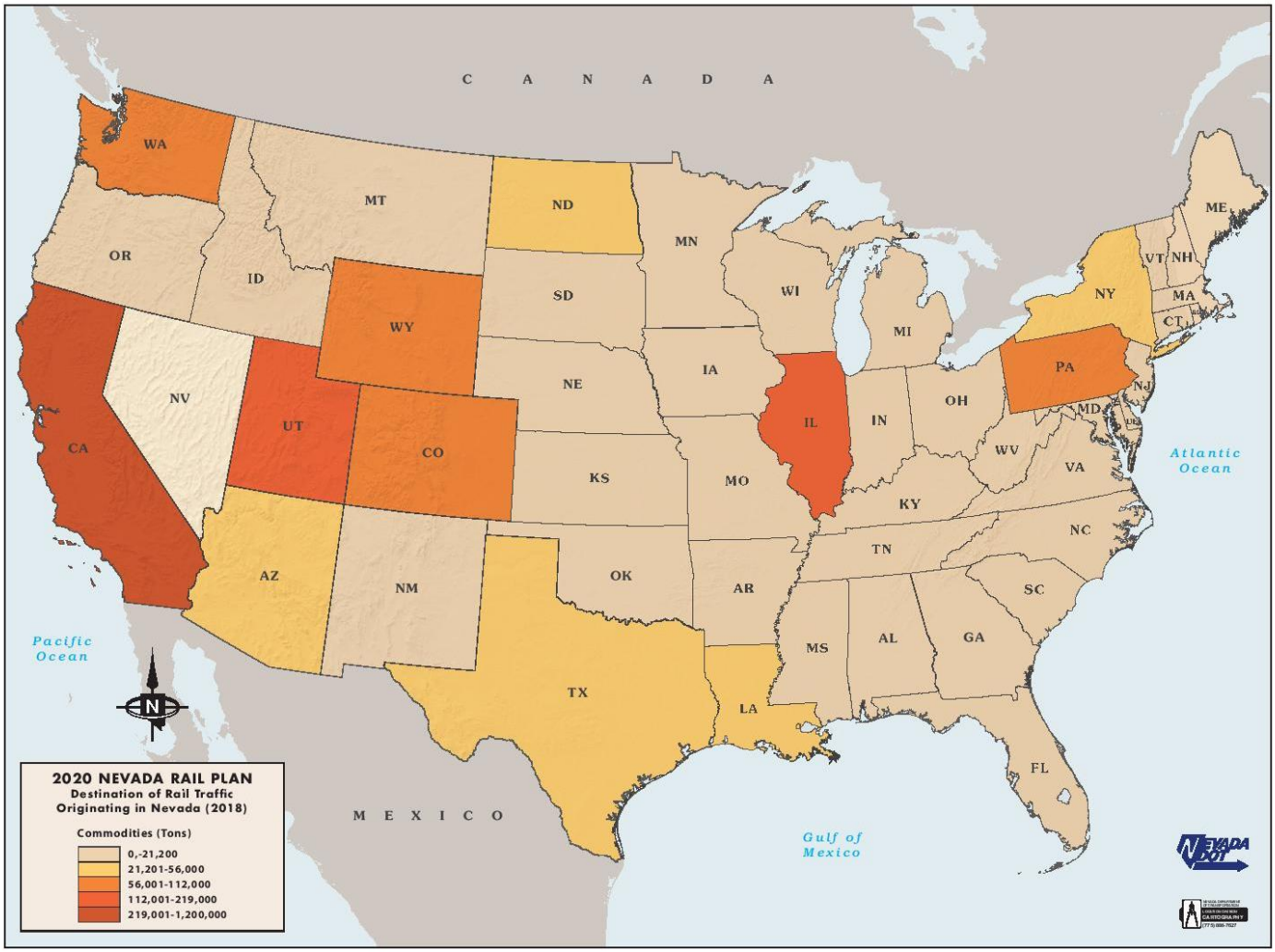


Figure 2-26 presents the 2018 distribution of rail equipment modes for originating freight outflows from Nevada. Expressed as a percentage of total tonnage, carload volumes represent 93% of the total volume

while intermodal volumes are only 7%. **Figure 2-27** represents the distribution of rail traffic flow types, where domestic freight destinations are 96% of all freight traffic.

Figure 2-26: 2018 Nevada Distribution by Rail Modes - Outflow Traffic[58]

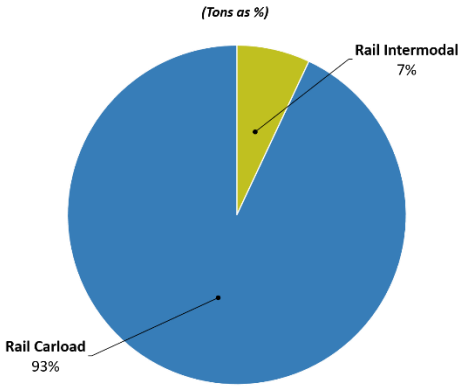
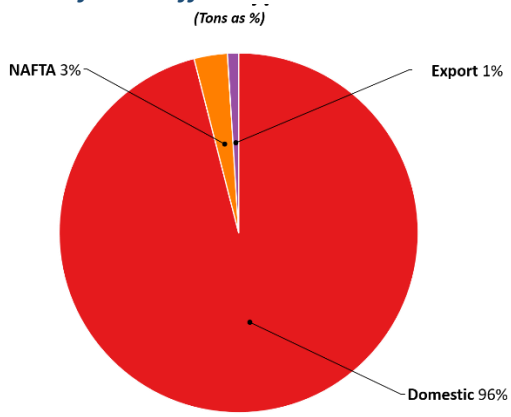


Figure 2-27: 2018 Nevada Distribution by Traffic Types - Outflow Traffic[59]



Nevada Rail Inflows (Nevada Destinations)

In 2018, nearly 5,280,000 tons and 78,000 carloads of rail cargo terminated in the state of Nevada. This represents nearly 12% of the total rail flow impacting the State. This cargo volume also represents a nearly 21% decrease from the reported inflow tonnage for 2009. **Table 2-20** ranks the top five commodities terminating in the State of Nevada, alongside the 2012 State Rail Plan that sourced data from the 2009 STB Waybill Sample.

Table 2-20: 2009 & 2018 Top 5 Nevada Commodities: Rail Inflow Traffic[60]

Based on 2009 STB Waybill				Based on 2018 STB Waybill			
STCC2	**Description**	**Tons**	**% Total**	**STCC2**	**Description**	**Tons**	**% Total**
11	Coal	3,437,693	51.45%	28	Chemicals or Allied Products	1,655,732	31.36%
32	Clay, Concrete, Glass, or Stone	856,939	12.83%	11	Coal	1,1017,970	19.28%
28	Chemicals or Allied Products	789,083	11.81%	32	Clay, Concrete, Glass, or Stone	579,924	10.99%
29	Petroleum or Coal Products	739,797	11.07%	24	Lumber or Wood Products	401,960	7.61%
20	Food or Kindred Products	236,447	3.54%	29	Petroleum or Coal Products	389,524	7.38%
	All Others	621,559	9.30%		All Others	1,233,890	23.37%
	Total	**6,681,518**	**100.00%**		**Total**	**5,279,000**	**100.00%**

From the table above, it should be noted that there have been several significant shifts in commodity flows between the two periods. Most notably is the significant reduction in coal imports (1,018 KTons in

[58] STB Waybill Sample 2018
[59] STB Waybill Sample 2018
[60] STB Waybill Sample 2018 & 2009

2020 vs. 3,438 KTons in 2012) and a corresponding increase in Chemicals or Allied products (1,656 KTons in 2020 vs. 789 KTons in 2012).

Table 2-21: 2018 Nevada Commodities Ranked by Value: Rail Inflow Traffic61

STCC2	STCC Name	Value	Value % of Total	Total Tons	Total Units
28	Chemicals or Allied Products	$1,851,295	33.12%	1,656	18
37	Transportation Equipment	$1,319,348	23.60%	140	8
46	Misc. Mixed Shipments/Intermodal	$856,222	15.32%	167	10
29	Petroleum or Coal Products	$261,953	4.69%	390	5
33	Primary Metal Products	$258,612	4.63%	165	2
26	Pulp, Paper or Allied Products	$208,525	3.73%	130	3
20	Food or Kindred Products	$158,677	2.84%	267	4
24	Lumber or Wood Products	$121,899	2.18%	402	4
23	Apparel or Related Products	$120,405	2.15%	22	2
30	Rubber or Misc. Plastics	$88,495	1.58%	15	1
	All Others	$344,185	6.16%	1,926	22
	Total	**$5,589,616**	**100.00%**	**5,279**	**78**

Table 2-21 ranks the top ten commodity inflows in terms of value. It is important to note the degree of commodity concentration in terms of value. Chemical and Allied Products, Transportation Equipment and Mixed Freight/Intermodal account for over 72% of the total value of rail traffic terminating in the State of Nevada. The top ten commodities account for over 93% of the value, and all remaining commodities account for just 6%.

Table 2-22: 2009 & 2018 Nevada Top Origination Ranking: Rail Inflow Traffic62

Based on 2009 STB Waybill			Based on 2018 STB Waybill		
State	**Total Tonnage**	**% Total**	**State**	**Total Tonnage**	**% Total**
Utah	2,677,341	40.07%	Wyoming	921,650	17.46%
Wyoming	801,996	12.00%	California	610,160	11.56%
Texas	717,408	10.74%	Utah	470,962	8.92%
California	613,257	9.18%	Idaho	435,588	8.25%
Colorado	322,709	4.83%	Illinois	354,240	6.71%
Oregon	291,238	4.36%	Texas	352,400	6.68%
Iowa	184,700	2.75%	Oregon	273,792	5.19%
Illinois	178,238	2.67%	Louisiana	218,160	4.13%
Nebraska	102,975	1.54%	Minnesota	200,044	3.79%
Montana	85,628	1.28%	Colorado	160,370	3.04%
All Others	791,655	9.30%	All Others	1,281,808	24.00%
Total	**6,681,517**	**100.00%**	**Total**	**5,279,174**	**100.00%**

Table 2-22 ranks the top ten rail-based State trading partners with cargo inflows terminating in the State of Nevada. As the table demonstrates, there have been significant changes in state rankings between the periods of 2009 and 2018. Based on the above commodity flow table, the reductions in demand for Coal

[61] STB Waybill Sample 2018 & 2009
[62] STB Waybill Sample 2018 & 2009

and Coal/Petroleum Products and the increased demand for Chemical or Allied Products have led to re-sorting of State partners over the nine-year span. **Figure 2-28** illustrates the concentration of Nevada rail freight inflows nationwide.

Figure 2-28: Origination of Rail Traffic Terminating in Nevada (2018)

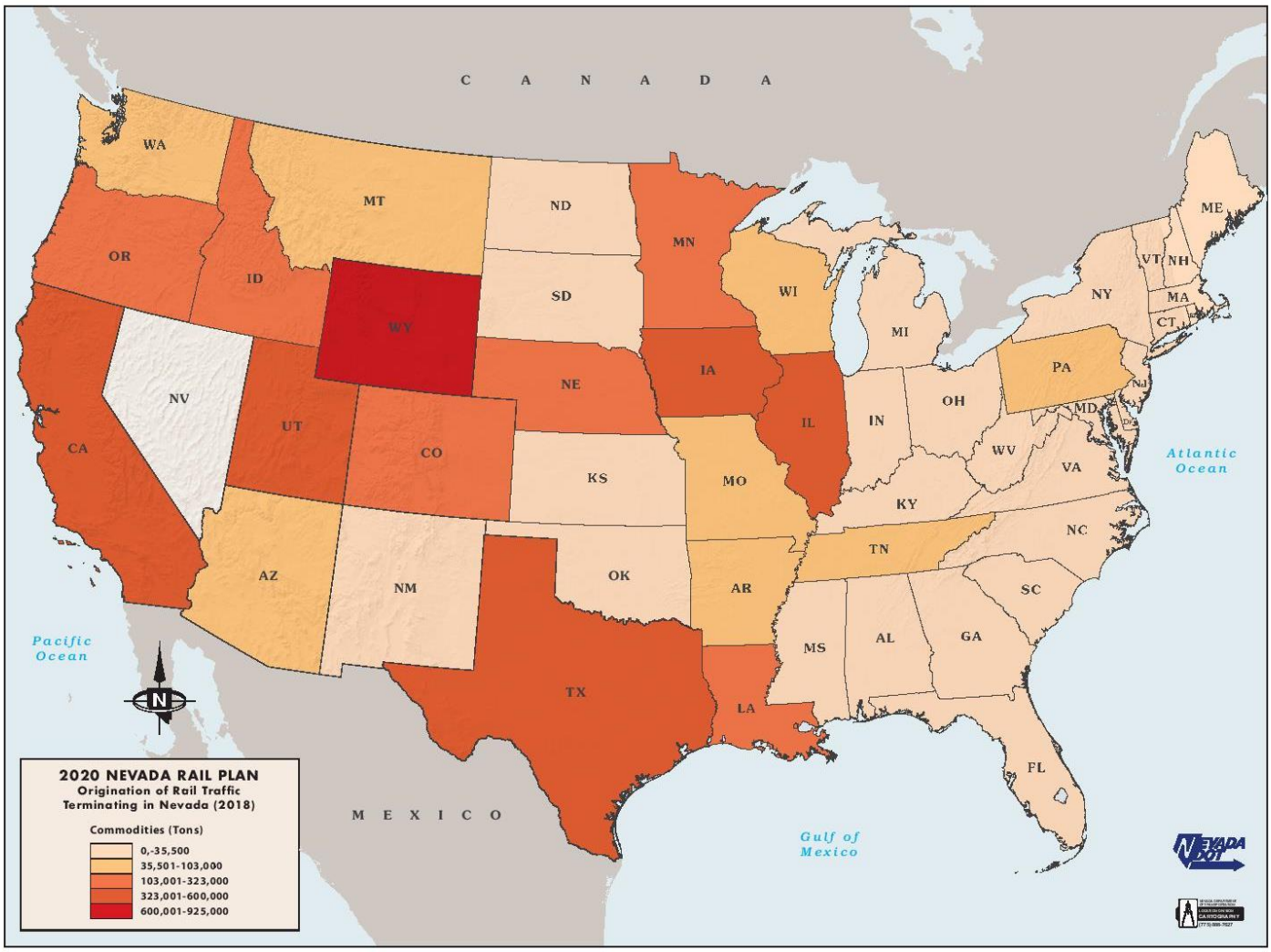


Figure 2-29 presents the 2018 distribution of rail equipment modes for freight inflows to Nevada. Expressed as a percentage of total tonnage, carload volumes represent 93% of the total volume while intermodal volumes are only 7%. **Figure 2-30** represents the distribution of rail traffic flow types, where domestic freight destinations are 96% of all freight traffic.

Figure 2-29: 2018 Nevada Distribution of Rail Modes - Inflow Traffic[63]

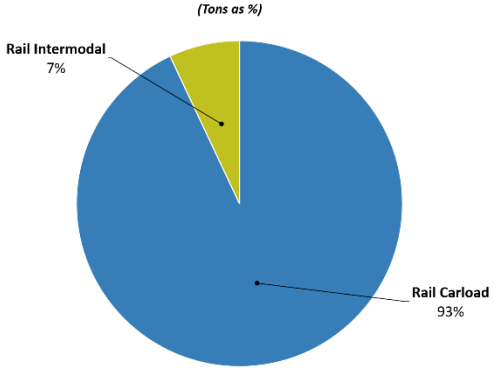
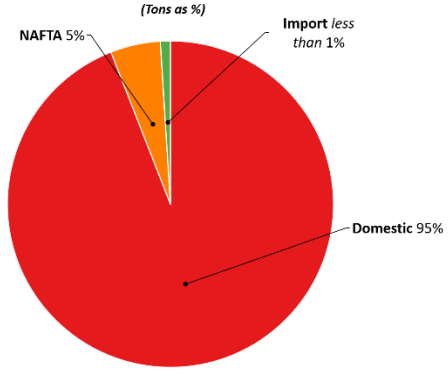


Figure 2-30: 2018 Nevada Distribution of Traffic Types - Inflow Traffic[64]



Nevada Rail Through Traffic

STB's revised calculation of through-traffic has had a material downward impact on the reporting of Nevada carload through-traffic volumes when compared to the prior years. Therefore, direct comparative analysis of reported through-traffic cargo volumes, prior to and after 2017, is no longer a viable measuring tool. The reporting data in this section should be considered on its own, where future comparisons can be made. **Table 2-23** illustrates the impact of this change in reporting.

Table 2-23: 2018 & 2009 Top 5 Nevada Commodities: Rail Through-Traffic[65]

Based on 2009 STB Waybill				Based on 2018 STB Waybill			
STCC2	**Description**	**Tons**	**% Total**	**STCC2**	**Description**	**Tons**	**% Total**
46	Intermodal/Freight All Kinds	54,348,091	29.71%	20	Food or Kindred Products	7,655,955	21.22%
1	Farm Products	41,516,765	22.70%	46	Intermodal/Freight All Kinds	6,786,841	18.81%
20	Food or Kindred Products	22,803,433	12.47%	1	Farm Products	5,864,909	16.25%
28	Chemicals or Allied Products	12,900,362	7.05%	11	Coal	5,854,322	16.22%
11	Coal	8,464,284	4.63%	28	Chemicals or Allied Products	3,046,230	8.44%
	All Others	42,889,000	23.45%		All Others	6,879,000	19.06%
	Total	**182,921,935**	**100.00%**		**Total**	**36,087,257**	**100.00%**

Table 2-24 ranks the top ten origin-destination (O/D) trade lane pairs for Nevada pass-through rail traffic. What is evident is that O/D trade-lane traffic, in terms of tonnage, is heavily biased towards westbound traffic (78%) versus eastbound traffic (22%). Conversely, unit carload and intermodal volumes do not correlate to tonnage. Westbound and eastbound unit traffic percentages are 59% and 41% respectively. The explanation primarily lies in the mix of rail equipment, where over 40% of total rail traffic is intermodal, and the unit weight density for eastbound traffic is less than 50% of its westbound counterpart.

[63] STB Waybill Sample 2018
[64] STB Waybill Sample 2018
[65] STB Waybill Sample 2018 and 2009

Table 2-24: 2018 Nevada Top Origination-Destination Pairings: Rail Through Traffic[66]

Origination	Destination	Direction	Tons	% Total Tons	Unit Value
Utah	California	Westbound	5,519,161	15.29%	95,837
California	Illinois	Eastbound	4,439,108	12.30%	271,484
Illinois	California	Westbound	4,084,079	11.32%	239,630
Nebraska	California	Westbound	3,637,650	10.08%	38,553
Iowa	California	Westbound	3,422,465	9.48%	57,346
Colorado	California	Westbound	2,658,374	7.37%	56,619
Minnesota	California	Westbound	1,881,497	5.21%	20,378
California	Utah	Eastbound	1,307,788	3.62%	62,204
Idaho	California	Westbound	932,064	2.58%	10,156
California	Colorado	Eastbound	551,584	1.53%	32,180
All Others			7,653,164	21.21%	244,151
Total			**36,086,934**	**100.00%**	**1,128,538**

Table 2-25 depicts the distribution of through traffic in terms of commodity value. Intermodal/Freight All Kinds leads the way with over 45% of the total value of Nevada through traffic. The top three reported commodities account for 77% of the total value of Nevada through traffic.

Table 2-25: 2018 Nevada Commodities Ranked by Value: Rail Through Traffic[67]

STCC2	STCC Name	Value	Value % of Total	Total Tons	Total Units
46	Intermodal/Freight All Kinds	$34,653,205,631	45.67%	6,786,841	456,240
20	Food or Kindred Products	$12,008,494,994	15.82%	7,655,955	161,947
37	Transportation Equipment	$11,685,942,980	15.40%	1,186,700	66,716
28	Chemicals or Allied Products	$4,180,720,007	5.51%	3,046,230	53,097
23	Apparel or Related Products	$3,277,191,009	4.32%	607,240	49,000
30	Rubber or Misc. Plastics	$1,937,811,784	2.55%	450,960	41,560
1	Farm Products	$1,203,850,188	1.59%	5,864,909	72,317
34	Fabricated Metal Products	$848,171,572	1.12%	120,688	9,080
25	Furniture or Fixtures	$846,246,928	1.12%	187,160	17,680
26	Pulp, Paper or Allied Products	$761,036,128	1.00%	549,600	18,680
	All Others	$4,481,397,780	5.91%	9,630,651	182,221
	Total	**$75,884,069,000**	**100.00%**	**36,086,934**	**1,128,538**

Figure 2-31 presents the 2018 distribution of rail equipment modes for Nevada pass-through traffic. Expressed as a percentage of total tonnage, carload volumes represent 67% of the total volume while intermodal volumes were 33%. **Figure 2-32** represents the distribution of rail traffic flow types, where domestic freight destinations are 83% of all freight traffic.

[66] STB Waybill Sample 2018
[67] STB Waybill Sample 2018

Figure 2-31: 2018 Nevada Distribution of Rail Modes – Through Traffic[68]

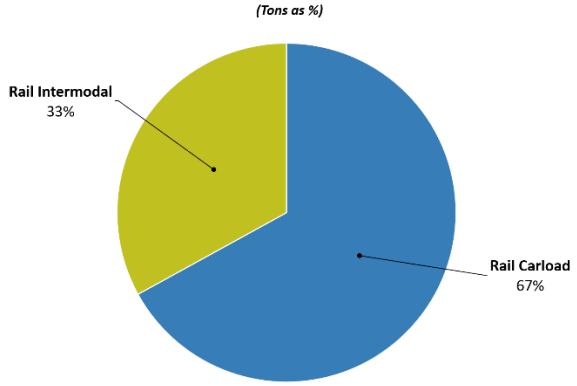
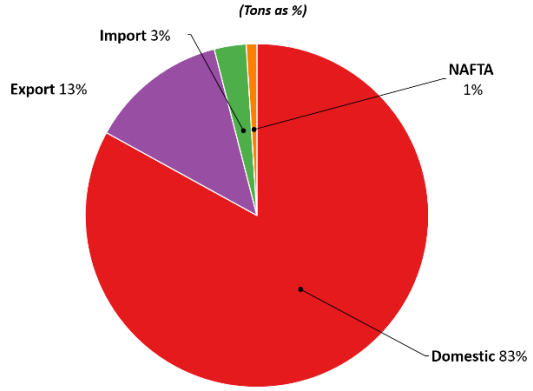


Figure 2-32: 2018 Nevada Distribution of Rail Traffic Types – Through Traffic[69]



Nevada Intrastate Rail Traffic

Nevada intrastate rail traffic represents only 0.16% of the total rail traffic traversing the state's rail network. Total tonnage for 2018 was less than 63,000, compared to over 81,000 tons in 2009 – a 22% decline over the two periods. It is also only represented by two commodity groups: Clay, Concrete, Glass, or Stone (STCC 32), and Waste and Scrap Materials (STCC 40). **Table 2-26** represents a comparative representation of those commodities compared to the 2012 plan.

Table 2-26: 2018 & 2009 Top 4 Nevada Commodities: Rail Intrastate Traffic[70]

Based on 2009 STB Waybill				Based on 2018 STB Waybill			
STCC2	**Description**	**Tons**	**% Total**	**STCC2**	**Description**	**Tons**	**% Total**
32	Clay, Concrete, Glass or Stone	67,189	82.50%	32	Clay, Concrete, Glass or Stone	55,548	88.70%
40	Waste or Scrap Materials	0	0.00%	40	Waste or Scrap Materials	7,080	11.30%
28	Chemicals or Allied Products	14,064	17.27%	28	Chemicals or Allied Products	0	0.00%
14	Nonmetallic Minerals	185	0.23%	14	Nonmetallic Minerals	0	0.00%
	Total	**81,439**	**100.00%**		**Total**	**62,628**	**100.00%**

C-3. Forecast Commodity Flows Overview

The FHWA's Freight Analysis Framework (FAF version 4.51) forecasts commodity flows to the year 2045 and is the data source utilized in the production of commodity flow forecasts for the 2021 Nevada State Rail Plan. A full description of the FAF data source is located in Freight Analysis Framework Truck and Rail Data.

As much as 70% of the data sourcing for the FAF model is derived from the Commodity Flow Survey (CFS), which is conducted every five years. The latest survey was conducted for 2017. However, the incorporation of the 2017 CFS results will not be available until the latter part of 2020. Therefore, the current forecasting model utilizes the 2012 base-year CFS data. The reliability or refinement of the

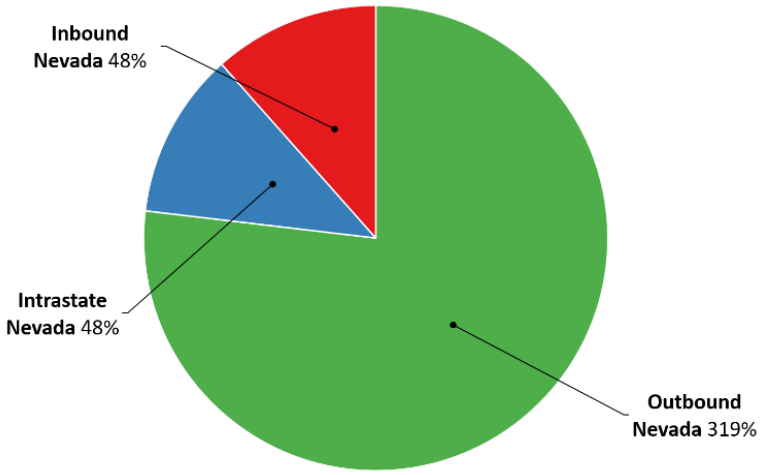
[68] STB Waybill Sample 2018
[69] STB Waybill Sample 2018
[70] STB Waybill Sample 2018 and 2009

forecasts may not accurately represent the current forecasted changes due to the age of the base-year data. Based upon these facts, the following forecasts will be presented on a percentage basis, with only limited refinements to cargo tonnage. A supplemental forecast to the 2021 State Rail Plan, with further refinements, will be resubmitted upon the publishing of next FAF version.

Forecasted Freight Flows

Figure 2-33 demonstrates the anticipated growth in Nevada State cargo flow tonnage expressed as percentage increases. The forecasts, which span a 27-year period, demonstrate expected in-scope growth for both inbound and intrastate traffic. Worthy of particular attention is the atypical growth in Nevada outbound flows, largely attributed to significant increases in the production and distribution of metallic ores, which will be addressed in the subsequent tables and narratives.

Figure 2-33: 2018-2045 Nevada Growth by Freight Flows



Forecasted Rail Inflows

Table 2-27 ranks the top five commodities with the largest change in volume between the years 2018 and 2045. The net change in tonnage for the top five commodities represents over 72% of the total forecasted change in volume between 2018-2045. Nevada terminating freight of Nonmetallic Minerals and Petroleum/Coal Products lead the way in rail cargo inflows, and as expected, inflows of coal continue to decline.

Table 2-27: 2018-2045 Nevada Top Commodities and Changes in Volume: Rail Inflow Traffic[71]

Commodity Type	KTon Change	% Change
Nonmetallic Minerals/Products	689	76%
Petroleum or Coal Products	411	97%
Plastics/Rubber	230	118%
Chemicals and Allied Products	148	53%
Coal	-377	-45%

[71] FHWA Freight Analysis Framework, 2018 v. 4.5.1

Table 2-28 depicts the forecasted top five Nevada State rail trading partners in the year 2045. Utah demonstrates the largest volume increase of freight flows to Nevada, while the inflows from Wyoming is forecasted to contract by over 27% during the 27-year span.

Table 2-28: 2018-2045 Nevada Top State Partners and Changes in Volume: Rail Inflow Traffic[72]

State	Total KTons in 2045	KTon Change	% Change
Utah	1,652	733	80%
Washington	397	215	118%
Nebraska	277	134	94%
California	284	101	55%
Wyoming	686	-249	-17%

Forecasted Rail Outflows

Table 2-29 depicts the top four commodity outflows in terms of forecasted volume increases between 2018 and 2045. These four commodities represent over 92% of the total outflow tonnage in the year 2045. Metallic Ores are forecasted to increase by over nine-fold over the period and Waste and Scrap is forecasted to increase well over two-fold the outflow activity of 2018.

Table 2-29: 2018-2045 Nevada Top Commodities and Changes in Volume: Rail Outflow Traffic[73]

Commodity Type	KTon Change	% Change
Metallic Ores	3,680	930%
Nonmetallic Minerals or Products	530	47%
Chemicals and Allied Products	506	75%
Waste and Scrap	409	242%

Table 2-30 ranks the top five Nevada state trading partners in year 2045. These five states represent 92% of total state trading partner outflows. The out-of-scope growth in outflow trade to Michigan, combined with the extraordinary growth in Metallic Ores, are intertwined. Deeper research into these data points led to the determination that the FAF survey anticipates significant growth in shipments of iron ore to the Detroit, MI region in the year 2045. This suggests that the mining industry in Nevada will perhaps play a major role in the shift in the raw material supply chain feeding the Detroit regional industries.

Table 2-30: 2018-2045 Nevada Top State Partners and Changes in Volume: Rail Outflow Traffic[74]

State	Total KTons in 2045	KTon Change	% Change
Michigan	4,051	3,819	1,645%
California	682	411	152%
Kansas	171	30	21%
Minnesota	150	96	178%
Arizona	94	26	39%

[72] FHWA Freight Analysis Framework, 2018 v. 4.5.1
[73] FHWA Freight Analysis Framework, 2018 v. 4.5.1
[74] FHWA Freight Analysis Framework, 2018 v. 4.5.1

D. General Analysis of Rail Transportation's Economic and Environmental Impacts

Effective and efficient comprehensive transportation systems provide a variety of regional and local benefits. Rail is a key component of Nevada's overall transportation system moving both freight and people. Investments in rail transportation technologies can help realize numerous community goals. Retrofitting, rehabilitating, and designing new infrastructure can benefit the national and state transportation system as well as the quality of life for Nevada residents.

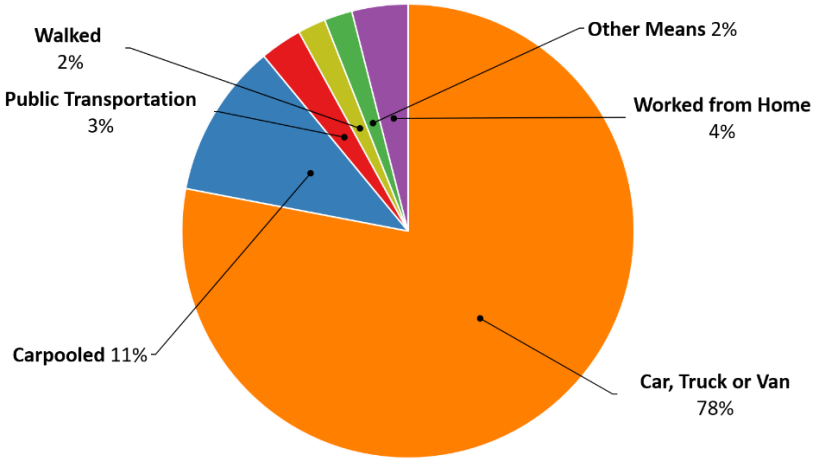
This section identifies benefits for the state of Nevada that will result from improvements in rail infrastructure. The economic and environmental impacts of rail infrastructure are embedded into many aspects of the state's economy, including such things as congestion mitigation (highway, airport, and rail), trade and economic development, air quality, land use, energy use, and community impacts, which are discussed below.

D-1. Congestion Mitigation

NDOT is tasked with developing and maintaining a modern transportation system with the capacity to accommodate future growth, and thus is constantly evaluating congestion levels to determine the use and capacity of the state's infrastructure. Air, truck, car, and train traffic all contribute to congestion within Nevada, affecting both freight and passenger movement and services.

As of 2018, the FHWA Office of Highway Policy Information lists 48,458 miles of public roads in the state of Nevada, including urban and rural interstates, principal arterials, minor arterials, collectors, local roads, and other freeways[75]. Even with some 79 percent of Nevada's roadway system classified as rural,[76] urban residents accounted for over 22 billion miles traveled, which is equivalent to approximately 80 percent of all vehicle miles traveled in Nevada in 2018.[77] A vast majority of Nevada residents chose to commute to work by means of car, truck, or van, as shown on **Figure 2-34**.

Figure 2-34: Nevada Means of Transportation to Work[78]



[75] FHWA Office of Highway Policy Information, Highway Statistics 2018, Public Road Length – 2018 Miles By Ownership (Table HM-10), source link, accessed July 2, 2020.
[76] FHWA Office of Highway Policy Information, Highway Statistics 2018, Public Road Length – 2018 Miles By Ownership (Table HM-10), accessed July 2, 2020.
[77] FHWA Office of Highway Policy Information Highway Statistics 2018, Functional System Travel - 2018 Annual Vehicle-Miles (Table VM-2), source link, accessed July 2, 2020.
[78] U.S. Census Bureau - American Community Survey (ACS) 2018 Figures

As a continuation of trends identified in the 2012 state rail plan, local commuter trips contribute to congestion in the state's urban areas. According the U.S. Census Bureau, Nevada was the sixth highest state in the U.S. for population growth by percentage (14.1 percent) in the last decade.[79] The existing transportation networks are becoming strained, causing delay in intercity truck freight shipment and motorist trips. Urban public transportation systems throughout Nevada continue to add local bus service and other high-capacity transit service options to help mitigate demand on highway infrastructure. The largest transit agencies within the state of Nevada are both operated by their respective regional transportation commissions (RTC), the RTC of Southern Nevada and the RTC of Washoe County.

Las Vegas' McCarran International Airport supports the local economy as the principal gateway for the majority of the city's visitors, and therefore is an essential component of the tourism, hospitality, and gaming industries. This airport is the 30th busiest in the world for passenger traffic,[80] serving more than 51 million travelers in 2019.[81] Cargo operations are also an important component of this airport's operations, moving over 264 million pounds of cargo in 2019.[82] McCarran, with a maximum capacity of 625,000 aircraft movements,[83] is anticipated to reach that capacity in the next decade.

Growing competition and increasing demand for freight traffic and passenger movements on existing rail lines suggest a need to restructure the movement of both people and goods. TOFC and COFC service is increasingly a major source of traffic and revenue. FHWA's Freight Management and Operations Department projects that rail congestion will worsen in Nevada. Although all rail lines in Nevada are currently operating below capacity, segments of UPRR's Overland Route are projected to experience train volumes at a level of maximum capacity by 2035, and UPRR's South Central Route is projected to be operating above capacity.

D-2. Trade and Economic Development

The transportation system provides mobility to the state's residents, visitors, and businesses, to reach school, work, recreation, healthcare, social, and commercial activities. Transportation and economic development are integrally linked. Investments in transportation infrastructure, and more specifically rail infrastructure, can provide numerous economic benefits for the region, while deficiencies within the system can be a detriment to Nevada's reaching its economic potential.

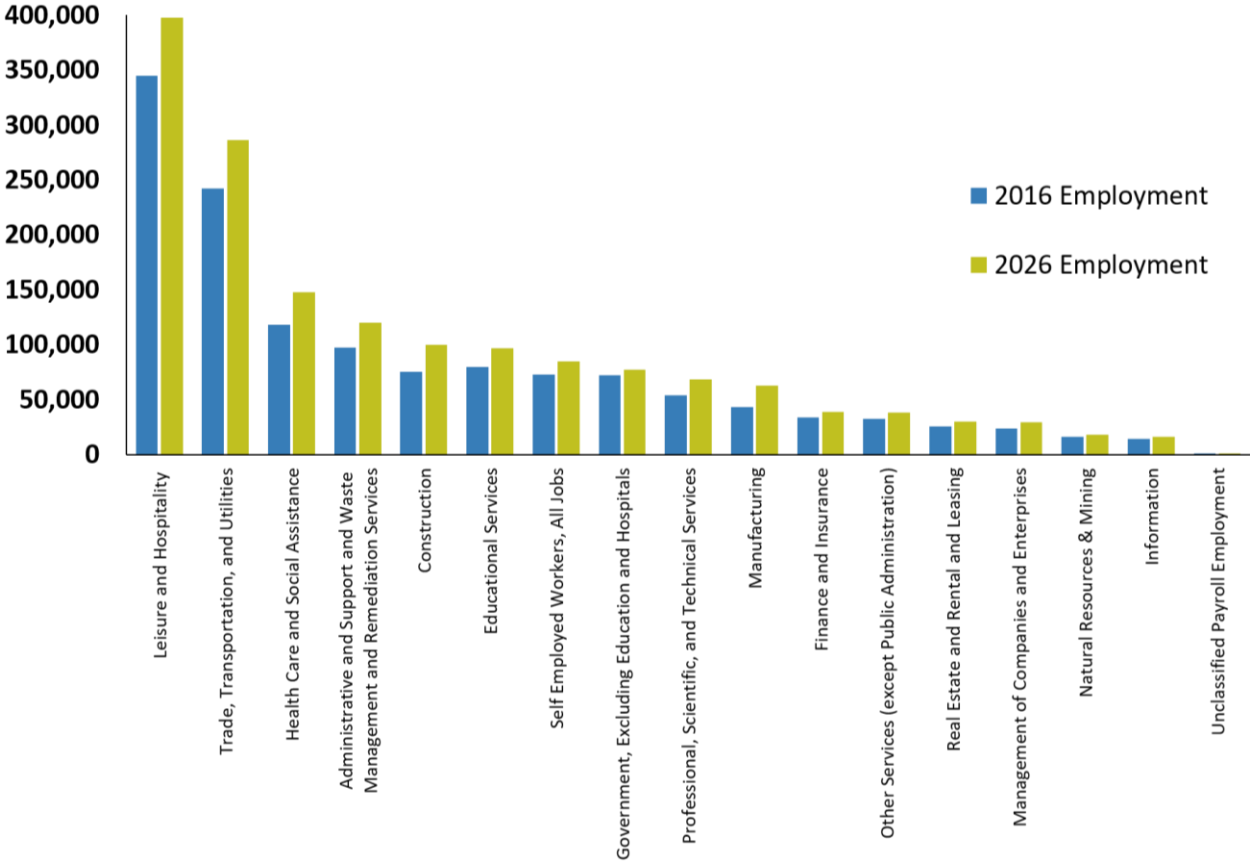
The development and construction process can create jobs and support other job-creation initiatives. Rail investments can spur supportive land use and developments to maximize land utility. Agencies and private industries that create efficient and safe infrastructure have a positive effect on multiple industries that are dependent on rail service.

Efficient transportation infrastructure can attract new talent needed to supplement the existing workforce. Nevada's Department of Employment, Training and Rehabilitation notes that manufacturing will see the largest increased requirements from 2016 to 2026 with 45.2 percent growth.[84] **Figure 2-35**

[79] U.S. Census Bureau, "Last Census Population Estimates of the Decade Preview 2020 Census Count", source link, published April 6, 2020.
[80] Airports Council International, source link, accessed July 2, 2020.
[81] Clark County Department of Aviation Statistics, 2019 Detailed Cargo By Airline Report, source link.
[82] Clark County Department of Aviation Statistics, 2019 Detailed Cargo By Airline Report.
[83] Las Vegas Airport website, source link, accessed July 2, 2020.
[84] Nevada's Department of Employment, Training and Rehabilitation, Long Term Industry Projections 2016-2026 Report, source link, accessed July 2, 2020.

shows that trade, transportation, and utilities as well as leisure and hospitality will remain the dominant industries in terms of employment share.

Figure 2-35: Long-Term Industrial Employment Projections, 2016-2026[85]



Transportation remains a critical component of Nevada's economy. Transportation and warehousing employment opportunities are projected to constitute approximately 4.5 percent of the total future share of Nevada industry jobs. Nearly all transportation sectors anticipate growth over the ten-year period as shown in **Table 2-31**.

The state's productivity and competitiveness, nationally and internationally, continues to depend heavily on the reliability and condition of the state's transportation infrastructure. Short- and long-term economic goals can be aided by reducing the cost of travel and by improving transportation infrastructure and systems.

[85] Nevada's Department of Employment, Training and Rehabilitation, Long Term Industry Projections 2016-2026 Report, accessed July 2, 2020.

Table 2-31: Nevada Transportation Industry Employment Projections[86]

Industry	2016 Employment	2026 Employment	2016 – 2026 Percent Change
Air Transportation	6,780	7,500	10.6%
Rail Transportation	775	757	-2.3%
Water Transportation	35	50	42.9%
Truck Transportation	8,391	9,905	18.0%
Water Transportation	14,236	15,270	7.3%
Scenic and Sightseeing Transportation	1,368	1,676	22.5%
Support Activities for Transportation	7,211	8,987	24.6%
Couriers and Messengers	5,079	6,093	20.0%
Warehousing and Storage	15,638	21,775	39.2%

Industrial development surrounding freight rail improvements can spur supportive service industries. An efficient rail system will help Nevada sustain the health, diversity, and productivity of its public lands. As of 2018, Nevada is the fifth largest gold producer in the world and is responsible for 83 percent of U.S. gold production.[87] Reducing the monetary and time costs involved with building, using, improving, and maintaining the transportation system will help sustain stable economic growth across multiple Nevada industries.

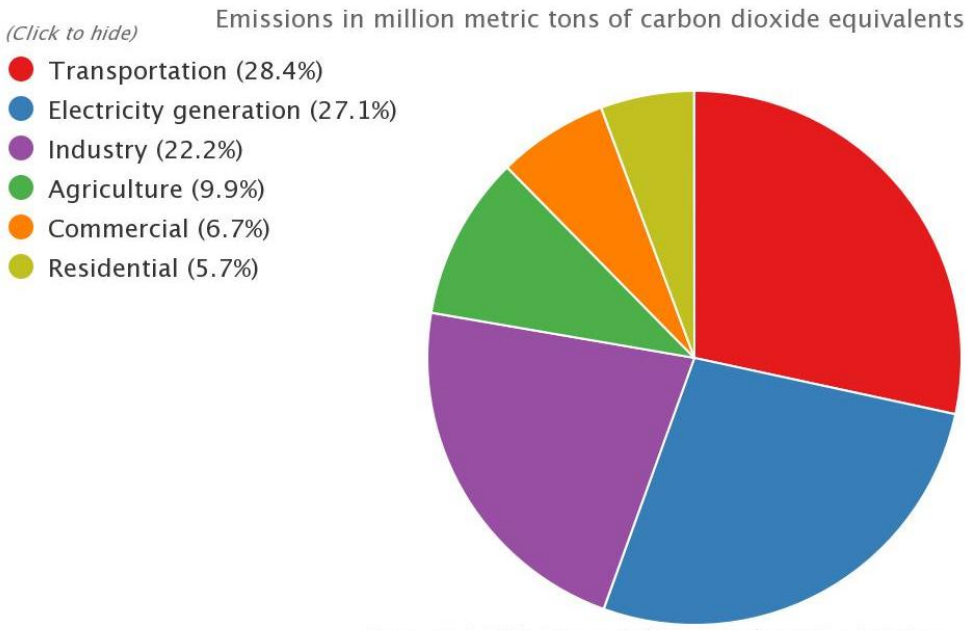
Development amenities around passenger rail stations take the form of mixed use, diverse, and dense land uses suitable for urban dwellers. This development can maximize land productivity and help agencies reach optimal transit occupancy. This type of urban development can create areas of dense economic activity, which support the revitalization and investment goals of urban communities.

D-3. Air Quality

The "transportation sector," including automobiles, trucks, buses, motorcycles, trains, subways, and other rail vehicles, aircraft, ships, barges, and other waterborne vehicles, plays a prominent role in regional and local air quality standards. **Figure 2-36** shows that transportation accounts for 28.4 percent of CO_2 emissions in the United States. As of 2015, the transportation sector emitted 35 percent of gross greenhouse gas emissions in Nevada.[88]

[86] Nevada's Department of Employment, Training and Rehabilitation, Long Term Industry Projections 2016-2026 Report, accessed July 2, 2020.
[87] State of Nevada Commission on Mineral Resources – Division of Minerals, "Major Mines of Nevada 2018" Report, page 23, source link.
[88] Nevada Division of Environmental Protection," Nevada Statewide Greenhouse Gas Emissions Inventory and Projections, 1990-2039" (2019 Report), page 18, source link.

Figure 2-36: US Greenhouse Gas Emissions by Economic Sector, 2018[89]



In 2017, Nevada consumed over 238 million British Thermal Units (BTUs) of energy, equating to over $3,100 per Nevada resident in the calendar year,[90] according to the U.S. Energy Information Administration. Carbon dioxide (CO2) emissions created by the transportation sector are mostly attributed to petroleum and partially to natural gas. Mobile combustion includes all emissions from passenger cars and trucks, air, rail, and marine transportation, plus farm and construction equipment. Nitrous oxide (NOX) emissions are sourced from stationary combustion, or consumption of energy for heat or electricity.

Investments in travel demand-management strategies, idle-reduction initiatives, and intermodal freight transportation improvements have the potential to improve air quality in Nevada. Intermodal projects are designed to improve the efficiency of truck, rail, and marine operations by connecting and coordinating between modes.

D-4. Reduction in Greenhouse Gas Emissions

The NVSRP has identified various opportunities to address the current overdependence on road trucking in Nevada by converting a proportion of existing and future freight movements to rail. Increasing the share of rail borne freight brings direct and indirect benefits to the economy and the citizens of Nevada. The primary direct benefit is the financial savings afforded to shippers resulting from lower comparative costs associated with moving freight by rail. Indirect benefits include the reduced costs of highway maintenance, eased congestion, fewer traffic accidents and lower environmental impacts.

The environmental benefits which result from increasing rail's share of freight can be highly significant in terms of reduced Greenhouse Gases (GHG) and improved air quality. GHG is defined as gases in Earth's

[89] U.S. Environmental Protection Agency, source link, accessed July 2, 2020.
[90] U.S. Energy Information Administration, source link, accessed July 2, 2020.

atmosphere that trap heat from sunlight and contribute to unnatural warming. The most prevalent greenhouse gas contributing to this is carbon dioxide (CO_2) which on average represents more than 95% of the impacts from burning transportation fuels.[91] The U.S. Environmental Protection Agency (EPA) closely tracks emissions by transportation modes and publishes detailed analysis of emissions by rail and truck segmented by length of journey, cargo type and weight. Considering that one single freight train can replace over 300 individual truck journeys it is not surprising that data from the latest EPA study published in 2019 finds the volume of CO_2 emitted by trucks is eight times that emitted by rail. [92][93]

In 2015 a U.S. Congressional Budget Office working paper computed a financial cost for the environmental impacts of truck and rail modes of freight transportation.[94] This calculated the costs of GHG carbon dioxide emissions are between 180% and 340% greater for trucks in dollars per ton mile shipped.

Implications for Nevada

The NVSRP identifies three major freight flows passing through the state that offer a high probability for conversion from truck to rail:

Fernley to Oakland : Conversion of through Farm and Food Products traffic

Over 50% of freight flowing through Nevada towards the Oakland port and region are farm and food products accounting for 385,000 annual truck movements, Development of rail infrastructure including an intermodal facility at Fernley would convert a proportion of this eastbound and westbound freight flow. This conversion would eliminate truck-trip mileage of ~246 miles for each converted trip.

Fernley to Sacramento : Conversion of local freight traffic

Annually, 510,000 truck journeys transport clay, concrete, glass, stone, and non-metallic minerals from the Fernley region to Sacramento and surrounding area. This generates a further 510,000 empty return journeys making a total of 1.1MM truck movements. Development of rail infrastructure including an intermodal facility at Fernley would convert a proportion of this eastbound and westbound freight flow. This conversion would eliminate truck-trip mileage of ~165 miles for each converted trip.

Fernley to Oakland : Diversion and conversion of Los Angeles through freight traffic

Over 35% of through-state freight flows destined for the Los Angeles ports and region are farm and food products accounting for 395,000 annual truck movements, development of rail infrastructure including an intermodal facility at Fernley would divert a proportion of this eastbound and westbound freight flow

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[91] Federal Transit Administration, U. (2010, January). Public Transportation's Role in Responding to Climate Change. Retrieved from https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/PublicTransportationsRoleInRespondingToClimateChange2010.pdf

[92] E. (2019, October). 2019 SmartWay Shipper Company Partner Tool: Technical Documentation. Retrieved from https://www.epa.gov/sites/production/files/2019-10/documents/420b19052.pdf

[93] Based on average CO_2/mile across five truck categories of 1710g against average CO_2/mile per rail car of 980g converted to truck equivalent unit at 25% to give 245g. Ratio of 1710:245 equates to 8 fold differential. Source https://www.epa.gov/sites/production/files/2019-10/documents/420b19052.pdf

[94] Austin, D. (2015, March). Pricing Freight Transport to Account for External Costs. Retrieved from https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/workingpaper/50049-Freight_Transport_Working_Paper-2.pdf

to Fernley for conversion to rail. The impact would be to divert truck traffic away from the I15 corridor towards the I80 corridor with conversion to rail at Fernley. This diversion and conversion would eliminate truck-trip mileage of ~202 miles for each trip.

Table 2-32 below provides a representation of the emissions benefits from these three freight flow conversions. Three conversion scenarios are considered; 5%, 15% and 25% of existing truck journeys being successfully converted to rail.

Table 2-32: Environmental Benefits of truck to rail conversions on three primary freight flows

Freight Flow	%age Conversion (truck to rail)	Reduced Annual Truck Trips	Reduced Annual Truck Mileage	Reduced CO_2 GHG (Gram)	Additional Rail CO_2GHG (Gram)	NET CO_2 Saving (Gram)
Fernley to Oakland Conversion	**5%**	19,250	4,735,500	8,097,705,000	1,160,197,500	6,937,507,500
Fernley to Oakland Conversion	**15%**	57,750	14,206,500	24,293,115,000	3,480,592,500	20,812,522,500
Fernley to Oakland Conversion	**25%**	96,250	23,677,500	40,488,525,000	5,800,987,500	34,687,537,500
Fernley to Sacramento Conversion	**5%**	55,000	9,075,000	15,518,250,000	2,223,375,000	13,294,875,000
Fernley to Sacramento Conversion	**15%**	165,000	27,225,000	46,554,750,000	6,670,125,000	39,884,625,000
Fernley to Sacramento Conversion	**25%**	275,000	45,375,000	77,591,250,000	11,116,875,000	66,474,375,000
Fernley to Oakland Diversion	**5%**	19,750	3,989,500	6,822,045,000	977,427,500	5,844,617,500
Fernley to Oakland Diversion	**15%**	59,250	11,968,500	20,466,135,000	2,932,282,500	17,533,852,500
Fernley to Oakland Diversion	**25%**	98,750	19,947,500	34,110,225,000	4,887,137,500	29,223,087,500

Freight Flow	%age Conversion (truck to rail)	Reduced Annual Truck Trips	Reduced Annual Truck Mileage	Reduced CO_2 GHG (Gram)	Additional Rail CO_2GHG (Gram)	NET CO_2 Saving (Gram)
TOTAL All 3 Flows	**5%**	**94,000**	**17,800,000**	**30,438,000,000**	**4,361,000,000**	**26,077,000,000**
TOTAL All 3 Flows	**15%**	**282,000**	**53,400,000**	**91,314,000,000**	**13,083,000,000**	**78,231,000,000**
TOTAL All 3 Flows	**25%**	**470,000**	**89,000,000**	**152,190,000,000**	**21,805,000,000**	**130,385,000,000**

Table 2-32 above illustrates the potential for material GHG reductions resulting from converting a proportion of freight from truck to rail on these three freight flows. Even a modest 5% conversion of current flows would equate to a reduction of 26,077,000,000 grams (or 28,600 tons) of CO_2 emissions per year. Converting 25% of these existing freight flows, which is a reasonable expectation resulting from the implementation of rail development projects recommended in this report, would equate to a reduction of 130,385,000,000 grams (or 143,000 tons) of CO_2 emissions per year.

These GHG reductions resulting from the conversion of tons of freight transported through Nevada will make a significant contribution to the Governors Executive Order 2019-22 (November 2019) and Nevada Senate Bill 254 to achieve greenhouse gas emission reductions in the areas of transportation amongst other sectors.

D-5. Land Use

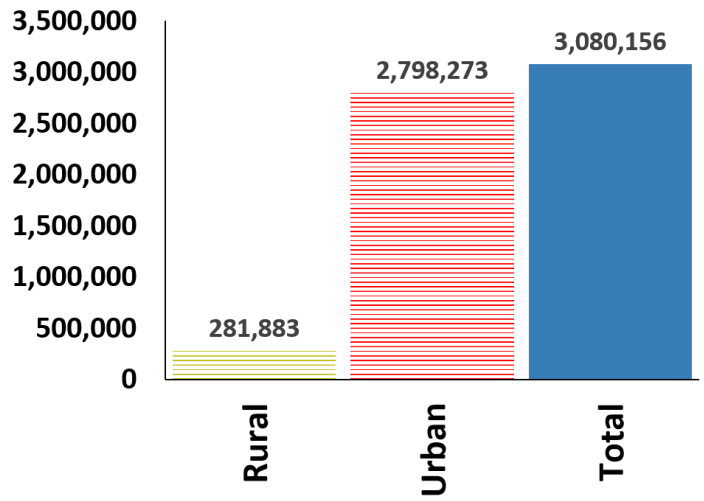
Nevada's land mass covers almost 110,000 square miles,[95] and supports a wide variety of industries, public land resources, and numerous urban and rural communities. The Federal Bureau of Land Management (BLM) manages 63 percent of Nevada's land as public lands.[96] Nevada has many important cultural transportation resources including historic roads, trails, railways, highways, and associated sidings and stations throughout the state.

Major destinations within the state of Nevada depend on a reliable and safe transportation system to maintain operations. Many cities and towns within Nevada also serve as the economic activity centers for the surrounding smaller communities. The most populous counties include Clark, Washoe, Carson City, and Lyon, which include the cities of Las Vegas, Reno, Carson City, and Fernley, respectively.[97]

Nevada's population is projected to reach over three million people by the new decade (from 2.7 million from the U.S. Census 2010), of which 91 percent live in an urban setting. (See **Figure 2-37**.) Future growth trends in population and employment will continually require additional investments in infrastructure and services to meet the growing population demands.

[95] U.S. Census Bureau, source link, accessed July 3, 2020.
[96] Bureau of Land Management, source link, accessed July 3, 2020.
[97] U.S. Census Bureau, 2018 data, source link, accessed July 3, 2020.

Figure 2-37: Nevada Total Population (2019)[98]



Transit-Oriented Development (TOD) is development associated with passenger rail and transit station areas. The compact urban TOD incorporates a mix of land uses, including residential and commercial activities. Station areas reinforce the importance of multimodal transportation, including transit, pedestrian, and bicycle travel. Several Nevada cities have incorporated TOD into the planning of land-use development, including Reno, Las Vegas, North Las Vegas, Sparks, and Henderson. Planning for TOD before high-capacity transit is implemented ensures that communities gain the full value of any future transit investment.

D-6. Energy & Fuel Use

The U.S. Energy Information Administration found that the transportation sector's consumption of energy in 2019 continues to exceed residential- and commercial-sector consumption with 28.2 percent of total consumption, as shown on **Figure 2-38**. Unlike other sectors, the transportation sector's energy consumption is mostly attributed to one energy source, petroleum.[99] Reliance on a single energy source can cause an unpredictable and unmanageable environment for future transportation investments. In 2018, the transportation sector used over 14 million barrels of petroleum products per day[100] compared to 13.5 million barrels per day in the last state rail plan. Most petroleum consumption can be attributed to motor gasoline; other major products include distillate fuel oil and jet fuel.

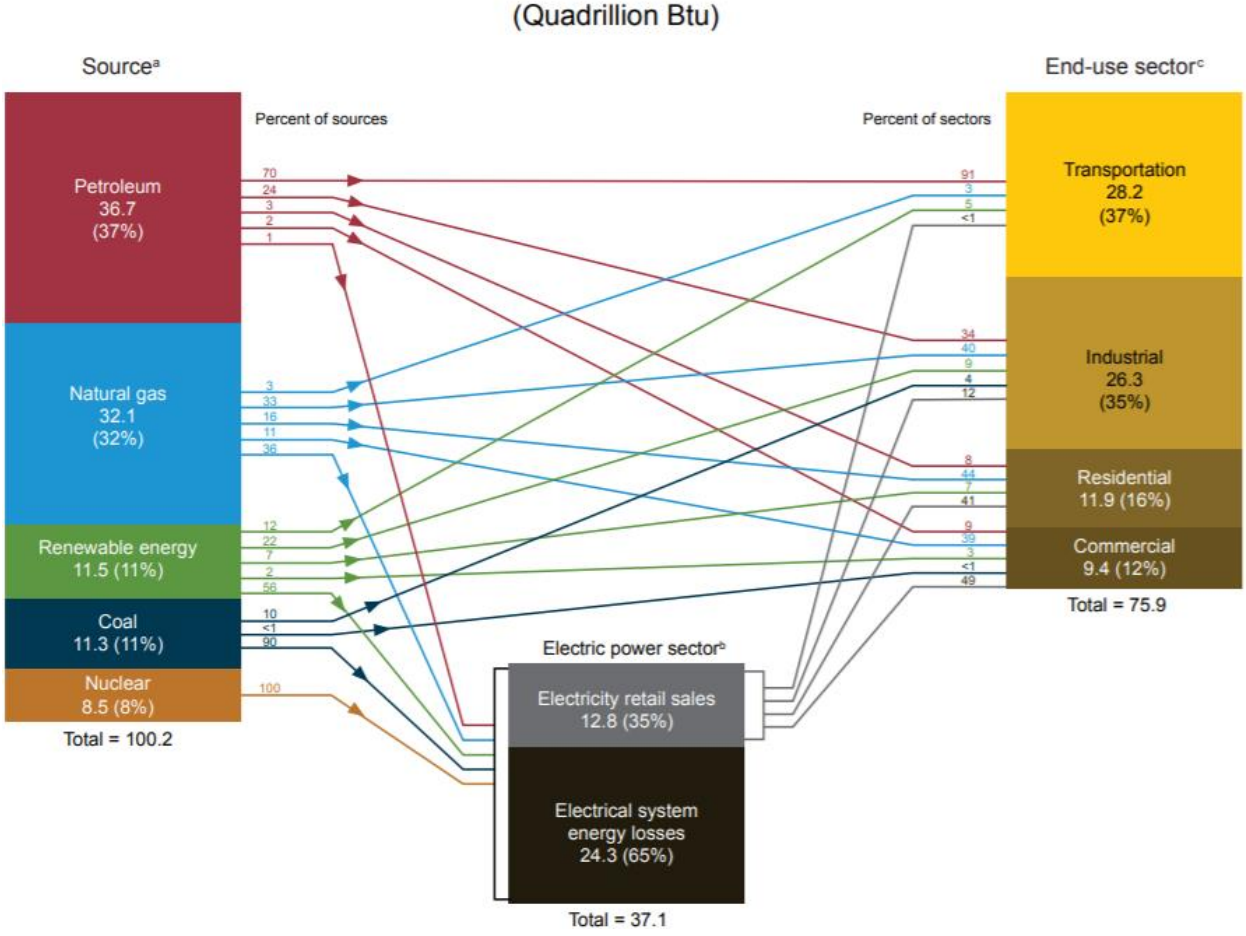
Nevada consumes about 238 million BTUs of energy per person each year, ranking 40th in consumption in the U.S.[101] In 2018, the Nevada transportation sector consumed approximately 230,000 billion BTUs of energy, or 0.8 percent of transportation energy usage nationwide. The state consumes approximately 41 million barrels of petroleum on an annual basis, which represents a 0.7 percent share of total U.S. petroleum consumption. While petroleum consumption is low, jet fuel consumption is disproportionately high, in part because of demand from airports in Las Vegas, Reno, and at the U.S. Air Force bases.

Renewable energy development of solar and geothermal energy continues to increase in prominence. SB 358 was passed into Nevada law in 2019, raising Nevada's renewable portfolio standard to require that 50 percent of its electricity come from renewable sources by 2030.[102]

[98] United States Department of Agriculture - Economic Research Service (USDA-ERS), source link, accessed July 3, 2020.
[99] U.S. Energy Information Administration, source link, accessed July 3, 2020.
[100] U.S. Energy Information Administration, source link, accessed July 3, 2020.
[101] U.S. Energy Information Administration, source link, accessed July 3, 2020.
[102] Office of Governor Steve Sisolak, Press Release, Press Release, Nevada Governor Steve Sisolak, source link, accessed July 3, 2020.

Regional planning organizations and agencies envision integrated transportation and land use planning as a primary strategy to reduce transportation energy usage in the long term. Nevada's economic growth, and specifically, casino resort and real estate development and its associated uses, require an increase in energy. Current land use and development patterns throughout Nevada's urban areas generate an increase in the number and length of vehicle trips. The state and regional agencies can influence energy consumption by reducing passenger miles through land use planning and promotion of telecommuting. Effective transportation policies combined with effective land use policies can reduce automobile travel and shift traffic to more efficient modes. Using existing mass transit and commuter travel systems and building compact development can result in energy savings for individuals and for agencies.

Figure 2-38: Primary U.S. Energy Consumption by Source and Sector, 2019[103]



[a] Primary energy consumption. Each energy source is measured in different physical units and converted to common British thermal units (Btu). See U.S. Energy Information Administration (EIA), Monthly Energy Review, Appendix A. Noncombustible renewable energy sources are converted to Btu using the "Fossil Fuel Equivalency Approach", see EIA's Monthly Energy Review, Appendix E.

[b] The electric power sector includes electricity-only and combined-heat-and-power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public. Energy consumed by these plants reflects the approximate heat rates for electricity in EIA's Monthly Energy Review, Appendix A. The total includes the heat content of electricity net imports, not shown separately. Electrical system energy losses are calculated as the

[103] U.S. Energy Information Administration, Monthly Energy Review (April 2020) Report, source link.

primary energy consumed by the electric power sector minus the heat content of electricity retail sales. See Note 1, "Electrical System Energy Losses," at the end of EIA's Monthly Energy Review, Section 2.
[c] End-use sector consumption of primary energy and electricity retail sales, excluding electrical system energy losses from electricity retail sales. Industrial and commercial sectors consumption include primary energy consumption by combined-heat-and-power (CHP) and electricity-only plants contained within the sector. Note: Sum of components may not equal total due to independent rounding. All source and end-use sector consumption data include other energy losses from energy use, transformation, and distribution not separately identified. See "Extended Chart Notes" on the next page.

D-6. Community Impacts

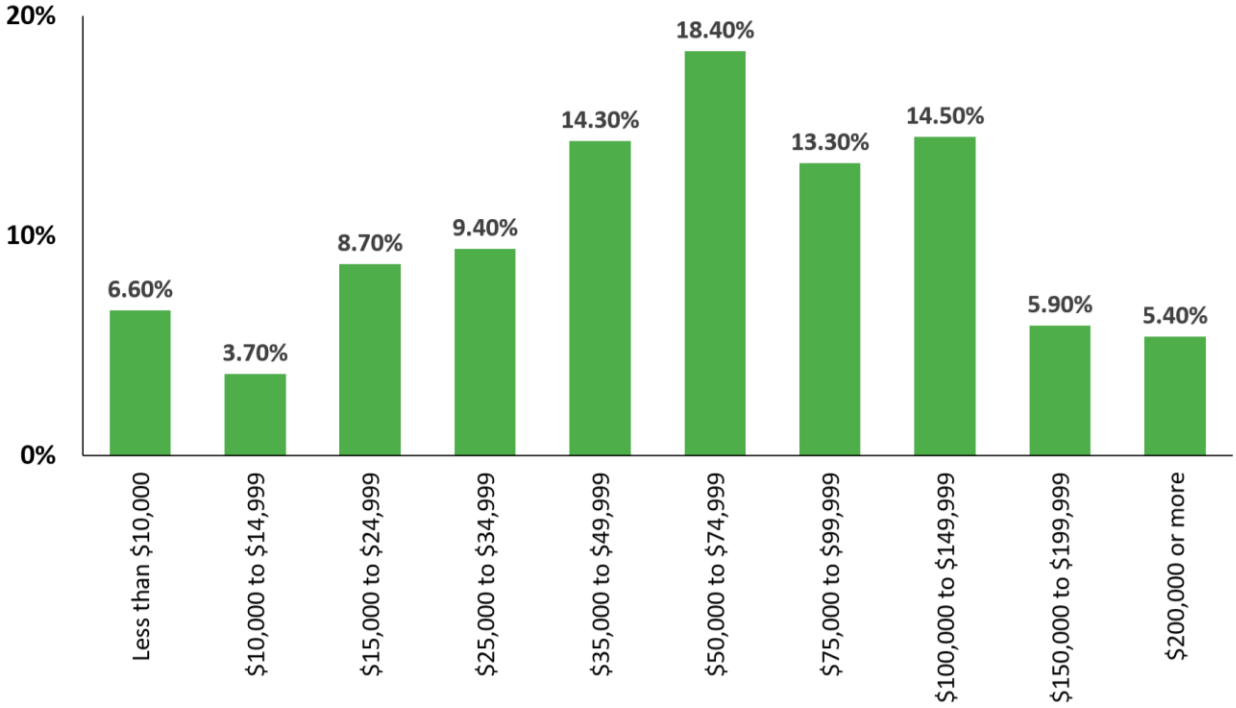
Population Demographics and Income

In 2019, Nevada's three million residents have a diverse range of nationalities, races, and socioeconomic characteristics. Most of Nevada's population is urban (91 percent in 2019 versus 76 percent reported in the 2012 state rail plan) and white alone (49 percent in 2019 versus 56 percent reported in the 2012 state rail plan). Twenty-nine percent of Nevada is Hispanic or Latino. Other minority populations residing in Nevada include Black or African American (ten percent), Asian (nine percent), American Indian or Alaska Native (two percent), and Native Hawaiian and Other Pacific Islander (one percent).[104]

Rail and transit investments in the state will result in both direct and indirect benefits. Effects on communities and concentrations of certain populations will need to be examined as individual projects advance to determine the level of impact and benefits of each project.

The median household income in Nevada is approximately $58,650 with 60.5 percent of Nevada residents earning between $35,000 and $149,999, according to the U.S. Census Bureau, see **Figure 2-39**. **Figure 2-40** shows that 12.9 percent or over 387,000 residents are living below the poverty line, compared to 158,000 reported in the last state rail plan.

Figure 2-39: Median Household Income in the Past 12 Months in 2018 (Percent of Population)[105]



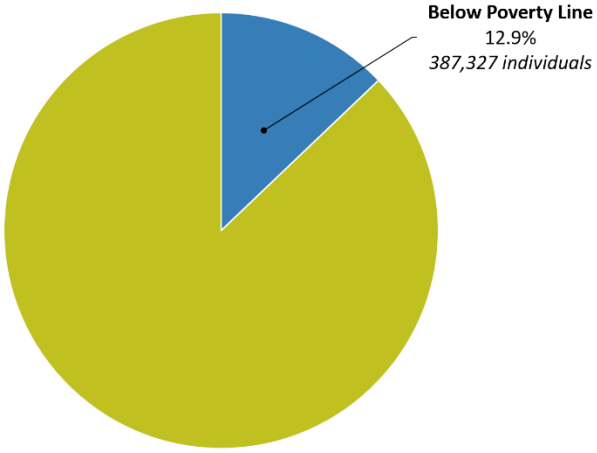
[104] U.S. Census Bureau, Nevada Quick Facts, source link, accessed July 3, 2020.

[105] U.S. Census Bureau – American Community Survey (ACS) 2018, Nevada Median Household Income Report, source link, accessed July 3, 2020.

Safety

Safety is one of the most tangible outcomes of creating a sustainable and effective state rail plan. FRA has jurisdiction for most rail safety rules and regulations. The state consistently ranks the lowest in the nation in terms of incidents and fatalities, with between zero to four train accidents occurring per year from 2017 to 2020, according to the FRA Office of Safety Analysis. The existing rail safety program inspects four major categories: hazardous material, operating practices, track and motive power, and equipment.

Figure 2-40: Nevada Population Below Poverty Line in 2018[106]



Crossing safety can often be improved by adjusting the roadway network in the area around the crossing. Collisions and derailments can be avoided by implementing improved technologies, such as Positive Train Control (PTC), Light Emitting Diode (LED) signal systems, wayside detection systems, and automatic train stop systems, among others. PTC is a concept which allows trains to receive geographic information and safe movement authorities; this technology allows computer systems to override human actions in emergencies. PTC user benefits include increased fuel efficiency and locomotive diagnostics. FRA requires this technology to be implemented for all Class I freight railroads and Amtrak by December 2020.

[106] U.S. Census Bureau – American Community Survey (ACS) 2018, Nevada Poverty Classification by Setting Report, source link, accessed July 3, 2020.

E. Pointing to a New Future

E-1. Passenger Rail

Overview & Key Issues

As outlined in the previous section, passenger rail has a very small footprint in Nevada and subsequently contributes little to the economic and social development of the state. Passenger rail accounts for a tiny fraction of personal transportation flows (see Section 2.2), commensurate to the amount Nevada is presently obligated to fund, which itself amounts to a tiny fraction of the state budget for occasional and limited capital improvements.

There are no regional passenger rail services in the state, despite the presence of operational rail lines passing through the major urban centers of Las Vegas, Sparks-Reno, and Elko. Although Intercity rail does exist in Nevada, it is limited to the once-daily Amtrak *California Zephyr* service which stops at Reno, Winnemucca, and Elko. Amtrak's federally funded *California Zephyr* serves a role of essential importance to the state, given its status as the sole common carrier passenger service in Northern Nevada between Reno and Salt Lake City, UT in the wake of Greyhound's abandonment of its parallel bus service.

Amtrak Winnemucca Station

Las Vegas is included in the Amtrak intercity network but has no direct passenger rail service. The state's largest urban center is served by Amtrak's Thruway connecting bus service which involves lengthy road journeys from Kingman (AZ), Bakersfield (CA), Los Angeles (CA), or Salt Lake City (UT). Laughlin, located at

the southern tip of the state along the Arizona border, is also served by Amtrak's Thruway service from Kingman, AZ.

Nevada has only three rail passenger stations (Reno, Winnemucca, and Elko) and four additional locations (Las Vegas, Stateline (South Lake Tahoe), Sparks, and Laughlin) included in the Amtrak network via direct connecting bus service. Direct connections to California's corridor services via Sacramento, CA Los Angeles, CA, and Bakersfield, CA are subsidized by that state. Despite Nevada's currently limited passenger rail service there is significant potential to develop rail as a sustainable and attractive personal transportation option in the state and as a net economic and social contributor to the state, as evidenced by several private ventures that have aimed to expand service.

Nevada has enjoyed perhaps more 21st century entrepreneurial private interest in its passenger rail corridors than any other state in the union, having no less than five private entities proposing new service within the state at the time of the 2012 State Rail Plan. However, in the wake of that plan, four of five have failed, the Brightline West project being the sole survivor. This dramatic rate of attrition is a key issue for stakeholders and policy makers; symptomatic of the market in which passenger trains are to compete with subsidized state and federally highways and significantly subsidized air travel. With an absence of in-kind support, it can come as no surprise that the Pullman Palace Car Company, X-Train, and others failed to materialize operations.

The remainder of this section will review the sizable service gaps that exist and outline various improvements and opportunities for developing passenger rail.

Service Gaps

The single passenger rail operation in Nevada is Amtrak's *California Zephyr* service, a part of Amtrak's Long Distance service line that operates between Chicago and Emeryville/San Francisco and takes over 50 hours, serving multiple travel market corridors. This train traverses northern Nevada with a daily frequency in each direction calling at Reno, Winnemucca, and Elko, utilizing the rails of Union Pacific's Overland Route.

Nevada does benefit from having three cities directly connected to the Amtrak intercity rail network, enabling passenger transport connectivity to points throughout the United States. This became more important since April 2018 when Greyhound ceased its Salt Lake City to Reno bus service making Amtrak the only common carrier intercity passenger transport option spanning Northern Nevada. Unlike arrangements in other states, Nevada does not financially subsidize Amtrak's service in the state.

Despite these benefits, the *California Zephyr* rail service has major service gaps which significantly reduces its value as an intra-state transportation link:

- Frequency: the train's present schedule of one daily train in each direction means Nevadans using the train are effectively making a commitment to a multiple-day journey.
- Schedule: The westbound service timings are far from appealing, running during the night, departing Elko daily at 3am, Winnemucca at 5:40 am and arriving in Reno at 8:36 am. The eastbound service departs Reno daily at 4:06 pm, Winnemucca at 7:08pm and arrives at Elko at 9:31 pm which makes a day trip to Reno for Northern Nevadans possible.
- Reliability: The *California Zephyr* is one of Amtrak's least reliable services. In 2018, it ran more than 15 minutes late 52% of the time. [1] This poor performance is the result of Amtrak's need to access rail rights of way from freight rail companies as well as the complexities of traversing a 2,438-mile route.

- Speed: The service covers the 330 route miles between Elko and Reno in 5.5 hours averaging 60mph. While it is relatively swift for Amtrak's long-distance routes, it is still slower than the equivalent road journey, via I-80, which takes between four and five hours depending on time of day.
- Stations: With only three stations over the approximately 400 miles of route crossing the state, several population centers are not connected. West Wendover (pop 4,300), located close to the Utah state line, has been proposing an Amtrak stop for over a decade. The line also routes through Lovelock (pop 1,800), the seat of Pershing County, midway between Winnemucca and Reno. Fernley (pop 21,000) and Sparks (pop 104,000) would also be important additional Amtrak stops, especially since Greyhound no longer serves Northern Nevada.
- Facilities: Although Reno has a station building with facilities, Winnemucca and Elko are very basic, having only a simple shelter and automobile parking. The station at Elko does not even allow for a direct connection between its eastbound and westbound platforms.

Further connections to Amtrak's Long Distance services exist via Amtrak Thruway bus connections. Las Vegas has Amtrak Thruway bus connections to Salt Lake City (seven to eight hours), Los Angeles (six hours) and Kingman (two-and-a-half hours) scheduled around rail services. For Salt Lake City and Kingman, connecting to the *California Zephyr* and *Southwest Chief* services respectively, that means service once per day in each direction. The schedule is unattractive. For example, Kingman services depart Las Vegas at 9:30 pm to meet a 2:30 am eastbound train, while in the other direction the bus departs Kingman at 12:50 am arriving Las Vegas at 3:00 am. Laughlin is also served by the Kingman Thruway service with equally unpalatable hours of 12:00 am and 1:00 am.

Direct connections to frequent Amtrak corridor services sponsored by the state of California are found in Las Vegas, Reno, Sparks, and Stateline, and represent the bulk of Thruway bus traffic in the state.

In conclusion, although Nevada is connected to Amtrak's national intercity route network it has no effective intra-state rail service. The *California Zephyr* service does connect Reno, Winnemucca, and Elko but the schedule of this once-daily train makes it impractical to accommodate a same-day return trip between any of these cities. Several Thruway bus connections exist but use of this service is restricted to passengers travelling on the feeding Amtrak rail services beyond Kingman or Salt Lake City due to a federal rule restricting Amtrak selling "bus-only" trips on bus routes[2].

Improvements and Opportunities – The Case for Rail

Multiple opportunities exist to develop rail as a sustainable passenger transportation mode in the state. These range from enhancements to the existing service footprint to exploring new passenger rail options either utilizing existing infrastructure or new build.

As a large, mostly rural state, Nevada's options for passenger rail service are limited by low population density, great distances, and lack of railroad infrastructure, specifically within its most populous regions of Reno and Las Vegas. However, passenger rail can still play an important role in the economic and social development of the state.

Passenger rail service supports urban and land planning policies enabling sustainable commuting and intercity travel options. Rail is also the most efficient mode of personal transport as it is energy efficient and environmentally benign. A single rail line with a 14-foot right of way has the capacity of a 20-lane highway. [3] It can reduce congestion on urban as well as interurban routes saving large investments in local and interstate highway development, expansion, with attendant maintenance costs. The economic

implications of congestion are significant in terms of wasted personal time, the "costs of doing business", and snarling supply chains as trucks and delivery vehicles are forced to operate sub-optimally, which itself brings more vehicles into the system and further increasing costs and congestion.

Even as self-driving vehicles emerge and the road infrastructure slowly evolves to accommodate autonomous operations of automobiles, passenger trains will continue to have the advantages of safety, more headroom/legroom than cars, speeds over 150 mph and restrooms, and cafes being available at any time without stopping. Passenger rail's comparative advantages will continue into the foreseeable future.

Moreover, passenger trains also have the advantage of operating reliably in adverse weather, and crucially for anyone travelling between point A and point B, they provide a certainty on journey time. Whether the journey is for business, commuting, or leisure one of the fundamental needs of any passenger is to have certainty over how long the journey will take and when they will arrive. Experience in cities and rural regions around the world proves that rail travel is unrivalled in providing this assurance and confidence. Passenger rail therefore unlocks untold efficiencies across personal and commercial travel with a major benefit for all aspects of the economy.

This report recommends considering two focus areas for Nevada: enhance existing service and develop new service.

Enhance Existing Service

The current Amtrak intercity service can be enhanced to deliver greater value to Nevada and residents in the northern part of the state. A direct and reliable rail service with daily connecting service from Elko and Winnemucca direct to urban centers such as Reno, Salt Lake City, Sacramento, Oakland, and San Francisco is an attractive offering which should generate far more demand than current ridership levels. Many states spend a great deal of time and resources trying to secure Amtrak service in order to reap the benefits of an intercity train option. Here are recommendations for improvements:

- More effective marketing of this service for residents
- Improvement of facilities to make them more welcoming, practical, and safer (such as connecting the platforms in Elko, NV)
- Opening new stations along this 400-mile route in Nevada (such as West Wendover, Lovelock, Fernley, and Sparks, which would effectively allow for intrastate travel, including a day trip to Reno
- Active engagement with Amtrak and Union Pacific to improve reliability and even scheduling times for westbound service
- Improved customer information tools (schedules, running times, delays, station information)
- Local initiatives in Reno, Winnemucca, and Elko to generate awareness
- Collaboration with other states, local authorities, and rail advocacy groups to learn and put into place best practices for leveraging existing Amtrak long-distance service to create local economic benefit and develop intra-state passenger rail

Develop New Service

Reno and Las Vegas

Reno and Las Vegas are major population centers with congestion and urban development challenges that can be addressed fully, or in part, by the adoption of commuter or regional passenger rail service. Both cities have existing and operational rail infrastructure that can be utilized for passenger rail services. The existence of rail track and infrastructure is a major benefit as it will significantly reduce the costs

associated with implementing a rail service. Many passenger rail initiatives in urban centers are unable to make an economic case due to the high costs associated with land acquisition and virgin infrastructure construction. When existing track beds exist, and especially when a rail line is in active use, such as in Reno and Las Vegas, this materially reduces capital investment requirements. The costs of adapting existing rail infrastructure are far lower than building anew. New passenger rail projects that utilize existing rail lines and focus investments on line extension spurs, stations construction, and upgrading signaling make a far better economic case than new-build projects.

The Reno-Sparks metro area is a fast-growing urban center facing issues of congestion and housing supply. It has an existing passenger rail station and operational Union Pacific rail lines to the North, East, and West which could potentially be leveraged for passenger service together with spurs from the line. The only public transportation modes in Reno are buses that do not offer speed or distance and add to congestion and environmental issues.

Las Vegas has no passenger rail station but does have an existing operational Union Pacific rail line crossing the city from North to South. This could be leveraged for passenger service together with spurs from the line. Las Vegas has adopted some non-road public transportation; it has three independent monorails that link the casinos along the Strip. Two are short routes operated by hotels with five stations. The third monorail is a traditional fare-based public transit operation, the Las Vegas Monorail, consisting of seven stations over a four-mile route connecting casinos from MGM northwards to Sahara. However, as these monorails are designed for tourism and convention business, they are limited as a passenger transport option for residents and businesses who are left with little option but private cars and road-based transit, adding to congestion and its economic and environmental impacts.

Over the past decade several passenger rail initiatives linking Las Vegas with Southern California and/or Reno have been proposed and evaluated yet none have transpired. However, one initiative, now branded Brightline West, linking Las Vegas to Victorville, CA is scheduled to break ground in 2020 and be operational by 2023. These plans appear to be unaffected by the COVID-19 pandemic during 2020.

Brightline West, owned by Fortress Investment Group, plans to operate a high frequency, high speed (up to 200mph) service covering the route's 170 miles in 85 minutes. The service will bring passenger rail to Las Vegas for the first time since the closure of Las Vegas' Amtrak station in 1997 when Amtrak dropped its *Desert Wind* service. A new rail station and operational rail infrastructure serving Las Vegas will open the door to significant development opportunities for new commuter rail services with stations on the newly built line or short extension spurs, which could be integrated into the Brightline West service. Brightline West's parent company also operates the Brightline passenger rail service in Florida from West Palm Beach to Miami via Fort Lauderdale. Opened in 2018, the Brightline service was originally marketed as a high-speed, intercity service, but it is now introducing intermediate stations at Boca Raton and Aventura, creating a hybrid intercity and regional commuter operation. Given recent developments at Brightline's Florida franchise, it is especially timely to consider development of local rail service along the I-15 route to Primm, NV near Las Vegas.

Any rail development plans in these two metro areas would need to be coordinated with local planning, urban development, and economic development bodies. Introducing passenger rail service into metros that are limited to personal car use for transportation can deliver significant benefits in terms of journey times, environment, and efficient use of land and capital. However, realizing these economic and social

benefits requires rail-based solutions to be incorporated into the economic and urban planning strategies for the metro. Collaboration and buy-in of stakeholders at state and local levels is fundamental for the success of passenger rail projects as they involve and benefit so many strategic areas: economic development, land use, urban planning, social development, tourism, and of course transportation.

Intercity and other rail developments

In terms of new intercity passenger rail within the state's borders, the only feasible new pairing would be between Reno and Las Vegas with a potential connection to Carson City. The 2014 FRA Southwest Multi-State Rail Planning Study classified this corridor as "third tier", or as being heavily dependent on other regional rail connections being established first, such as Las Vegas to Los Angeles. Therefore, it is local, commuter lines, and lines connecting to population centers outside of the state that are considered the optimal approach for new passenger rail development and investment in the short to medium term. Use of existing railroad lines can connect Las Vegas with Reno via the populous California Central Valley. Sections of this train could also provide Las Vegas rail service to San Jose and San Francisco with travel times competitive with drive times.

One further area for consideration is to utilize existing rail lines in the state for high-end tourism rail experiences. Nevada, especially Las Vegas, attracts significant volumes of tourists, and Nevada can exploit its existing rail lines and natural beauty to promote luxury rail-based services such as the Blue Train (South Africa) and Orient Express (France/Italy). These can provide a mix of high value and "red letter" experiences, moving through the majestic natural scenery in a temperature controlled vehicle in the 100-degree summer heat.

There are also a handful of existing heritage, excursion, and tourist rail lines across the state, such as the Nevada Southern Railway and Nevada Northern Railway, which operate services using period rolling stock. These small operations could be boosted by a coordinated rail tourism initiative sponsored by the state. These excursion operations could perhaps be developed to provide regular passenger rail services. As an example, in rural areas of the United Kingdom, some heritage railroads operate as the public transportation company in addition to their main tourist excursion business, with subsidized fares for local residents for whom the heritage railroad is their only means of transportation.

Passenger Rail in Summation

Despite a low penetration of passenger rail in Nevada, there are multiple opportunities to enhance existing service to develop new rail initiatives. Rail offers solutions to the challenges of highway congestion, safety, and pollution caused by an over-reliance on road-based transportation. Rail also enhances sustainable urban expansion when intelligently coordinated with land-use planning and economic development.

Nevada is fortunate to have rail infrastructure already in place at its two largest urban centers. This will materially reduce the financial outlay associated with constructing rail lines and services at Reno and Las Vegas. In addition, the upcoming high-speed passenger rail service to and from Las Vegas is a tremendous opportunity to develop complementary local passenger rail services.

E-2. Freight Rail

Nevada's impressive industrial and commercial growth requires a unique set of approaches to expand the contribution of rail transportation to the state's logistics-based economic opportunities. The large amount of raw land in the state is rapidly being developed with little consideration of rail service. While vast stretches of the state are lightly populated rural communities where transportation inefficiency is less

visible, two high-growth urban areas — Clark County in the south and Reno-Sparks-Stead in the north — are experiencing the negative impacts of loosely planned industrial development with its consequent highway congestion impinging on the quality of life for a growing population.

Rail-Served Industry in North Las Vegas

In the face of increasing costs and impacts from industrial development growth and its consequent increase in truck and passenger vehicle traffic, more rail transportation is needed for goods movement and regional transit. Given rail transportation's efficient use of space for moving goods and people, Nevada needs more rail service to enhance the compatibility of commercial developments and quality of community life.

Moving heavy weight and people over land using hard steel wheels over smooth steel rails generates much less friction than using rubber tires on rough concrete and asphalt. The resulting decrease in fuel use, air pollutants, highway congestion, infrastructure costs, crashes, and improvement in quality of life are critical elements of a well-working, modern society.

Freight rail development in Nevada should be forwarded as a response to two dynamics contributing to the state's commercial development. One is the increasing demand for strategic minerals of which Nevada has an abundance. Mining continues to be a major industry in the Nevada economy with an $8B gross value of produced minerals in 2018.[107] The other is locating warehouse and distribution centers in Nevada that primarily serve California's economy and population. The proximity of California, which has 13 times the population of Nevada and 20 times the Gross Domestic Product has stimulated the building of many large distribution centers in Nevada, only one of which is served by rail. The negative impacts of the

[107] Nevada Commission on Mineral Resources – Division of Minerals, Report "Major Mines of 2018", page 26, source link.

activity from each of these developments would be alleviated if rail were integrated into the transportation planning for goods, materials, and people.

Regional, Cross-Agency, and Cross-Industry Approach

The Nevada State Rail Plan (NVSRP) organizes Nevada into eight regions distinguished by a combination of geography, governing jurisdictions, and operating characteristics of each section of the rail network. This structure facilitates effective stakeholder collaboration on rail-based economic development in each region. The 450+ stakeholders catalogued within the NVSRP database are organized by region, industry, and/or public service role so that group dialogues can be conducted with the most appropriate stakeholder representatives. This degree of specificity demonstrates respect for stakeholders' time and energy, which engenders trust and participation.

Nevada, given its adjacency to California, is experiencing the geographic flipside of what has occurred in Pennsylvania due to its proximity to New Jersey. Nevada and Pennsylvania's lower land prices, reduced construction and labor costs, lower taxes, and relaxed development rules have led to a surge in the development of warehouse and distribution facilities serving the more densely populated coastal states of California and New Jersey. The sensibility, or lack thereof, of this development dynamic is being driven by land prices and real estate transactions, not by logistics and land-use planning. The result is that new businesses are locating in Nevada without the benefit of rail service and rail transportation's overall efficiencies, lower cost, and access to markets across the supply chain.

Nevada can gain much by centering its critical Covid-19 economic recovery plan on a logistics- and rail-based development strategy that brings rail and truck service into full integration to and from Nevada's growing industrial base. As California's economy is right behind the four largest national economies (United States, China, Germany, and Japan) and its ocean ports provide access to the entire eastern hemisphere, there is much to be gained by improving rail service between Nevada and California.

Fortunately, in the face of newly depressed public-sector treasuries, freight-rail development in Nevada can be funded by private-sector capital, along with integration of low-interest federal loan funding where available. The new Nevada State Rail Plan includes an innovative approach to public/private funding of this rail-centered economic development, which will be presented in Chapter 4.

CHAPTER 3

Nevada Passenger Rail Strategic Plan

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Chapter 3 Proposed Passenger Rail Improvements and Investments

A. Introduction

As covered in Chapter 2, passenger rail service in Nevada is presently limited in scope, frequency, and availability. Development of passenger rail in the state has been historically impaired by numerous challenges ranging from limited funding sources, subsidized competition from air and highways, topography, distance between the larger potential passenger rail markets, and the location or absence of existing infrastructure for intercity or commuter rail.

Amtrak's Westbound California Zephyr at Reno

Although many of these challenges continue to exist, this section details a broad range of proposed projects and investments to address passenger rail needs in the state. These proposals, improvements, and investments cover enhancements to existing services and the development of new services. The scope of these improvements encompasses conventional and high-speed intercity services, commuter services, excursion rail attractions, and intermodal passenger transportation connectivity. While the Nevada State government has been encouraging a private-sector passenger rail initiative that promises

to institute new high-speed rail between Southern California and Las Vegas, the primary focus of the new state rail plan is on the use of existing railroad infrastructure as the base for new passenger transit development.

B. Passenger Rail Improvement Opportunities

Nevada has opportunities to grow passenger rail service in the near- and long-term. Multiple proposals and studies have addressed and analyzed this opportunity, considering intercity, commuter, and excursion services and encompassing many corridors and urban centers in the state.

The following sections describe each opportunity area in detail, categorized by rail type:

- Intercity
    - Amtrak *California Zephyr* Improvements
    - Extension of Amtrak's Capital Corridor to Reno-Sparks
    - Multistate Intercity Equipment Pool
    - Brightline West
    - Southwest Multi-State Rail Planning Study
    - Thruway Improvements and the C Route from Las Vegas to Reno
    - Amtrak service: Salt Lake City to Las Vegas and Los Angeles
- Excursion
    - Nevada Northern Railway
    - Virginia & Truckee Railroad
    - Nevada Southern Railway – *The Hoover Dam Limited*
    - Las Vegas Xpress X-Train Los Angeles to Las Vegas
- Commuter
    - Reno to Innovation Park (formerly the Tahoe-Reno Industrial Center)
    - Reno Area Transit Service
    - Brightline West Commuter
    - Extension of the Las Vegas Monorail to the Brightline West Terminal

B-1. Intercity Rail Improvements

Amtrak California Zephyr

Amtrak currently provides conventional passenger rail service in northern Nevada with its national-network *California Zephyr* line between Chicago and the San Francisco Bay area with Nevada stops in Elko, Winnemucca, and Reno. Following Greyhound Lines' abandonment in 2018 of its parallel services, Amtrak represents the only public transport option between these cities. Amtrak has no plans to add stops in

other Nevada cities at the present time, though there are ongoing discussions with the city of West Wendover, NV.[1]

The state rail plan has elicited suggestions to enhance station facilities and operations and to expand service; these suggestions do not include cost estimates, schedules, or benefit/cost analyses (BCA) but do expand on their potential connectivity, economic, environmental, and social benefits. Other sources of improvement suggestions are Amtrak's *California Zephyr's* Performance Improvement Plan (CZ PIP) in 2010 and recommendations from advocacy groups.

- **Improve Passenger Station Facilities at Elko** to conform with best practices by facilitating a direct connection between eastbound and westbound platforms. The present three-quarter mile distance between platforms, which causes lengthy and challenging walks (as reported in chapter 2, section 2-5 of this rail plan), is worthy of further analysis, perhaps taking advantage of the nearby South 12th Street overpass that bridges the tracks. Train stations can stimulate area growth and economic development even if they only see one daily train as Elko does, as attested by many communities participating effectively in the Great American Stations Project.[2] However, these benefits are hard to capture if the station facility is not itself inviting, let alone intuitively functional. Due to the late-night train arrival and departure times, local bus transit connections are not available.
- **ADA Improvements at Elko** Amtrak has several initiatives underway to bring all its stations into ADA (Americans with Disabilities Act) compliance, along with an initiative to improve station signage and information displays. The Winnemucca station work was focused on meeting ADA requirements and included parking spaces, pathways, a new unstaffed station providing a three-sided shelter in the style of a traditional railway station, and a new platform. The Elko station upgrades included parking improvements, new concrete sidewalks, pathways, curb ramps, new stairs with handrails, a new fence and guardrail, new doors and hardware, and repair of the existing platforms including the addition of detectable warning strips on the platform edges and new signs on the platforms. However, as stated above, this station's fundamental dysfunction of separate platform access has yet to be addressed fully.
- **Add Sleeping Cars to the *California Zephyr*** train sets as per the 2010 PIP performed by Amtrak to add capacity for visitors to Nevada. Sleeping cars frequently sell out.
- **Add Service Between Reno and the San Francisco Bay Area** during the winter months as a more desirable means of transportation between these two areas as recommended in Amtrak's 2010 CZ PIP[3].

  This will meet peak seasonal demand for ski tourists visiting Nevada. Dedicated shuttle service from Reno or Truckee, CA would provide better transportation options for ski travelers to Tahoe.

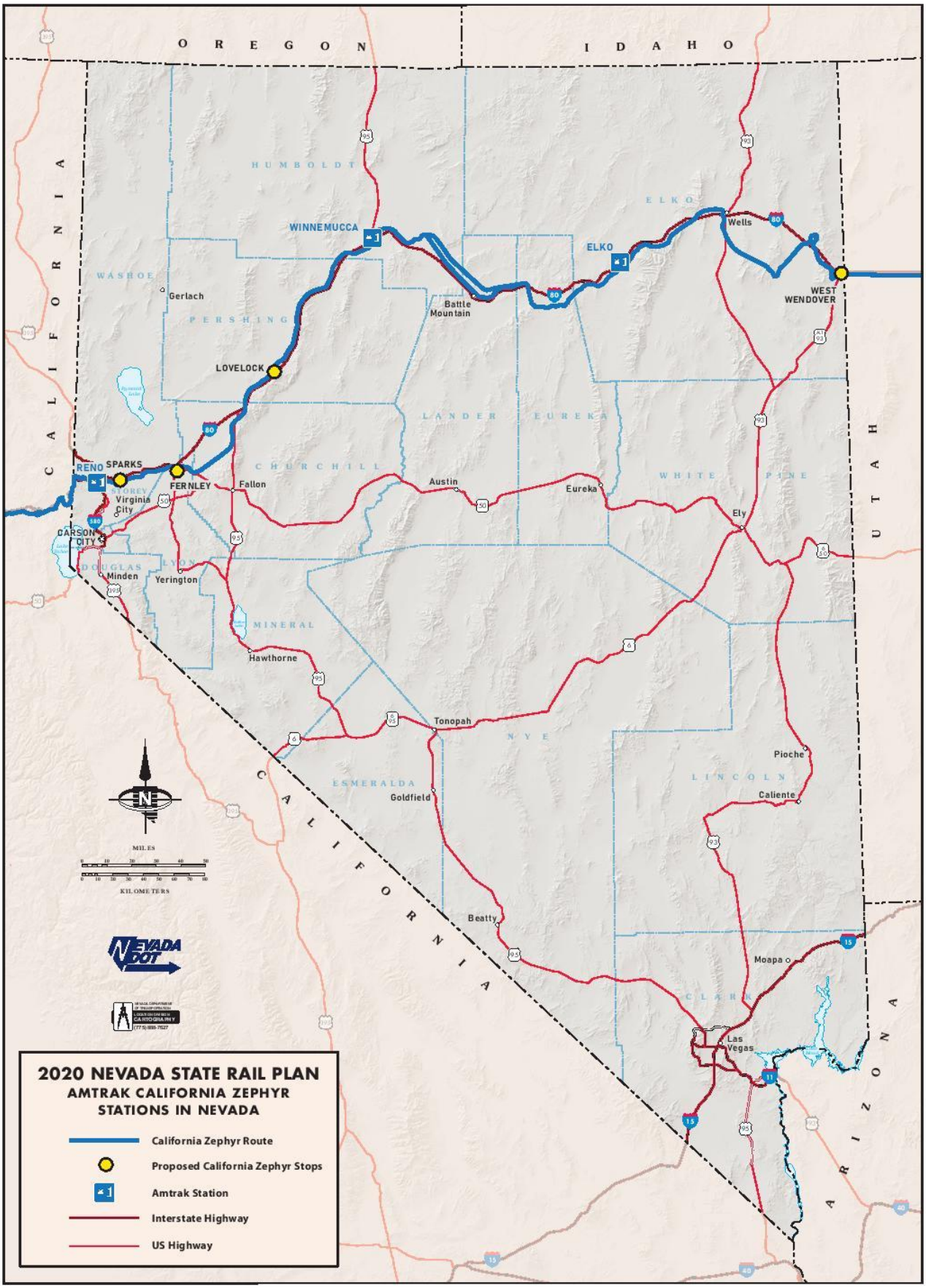
[1]Amtrak, "Amtrak Fact Sheet, Fiscal Year 2018, State of Nevada" Report, source link.
[2]The Great American Stations website, source link, accessed July 24, 2020.
[3] PRIIA Section 210 Report, California Zephyr, Performance Improvement Plan (pp. 1-36, Rep.). Washington, D.C.: Amtrak, source link

- **Add a Second Daily Train in Each Direction to the *California Zephyr*** service for the length of its Chicago-to-San-Francisco-Bay-Area run. This will create more connectivity between the stations on the route and more local travel opportunities for communities in Nevada (Amtrak 2010 PIP).
- **Adding Station Stops in Nevada** further leverages this federally subsidized train to produce an increase in service for the state. The one-time capital expense associated with constructing new station(s) provides an attractive return on investment because the entire ongoing costs of operating and maintaining the rail service continue to be borne by Amtrak. The investment would be felt along the route of the *California Zephyr* in Nevada, especially as its corridor isn't served by another public transportation mode. Furthermore, the addition of these stations may help the *California Zephyr*'s own performance given the Reno, NV-Salt Lake City, UT segment of the *California Zephyr*, which at present has the lightest coach class ridership on the route.[4] Please refer to **Figure 3-1** for more detail.
    - **West Wendover, NV** (population 5,700) has been in discussions with Amtrak since the 2012 Nevada State Rail Plan to add a station on the Utah/Nevada border, and may induce casino traffic from Salt Lake City. Amtrak has agreed to add the stop if West Wendover can secure the funds for constructing the station.
    - **Lovelock, NV** (population 1,800) is the seat of Pershing County, and is an optimally located stop to leverage the *California Zephyr* to better serve Nevada. The present *California Zephyr* timetable would allow for a day trip from Lovelock to Reno, a travel pattern not presently available to Nevadans. Given the average catchment zone for an Amtrak long-distance train in a rural location of up to 50 miles,[5] such a stop could see impressive ridership as compared to the local population, as experienced at rural stations elsewhere on Amtrak's Long Distance network.[6]
    - **Fernley, NV** is a satellite community of Reno, roughly 35 rail miles east of the Reno depot. It has seen significant growth over the past decade. A stop at Fernley would also provide more convenient access to Fallon, NV. Fernley has a growing industrial base (such as Tesla's Gigafactory) while Fallon is the home of the Naval Aviation Warfighting Development Center. (Combined populations of Fernley and Fallon total almost 30,000).
    - **Sparks, NV** (population 104,000) was an Amtrak stop prior to May 2009. Safety issues developed as the passenger station was co-located in the Union Pacific freight yard. As the largest town between Reno and Salt Lake City, it represents an important community to serve.

[4] Source: RailPAC, Interviewed by Author, April 22, 2020.
[5] Rail Passenger Association, Route Fact Sheet, 2010
[6] *Note the California Zephyr's presently high ratio of ridership to population in Nevada in Table 2-3 in Chapter 2 of this study – 40% in Elko, 67% in Winnemucca, 30% in Reno.*

Lounge Car on Amtrak's California Zephyr Crossing Nevada East of Reno

Figure 3-1 Proposed Amtrak California Zephyr Station Stops



Since the *California Zephyr* arrives westbound at Reno at 8:36am and departs Reno eastbound at 4:06pm new Amtrak stops at Lovelock, Fernley and Sparks would create improved mobility for Nevadans and provide those rural residents with the opportunity to make day trips to Reno for doctor appointments, shopping, visiting family, friends, and local attractions.

Adding stops would require a formal local or state request, an Amtrak evaluation of the revenue, the costs of adding the proposed stop(s), and negotiations involving Union Pacific's evaluation of capacity impacts on the line's throughput. Costs could include improvements such as station platforms, lighting, main line track or siding, signal upgrades, and grade-crossing improvements to maintain the line's existing level of freight service.

Amtrak's September 2010 PRIIA PIP presents Amtrak's proposed plan for improving the *California Zephyr* including customer service, equipment inspections, and ADA access at stations. The PIP proposed to upgrade the *California Zephyr* to premium service, pending equipment availability; such service would require, at a minimum, an additional sleeping car and a dedicated first class lounge car. As noted in the 2012 State Rail Plan, Amtrak's comprehensive business plan called for a consistent, sustainable annual fleet purchase plan to replace Amtrak's national fleet with new intercity equipment. In addition, Amtrak previously entertained other options to enhance its *California Zephyr* service, including the Sparks Car Initiative, which would add passenger cars and increase seating capacity between Emeryville, CA, and Reno during the popular winter months. Extra cars would be added to the train for the segment from Emeryville to Reno, and the additional cars would then be detached in the Sparks railyard for servicing before returning to Emeryville on the return Amtrak train.

The above initiatives have not been pursued, and the *California Zephyr* presently operates with heavily depreciated 40-year-old Superliner equipment. Amtrak has stated that it does not intend to begin the procurement process for the Superliner fleet until after 2025,[7] meaning that the equipment used by Nevada's only passenger train will have to wait until it reaches an average age of nearly 50 years before there is even an established timeline for its replacement. The shortfall could lead to an existential threat to this essential service.

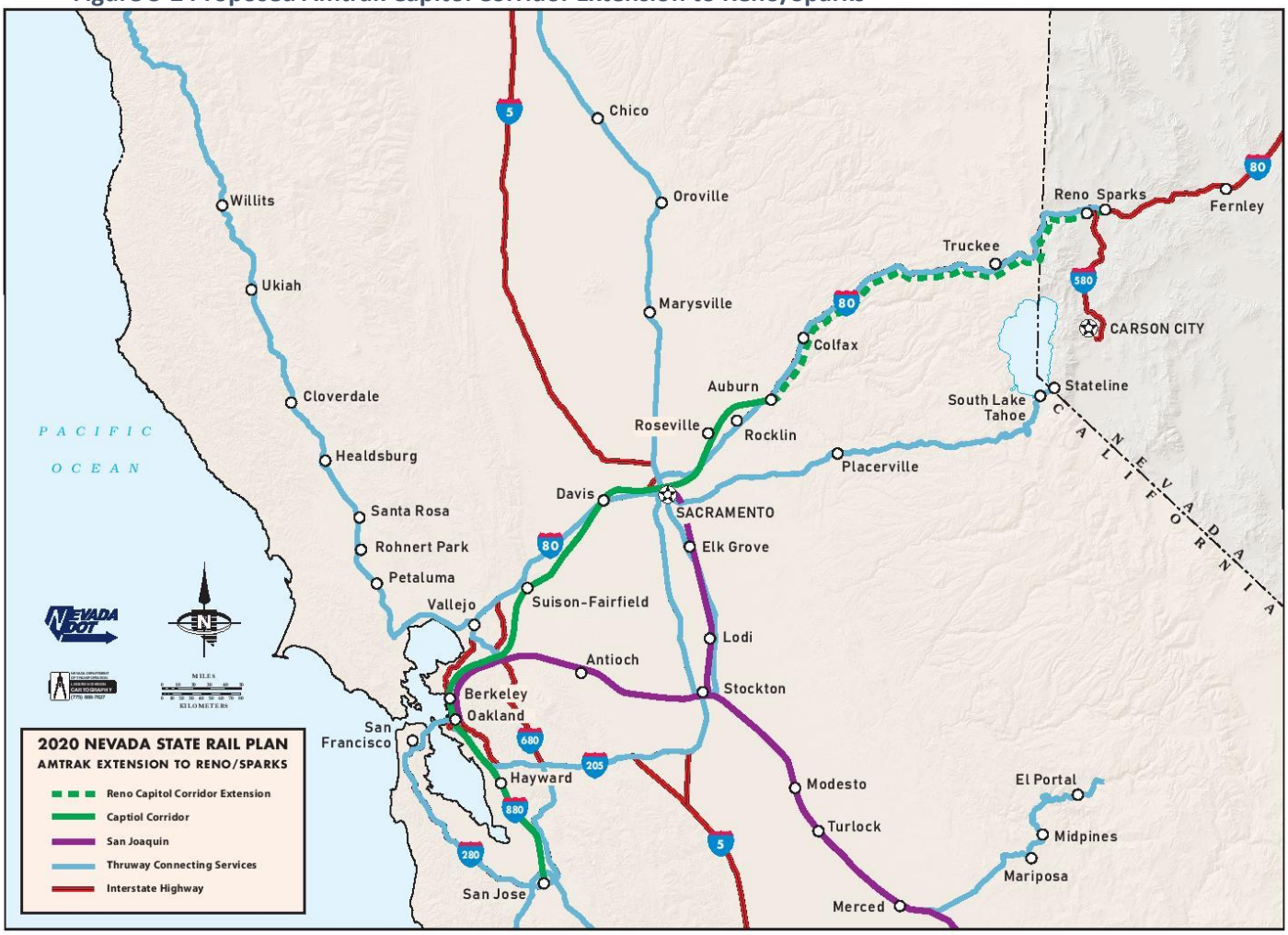
Adding a second daily train to Amtrak's *California Zephyr* service will require Amtrak's fleet replacement program to be established, Congressional approval and funding, as well as host railroad capacity evaluations, which are likely to result in a need for capital improvements.

Extension of Amtrak's Capital Corridor to Reno-Sparks

The Rail Passenger Association of California and Nevada (RailPAC) has recommended that the Nevada State Rail Plan consider the potential of extending Amtrak's *Capital Corridor* service to Reno-Sparks over the Union Pacific and the *California Zephyr* route. Refer to **Figure 3-2** for more details.

[7]Amtrak, "Five-Year Service Line Plans, Fiscal Years 2021-2025" Report, pg. 88, source link.

Figure 3-2 Proposed Amtrak Capitol Corridor Extension to Reno/Sparks



[UPRR Comment: Extension of Amtrak's Capitol Corridor to Reno-Sparks Given the regular suspension of passenger rail service over Donner Pass during snow events, UPRR does not support the implied greater availability of the rail route versus 1-80 during winter storms.] There is substantial travel from Northern California cities to the Reno metro area as a result of leisure and vacation activities, visiting family and friends (many California retirees have relocated to the Reno area) and student travel from California to the University of Nevada, Reno. This travel demand becomes especially problematic during winter storms when I-80 can be unreliable.

As part of the California State Rail Plan, extension of *Capitol Corridor* service to Reno-Sparks was listed. RailPAC recommends that Nevada DOT coordinate with Caltrans and the Capitol Corridor Joint Powers Authority (CCJPA) in identifying and funding capacity improvements for extending *Capitol Corridor* service between the Bay Area and Reno-Sparks. Nevada DOT would be the lead agency for capacity projects in Nevada.

A further recommendation stated Nevada DOT should coordinate with Caltrans and the CCJPA on the location, scope, and design of a layover facility for the extended *Capitol Corridor* service.

Multistate Intercity Equipment Pool

RailPAC recommends that Nevada explore with other states the initiation of a multi-state equipment pool. This pool of cars would provide Nevada with equipment to extend the *Capitol Corridor* service to Reno, add additional capacity between Oakland and Reno on the *California Zephyr* and reestablish service on the *Desert Wind* route: LA – Las Vegas – Salt Lake City.

Another goal of this effort would be to provide, as states phase in additional rail service over time, a steady stream of production to maintain a robust U.S. railway passenger equipment manufacturing base.

Brightline West – Rancho Cucamonga, CA to Las Vegas, NV

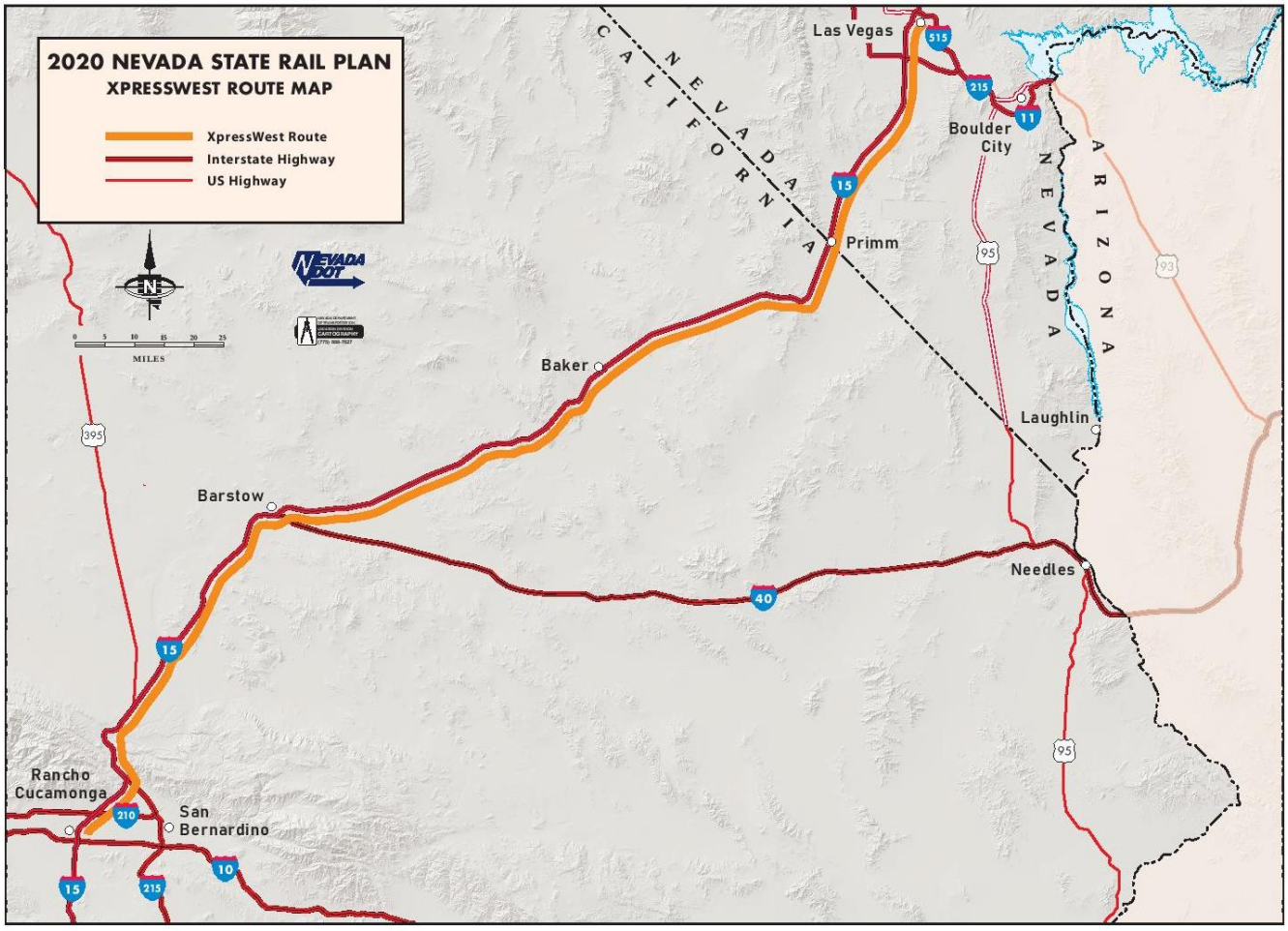
The proposed Brightline West service between Las Vegas and Rancho Cucamonga and ultimately the LA Basin in the California Inland Empire is the sole survivor of three separate private venture attempts to serve the Southern California-to-Las Vegas market as recorded in the 2012 Nevada State Rail Plan. Originally named DesertXpress the project was renamed in 2018 when it was acquired by Brightline. Refer to **Figure 3-3** for more details.

Brightline West will construct, operate, and maintain a high-speed passenger train system along the approximately 220-mile corridor between Las Vegas, NV and the Inland Empire in Rancho Cucamonga, CA. The alignment is predominantly constructed within the I-15 right of way in California and Nevada. Most of that alignment within the I-15 right of way will be within the median of the highway and the entire alignment will be protected and isolated from the highway, creating a dedicated rail corridor with no grade crossings. The alignment will be primarily single track with passing "sidings" that allow trains to pass each other on the corridor. The train will be fully electric with trainsets provided by Siemens, a global leader in high-speed train technology.

Upon opening, the company expects to operate trains departing every 45 minutes in each direction. There will be three stations: one in Rancho Cucamonga, one in Las Vegas, and a station in between called Victor Valley, in Apple Valley, CA. Each station will be located adjacent to the I-15 corridor. The project will include a vehicle maintenance facility adjacent to the Victor Valley station and ancillary operations and maintenance facilities along the corridor.

This passenger rail service will be substantially similar to the service Brightline West currently provides in South Florida. This passenger rail service will offer business, leisure, and personal travelers safe, sustainable, fast, reliable, convenient, and comfortable travel. Travelers will be able to reserve specific seats on trains and at times that fit their specific travel needs. Passengers will enjoy free high-speed Wi-Fi on board and other amenities at all three stations, such as business centers with print and copy services. Ancillary services on board the trains and in stations include the sale of passenger tickets, food and beverages, merchandise, parking, and other related services.

Figure 3-3 Brightline West Route Map



Upon arrival, Brightline West passengers will be able to continue to travel seamlessly to their destinations. Train stations are usually conveniently located near major travel destinations and offer access to other modes of transportation such as public ground transportation and ride-sharing services. The Brightline West station in Las Vegas is primarily designed to have access to ride-sharing services and shuttle vans from casino hotels. The station in Rancho Cucamonga will be adjacent to the existing Metrolink station, which provides direct connectivity to Los Angeles Union Station and connects to the full Southern California mass-transit system.

The service will bring passenger rail service to Las Vegas for the first time since the closure of Las Vegas' Amtrak station in 1997 when the intercity rail operator dropped its *Desert Wind* service.

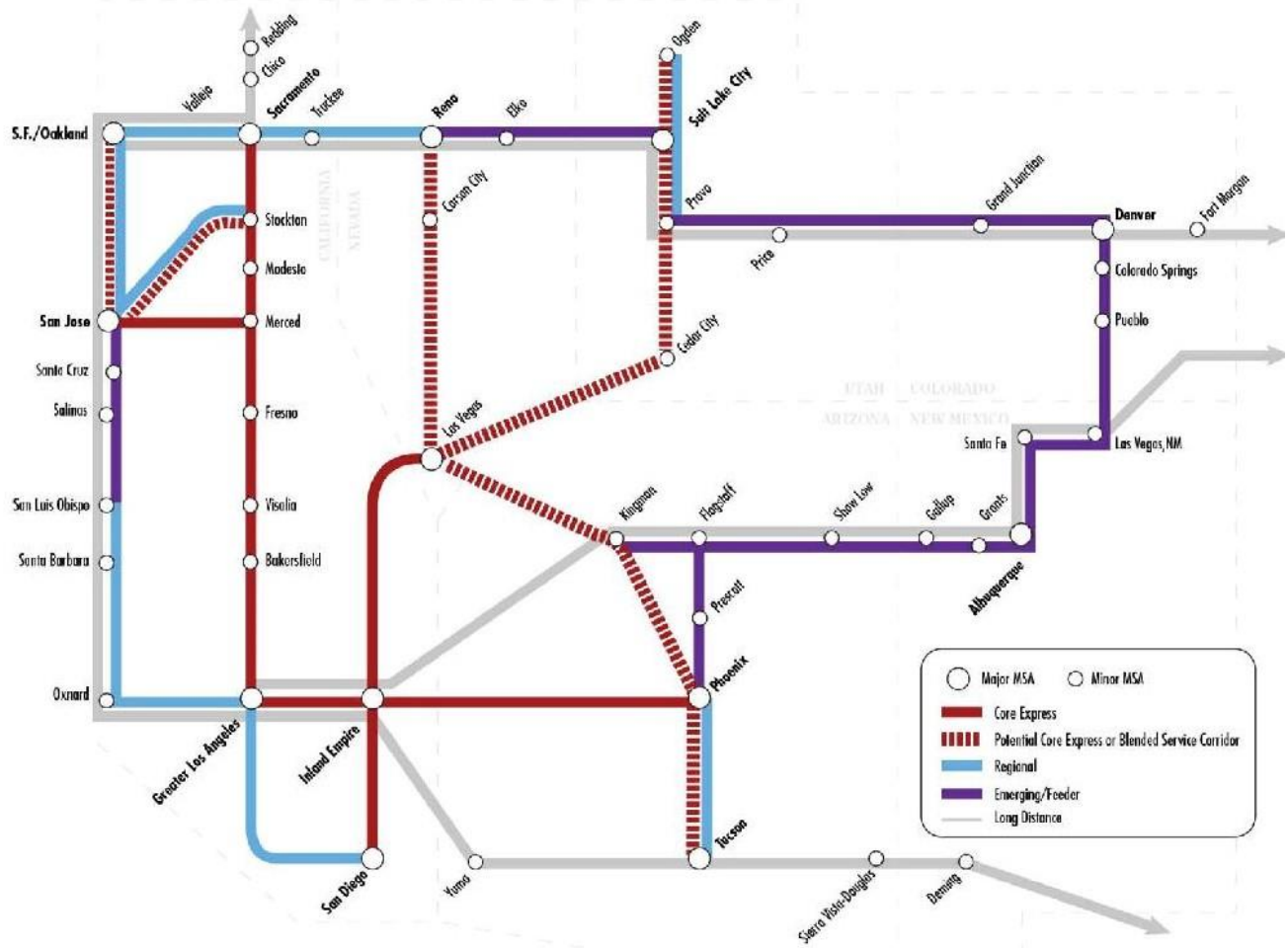
These plans appear to be unaffected by the COVID-19 pandemic during 2020 and open an exciting new chapter for passenger rail in Las Vegas and Southern Nevada as the development of new rights-of-way offers commuter and regional rail opportunities. (*These opportunities are covered in the Commuter Rail Section below.*)

Brightline West anticipates a high level of demand for its service. Las Vegas is an international tourist and business convention destination, and demand for travel between Southern California and Las Vegas has substantially increased over the years. Approximately 85% percent of visitors from Southern California drive on I-15, the only highway connecting Southern California with Las Vegas. Over the last decade, the trip on I-15 has become a time-consuming, stressful, and congested travel experience. The Brightline West service will offer an attractive alternate mode of transportation for travelers between Southern California and Las Vegas. Automobile travel from Rancho Cucamonga to Las Vegas takes four hours without traffic, and that time increases considerably during peak days and times. The train will take approximately one hour and 20 minutes. The project will offer passengers an unparalleled transportation experience that bypasses traffic along this busy corridor in approximately half the time, and a better, cleaner, and safer alternative to driving. For air passengers, not only will the monetary savings be substantial, but the check-in process for rail service is also faster, easier, and less stressful than airport check-in and security procedures, providing a better experience for the traveler.

Southwest Multi- State Rail Planning Study

FRA's Southwest Multi-State Rail Planning Study completed and published in 2014 contemplated 11 intercity rail corridors, six of which involve Nevada. Together, the 11 corridors form an expanded "Golden Triangle" connection involving Las Vegas, Phoenix, and Los Angeles that was previously the major focus of the Western High Speed Rail Alliance (WHSRA). All but one of the six corridors in the Southwest Multi-State Rail Planning Study involving Nevada are subject to proposals described in detail in this report. The corridors and cross references to their relevant sections in this report are listed below. Refer to **Figure 3-4** for more details.

Figure 3-4: Proposed FRA Southwest Multi-State High Speed Rail



Greater Los Angeles–Las Vegas

Proposals and developments on this corridor are referenced in the section "Brightline West -- Rancho Cucamonga to Las Vegas" above.

S.F./Oakland–Reno

Proposals and developments on this corridor are referenced in the section "Thruway Expansion & C Route" below.

Las Vegas–Salt Lake City

Proposals and developments on this corridor are referenced in the section "Amtrak Salt Lake City-to-Las Vegas and Los Angeles Service" below.

Las Vegas–Reno

Proposals and developments on this corridor are referenced in the section "Thruway expansion & C Route" below.

Reno–Salt Lake City

Proposals and developments on this corridor are referenced in the section "Amtrak *California Zephyr*" above

Las Vegas–Tucson via Phoenix

This corridor, running from Las Vegas via Kingman, AZ to Phoenix and Tucson, has not engendered further studies or proposals.

Thruway Expansion & C Route: Reno to Las Vegas by Way of Central California

Several of Amtrak's Thruway bus routes that serve Reno offer direct connections to some of the most successful passenger rail corridors in North America, run by the state of California such as the *Capitol Corridor* and the *San Joaquins* serving California's Central Valley. Proximity to these routes could be leveraged, rather than building a customer base from scratch. Past California Rail Plans have contemplated more proactive involvement by Nevada in these corridors.

California's importance to the state of Nevada cannot be overstated either in terms of the dynamics of its travel markets nor in its connections to the national rail network. California visitors represent a plurality of visitors to Nevada's major travel markets. They comprise 27% of all visitors to Reno-Tahoe[8] and 23% of all visitors to Las Vegas.[9] The rail corridors with the highest ridership in the United States outside of the Northeast Corridor exist in California, and all three presently boast Thruway Bus connections to Nevada, paid for by the State of California. In the FRA's 2014 Southwest Multi-State Rail Planning Study, the FRA found that travel demand between San Francisco to Reno "allows competitive trip times for destinations throughout the entire Southwest network, including Los Angeles, San Diego, and Las Vegas. The recovery ratio exceeds 1.0 when the corridor is part of the greater network."[10]

This follows, given California's high frequency *Capitol Corridor* between San Francisco and Sacramento serving as the fourth busiest Amtrak route by ridership. While a direct rail extension of this corridor to Reno has been contemplated in the past,[11] the motivation to extend frequent corridor service into the state of Nevada did not originate from Nevada itself, and has not been seen in a business plan regarding the *Capitol Corridor* since 2005.

Nevada has no connection between its major population centers via grade-separated highways nor by railroad, reflecting the historic east-west pattern of development by which the state grew. The present ongoing development of the Interstate-11 project serves as evidence that a dedicated and modern ground connection between the cities of Las Vegas and Reno, NV will be a 21st century project. [12] The 2014 FRA Southwest Multi-State Planning Study categorized this corridor as third-tier: to be developed after other regional rail connections are established, such as between Las Vegas and Los Angeles, and San Francisco and Reno.

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[8]Reno-Sparks Convention and Visitors Authority, "Reno Tahoe 2019 Visitor Profile Survey – Executive Summary Report January – December 2019", pg. 15, source link.

[9]Las Vegas Convention and Visitors Authority, "Las Vegas Visitor Profile, Calendar Year 2018 – Southern California and International Visitors Version", pg. 72, source link.

[10]Federal Railroad Administration, "2014 Southwest Multi-State Rail Planning Study", pg. 137.

[11] *Several Capitol Corridor Joint Power Authority business plans listed extending Capitol Corridor passenger rail service from Sacramento to Reno, electing not to pursue the extension in 2005 following UPRR's capacity determination that separate right-of-way requiring costly new trackage would be needed on the Donner Pass route.*

[12]I-11 and Intermountain West Corridor Study, "Corridor Concept Report – November 2014", source link.

In service of establishing what the FRA deemed as the region's "low hanging fruit", it is worthwhile to note that passenger rail works well directly connecting travel markets, but it is arguably at its most effective when it serves a corridor of multiple travel markets linked together. This is a reason why Amtrak's Northeast Corridor as well as its seemingly disparate long distance service lines boast similar load factors; they both serve a great number of possible and viable trip permutations.[13]

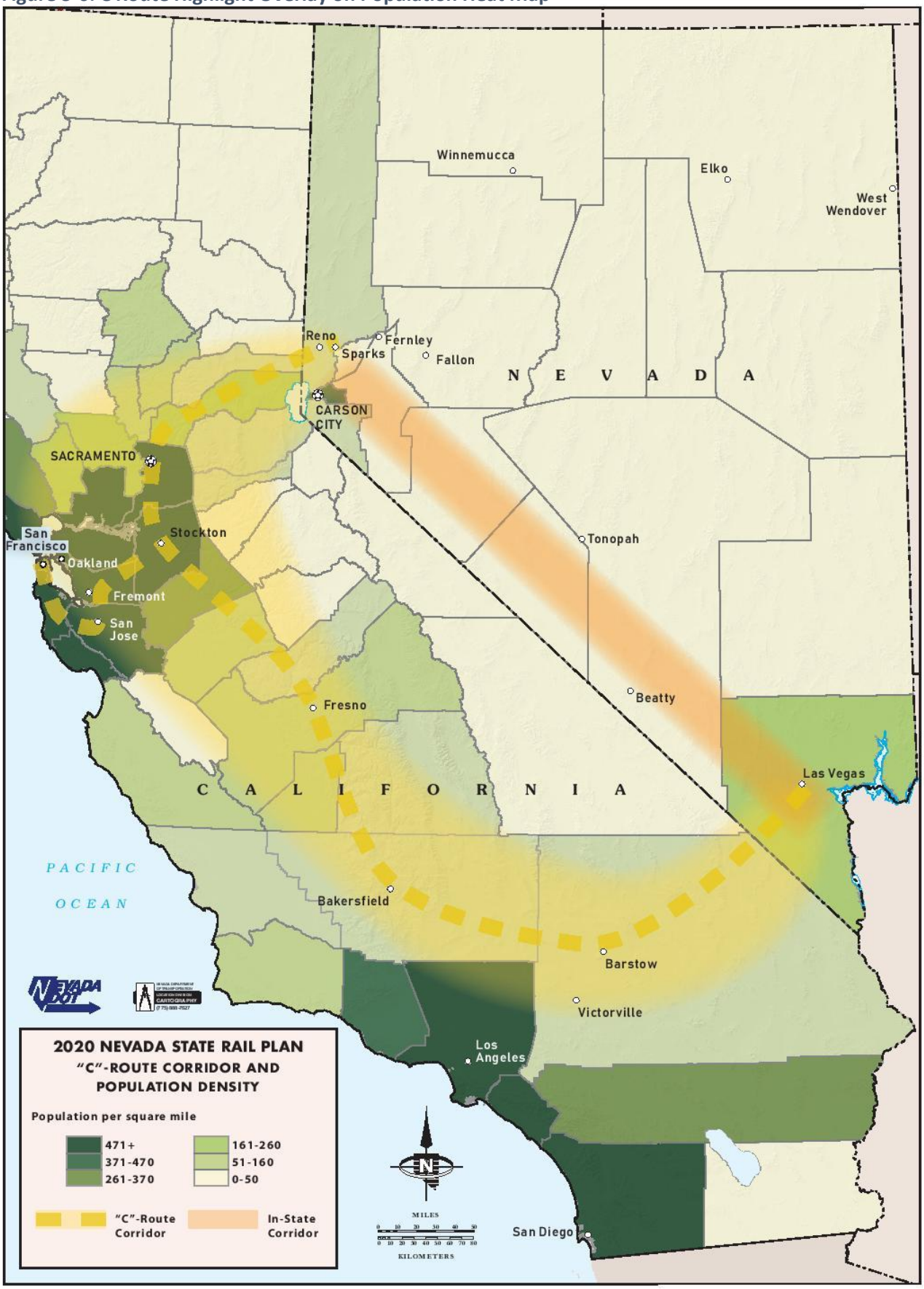
With this dynamic keenly in mind, in terms of conventional rail, Nevada should investigate the feasibility of developing a rail corridor between its major population centers using the bedrock of California's corridor system as a means of connection. Rights of way for such a service would utilize already extant, frequent California corridor services that already have a ready ridership base within a significant catchment area. Such service would leverage California's decades of investment in frequent corridor services and intermodal connections throughout the population centers of that state into a feeder system to the major tourist markets in Nevada. Such an interregional corridor could also take significant advantage of brand new passenger rail infrastructure as it comes online, in the form of the California High Speed Rail Project's initial segment currently under construction and the eventual Brightline West right of way in the I-15 corridor.

Using conventional rail passenger equipment and the existing railroad lines of Union Pacific and BNSF, service could be started anytime between Las Vegas and Reno over a "C" shaped route from Las Vegas to Bakersfield via Barstow and Tehachapi, as illustrated in **Figures 3-5** and **Figure 3-6**.

[13]Amtrak, "Five-Year Service Line Plans, Fiscal Years 2025-2025" Report, pg. 19, source link.

Figure 3-5: Las Vegas – Reno C Route

Figure 3-6: C Route Highlight Overlay on Population Heat Map



From Bakersfield to Sacramento, the "C" Route would follow the existing routes of Amtrak's *San Joaquins* and *Capital Corridor* trains to serve stations in the heavily populated Central Valley of California including Fresno, Merced, and Stockton. From Sacramento the C Route would follow the *California Zephyr* route to Reno.

A section of the train would provide through service from Las Vegas to San Jose and San Francisco. Although the running time between Las Vegas and Reno would be 12–14 hours **[UPRR Comment: Without understanding the full route, capacity, capabilities, and proposed passenger equipment, UPRR does not support including a statement estimating the potential running time between those two points as 12-14 hours.]**, it would provide an important alternative for seniors who do not want to fly or drive. The Las Vegas service to the Central Valley, San Jose, and San Francisco would be competitive with drive times because the geography makes trips by car long and circuitous. Air service from the Central Valley to Las Vegas is infrequent and expensive. Even with good, low-fare air service from the Bay Area to Las Vegas, more than half of the tourists choose to drive, according to previous National Household Travel surveys by the USDOT.

As a non-rail alternative, new intercity bus service will begin along the US 95 corridor between Reno and Las Vegas. This service will be operated by Greyhound per an agreement with NDOT. A separate agreement between NDOT and Salt Lake Express has also been finalized, which will add two other intercity bus routes connecting Elko to Salt Lake City, UT on one route, and Elko to Twin Falls, ID on the other. All three routes are slated for a late 2020 or early 2021 start. Details about the service will be posted to the NDOT Public Transit web page as they become available.

Amtrak Service Between Salt Lake City, Las Vegas, and Los Angeles

The 2012 state rail plan expressed citizen interest in reviving conventional passenger rail service between Salt Lake City and Las Vegas, which was formerly provided as part of Amtrak's *Desert Wind* service between Chicago and Los Angeles, until it was discontinued in 1997. Public transit planners in Clark County have also expressed their interest in restoring service on the route.

Amtrak provided Las Vegas and Caliente, NV with direct rail trips to Salt Lake City and Los Angeles until 1997 when Congressional budget cuts required Amtrak to discontinue its *Desert Wind* service. *Desert Wind* ran daily between Salt Lake City and Los Angeles between 1979 and 1995, when the service was modified to extend to Chicago with only three-day-a-week service and interlined with four-day-a-week *California Zephyr* service. Prior to the discontinuation, only a *Desert Wind* through coach and sleeping car extended east of Salt Lake City to Chicago. After the discontinuation, *California Zephyr* service was restored to daily operations between Salt Lake City and Emeryville, which had been provided before 1995. (Changes in Amtrak's Pioneer service, linking Salt Lake City; Boise, ID; Portland, OR; and Seattle, WA, mirrored those of the *Desert Wind*.) Southern Nevada has not had any passenger rail service since the elimination of the route.

Variations on *Desert Wind* service restoration could involve providing connecting train service at Salt Lake City, extending to Las Vegas and Los Angeles, or providing connecting train service at Salt Lake City, extending to Las Vegas, and linking with timed transfers to and from Brightline West or another proposed service in Las Vegas. Refer to **Figure 3-7** for more details.

Figure 3-7: Desert Wind Corridor

However, requiring transfers can result in significant losses in ridership. Also, the two states would likely need to pay Amtrak to provide the Salt Lake City-Las Vegas service. If cost is based on line length in each state, the bulk of the cost would fall to Utah, where the state constitution prohibits using gas tax receipts for non-highway expenditures. Utah might also be disinclined to fund such a service because the Union Pacific main line between Salt Lake City and Las Vegas is located away from the more populated areas in Utah, lying between the two cities. Historically, I-15 travel has been greater between Salt Lake City and St. George, UT than to Las Vegas; Salt Lake City's airport is a hub for Delta and Southwest airlines, so Salt Lake City residents would not be inclined to go to Las Vegas' McCarran Airport to catch a flight. In addition, the Las Vegas-Los Angeles leg of the original *Desert Wind* service garnered higher ridership than the Salt Lake City-Las Vegas segment.

Union Pacific uses its *South Central Route* between Las Vegas and Salt Lake City to handle traffic between Los Angeles and Salt Lake City, as well as to accommodate *Sunset Route* traffic shifts in response to construction, maintenance, weather, and other conditions. Union Pacific continues to upgrade its *Sunset*

Route since the merger with the SPTC in 1997 because the *Sunset Route* offers a more favorable route east than the *South Central Route*, from which it has removed some traffic, especially within the last four years. However, the *South Central Route* provides a viable main line function for the railroad, which the company is interested in continuing.

Amtrak's September 2010 PRIIA PIP suggests restoring the Chicago-to-Los Angeles *Desert Wind* service in the long term to complement the existing *California Zephyr* service, pending host railroad negotiations, and securing capital and operating funding, which would be expected to require federal appropriations to cover capital costs for equipment, stations, freight capacity analysis improvements, and operating losses. If such conditions could be realized, states along the route could opt to provide supplemental support for the line similar to California's contract with Amtrak on the *Capitol Corridor* line. The 2014 FRA Southwest Multi-State Rail Planning Study classified this corridor as a later-phase development, meaning its viability is heavily dependent on other regional rail connections being established first, such as Las Vegas to Los Angeles.

B-2. Excursion Rail Improvements

Excursion rail enhancements also present opportunities to advance the state's tourism and economic development. Nevada's Excursion Railroads play a significant role in the state's more rural tourism economy outside of Reno and Las Vegas. The Virginia & Truckee (V&T) Commission and the Nevada Northern Railway both have plans for expansion that reflect their popularity with Nevadans and out-of-state visitors alike.

Nevada Northern Railway at Ely

Nevada Northern Railway

The Nevada Northern Railway Museum and the White Pine Historical Railroad Foundation, which operate excursion trains in northeast Nevada, propose to rehabilitate the four miles of trackage from McGill Junction to McGill Depot in the near term and operate its *McGill Junction Route* on this extension. See **Figure 3-8**.

Reopening the closed US93 at-grade crossing between McGill Depot and McGill Junction will require widening the road by two lanes for appropriate grade-crossing protection. The historic McGill depot was restored with state grants by the Nevada Northern Railway. The Railway has an active partner in turning McGill into an attraction that is a beneficent owner of historic properties adjacent to the depot, including the historic Oddfellows Hall and the town theater.

Las Vegas to Caliente Excursion

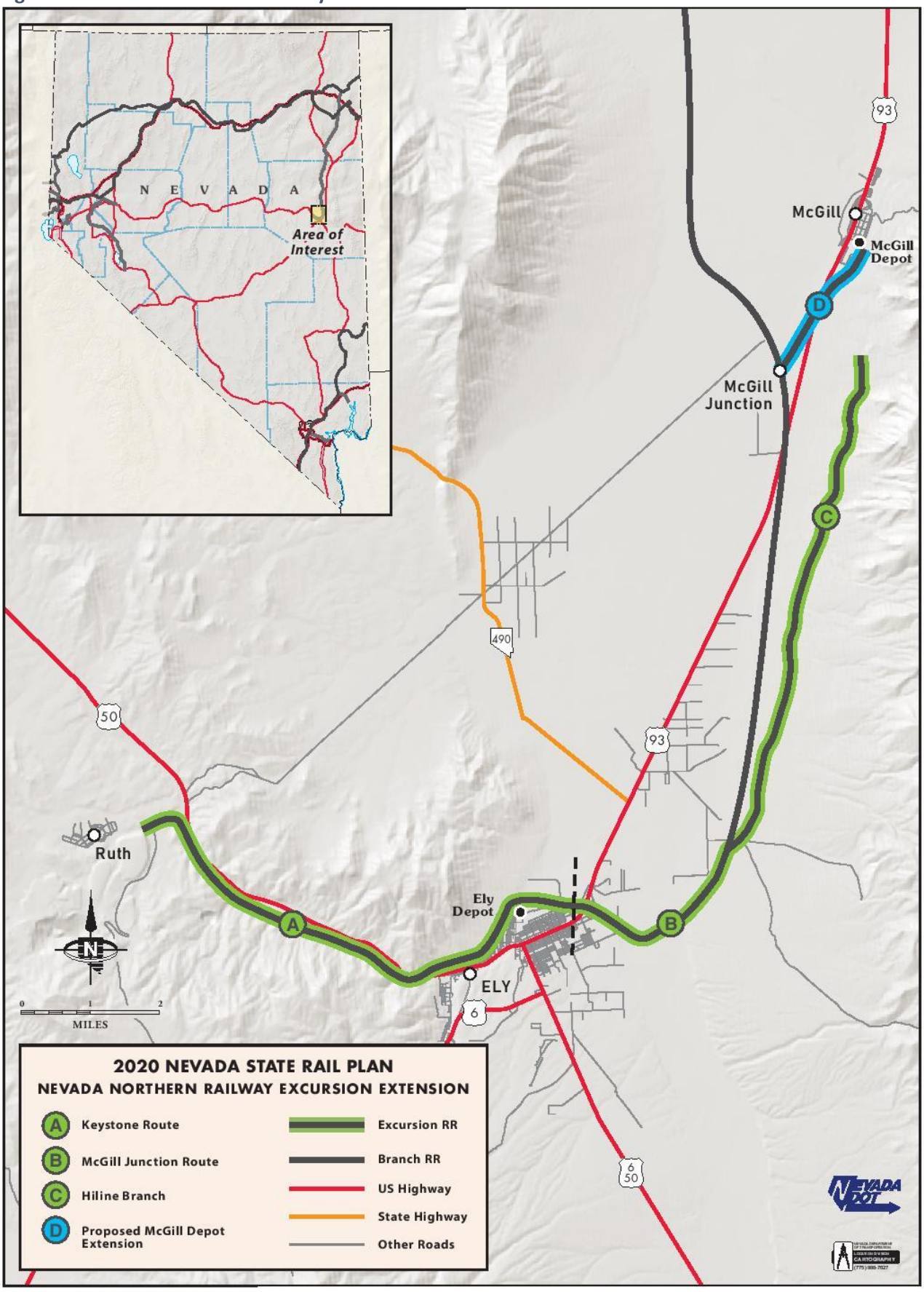
Caliente, in Lincoln County, Nevada offers several destinations for tourists to enjoy. These attractions include hot springs, six state parks and a network of trails for hiking, biking and horseback riding that attracts visitors from around the country and around the world. This is a tourist destination that could be made more accessible to the visitors and residents of Las Vegas with energy efficient, climate friendly passenger trains. **[This is a conceptual idea from Lincoln County and UPRR has not been engaged in discussions regarding the use of their rail line for this excursion route.]**

Currently reaching Caliente requires a bus or car to travel a circuitous 151 mile route via Nevada 93 that takes about 3 hours, 15 minutes. As can be seen in Figure 3-15: Existing Nevada Rail Network, the South Central mainline of the Union Pacific provides a more direct route between Las Vegas and Caliente of only 126 miles. With current track speeds up to 79 MPH on the UP, passenger trains can average 50 mph and connect Las Vegas and Caliente in 2 hours, 30 minutes thus offering an alternative that is faster than driving.

Using Caliente as an overnight base for the excursion train, multiple roundtrips a day could be operated to provide Caliente and Lincoln County residents with an early morning train for day trips to Las Vegas. This train would also make it possible for tourists to arrange overnight stays in Caliente.

In 2023, NDOT will have a unique opportunity to operate a 30 day demonstration of this service using the first hydrogen fuel-cell powered, Zero Emission Multiple Unit (ZEMU) train in the United States. The ZEMU train is being built for the ARROW Redlands – San Bernardino Rail Project by Stadler in Salt Lake City and will be delivered to California via the rail line through Caliente and Las Vegas. Each ZEMU train has capacity for at least 100 passengers and as many as 12 bicycles for residents of Las Vegas to bring bikes to Caliente. Tourists could rent bikes in Caliente for touring the bike trails.

Figure 3-8: Nevada Northern Railway McGill Extension



Virginia & Truckee Railway Commission

The V&T Railway, which operates excursion trains in western Nevada in conjunction with the V&T Railroad, is requesting financial assistance for the extension of the Railway into the Carson River Canyon as part of their ongoing rail system reconstruction project between Carson City and Gold Hill, NV. While over 12 miles of the railroad has already been reconstructed through a combination of local, state, federal, and private funding and donations, additional funding will allow for the extension of another 2.25 miles into the river canyon providing sightseeing access to this historical hidden treasure.

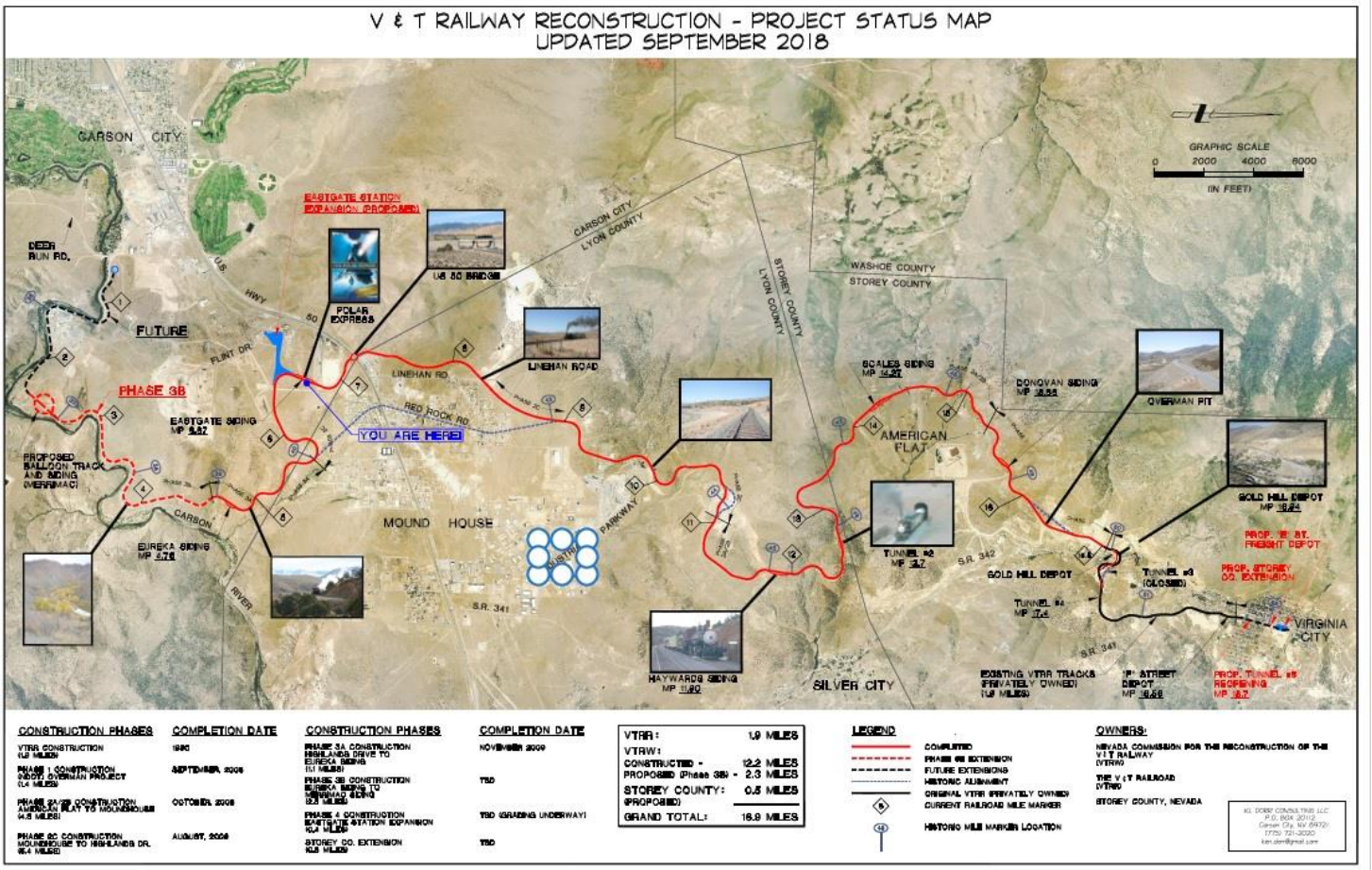
Returning the historic right of way to railroad access will effectively eliminate automotive access to the canyon and the accompanying continual problems Carson City has had with illegal dumping into the canyon and the river itself. The problem is pronounced enough at present to require an annual cleanup effort to remove trash and debris, including abandoned vehicles deliberately placed alongside of or within the waters of the Carson River. Necessary environmental assessments and approvals have been issued, 90% construction plans are complete, and the right of way has been secured for this next phase of the project.

Figure 3-9 shows the planned extension. Long term, the V&T would like to connect closer to downtown Carson City, possibly with the Nevada State Prison grounds located at 3301 E. 5th Street on the east side of Carson City. Such a connection would require the evaluation of alternate alignments, additional river crossings, environmental documentation, and additional funding.

In the near-term, The V&T has plans to improve the safety of its railroad crossings. At F Street in Virginia City, four streets and the entrance to the Events Arena West intersect with the railroad at various angles. The complex sightlines for motorists and railroad operations are protected by a railroad crossing with aging signal components. The V&T is proposing an upgrade of this railroad crossing to improve the operating safety of its excursion trains and motorists using the railroad crossing.

V&T has identified other railroad crossings to be evaluated for safety improvements including one location that has the steepest railroad grade on the sharpest railroad curve and crosses the steepest roadway in the state, just below the sharpest roadway curve in the state.

Figure 3-9: V&T Railway Extension



Nevada Southern Railway – "The Hoover Dam Limited"

Commuter rail service between Las Vegas and Henderson was proposed in the Nevada State Rail Plan prior to 2012 and was subject to intense community opposition.[14] A decade later, this corridor, which includes the Nevada Southern Railway, is worthy of a revisit.

In service of reducing rental car congestion to visit the Hoover Dam as well as attracting tourist dollars outside of Las Vegas proper, it is proposed that local governments consider a partnership with Union Pacific Railroad and the Nevada State Railroad Museum in Boulder City to create a unique rail experience to attractions around the Hoover Dam for Las Vegas tourists and convention attendees.

[14] Nevada Department of Transportation, "2012 Nevada State Rail Plan", Table 3-1, pg. 3-27, source link.

Las Vegas Xpress X-Train Los Angeles to Las Vegas

Specialty passenger rail company Las Vegas Xpress has plans to operate luxury excursion trains between San Bernardino, CA, and a new rail station they would construct in Las Vegas. Branded as X-Train, the concept has been under consideration for a while, including back in the 2012 Nevada Strategic Rail Plan. According to Las Vegas Xpress' website the company is targeting the launch of X-Train services in September 2021. Their proposal is to utilize existing locomotives, cars, and Union Pacific tracks under contract with Amtrak, and operate a Friday-to-Sunday schedule. According to an August 1, 2020 report in the *Las Vegas Review-Journal* the company has yet to finalize operating agreements with Union Pacific and Amtrak, confirm the Las Vegas station location, or secure the $100MM in private financing needed for the project.

B-3. Commuter Rail Improvements

There are several opportunities for new-start rail service utilizing existing infrastructure and taking advantage of established travel patterns outside of robust passenger rail corridors. They include a new commuter rail service between Reno and Innovation Park, Reno Area Transit Service, and opportunities to utilize the new Brightline West intercity trackage for Nevada commuter rail service, opening in Las Vegas in 2023.

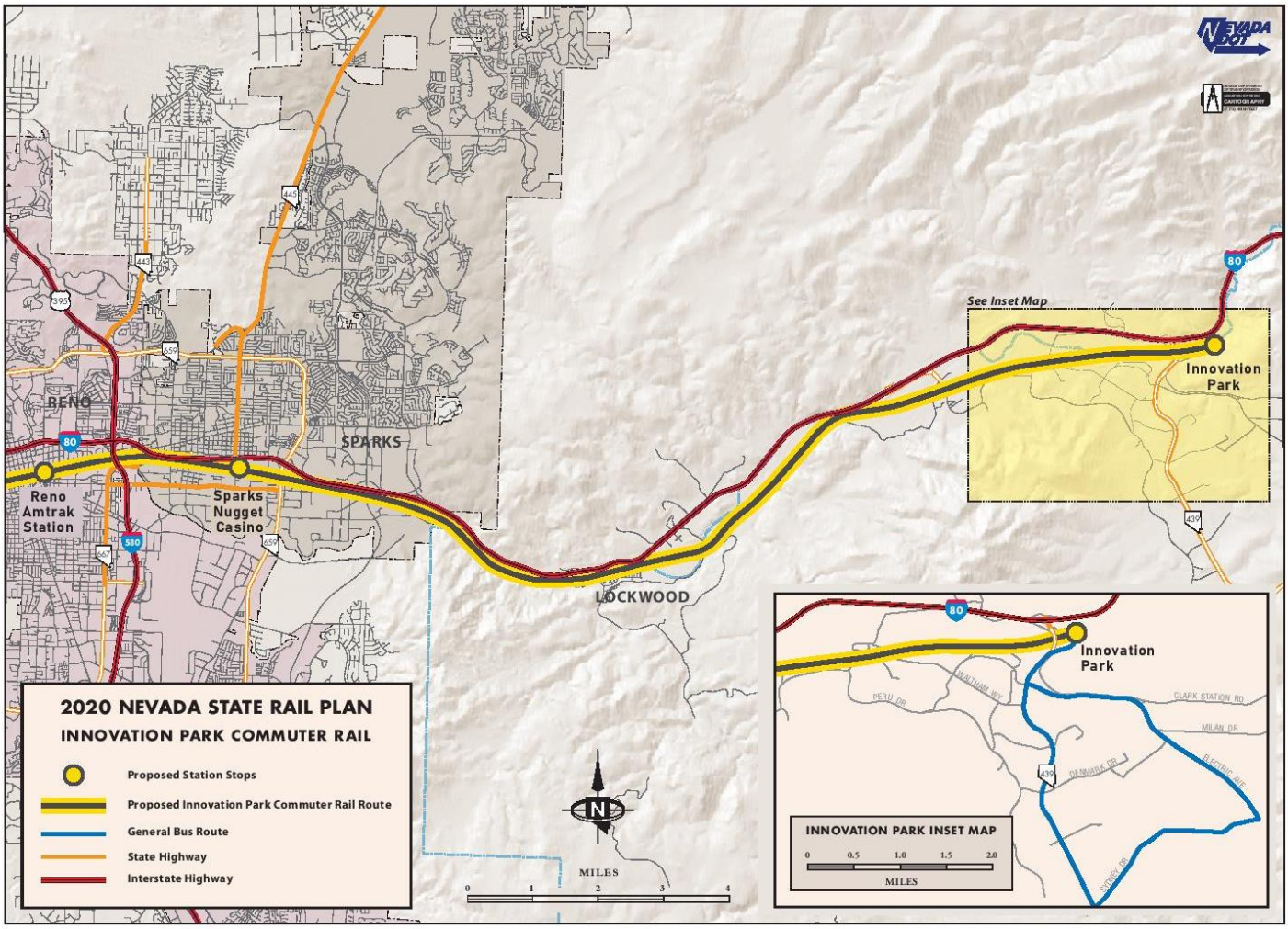
Reno, Nevada, and Innovation Park (formerly Tahoe-Reno Industrial Center - "TRIC")

Twenty-four miles to the East of Reno is a 107,000-acre industrial park hosting growing companies like Tesla, Blockchains, Switch, and Google. Presently 12,000 employees commute from Greater Reno to Innovation Park for work. The projected growth for Innovation Park employment to 25,000 has created concerns for capacity on the I-80 corridor and the development patterns that may result.[15]

The Union Pacific *Central Corridor* runs directly east to Innovation Park from Reno's Amtrak station, which is Greater Reno Metropolitan Area's center of highest population. It could become a reliable conduit to Innovation Park with the development of adequate commuter rail service. (See route map in **Figure 3-11**.)

[15] 2019 NDOT Inter-County and Regional Transit Plan

Figure 3-10: Innovation Park Commuter Rail Service



Such service would represent the state's first foray into commuter rail service and would require further study in several areas. Under 49 U.S.C. §28103, commuter rail operators and Amtrak must be insured to a level not exceeding $200MM per claim. Many states prohibit state agencies from taking on significant liability insurance. Since no state- funded and insured rail passenger service exists in Nevada, a new and separate agency would need to be formed outside of the Department of Transportation.[16] Finally, this effort like any other new service seeking access to the extant national rail network within the borders of Nevada would require negotiations with host railroad Union Pacific to gain adequate access to its central corridor.

If rail service is to be successful it will need to be as attractive as possible in speed, frequency, and access to the front door of workplaces via shuttle bus connections.

[16]Federal Transit Administration, "TCRP Contracting Commuter Rail Services Guidebook, Vol. I" pg. 26.

Although Innovation Park is served by a five-mile branch line, it is not expected to offer useful access to workplaces because of its circuitous route, operating speeds that may be limited to 20 MPH, and congestion from freight-switching operations.

Maximizing hourly service to the Union Pacific main line road crossings at Innovation Park (Waltham Way or Clark Station Road) could provide the fastest access to the front door of Innovation Park workplaces using shuttle bus connections. The 2018 TRIC Circulation Options Study recommended shuttle buses to individual work locations as well as the development of a Transportation Management Association that would potentially coordinate and operate this type of service. NDOT is a stakeholder in the group that is attempting to formally implement a TRIC Transit Management Association.

Significant issues for this service will be obtaining track rights on the Union Pacific and insurance coverage in the range of $200MM+. State ownership of the Reno trench and other Nevada state rail issues potentially could be important in negotiations with Union Pacific for trackage rights. UPRR reserves the right to determine the capacity and capability of its rail lines.

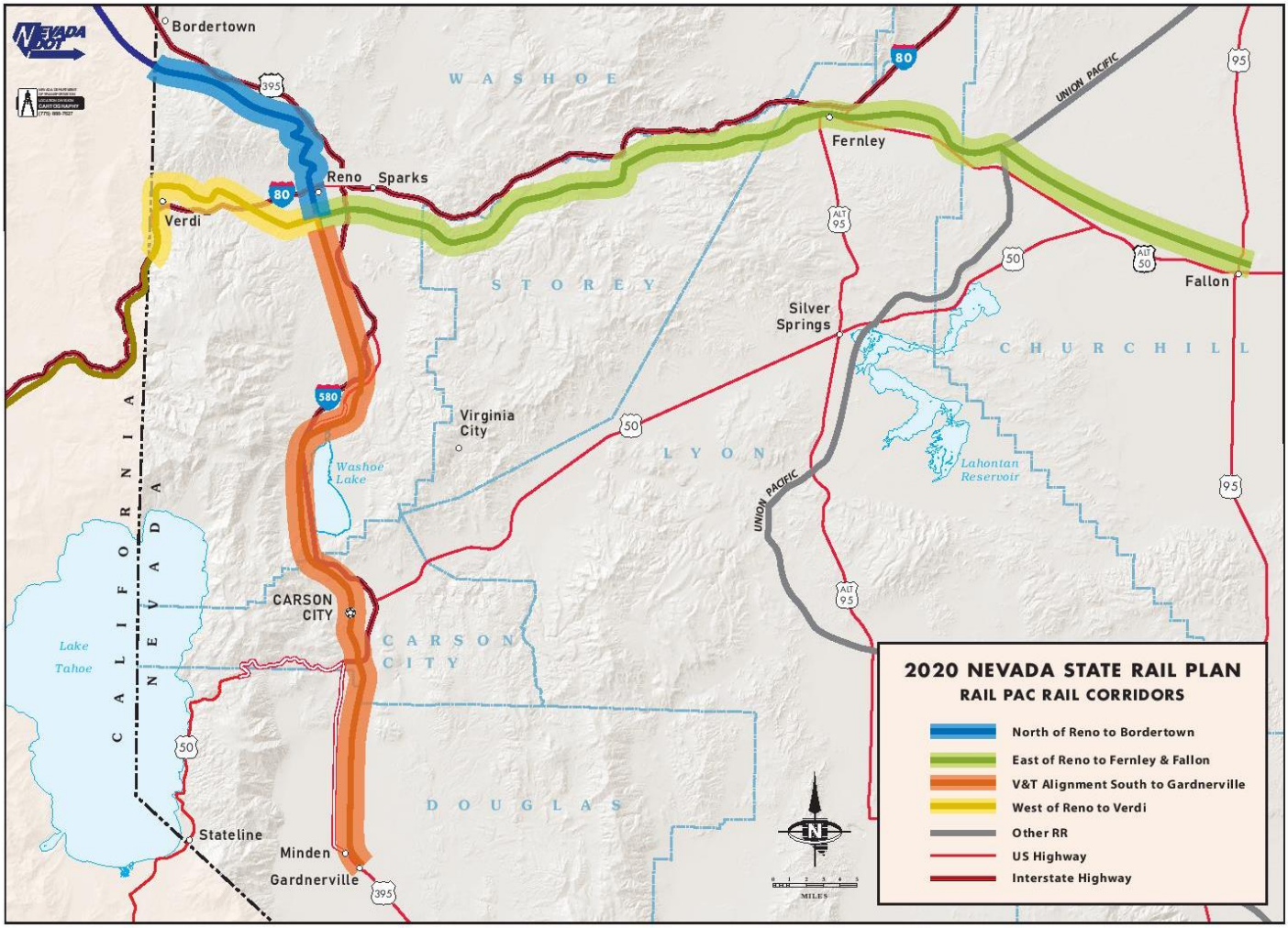
The Reno-Innovation Park Commuter Rail service would address several goals, objectives, and issues identified in NDOT's 2019 Inter-County and Regional Transit Plan. One key finding is that 80% of the Innovation Park workers are driving through Reno-Sparks on I-80, which is well suited to be served by rail stations. Innovation Park is also expected to increase the number of workers to 25,000 later this decade, creating additional residential sprawl, traffic, pollution, and congestion issues, with commuter rail service as an alternative.

This commuter rail service is also consistent with the recommendations of the Sierra Club Toiyabe Chapter Transportation Team and is part of their three-stage proposal (presented in September 2020) for expanding rail passenger service in Northern Nevada.

Reno Area Transit Service

With continued population and economic growth in the Reno metro area, the existing road network will be under pressure to handle future traffic volumes. To forestall gridlock or ever costlier highway expansion, RailPAC recommends efforts to preserve and/or acquire existing historic rail rights of way. In addition, operation, ridership, and financial studies should be undertaken to analyze the feasibility of using these local rights of way to provide future passenger transit in the greater Reno area. See **Figure 3-12**.

Figure 3-11: RailPAC Reno Corridor Proposals



Routes suggested by RailPAC include the following:

a) The Reno Branch north to Bordertown and Reno Junction

b) V&T gradient/Hwy 395 South to Carson City, Minden, and Gardnerville

c) East to Fernley (MP 276) on the Union Pacific main line and branch line from the main at Hazen (Nevada Subdivision MP 288) to Fallon

d) West on the Union Pacific main line to California border at Verdi, NV (Roseville Subdivision MP229)

Many elements of the RailPAC vision for Reno Area Transit Service are reflected in the Sierra Club proposal to improve rail passenger service in Northern Nevada. The goals of this initiative include: “reduce traffic congestion; safely and efficiently get people where they need to go; improve air quality; and enable Nevada to meet its clean energy goals.”

A key part of the Sierra Club’s vision for a Northern Nevada Regional Rail Passenger Service Network is to preserve the future mobility of service on the proposed rail lines by acting now to acquire the railroad

lines and station sites before future real estate development pressures impede building the rail network because of rising land prices and the loss of rail rights of way to abandonment. As discussed in Chapter 4, this would also create the opportunity to co-locate utilities along the rail lines to encourage transit-oriented development and avoid the checkerboard sprawl of development and utility corridors.

To implement their plan, the Sierra Club proposes that "the State of Nevada, in conjunction with Washoe, Storey, and Carson counties, develop a regional passenger authority to oversee creation of a passenger rail system to serve the people of northwest Nevada."

Brightline West - Las Vegas Commuter

The Brightline West high speed intercity line between Rancho Cucamonga and Las Vegas is scheduled to be operational in 2023. A commuter regional rail service is recommended between Las Vegas and Primm, which would utilize the new rail infrastructure. A new service would utilize excess capacity of the high speed line along I-15 between Las Vegas and the Nevada state line at Primm to support future Southern Nevada residential development and provide fast rail access to the proposed second Las Vegas Airport at Ivanpah, about 30 miles from McCarran Airport along I-15, between Jean and Primm.

This rail service will provide regional mobility, reduce I-15 traffic congestion, and encourage sustainable expansion of residential areas and transit-oriented communities along this rail line. Although Brightline West is building the Brightline West high speed line to connect Southern California residents and tourists with Las Vegas, utilizing the high speed line infrastructure to operate Las Vegas Regional Rail Service will provide Nevadans with real transportation benefits for the use of the I-15 public right of way. NDOT's arrangements with Brightline West to use the I-15 right of way makes the high-speed line feasible to construct without complex environmental issues and land purchases.

It is possible for a Las Vegas commuter regional service to share tracks with high-speed trains by selling the unused operating slots of its infrastructure to the public agencies funding the service.

This creates a win-win opportunity to develop local rail service at a fraction of the costs of building a brand-new rail line with the local operator paying Brightline West user fees for the use of track slots and their Las Vegas terminal. Public agencies in Nevada would only need to fund the costs of new trainsets (which could operate up to 125mph in commuter rail service), some additional trackwork, and new stations, as illustrated in **Figure 3-13.** The following are proposed stops with excellent access to I-15 for park and ride stations:

- Starr Avenue
- Sloan
- Jean
- Ivanpah Valley Airport (Brightline West trains could also serve this new airport)
- Primm

Figure 3-12: Las Vegas – Primm Regional Rail

Brightline West's parent company also operates the Brightline passenger rail service in Florida from West Palm Beach to Miami via Fort Lauderdale. Opened in 2018, the Brightline service was originally marketed as a high speed, intercity service but it is now introducing intermediate stations at Boca Raton and Aventura, creating a hybrid intercity and regional commuter operation. Given recent developments at Brightline's Florida franchise, it is especially timely to consider development of local rail service along the I-15 route to Primm, near Las Vegas.

Las Vegas Monorail near Westgate Station

Extension of the Las Vegas Monorail to Brightline West

The recent decision by Brightline West to develop their Las Vegas station along South Las Vegas Boulevard between Blue Diamond Road and West Warm Springs Road creates an opportunity for NDOT to facilitate development of intermodal opportunities between Brightline West, Las Vegas Monorail, Allegiant Stadium, and the McCarran Airport, the Las Vegas strip, and the Convention Center.

A five-mile extension from the MGM Grand to the Brightline West Las Vegas Station would add new monorail stations at Luxor/Mandalay Bay, Allegiant Stadium, McCarran Airport (Rental Car Center), and Brightline West Las Vegas.

The Las Vegas Monorail station at the McCarran Car Rental Center would provide access to the airport via the existing car-rental shuttle buses.

The Las Vegas Monorail is the only form of electrically powered mass transit in Nevada. It can utilize solar, hydro-electric and/or wind power to provide carbon-neutral transportation. Extending the Las Vegas Monorail would provide Brightline West passengers with zero-emission access to the Las Vegas Convention Center, hotels, and casinos. The proposed extension of the electrically powered Las Vegas Monorail represents the most significant opportunity to reduce greenhouse gas emissions in Las Vegas

and advance the climate goals of Governor Sisolak's Executive Order 2019-22. Section 6. B of the Governor's executive order specifically calls for projects which can provide "Support for transportation electrification…"

Service to the McCarran Airport terminals via zero-emission shuttle buses from the proposed monorail stop at the McCarran Car Rental Center would also significantly reduce Las Vegas traffic congestion and pollution for thousands of tourists travelling between the airport, hotels, the convention center, and the stadium.

In conjunction with the proposed Las Vegas-Primm Regional Rail service described above, the Las Vegas Monorail Extension would provide car-free flexibility, mobility, and accessibility for rail commuters to access major employment destinations along the monorail route such as the McCarran Airport, Allegiant Stadium, casinos, hotels, and the convention center. This would help diminish traffic congestion on I-15.

Since the Las Vegas Monorail extension would provide Brightline West significant value for its passengers to easily connect to Allegiant Stadium, Las Vegas resort hotels, the Convention Center, McCarran Airport, and ease of access to the rental car center, their private investment partners are potential sources to finance the extension. In fact, the monorail extension would also create additional value for the retail, residential, and commercial real estate development that Brightline West is planning on the station site because of direct monorail service to the airport and Las Vegas attractions.

The Las Vegas Monorail Extension would help fulfill the State Rail Plan vision for a safe, secure, attractive, energy-efficient, cost-effective, and reliable alternative to auto transportation, with intermodal connectivity that enhances economic and environmentally sustainable travel within the state. **Figure 3-14** illustrates the potential stops for extending the Las Vegas Monorail to the Brightline West Las Vegas Terminal.

Figure 3-13: Las Vegas Monorail Extension to Brightline West

B-4. Challenges of Developing Passenger Rail

The preceding sections have described numerous proposals and projects to develop passenger rail services in Nevada. These range from relatively straightforward amendments to existing services, such as Amtrak's *California Zephyr* upgrades to more complex development of existing rail track into new passenger services such as the route from Reno to Innovation Park.

The description of each proposal included the benefits and return on investment, with a focus on the value generated by each project. Although some challenges were also referenced in these descriptions, such as host railroad permissions, this was covered exhaustively. This section provides more details on the policy, funding, and ownership challenges that impact rail passenger development.

Policy & Funding

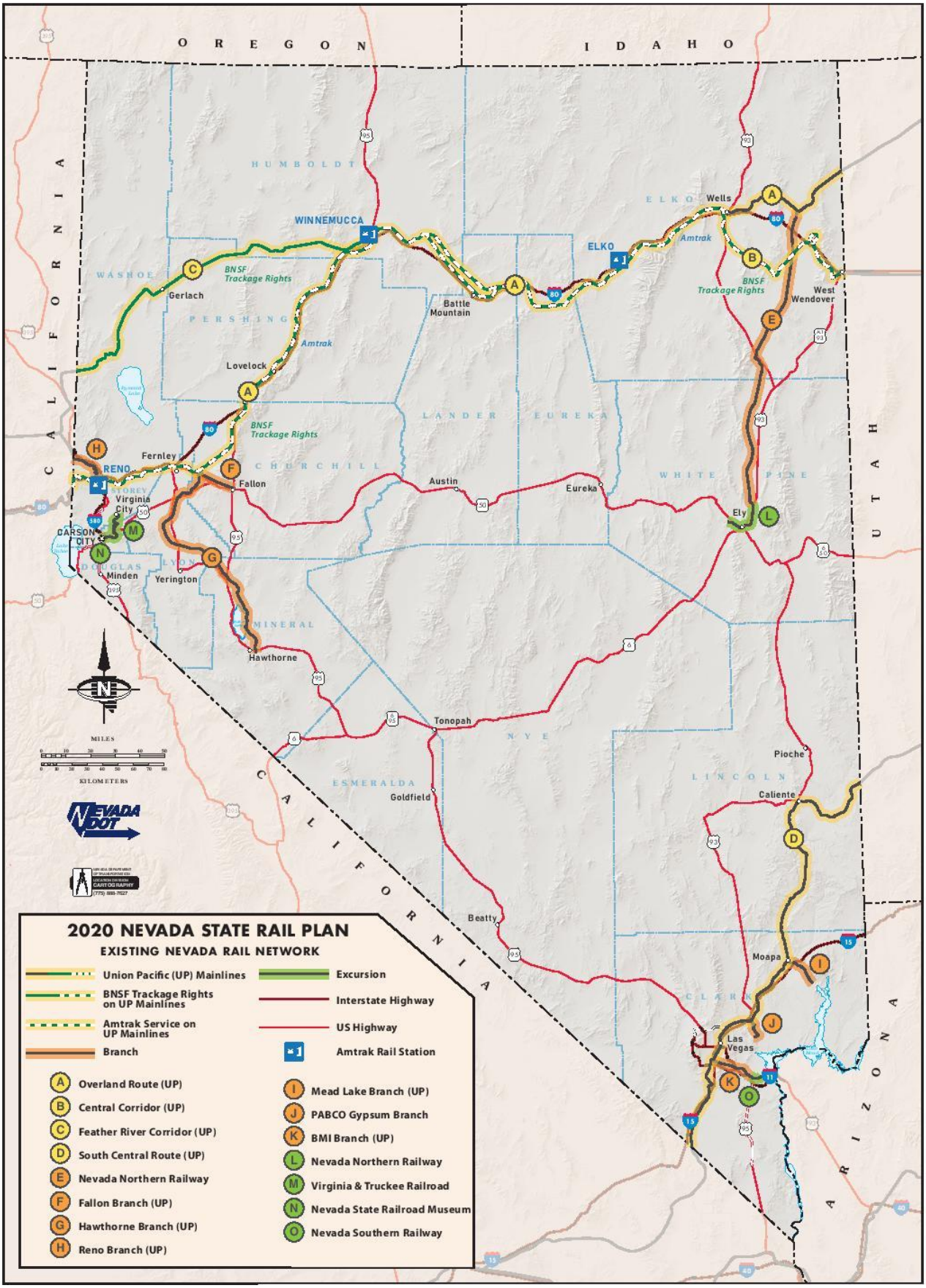
Per NRS 705.428, the Nevada Department of Transportation may contract for the construction, improvement, or rehabilitation of the trackage and other rail properties of any rail line, but no such contract may require the expenditure of state money unless previously authorized by the Legislature. Moreover, as Amtrak is a federally funded intercity passenger railroad, the 2008 PRIIA legislation, Section 209, stipulates that all Amtrak-related passenger services under 750 miles be funded by the states they serve. As Nevada, like all other states, subsidizes highways and airports that otherwise compete with passenger rail, the lack of state funding for passenger rail service precludes public options pending new state legislation.

As a result of these constraints, new passenger rail development in the U.S., especially short- to medium-length intercity routes, has been primarily through private-sector initiatives. Examples include the existing Brightline (South Florida) service and the planned Texas Central and Brightline West services. These private initiatives are predicated on extensive publicly funded studies and research, such as the 2014 FRA's Southwest Multi-State Rail Planning Study, which identify attractive corridors for development and their commercial viability. States like Nevada with Brightline West, benefit from this private-sector investment in passenger rail infrastructure.

Ownership and Access

Every mile of existing rail track in Nevada is privately owned. There are four excursion railroads and one branch line owned and operated by Pabco Gypsum. Union Pacific Railroad, the nation's largest Class I rail company, owns all the main line routes crossing the state, including the path of the only existing passenger service, the *California Zephyr*. **Figure 3-15** illustrates the existing rail network in Nevada.

Figure 3-14: Existing Nevada Rail Network



All the proposals for passenger rail development in this report, except for Brightline West and the Las Vegas Monorail extension, utilize existing tracks. Therefore, permission and access to these privately owned rights of way is fundamental to the development of passenger rail in the state. Union Pacific is the host railroad in most passenger rail development projects listed in this report and is therefore a critical partner and factor in realizing these opportunities.

Negotiation with the host railroad encompasses capacity and access. In terms of capacity, existing infrastructure may require upgrades to support the passenger rail vehicles being proposed, the speeds envisaged, and the construction of stations on the host company's line. In terms of access, new passenger rail operation requires suitable paths to operate the service with the optimal schedule times. Detailed consideration must be given by the host railroad of their present and possible future access needs before committing to any developments that could affect their operations.

Even existing Amtrak services are subject to negotiation with Union Pacific, as sharing the rails has a direct impact on service performance. Amtrak's PRIIA-required study of its *California Zephyr* service found in 2010 that only 30 percent of this route's trains operated on schedule, a condition that continued until 2019, according to Amtrak's Host Railroad Reports. Amtrak's evaluation attributed delays on the route to speed restrictions, dispatching priorities, and right-of-way conditions. Single-track main line operations with existing sidings east of Elko between West Wendover and Wells and west of Winnemucca to Reno have historically resulted in freight-passenger congestion and delays.

Host railroad partnership is a crucial factor in passenger rail development in the state and resulting agreements on access and capacity investments will have a direct contribution to the benefit-cost analysis of the projects.

B-5. Conclusion

The passenger rail service recommendations described in this chapter, and summarized in the table below, are designed to be implemented in collaboration with federal, state, local agencies, public stakeholders, and private interests such as Union Pacific as described throughout this chapter. Most of the recommendations focus on improving rail passenger service in Nevada by utilizing existing railroad infrastructure to the maximum extent possible. This will help minimize project costs and the lead time needed to implement recommendations.

Summary of Passenger Rail Service Recommendations

Recommendation	Page Location
1. Utilize existing railroad infrastructure for expanded rail passenger service	Throughout Chapter 3
2. Initiate Reno/Sparks to Fernley commuter rail service along the I-80 corridor via Union Pacific	Chapter 3, page 29
3. Analyze the potential and develop Reno Area Transit routes as proposed by RailPac and the Sierra Club on Union Pacific mainlines and branch lines	Chapter 3, page 30

Recommendation	Page Location
4. Create additional Northern Nevada stops on Amtrak's California Zephyr to improve mobility for rural Nevada communities on Amtrak's Chicago – Oakland long distance service on the Union Pacific route	Chapter 3, page 5
5. Evaluate and develop the "C"-Route: Las Vegas to Reno via Central California utilizing existing UP, BNSF lines and in the future utilize the Brightline West and California High Speed Rail lines to speed up service	Chapter 3, page 16
6. Extend Amtrak service on the Capitol Corridor to Reno-Sparks via the Union Pacific Railroad	Chapter 3, page 10
7. Re-institute operation of Amtrak's Desert Wind: LA - Las Vegas – Salt Lake City on the Union Pacific	Chapter 3, page 20
8. Establish the Hoover Dam Limited: Las Vegas to Boulder City (Hoover Dam) on the Union Pacific and the Nevada Southern Railway	Chapter 3, page 26
9. Organize collaboration between NDOT and stakeholders: Union Pacific, Amtrak, RTC of Washoe County, RTC of Southern Nevada, RailPAC, Sierra Nevada, Brightline West, Nevada Southern Railway, Caltrans	Proposals throughout Chapter 3

The development of intercity and commuter rail would be a major contribution to meeting the state's environmental, economic, and quality-of-life goals. Although Nevada has a paucity of passenger rail service, this chapter highlighted multiple opportunities for expansion.

The state's existing rail footprint offers a firm foundation for cost-effective passenger rail projects. Existing tracks and rights of way mitigate the sizeable land acquisition and engineering costs that often thwart new service development.

The other area of great potential for increased passenger service is new private-sector development. The most prominent example is the Brightline West project. The idea of new, high-speed passenger rail into Las Vegas from Southern California is exciting for numerous reasons, one of which is not yet fully appreciated: The phalanx of new commuter rail options that could be available to Las Vegas and communities in Southern Nevada.

Nevada's existing Amtrak service spanning the north of the state is an established and core national route. There are multiple options to enhance and expand Nevada's existing intercity rail passenger service cost effectively through utilization of a service that is already subsidized by the federal government.

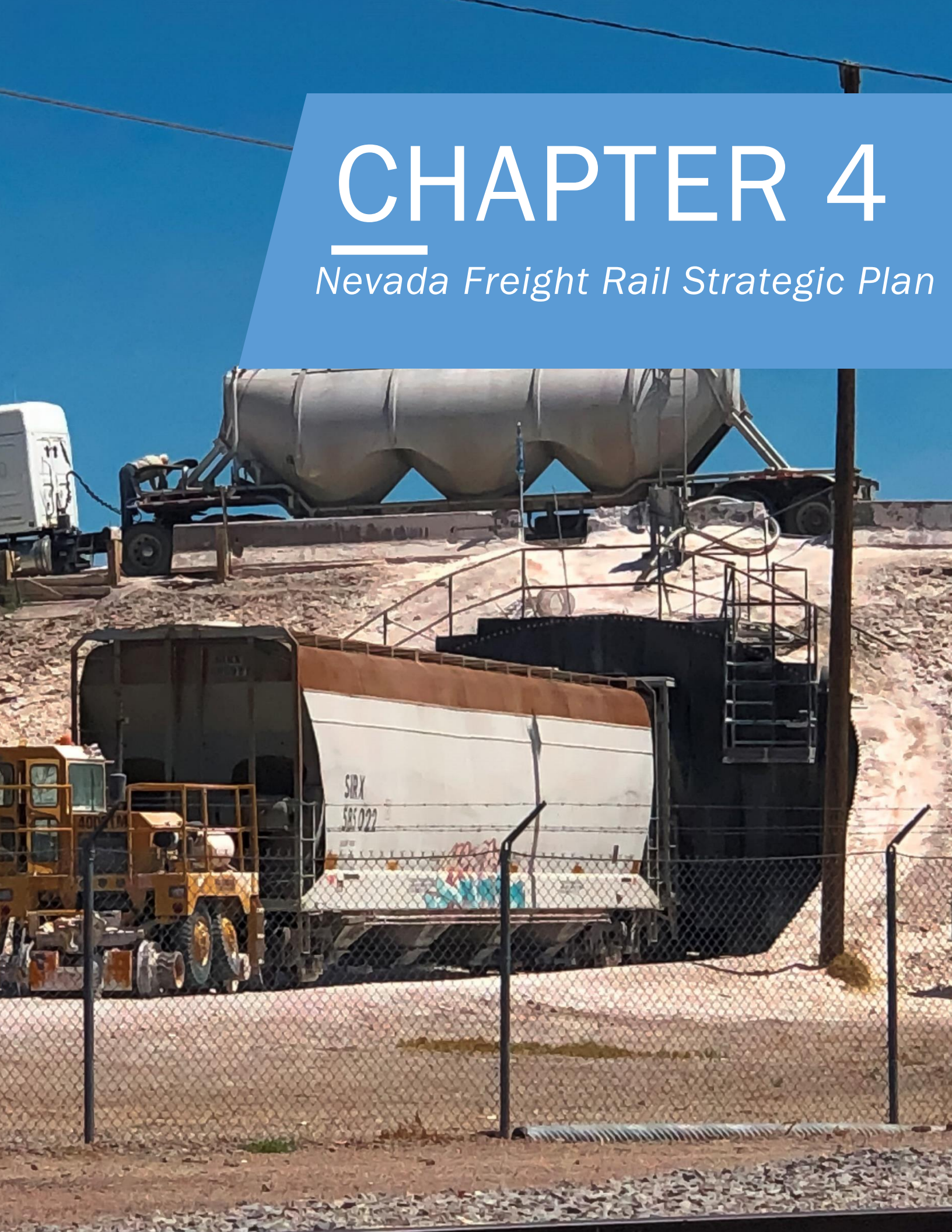
Southbound Onboard the Las Vegas Monorail

This proposed use of the Amtrak line exemplifies a running theme throughout this chapter. Expanding rail passenger service in Nevada is best achieved by leveraging the state's existing assets. In addition, the Brightline West project to construct new, high grade passenger rails into Las Vegas from Southern California is not only highly advantageous in its own right, but it opens the door to new commuter rail options.

Nevada is in a uniquely advantageous position to leverage these advantages and develop expanded rail passenger service in the state.

CHAPTER 4

Nevada Freight Rail Strategic Plan



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Chapter 4 The Nevada State Freight Rail Strategic Plan

Chapter 4 presents the Freight Rail Strategic Plan portion of the Nevada State Rail Plan. The 13 innovative approaches described in the Blueprint for Action are applied here to accelerate statewide freight rail development and funding.

A. Meeting the Opportunity of Rail Development

The new Nevada State Rail Plan (NVSRP) is informed by a well-grounded perspective that there is ample private-sector capital available for good rail projects.[1] Unconstrained by the usual mindset that there is not enough money, the NVSRP moves the state into a proactive, and therefore cutting-edge relationship with its freight rail system and the marketplace. Nevada's abundant resources, particularly of land and its many above- and below-ground uses, present an ideal foundation for a rail-enabled economic and environmental improvement strategy. More than a rail plan, the NVSRP is designed to make a vital contribution to Nevada's recovery from the pandemic-induced economic crisis.

The NVSRP illuminates the path for sustainable growth of rail in Nevada and the United States. Historic shortsightedness in U.S. transportation policy and commerce has limited the high-return opportunity of using more rail to serve Nevada's burgeoning development. This service gap occurs in different manifestations across the country, not just in Nevada. As robust as the rail industry is in North America, there are significant benefits yet to be tapped from railroads' energy, capital, labor, and space efficiency for moving goods and people over land. Optimizing the use of the wheel is key to using land conscientiously, thereby capitalizing on efficiencies that will deliver a cascading array of benefits to Nevada's economy and environment.

United States freight railroads and services are some of the more stable and attractive investments in the world, yet the industry remains underutilized.[2] It *can* be supported in becoming a high-growth, high *social* return industry, if leaders within the industry itself and government act and invest in the best interests of current and future generations. In this critical moment of battered public-sector budgets, funding for freight rail projects is available from well-capitalized private-sector investors and lenders who are eager to invest in rail infrastructure. This Freight Rail Strategic Plan has been structured to attract and facilitate a surge of private-sector investment in Nevada's rail infrastructure to help the state's businesses grow rapidly and sustainably.

A clear-eyed awareness of current societal challenges is required to bring context to this opportunity. Innovation and collaboration are now strategic imperatives for businesspeople, citizens, and government staff to work together to solve major social issues. Transportation congestion, mounting costs for building and maintaining roads and highways, air quality challenges, and supply chain imperatives are some of the multifaceted infrastructural issues that can only be solved with the pragmatic collaboration that has been modeled during the development of the 2021 NVSRP.

Two hundred and thirty stakeholders, including many of the largest industrial land developers and shippers in the state, participated in the Nevada State Rail Plan process. These stakeholder's participation has been motivated by a shared interest in advancing "good rail projects." The Freight Rail

[1]Investable Universe, "Hot Rails: Private Equity's Boxcar Barons See Deals in U.S., Europe" article, source link, published August 12, 2020.
[2]Bezinga website, "Best Railroad Stocks" article, source link, published June 2, 2020.

Strategic Plan is designed to support those rail projects that expand access to the marketplace, improve operations, and contribute to the quality of community life. Nevada, working collaboratively among its many energized stakeholders can benefit greatly from an additional influx of private-sector capital for new infrastructure and commerce. The process of creating the NVSRP has established the system and tool set that empowers stakeholders to think and work together on this rail-enabled economic and environmental improvement strategy. The rest of this chapter illuminates the fundamentals of this strategy, with the next section highlighting the value of engagement with key stakeholder groups.

B. Radical Inclusion Is a Fundamental Building Block

Recognizing rail opportunities, defusing problems, and identifying knowledge gaps statewide require a team of partners. A fundamental building block of NVSRP's success is its orientation toward including "All", rather than "Some" parts of a state in a rail plan. Planning efforts typically apply value assessments whereby only the "highest rated" regions and projects are funded and advanced. The NVSRP illustrates that *all* of the track miles of a state's railroads comprise a connected system. This aligns with the perspective that all communities make valuable contributions to a state's well-being. It is eminently practical and responsible to include all miles, and even feet, of track as well as all regions, towns, and projects. The NVSRP has advanced with radical inclusion in its outreach and coordination strategies. The following is an explanation of why such extensive engagement was conducted.

B-1. Radical Inclusion Part 1: *Businesses and Industries*

The NVSRP has centered its outreach on the business community in Nevada in preparation for optimizing entire supply chains and transportation corridors. It is impractical and wasteful to advance rail plans on an individual project basis. The NVSRP deploys "Collaborative Infrastructure Development" that aggregates the logistical needs and opportunities of individual businesses into viable regional and corridor rail development plans. Projects and operating plans must be developed collaboratively to achieve the volume necessary to warrant rail infrastructure investment and Class I engagement.

Collaboration begins with engagement and dialogue. For example, business leaders throughout the state have been asked about sharing existing or new rail facilities, even proprietary facilities with businesses having complementary logistics needs. Their chorus of replies reflected a genuine intrigue with the concept. Aggregating shippers to share the use of rail facilities also establishes the critical mass of railcar volumes essential for railroads to justify new or improved rail service.

Establishing this degree of transparency and trust requires earnest and robust stakeholder engagement. Businesspeople are wary of sharing their plans unless they are engaged in interpersonal dialogues. Typical state rail plan stakeholder outreach is conducted through town hall meetings, poster presentations, surveys, and relatively few interviews. These methods provide a limited window through which one might see the rail growth opportunities in a state. The NVSRP incorporates a comprehensive communications strategy that includes email and telephone contact, knocking on doors, and meeting to connect *personally* with stakeholders. From the outset, stakeholders who have contributed to the NVSRP have not simply been surveyed for their input—they have been engaged in an ongoing partnership for rail development.

Even as the NVSRP goes to print, new stakeholders with roles in logistics-oriented commerce, development, and planning in Nevada continue to be brought into the effort. The most sustainable policies, programs, and strategies are developed from input that elevates and incorporates all

perspectives. Throughout the state of Nevada, stakeholders have enthusiastically expressed appreciation for this opportunity to contribute and collaborate.

> "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

B-2. Radical Inclusion Part 2: *Key State Policy Makers & Private Sector Influencers*

Key Nevada policy makers and influencers, as well as business and community stakeholders collaborated to advance the likelihood that rail plan recommendations will be embraced and enacted. For example, support was gathered for the NVSRP's transportation and land use policies and plans through focused outreach to the Nevada State Land Use Planning Advisory Council, land developers throughout the state, local and county elected leaders, and professional urban and rural planners. Likewise, the NVSRP's Mining Materials Supply Chain Logistics Strategy has been discussed with the Nevada Division of Minerals, the Nevada Mining Association, The Mackay School of Earth Sciences, and many mining companies and suppliers.

B-3. Radical Inclusion Part 3: *County Planners and Economic Development Agencies*

Regional, county, and local economic development and planning staff field many early-stage opportunities when rail logistics knowledge can inform a business's optimal choice of location and transport mode. Nationally, these key staff have a generalized belief that rail-based development is good for the economy and the environment. However, their understanding of many of the unique aspects of rail development is typically limited due to a dearth of academic and professional education in rail transportation. Rail planning depends on providing these participants with this relevant knowledge.

B-4. Radical Inclusion Part 4: *Land Developers and Landowners*

The optimal use of freight railroads begins with informed conception of logistics services at each property. With land in Nevada undergoing rapid industrial development, there is a compelling and urgent call to engage with landowners on how freight and people will move to, from, and within their sites. The NVSRP team has met over the course of the last year with the largest landowners and developers in the state, including the developers of the 110,000-acre Tahoe-Reno Industrial Center in Sparks, the owners of the 70,000-acre planned Innovation Park, and the managers of Clark County's 17,000-acre Apex Industrial Park. The NVSRP team engaged with developers controlling over 650,000 acres who have stepped into ongoing dialogue for advancing rail-enabled development.

C. Supply-Chain Infrastructure Planning

Transportation Infrastructure Can Be Conceived to Support Whole Supply Chains

The United States enjoys an abundance of natural resources and robust private-sector commerce, accompanied by an ongoing increase in truck activity. Consequently, transportation departments in every state are struggling to fund road construction and maintenance to keep up with growing road wear and congestion. Meanwhile, the country benefits from a freight rail system that is almost entirely funded and maintained by the private sector. Given the critical role of transportation infrastructure in our nation's most important supply chains, it is imperative that states lead the transition to a balanced

use of roads and rail. Nevada's current surge of industrial development and its adjacency to California and west coast ports present a rich opportunity to plan infrastructure for supply chain optimization that minimizes the public costs and community impacts of this growth.

What is commonly called "supply chain optimization" has been narrowly focused on individual companies' material sourcing and product distribution. Consequently, in 21st century North America, neither the marketplace nor the public sector has been able to comprehensively plan infrastructure for efficient supply chain systems.[3] For example, in 2008 at the height of America's ethanol-production boom, hundreds of billions in investment capital poured into the ethanol industry to fund individual "competing" infrastructure projects. Ethanol production skyrocketed while the ad hoc transportation and distribution system remained inadequate for meeting the nation's important energy needs.

Nevada's long-standing mining industry presents a compelling opportunity to apply "whole systems" supply chain infrastructure planning. Section C.2 describes the NVSRP's *Mining Materials Supply Chain Logistics Strategy*. Nevada's mines in the 21st century have become a global provider of silver, gold, copper, and "strategic minerals" critically needed for electronics and alternative energy systems. Supply chain infrastructure planning will bring transportation efficiencies and enhanced market access to Nevada's mining industry. This opportunity has been well-received across the industry. During a NVSRP Regional Meeting, the North American head of logistics for a Nevada gold mining company expressed their company's "interest in connecting with their South American operations" via rail through west coast ports. Nevada has a timely opportunity to expand and diversify its commercial base by empowering its mining industry with a rail-enabled logistics system that connects producers, suppliers, and customers across the state and world. The logistics system to be forged by the *Mining Materials Supply Chain Logistics Strategy* would also allow Nevada to retain more value in the supply chain as it enables an expansion of in-state "Beneficiation." Beneficiation refers to the economic and environmental improvements experienced by natural resource-producing regions when moving up the mining value chain. Section C.2 provides a global perspective on Nevada's Beneficiation opportunity. First is an overview of the state's mining activity.

C-1. Nevada's Mining Industry – Overview & Trends

Mining continues to be a major industry in the Nevada economy with an $8 billion gross value of produced minerals in 2018.[4] For the past 5 years, Nevada mining has consistently ranked in the top 10 in global investment attractiveness, including a 3rd place ranking in 2019.[5] The mining industry provides a fairly small share of overall Nevada employment (1.2% in 2016, predominantly in rural communities). However, the two major mining companies, Barrick Mining and Newmont Mining, both consistently rank in the top ten highest assessed taxpayers in the state. This speaks to the fact that the mining industry is a powerful economic contributor to Nevada.

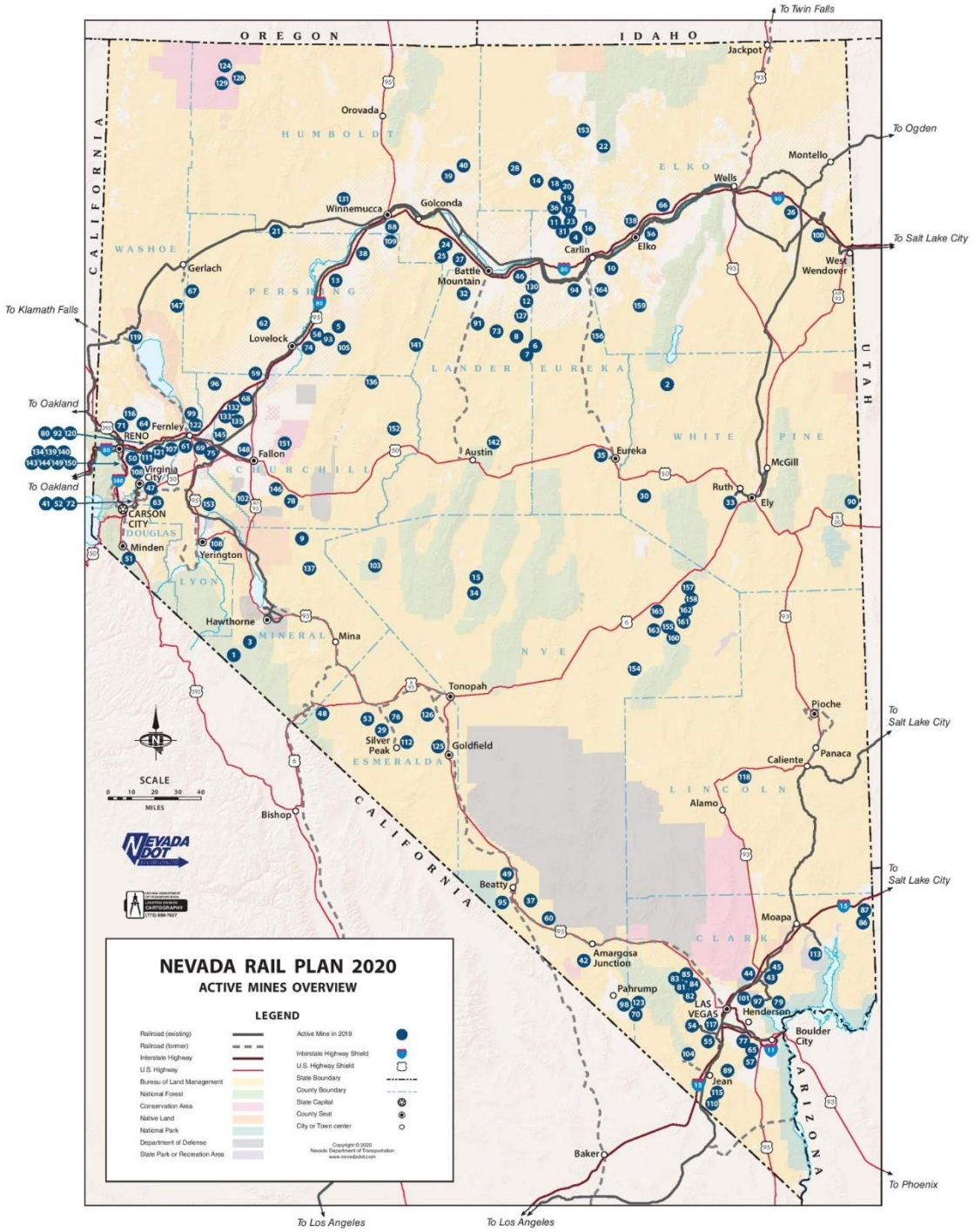
[3] Vimmerstedt, Laura J.; Bush, Brian & Peterson, Steve, "Ethanol Distribution, Dispensing, and Use: Analysis of a Portion of the Biomass-to-Biofuels Supply Chain Using System Dynamics", PLoS One Journal, source link, published May 2014.

[4] Nevada Commission on Mineral Resources – Division of Minerals, Report "Major Mines of 2018", source link, page 26.

[5] Fraser Institute Survey of Mining Companies, 2019 Annual Survey of Mining Companies, source link.

Currently there are 20 major minerals mined in Nevada with 103 active mining sites as of 2018, shown in the map below.[6]

Figure 4-1: Nevada Active Mines Overview



[6] Nevada Mining Association website, source link, website accessed July 9, 2020.

Gold, silver, copper, barite, magnesium, and, increasingly, lithium are among the more important minerals mined, based on revenue and production. Nevada is the fifth largest gold producer in the world and is responsible for 83% of U.S. gold production.[7] Nevada ranks second in geothermal energy mined in the U.S. (California is the top producer).

Due to stable prices, conducive regulatory environment, and continued population growth, the Nevada mining industry in gold, silver, etc. is projected to continue to be strong for many years to come. The projected exponential demand in electric vehicles and batteries will require significant increases in lithium and copper production.[8] In 20 years, 56% of all light-duty commercial vehicles and 31% of all medium-duty commercial vehicles are projected to be electric. [9] Demand for copper in vehicles is expected to increase by 1,700 kilotons by 2027. Tesla operates their "Gigafactory", a lithium-ion battery and electric vehicle subassembly factory in Sparks. Nevada has the only mine producing lithium in the U.S., called the "Lithium Hub", located near the Tesla Gigafactory facility.

The Nevada Department of Employment, Training and Rehabilitation projects 2026 employment in the Natural Resources and Mining sector to be stable at a 1.1% employment share of the overall state workforce compared to a 1.2% share in 2016.[10]

Table 4-1: Nevada Long-Term Industrial Employment Projection from 2016-2026[11]

Industry Title	2016 Employment	2016 Employment Share (to all NV Industries)	2026 Employment	2026 Employment Share (to all NV Industries)	2016-2026 Total Change
Natural Resources & Mining	16,671	1.2%	18,345	1.1%	+1,674

C-2. Mining Materials Supply Chain Logistics Strategy

Elevating the planning focus from individual projects to encompass the whole network of mining industry supply chains will deliver measurable financial, economic, environmental, and social benefits to Nevada's businesses and communities. The foundation for this supply chain strategy exists as Nevada already engages in vigorous cross-sector collaboration among its mining industry, government, and academia. The Nevada Mining Association, the Nevada Division of Minerals, the Nevada Bureau of Mines and Geology and the Mackay School of Geology and Earth Sciences collaborate with each other and with the many mining and mining supply companies in the state. Each of these organizations has provided input into the *Mining Materials Supply Chain Logistics Strategy*.

Following is an inquiry-based outline of the analytical process for "mapping" the Nevada mining industry and improving its supply chain efficiencies and opportunities. This supply chain mapping will guide

[7] Nevada Commission on Mineral Resources – Division of Minerals, Report "Major Mines of 2018", source link, page 23.
[8] Nevada Commission on Mineral Resources – Division of Minerals, Report "Major Mines of 2018", source link, page 26.
[9] Nevada Mining Association, Presentation "Mining Through Uncertainty", source link, page 98.
[10] Nevada Department of Employment, Training and Rehabilitation, 2016-2026 Long-Term Employment Projections, source link.

Nevada to a system for transporting and distributing mining materials before and after extraction and will inform the smartest siting of new processing and manufacturing facilities.

Mapping the current mining materials and supply chain

1. Where is each mine located in the state?
2. What company owns each mine?
3. What company operates each mine?
4. What activity is going on at each mine? What materials are mined?
5. What supplies in what quantities are brought into each mine?
6. Where do those supplies originate?
7. What transportation mode(s) and facilities are used for each supply item?
8. What ore elements and volumes are produced at each mine?
9. At which mines are the ores currently refined onsite?
10. If refined onsite, where and how are the refined minerals shipped?
11. Where are the in-state and out-of-state processing, refining, and smelting facilities?
12. Where and how is each ore element transported to offsite refining or smelting?
13. What quantity and type of byproducts are generated at each mine and where and how are they shipped?
14. What quantity and type of waste products are generated at each mine and how and where are they disposed?

Mapping the materials and supply chain for mines in development

15. Apply the same questions above to mining projects, proposed or in development

Mapping current transportation, storage, and distribution facilities

16. Where are the in-state rail- and truck-served mining supply warehouse and unloading facilities?
17. Where are the in-state rail- and truck-served mining materials distribution and storage facilities?

Discerning the optimal mining materials and supply chain logistics system

18. What are the requirements and metrics for mining supply provision?
19. What are the requirements and metrics for mining materials transportation?
20. What are the requirements and metrics for mining materials storage?
21. What are the requirements and metrics for mining materials distribution?
22. What is the competitive landscape of mines in the state?
23. What new supply chain developments would enhance mining operations?
24. Where can new rail line construction enhance mining operations and minimize transportation costs and impacts?
25. Where can new rail loading facilities enhance mining operations and minimize transportation costs and impacts?
26. Which communities and residents should be included in evaluation of siting new facilities and infrastructure?

Diversification and Beneficiation—logistics for new processing and associated product manufacturing

27. Where can new smelting, processing, or refining facilities be optimally located in relation to the needs, benefits, and impacts of transporting mining products, by-products, and waste streams?
28. What new associated product manufacturing facilities are made viable by Nevada's mining activity and location in the market?

29. Where can new associated product manufacturing facilities be optimally located in relation to the rest of the supply chain?

The *Mining Materials and Supply Chain Logistics Strategy* outlined above can be a collaborative effort among the University of Nevada-Reno, the Nevada Mining Association, and the Nevada Bureau of Mines. The Nevada Mining Association's co-sponsorship of the project will go a long way toward fast-tracking the effort and minimizing the staff time required to map out the entire mining supply chain system. Conversations in the state during the development of the NVSRP has provided early indications that the project is well-received by the association and its members. An efficient budget could be funded by a combination of potential sponsors such as the Governor's Office of Economic Development, the Nevada Mining Association, individual mining company sponsors, and Nevada charitable foundations. Several federal agencies that offer planning grants, such as the U.S. Department of Agriculture, particularly for rural areas, may be motivated to co-fund this innovative effort as well.

Rail lines and rail-served transload, storage, and distribution facilities conceived to improve efficiencies and expand opportunities for Nevada's entire mining industry will provide the infrastructure backbone for beneficiation, a transformational enhancement of the state's economic well-being.

C-3. Beneficiation of Nevada's Natural Resource Economy

The western states of the U.S. are rich in primary mineral resources and thereby make a significant contribution to the wealth and economic security of the nation. These extractive resources are abundant and varied, ranging from volume aggregates to high value precious metals. Whereas the agricultural Mid-West and Great Plains are America's breadbasket providing food security for the nation, the western states provide a similarly important resource security. Thanks to this natural endowment the U.S. does not suffer the same vulnerability of other global economic powerhouses such as China, Japan, and India who are far more dependent on importing primary resources.

The value of extractive goods, especially the non-oil resources found in Nevada and other western states, goes beyond economic security and resource self-sufficiency. Materials from aggregates to copper to lithium to silver are crucial feedstocks to U.S. manufacturing, technology, and construction industries as well as a major revenue earning export.

Despite this disproportionate economic importance and value contributed by Nevada mining, the state is one of the lowest contributors to U.S. gross domestic product (GDP).[12] This dichotomy is partly explained by the methodology employed in GDP calculations, but it also reflects how the state is not taking full advantage of its significant natural resource endowment. The state has a strong mining focus concentrated on the initial stage of a four-phase value chain which starts with extraction and moves through processing to manufacturing and distribution. There are historic reasons why the development of Nevada focused on extraction but looking ahead there is a clear opportunity to change the dynamics of the resources supply chain, bringing more of the higher value activities into the state.

There are economic and environmental benefits for Nevada's embrace of higher value activities. This is referred to as "Beneficiation", an economic development term for a strategy that leverages an existing sector to create additional jobs and economic activity in subsequent stages of the value chain. In the

[12] Statista website, "Which States are Contributing the Most to U.S. GDP?" article, source link , published June 8, 2020.

resources sector, this often means creating new industries that process a region's resources locally rather than simply exporting raw materials. In the case of gems, this could involve cutting and polishing the stones. For metals, it could be building capacity in the refining and manufacturing processes. As highlighted by the Nevada Bureau of Mines 2018 report, "Opportunities for Precious Metals Toll Processing and Copper Concentrate Processing in Nevada"[13]…

> "…a case could be made for establishing a concentrate processing facility in Nevada, if production from other western states that is now exported and the potential production from undeveloped resources in Nevada and other states are considered along with the current Nevada production.
>
> "Development of a concentrate processing facility may attract downstream copper facilities such as rod plants, wire manufacturers, brass mills, and copper-alloy manufacturers."
>
> "Transportation of concentrate to a new processing facility requires accessibility to highway and rail systems."
>
> "Tentatively, a swath of potential locations along the I-80 corridor west from Wells west to about Fernley then south between highways US-95 and US-95A toward Yerington is initially proposed. At first look, this swath of land appears to provide access to transport and utilities required to support a processing facility. Potential areas for siting a concentrate processing facility are highlighted on the map on figure 1. These areas have access to highway and rail systems, the electrical grid, and natural gas pipelines as well as having no current sources of air emissions within the boundaries of the basin."

Although local beneficiation is often recommended in development strategies for resource rich but economically poor countries in Africa, Asia, and South America it is equally applicable to major economies such as Canada or Australia, and it is highly applicable to Nevada.

The state's rail strategy is key to realizing the economic development advantages of beneficiation. Advancing higher value industries requires an effective and reliable freight transportation network with sufficient capacity and scalability to support growth. This growth can only be served when Nevada's rail network is augmented to accommodate rail movement between in-state businesses. As pointed out in the freight data analysis reported in Chapter 2, the share of intra-state freight rail activity (originate and terminate the same railcar load of freight within the state) is currently about .25% of overall rail traffic in Nevada.

Fortunately, as described in Chapter 2, Nevada enjoys an existing core of rail infrastructure including operational and dormant freight lines and sidings, as well as relatively attractive topography for building new rail connections. Therefore, rail can be a powerful catalyst for a successful beneficiation program in Nevada, providing the robust freight infrastructure necessary to support inbound, outbound, and intra-state supply chain movements. Without rail, beneficiation will be limited by the constraints of road-based transport and its consequent environmental and congestion impacts.

[13] Nevada Bureau of Mines and Geology, Report 57: "Opportunities for Precious Metals Toll Processing and Copper Concentrate Processing in Nevada", source link, accessed August 26, 2020.

The economic benefits are significant for the state. By expanding up the mining value chain, Nevada will realize increased employment, a greater diversity of jobs, higher salaries, and increased state tax revenues from a growing business sector and expanding population. These benefits create a virtuous circle whereby greater state revenues fund improvements in infrastructure attracting even more businesses and residents.

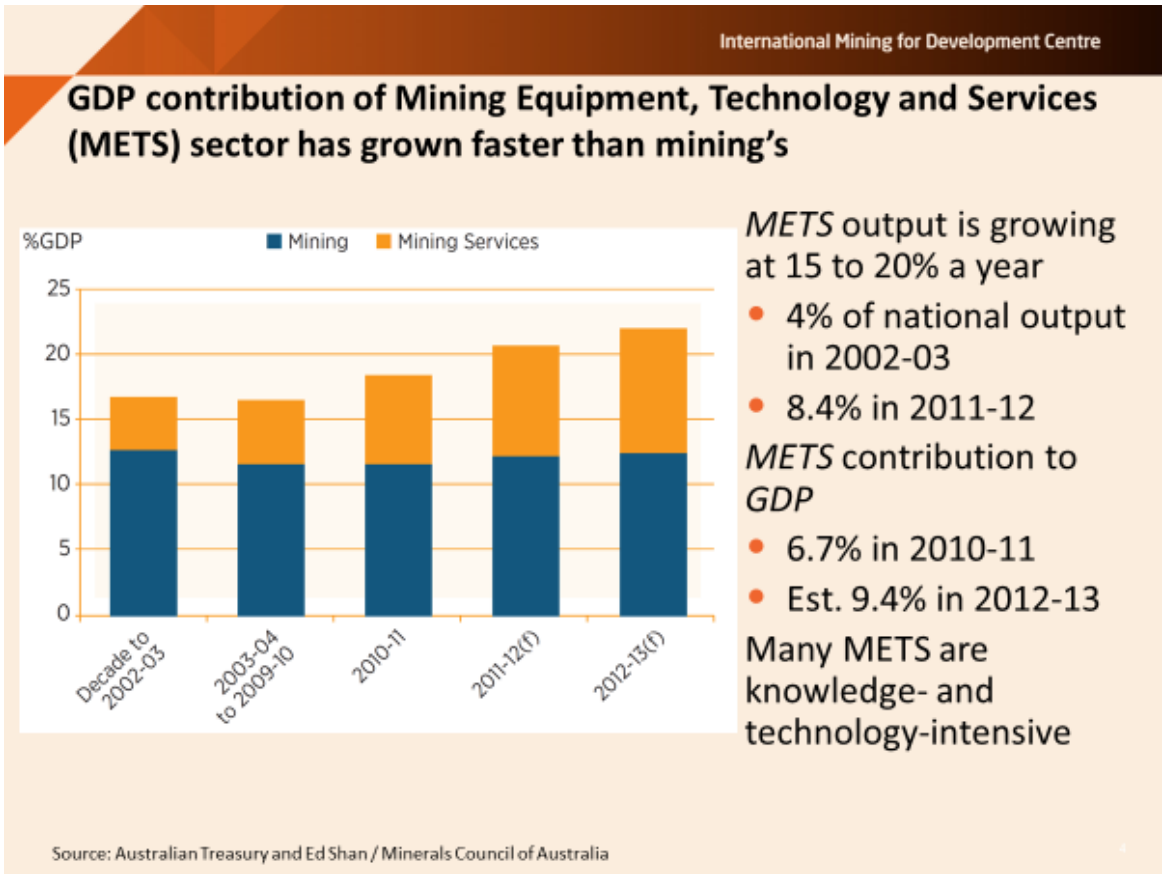
The relative impacts of beneficiation differ by commodity but can bring substantial economic growth to all primary extractive resource sectors. Case studies, research, and analysis around the world demonstrate that any movement up the value chain generates economic benefit. The greatest economic benefits derive from the increased value of added-value processing and manufacturing. One example is when the Indonesian government restricted the export of raw nickel ore, bauxite, and tin in 2014 to encourage the development of local processing capacity. This resulted in exports of refined metals growing at an annual average rate of 9.2% over five years (to 2019), from $9.3 billion to $13.4 billion.[14] In 2019, China implemented policies to reduce exports of raw rare earth elements, triggering new economic development from downstream processing of products such as magnets, catalysts, alloys, and glass. South Africa has also attempted to develop a diamond cutting and polishing sector by restricting licenses for the sale of mined diamonds.

Examples of beneficiation are not limited to the developing world. In 2003 the Australian government sought to move up the extractive industry value chain to reduce commodity price volatility and over-dependence on the export of raw extracted materials to China. The country took creative steps to bring diversity and high value production into its mining states. One successful approach took advantage of mining industry clusters to create a Mining Equipment, Technology and Services (METS) sector. The METS sector has grown into a major economic contributor for Australia, growing at double the rate of the mining sector and contributing an equal share of GDP by 2012.[15] See the tables below from the International Mining Development Centre/World Bank.

[14] Mining.com website, "Indonesia moving up the mining value chain – report", source link, published July 28, 2020.

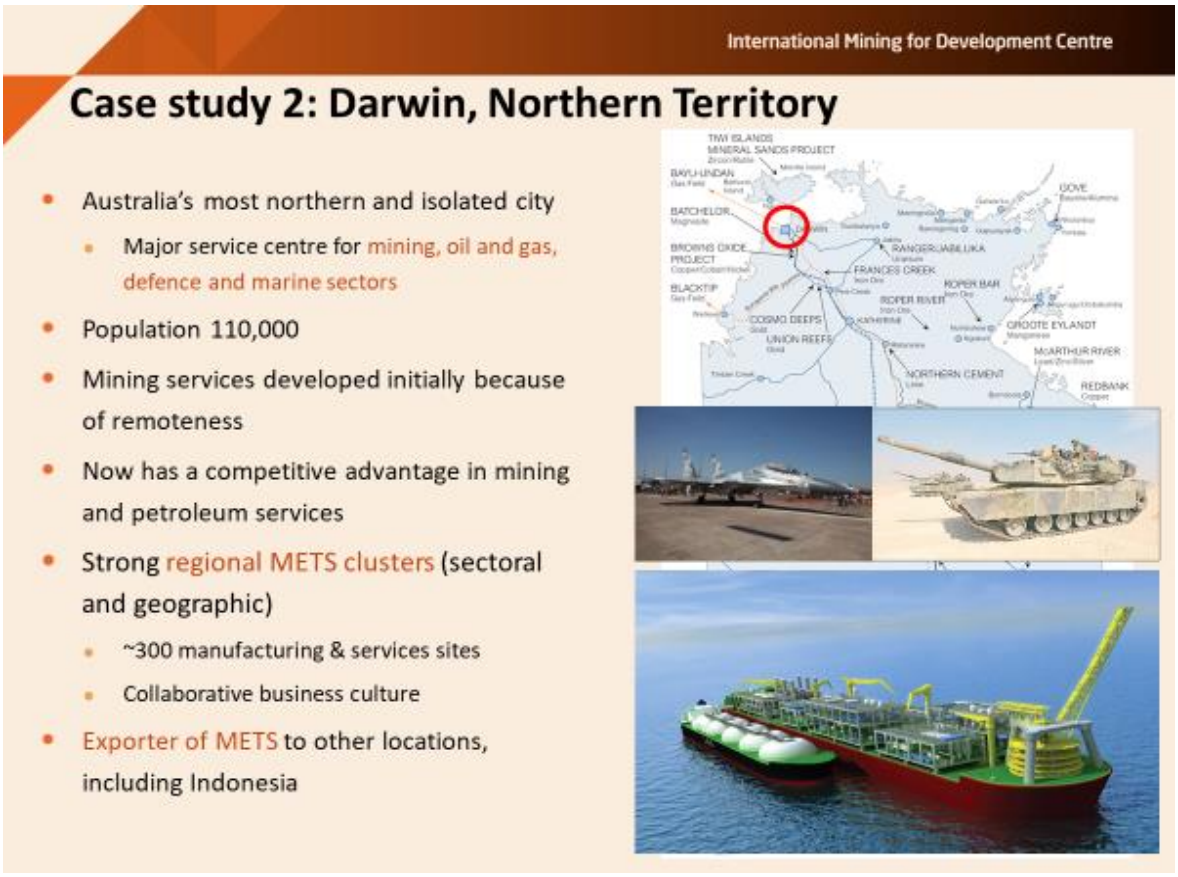
[15] International Mining for Development Centre/World Bank, Presentation: "Enabling the development of industrial capacity: Resource corridors, clusters and SEZs", source link, accessed August 26, 2020.

Table 4-2: GDP contribution of Mining Equipment, Technology and Services Sector[16]



[16] International Mining for Development Centre/World Bank, Presentation: "Enabling the development of industrial capacity: Resource corridors, clusters and SEZs", slide 4, source link, accessed August 26, 2020.

Table 4-3: METS Case Study 2 – Darwin, Northern Territory[17]



This Australian example shows that the opportunities for economic benefits from beneficiation expand to new and aligned industries in addition to direct downstream manufacturing. A further benefit is that diversifying economic activity up the mining value chain reduces the impact of fluctuating commodity prices on the state's economy. Having such downstream industries in-state provides diversity which reduces the proportion of output affected by often-volatile commodity prices in a global market.

Nevada is positioned to benefit substantially from beneficiation simply because it's location in the continental United States gives it direct access to North America, the world's largest economic zone. Having such a large market means Nevada depends far less on international exports than other developed, resource-rich countries such as Australia and Norway. A dependency on exports gives leverage to the importing nations who will seek to keep a greater share of economic value by importing raw materials rather than processed or manufactured product. For Nevada, a huge and free internal North American market, connected by transcontinental transportation corridors, removes this constraint, and clears a path for developing an economy which moves up the vertical value chain.

In addition to the economic factors, there are clear environmental benefits as well. Nevada's roads are increasingly congested, and air quality is suffering. High volume road movements of extracted materials trucked to out-of-state facilities, primarily in California is a prime cause of these impacts. These truck

[17] International Mining for Development Centre/World Bank, Presentation: "Enabling the development of industrial capacity: Resource corridors, clusters and SEZs", slide 8, source link, accessed August 26, 2020.

movements, in coordination with a robust expansion of the intra-state rail network, would be redirected to far shorter, less environmentally damaging local road and rail hauls to in-state facilities. Moreover, the additional revenues from beneficiation would fund investments that improve the road and highway network and its integration with rail.

C-4. Nevada's Other Commodity Supply Chains

Mining, as Nevada's largest user and producer of materials that can be effectively carried by rail, should be the industry to focus on with this rail-enabled, supply chain improvement strategy. The lessons learned, including the rail expansion strategies identified can then be applied to other regional supply chains that are most active in Nevada:

- Food and beverage
- Building materials
- Chemicals
- Waste, scrap, and recycling[18]
- Manufacturing
- Agricultural products
- Energy

C-5. Rail Electrification Addresses Nevada Governor's Executive Order on Climate Change

Rail electrification in Nevada harmonizes with Nevada Governor Steve Sisolak's 2019-22 Executive Order on Climate Change, which calls for, in Section 6: B. *"Support for transportation electrification and demand management, including infrastructure, fleet procurement, alternative funding mechanisms and other programs."*[19]

During the 20-year horizon of the NVSRP, Nevada transportation will likely follow the global transition to non-petroleum-based power for freight and passenger vehicles.

A statement on electrification by the Rail Electrification Council[20] is included in the Appendix. The National Electrical Manufacturers Association developed the Rail Electrification Council[21] (Council) to promote the adoption of electricity as the principal motive power of domestic railroad (freight and passenger) transportation and as an enabler of electric grid integration and innovation.

D. Funding Rail Development in Nevada

The freight railroad industry is, at the most fundamental level, a support industry – an industry that enables efficient operations of other industries, such as mining, energy, automotive, and agriculture. Diverse Nevada industries need better connections to Class I railroads via new and revitalized short

[18] *A draft report on recycling in Nevada cites transportation as challenge in reaching Nevada's goal of recycling 25% of its waste. Economical rail transportation can be a key enabler of the hub-and spoke collection scheme envisioned by the report; pages 3, 21, and 26* – "2021 Waste Reduction and Recycling Report" - Nevada Department of Conservation and Natural Resources, Division of Environmental Protection, Bureau of Sustainable Materials Management

[19] Nevada State Government Website, " Governor Sisolak Signs Executive Order Directing Administration to Collaborate on Achieving Nevada's Climate" article, source link, published November 22, 2019.

[20] For more information, please visit: https://www.nema.org/directory/products/rail-electrification-council

[21] For more information, please visit: https://www.nema.org

lines, industry tracks and yards, transload facilities, and intermodal terminals. Other sections of this strategic plan list many of these needs and opportunities, of varied sizes, regions, and stages of development. While big railroads themselves do not need funding support, many of these customer projects do. Several will likely falter otherwise.

State government should not have to fund freight rail development, as railroads and shippers are engaged in private-sector, income-producing activity that can attract private-sector funding. This statement is true for large rail projects and smaller projects. This is not the same as saying that those projects do not need public support, a distinction explained in the Appendix Item, Funding Resources and Strategies. All other funding recommendations of the NVSRP can be found there.

E. Stewarding Plans to Action

Focused action (not just static reports) begins with dynamic reformulation of plan documents. How are the multifaceted perspectives and collective intelligence of stakeholders catalogued and organized? Where and how will the documents be housed? Will they be in written and/or electronic interactive format to allow for ongoing stakeholder input? Is the content presented in a narrative and/or outline format? To provide for accessibility and collaboration, Nevada will host the 2021 rail plan on the NDOT website www.nevadadot.com/rail.

This interactive website database should have four sections:

- Asset Inventory = Data and maps at state, regional, corridor, property, and project levels
- Dialogues = A matrix of facilitated stakeholder discussions by region, industry, or topic
- Planning = Organized process for systematic advancement of each initiative
- Stewardship and Funding = Details of plan implementation from start to completion

Providing education, information, context for collaboration, and technical assistance to businesses is a proven recipe for success. Here are two analogous examples:

1. The nationwide network of extension offices sponsored by the U.S. Department of Agriculture spans the country and is often associated with states' university systems. Extension offices are run by employees and volunteers—teams of experts in crops, fertilizers, environmental sustainability, and economics relating to agriculture, animal husbandry, and landscaping. They provide locally relevant information to farmers, businesses, and residents—bringing agricultural expertise, training, and knowledge to those who need it.

2. The network of over 1,000 Small Business Development Centers across the United States are sponsored by the U.S. Small Business Administration and hosted by universities, state economic development agencies, and private sector partners. They provide educational assistance, professional business advice, counseling, and information to entrepreneurs and small/medium sized companies to support their growth and create jobs for long-term economic impact.

Unlike many business support programs, the proposed Nevada Freight Rail Development Fund could quickly transfer financial support from partner and sponsor seed funding sources to a conglomerated social enterprise that provides consulting services, site selection services, industry partnerships, and services.

In summary, NDOT's Rail Division (or a new purpose-built entity) can function as a clearinghouse for rail information, expertise, financing, and training, in order to:

- Support small shippers so they can flourish into the big rail users of tomorrow.
- Bring resources to small- and medium-sized rail infrastructure projects.
- Bring rail awareness to all large-lot shippers and receivers in Nevada.
- Encourage the sharing of tracks and facilities, particularly for new branch lines.
- Introduce shippers and receivers who would not normally interact or cooperate.
- Stimulate the reactivation of the Nevada Northern Railway and the creation of other short lines.
- Create a culture of collaboration among Nevada's shippers, receivers, transportation providers, developers, and public planners.

The next section identifies a comprehensive set of recommendations for expanding and improving Nevada's rail system, beginning with important background on Nevada's rail network and its opportunity.

F. Rail Service Expansion Recommendations

The NVSRP's recommendations for expanding rail service outlined in this section address these fundamental characteristics of the Nevada Rail System:

- Rail trackage consists of three east-west main lines
- There are few branch lines
- Rail service between Nevada and California is limited
- Rail service between Nevada and the rest of the country is limited
- Rail service in Nevada is oriented around a few large shippers
- Rail service between Nevada businesses is practically non-existent

Background for Expanding the Nevada Rail System

Railroads arrived in Nevada during the continental drive to connect the rest of the country to California, most famously when the Central Pacific built across northern Nevada to connect with the Union Pacific at Promontory Point, Utah on May 10, 1869, marking the completion of the first transcontinental railroad. In 1905, a second main line was built through the state, this time across southern Nevada, by a Union Pacific subsidiary to connect the UP in northern Utah with Los Angeles. Between 1907 and 1909 the third and final main line across Nevada was built—the Western Pacific, which largely paralleled the Central Pacific (by then part of the Southern Pacific's vast rail system) across northern Nevada. All three main lines are now owned by the UP, which uses these lines primarily as connections between California and the rest of the nation.

The frenzy of railroad-building in Nevada during the first decade of the 20th century included the construction of 22 independent short lines, including the Nevada Northern Railway to Ely, the Eureka & Palisade Railroad to Eureka, the Nevada Central Railway to Austin, the Virginia & Truckee Railroad to Carson City and Virginia City, the Carson & Colorado to Keeler, CA, the Tonopah & Goldfield Railroad to Goldfield from the north, the Las Vegas & Tonopah Railroad to Goldfield from the south, and the Tonopah & Tidewater Railroad to Ludlow, CA. None of these 22 short lines have survived as a common carrier of freight, and almost all have long been abandoned and scrapped. Rail mileage in Nevada peaked in 1914 at 2,422 miles, diminishing over time to its current 1,193 active rail miles. There are currently 603 active freight short lines in the U.S., and Nevada is the only state in the Lower 48 without one. However, there are several large mining and industrial development projects in Nevada which would appear to be prime candidates for the construction of new short lines, and these should be encouraged for multiple reasons:

- To make these projects more economically viable in the long run,
- To reduce the impact of these projects on Nevada's road network and environment, and
- To spearhead the economic development of additional areas in the state.

Opportunities for rail service expansion abound, as there is currently negligible intrastate movement of freight by rail. That is, almost no Nevada shipper transports freight to a Nevada receiver by rail. However, there are numerous opportunities to save transportation expense, and reduce environmental impact and highway wear by using railroads for freight movements such as mined ores to in-state processing facilities or users, and municipal solid waste to processing facilities or disposal sites.

As another example of the latent opportunity, there is only one warehouse or distribution center in Nevada that utilizes its sidetrack connection to the rail system. However, the reliability of railroad linehaul service has greatly improved with the recent advent of Precision Scheduled Railroading (PSR), which, by making similar improvements to local switching service, will bring rail service reliability in line with truck service. This potential service quality improvement will require local presence and attention.

In October of 1980, the United States Congress passed a body of federal legislation that eased regulations on the railroad industry. The new regulatory framework allowed large railroads (Class Is) to sell line segments to entrepreneurial rail operators better equipped to focus on local rail service and customer development. In addition to lower operating costs, these regional (Class II) and short line (Class III) operators initiated flexible hours and work assignments, all vital to the task of assisting shippers through start-up and ongoing use of rail transportation. Nevada has no such Class II or Class III rail operations, a limitation that must be addressed to advance many of the projects and strategies identified in Chapter 5's Rail Service and Investment Program.

This limitation has created a rail service gap that the state of Nevada should and can address. Simply spending more money or passing new legislation will not enable more rail service. Nevada needs a "shortline approach" to statewide rail business development, which can be accomplished in a number of ways. That approach must be co-created with Union Pacific Railroad and BNSF.

Transforming rail service in Nevada demands planning and development at the level of the logistics needs of individual shippers and receivers. There are many shippers and logistics-oriented land developers already active in the state. Fostering their expanded use of rail with targeted individual commercially relevant action is the way the NVSRP will deliver the most robust and expedited economic benefit to the state. A state's freight rail planning effort can deliver a measurable expansion and improvement in rail service when it coordinates engagement with shippers around their individual locations, specifically promoting aligned building design, site layout, volumes, destinations, timelines, and all the factors that go into modal choice. This degree of granularity and commercial interaction with the private sector must now become standard practice in public-sector infrastructure planning.

The success of this approach is eminently achievable with a commitment to inclusion and organization. The NVSRP's prior development of an accurate and organized database of all stakeholders and conversations renders ongoing collaborative dialogue with the state's approximately 1,100 shippers and property owners manageable. The tools and relationships created by the NVSRP have established a statewide system for this effort.

The NVSRP is designed to be implemented in its entirety, in a well-coordinated, integrated sequence. The following 17 Rail Service Recommendations comprise a systematic solution to the challenge of optimizing the use of rail for the economic expansion and environmental improvement within Nevada. It is more productive and efficient to transform a system all at once. Each recommendation is accompanied by a link to its coverage in the NVSRP.

Table 4-4: Freight Rail Service Recommendations

	Recommendation	Page Location	Agency
1	Expand Nevada freight rail service to and from California and points east	Blueprint for Action Approach #12,xxvii	NDOT/GOED
2	Initiate and expand new intermodal services	Chapter 4, p28	NDOT/GOED
3	Facilitate shippers' early-stage use of the rail network	Chapter 4, p28	RDA
4	Preserve and utilize existing rail assets, including branch lines / industrial lead tracks	Chapter 4, p28	RDA
5	Develop rail operating plans that serve local Nevada	Blueprint for Action Approach #5, vii	RDA
6	Balance long-term project planning with near-term improvements for existing shippers	Chapter 4, p30	RDA
7	Aggregate shippers' needs into corridor plans through the state freight plan	Blueprint for Action Approach #11, xi	GOED/RDA
8	Co-locate new rail shippers in industrial parks when sensible	Chapter 4, p58	RDA
9	Provide rail-informed expertise to shippers and land developers	Chapter 4, p23	RDA
10	Provide financing solutions for all-size rail infrastructure	Chapter 4, p23	GOED/RDA
11	Evaluate freight movement data for meaningful commercial opportunities	Blueprint for Action Approach #4, xxvii	RDA
12	Facilitate collaborative dialogue among suppliers, customers, transportation providers, developers, and citizens	Blueprint for Action Approach #2, v	RDA
13	Initiate rail-served supply chain planning and add to the state freight plan	Chapter 4, p8	NDOT /GOED/RDA
14	Enact freight transportation land use strategies	Chapter 4, p30	State Lands
15	Establish Partnership with UPRR and BNSF	Blueprint for Action Approach #12, xxvii	NDOT/GOED
16	Support BNSF expansion in Nevada	Chapter 4, p31	RDA
17	Fundamental Performance Measures for Improving Nevada's Rail System	Chapter 4, p32	NDOT/GOED

The following sections cover recommendations 2, 3, 4, 6, 14, 16, 17. See chart above for coverage of the other recommendations. The Blueprint for Action describes Items 1, 5, 7, 11, 12, and 15.

Recommendation #2: Initiate and expand new intermodal services

Akin to transloading service is rail intermodal service where containers are transferred between trucks and railcars. This allows shippers without onsite rail infrastructure to take advantage of rail savings on their long-distance containerload moves. There are two intermodal terminals in Nevada that are under-utilized and available for rapid growth. The Union Pacific has intermodal facilities in Sparks and North Las Vegas that are currently only used once per week to handle traffic to and from one destination—Chicago. However, the Ports of Oakland, Long Beach, and Los Angeles are all interested in handling international container traffic to and from Nevada. Adding frequency and new lanes, particularly lanes to ports in California, should be an objective for Nevada. Clearing the volume hurdle to justify that service will take a coordinated effort.

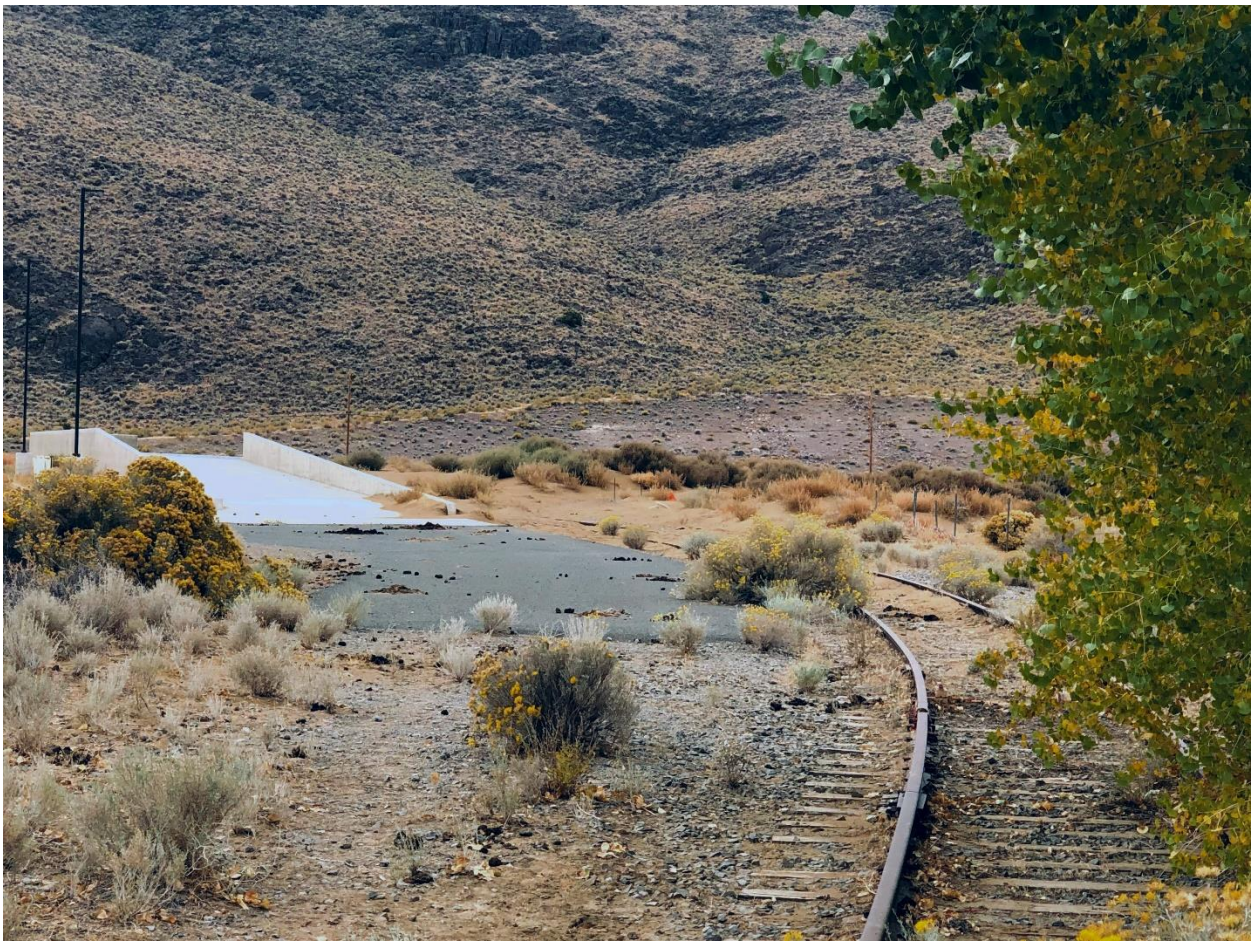
Recommendation #3: Facilitate shippers' early-stage use of the rail network

Logistics plans and decision-making in the private sector, especially those that involve long-term investment in fixed assets like rail loading facilities and rail line construction must meet a high hurdle of shipper confidence in their modal choice. While rail service usually offers higher capacity with cost and labor savings, transit times are often longer and less predictable than trucking. Shippers will choose rail, but often need to start out with limited capital commitment and risk. The country's best rail operators overcome shipper skepticism in rail's reliability by offering flexible service and infrastructure options for shippers as they begin to use rail. Here are the critical characteristics of early-stage rail service delivery:

- test-runs of railcars to build shippers' confidence
- Incubation of new rail shippers via trucking to transloading sites
- New rail infrastructure scaled to lower the start-up capital costs
    - Creative approaches to new transload trackage and service
    - Lower cost, flexible approaches to interchange trackage
- Shared use of track and facilities among multiple shippers

Recommendation #4: Utilize existing rail Infrastructure

Early benefits from rail service expansion in Nevada can be generated by utilizing what already exists. Out of 239 companies with private sidetracks in Nevada, 99 (or 41%) do not use them. Out of 83 Union Pacific sidetracks in Nevada that are not normally used for train operations, 80 (or 96%) are also not used as team tracks or transloading tracks by rail shippers. Many of the sidetracks that see traffic are underutilized. Rail shippers can be introduced to the opportunity of using existing infrastructure, if supported with the needed rail expertise. Here is a photo of one idle transload site in Innovation Park.



Transloading Site Idle at Innovation Park

Using existing infrastructure avoids or delays the cost of new construction as labor and materials for a new turnout cost $50,000+ and the track is $150-to-$200 per foot thereafter. Loading or unloading railcars requires dock space and possibly pneumatic and/or conveyor systems that are separate from truck loading infrastructure. Add to that $150,000 if the new turnout is along a main line requiring Positive Train Control hardware and labor. If a customer wants to locate on a main line designated as Restricted Access, then an additional $3 million is needed for two main line turnouts and enough running track to closet an entire local train.

With such a large initial cost for new rail infrastructure, it is difficult for shippers and receivers, particularly small ones, to test rail service or to justify rail investment without sharing costs of connectivity. This underscores the importance of using existing assets to incubate new rail shippers. In particular, rail/truck transloading can provide the economical introduction for new rail bulk shippers and receivers. There are already public transloading terminals in Sparks, Darwin, Elko, and North Las Vegas, with another on the way in Hawthorne. The 83 existing and underutilized UP sidetracks can serve as new transloading sites, particularly for accommodating early-stage rail shippers. The next photo shows one of these sidetracks in Winnemucca.

Winnemucca House Tracks

Recommendation #6: Balance long-term planning of large projects with near-term improvements for existing shippers

Decades of declining attention to rail service has led to many shippers having access to or being sited near a rail line yet not using rail. Reconnecting as many of these existing shippers to rail is the quickest path to improving Nevada's economy and environment. Existing rail shippers, as demonstrated by the data, are likely not using rail as robustly as they could. Engaging with these shippers at the outset of the NVSRP's implementation will deliver an early return on the plan's promise, at a very low cost. This near-term rail service expansion then forms a foundation of growing commercial activity making feasible development of more substantial rail infrastructure projects, such as intermodal terminals and industrial parks. Otherwise, the viability of these projects depends on a few large users, adding to project risk. Waiting to land the large rail users takes time that can be used to interact with existing businesses to increase their profitability, employment, and contribution to state revenue.

Recommendation #14: Enact effective freight transportation land use strategies

Nevada's land has been undergoing rapid development across its two primary metropolitan areas of Reno and Las Vegas. Commercial absorption rate in the Reno region in 2019 was 3.45MM sq. ft. of new

space leased or sold.[22] The commercial property absorption rate for Las Vegas in 2019 was 4.75MM sq. ft, outpacing both Los Angeles and San Francisco. [23]

This development pace must be met with the careful preservation of land along rail rights-of-way. Rail service requires access to rail lines. It is important to direct non-rail users away from rail adjacent property to optimize the productivity of Nevada's existing rail network. As the state embarks on facilitating the rail service expansion envisioned in the new NVSRP, it must recognize that effective freight transportation land use will be a critical element of attracting private-sector investment.

In the same way that communities preserve land along scenic lakefronts for low-impact, non-industrial uses, land adjacent to rail lines should be utilized as much as possible for rail-served industrial activities. Land is no longer so plentiful in Nevada that the state can afford to use it unwisely. There are a range of programs, protocols, laws, tax concepts, and regulations that can be evaluated by Nevada's governing and community leaders for effectuating the best use of its rail assets and related land.

What sensible approaches should Nevada consider?

- Support developers and shippers in designing sustainable logistics plans
- Preserve land along rail ROW's for rail-served development
- Create statewide rail-served property database
- Co-locate utility and transportation corridors
- Co-locate innovative passenger rail services on freight rail lines
- Offer property tax incentives to shippers using Nevada's rail system
- Establish low-interest, long-term financing for rail infrastructure
- Develop corridor rail development and operating plans
- Support real estate brokers to market properties as "rail access sites"

Land use planning is widely practiced in transit-oriented development, but rarely applied to logistics-oriented development. Given the important opportunity to optimize its use of rail transportation, Nevada has much to gain from a pragmatic, effective approach to *freight* transportation land use. Nevada, acting collaboratively among its public- and private-sector stakeholders can take the lead in modeling this approach for other states. The Nevada State Land Use Planning Advisory Council has expressed their interest in supporting a collaborative transportation land use planning process between local governments and private-sector stakeholders.

Recommendation #16: Support BNSF service in Nevada

The only common carrier currently hauling rail freight in Nevada besides the Union Pacific is the BNSF Railway, which was awarded trackage rights on the two main lines across northern Nevada by the Surface Transportation Board as a condition to the Union Pacific's acquisition of the Southern Pacific in 1996. BNSF's rights include the ability to serve any private sidetrack between Winnemucca and Wells and to serve any new private sidetrack on a main line from Winnemucca west. Of 96 existing private sidings in Nevada that BNSF has the right to serve, it has only served 30 at one time or another.

[22] Kidder Matthews, "Market Trends Reno Industrial" Report, source link, accessed September 10, 2020.
[23] Statista website, "Absorption rate of industrial property in selected markets in the U.S. 2019" statistical report, source link, published March 23, 2020.

This traditional public policy and regulatory approach has not led to Nevada's shippers, and therefore the economy, having the benefit of the extensive market reach of these two carriers' combined network. Unpacking and addressing the commercial realities that have suppressed the opportunity of having two rail service providers is key to Nevada's economy. The NVSRP is designed to facilitate the expansion of both UP and BNSF service in Nevada. The United States has leaned on "competition" as an orienting principle for regulations concerning transportation. The NVSRP advocates that these competing Class I railroads evolve into a collaborative relationship focused on the best interests of the Nevada shipping community. The resulting expansion of market reach from having equitable and reliable access to both carriers' networks will raise the attractiveness of rail transportation for shippers. Both companies will enjoy an improved modal balance with trucks.

Recommendation #17: Focus on fundamental performance measures for improving Nevada's rail system

Here are three performance measures on which to focus stakeholders' efforts to generate a meaningful contribution to the state's businesses and communities.

Table 4-5: Performance Measures

#	Performance Measurement	Data Point
1	Percent of truckload quantity shippers that are using rail	140 out of 1,075 or 13%
2	Number of railcars moving interstate to and from Nevada Businesses	Baseline 2018: 113,020
3	Number of railcars moving intrastate between Nevada businesses	Baseline 2018: 664

G. Nevada State Rail Plan Regions

Nevada's resource-rich landscape, high industrial activity, long distances, and adjacency to California and West Coast ports present a potent opportunity for freight rail development. Developing a modern rail system that serves the state's unique industrial development calls for a similarly unique approach for each region of the state. Identifying a set of logical regions empowers stakeholders to collaborate around the strategies that are most applicable for their region.

Nevada's rail assets, development activity, and political jurisdictions point to the selection of eight regions on which to organize the implementation process.

- Region 1: Clark County
- Region 2: Lincoln County
- Region 3: Nevada Northern Railway
- Region 4: I-80 Corridor
- Region 5: Fernley/Hazen/Fallon/Silver Springs/Innovation Park
- Region 6: Reno/Sparks/Stead
- Region 7: Mina Branch
- Region 8: Beatty/Pahrump

The factors that were assessed in distinguishing each region were:

- Population density and distribution
- Existing and potential industrial activity
- Natural resources
- Physical rail assets
- Availability of developable land
- Relationship to the larger transportation network

Cataloguing stakeholders, industries, projects, and freight data for these eight distinct regions reflects a deep and worthwhile investment of resources. This positions the NVSRP for an amplified contribution to the state. In the face of strained budgets and environmental challenges, states need a system for coordinating policy development, community planning, and public and private investment in rail.

Each of the eight NVSRP Regions can support rail growth in Nevada. This potential stems from the state's surging economic and population growth, which in most regions includes the prevalence of mining, where bulk movements lend themselves to the efficiencies and environmental advantages of rail transportation.

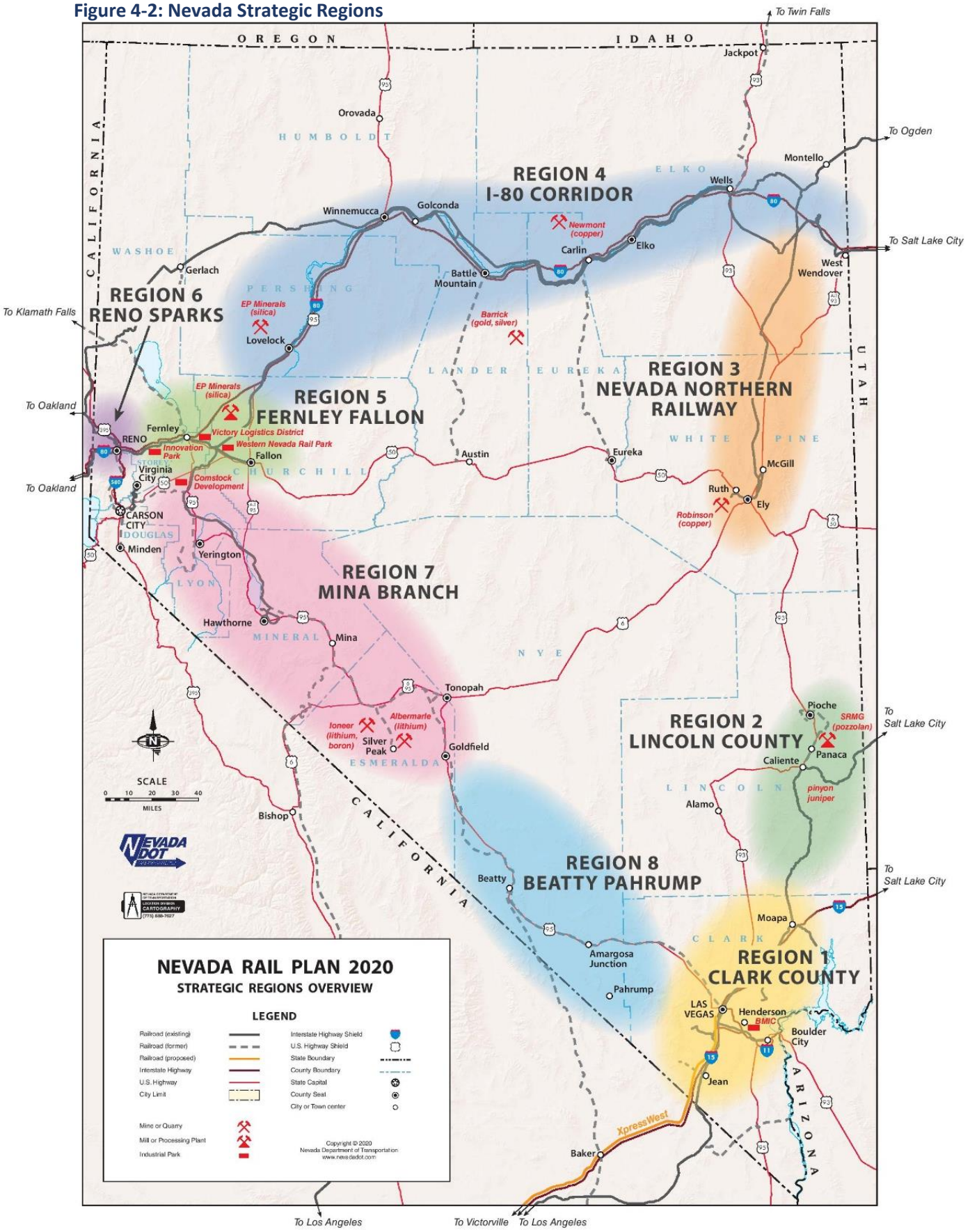
The next section of the Freight Rail Strategic Plan introduces strategies for each region, along with its data and maps. These sections are designed to become Action Plans around which the stakeholders will coordinate their collective productivity in their region. As such, they are continually expanded and refined.

Each regions' data, as applicable, includes:

- Potential rail service growth projects-Listed for each region
- Major land developments-Listed for each region
- Active mines--Listed for each region
- Businesses with sidetracks and nearby truckload shippers (Appendix 1)
- Truckload shippers that are not located adjacent to a rail line (Appendix 2)

Next is a map of Nevada displaying the location of the eight Strategic Regions:

Figure 4-2: Nevada Strategic Regions



G-1. Region 1: Clark County

Overview

Las Vegas is the youngest major metropolitan area in the United States, having grown from its founding in 1905 upon the completion of the San Pedro, Los Angeles, and Salt Lake Railroad to a metropolitan population of 2¼ million in 2020, making Las Vegas the 28th most populous city in the U.S. Las Vegas is experiencing significant industrial growth due to its large labor pool, low cost of electricity, zero personal income tax, zero franchise or inventory tax, favorable business climate, and proximity to California's huge consumption markets.

Warehouses with Rail Across the Street

The Union Pacific Railroad—heir to the San Pedro, Los Angeles, and Salt Lake Railroad—is the only railroad serving Region 1, but it has not shared in most of the area's phenomenal growth. Of 73 facilities in Region 1 with private sidetracks, 24 are inactive. Of 19 new $5 million+ manufacturing facilities built in the Las Vegas area since 2017, only one is planning on using UP (Ryze Renewables' $74 million biodiesel production plant on the Nellis Industrial Lead). In the 17,273 acres of the Apex Industrial Park in North Las Vegas, only two shippers have constructed rail sidings (Lhoist and Boral CM). Of Apex's

700,000 square feet of warehouse space with rail docks, only 100,000 square feet are in service. There have been an additional 6.4 million square feet of warehouse space built next to UP right-of-way in Region 1 without any rail sidetracks at all. UP currently offers limited intermodal service between its container-on-flat-car (COFC) yard in North Las Vegas and southern California. Service to and from Chicago once a week is the only intermodal lane operating to the east.

Nevada Division of State Lands statement recommending contruction of a crossing for the Floyd Edsall Training Complex [excerpted from 1/21/2021 letter in Appendix]:

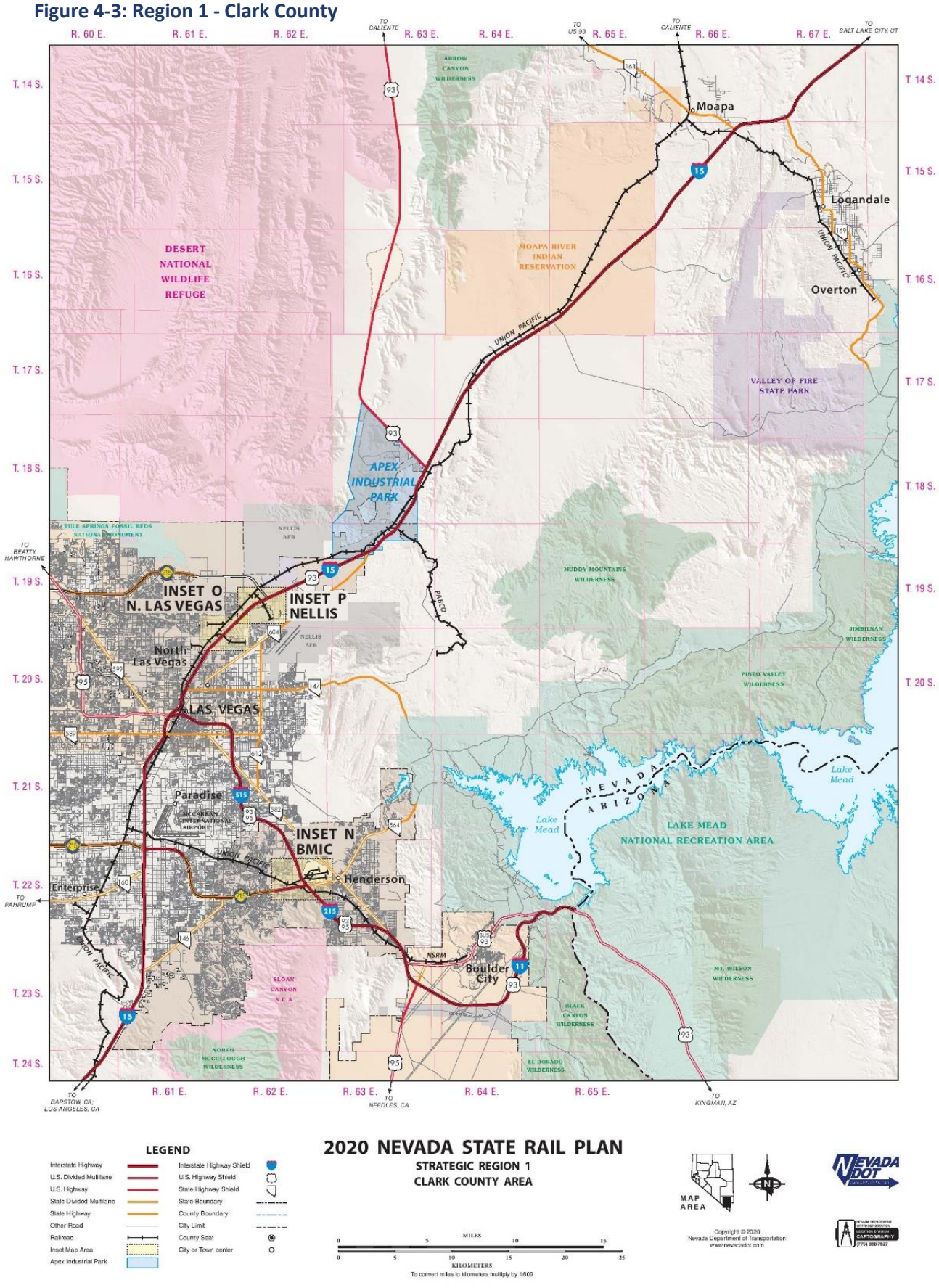
> The Agency recommends that the project team consider amending the Region 1 Project List to add a rail crossing and rail connection near the Nevada National Guard's Floyd Edsall Training Complex (FETC) in North Las Vegas. The FETC is currently bisected by the Union Pacific rail line and lacks access to the rail line itself. The existing rail line provides challenges to the National Guard's mission capabilities by limiting access to portions of the FETC for training and other uses. Access across the railroad is needed on the FETC site to allow the National Guard to fully utilize this property for heavy vehicle training. Without a rail crossing near the FETC, the National Guard's and other heavy vehicles in the area are unable cross the railroad tracks due to weight restrictions imposed by Union Pacific.
>
> Additionally, the FETC site and other industrial developments in the area do not have access to the rail line. A new rail connection to the Union Pacific rail line near the FETC would benefit the National Guard's readiness to carry out its missions and response. Currently, the National Guard has equipment used to support readiness and response efforts stored off site FETC due of the lack of rail access. A rail connection near FETC would allow the National Guard to store its equipment onsite and transport this equipment more efficiency from the complex. Additionally, a new connection in this area would support the City of North Las Vegas' economic development efforts in this area by providing existing and planned industrial developments with new rail access. Before the plan is adopted, the Agency would like to set up a meeting with NDOT and the National Guard to explore these potential Region 1 rail projects in further detail.

Key Strategies

- Develop rail-served industry southwest of the Las Vegas-Henderson metro area to increase economic development with less traffic impact on downtown Las Vegas
- Preserve as much as practical of remaining developable commercial land for rail-served industry
- Connect as many of the existing shippers to rail as possible
- Support developers and shippers in North Las Vegas with their rail planning efforts
- Redevelop Black Mountain Industrial Center for rail-served heavy industry
- Establish two-way intermodal service to San Pedro Bay, CA

The Region I map below is followed by Inset Maps for three areas of concentrated industrial activity.

Figure 4-3: Region 1 - Clark County



LEGEND

Interstate Highway	Interstate Highway Shield
U.S. Divided Multilane	U.S. Highway Shield
U.S. Highway	State Highway Shield
State Divided Multilane	State Boundary
State Highway	County Boundary
Other Road	City Limit
Railroad	County Seat
Inset Map Area	City or Town center
Apex Industrial Park	

2020 NEVADA STATE RAIL PLAN

STRATEGIC REGION 1

CLARK COUNTY AREA

MILES 0 5 10 15

KILOMETERS 0 5 10 15 20 25

To convert miles to kilometers multiply by 1.609

MAP AREA

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Figure 4-4 presents an example of land well-positioned for new rail-served operations. The Black Mountain Industrial Complex is now owned by Olin Chlor-Alkali (214 acres), doing business as ioneer Americas, which already leases space to Timet, Lhoist, and Borman with ample available acreage. Xtreme Manufacturing (20 acres) also has space available adjacent to existing rail. The highest and best use for these brownfield sites would be heavy industry.

The numbered and colored disks correspond to line items with details on each property that are catalogued in the NVSRP's statewide database presented in the Appendix as the ***Inventory of Nevada Industry: Businesses with sidetracks and nearby truckload shippers*** (black disks for businesses with active rail sidetracks, purple for those with inactive rail sidetracks, and red for those next to rail right-of-way that could build new sidetracks easily), and as Appendix Item ***Truckload Shipper Inventory*** (blue disks for truckload shippers farther away from rail right-of-way).

ioneer Americas' Tank Cars in BMI

A Guide for Looking at Next Three Inset Maps

Inset maps, such as the three shown in Region 1 (Figures 4-4, 4-5, and 4-6), highlight dense concentrations of businesses with two characteristics: 1) proximity to active tracks, and 2) elevated shipping activity in truckload or carload lots. These areas are particularly intriguing due to their potential

for becoming centers of carload traffic growth with frequent and reliable switching service and localized solicitation effort. This is doubly true for the areas in Figures 4-5 and 4-6, which are within a mile of one another, making them a ready-made platform for carload initiatives.

Figure 4-4: Region 1 – Black Mountain Industrial Complex Area

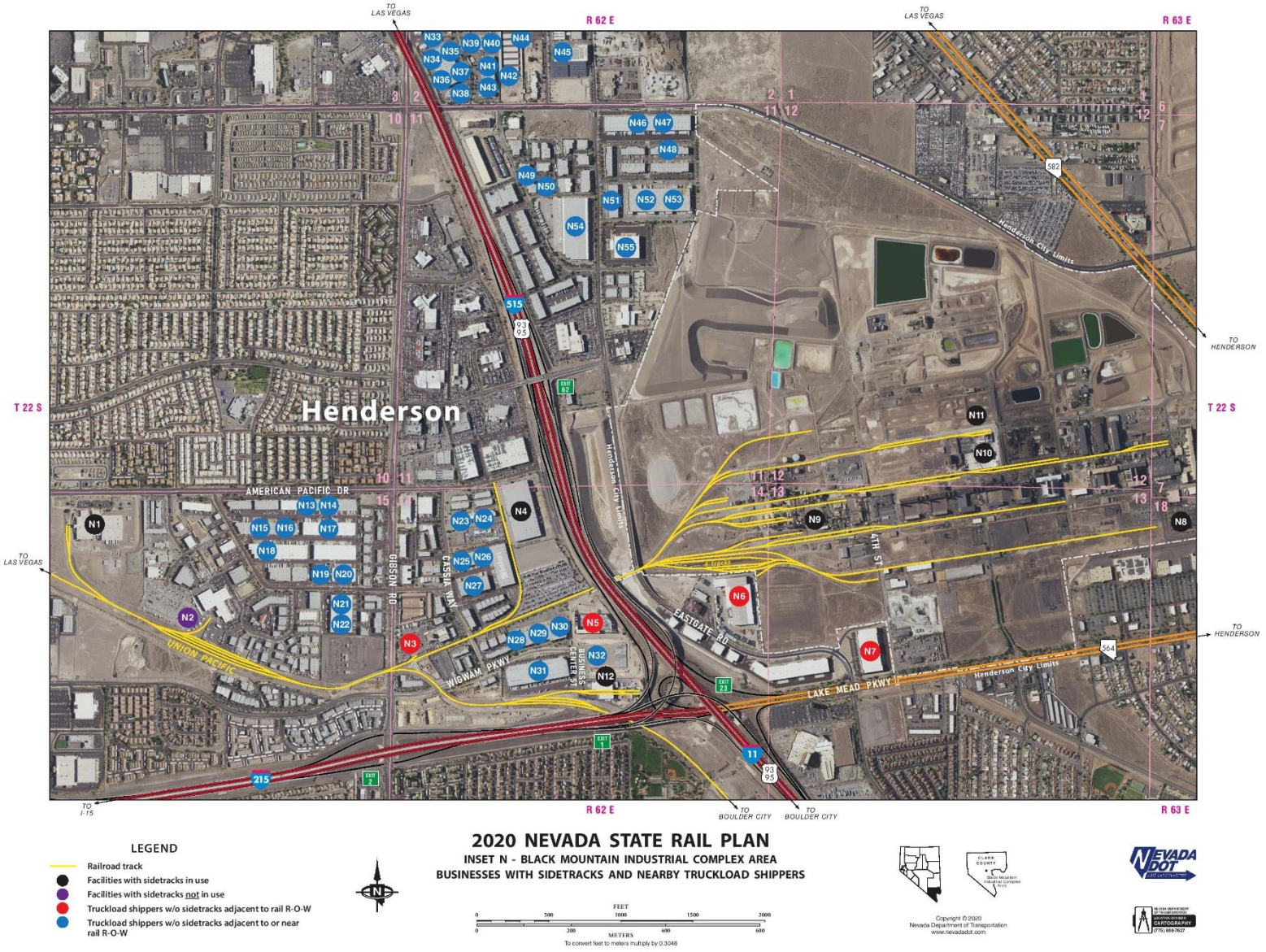


Figure 4-5: Region 1 – North Las Vegas Area

Figures 4-5 and **4-6** show active and prospective rail customers that are clustered in North Las Vegas. In all, these maps show 21 businesses that use their sidetracks, 10 businesses that do not use their sidetracks, and 10 businesses located adjacent to UP right-of-way that could easily build sidetracks. Other businesses with blue tags are intermodal candidates that can also be reached with future sidetrack construction at moderate expense.

Figure 4-6: Region 1 – Nellis Area

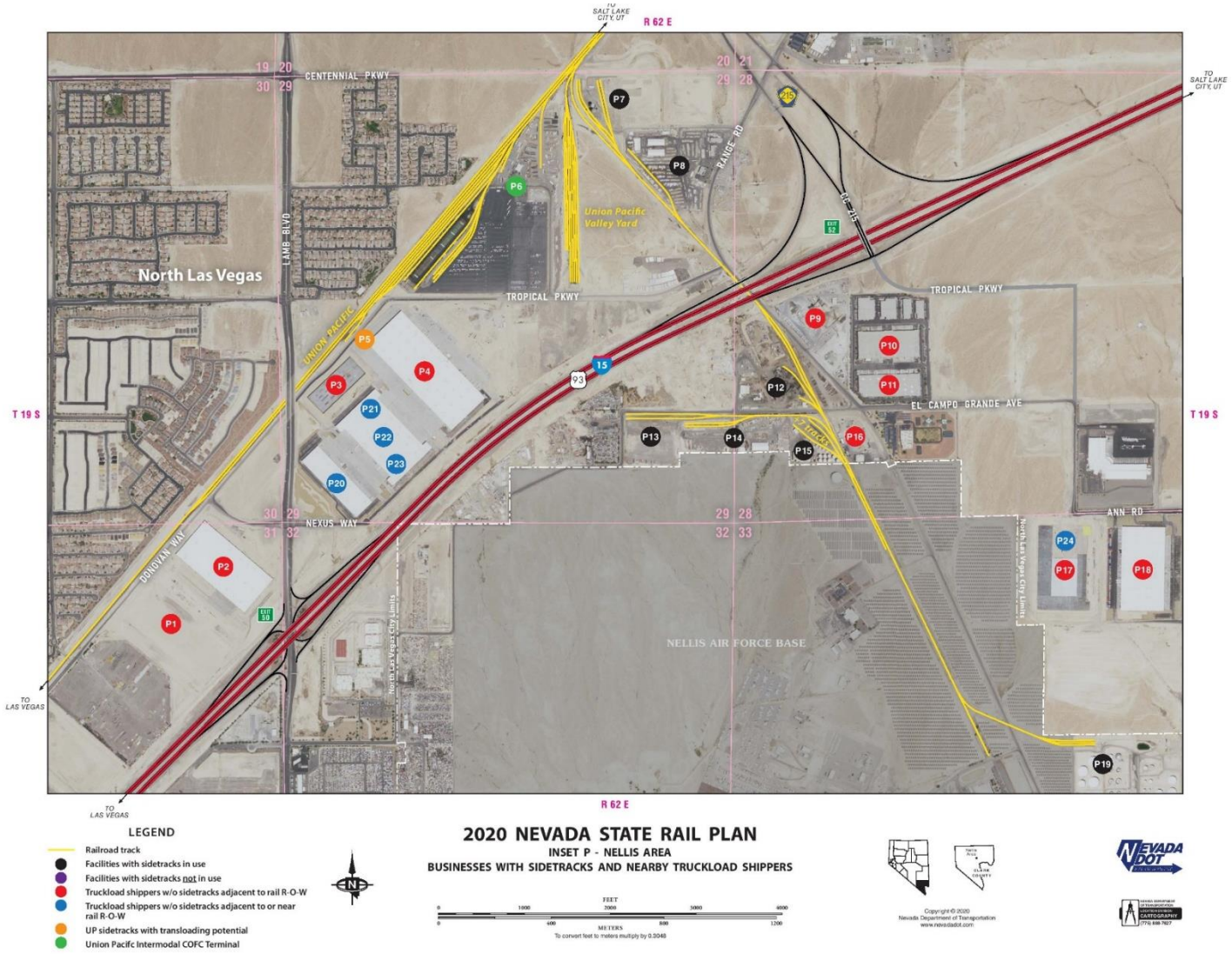


Table 4-6: Region 1 – Project List

Project Name	County	Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
Blue Diamond property	Clark	Development	Rail Connection	TBD	0.1	$250,000	Blue Diamond Branch Line	1	4
Ryze Renewables	Clark	Expand rail terminal	Terminal Expansion	alternative fuel	0.25	$2,000,000	Ryze Renewables	1	4
Apex Industrial Park	Clark	Connect to UP main line	Rail Connection	TBD	4	$5,000,000	Land Development Associates		
Nevada National Guard's Floyd Edsall Training Complex (FETC)	Clark	Add a rail crossing and rail connection	Rail Crossing	Material	NA	$250,000	Nevada National Guard		

*miles to reach site, not including serving tracks at site

Table 4-7: Region 1 – Active Mines

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
42	43	**Apex Landfill Pit**	Las Vegas Paving Corp.	Aggregate	Clark	4027000	691000
43	44	**Apex Lhoist Quarry**	Las Vegas Paving Corp.	Aggregate, sand	Clark	4026900	687340
44	45	**Apex Lhoist Quarry**	Lhoist North America	Limestone, dolomite	Clark	4026900	687340
53	54	**Blue Diamond Hill Mine**	Gypsum Resources, LLC	Gypsum, limestone	Clark	3994300	643650
54	55	**Blue Diamond Pit**	Las Vegas Paving Corp.	Sand, gravel	Clark	3986500	659800
56	57	**Boulder Ranch Quarry**	CTC Crushing LLC	Sand, gravel	Clark	3978450	687100
64	65	**El Dorado Quarry**	Portable Aggregate Producers, LLC	Sand, gravel	Clark	3980374	687952
76	77	**Henderson Community Pit**	Various (Bureau of Land Management manages pit)	Sand, gravel	Clark	3980500	687800
78	79	**Lima Nevada Gypsum Mine**	H. Lima Nevada LLC	Gypsum	Clark	4006000	692840
80	81	**Lone Mountain**	Las Vegas Paving Corp.	Aggregate	Clark	4012520	648880
81	82	**Lone Mountain**	Mel Clark, Inc.	Sand, gravel	Clark	4008000	650340
82	83	**Lone Mountain**	Nevada Ready Mix Corp.	Sand, gravel	Clark	4013180	650790
83	84	**Lone Mountain**	Wells Cargo, Inc.	Sand, gravel	Clark	4013069	649060
84	85	**Lone Mountain Community Pit**	Various (Bureau of Land Management manages pit)	Sand, gravel	Clark	4013220	648880
85	86	**Mesquite Community Pit**	BJ Rees's Enterprise	Sand, gravel	Clark	4074700	760420
86	87	**Mesquite Community Pit**	Various (Bureau of Land Management manages pit)	Sand, gravel	Clark	4074700	760420
88	89	**Money Pit**	Southern Nevada Liteweight, Inc.	Silica sand	Clark	3961020	665500
96	97	**PABCO Apex Quarry**	Pacific Coast Building Products, Inc.	Gypsum	Clark	4009484	691057
100	101	**Pole Line Pit**	Boulder Sand and Gravel, Inc.	Sand, gravel	Clark	4009352	678819
103	104	**Rainbow Quarries**	Las Vegas Rock, Inc.	Landscape rock, sand, gravel	Clark	3974880	638780
109	110	**Sierra Ready Mix Quarry**	Sierra Ready Mix, LLC	Sand, gravel	Clark	3953030	653740
112	113	**Simplot Silica Products Pit**	J. R. Simplot Co.	Silica sand	Clark	4039110	727470
113	114	**Sloan Quarry**	Aggregate Industries	Crushed stone	Clark	3978918	661472
114	115	**South Jean Pit**	Service Rock Products	Sand, gravel	Clark	3955100	657120
116	117	**Spring Mountain Pit**	Wells Cargo, Inc.	Sand, gravel	Clark	3990171	657163

Regional Development Authority

The regional Development Authority contact for this region is Perry Ursem of the Las Vegas Global Economic Alliance.

G-2. Region 2: Lincoln County

Overview

Lincoln County has a Union Pacific main line track that runs through the center of Caliente, but does not have scheduled local service, active sidings, or an operating transloading site, in spite of the presence of ample yard trackage in the center of town. Resumption of local freight train service and transloading activity at that location is not desired by citizens and leaders who are intent on preserving the ambience of the historic Caliente rail depot that sits alongside the yard.

Caliente City Hall Station

Lincoln County's low population of 5,345 residents renders each potential rail user as critical to the area's economy and the viability of renewed local rail service. Salt River Materials Group has contracted

with the U.S. Bureau of Land Management (BLM) for access to the largest pozzolan deposit in the U.S., 15 miles north of Caliente. Pozzolan is used in concrete and fertilizer, instead of fly ash from coal-fired power plants, which is becoming scarce as those plants shutter. Beginning at 500 railcars per year, Salt River's growth plans would increase that volume to several thousand railcars per year, creating a solid base for the resumption of local rail service.

A Nevada bio-tech entrepreneur has been working with BLM on access to thousands of acres of invasive Pinon Pine and Juniper growth for harvesting and processing into a variety of fuels and valuable byproducts while removing a wildfire fuel. The county owns 320 acres near the state line at Crestline, alongside the UP main with available power and water. In combination with the development of local rail service, the county would like to construct a recycling facility there. Lincoln County's sparse rural population demands that each potential industrial development opportunity be approached with multi-stakeholder creativity and collaboration.

Key Strategies

- Establish truck to rail transloading site for pozzolan and future commodities
- Evaluate Crestline site for future rail-served industrial development
- Evaluate land south of Caliente town-center for future rail-served commercial development

Figure 4-7: Region 2 - Lincoln County

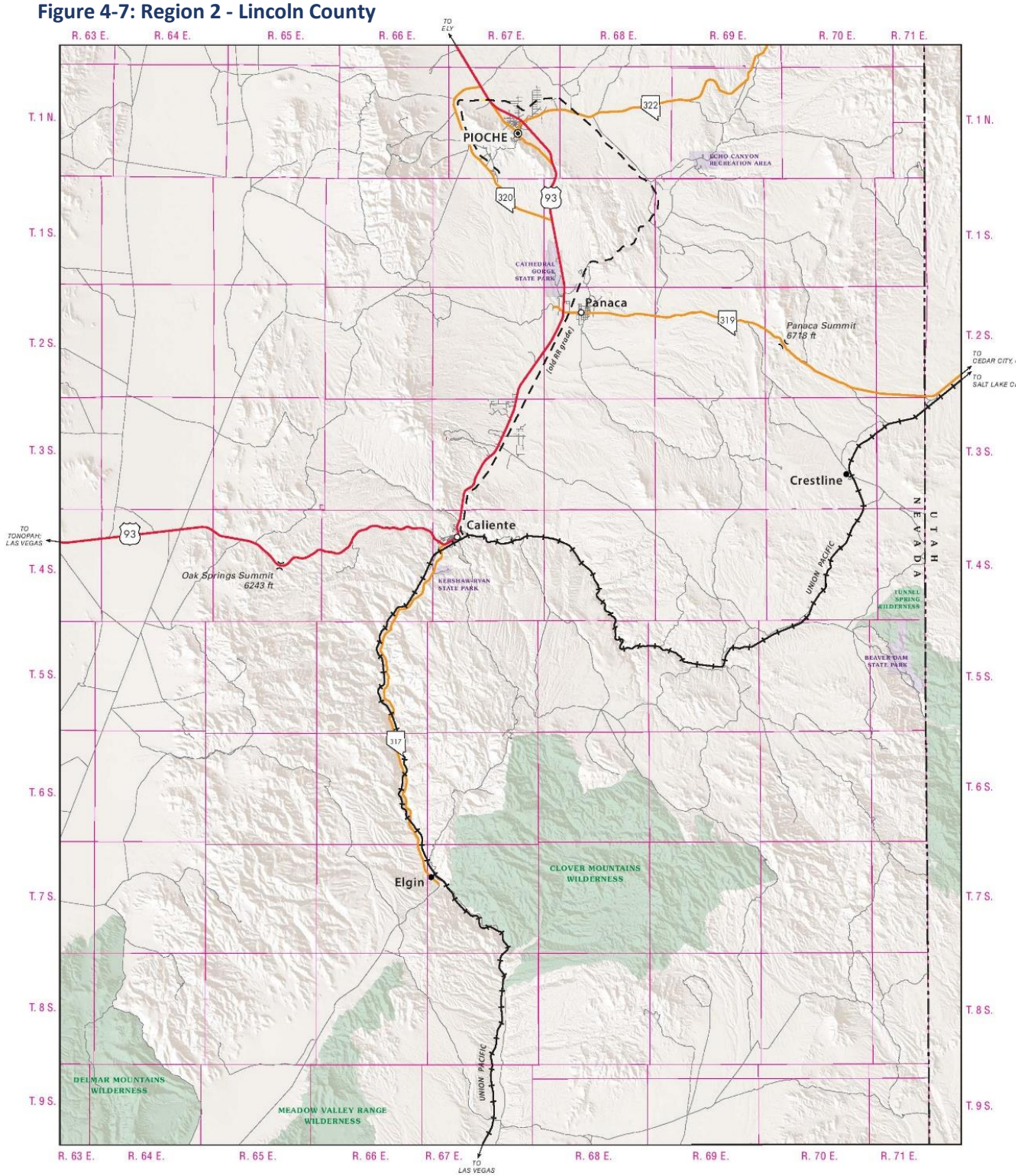


Table 4-8: Region 2 – Project List

Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
Panaca Mines	Lincoln	Connect to UP main line	Rail Connection	pozzolan	15	$22,000,000	Salt River Materials Group	2	20

*miles to reach site, not including serving tracks at site

Table 4-9: Region 2 – Active Mine

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
117	118	**Tenacity Perlite Mine**	Wilkin Mining and Trucking Co., Inc.	Perlite	Lincoln	4157600	675240

Regional Development Authority

The regional Development Authority contact for this region is Jeff Fontaine, Lincoln County Regional Development Authority.

G-3. Region 3: Nevada Northern Railway

Overview

The Nevada Northern Railway (NNRY) is a 146-mile rail line built in 1905-06 from connections with the Southern Pacific Railroad (SP) and Western Pacific Railroad (WP) south to reach copper deposits west of Ely. The copper largely played out by 1978 and a copper smelter in McGill closed in 1983, when all railroad operations ceased. In 1986, the last operating owner, Kennecott Copper, transferred all rail assets to a non-profit, the White Pine Historical Railroad Foundation, which leases a short segment around Ely for a tourist rail operation. In 2009, White Pine Historical Railroad Foundation leased the northern 128.5 miles to a car storage operator, but that has not proven to be viable and a suit was initiated in 2015 to evict the operator from the property.

Nevada Northern Boxcars

Nevada Northern Passenger Cars

Because the original 60-pound rail (weight per 3-foot section) from 1905-06 was never upgraded for most of the NNRY's length, the resumption of standard operations with modern heavy cars and engines would require the replacement of most of NNRY's rail. (Contemporary rail weight ranges from 110-

pound to 136 pound). However, given the mineral wealth in this area, a baseload opportunity that justifies the financial investment of a major rebuild may exist. Promising prospects for expanded mining near the NNRY right-of-way include the Long Canyon gold mine (4 miles west of milepost 7), the Victoria copper & silver mine (8 miles west of MP 53), the Kinsley gold mine (21 miles east of MP 71), the Robinson copper mine (1-mile south of MP 145, which currently trucks copper ore to Wendover, UT for transloading into railcars), and the Pan gold mine and Gold Rock gold mine (40 miles west of MP 148). There are also expanding hemp operations now at 2,500 acres, and hay growing areas north of Ely, which consume much fuel and lime in bulk and ship all over the West.

Key Strategies

- Initiate robust engagement with all potential rail shippers in the corridor to aggregate the overall prospects for rail line utilization
- If substantial enough, proceed to evaluate approximate rebuilding and operating costs to establish preliminary viability
- If viable, develop a complete proforma business and financial model for the reconstruction and operation of the restarted NNRY
- Proceed to structure a development, operating, and funding strategy that serves all stakeholders

Figure 4-8: Region 3 - Nevada Northern Railway

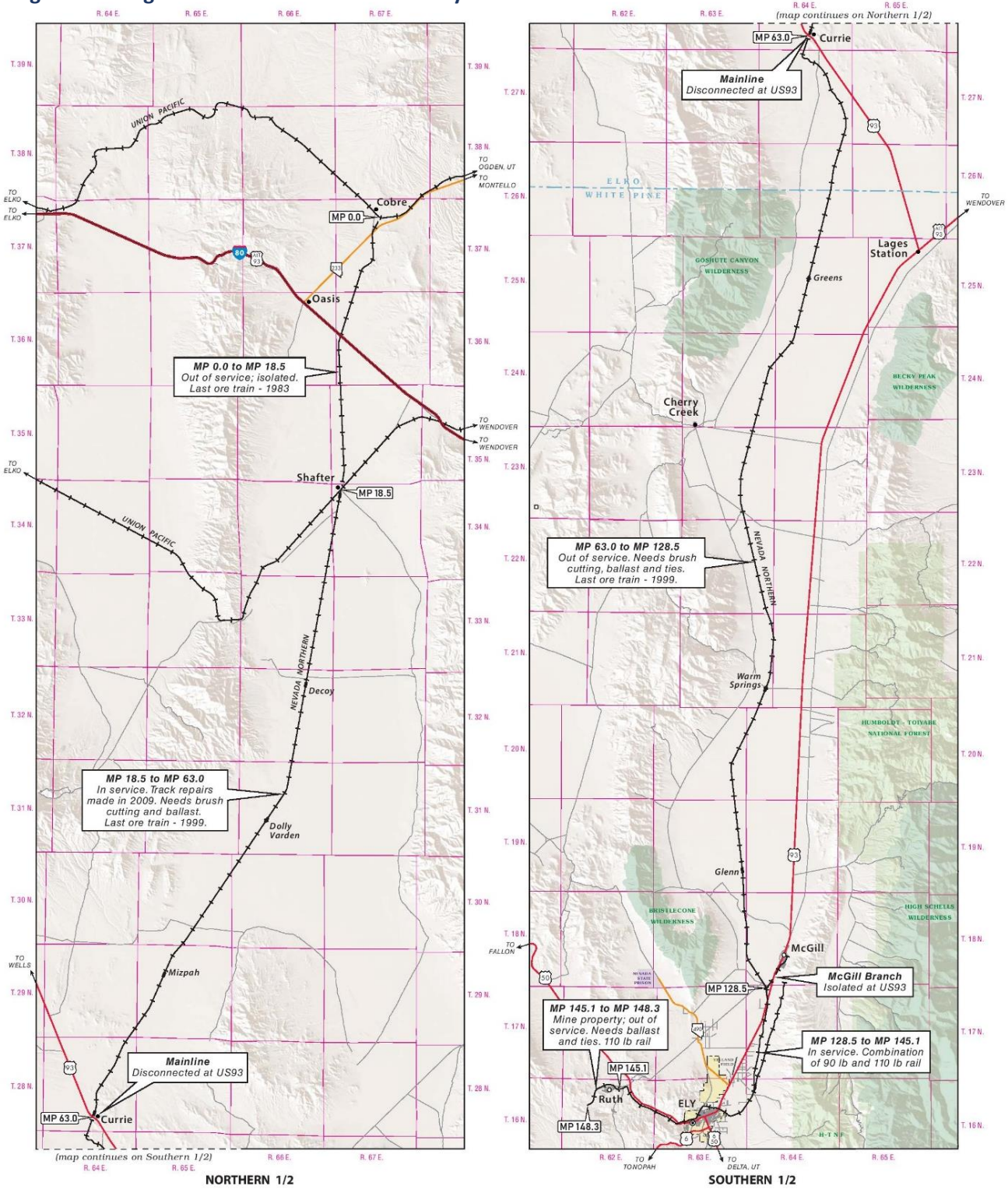


Table 4-10: Region 3 – Project List

Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
Victoria Mine	Elko	Connect to Nevada Northern	Rail Connection	copper, silver, fuel, lime, etc.	8	$12,000,000	US Mine Corporation	3	4
Long Canyon Mine	Elko	Connect to Nevada Northern	Rail Connection	refractory ore, I/B fuel, lime	2	$3,000,000	Nevada Gold Mines	3	4
Pan & Gold Rock Mines	White Pine	Transloading on Nevada Northern	Transload	cyanide, sulfates	0.1	$200,000	Kinross Gold	3	4
Silver Lion Farms	White Pine	Transloading on Nevada Northern	Transload	I/B fuel, fertilizer; O/B hemp	0	$200,000	Silver Lion Farms	3	4
Robinson Mine	White Pine	Re-connect to Nevada Northern	Rail Connection	O/B copper concentrate; I/B fuel, lime, steel balls	1	$1,000,000	Robinson Mine	3	4
Kinsley Mine	White Pine	Transloading on Nevada Northern	Transload	cyanide, sulfates	0.1	$200,000	Liberty Gold	3	4
Nevada Northern Railway	White Pine	Rebuild track and Rt. 93 rail crossing	Track Rebuild	copper, hemp, fuel, tourists	128	$100,000,000	Nevada Northern Railway	3	4

*miles to reach site, not including serving tracks at site

Table 4-11: Region 3 – Active Mines

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
9	10	**Emigrant Mine (open pit)**	Newmont Mining Corp.	Gold, silver	Elko	4496802	586981
13	14	**Hollister Mine (underground mine)**	Hecla Mining Co.	Gold, silver	Elko	4550620	536640
19	20	**Goldstrike Meikle Mine (underground mine)**	Barrick Goldstrike Mines, Inc.	Gold, silver	Elko	4539278	551865
21	22	**Jerritt Canyon Mine (underground mines)**	Jerritt Canyon Gold LLC (joint venture with Sprott Mining Inc., 80%; Whitebox Asset Management, 20%)	Gold, silver	Elko	4579621	583571
25	26	**Long Canyon Mine (open pit)**	Newmont Mining Corp.	Gold	Elko	4539742	708395
27	28	**Midas Mine (underground mine)**	Hecla Mining Co.	Gold, silver	Elko	4565942	518521
55	56	**Boehler Pit**	Staker Parson Co.	Sand, gravel	Elko	4522100	606780
65	66	**Elburz Pit**	Vega Construction and Trucking Co.	Sand, gravel	Elko	4533600	622900
99	100	**Pilot Peak Quarry**	Graymont Western US., Inc.	Limestone	Elko	4522627	731144
137	138	**Elko Hot Springs**	Elko County School District	Space Heating	Elko	4521706	604406
152	153	**Tuscarora**	Ormat Nevada, Inc.	Electricity	Elko	4590782	570913
158	159	**Huntington**	Noble Energy, Inc.	Oil	Elko	4474961	607223
1	2	**Bald Mountain Mine (open pit)**	KG Mining (Bald Mountain), Inc.	Gold, silver	White Pine	4422307	624496
29	30	**Pan Mine (open pits)**	Fiore Gold, Ltd.	Gold, silver	White Pine	4349710	609300

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
32	33	**Robinson Mine (open pits)**	KGHM International, Ltd.	Copper, gold, molybdenum, silver	White Pine	4347450	674222
89	90	**Mount Moriah Quarry**	Mount Moriah Stone Quarries, LLC	Building stone, landscape rock	White Pine	4343795	751603

Regional Development Authority

The regional Development Authority contact for this region is Sheldon Mudd, Northeastern Nevada Regional Development Authority.

G-4. Region 4: I-80 Corridor

Overview

The I-80 corridor from W. Wendover to Lovelock can benefit from a rail-enabled development strategy that embraces the potential connected nature of this corridor—towns connected with each other and the corridor connected with California, ocean ports, and points east. The counties and towns throughout this northern Nevada corridor share adjacency to the Interstate 80 Freeway and two UP main line tracks that traverse the entire state. Despite the presence of the physical infrastructure of these rail lines, limited local rail service and therefore limited connections east and west constrain the commercial opportunities for businesses and communities along this otherwise vital trade corridor.

Trucks on Interstate 80

This is an area of intense mining activity, where there are already 36 active private sidetracks that mostly support movement of mining materials. There are also 52 in-service sidetracks owned by UP that would be suitable for rail/truck transloading. The construction of new branch lines to new mining areas is a growing possibility. For example, the impact of trucks using Highway 766 north out of Carlin to reach the Goldstrike gold processing facilities could be mitigated with a new branch line to Goldstrike. And the impact of trucks using U.S. 95 north out of Winnemucca to reach the pending Thacker Pass lithium mine and processing facility could be mitigated with a new branch line to Thacker Pass. Also, as traffic builds on Route 93 between Wells and Southern Idaho the adjacent, dormant but apparently intact rail right-of-way could be reactivated to divert existing agricultural and possible future mining traffic.

Northeastern Nevada Regional Railport

There are a multitude of idiosyncratic rail opportunities. For example, EP Minerals, which has three private sidetracks in Colado, loads 4500 containers of diatomaceous earth per year for export through the Port of Oakland. EP ships its containers to Oakland by truck. Baker Hughes Oilfield Operations operates a large barite mine in Argenta with two private sidetracks in use. Barite is used as a thickening agent in drilling mud. Most of the barite used in the Permian Basin, which produced 40% of the oil & gas in the U.S. in 2019, is trucked into Texas at great expense from Mexico. The common denominator of rail opportunities across Region 4 is the need for individual attention to unique circumstances.

Nevada's mining suppliers and mining producers, heavily concentrated in Region 4 can build new strategic supply partnerships around the intrastate transportation of material by rail.

Key Strategies

- Initiate a rail-enabled, corridor-wide development strategy

  This strategy will provide a cohesive organizing principle around which stakeholders can plan land use and business attraction. The success of this strategy begins with two steps:

  a) Turning these two important rail line arteries toward *serving* the region, not just carrying freight *through* the region, and
  b) Implement the NVSRP's comprehensive rail-centric supply chain strategy for the mining industry. *Read more about this strategy in C-2. Mining Materials Supply Chain Logistics Strategy.*

  Attending initially to mining, the largest industry in the region, will enable the growth of local rail service that would then be in an ideal position to serve other commodities and economic development efforts.

  Economic development leaders throughout the corridor shared these observations:

a) Approximately one-third of industrial prospects want access to rail service.
b) The real or perceived lack of rail-served properties handicaps their economic development efforts.

Sheldon Mudd, Executive Director of the Northeastern Nevada Regional Development Authority (NNRDA) reported that in the two years since he has been with NNRDA a total of 35 Requests for Information (RFI) or Company Leads have registered their interest in this region. Of those, 12 (or 34%) requested property with access to rail – most specifically requesting a spur line into their site.

The region has benefited from landing two of those companies resulting in $65MM worth of capital investment and approximately 40 new jobs. Another prospect is expected to yield up to $1B in capital investment and roughly 20 jobs. The rest have been lost meaning that the region missed out on $1.6B in capital investment and approximately 4,700 jobs, many due to shortcomings in the process of offering rail service. Improved awareness of and support for rail logistics decision-making will directly result in the development and enhancement of new and existing industry in the region.

There is an abundance of interest among Region 4 economic development and community leaders in rail-based activity. Their efforts will benefit from a deeper education on the commercial, operational, and physical characteristics of rail operations. This knowledge is critical to choosing properties that are conducive to efficient rail operations. Well-conceived land use decisions lead to local rail-served industrial development that undergirds a corridor-wide supply chain logistics strategy.

Here is an outline of the steps for establishing the foundation of an I-80 Corridor rail-enabled development strategy:

A. Illuminate the Current Status of Rail

a. Existing rail activity- (Partially Completed)
b. Existing rail track and facilities-(Completed)
c. Name and location of all rail shippers and receivers-(Completed)
d. Identification of all businesses that were shipping or receiving by rail and are not currently-(Completed)
e. Location and growth capacity of transloading operations-(Completed)
    i. Private facility only
    ii. Public service available
f. UP and BN service characteristics- (Partially Completed)

B. Identify the Opportunities

a. Pinpoint potential transloading sites-(Completed)
b. Identify shippers and receivers that should be contacted-(Completed)
c. List land that has been identified and invested in by local government for rail-served industry
d. Identify land that is attractive for rail service that has not been invested in by local government
e. Assess what will be required to provide rail service at each of these properties
f. Identify each of the major rail infrastructure projects under consideration- (Partially Completed)
g. Complete the *Mining Materials Supply Chain Logistics Strategy*-(Outlined)

Figure 4-9: Region 4 - I-80 Corridor

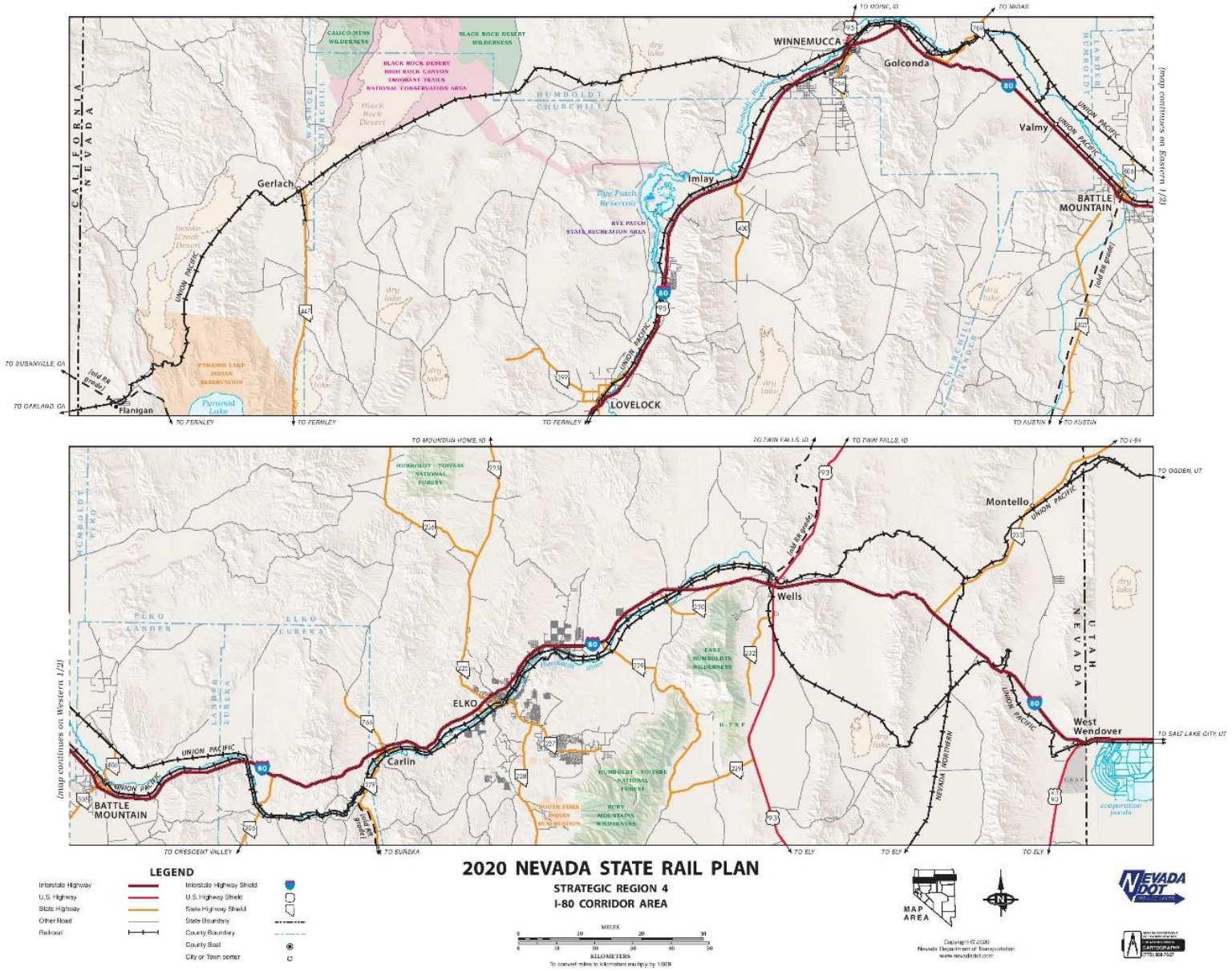


Table 4-12: Region 4 – Project List

Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
NGM Rail Connections	Eureka & Lander	Connect Cortez & Goldrush mines to Goldstrike gold processing facilities	Rail Connection	refractory ore, l/B fuel, lime, ammonium nitrate, sulfuric, peroxide, cyanide, ash, etc.	50+	$100,000,000	Nevada Gold Mines	4	4
Midas Mine	Humboldt	Connect to UP main line	Rail Connection	refractory ore, l/B fuel, lime	30	$60,000,000	Hecla Mines	4	4
Repurpose Sewer Treatment Property	Humboldt	Build connection to UP	Rail Connection	TBD	0.1	$1,000,000	City of Winnemucca	4	4
Thacker Pass Project	Humboldt	Connect to UP main line	Rail Connection	l/B molten sulfur, caustic soda, cyanide, soda ash, fuel	50	$100,000,000	Lithium Nevada Corporation	4	4
Fire Creek Mine	Lander	Connect to UP main line	Rail Connection	refractory ore, l/B fuel, lime	15	$30,000,000	Hecla Mines	4	4
Wells Heavy Industrial Park	**Elko**	Connect to UP main line	Rail Connection	TBD	.1	$4,000,000	City of Wells	**4**	**4**
Lander County Railpark	**Lander**	Connect to UP main line	Rail Connection	TBD	.1	$2,000,000	Lander County	**4**	**4**

*miles to reach site, not including serving tracks at site

Table 4-13: Region 4 – Active Mines

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
3	4	**Chukar (underground mine)**	Newmont Mining Corp.	Gold, silver	Eureka	4514625	565713
10	11	**Exodus Mine (underground)**	Newmont Mining Corp.	Gold, silver	Eureka	4530175	553868
15	16	**Gold Quarry (open pit)**	Newmont Mining Corp.	Gold, silver	Eureka	4515151	565991
16	17	**Goldstar (formerly West Genesis) (open pit)**	Newmont Mining Corp.	Gold, silver	Eureka	4533815	552725
17	18	**Goldstrike Arturo Mine Project (open pit)**	Barrick Goldstrike Mines, Inc. (joint venture with Premier Mines Ltd., 40%)	Gold, silver	Eureka	4543001	548221
18	19	**Goldstrike Betze-Post (open pit)**	Barrick Goldstrike Mines, Inc.	Gold, silver	Eureka	4537038	551878
22	23	**Leeville Mine (underground mine)**	Newmont Mining Corp.	Gold, silver	Eureka	4531532	556645
30	31	**Pete-Bajo Mine (underground mine)**	Newmont Mining Corp.	Gold, silver	Eureka	4528190	559441
34	35	**Ruby Hill Mine (leaching old pads)**	Ruby Hill Mining Co., LLC	Gold, silver	Eureka	4375649	587385
35	36	**Silverstar (formerly Genesis) (open pit)**	Newmont Mining Corp.	Gold, silver	Eureka	4533745	553720
93	94	**Nevada Barth Iron Mine**	Saga Exploration Co.	Iron ore	Eureka	4492240	562180
155	156	**Blackburn**	Grant Canyon Oil and	Oil	Eureka	4453769	573200

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
			Gas, LLC				
163	164	**Tomera Ranch**	Tomera Oil Fields, LLC	Oil	Eureka	4485941	574331
20	21	**Hycroft Mine (open pits)**	Hycroft Resources and Development, Inc.	Gold, silver	Humboldt	4526602	358640
23	24	**Lone Tree Complex (leaching old pads)**	Newmont Mining Corp.	Gold, silver	Humboldt	4520101	482251
24	25	**Lone Tree Mine (Brooks Pit) (open pit)**	Newmont Mining Corp.	Gold, silver	Humboldt	4518782	479712.1
26	27	**Marigold Mine (open pits)**	SSR Mining	Gold, silver	Humboldt	4507224	485220
38	39	**Turquoise Ridge Joint Venture (underground mine)**	Barrick Gold Corp. (joint venture with Newmont Mining Corp., 25%)	Gold	Humboldt	4562779	479465
39	40	**Twin Creeks Mine (open pit and underground mine)**	Newmont Mining Corp.	Gold, silver	Humboldt	4566061	485471
87	88	**MIN-AD Mine**	MIN-AD, Inc.	Dolomite	Humboldt	4525800	440120
123	124	**Bonanza Opal Mine**	Bonanza Opal Mines, Inc.	Precious opal	Humboldt	4633240	327520
127	128	**Rainbow Ridge Opal Mine**	Rainbow Ridge Opal Mines, Inc.	Opalized wood, precious opal	Humboldt	4628820	332830
128	129	**Royal Peacock Opal Mine**	Royal Peacock Opal Mine, Inc.	Precious opal	Humboldt	4628180	326360
130	131	**Blue Mountain**	AltaRock Energy	Electricity	Humboldt	4538407	404447
5	6	**Cortez Hills (open pit)**	Barrick Cortez, Inc.	Gold, silver	Lander	4446701	533501
6	7	**Cortez Hills (underground mine)**	Barrick Cortez, Inc.	Gold, silver	Lander	4446420	533387
7	8	**Cortez Pipeline Mine (open pit)**	Barrick Cortez, Inc.	Gold, silver	Lander	4455317	524233
11	12	**Fire Creek Mine (underground)**	Hecla Mining Co.	Gold, silver	Lander	4479271	529591
31	32	**Phoenix Mine (open pits)**	Newmont Mining Corp.	Gold, copper, silver	Lander	4488081	488921
45	46	**Argenta Mine**	Baker Hughes Oilfield Operations, Inc.	Barite	Lander	4498100	523540
72	73	**Greystone Mine**	M-I Swaco	Barite	Lander	4457850	510540
90	91	**Mountain Springs Mine**	M-I Swaco	Barite	Lander	4462620	496480
126	127	**May Turquoise Mine**	Red Widow Mine Co.	Turquoise	Lander	4466496	527135
129	130	**Beowawe**	Terra-Gen Power, LLC	Electricity	Lander	4489415	532398
141	142	**McGinness Hills, McGinness Hills II, III**	Ormat Nevada, Inc.	Electricity	Lander	4382385	507530
4	5	**Coeur Rochester Mine (open pit)**	Coeur Rochester, Inc.	Silver, gold	Pershing	4460022	402550
12	13	**Florida Canyon Mine (open pits)**	Alio Gold (US), Inc.	Gold, silver	Pershing	4492602	395130
37	38	**Sunrise Gold Placer Mine**	Sunrise Minerals LLC	Gold	Pershing	4509602	419820

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
57	58	**Buff-Satin Mine (stockpile)**	Vanderbilt Minerals Corp.	Clay	Pershing	4454650	385140
61	62	**Colado Mine**	EP Minerals, LLC	Diatomite, perlite	Pershing	4460730	352910
66	67	**Empire Mine**	Empire Mining Co.	Gypsum	Pershing	4485750	304800
73	74	**Gypsum Mountain Mine**	Silver State Minerals, LLC	Gypsum	Pershing	4448381	382857
92	93	**Nassau (Section 8) Mine (stockpile)**	American Colloid Co.	Clay	Pershing	4453880	388920
104	105	**Relief Canyon Quarry**	Nevada Cement Co.	Limestone	Pershing	4449781	401478
108	109	**Sexton Mine**	Nutritional Additives Corp.	Dolomite	Pershing	4522140	438740
140	141	**Jersey Valley**	Ormat Nevada, Inc.	Electricity	Pershing	4448142	458876

Regional Development Authority

The regional Development Authority contact for this region is Sheldon Mudd, Northeastern Nevada Regional Development Authority.

G-5. Region 5: Fernley/Hazen/Fallon/Silver Springs/Innovation Park

Overview

The salient factor for Region 5 is intense interest in developing new industrial parks. The following new projects are in various stages of development.

Table 4-14: Region 5 Industrial Parks Under Development

Industrial Parks in Fernley-Hazen-Fallon-Silver Springs-Sparks			
Name	**Acreage**	**Location**	**Distance from Rail**
Pyramid Commercial Center*	3,333	NW of Wadsworth	2 mi., former R-O-W
Victory Logistics	3,894	NE of Fernley	Abuts 2 branch lines
Tahoe Reno Industrial II	6,345	SW of Fernley	3 mi. to closest parcel
Northern Nevada Industrial Center	20,251	Stagecoach	7 mi. to Mina Branch
Silver Springs Opportunity Fund	2,746	Silver Springs	½ mi. to 4 parcels
Geothermal Rail/Dark Horse Rail	3,177	NW of Hazen	2 parcels abut main line
Western Nevada Rail Park	226	NW of Hazen	In operation on main line
Churchill Hazen Industrial Park	2,308	S of Hazen	Abuts 2 branch lines
Lahontan Rail Industrial Park	620	NE of Silver Springs	Abuts Mina Branch
Tahoe-Reno Industrial Center	19,749	Storey County	Limited rail is present
Innovation Park	67,000	Storey County	Rail is adjacent
40-Mile Desert Project	25,000	Churchill County	Abuts UP main east of Hazen
Unnamed project, City of Fallon*	3,625	NW of Fallon	1 mi to Fallon Branch
Unnamed project, City of Fallon*	3,070	NE of Fallon	1 mi to Fallon Branch
Total	**161,344**	**acres**	

**land deals not finalized*

Integrating these Fernley area developments with rail infrastructure and service is important to the state as well as the country, given their size and location on the corridor to and from California. For reference, the entire land mass of Salt Lake City, UT is 70,000 acres and San Francisco, CA covers 71,000 acres.

While some land and economic development leaders do not consider rail service to be a salient selling point, most of the current project sponsors are working on rail-served industrial parks. Even those

developers that have been low-key about rail in the past are expressing their interest in providing rail service to enhance the attractiveness of their properties.

Branch line in the Tahoe-Reno Industrial Center

Innovation Park is the name for the 67,000-acre development planned by Blockchains, Inc. acquired from the developers of the Tahoe-Reno Industrial Center. The brand may be in the process of also being applied to the 20,000-acres remaining within the Tahoe-Reno Industrial Center. Its total land mass of 107,000 acres makes it one of the top three largest industrial parks in the world.[24] The Tahoe-Reno Industrial Center is a vibrant industrial park, yet largely dependent upon trucks for freight. Of its 35 tenants with shipping needs of at least truckload quantities only 6 (17%) use rail. Our analysis suggests only 2-4% of freight flowing into and out of this development utilizes rail. Tesla, for instance, ships an average of 52 truckloads of auto parts per night (round trip) from its Gigafactory in Innovation Park over the Donner Pass to its assembly plant in Fremont, CA. The Fremont facility already has adjacent rail, and a routing for a new 2.5-mile spur to connect the Gigafactory to rail has been identified. This one project would enable the elimination of 36,400 truck trips a year on I-80 through Sparks, Reno, and northern California.

[24] World Atlas website, "The World's Largest Industrial Areas" article, source link, published June 10, 2019.

Key Strategies

- Support existing industrial parks and shippers in connecting to rail by attending to their specific logistics requirements and current rail infrastructure.

In our engagement with land developers some believed rail could not be constructed to their properties. Months of dialogue in the Region uncovered a series of conflicting beliefs about where in the Tahoe-Reno Industrial Center rail could and could not be constructed and used, due to possible steep grades, tight curves, or poor engineering and construction. However, track inspection has shown the existing track to be adequate for servicing the park's tenants located adjacent to the rail corridor and topographical analysis conducted by NDOT in 2020 has identified a viable route to connect the remainder of the park tenants to rail, including Tesla, as well as the nearby Innovation Park acreage.

- Support new land developers in the Fernley/Hazen/Fallon/Silver Springs corridor in their efforts to develop rail service.

The high number of vast land developments underway in Region 5 presents one of the state's most urgent opportunities to improve economic well-being and environmental sustainability through the logistics efficiencies of rail. Continuing the engagement with new land developers in this part of the region is needed to encourage their utilization and promotion of rail freight service in their industrial developments. It is crucial to continue to provide on-going support to these developers as they navigate the often-challenging process of dealing with railroads, tenants, federal government, state entities and other stakeholders when trying to enable rail service to their sites.

One 4,000-acre development in the region was operating under the misunderstanding that a viable rail connection could not be constructed to their property. NDOT's preliminary topographical analysis has established two rail right-of-way alignments that could be used to build in rail service.

This is a major opportunity for the region to secure rail freight service and address the current over-dependence on trucking freight because of the large scale of these new industrial sites. The largest land developers in Region 5 contacted by SRF have indicated they see rail as a core element of their land development. The developments that were accounted for via Land Development Project Assessment forms (Appendix Item) completed by developers include approximately 40,000 acres of land with 9,000 acres of industrial space being available in 2021 and 2022. All these developers are located aside or close to the UPRR Main line and 75% have industrial lead track status in place or accessible. The majority also have their industrial sites rail engineered with Union Pacific approval in place.

- Complete a detailed business case analysis of Fernley Multimodal Freight Facility.

  In parallel to the NVSRP report SRF has also completed a feasibility study for the Northern Nevada Development Agency (NNDA) (Appendix Item) The study concluded that locating a new multimodal

freight facility at Fernley is commercially feasible and will result in a significant conversion of truck freight to rail. The feasibility study identifies the potential for; 1) conversion of existing through-region truck freight, 2) conversion of existing truck freight out of the region, and 3) generation of new out of region freight flows.

The study proposes an Integrated Multimodal Cargo Transfer Facility (IMCTF) model for the Region to maximize the economic benefits of freight rail utilization. Unlike traditional multimodal terminals which are focused on container freight, the IMCTF model accommodates multiple freight types and a large land footprint. These aspects are important because the Fernley IMCTF will be able to capture the regional demand for mining and manufactured freight as well as containers. The additional land capacity of the Region is also a key factor as it enables the Fernley facility to offer extended freight services such as transloading and warehouse operations.

- Focus on rail development opportunities along the Fallon Branch, especially near the town of Fallon
- Reinstitute commercial service on the Mina Branch to Hawthorne, thereby stimulating rail activity that can utilize new logistics services in Fernley area
- Continue and expand stakeholder engagement and collaboration

This region is currently dominated by truck freight, accounting for 90% of all current freight flows. Although this report has identified major opportunities for increasing rail freight traffic, supported by land developers openly encouraging rail development, successfully achieving this potential will be dependent upon numerous stakeholders. Stakeholder engagement and collaboration is therefore of crucial importance.

A Guide to Region 5 Industrial Park Insets

The following nine maps, beginning with an overview map of all major industrial developments (Tim Tucker's planned 40-mile Desert Project is not shown) zoom in on the planned industrial parks listed previously. Region 5 is a hotbed of such activity due to the proximity of California and the lack of such large areas of developable land to the west in Region 6. Intense pressure on I-80 from traffic congestion, pavement degradation, and the incidence of truck accidents can be relieved through the proactive facilitation of rail service into these developments.

Figure 4-10: Region 5 – Industrial Parks

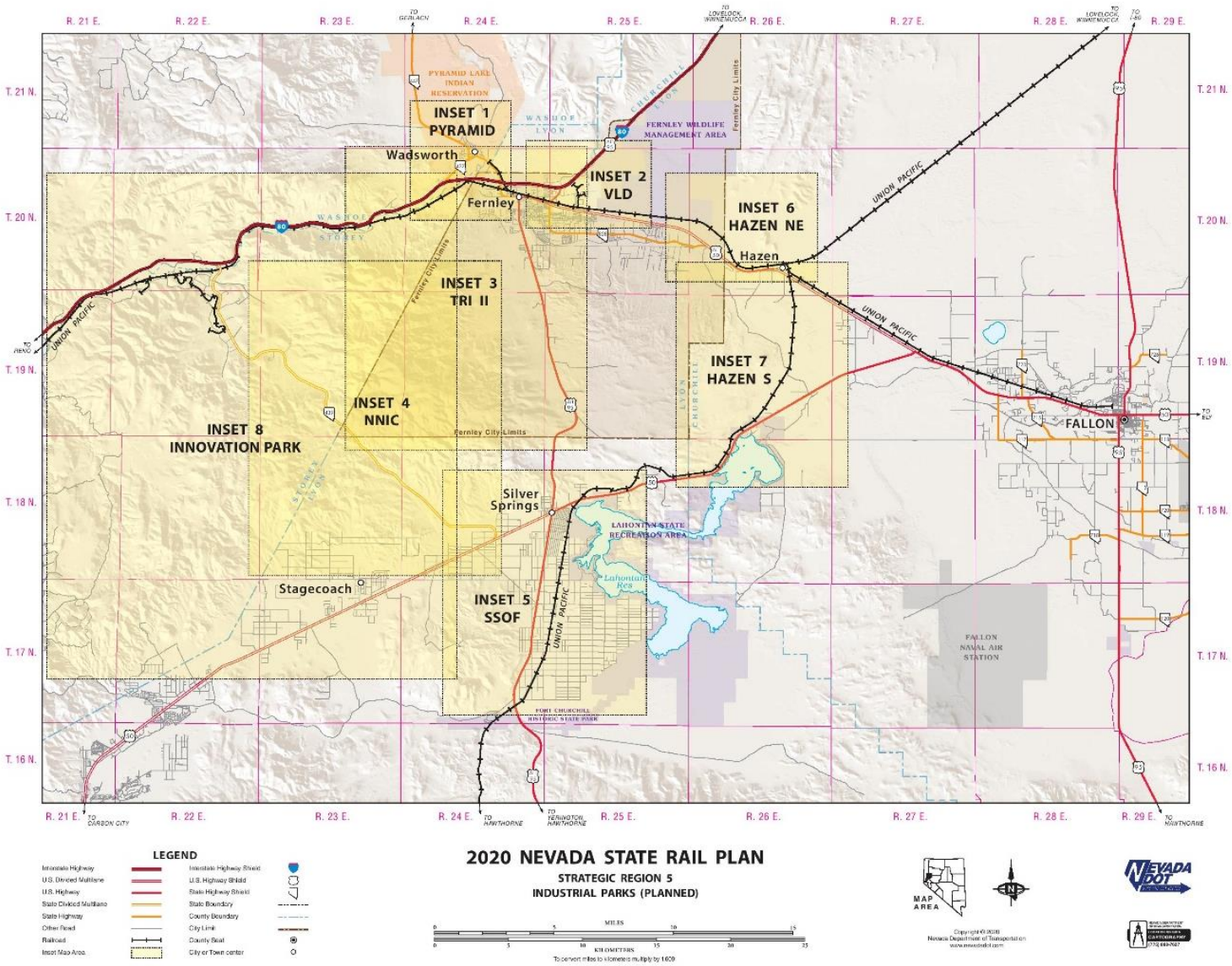


Figure 4-11: Region 5 – Pyramid Commercial

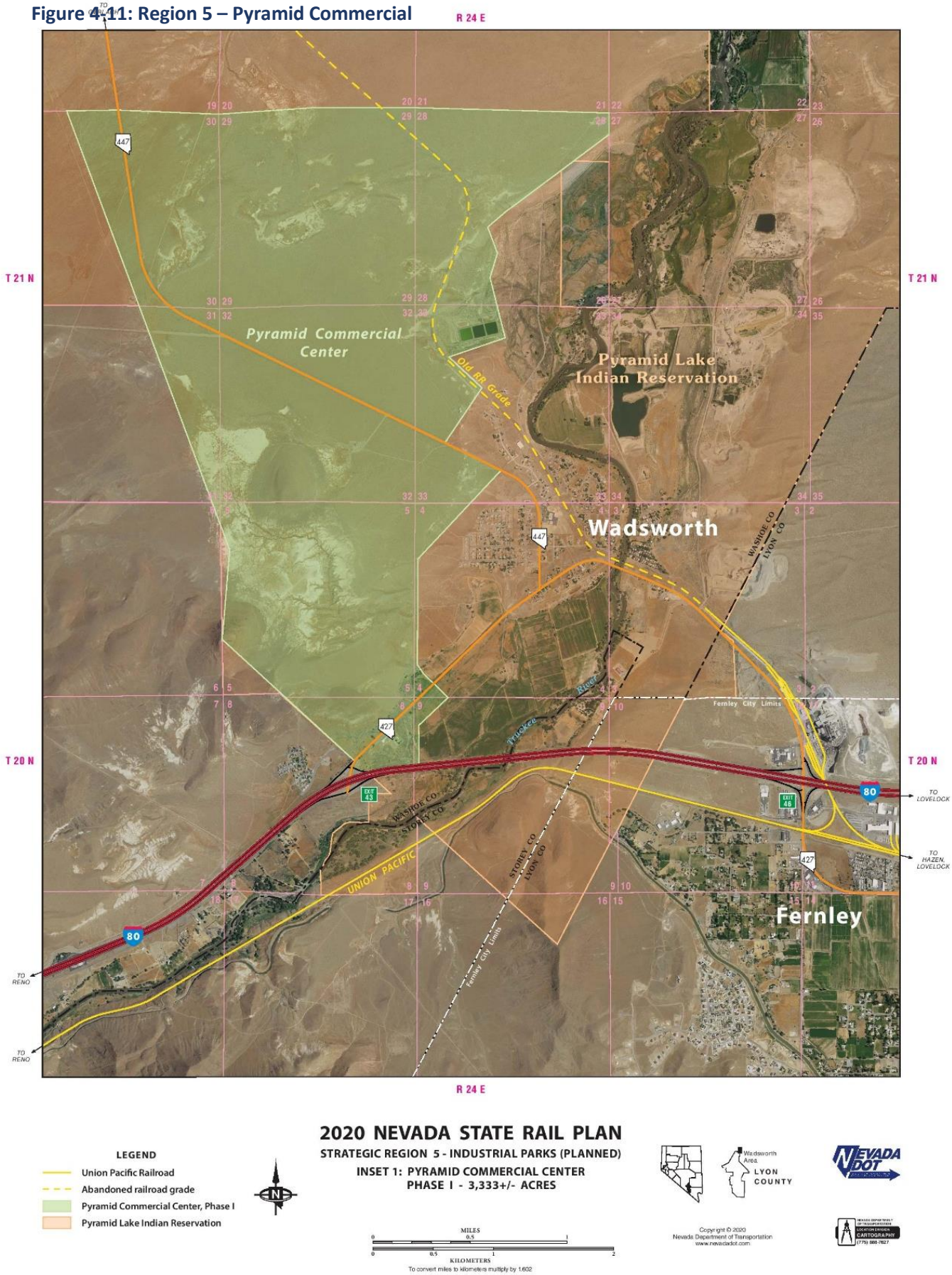


Figure 4-12 Region 5 – Victory Logistics District

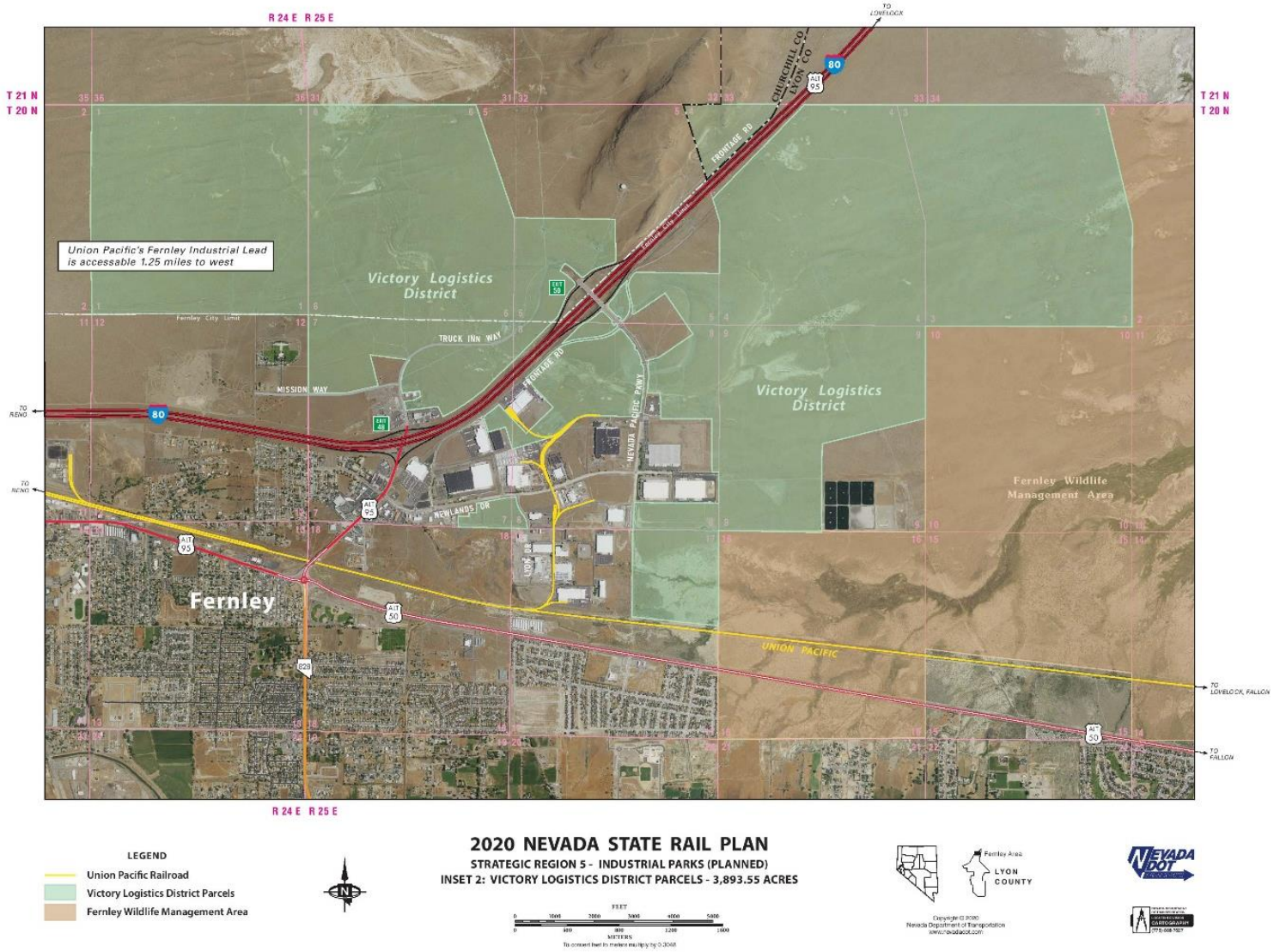


Figure 4-13: Region 5 – TRI II

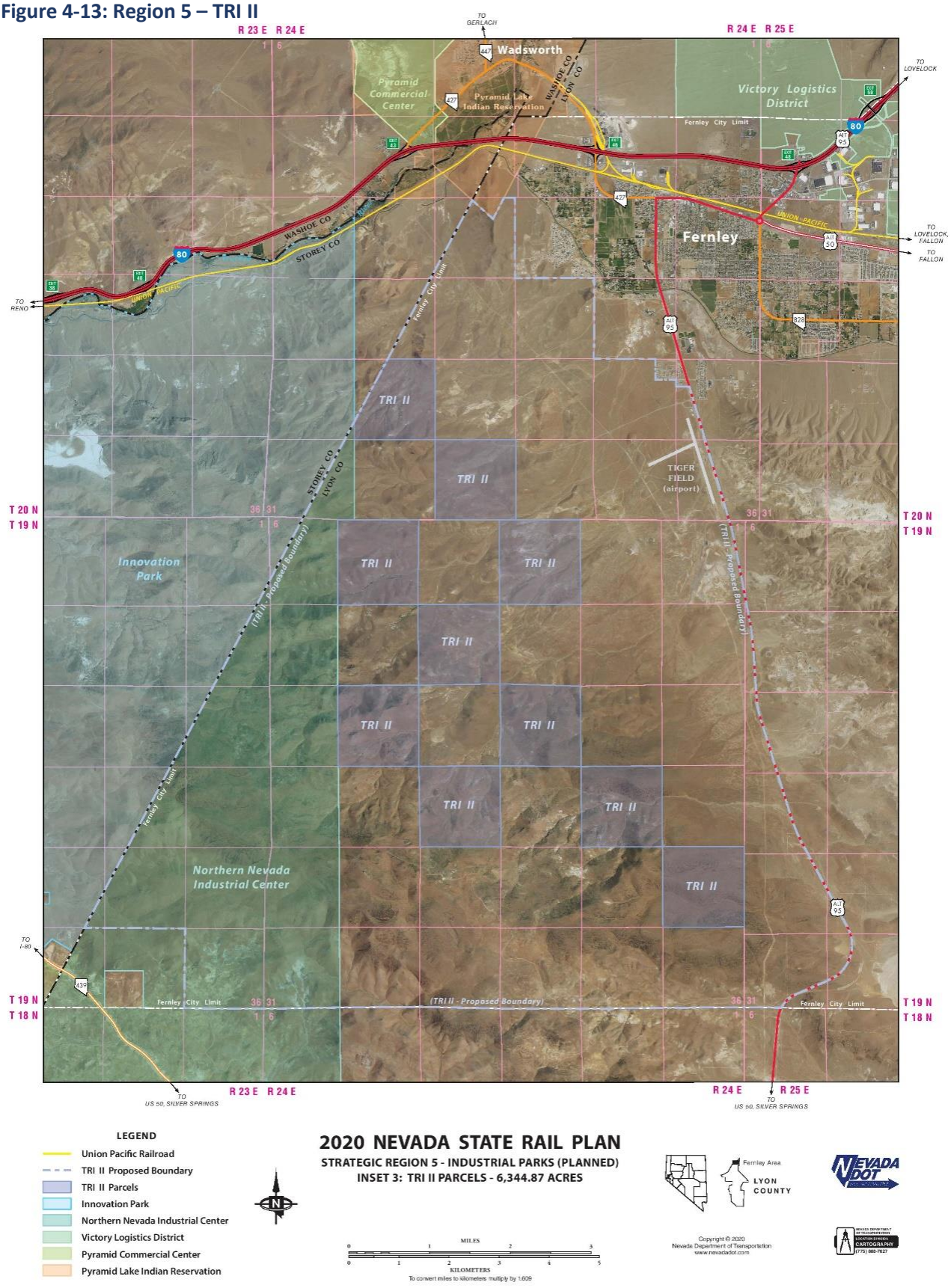


Figure 4-14: Region 5 – NNIC

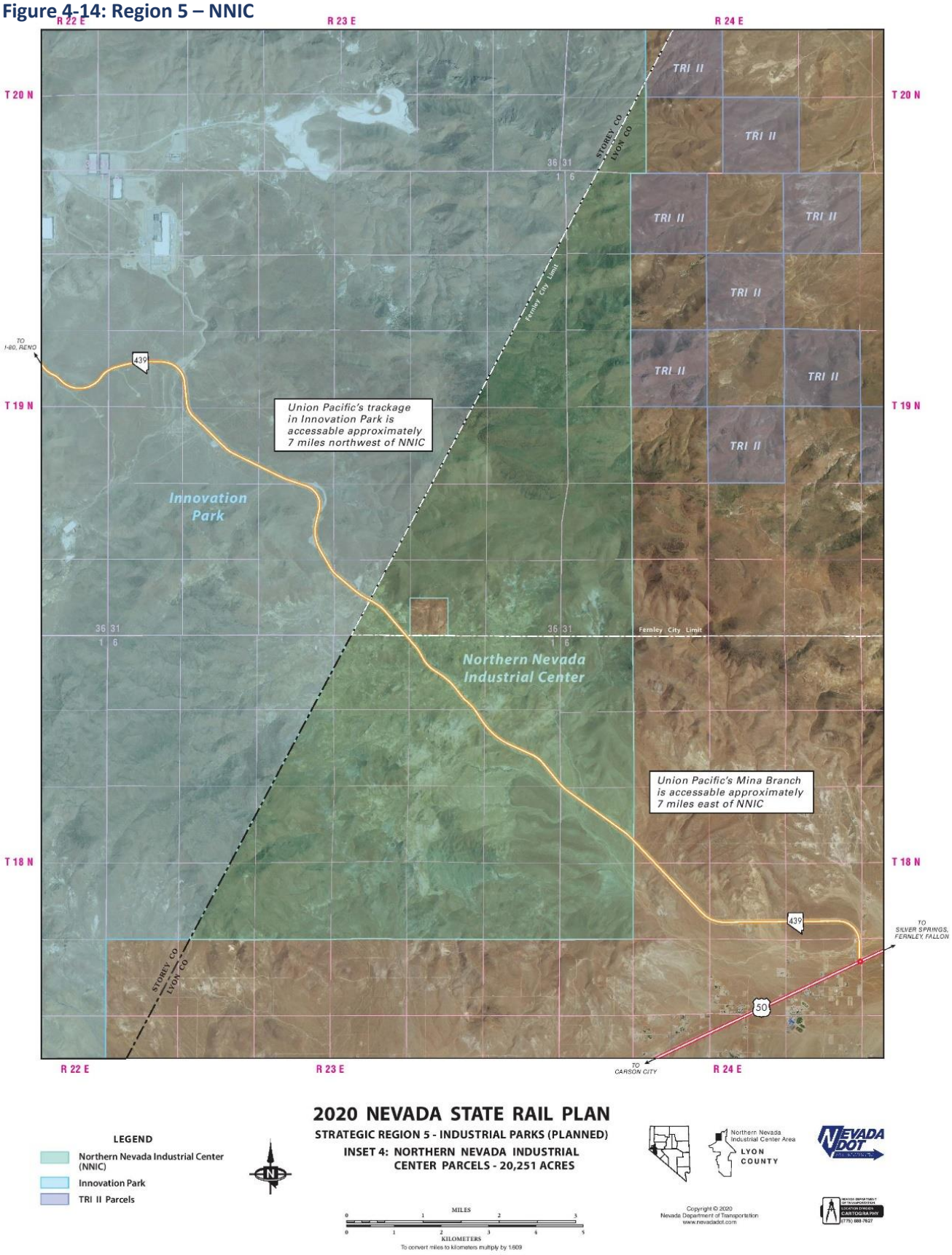


Figure 4-15: Region 5 – SSOF

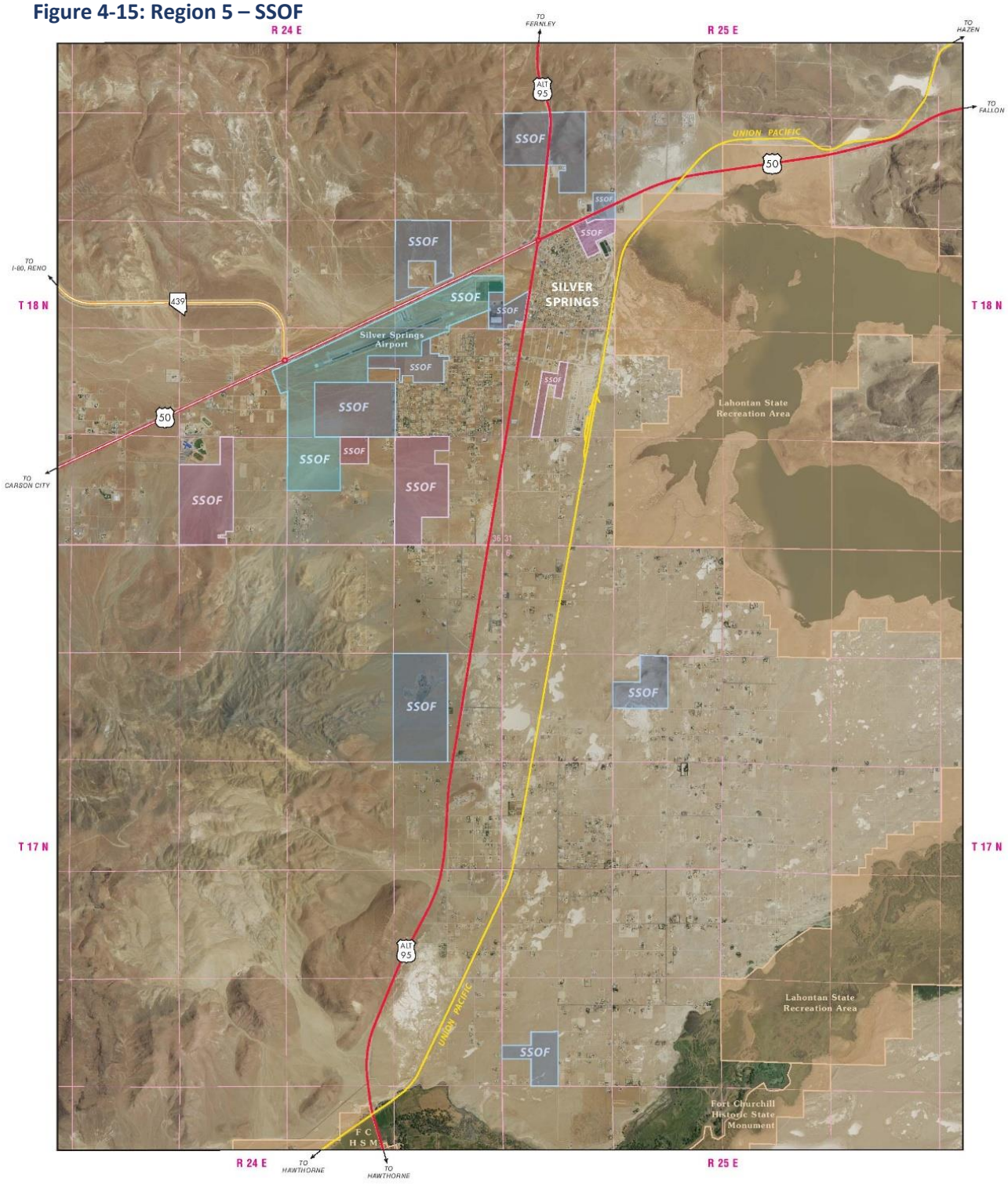


Figure 4-16: Region 5 – Hazen NW

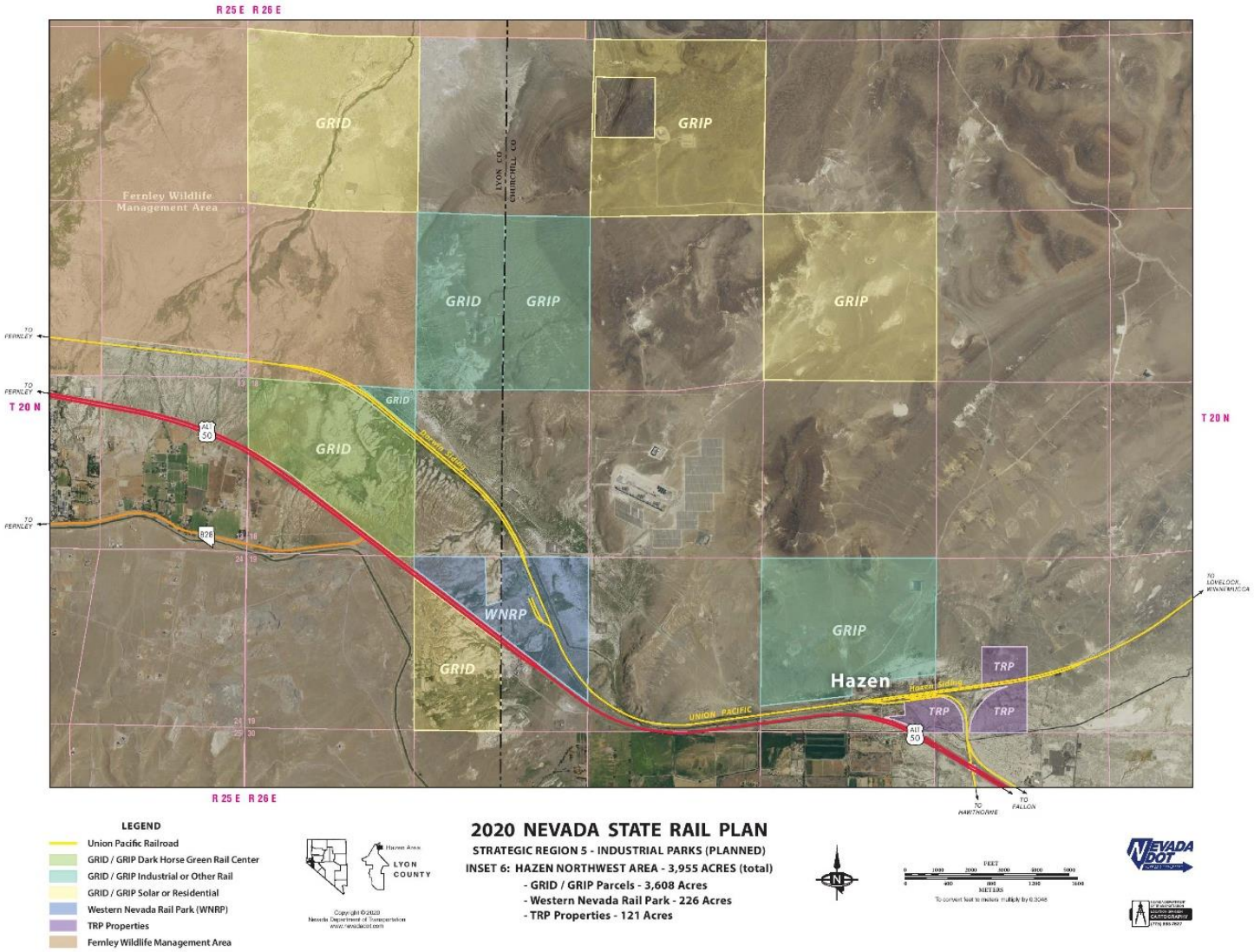
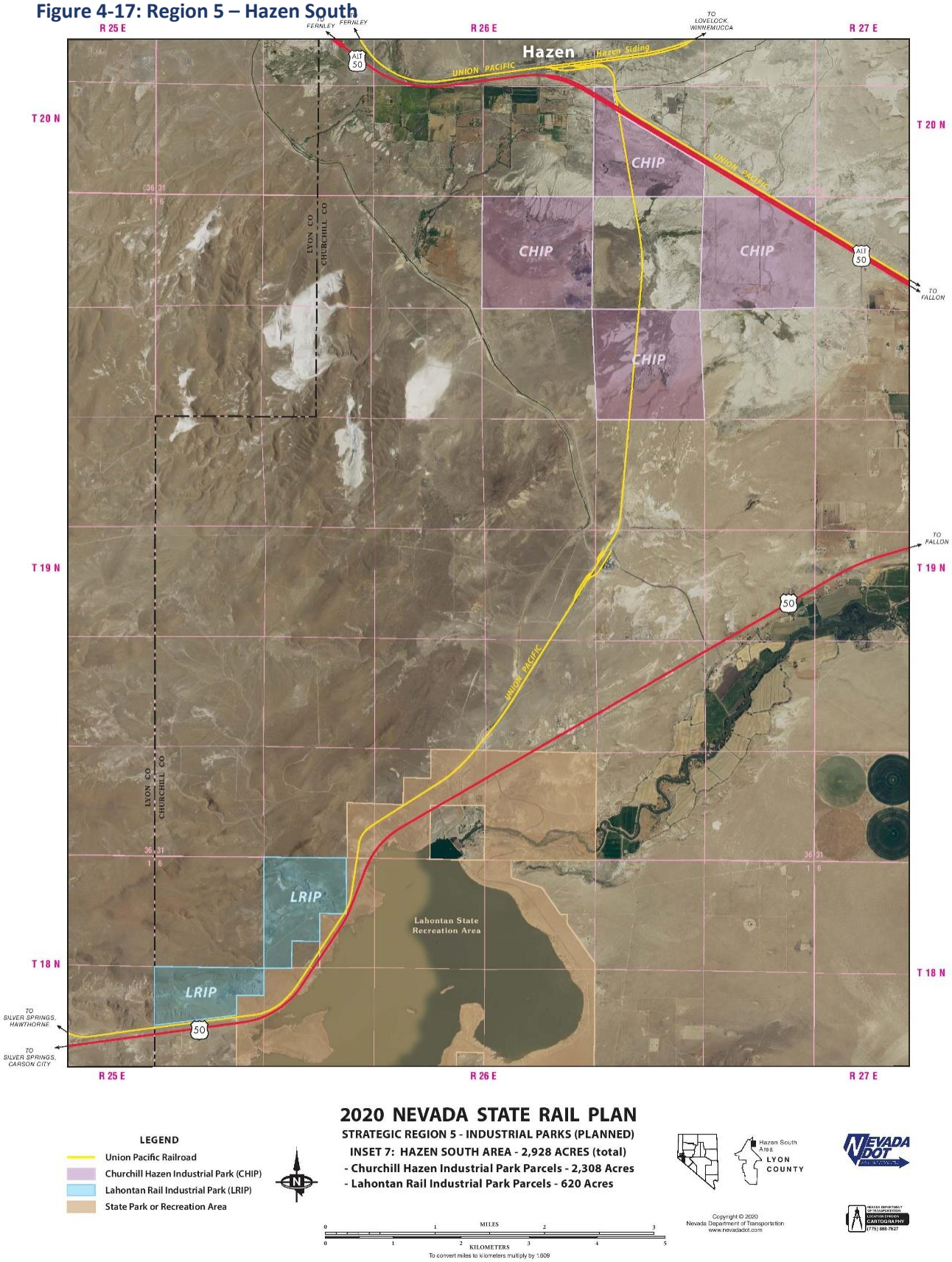


Figure 4-17: Region 5 – Hazen South



2020 NEVADA STATE RAIL PLAN

STRATEGIC REGION 5 - INDUSTRIAL PARKS (PLANNED)

INSET 7: HAZEN SOUTH AREA - 2,928 ACRES (total)

- Churchill Hazen Industrial Park Parcels - 2,308 Acres
- Lahontan Rail Industrial Park Parcels - 620 Acres

LEGEND

- Union Pacific Railroad
- Churchill Hazen Industrial Park (CHIP)
- Lahontan Rail Industrial Park (LRIP)
- State Park or Recreation Area

Hazen South Area
LYON COUNTY

MILES 0 1 2 3
KILOMETERS 0 1 2 3 4 5
To convert miles to kilometers multiply by 1.609

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Figure 4-18: Region 5 – Innovation Park

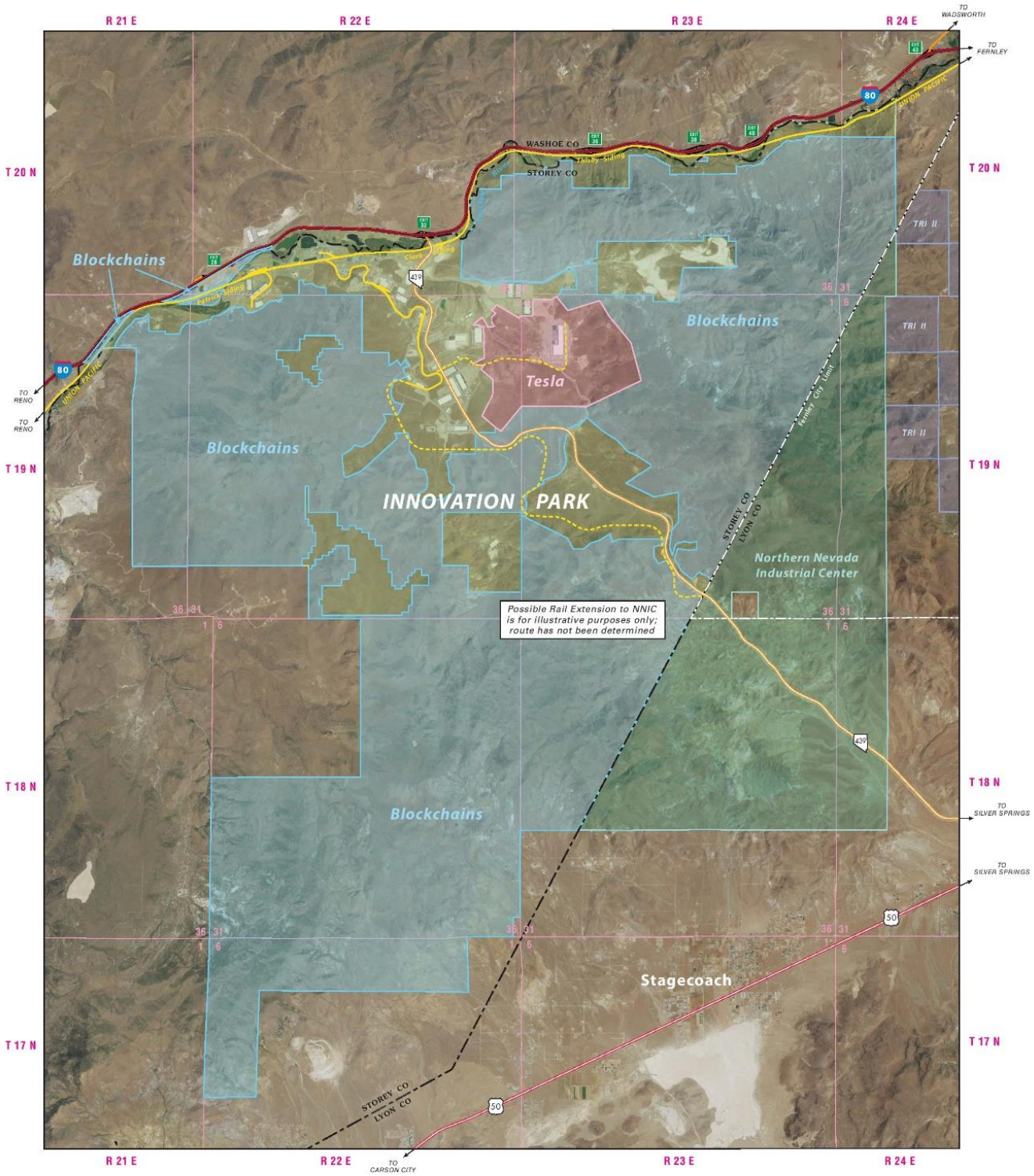
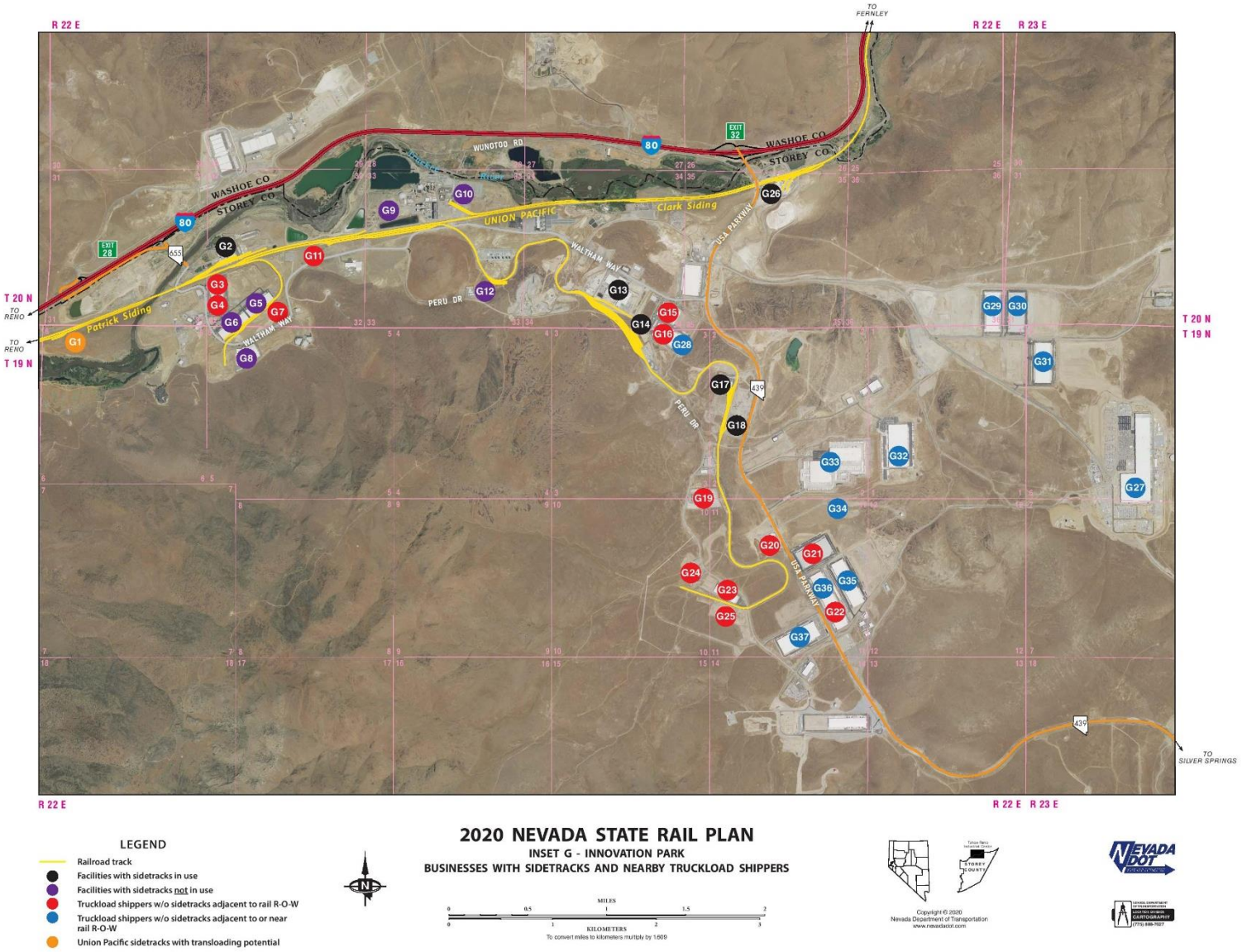


Figure 4-19: Innovation Park (Inset)



The above map and the following map show details of the existing rail infrastructure where existing and potential rail customers are clustered in Region 5. Notice that Tesla's Gigafactory (blue disk G27 in lower right), which ships an average of 52 truckloads per night via I-80 over the Donner Pass to Tesla's assembly plant in Fremont, CA, is only 2.5 miles away from an active branch line. The rail right-of-way for this connection (not shown) has already been set aside by the TRI General Improvement District and Tesla.

Figure 4-20: Fernley Northeast Area

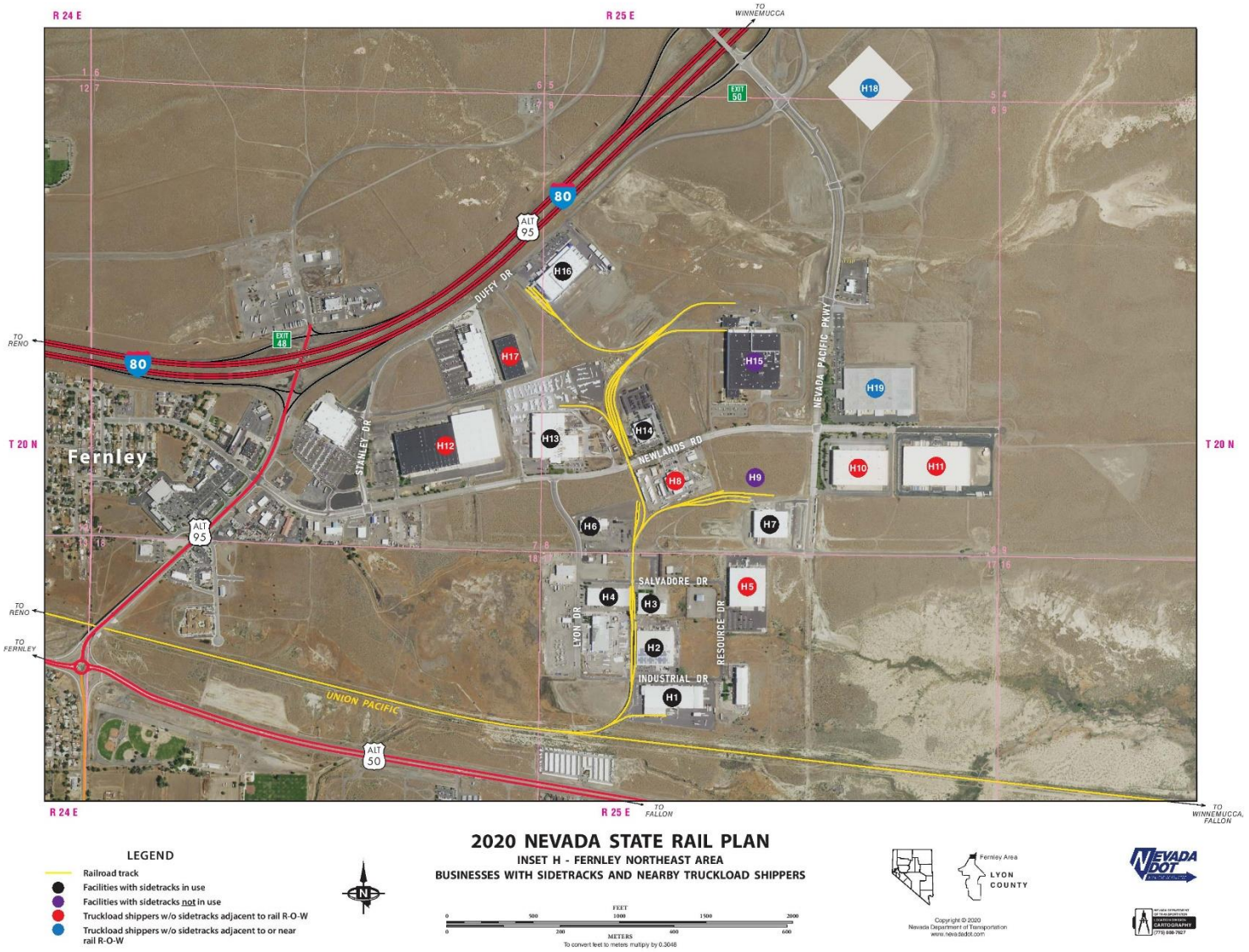


Table 4-15: Region 5 Project List

Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
40-Mile Desert Land Development	Churchill	Connect to UP main line	Rail Connection	TBD	0.1	$4,000,000	TOT, LLC	5	4
Lahontan Rail Industrial Park	Churchill	Connect to Mina Branch	Rail Connection	TBD	0.2	$400,000	TOT, LLC	5	4
Geothermal Resources Industrial Park	Churchill	Connect to UP main line	Rail Connection	TBD	0.1	$4,000,000	GRIP LLC	5	4

Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
Limestone Mine	Churchill	Transloading site off main	Transload	specialized limestone	0.2	$4,000,000	Advanced Carbonate Technologies, LLC	5	4
Victory Logistics	Churchill	Connect to Fernley Industrial Lead Connect to LA Pacific Lead	Rail Connection	TBD	0.4 1.25	$4,000,000	Mark IV Capital	5	4
TRP Properties	Churchill	Connect to Fallon Branch	Rail Connection	TBD	0.1	$300,000	Omaha Track Hazen Project	5	4
Churchill Hazen Industrial Park	Churchill	Connect to Fallon Branch	Rail Connection	TBD	0.1	$300,000	TOT, LLC	5	4
Northern Nevada Industrial Center	Lyon	Connect to TRIC lead	Rail Connection	TBD	7	$14,000,000	Reno Engineering	5	4
Sierra Springs Opportunity Fund	Lyon	Connect 15-591-09 (120 ac.) Connect 15-581-03 (91 ac.)	Rail Connection	TBD	0.6 0.6	$2,000,000	Sierra Springs Opportunity Fund	5	4
Geothermal Rail Industrial Development	Lyon	Connect to UP main line	Rail Connection	TBD	0.1	$4,000,000	GRID LLC	5	4
Gigafactory Project	Storey	Connect to TRIC lead	Rail Connection	battery packs, drivetrains	2.5	$5,000,000	Tesla	5	4
Sierra Biofuels Plant	Storey	Connect to TRIC lead	Rail Connection	O/B syncrude feedstock	0	$0	Fulcrum BioEnergy	5	4
Innovation Park	Storey	Industrial Park	Rail Connection	TBD	0.1	$4,000,000	Blockchains, Inc.	5	4
Pyramid Commercial Center	Washoe	Connect to Fernley Industrial Lead	Rail Connection	TBD	1.7	$5,000,000	Reno Engineering	5	4

Table 4-16: Region 5 – Active Mines

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
58	59	**Churchill Mine**	Nevada Cement Co.	Limestone	Churchill	4427500	349540
67	68	**Fernley Operation Mine**	EP Minerals, LLC	Diatomite	Churchill	4410158	332267
77	78	**Huck Salt**	Huck Salt Co.	Salt	Churchill	4346860	374550
95	96	**Nightingale Pit**	Imerys Filtration Minerals, Inc.	Diatomite	Churchill	4422800	321060
101	102	**Popcorn Mine**	EP Minerals, LLC	Perlite	Churchill	4344290	345870
131	132	**Brady Hot Springs**	Ormat Nevada, Inc.	Electricity	Churchill	4407088	327912
132	133	**Brady Hot Springs**	Olam Spices and Vegetables, Inc.	Vegetable dehydration	Churchill	4406553	327273
134	135	**Desert Peak II**	Ormat Nevada, Inc.	Electricity	Churchill	4402148	332634
135	136	**Dixie Valley**	Terra-Gen Power,	Electricity	Churchill	4424433	426925

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
			LLC				
144	145	**Patua**	Cyrq Energy	Electricity	Churchill	4383471	321797
145	146	**Salt Wells**	Enel North America, Inc.	Electricity	Churchill	4352375	364296
147	148	**Soda Lake Nos. 1, 2**	Cyrq Energy	Electricity	Churchill	4380171	341112
150	151	**Stillwater 2**	Enel Stillwater, LLC	Electricity	Churchill	4378439	366194
151	152	**Tungsten Mountain**	Ormat Nevada, Inc.	Electricity	Churchill	4391619	440784
46	47	**Basalite Dayton Pit**	Basalite Concrete Products, LLC	Sand, gravel	Storey	4357606	282597
60	61	**Clark Mine**	EP Minerals, LLC	Diatomite	Storey	4381500	295120
106	107	**River Canyon III**	Joy Engineering	Aggregate	Storey	4379781	286375
110	111	**Sierra Stone Quarry**	CEMEX Construction Materials Pacific, LLC	Aggregate	Storey	4372283	274829
120	121	**Trico Pit**	Gopher Construction Co.	Aggregate	Storey	4382000	283800

Regional Development Authority

The regional Development Authority contact for this region is Rob Hooper, Northern Nevada Development Authority.

G-6. Region 6: Reno/Sparks/Stead

Overview

Region 6 features extensive industrial spurs and branch line infrastructure that is greatly underutilized. There are 39 manufacturing and transloading facilities served by rail in Region 6, but 15 do not use their sidetracks. There are 37 warehouses and distribution centers served by rail in Region 6, with a cumulative total of just over 5 million square feet of space, and none of their sidetracks are being used. One of those warehouses is the moribund BNSF Quality Distribution Center in Sparks. There are also 53 facilities located adjacent to UP right-of-way that ship or receive in truckload lots, but none of which built a sidetrack. Thirty-six of those 53 facilities are warehouses with another 5+ million square feet of space. Here is one large distribution center building in Stead adjacent to the branch line that is not being used.

Stead Warehouse near rail line that does not use rail

UP and BNSF, which operates in Region 6 under rights granted by the Surface Transportation Board in 1996 from UP's merger with SP, do not provide intermodal service between the COFC terminal in Sparks and California. In fact, BNSF does not utilize its intermodal rights in Nevada at all. UP only handles containers to and from Chicago. However, the Port of Oakland has expressed an interest in activating intermodal service to and from Nevada.

Notice in the following Figures 4-21 through 4-26 that almost all of the sidetrack infrastructure in Region 6 is not served off of the UP's main line, but instead off of industrial spurs and branch lines, whose operation need not interfere with main line traffic, and whose proximity to truckload shippers opens up the potential for new sidetracks. This evidences an opportunity for UP to outsource local switching operations and business development to a locally focused subsidiary or independent rail operator.

Key Strategies

- Co-create with UP a local rail service development effort
- Co-create with UP and BNSF a collaborative service development plan where BNSF has existing rights
- Gather the rail service case and operating plan for intermodal service with the Port of Oakland

- Conduct supply chain logistics analysis on the regions production and transportation of aggregates, sand, and non-metallic minerals to California
- Establish high-volume interaction with customers
- Establish collaboration with real estate community on awareness and promotion of rail access in sales and leasing of commercial property
- Establish collaboration with economic developers on rail-centric business attraction strategies

A Guide for Looking at Next Six Maps

The next map, Figure 4-21, is an overview of Region 6 that shows the location of five areas of dense concentrations of businesses that have two characteristics: 1) proximity to active tracks, and 2) elevated shipping activity in truckload or carload lots. The following five maps, Figures 4-22 through 4-26, zoom in on these dense concentrations, which are particularly intriguing due to their potential for becoming centers of carload traffic growth when supported by frequent and reliable switching service and localized solicitation effort. This is particularly true for Figures 4-24 through 4-26, which overlap one another, making them a ready-made platform for carload initiatives.

The numbered and colored disks in the inset maps correspond to line items with details on each property that are catalogued in the NVSRP's statewide database presented in the Appendix as the ***Inventory of Nevada Industry: Businesses with sidetracks and nearby truckload shippers*** (black disks for businesses with active rail sidetracks, purple for those with inactive rail sidetracks, and red for those next to rail right-of-way that could build new sidetracks easily), and as Appendix Item ***Truckload Shipper Inventory*** (blue disks for truckload shippers farther away from rail right-of-way).

Figure 4-21: Region 6 – Reno/Sparks/Stead

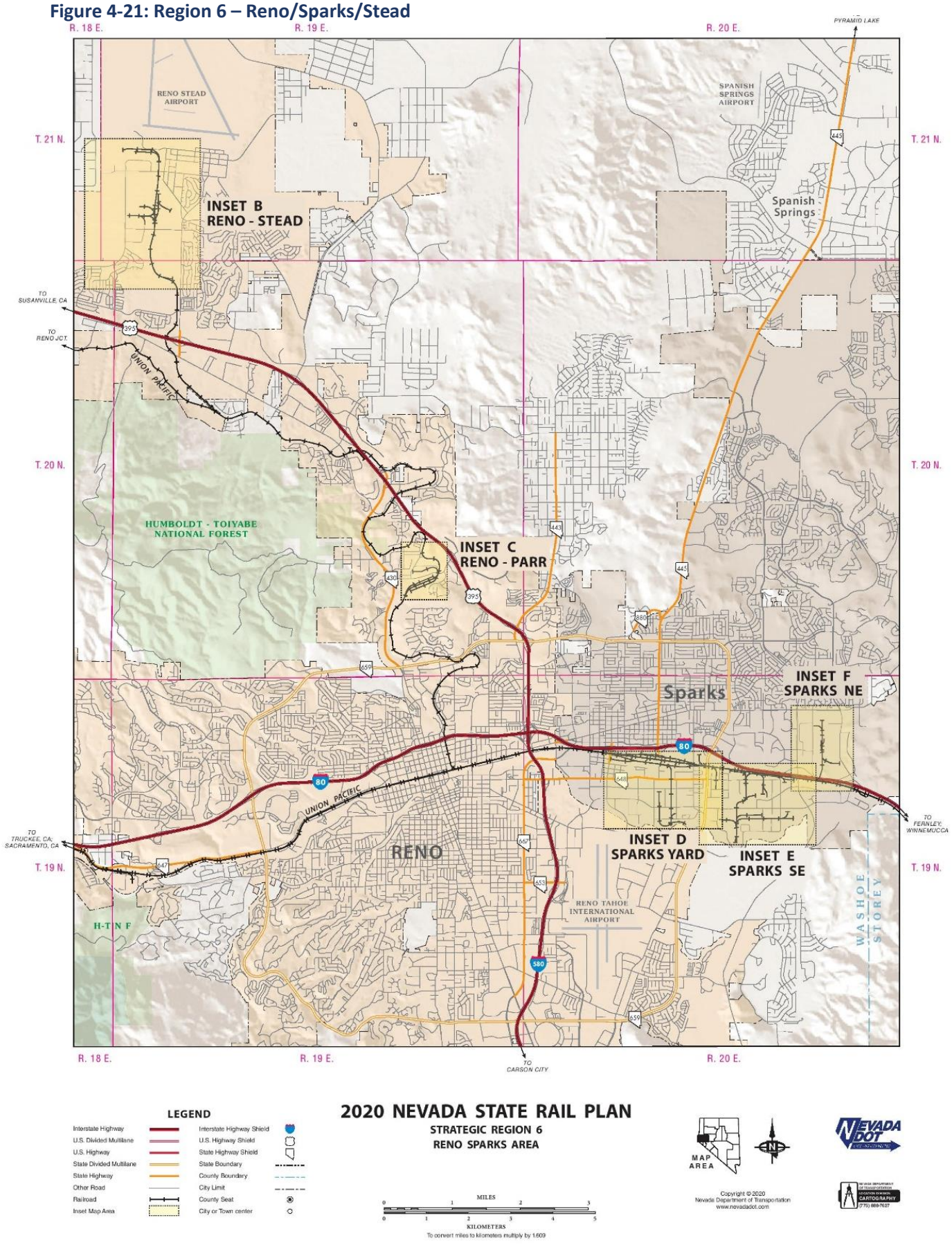


Figure 4-22: Region 6 – Reno Stead Area

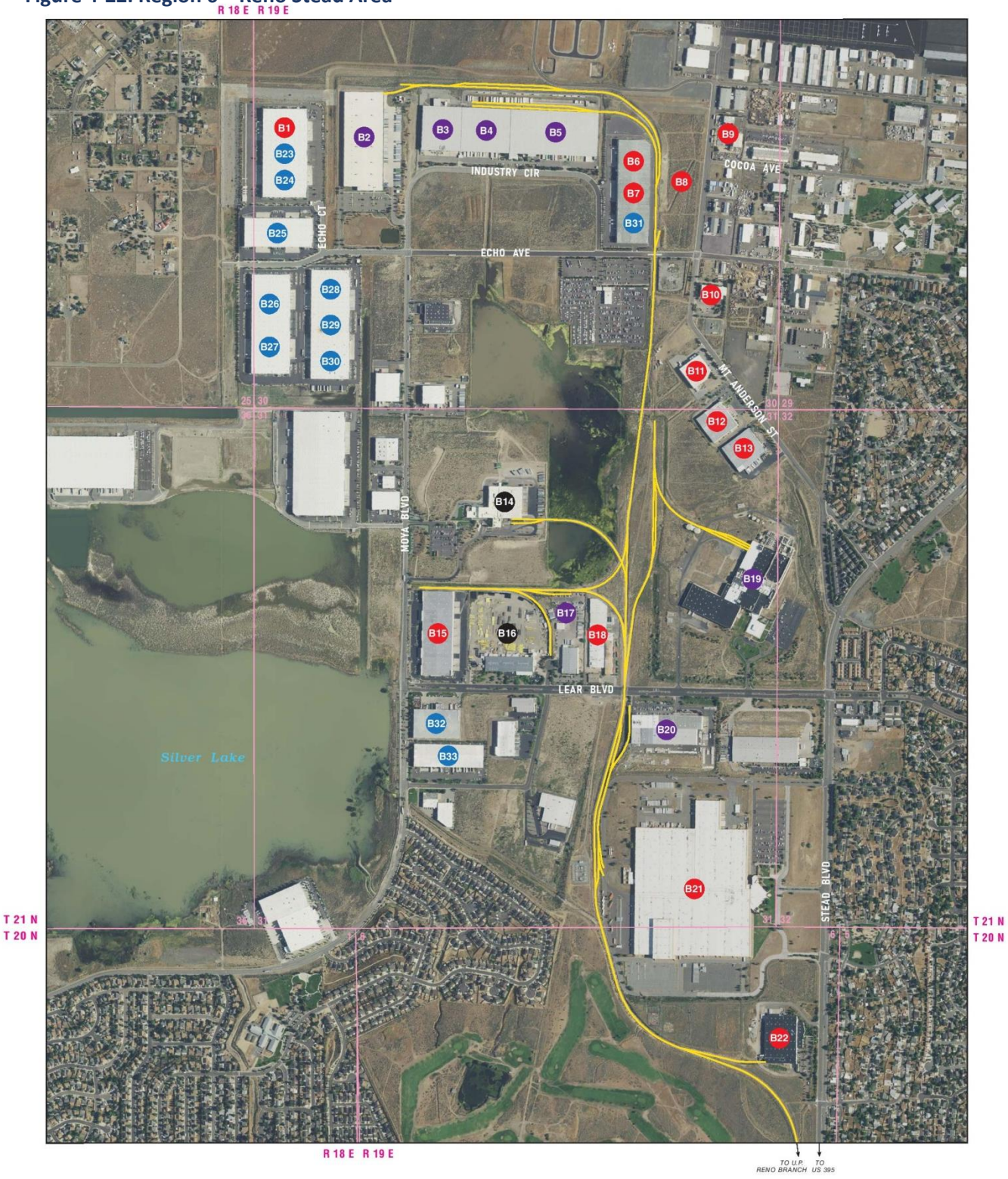
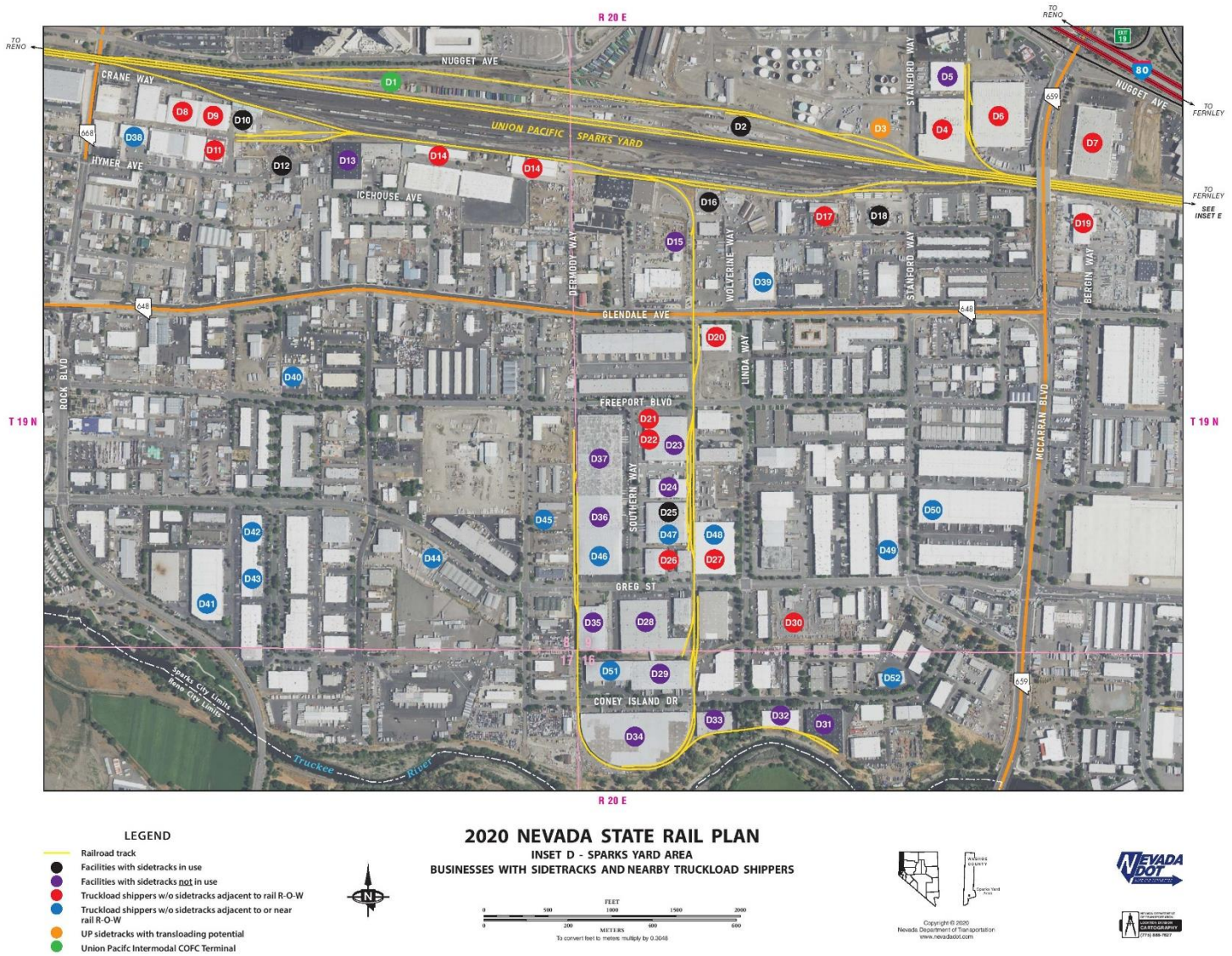


Figure 4-23: Region 6 – Reno Parr Area

Figure 4-24: Region 6 – Sparks Yard Area



LEGEND

- Railroad track
- Facilities with sidetracks in use
- Facilities with sidetracks not in use
- Truckload shippers w/o sidetracks adjacent to rail R-O-W
- Truckload shippers w/o sidetracks adjacent to or near rail R-O-W
- UP sidetracks with transloading potential
- Union Pacifc Intermodal COFC Terminal

2020 NEVADA STATE RAIL PLAN

INSET D - SPARKS YARD AREA

BUSINESSES WITH SIDETRACKS AND NEARBY TRUCKLOAD SHIPPERS

FEET 0 500 1000 1500 2000

METERS 0 200 400 600

To convert feet to meters multiply by 0.3048

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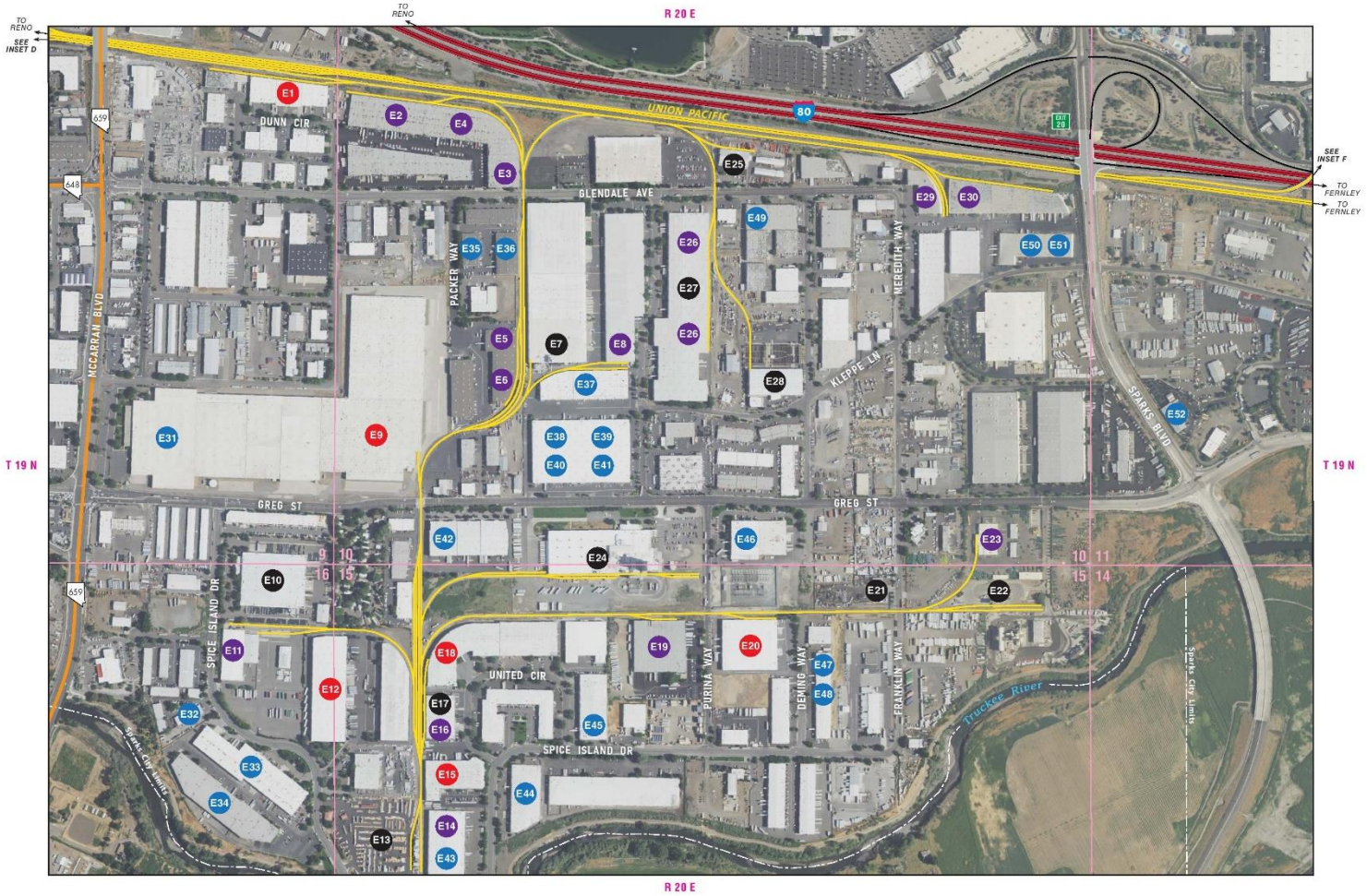
Figure 4-25: Region 6 – Sparks Southeast Area



2020 NEVADA STATE RAIL PLAN

INSET E - SPARKS SOUTHEAST AREA

BUSINESSES WITH SIDETRACKS AND NEARBY TRUCKLOAD SHIPPERS

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Figure 4-26: Region 6 – Sparks Northeast Area

Table 4-17: Region 6 – Project List

Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
Lear Industrial Center	Washoe	Connect to Leareno Industrial Lead	Rail Connection	to closest of 5 buildings:	0.3	$200,000	Lear Industrial Center	6	4
Pozzolan Transloading Site	Washoe	Connect to Leareno Industrial Lead	Rail Connection	pozzolan	0.1	$100,000	Geofortis Processing & Logistics LLC	6	4

*miles to reach site, not including serving tracks at site

Table 4-18: Region 6 – Active Mines

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
51	52	**Black and Red Cinder Pits**	Cinderlite Trucking, Inc.	Cinder, landscape rock	Carson City	4346880	264860
71	72	**Goni Pit**	Cinderlite Trucking Corp.	Decomposed granite, sand, gravel	Carson City	4344430	263820
50	51	**Bing Materials Pit**	Bing Materials Co.	Sand, gravel	Douglas	4308700	261500
49	50	**Bella Vista Pit**	A and K Earthmovers	Rock, sand	Washoe	4371320	265930
63	64	**Donovan Pit**	R.T. Donovan Co., Inc.	Decomposed granite	Washoe	4395000	270000
70	71	**Golden Valley Pit**	A and K Earthmovers	Aggregate	Washoe	4388960	259020
79	80	**Lockwood Quarry**	Granite Construction Co.	Aggregate	Washoe	4377267	271751
91	92	**Mustang Quarry**	Sierra Nevada Construction, Inc.	Aggregate	Washoe	4379650	273880
98	99	**Paiute Pit**	CEMEX Construction Materials Pacific, LLC	Sand, gravel	Washoe	4391040	304400
105	106	**Rilite Aggregate**	Rilite Aggregate Co.	Sand, rock	Washoe	4365881	266702
115	116	**Spanish Springs Quarry**	Martin Marietta Materials, Inc.	Aggregate, decomposed granite	Washoe	4395944	266114
118	119	**Terraced Hill Clay (Flanigan) Mine**	Nevada Cement Co.	Clay	Washoe	4455060	261500
119	120	**Tracy Pit**	BJ Rees's Enterprise	Sand, gravel	Washoe	4383361	284683
121	122	**Wade Sand Pit**	Granite Construction Co.	Sand	Washoe	4388890	305170
133	134	**Burdette (Galena 3)**	Ormat Nevada, Inc.	Electricity	Washoe	4363504	263276
138	139	**Galena 1**	Ormat Nevada, Inc.	Electricity	Washoe	4364213	263433
139	140	**Galena 2**	Ormat Nevada, Inc.	Electricity	Washoe	4361796	261800
142	143	**Moana Hot Springs**	Avalon Geothermal, LLC	Space heating	Washoe	4374819	258439
143	144	**Moana Hot Springs**	Peppermill Casinos, Inc.	Space heating	Washoe	4375822	258958

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
146	147	**San Emidio**	Ormat Nevada, Inc.	Electricity	Washoe	4472701	296269
148	149	**Steamboat II, III**	Ormat Nevada, Inc.	Electricity	Washoe	4363738	262756
149	150	**Steamboat Hills**	Ormat Nevada, Inc.	Electricity	Washoe	4361484	261630
49	50	**Bella Vista Pit**	A and K Earthmovers	Rock, sand	Washoe	4371320	265930

Regional Development Authority

The regional Development Authority contact for this region is Nancy McCormick, Economic Development Authority of Western Nevada.

G-7. Region 7: Mina Branch

Overview

The Mina Branch Region includes the last 77 miles of a 97-mile branch line from Hazen that formerly went all the way to Mina, Nevada, but now ends at the Hawthorne Army Depot in Hawthorne. UP sold the last 54 miles to the U.S. Army, and it wishes the Army to subcontract with an independent rail operator for those 54 miles so that UP would only traverse 43 miles south from Hazen (which is in Region 5). The Army has agreed in principle to work with Top Rail Solutions of Pittsburg, Kansas to do this, but an interchange between UP and Top Rail remains to be agreed upon and funded.

Hawthorne Army Depot

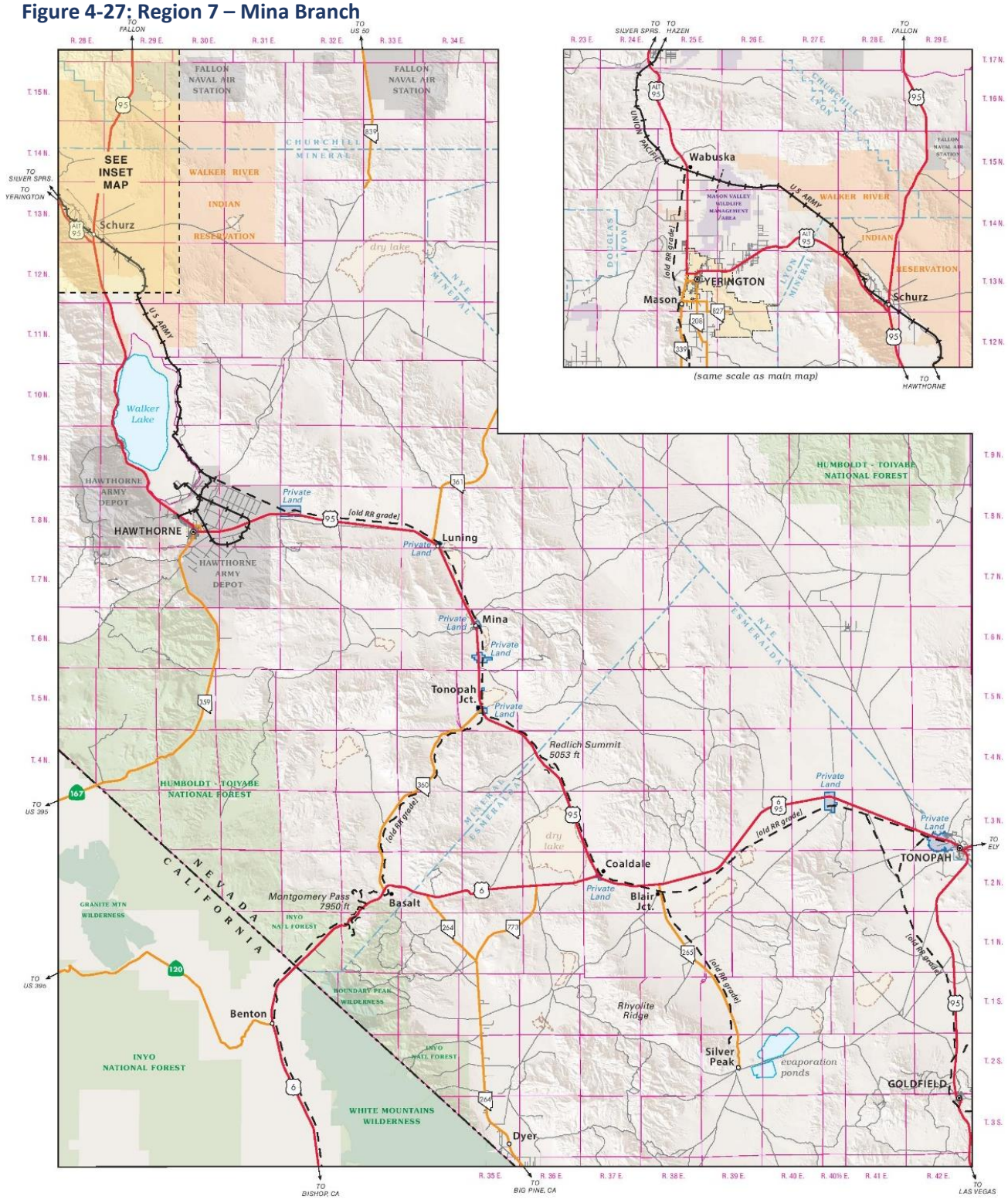
There is only one active customer besides the Army on the Region 7 portion of the Mina Branch, a dairy that transloads animal feeds on a Union Pacific-owned sidetrack in Wabuska. However, there are strong prospects for additional rail traffic. First and foremost are the prospects for empty rail car storage on a portion of the 252 miles of in-service sidetracks inside the Army Depot. There are also good prospects for Top Rail to operate a transloading site inside the Army Depot to handle bulk materials for mining and energy supplies.

Key Strategies

- Explore opportunities to serve copper mines, molybdenum mines, and cattle lots in the Yerington area with a short branch line diverging south from the Union Pacific at Wabuska
- Collaborate with Union Pacific and the U.S. Army on an economical, near-term approach to constructing interchange trackage between UP and Top Rail at Fort Churchill
- Publicize and facilitate car storage and rail/truck transloading at the Hawthorne Army Depot
- Promote collaboration among mining and energy operations that would be better served by having the Mina Branch reconstructed back through Luning to Mina for rail/truck transloading there
- Eventually continue the process of reconstructing an active rail line in steps to Blair Junction and Goldfield Junction, to include stubs directly into nearby mines

Roadbed of former Mina Branch east of Hawthorne

Figure 4-27: Region 7 – Mina Branch



LEGEND

U.S. Highway		U.S. Highway Shield	
State Highway		State Highway Shield	
Other Road		State Boundary	
Railroad (in service)		County Boundary	
Railroad (out of service)		City Limit	
Private Land Parcels		County Seat	◉
Inset Map Area		City or Town center	○
		Site	•

2020 NEVADA STATE RAIL PLAN

STRATEGIC REGION 7

MINA BRANCH AREA

MILES 0 10 20 30

KILOMETERS 0 10 20 30 40 50

To convert miles to kilometers multiply by 1.609

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Table 4-19: Region 7 – Project List – One- to Four-Year Horizon

Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
Cattle Feed Project	Lyon	Transloading on Mina Branch	Transload	various cattle feeds	0.1	$150,000	Snyder Livestock Co Inc	7	4
Ann Mason Project	Lyon	Connect to Mina Branch	Rail Connection	copper & molybdenum ores	8	$16,000,000	Hudbay Minerals	7	4
Pumpkin Hollow	Lyon	Connect to Mina Branch	Rail Connection	copper ores, I/B fuel, lime, etc	8	$16,000,000	Nevada Copper, Inc.	7	4
Hawthorne Army Depot Car Storage	Mineral	Build interchange with UP	Interchange with UP	car storage, transloading bulk	2	$3,000,000	Top Rail Solutions, Inc.	7	4
Round Mountain Gold	Nye	Transloading site at Hawthorne	Transload	ammonium nitr., lime, diesel	TL	$250,000	Kinross Gold	7	4
Bolo Project	Nye	Transloading site at Hawthorne	Transload	ammonium nitr., lime, diesel	TL	$250,000	Barrian Mining	7	4
Gold Resources-Isabella Pearl Mine	Mineral	Transloading site at Hawthorne	Transload	ammonium nitr., lime, diesel	TL	$250,000	Gold Resources	7	4
Extend Mina Branch, Hawthorne to Mina	Mineral	Build on abandoned ROW on BLM	Rail Connection	N/A	33	$50,000,000	Joint Venture	7	4
Basalt Mine (Esmeralda County)	Mineral	Transloading site in Mina	Transload	diatomaceous earth	TL	$250,000	Dicalite Management Group, Inc.	7	4
Rhyolite Ridge	Esmeralda	Connect to Mina Branch at Coaldale	Rail Connection	boron, lithium O/B, I/B various	19	$30,000,000	ioneer USA Corp.	7	5-20

*miles to reach site, not including serving tracks at site

Table 4-20: Region 7 - Project List – Five- to Twenty-Year Horizon

Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
Extend Mina Br., Mina to Blair Jct.	Esmeralda	Build on abandoned ROW on BLM	Rail Connection	N/A	36	$54,000,000	Joint Venture	7	5-20
Extend Mina Br., Blair to Goldfield Jct.	Esmeralda	Build on abandoned ROW on BLM	Rail Connection	N/A	23	$35,000,000	Joint Venture	7	5-20
Crow Springs	Esmeralda	Connect to Mina Branch SW of G Jct.	Rail Connection	open-pit perlite and pozzolan	10	$20,000,000	SR Minerals, Inc.	7	5-20
Tonopah Lithium Claims (Am. Lithium)	Nye	Connect to Mina Br. at Goldfield Jct.	Rail Connection	I/B molten sulfur, caustic soda, cyanide, soda ash, fuel	7	$15,000,000	American Lithium	7	5-20

Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
Liberty Project	Nye	Connect to Crow Springs Branch	Rail Connection	Molybdenum, copper	7	$15,000,000	General Moly, Inc.	7	5-20
Gemfield Mine	Esmeralda	Transloading site at Goldfield Jct.	Transload	ammonium nitr., lime, diesel	TL	$250,000	Gemfield Resources	7	5-20
Goldfield Bonanza Mine	Esmeralda	Transloading site at Goldfield Jct.	Transload	ammonium nitr., lime, diesel	TL	$250,000	Lode-Star Mining Inc.	7	5-20
Silver Peak	Esmeralda	Connect to Mina Branch at Blair Jct.	Rail Connection	Lithium	18	$27,000,000	Albemarle Corp	7	5-20
Clayton Valley	Esmeralda	Connect to Albemarle line at Silver Peak	Rail Connection	Lithium	22	$7,000,000	Pure Energy	7	5-20
Hasbrouck Project	Nye	Hasbrouck Project	Rail Connection	ammonium nitr., lime, diesel	TL	$250,000	West Kirkland Mining Inc.	7	5-20
Round Mountain Mine	Nye	Round Mountain Mine	Rail Connection	ammonium nitr., lime, diesel	TL	$250,000	Round Mountain Gold Corp.	7	5-20

Table 4-21: Region 7 – Active Mines

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
14	15	Gold Hill Mine (open pit)	Round Mountain Gold Corp.	Gold, silver	Nye	4291260	495570
33	34	Round Mountain Mine (open pit)	Round Mountain Gold Corp.	Gold, silver	Nye	4283750	493240
36	37	Sterling Mine (permitted open pit)	Coeur Rochester, Inc.	Gold	Nye	4075340	532100
41	42	Amargosa Clay Operation (IMV Pits)	Lhoist North America of Arizona	Clay	Nye	4034845	568580
48	49	Beatty Quarry	Kalamazoo Materials, Inc.	Landscape rock	Nye	4094750	521840
59	60	Cinder Cone Pit	Allied Building Materials, Inc./Cind-R-Lite Co.	Cinder	Nye	4060140	543740
69	70	Gamebird Pit	Wulfenstein Construction Co., Inc.	Sand, gravel	Nye	4001996	599697
94	95	New Discovery Mine	Vanderbilt Minerals Corp.	Clay	Nye	4081905	520520
97	98	Pahrump Community Pit	Various (Bureau of Land Management manages pit)	Sand, gravel	Nye	4004300	596780

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
102	103	Premier Chemicals, LLC, Mine	Premier Chemicals, LLC	Magnesite	Nye	4302120	422900
122	123	Wulfenstein (BLM) Pit	Wulfenstein Construction Co., Inc.	Sand, gravel	Nye	4004300	596800
154	155	Bacon Flat	Grant Canyon Oil and Gas, LLC	Oil	Nye	4258061	622592
156	157	Eagle Springs	Kirkwood Oil and Gas, LLC	Oil	Nye	4273541	627598
157	158	Ghost Ranch	Kirkwood Oil and Gas, LLC/Makoil, Inc.	Oil	Nye	4272319	627902
159	160	Grant Canyon	Grant Canyon Oil and Gas, LLC	Oil	Nye	4256983	624095
160	161	Kate Spring	Western General / Makoil, IInc.	Oil, gas	Nye	4271057	627115
161	162	Sand Dune	Kirkwood Oil and Gas, LLC	Oil	Nye	4272249	627722
162	163	Sans Spring	Grant Canyon Oil and Gas, LLC	Oil	Nye	4258648	617622
164	165	Trap Spring	Makoil, Inc./Frontier Exploration Co.	Oil	Nye	4274130	617171
0	1	Aurora Mine (reprocessing)	Hecla Mining Co.	Gold, silver	Mineral	4240220	334720
2	3	Borealis Mine (leaching old pads)	Borealis Mining Co., LLC	Gold, silver	Mineral	4250000	347250
28	29	Mineral Ridge Mine (open pits)	Mineral Ridge Gold LLC	Gold, silver	Esmeralda	4183158	437800
47	48	Basalt Mine	Grefco Minerals, Inc.	Diatomite	Esmeralda	4205478	393380
52	53	Blanco Mine	Vanderbilt Minerals Corp.	Clay	Esmeralda	4196340	425740
75	76	Heart of Nature Alum/Sulfur Mine	Heart of Nature, LLC	Alum, sulfur	Esmeralda	4195570	441510
111	112	Silver Peak Operations	Rockwood Lithium, Inc.	Lithium carbonate	Esmeralda	4178350	443700
124	125	Gemfield Gems	Gemfield Gems	Chalcedony	Esmeralda	4176832	474068
125	126	Lone Mountain Turquoise Mine	Lone Mountain Mining, LLC	Turquoise	Esmeralda	4201200	463200
8	9	Denton-Rawhide Mine (open pit)	Rawhide Mining, LLC	Gold, silver	Mineral	4319430	379657
136	137	Don A. Campbell, Don A. Campbell II	Ormat Nevada, Inc.	Electricity	Mineral	4299493	384894
40	41	Adams Claim Gypsum Mine	Art Wilson Co.	Gypsum, limestone	Lyon	4345271	267860

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
62	63	Dayton Materials (Mustang Pit)	3D Concrete, Inc.	Aggregate, sand	Lyon	4346000	277000
68	69	Fernley Quarry	Nevada Cement Co.	Limestone	Lyon	4380020	310490
107	108	Rocks Road Pit	Desert Engineering	Sand, gravel	Lyon	4312626	316830
153	154	Wabuska	Open Mountain Energy	Electricity	Lyon	4337262	311667
74	75	Hazen Pit	EP Minerals, LLC	Diatomite	Lyon/Churchill	4377320	320220

Regional Development Authority

The regional Development Authority contact for this region is Northern Nevada Development Authority.

G-8. Region 8: Beatty/Pahrump

Overview

Region 8 was established in July after further thought regarding the opportunity of rebuilding a freight rail line between Hawthorne and southern Nevada. An extension of the line southeast of Goldfield and through Nye County might be justified in the future by aggregating the logistics needs of mines and other bulk freight shippers between Goldfield south Nye County, such as the Sunrise Gold Placer gold mine near Beatty.

New mining discoveries and new players are common events in Nevada. In the long run, a pragmatic southern connection could be realized by constructing new track on the existing grade of the abandoned Tonopah & Tidewater RR between Beatty and a connection with the UP at Crucero, CA, and the BNSF at Ludlow, CA.

The long-term prospect for the Mina Branch to connect with southern Nevada should begin by reinstituting commercial rail service south of Wabuska to Hawthorne. Revitalizing the Mina Branch from Hazen to Hawthorne can form the economic and financial anchor for further extensions of the rail line south to Mina, and Esmeralda and Nye Counties, eventually extending further south to complete the long-sought reconnection of north and south Nevada.

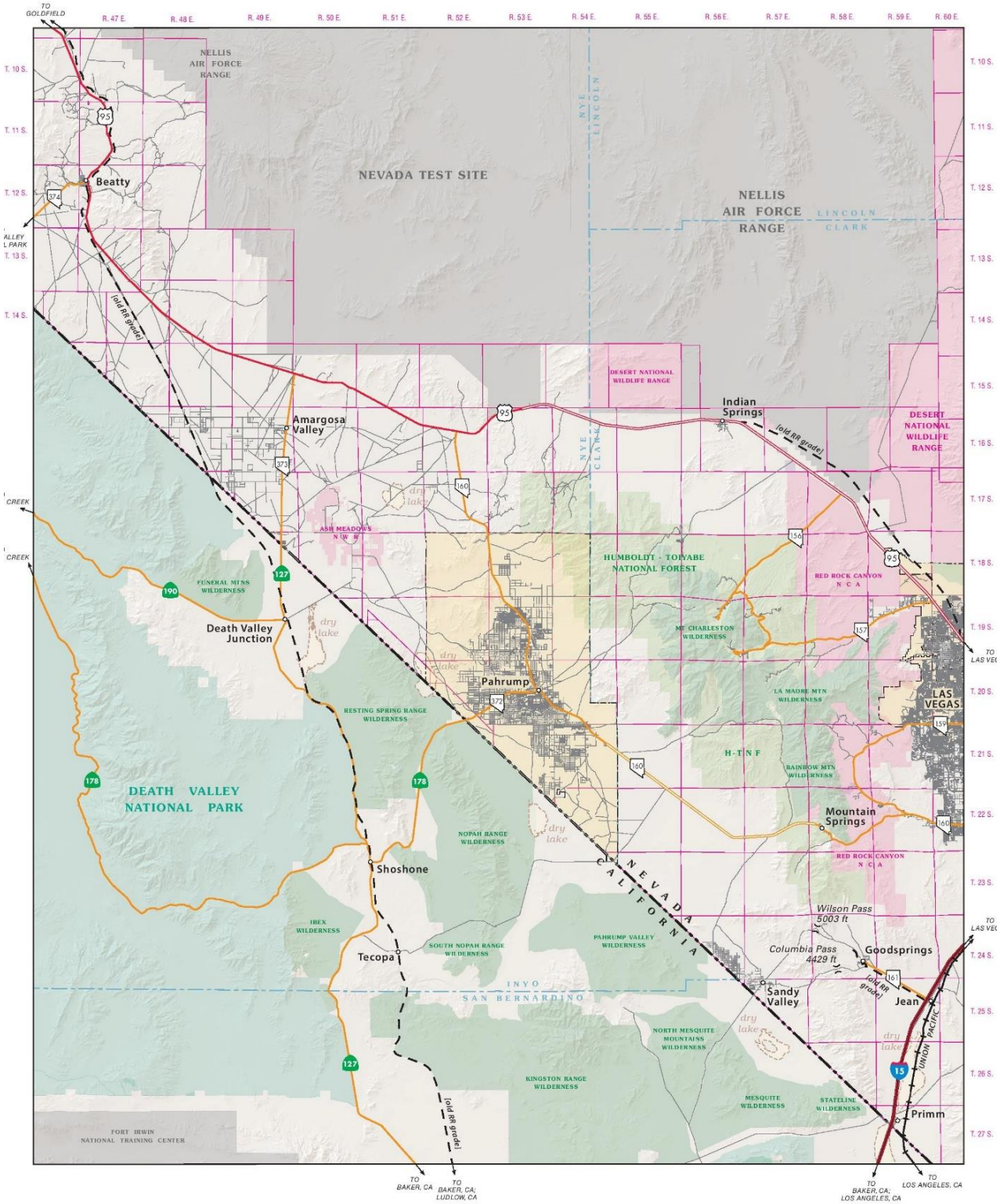
There is also discussion of a new technology corridor on the western side of the state that will combine the transfer of utilities and rail to move both freight and people to intersect with the new high speed rail line and the new Ivanpah airport in Jean, NV located in southern Clark county. The citizens of this area need access to both technology and utilities such as a natural gas pipeline.

Key Strategies

- The process of reconstructing a rail line south from Hawthorne to Luning to Mina to Blair Junction to Goldfield Junction can be continued south into Region 8 to Beatty and connections with UP and BNSF by continuing to promote collaboration among mining and energy companies to pool their efforts in the creation of economical direct rail service.

- Transportation opportunities unique to southern Nye County should be explored, such as the inbound movement of dairy feed, fertilizer made from waste recycling in the Los Angeles area, and general transloading near Pahrump to support a local surge in population.

Figure 4-28: Region 8 – Beatty/Pahrump Area



Regional Development Authority

The regional Development Authority contact for this region is Paul Miller, Nye Co & Esmeralda Regional Economic Development Authority.

Summary—Nevada Freight Rail Strategic Plan

An on-going entity could be established to triage and promote all the projects enumerated for the eight Regions above, providing a forum for their refinement and implementation.

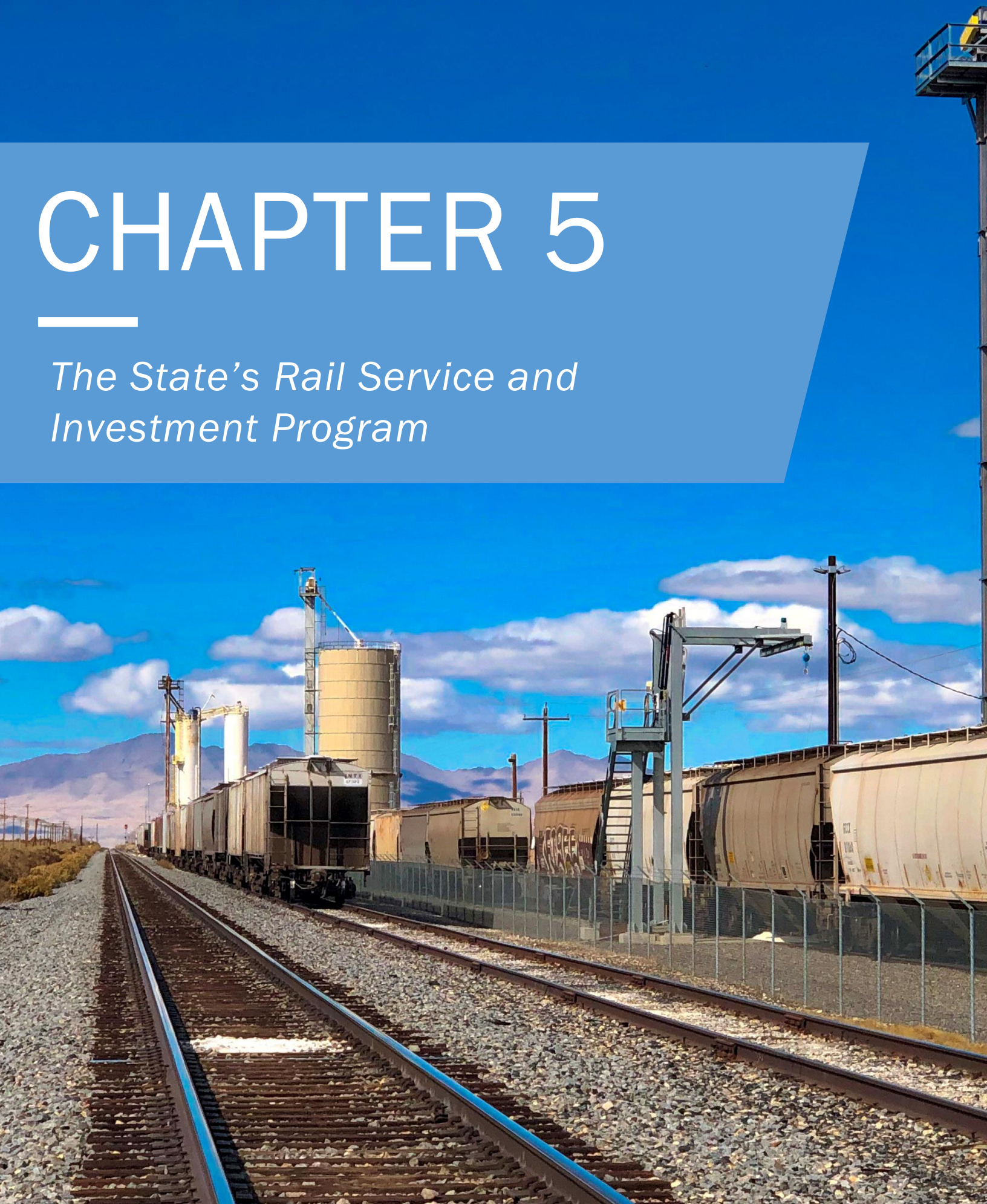
That entity could provide the path to the radical inclusion of all commercial decision-makers in Nevada: the mining, warehousing, and manufacturing industries; policy makers; economic development agencies; landowners and land developers; and the railroads. It could assist in the beneficiation of Nevada's natural resources and to the environmentally friendly expansion of Nevada's employment in industries that need to move large quantities of product.

Such an entity could be the clearinghouse for rail information, financing, expertise, and expertise-in-the-making by:

- Creating and managing a website and associated databases, such as continuously upgraded inventories of Nevada's existing sidetracks, high-potential sidetracks, and large-lot shippers
- Facilitating dialogues among Nevada's various commercial stakeholders
- Shepherding a Freight Rail Development Fund; and perhaps most importantly
- Cultivating partnership with Nevada's two rail freight carriers—Union Pacific and BNSF

CHAPTER 5

The State's Rail Service and Investment Program



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Chapter 5 The State's Rail Service and Investment Program

Nevada's Rail Service and Investment Program has been presented in the two previous chapters, Chapter 3 Passenger Rail Strategic Plan, and Chapter 4 Freight Rail Strategic Plan. Doing so in this manner accommodates stakeholders' ability to focus on the area of rail development that is most relevant to their professional, commercial, and/or community interests. Chapter 5 encompasses the list of potential rail growth projects envisioned at the outset of the new Nevada State Rail Plan (NVSRP). It is meant to be expanded throughout the next 4-5 years before the state is required to submit its update to the Federal Railroad Administration.

Freight projects included in the Rail Service and Investment Program (RSIP) are all connected to private sector business growth projects, with benefits accruing to the businesses involved, as well as the communities who enjoy more jobs and sustainable freight transportation. Projects that are commercially relevant can be assessed based on the overall benefit cost calculation of the underlying business development. That evaluation process and decision to proceed connects the investments directly to the results that a rail plan is designed to advance—an improved economy and environment, and a safer transportation system.

Because of Nevada's unique situation of having no active shortline railroads, every rail development project requires the active collaboration of either or both of the state's Class I rail providers, Union Pacific, and BNSF. It has been of the utmost importance to organize and present rail development opportunities of commercial scale that will be meaningful to the Class Is. The quantity, scale, and quality of revenue-generating freight rail projects listed here certainly merits the attention of the railroads, private infrastructure investors, and public infrastructure programs—creating new opportunities for funding and operating partnerships.

The freight rail projects listed below have a total estimated cost of $578MM. This is a sum that private-sector infrastructure investors are well positioned to invest.[1] According to the magazine *Infrastructure Investor*, the top 30 global infrastructure investors allocated $321B to this investment class in 2019 with hundreds of billions of investment capital in the hands of companies not in the top 30. Many of these funds are motivated to invest in North American rail infrastructure projects. The NVSRP elevates the fundability of individual projects by aggregating the opportunities and integrating transportation planning with economic development.

This capital could flow to projects many different ways other than directly from investment funds to the project. In many cases capital flows indirectly from funds to rail-related developments, through rail-experienced banks, through rail asset holding companies, or through rail service provider operating conglomerates.

In addition to this private-sector funding, there is broad-based interest at the federal level in infrastructure funding as an economic stimulus strategy.

[1] "Meet the 30 largest infrastructure investors," Infrastructure Investor Global Summit, source link, (2019)

Projects have been gathered from the over 230 stakeholder interviews that have occurred during the development of the NVSRP. Projects will continue to be added to the investment program as stakeholder engagement continues post-plan preparation.

Table 5-1: Rail Service and Investment Program Freight Project List, All Regions–Four-Year Horizon

#	Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
1	**Blue Diamond property**	Clark	Development	Rail Connection	TBD	0.1	$250,000	Blue Diamond Branch Line	1	4
2	**Ryze Renewables**	Clark	Expand rail terminal	Terminal Expansion	alternative fuel	0.25	$2,000,000	Ryze Renewables	1	4
3	**Apex Industrial Park**	Clark	Connect to UP main line	Rail Connection	TBD	4	$5,000,000	Land Development Associates	1	4
4	**Panaca Mines**	Lincoln	Connect to UP main line	Rail Connection, plus TL	pozzolan	3	$4,000,000	Salt River Materials Group	2	4
5	**Victoria Mine**	Elko	Connect to Nevada Northern	Rail Connection	copper, silver, fuel, lime, etc.	8	$12,000,000	US Mine Corporation	3	4
6	**Long Canyon Mine**	Elko	Connect to Nevada Northern	Rail Connection	refractory ore, I/B fuel, lime	2	$3,000,000	Nevada Gold Mines	3	4
7	**Pan & Gold Rock Mines**	White Pine	Transloading on Nevada Northern	Transload	cyanide, sulfates	0.1	$200,000	Kinross Gold	3	4
8	**Silver Lion Farms**	White Pine	Transloading on Nevada Northern	Transload	I/B fuel, fertilizer; O/B hemp	0	$200,000	Silver Lion Farms	3	4
9	**Robinson Mine**	White Pine	Re-connect to Nevada Northern	Rail Connection	O/B copper concentrate; I/B fuel, lime, steel balls	1	$1,000,000	Robinson Mine	3	4
10	**Kinsley Mine**	White Pine	Transloading on Nevada Northern	Transload	cyanide, sulfates	0.1	$200,000	Liberty Gold	3	4
11	**Nevada Northern Railway**	White Pine	Rebuild track and Rt. 93 rail crossing	Track Rebuild	copper, hemp, fuel, tourists	128	$100,000,000	Nevada Northern Railway	3	4
12	**Wells Heavy Industrial Park**	Elko	Connect to UP main line	Rail Connection	TBD	1	$4,000,000	City of Wells	4	4
13	**NGM Rail Connections**	Eureka & Lander	Connect Cortez & Goldrush mines to Goldstrike gold processing facilities	Rail Connection	refractory ore, I/B fuel, lime, ammonium nitrate, sulfuric, peroxide, cyanide, ash, etc.	50+	$100,000,000	Nevada Gold Mines	4	4

#	Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
14	**Midas Mine**	Humboldt	Connect to UP main line	Rail Connection	refractory ore, I/B fuel, lime	30	$60,000,000	Hecla Mines	4	4
15	**Repurpose Sewer Treatment Property**	Humboldt	Build connection to UP	Rail Connection	TBD	0.1	$1,000,000	City of Winnemucca	4	4
16	**Thacker Pass Project**	Humboldt	Connect to UP main line	Rail Connection	I/B molten sulfur, caustic soda, cyanide, soda ash, fuel	50	$100,000,000	Lithium Nevada Corporation	4	4
17	**Fire Creek Mine**	Lander	Connect to UP main line	Rail Connection	refractory ore, I/B fuel, lime	15	$30,000,000	Hecla Mines	4	4
18	**Lander County Railpark**	Lander	Connect to UP main line	Rail Connection	TBD	0.1	$11,000,000	Lander County	4	4
19	**40-Mile Desert Land Development**	Churchill	Connect to UP main line	Rail Connection	TBD	0.1	$4,000,000	TOT, LLC	5	4
20	**Lahontan Rail Industrial Park**	Churchill	Connect to Mina Branch	Rail Connection	TBD	0.2	$400,000	TOT, LLC	5	4
21	**Geothermal Resources Industrial Park**	Churchill	Connect to UP main line	Rail Connection	TBD	0.1	$4,000,000	GRIP LLC	5	4
22	**Limestone Mine**	Churchill	Transloading site off main	Transload	specialized limestone	0.2	$4,000,000	Advanced Carbonate Technologies, LLC	5	4
23	**Victory Logistics**	Churchill	Connect to Fernley Industrial Lead Connect to LA Pacific Lead	Rail Connection	TBD	0.4 1.25	$4,000,000	Mark IV Capital	5	4
24	**TRP Properties**	Churchill	Connect to Fallon Branch	Rail Connection	TBD	0.1	$300,000	Omaha Track Hazen Project	5	4
25	**Churchill Hazen Industrial Park**	Churchill	Connect to Fallon Branch	Rail Connection	TBD	0.1	$300,000	TOT, LLC	5	4
26	**Northern Nevada Industrial Center**	Lyon	Connect to TRIC lead	Rail Connection	TBD	7	$14,000,000	Reno Engineering	5	4
27	**Sierra Springs Opportunity Fund**	Lyon	Connect 15-591-09 (120 ac.) Connect 15-581-03 (91 ac.)	Rail Connection	TBD	0.6 0.6	$2,000,000	Sierra Springs Opportunity Fund	5	4
28	**Geothermal Rail Industrial Development**	Lyon	Connect to UP main line	Rail Connection	TBD	0.1	$4,000,000	GRID LLC	5	4

#	Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
29	**Gigafactory Project**	Storey	Connect to branch track	Rail Connection	battery packs, drivetrains	2.5	$5,000,000	Tesla	5	4
30	**Sierra Biofuels Plant**	Storey	Connect to branch track	Rail Connection	O/B syncrude feedstock	TL	$2,000,000	Fulcrum BioEnergy	5	4
31	**Innovation Park**	Storey	Industrial Park	Rail Connection	TBD	0.1	$4,000,000	Blockchains, Inc.	5	4
32	**Pyramid Commercial Center**	Washoe	Connect to Fernley Industrial Lead	Rail Connection	TBD	1.7	$5,000,000	Reno Engineering	5	4
33	**Lear Industrial Center**	Washoe	Connect to Leareno Industrial Lead	Rail Connection	to closest of 5 buildings:	0.3	$200,000	Lear Industrial Center	6	4
34	**Pozzolan Transloading Site**	Washoe	Connect to Leareno Industrial Lead	Rail Connection	pozzolan	0.1	$100,000	Geofortis Processing & Logistics LLC	6	4
35	**Cattle Feed Project**	Lyon	Transloading on Mina Branch	Transload	various cattle feeds	0.1	$150,000	Snyder Livestock Co Inc	7	4
36	**Ann Mason Project**	Lyon	Connect to Mina Branch	Rail Connection	copper & molybdenum ores	8	$16,000,000	Hudbay Minerals	7	4
37	**Pumpkin Hollow**	Lyon	Connect to Mina Branch	Rail Connection	copper ores, I/B fuel, lime, etc.	8	$16,000,000	Nevada Copper, Inc.	7	4
38	**Hawthorne Army Depot car storage**	Mineral	Build interchange with UP	Interchange with UP	car storage, transloading bulk	2	$3,000,000	Top Rail Solutions, Inc.	7	4
39	**Round Mountain Gold**	Nye	Transloading site at Hawthorne	Transload	ammonium nitrate, lime, diesel	TL	$250,000	Kinross Gold	7	4
40	**Bolo Project**	Nye	Transloading site at Hawthorne	Transload	ammonium nitrate, lime, diesel	TL	$250,000	Barrian Mining	7	4
41	**Gold Resources-Isabella Pearl Mine**	Mineral	Transloading site at Hawthorne	Transload	ammonium nitrate, lime, diesel	TL	$250,000	Gold Resources	7	4
42	**Extend Mina Br., Thorne to Mina**	Mineral	Build on abandoned ROW on BLM	Rail Connection	N/A	33	$50,000,000	Joint Venture	7	4
43	**Basalt Mine (Esmeralda County)**	Mineral	Transloading site in Mina	Transload	diatomaceous earth	TL	$250,000	Dicalite Management Group, Inc.	7	4
Total Cost:							**$580,300,000**			

*miles to reach site, not including serving tracks at site; TL = Transload

Table 5-1a: Union Pacific Railroad suggested additions to Nevada Rail Service and Investment Program Freight Project List

#	Area	Project
1	**Elko, NV**	Run-through tracks to support fluid operation of thru trains, including existing passenger trains, around trains performing yard operations
2	**Las Vegas, NV**	3.3 miles second main track between Arden and Maul Ave to reduce congestion in a major metropolitan area
3	**South Central Route**	Siding upgrades to support improved opportunities for trains to meet/pass on single track route

Table 5-2: Rail Service and Investment Program Freight Project List, All Regions–Five to Twenty-Year Horizon

#	Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
1	**Extend Mina Br., Mina to Blair Jct.**	Esmeralda	Build on abandoned ROW on BLM	Rail Connection	N/A	36	$54,000,000	Joint Venture	7	5-20
2	**Rhyolite Ridge**	Esmeralda	Connect to Mina Branch at Blair Jct.	Rail Connection	boron, lithium O/B, I/B various	12	$20,000,000	ioneer Ltd.	7	5-20
3	**Extend Mina Br., Blair to Goldfield Jct.**	Esmeralda	Build on abandoned ROW on BLM	Rail Connection	N/A	23	$35,000,000	Joint Venture	7	5-20
4	**Crow Springs**	Esmeralda	Connect to Mina Branch SW of G Jct.	Rail Connection	open-pit perlite and pozzolan	10	$20,000,000	SR Minerals, Inc.	7	5-20
5	**Tonopah Lithium Claims Project**	Nye	Connect to Mina Br. at Goldfield Jct.	Rail Connection	I/B molten sulfur, caustic soda, cyanide, soda ash, fuel	7	$15,000,000	American Lithium	7	5-20
6	**Liberty Project**	Nye	Connect to Crow Springs Branch	Rail Connection	Molybdenum, copper	7	$15,000,000	General Moly, Inc.	7	5-20
7	**Gemfield Mine**	Esmeralda	Transloading site at Goldfield Jct.	Transload	ammonium nitrate, lime, diesel	TL	$250,000	Gemfield Resources	7	5-20
8	**Goldfield Bonanza Mine**	Esmeralda	Transloading site at Goldfield Jct.	Transload	ammonium nitrate, lime, diesel	TL	$250,000	Lode-Star Mining Inc.	7	5-20
9	**Hasbrouck Project**	Nye	Hasbrouck Project	Rail Connection	ammonium nitrate, lime, diesel	TL	$250,000	West Kirkland Mining Inc.	7	5-20
10	**Round Mountain Mine**	Nye	Round Mountain Mine	Rail Connection	ammonium nitrate, lime, diesel	TL	$250,000	Round Mountain Gold Corp.	7	5-20
Total Cost:							**$160,000,000 (in 2020 Dollars)**			

*miles to reach site, not including serving tracks at site; TL = Transload

The passenger rail projects listed below have a total estimated cost of $7B in 2020 dollars. At least 73% or $5.1B is expected to be private sector investment mostly in the Las Vegas – Rancho Cucamonga, CA Brightline West high speed rail project.

Greater emphasis this decade for passenger transportation solutions that reduce traffic congestion and energy consumption and provide environmentally sustainable mobility will motivate public commitments to invest in passenger rail projects.

Table 5-3: Rail Service and Investment Program Passenger Project List, All Regions–Four-Year Horizon

#	Project Name	Status Description	Track Mi*	Cost	Company	Region	Horizon
1	**Amtrak California Zephyr**	Additional Nevada stops requires station funding, UP approval; Elko ADA improvements requires station funding	719	$40,000,000	Amtrak and NDOT	3, 4, 5, 6	0 - 4
2	**Xpress-West—Rancho Cucamonga to Las Vegas**	Nevada and California approved issuing PABs, construction expected to begin in 2021, service to begin in 2023	44 in NV	$5B: $200M in NV PABs	Fortress Investments	1	0 - 4
3	**Thruway expansion & "C"-Route: Reno to Las Vegas by way of Central California**	Both require state funding commitments for operations and capital improvements; Existing railroad lines could host a demonstration run in 2021; requires UP/BNSF/Amtrak deal	670 LV to Reno + 108 to SF	$2,000,000 for demo run	Amtrak, NDOT and Caltrans	1, 5, 6	0 - 4
4	**Nevada Northern Railway**	McGill Extension requires grant financing, grade crossing funds	2	TBD	Nevada Northern	3	0 - 4
5	**Virginia & Truckee Railway Commission**	Virginia City Grade Crossing project requires grant program; 2.5-mile long Carson River Canyon extension has environmental approvals, R-O-W and is 90% designed awaiting funding solution	2.5	TBD	Virginia & Truckee Railway Commission	6, 7	0 - 4
6	**Nevada Southern Railway— "The Hoover Dam Limited"**	Project needs to be evaluated in coordination with Union Pacific, Nevada Southern Railway, Nevada State Railroad Museum, potential casino sponsors and concessionaire	29	$3,000,000	UP and private contractor	1	0 - 4
7	**Las Vegas Xpress X-Train Los Angeles to Las Vegas**	Planned start of service in September 2021 requires securing $100 million in private financing	50 in LV	$100MM	Las Vegas Xpress	1	0 - 4
8	**Reno, Nevada, and Innovation Park**	Requires UP approvals, funding, and a contract operator	18	$25MM	TBD	5,6	0 - 4
9	**Extension of the Las Vegas Monorail to Brightline West Las Vegas Terminal**	Evaluation by Brightline West, NDOT, RTC of Southern Nevada, Allegiant Stadium, McCarran Airport and Las Vegas Monorail can arrange funding through public-private partnership	10	$750MM	Las Vegas Monorail	1	0 - 4
Total Cost:				**$817,000,000 + $5.1B Private Funds**			

Table 5-4: Rail Service and Investment Program Passenger Project List, All Regions–Five to Twenty Year Horizon

#	Project Name	Status Description	Track Mi*	Cost	Company	Region	Horizon
1	**Multistate Intercity Equipment Pool**	Requires funding agreement between NV, CA, AZ, and UT	N/A	TBD	NV, CA, AZ, and UT	1,5,6	5-20
2	**Southwest Multi-State Rail Planning Study**	Requires development of a multi-state high speed funding compact and federal funding commitment	TBD	TBD	NV, CA, AZ, and UT	1,2,4,57, 6,8	5-20
3	**Extension of Amtrak's Capital Corridor to Reno/ Sparks**	Requires Amtrak/UP approvals, CA/NV coordination and shared funding of capital improvements required by Union Pacific	100	$100MM	Amtrak, Caltrans, NDOT	5,6	5-20
4	**Thruway expansion &"C-Route": Reno to Las Vegas by way of Central California**	Requires Amtrak/UP/BNSF approvals, CA/NV coordination and shared funding of capital improvements required by Union Pacific and BNSF	670 LV to Reno + 108 to SF	$250MM for trainsets and trackwork	Amtrak, NDOT and Caltrans	1,5,6	5-20
5	**Amtrak Salt Lake City-to-Las Vegas and Los Angeles Service**	Requires Amtrak and UP approvals, funding for new equipment and station improvements	212 in NV	$100MM for trainsets and trackwork	Amtrak, NV and UT	1,2	5-20
6	**Virginia & Truckee Railway Commission**	Carson City extension requires evaluating alternate alignments, additional river crossings and environmental documentation, plus funding solutions	TBD	TBD	Virginia & Truckee	6	5-20
7	**Reno Area Transit Service**	Will need evaluation by RTC Washoe County	107	$400MM+	TBD/RTC	6	5-20
8	**Brightline West—Las Vegas Commuter**	Requires Brightline West approval and public funding for regional stations, additional passing tracks and regional trainsets	35	$250MM	TBD/RTC	1	5-20
Total Cost:				**$1.1 Billion (in 2020 Dollars)**			

The Nevada Statewide Transportation Improvement Program (STIP) is a list of transportation projects eligible for federal funding.

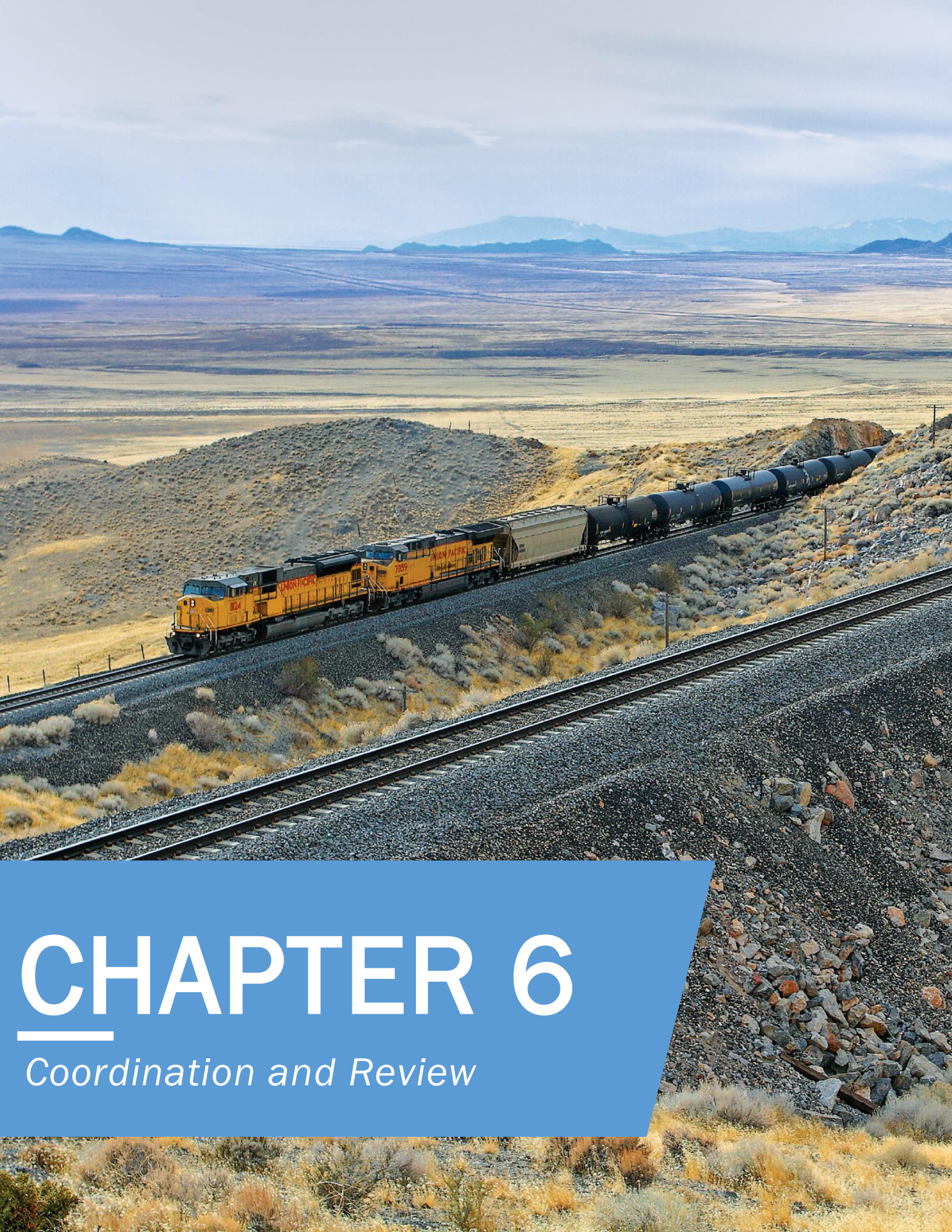
Table 5-5: 2021 Nevada Statewide Transportation Improvement Program (STIP) List[2]

MPO	Title	STIP Cost (2021-2024)	Federal Funds	Federal	State	Local
RTC Washoe	Golden Valley Road Railroad Crossing	$275,000	Rail	52%	0%	48%
Non MPO	Rail Crossings Humboldt County	$55,000	Rail	90%	0%	10%
RTCSNV	El Campo Grande Railroad Crossing	$192,000	Rail	90%	1%	9%
Non MPO	Morison Avenue Railroad Crossing Golconda	$421,000	Rail	63%	0%	37%
RTC Washoe	Highland Avenue Railroad Crossing	$305,000	Rail	51%	0%	49%
RTCSNV	Railroad Crossings Consolidation Logandale	$283,056	Rail	90%	1%	9%
RTC Washoe	Silver Lake Drive Railroad Crossing	$410,000	Rail	63%	0%	37%

Table 5-1a: Union Pacific Railroad suggested additions to Nevada Rail Service and Investment Program Freight Project List

AREA:	PROJECT
Elko, NV	Run-through tracks to support fluid operation of thru trains, including existing passenger trains, around trains performing yard operations
Las Vegas, NV	3.3 miles second main track between Arden and Maul Ave to reduce congestion in a major metropolitan area
South Central Route	Siding upgrades to support improved opportunities for trains to meet/pass on single track route

[2] NDOT website, 2019 Statewide Transportation Improvement Program (STIP) Database, source link, accessed August 22, 2020.



CHAPTER 6

Coordination and Review

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Chapter 6 Coordination and Review

A. Approach to Public and Agency Participation

Outreach for the new Nevada State Rail Plan (NVSRP) began with comprehensive research into Nevada's history, rail development, the overarching economics of the state, and the structures of public sector planning and economic development.

NDOT's rail program and its state rail planning activities are staffed by one person with assistance from the DOT's cartography team. NDOT management provides oversight and input into rail planning activities. These activities have included close interaction with NDOT staff. Approximately half of all in-person, telephone, or video conference stakeholder meetings have been attended by NDOT staff.

NVSRP staff reached out to each statewide and regional agency involved in planning and transportation in Nevada. Other stakeholders involved in commerce, logistics, economic development, and governance were identified and contacted after internet research and networking conversations. These stakeholder groups included:

- Freight shippers (both truck and rail)
- Land developers
- Mining operators
- Railroad personnel
- State and local government employees
- Academics
- Tribes
- Citizen groups (for example, The Sierra Club)

These stakeholders were cataloged by role, region, and - where appropriate - specific supply chain. Interviews led to local insights and further recommendations for stakeholder engagement which were immediately pursued. Also, as participating stakeholders were engaged, they subsequently informed others of the NVSRP process who enthusiastically requested invitations to participate.

There are three Class I railroads operating in Nevada – freight operators Union Pacific Railroad and BNSF Railway, and long-distance passenger rail provider Amtrak. There is no regional passenger rail service in Nevada. NVSRP staff have been in close contact with both freight railroads throughout this process. Additionally, NVSRP's passenger rail team solicited input from Amtrak. While there are no Class II or III "Regional" or "Short line" freight railroads there are three passenger excursion operations; each was engaged by NVSRP staff.

Nevada's two transit authorities – the Regional Transportation Commission (RTC) of Washoe County and the Regional Transportation Commission of Southern Nevada are housed in their respective area's Municipal Planning Organizations. Representatives from both were engaged by the NVSRP team to explore opportunities for regional passenger rail service.

B. Coordination with Neighboring States

The NVSRP team reached out to Departments of Transportation in California and Utah, the two states with which Nevada shares rail connections. Caltrans, UDOT, and NDOT are now in ongoing dialogue. Caltrans rail planners have expressed a policy and planning priority of developing new bi-state freight and

passenger rail services to and from Nevada. They are supportive of new inland intermodal shuttles between California ports and warehousing and industrial shippers in Northern and Southern Nevada.

NVSRP staff explored the role of rail shippers' associations in Nevada. The American Institute for Shippers' Associations, Inc. defines Shippers' Associations as: "Generally non-profit transportation membership cooperatives which arrange for the domestic or international shipment of members' cargo. Associations will contract for the physical movement of the cargo with motor carriers, railroads, ocean carriers, air carriers, and others. The ability to aggregate and ship the collective membership cargo at favorable volume rates is the key to the existence of the modern-day Shippers' Association." In addition to rate negotiating these regional entities are forums for shippers to share knowledge. NVSRP staff interviewed the Southwest Association of Rail Shippers (SWARS) and the Northwest Association of Rail Shippers and found that no Nevada shippers are members of either organization. The rate benefits of participating in a shipper association remain available to Nevada's shippers.

Nevada has no rail connections with Arizona, Idaho, or Oregon. Following is a list of all neighboring state rail planning offices and links to their rail plans and other transportation planning documents and administrative entities.

				Email	Phone Number
California	**Rail Plan**	https://dot.ca.gov/programs/rail-and-mass-transportation/california-state-rail-plan			
	Freight Mobility Plan	https://dot.ca.gov/programs/transportation-planning/freight-planning/ca-freight-advisory-committee/cfmp-2020			
	Advisory Board	Rail Planning Branch, https://catc.ca.gov/			
	Contact	Hilary Norton	Vice Chair of Commission	hnorton@tpgre.com	213-448-2900
	Contact	James Jack	Capitol Strategic Advisors	james@capitolstrategic.com	916-325-8591
	Contact	Andy Cook	Chief, Office of Planning & Operations, Caltrans	Andrew.Cook@dot.ca.gov	916-653-0806
Utah	**Rail Plan**	https://drive.google.com/file/d/15Zjl8Rojq8iL5icZgS-OKiziFKwhY-4K/view			
	Advisory Board	https://www.udot.utah.gov/connect/business/public-entities/planning/ Board is State Rail Plan specific, can't find any online evidence that it remained in existence past the writing of the rail plan. Dan Kuhn was on the committee and a major participant in the plan.			
	Contact	Jordan Backman,	Railroad Planner, UDOT	jbackman@utah.gov	385-226-4255

				Email	Phone Number
Arizona	**Rail Plan**	https://azdot.gov/planning/transportation-programs/state-rail-plan			
	Advisory Board	https://www.azmc.org/binational-committees/transportation-infrastructure-ports/			
	Contact	John Halikowski	ADOT Director	jhalikowski@azdot.gov	602-712-7227
Oregon	**Rail Plan**	https://www.oregon.gov/ODOT/Planning/Documents/OSRP.pdf			
	Advisory Board	https://www.oregon.gov/odot/RPTD/Pages/RAC.aspx			
	Contact	Paul Langner,	Committee Chair	plangner@teevinbros.com	503-741-0175
	Contact	Cary Goodman,	ODOT Rail Program Coordinator	cary.goodman@odot.state.or.us	503-986-4230
Idaho	**Rail Plan**	https://apps.itd.idaho.gov/apps/freight/Idaho-Statewide-Rail-Plan.pdf			
	Advisory Board	https://itd.idaho.gov/board/			
	Contact	Bill Moad,	Chairman	contact info not readily available	
	Contact	Sue Higgins	Secretary	sue.higgins@itd.idaho.gov	208-334-8808
	Contact	Rail department is unstaffed			

The Western States Freight Coalition (WSFC)[1] was founded by Bill Thompson of Nevada Department of Transportation in 2014 to facilitate peer exchange among state DOT freight program managers and coordinate preparation of FAST Act compliant state freight plans. Leadership rotates among participating states and WSFC is now led by Utah. The Western Association of State Highway and Transportation Officials (WASHTO) is reportedly planning to absorb WSFC's activities into its operation.

C. Involvement of Stakeholders in the Preparation and Review of the State Rail Plan

SRF and NDOT worked to create a plan that expands and improves on typical stakeholder engagement. SRF, with NDOT's significant participation, has conducted in-depth dialogues with 235 (and counting) stakeholders from every related public- and private-sector arena. In many cases the dialogues have led to second and third conversations. These conversations continue to illuminate the challenges, opportunities, and needs particular to Nevada's regions and industries that would not have been otherwise discerned.

NVSRP staff toured the entire state's rail network and made extensive use of satellite imagery. This has proven to be an effective method for the identification of 1) every rail siding in the state, 2) every truckload shipper in the state, and 3) every non-rail shipper located adjacent to a rail line.

[1] *Western State Freight Coalition*, Christopher Chesnut, Dan Anderson, source link, (April 2019)

Approximately 140 shippers were interviewed in-person during several cross-state trips made by NVSRP staff (before the COVID virus curtailed travel starting in March 2020), or through individual telephone interviews.

One hundred and seventy-five stakeholders participated in ninety-minute regional video meetings (complete attendance lists and meeting metrics are contained in the Technical Appendix):

Region 1 - Southern Nevada [Clark County] - July 28, 2020

Region 2 - Lincoln County - July 27, 2020

Region 3 - Ely-North to W. Wendover [White County; some Elko County] - July 23, 2020

Region 4 - I-80 Corridor, Lovelock to Wendover [Elko County; Eureka County, Lander County; Humboldt County; Pershing County] - July 29, 2020

Region 5 - TRIC-Fernley-Fallon-Silver Springs [Washoe County; Storey County; Douglas County; Lyon County; Churchill County] - July 27, 2020

Region 6 - Carson City-Reno-Sparks-Stead - July 30, 2020

Region 7 - Wabuska-Yerington-Mineral County-Tonopah-Esmeralda County [Mineral County; Esmeralda County; some Nye County] - July 29, 2020

Region 8 - Nye County from Hawthorne to Jean - created post-Regional Team Meetings

Stakeholders were also invited to the two statewide IntelliConferences (described below). Lastly, stakeholders were invited to share their input directly with NVSRP staff at any time throughout the NVSRP process.

From the outset, stakeholders who have contributed to the NVSRP have not simply been surveyed for their input—they have been enrolled in an ongoing partnership for rail development. Typical state rail plan stakeholder outreach is conducted through town hall meetings, poster presentations, surveys, and a few interviews. The NVSRP incorporates a comprehensive communications strategy that includes email, calling, and knocking on doors as needed to connect *personally* with stakeholders.

This regional and statewide teamwork is made practical by an innovative, online, time-saving program for multi-stakeholder dialogue. The program design accommodates stakeholders participating asynchronously, on their own schedules, from the convenience and safety of their remote locations. This inquiry-based dialogue methodology—**IntelliConference—**has been developed by a non-profit transportation policy development organization, *OnTrackNorthAmerica*, founded and led by the principals of Strategic Rail Finance. The **IntelliConference** system facilitates asynchronous online summits of stakeholder representatives for efficient gathering of collective input and intelligence. The **IntelliConference** methodology also supports real-time, in-person and virtual summits. With each successive summit, new points of view are added to an ongoing dialogue that incorporates diverse perspectives. This methodology puts into practice cutting-edge research in civic and large-group engagement.

As a complement to these summits, the NDOT Rail website at www.nevadadot.com/mobility/rail-planning serves as a portal for ongoing multi-stakeholder input. All participating stakeholders and interested observers can follow this evolving process. The website also serves as the platform for compiling and cataloguing relevant reports, projects, plans, and events.

D. Issues Raised During Preparation of the NVSRP and Their Consideration

Issues identified during interviews and meetings included:

- Access to rail service is a critical requirement for advancing mining business plans
- Traffic congestion is exacerbated by increasing truck traffic
- Truck crashes are a problem in the state
- Need for information sharing and collaboration between government planning and economic development entities
- Need for educating industrial real estate developers and shippers about rail options
- Need for connections to and relationships with West Coast ports where Nevada can provide economical green- and brown-field facilities for shipping container staging to buffer port traffic
- Need for additional Amtrak passenger rail service frequencies along with re-opening Amtrak stations in Lovelock and Sparks
- Exploration of nascent regional passenger rail options in the Reno-Sparks and Las Vegas regions

All suggestions, concerns, and requests for service were catalogued, aggregated, and considered for immediate action where appropriate. Most of these stakeholders have continued to engage in NVSRP teamwork activities within one-on-one and group conversations.

E. Recommendations Made by Participants

Recommendations were solicited and came from many stakeholders during NVSRP outreach. The outreach was conducted via one-on-one interviews. All stakeholder comments were noted and have been included in the Technical Appendix. Eight developers in Region 5 were given Land Development Project Assessment forms for their eleven projects. Eight Assessment forms were returned and have been used internally by the NVSRP project team. A sample Assessment Form is included in the Technical Appendix.

Nevada's primary freight railroad – Union Pacific participated in each of the seven NVSRP regional meetings in July and provided general guidance for those seeking new or enhanced service. Stakeholders have been forthcoming with their knowledge and wisdom, and frequently introduce others and make recommendations to NVSRP staff on new participants.

Stakeholders participating in NVSRP Regional team meetings stepped into creative brainstorming on solving challenges and collaborating on opportunities.

F. Coordination with Other Planning Functions

NDOT works closely with all Nevada state and local planning entities to coordinate planning efforts and prioritize transportation spending. The NVSRP is fully integrated with:

- 2017 Nevada State Freight Plan[2]

[2] *Nevada State Freight Plan*, Michael Gallis & Associates, ch2m, Cambridge Systematics, source link, (January 2017)

- 2018 One Nevada Transportation Plan[3]
- And all Nevada Municipal Organization and Regional Transportation Commission planning:
    - Washoe County RTC[4]
    - Carson Area Metropolitan Planning Organization[5]
    - Regional Transportation Commission of Southern Nevada[6]
    - Tahoe Regional Planning Agency[7]

In preparation for the NVSRP, multiple readings of the state transportation plan, state freight plan, and 2012 Nevada state rail plan have been completed to synthesize previously developed intelligence. Additionally, plan authors have been working with the Northern Nevada Development Authority to create a plan for rail service in its catchment area. The Fernley Multimodal Freight Facility Feasibility Study has been completed and included in the Appendix.

F.1 U.S. Department of Defense Strategic Rail Corridor Network (STRACNET)

The U.S. Department of Defense's (DOD) Military Traffic Management Command (MTMC) evaluates and determines the Department's needs for rail service that is essential for national defense. MTMC selected these rail lines in the 1970s to form a DOD Strategic Rail Corridor Network (STRACNET), involving 38,000 miles serving over 170 defense installations. Please refer to **Figure 6-1** for more detail.

Hawthorne Army Depot is the only DOD installation located in Nevada that requires rail service. Although the Sierra Army Depot is located just across the state line in California, the Union Pacific's Feather River Corridor from Winnemucca provides a key link for the movement of military materials to and from the base. Additionally, MTMC has identified the UPRR Overland Route mainline through northern Nevada and the South-Central Route mainline through southern Nevada as elements of STRACNET. Please refer to **Figure 6-2** for more detail.

[3] *One Nevada Transportation Plan,* Nevada DOT, source link, (November 2018)
[4] RTC Metropolitan Planning website, source link
[5] Carson City official website, source link
[6] RTC Southern Nevada website, source link
[7] Tahoe Regional Planning Agency website, source link

Figure 6-1: STRACNET and Defense Connector Lines

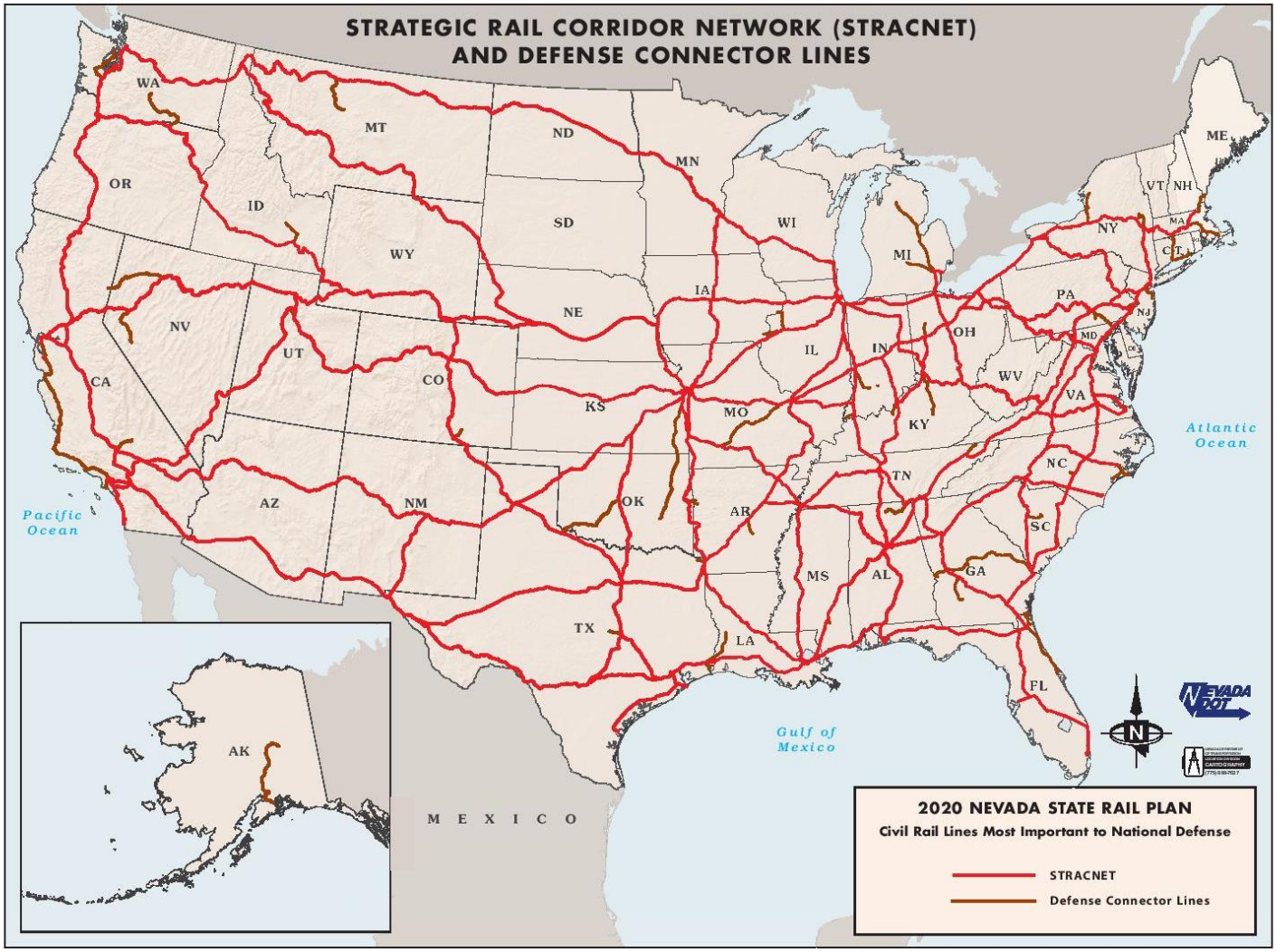
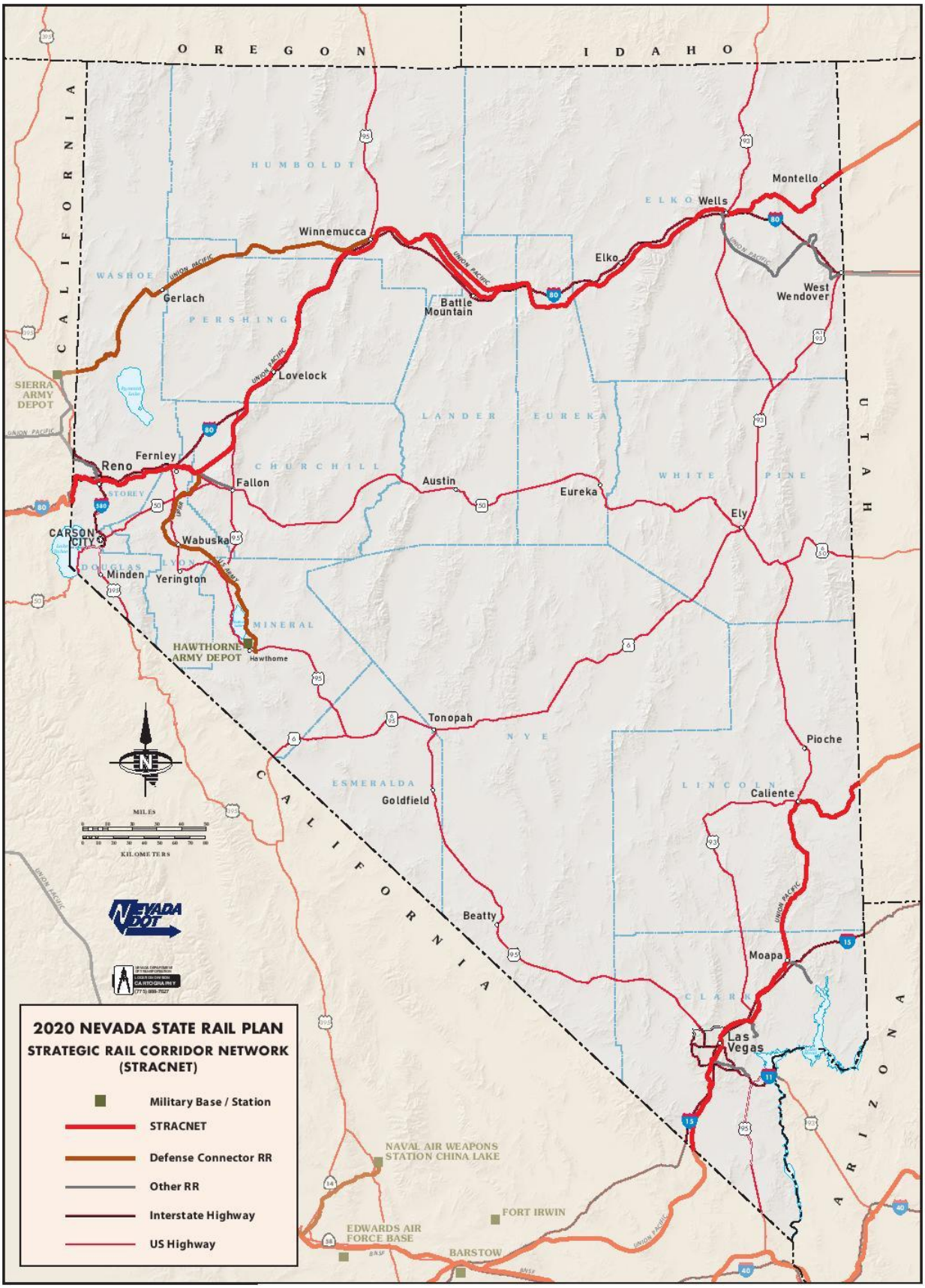


Figure 6-2: STRACNET in Nevada



APPENDIX

Nevada State Rail Plan 2021

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Inventory of Nevada Industry: with Sidetracks/ without Sidetracks

The Nevada Inventory of Industry—Businesses with sidetracks and nearby truckload shippers is a spreadsheet of approximately 550 rows, created with the objective of documenting all sidetracks in the State of Nevada that fall into the following categories:

- Private sidetracks owned by active and inactive rail shippers and receivers
- UP-owned in-service sidetracks that are not used for linehaul or switching operations
- Potential sidetracks that could be built by truckload users adjacent to UP right of way

The databases used as sources are (in order):

1. The SCRS (Serving Carrier Reciprocal Switching) database maintained by Railinc, which is a wholly owned subsidiary of the large U.S. railroad trade association, The Association of American Railroads. SCRS purports to itemize all private sidings in the U.S. by customer name, station name, street address, serving carrier, phone, and other information. This resource proved to be only about 70 percent accurate for Nevada but was a good starting point.
2. Google Maps: to verify the existence of sidings in SCRS, to identify sidings not listed in SCRS, and to identify facilities that appear to be handling truckload lots next to railroad rights of way.
3. Nevada county online tax maps: to identify the parcel ID numbers for specific lots where the operator of the facility is not shown on Google Maps.
4. Nevada county online property records: to find the owner, address, and acreage of specific parcels using the parcel ID number.
5. Internet search engines: to find the customer name associated with an address.
6. Web pages: to gather specific information about company products and telephone numbers.
7. Union Pacific maps, specifically ZTS maps: to acquire track numbers for UP-owned tracks and tracks designated by UP for individual customers.

The information gleaned from these databases was supplemented and confirmed when necessary by on-site visits and telephone calls. One column in the inventory lists 141 such personalized searches. Of those, 66 were personal visits to the entry shown. The other 75 were telephone calls that resulted in the verification of a qualifying entry. Driving tours and telephone calls were employed to clarify or disqualify prospective entries from the inventory.

The Nevada Inventory of Industry—Businesses with sidetracks and nearby truckload shippers, like the other datasets gathered by the NVSRP team, is intended to be continuously updated to keep pace with changing circumstances. With vigilant refinement it can be a valuable tool for supporting new and existing rail traffic.

Inventory of Nevada Industry
Businesses with Sidetracks & Nearby Truckload Shippers

Code	Region/ Inset Map SRF Ref. #	UP Hub Book Track UP ZTS #	Station	Sidetrack Owner	Street Address	City	Mfg or Xload Track in Use? yes	no	Warehouse Space (SF) Track Used	Track Unused	Track easy to build	UP Sidetracks Available
REGION 1, Clark County												
South Central Route Main Line												
O	1 L1	4-401-704	Jean	UP team track	northeast corner of Prison Road crossing							NUTS
B	1 L2	4-401-705	Jean	Letica Corp.	22520 S. Las Vegas Blvd.	Jean	Mfg					
R	1 L3		Sloan	Cal Portland	5300 Sloan Road	Las Vegas					Mfg	
R	1 L4		Sloan	Sierra Ready Mix, South Plant	13890 S. Decatur Road	Sloan					Mfg	
P	1 L5	4-401-109	Sloan	Precast Management Corp.	HQ: 3664 Susana Street	Las Vegas		Mfg				
P	1 L6	4-401-710	BlueDiamond	Certainteed Gypsum Manufacturing Inc.	Highway 159	Blue Diamond		Mfg				
b			BlueDiamond	Southwest Industrial Rigging	UP Team Track	Blue Diamond						
O	1 L7	4-401-415	Arden	UP storage track	off east end of W. Gary Ave.	Enterprise						NUTS
R	1 L8		Arden	Impact Sand & Gravel	9325 S. Jones Blvd.	Las Vegas					Mfg	
B	1 L9	4-401-716/7	Arden	Goldern Bear Oil Specialties	6400 W. Richmar	Las Vegas	Mfg					
O	1 L10	4-401-116,8	Arden	UP house tracks	Arden Rd. at W. Oleta Rd.	Las Vegas						NUTS
B	1 L11	4-401-722/4	Arden	Ken's Foods Inc.	8925 Kens Court	Las Vegas	Mfg					
O	1 L12	none	Arden	UP set out track	at S. West Wind Road	Las Vegas						NUTS
R	1 L13			Southern Glazer's Wine & Spirits	8400 S. Jones Blvd.	Las Vegas					330,000	
R	1 L14		Arden	Granello Bakery	5045 Mardon Ave.	Las Vegas					Mfg	
b			Arden	Greater Nevada Auto Auction	8801 Las Vegas Blvd. S	Las Vegas						
Boulder Branch												
R	1 M1		Boulder Jct.	Pacific Seafood	5845 S. Wynn Road	Las Vegas					Mfg	
R	1 M2		Boulder Jct.	Big D Floor Covering Supplies	4155 W. Russell Road	Las Vegas					Mfg	
B	1 M3	4-401-735/6	Boulder Jct.	Ergon Asphalt & Emulsions Inc.	3901 Ponderosa Way	Las Vegas	Mfg					
P	1 M4	4-401-737a	Boulder Jct.	Supreme Lobster & Seafood	6065 Polaris Ave.	Las Vegas				26,000		
P	1 M5	4-401-737b	Boulder Jct.	warehouse space for rent	6065 Polaris Ave.	Las Vegas				26,000		
P	1 M6	4-401-737c	Boulder Jct.	Albertson's Distribution Center	6065 Polaris Ave.	Las Vegas				26,000		
b		4-401-737	Boulder Jct.	National Wood Products	6065 Polaris Ave. Suite D	Las Vegas						
b		4-401-737	Boulder Jct.	National Moving & Storage Inc.	6065 S. Polaris Ave.	Las Vegas						
B	1 M7	4-401-738	Boulder Jct.	Ganesh LLC dba TransWorld Manufacturing	6109 Dean Martin Drive	Las Vegas	Mfg					
B	1 M7	4-401-738	Boulder Jct.	Jake's Crane & Rigging Inc. (Ganesh)	6109 Dean Martin Drive	Las Vegas						
B	1 M8	4-401-739	Boulder Jct.	Gibb Recycling/BB Recycling/LV Scrap Metal R	6100 Polaris Ave.	Las Vegas	Mfg					
R	1 M9		Boulder Jct.	Bonanza Beverage Co.	6333 Ensworth Street	Las Vegas					Mfg	
R	1 M10	4-401-744	Boulder Jct.	warehouse for lease/sale	6590 Bermuda Road	Paradise					80,000	
P	1 M11	4-401-745/6	Boulder Jct.	between Vitacost and Vololu	920 Pilot Road	Paradise		Mfg				
B	1 N1	4-401-744/5	Henderson	Ocean Spray Cranberries Inc.	1301 American Pacific Dr.	Henderson	Mfg					
P	1 N2	4-401-743	Henderson	Henderson School Board of Trustees	Gibson Business Park (no road)			Mfg				
R	1 N3	4-401-741/2	Henderson	Cassia Ranch dba Star Nursery?	125 Cassia Way	Henderson					Mfg	
B	1 N4	4-401-736	Henderson	Graham Packaging Company LP	875 American Pacific Dr.	Henderson	Mfg					
R	1 N5		Henderson	Progress Rail	860 Wigwam Parkway	Henderson					117,000	
R	1 N6		Henderson	Xtreme Manufacturing	8370 Eastgate Rd. Bldg.A	Henderson					45,000	
R	1 N7		Henderson	warehousese for lease, 4 units	8385 & 8390 Eastgate Rd.	Henderson					163,000	
B	1 N8	4-401-704	Henderson	Titanium Metals Corp. dba Timet	181 N. Water St. Gate 3	Henderson	Mfg					

Legend

B=Black Private sidetracks in use **P=Purple** Private sidetracks not in use **G=Green** UP COFC terminals **O=Orange** UP vacant sidetracks with transloading potential **R=Red** Truckload shippers on RR R-O-W: potential sidetracks
b=Blue Customers in Railinc SCRS database but not found

Mfg Manufacturing **Xld** Transload **Intmdl** Intermodal **NUTS** Not Using Track Siding

Inventory of Nevada Industry
Businesses with Sidetracks & Nearby Truckload Shippers

Code	Region/ Inset Map SRF Ref. #	UP Hub Book Track UP ZTS #	Station	Sidetrack Owner	Street Address	City	Mfg or Xload Track in Use? yes	no	Warehouse Space (SF) Track Used	Track Unused	Track easy to build	UP Sidetracks Available
B	①N9	4-401-many	Henderson	Olin Chlor-Alkali dba Pioneer Americas	245/350 4th Street	Henderson	Mfg					
B	①N10	4-401-724/6?	Henderson	Lhoist North America of Arizona Inc.	450 S. 4th Street	Henderson	Mfg					
B	①N11	4-401-732/3?	Henderson	Borman Specialty Materials	560 W. Lake Mead Pkwy.	Henderson	Mfg					
B	①N12	4-401-855/6	Henderson	Thatcher Company of Nevada	90 Business Center St.	Henderson	Mfg					
B	①M13	4-401-857	Henderson	Berry Global Inc.	800 E. Horizon Dr.	Henderson	Mfg					
R	①M14		Henderson	Americold Logistics	830 E. Horizon Dr.	Henderson					146,000	
B	①M15	4-402-859/63	Henderson	Poly-West Inc.	251 Conestoga Way	Henderson	Mfg					
B	①M16	none	Henderson	Nevada Railroad Museum	600 Yucca St.	BoulderCity	Mfg					
South Central Route Main Line continued												
P	①L15	none	Boulder Jct.	Harrington Industrial Plastics	5530 Arville Street	Paradise		Mfg				
B	①L16	4-402-850	Boulder Jct.	Desert Lumber (South Las Vegas)	5555 Arville Street	Paradise	Mfg					
R	①L17		Boulder Jct.	Western Pacific Pulp & Paper	5475 Wynn Road Suite 100	Paradise					Mfg	
b			Boulder Jct.	Dielco Crane Service Inc.	5454 Arville Street	Paradise						
R	①L18		Boulder Jct.	Nevada Ready Mix Corp.	4301 W. Hacienda Avenue	Paradise					Mfg	
R	①L19		Boulder Jct.	Nevada Beverage Company	3940 W. Tropicana Ave.	Paradise					110,000	
R	①L20		Boulder Jct.	J. Picini Flooring (dba J&R Flooring?)	4140 W. Reno Avenue	Paradise					28,000	
R	①L21	4-402-841	Boulder Jct.	Sternschnuppe LLC	3855 W. Harmon Avenue	Paradise					40,000	
R	①L22	4-402-840a	Boulder Jct.	warehouse for sale/lease	4500 Wynn Road	Paradise					75,456	
R	①L23	4-402-840b	Boulder Jct.	First Class Vending	3990 W. Naples Drive	Paradise					60,000	
R	①L24	4-402-840c	Boulder Jct.	Roofing Supply Group	3860 W. Naples Drive	Paradise					20,000	
R	①L25	4-402-831a	Boulder Jct.	vacant lot	South Valley View Blvd.	Paradise					Mfg	
R	①L26	4-402-831b	Boulder Jct.	Windriver Industrial Complex	4301 S. Valley View Road	Paradise					123,000	
R	①L27	4-402-833	Boulder Jct.	Goodman Distribution Inc.	4000 W. Harmon Ave.	Paradise					79,000	
R	①L28	4-402-832	Boulder Jct.	warehouse building with 4+ sections	4050 W. Harmon Ave.	Paradise					100,000	
b			Boulder Jct.	Rugby Architectural Bldg. Products	3585 W. Diablo Rd. Ste. 6	Las Vegas						
b			Boulder Jct.	NV Yellow Checker Star Cab Corp.	3950 W. Tompkins Ave.	Las Vegas						
b			Boulder Jct.	P&S Metals & Supply	5160 Rogers Street	Las Vegas						
b			Boulder Jct.	RW Bugbee & Associates Inc.	1005 S. Cimarron Road	Las Vegas						
b			Boulder Jct.	Garrett Furniture Co.	1640 E. Tropicana Ave.	Las Vegas						
b			Boulder Jct.	NV Energy	6226 W. Sahara Ave.	Las Vegas						
P	①L29	4-402-801a	Las Vegas	Steel Engineers Inc.	716 W. Mesquite Ave	Las Vegas		Mfg				
B	①L30	4-402-805a	Las Vegas	Nevada Ready Mix Corp.	601 W. Bonanza Road	Las Vegas	Mfg					
P	①L31	4-402-805b	Las Vegas	On Time Oil LLC	715 W. Bonanza Road	Las Vegas		Mfg				
P	①L32	4-402-801b	Las Vegas	Keenan Pipe & Supply	831 W. Bonanza Road	Las Vegas		Mfg				
P	①L33	4-402-809	Las Vegas	(Promotions) LV Review-Journal	1111 W. Bonanza Road	Las Vegas		Mfg				
P	①L34	4-402-810	Las Vegas	Xtreme Manufacturing	1415 W. Bonanza Road	Las Vegas				35,000		
b			Las Vegas	Remac Inc.	2123 W. Bonanza Road	Las Vegas						
R	①L35		Las Vegas	Outwest Meat Company	300 W. Bonanza Road	Las Vegas					51,000	
R	①L35		Las Vegas	U.S. Foods	300 W. Bonanza Road	Las Vegas					96,000	
R	①L35		Las Vegas	Bimbo Bakeries	300 W. Bonanza Road	Las Vegas					24,000	
R	①L36		Las Vegas	vacant warehouse	701 N. Main Street	Las Vegas					24,000	

Legend

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Businesses with Sidetracks & Nearby Truckload Shippers

Code	Region/ Inset Map SRF Ref. #	UP Hub Book Track UP ZTS #	Station	Sidetrack Owner	Street Address	City	Mfg or Xload Track in Use? yes	no	Warehouse Space (SF) Track Used	Track Unused	Track easy to build	UP Sidetracks Available
R	①L37		Las Vegas	vacant warehouse	601 N. Main Street	Las Vegas					38,152	
R	①L38		Las Vegas	Trulite Glass & Aluminum Solutions	1513 A Street	Las Vegas					Mfg	
R	①L39		Las Vegas	Liberty Salvage Materials	130 W. Owens Avenue	Las Vegas					Mfg	
R	①L40		Las Vegas	Rosen Materials	1818 Losee Road	Las Vegas					12,000	
R	①L41		Las Vegas	warehouse, available?	3108 Losee Road	Las Vegas					51,000	
R	①L42		Las Vegas	Southern Tire Mart	3426 Losee Road	Las Vegas					20,000	
B	①L43	4-402-819/20	Wann	SW Liquid Asphalt & Emulsions LLC	3752 Bruce Street	N. Las Vegas	Mfg					
b			Wann	General Building Systems Inc.	3752 N. Bruce Stree	N. Las Vegas						
P	①L44	4-402-818	Wann	building for lease	3649 Losee Road	N. Las Vegas				50,000		
b			Wann	Capital Cabinet Corp.	3645 Losee Road	N. Las Vegas						
P	①L45	4-402-876	Wann	Adesa Auto Auctions	1000 E. Gowan Road	N. Las Vegas		Mfg				
B	①L46	4-402-877	Wann	Clearwater Paper Corp.	3901 N. Donna Street	N. Las Vegas	Mfg					
R	①L47		Wann	Clearwater Paper Corp.	3750 North 5th Street	N. Las Vegas					170,000	
B	①L48	4-402-861	Wann	SA Recycling LLC	3870 Losee Road	N. Las Vegas	Mfg					
b			Las Vegas	Silver Dollar Recycling LLC	3870 Losee Road	N. Las Vegas						
b			Las Vegas	Bechtel National Inc.	2621 Losee Road	Las Vegas						
b			Las Vegas	James Truss Co., A Nevada Corp.	4220 Donovan Way	N. Las Vegas						
R	①L49		Wann	Prologis N 15 Freeway Distribution Ctr.	4140 Frehner Road	N. Las Vegas					190,000	
R	①L50		Wann	Prologis N 15 Freeway Distribution Ctr.	4140 Frehner Road	N. Las Vegas					190,000	
P	①O1	4-402-870	Wann	warehouse, space available	4550 Engineers Way	N. Las Vegas				240,000		
P	①O2	4-402-871b	Wann	Metl-Span	4700 Engineers Way	N. Las Vegas		Mfg				
P	①O3	4-402-871a	Wann	Parker Plastics	4700 Engineers Way	N. Las Vegas		Mfg				
R	①O4		Wann	7-Up RC Bottling	4610 Donovan Way	N. Las Vegas					112,000	
b			Las Vegas	Office Max Inc.	2861 Marion Drive	Las Vegas						
b			Las Vegas	State of Navada [sic]	123 E. Washington	Las Vegas						
b			Las Vegas	Circus Circus Hotel & Casino	2880 Las Vegas Blvd. S	Las Vegas						
b			Las Vegas	JW Costello Beverage Company Inc.	4370 S. Valley View Blvd.	Las Vegas						
b			Las Vegas	Hampton Distribution Companies	ML: 9600 SW Barnes Rd Ste 200	Portland						
b			Las Vegas	Amer. Intn'l. Forest Products Inc.	ML: 5560 SW 107th Ave.	Beaverton						
b			Las Vegas	General Outdoor Cleanup	2720 Pinto Lane	Las Vegas						
b			Las Vegas	Deluca Liquor & Wine	1849 W. Cheyenne Ave.	N. Las Vegas						
North Las Vegas Industrial Track (Track 700)												
B	①O5	4-402-706a	Las Vegas	Lighthouse Holdings dba L/H Logistics	4501 Mitchell Street	N. Las Vegas			100,000			
P	①O5	4-402-706b	Las Vegas	Brady Industries Inc.	4175 Arville Street	Las Vegas				100,000		
P	①O6	4-402-703	Las Vegas	Nevada Recycling	4611 Mitchell Street	N. Las Vegas		Mfg				
R	①O7		Las Vegas	Johnson Brothers Liquor Company	4701 Mitchell Street	N. Las Vegas					115,000	
R	①O8		Las Vegas	Cind-R-Lite	4745 Mitchell Street	N. Las Vegas					40,000	
B	①O9	4-402-704	Las Vegas	Suburban Propane	4520 Mitchell Street	N. Las Vegas	Mfg					
P	①O10	4-402-701	Las Vegas	Rebel Oil Company	4532 Mitchell Street	N. Las Vegas	Mfg					
P	①O11	4-402-702	Las Vegas	Worthington Armstrong Venture	4525 N. Walnut Road	N. Las Vegas				100,000		
B	①O12	4-402-707	Las Vegas	Amerigas Propane LP	4420 McGuire Street	N. Las Vegas	Mfg					

Legend

B=Black Private sidetracks in use **P=Purple** Private sidetracks not in use **G=Green** UP COFC terminals **O=Orange** UP vacant sidetracks with transloading potential **R=Red** Truckload shippers on RR R-O-W: potential sidetracks
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	Region/ Inset Map	UP Hub Book Track					Mfg or Xload Track in Use?		Warehouse Space (SF)			UP Sidetracks
Code	SRF Ref. #	UP ZTS #	Station	Sidetrack Owner	Street Address	City	yes	no	Track Used	Track Unused	Track easy to build	Available
B	①O12	4-402-707	Las Vegas	Hesperia Liquid Gas Co.	4420 McGuire Street	N. Las Vegas	Mfg					
B	①O13	950	Las Vegas	Brenntag Plastics	3880 E. Craig Road	N. Las Vegas	Mfg					
B	①O14	952	Las Vegas	Basic Food Flavors, Inc.	3900/3950/4000 E. Craig Road	N. Las Vegas	Mfg					
R	①O15		Las Vegas	West Direct Oil	4581 Eaker Street	N. Las Vegas					Mfg	
Golden Triangle Industrial Track (Track 850)												
P	①O16	4-402-862	Wann	Sparks Exhibits	4975 N. Pecos Road	N. Las Vegas		Mfg				
B	①O17	4-402-863	Wann	Advanced Polybag (Nevada) Inc.	4900 Engineers Way	N. Las Vegas	Mfg					
P	①O18	4-402-856	Wann	Tri-Dim Filter Corp.	4980 Statz Street	N. Las Vegas		Mfg				
b		4-402-856	Las Vegas	Columbia River Logistics	4980 Statz Street	N. Las Vegas						
B	①O19	4-402-853/4	Wann	Desert Lumber (North Las Vegas)	4950 Berg St./2900 E. Lone Mtn. Rd.	N. Las Vegas	Mfg					
B	①O20	4-402-855	Wann	Builders Firstsource Inc.	4915 Berg Street	N. Las Vegas	Mfg					
B	①O21	4-402-857	Wann	84 Lumber Co.	2824 E. La Madre Way	N. Las Vegas	Mfg					
South Central Route Main Line continued												
B	①O22	4-402-803/4;13/	Las Vegas	CalPortland Company	4938 Donovan Way	N. Las Vegas	Mfg					
B	①O23	4-402-?	Las Vegas	Strategic Materials Inc.	4910 Donovan Way, Ste. A	N. Las Vegas	Mfg					
B	①O24	4-402-?	Las Vegas	Las Vegas Paving Corp.	4910 Donovan Way	N. Las Vegas	Mfg					
B	①O25	4-402-?	Las Vegas	Thermo Fluids (div. of Clean Harbors)	4910 Donovan Way	N. Las Vegas	Mfg					
		4-402-807/12	Las Vegas	Arrow Reload Nevada Inc.	4910 Donovan Way, Ste. A-10	N. Las Vegas						
R	①P1		Valley	Northgate Distribution Center - South	5430 Donovan Way	N. Las Vegas					677,765	
R	①P2		Valley	Northgate Distribution Center - South	5550 Donovan Way	N. Las Vegas					564,000	
R	①P3		Valley	Northgate Distribution Center - North	5840 Donovan Way	N. Las Vegas					185,000	
R	①P4		Valley	Northgate Distribution Center - North	4550 Nexus Way	N. Las Vegas					800,000	
O	①P5	4-402-410	Valley	UP storage track	parallel to Donovan Way, 50' away	N. Las Vegas						NUTS
G	①P6	4-402-401/9,11	Valley	SW Transload & Distribution Svcs. LLC	4740 E. Tropical Pkwy.	Las Vegas						Intmdl, Term
b			Valley	Nissan North America Inc.	ML: 1 Nissan Way	Franklin						
b			Valley	Volkswagen Group of America Inc.	ML: 2200 Fernando Porsche Dr.	Herndon						
b			Valley	Intermountan Rigging & Heavy Haul	ML: 961 S. Pioneer Rd.	Salt Lake City						
Valley Nellis Industrial Lead (Track 711)												
B	①P7	4-402-722/25	Valley	Ash Grove Cement Co.	4851 E. Centennial Pkwy.	Las Vegas	Mfg					
B	①P8	4-402-721	Valley	BMC West LLC	6255 Range Road	Las Vegas	Mfg					
R	①P9		Valley	Cal Portland Ready Mix Plant	5910 Range Road	Las Vegas					Mfg	
R	①P10		Valley	Northern Beltway Industrial Center	5406 El Campo Grande Ave.	North Las Vegas					240,000	
R	①P11		Valley	Northern Beltway Industrial Center	5402 El Campo Grande Ave.	North Las Vegas					200,000	
B	①P12	4-402-712/3	Valley	SA Recycling LLC	5850 N. Nellis Blvd.	Las Vegas	Mfg					
b			Valley	Silver Dollar Recycling	5000 Range Road	N. Las Vegas						
B	①P13	4-402-733/4,83	Valley	ProPetroleum Terminal	4800 El Campo Grande Ave.	Las Vegas	Mfg					
B	①P14	4-402-731/2	Valley	Rebel Oil Company	5095 E. El Campo Grande Ave.	Las Vegas	Mfg					
B	①P15	4-402-822/31	Valley	Ryze Renewables Las Vegas LLC	5233 E. El Campo Grande Ave.	Las Vegas	Mfg					
b		4-402-822/31	Valley	Biodiesel of Las Vegas Inc.	5233 E. El Campo Grande Ave.	Las Vegas						
R	①P16		Valley	Baker Commodities	5725-29 Range Road	Las Vegas					Mfg	
R	①P17		Valley	warehouse, space available	5675 East Anne Road	North Las Vegas					580,000	

Legend

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Mfg Manufacturing **Xld** Transload **Intmdl** Intermodal **NUTS** Not Using Track Siding

Inventory of Nevada Industry
Businesses with Sidetracks & Nearby Truckload Shippers

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R	①P18		Valley	Bed, Bath & Beyond distribution center	5835 East Anne Road	North Las Vegas					525,000	
B	①P19	4-402-718/20	Valley	Kinder Morgan Energy Partners LP	5049 N. Sloan Lane	Las Vegas	Mfg					
b			Valley	Haycock Petroleum Co.	4825 N. Sloan	Las Vegas						
b			Valley	River City Petroleum Inc.	4915 N. Sloan Lane	Las Vegas						
Pabco Branch (private)												
B	①L51	4-402-727+	Apex	Pabco Building Products LLC	8000 E. Lake Mead Blvd.	Las Vegas	Mfg					
B	①L51	4-402-727+	Apex	Pabco Gypsum	ML: 800 E. Lake Mead Blvd.	Las Vegas						
South Central Route Main Line continued												
R	①L52		Lovell	Georgia-Pacific	11401 US Highway 91	Las Vegas					Mfg	
B	①L53	4-402-735/47	Arrolime	Lhoist North America of Arizona	12101 Las Vegas Blvd. North	North Las Vegas	Mfg					
B	①L54	4-402-739/40	Arrolime	Boral CM Services LLC	11458 US Highway 93	Las Vegas	Mfg					
b			Dry Lake	Oxbo Inc.	ML: 33341 Gilmore Rd.	Scappoose						
b			Dry Lake	Contractors Cargo Co.	ML: 500 S. Alameda St.	Compton						
O	①L55	4-402-143	Dry Lake	UP back track, double-ended siding		Dry Lake						NUTS
b			Moapa	Barnhart Crane & Rigging Co.	ML: 2163 Airways Blvd.	Memphis						
P	①L56	4-402-748/52	Moapa	Nevada Energy, Reid Gardner Generating Stat	501 Walky Kay Way	Moapa		Mfg				
Mead Lake Branch												
P	①L57	4-402-758	Arrowhead	Hidden Valley Dairy	1000 Hidden Valley Road	Moapa	Mfg					
b			Arrowhead	DG Partners (Ponderosa Dairies)	ML: 2055 N. Hwy. 168	Moapa						
B	①L58	4-402-764/9	Mead Lake	JR Simplot Co.	1551 S. Moapa Blvd.	Overton	Mfg					
South Central Route Main Line continued												
B	①L59	4-402-756/7	Moapa	Plastic Express		Moapa	Mfg					
Region 1 Totals						**Facility counts**	48	16	1	8	54	7
						Warehouse square feet			100,000	603,000	6,421,373	

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REGION 2, Lincoln County												
South Central Route Main Line												
O	②Q1	4-402-102	Farrier	UP house track, double-ended		Moapa						NUTS
O	②Q2	4-402-106	Hoya	UP house track, double-ended		Hoya						NUTS
O	②Q3	4-402-109	Vigo	UP house track, double-ended		Vigo						NUTS
O	②Q4	4-402-111	Carp	UP house track, double-ended		Carp						NUTS
O	②Q5	4-402-113	Leith	UP house track, double-ended		Leith						NUTS
O	②Q6	4-402-117	Elgin	UP house track, double-ended		Elgin						NUTS
O	②Q7	4-402-119	Elgin	UP house track, double-ended		Boyd						NUTS
O	②Q8	4-402-121	Stine	UP house track, double-ended		Stine						NUTS
O	②Q9	4-402-425/6,13(	Caliente	5 different UP tracks, 6100 feet potential xloading		Caliente						NUTS
b			Caliente	Ecology Recycling Services LLC	ML: 785 E. M Street	Colton						
O	②Q10	4-402-134	Eccles	UP house track, double-ended		Eccles						NUTS
O	②Q11	4-402-141	Acoma	UP house track, double-ended		Acoma						NUTS
O	②Q12	4-402-145	Crestline	UP house track, double-ended		Crestline						NUTS
Region 2 Totals						**Facility counts**	0	0		0	0	12
						Warehouse square feet				0	0	
REGION 4, I-80 Corridor												
Overland Main Line (former Southern Pacific)												
O	④J1	2-205-154	Parran	UP setout track	400' dirt road from Hwy 95	Parran						NUTS
O	④J2	2-205-158	Ocala	UP setout track	1.4 mi dirt rd from Hwy 95	Ocala						NUTS
O	④J3	2-205-161	Toy	UP setout track	850' dirt road from Frontage	Toy						NUTS
O	④J4	2-205-162	Granite Point	UP setout track	400' dirt road from Frontage	Granite Point						NUTS
O	④J5	2-205-765	Lovelock	Oreana Energy LLC	leased UP track on NV Blvd	Lovelock						In Use
P	④J6	2-205-766a	Lovelock	Nevada Soy Products	550 Industrial Parkway	Lovelock		Mfg				
B	④J7	2-205-766b	Lovelock	Tolsa West Coast Corp.	35 McDougal Ind'l Complex Rd	Lovelock	Mfg					
P	④J8	2-205-766c	Lovelock	C Punch Ranch Inc.	25 McDougal Ind'l Complex	Lovelock		Mfg				
O	④J9	2-205-575	Colado	UP setout track	350' n of Coal Canyon Rd. xing	Colado						NUTS
B	④J10	2-205-770/1/2	Colado	Eagle Pitcher (EP) Minerals LLC	150 Coal Canyon Rd.	Lovelock	Mfg					
O	④J11	2-205-579	Humboldt	UP setout track	650' nw of Frontage Road	Humboldt						NUTS
B	④J12	4-412-811/3	Winnemucca	Winnemucca Farms Inc.	1 Potato Pl. Unit 1	Winnemucca	Mfg					
B	④J13	4-412-814	Winnemucca	Ron's Seed & Supply	710 S. Grass Valley Rd.	Winnemucca	Mfg					
O	④J14	4-412-818/20	Winnemucca	UP team track & circus ramp track	s of S. Bridge Street xing	Winnemucca						NUTS
P	④J15	4-412-725a	Winnemucca	Sexton & Sons d/b/a Mezotrace	415 Wellington Street	Winnemucca		Mfg				
B	④J16	4-412-825b	Winnemucca	Great Basin Agriculture	950 East 4th Street	Winnemucca	Mfg					
b			Winnemucca	Dustbusters Enterprises Inc.	ML: 108 Meadow Ln., Evanston WY	Evanston						
b			Winnemucca	Stanislaus Farm Supply Co.,	ML: 624 E. Service Rd, Modesto CA	Modesto						
O	④J17	4-412-801	Tule	UP spur track	575' n of N. Coyote Road	Tule						NUTS
O	④J18	4-412-803	Golconda	UP spur track	parallel to Stanford Road	Golconda						NUTS
O	④J19	4-412-135	Mote	UP spur track	0.9 mi n of I-80 ramps on paved road	Mote						NUTS

Legend

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B	④J20	4-412-844/5	Battle Mtn.	M-I Drilling Fluids (Schlumberger?)	2 N. 2nd Street	Battle Mtn.	Xld					
B	④J21	4-412-843	Battle Mtn.	Flyers Energy	345 N. 1st Street	Battle Mtn.	Mfg					
b			Battle Mtn.	Interstate Oil Co.	ML: 50 Lillard Dr.	Sparks						
O	④J22	4-412-842	Battle Mtn.	UP team track	N. 1st Street	Battle Mtn.						NUTS
P	④J23	4-412-842	Battle Mtn.	Atlas Towing Service, Inc.	1339 Clydesdale Rd.	Battle Mtn.		Mfg				
O	④J24	4-412-850	Hilltop	UP team track	Muleshoe Road	Battle Mtn.						NUTS
O	④J25	4-412-852/3	Imco	MI Drilling Fluids (Schlumberger?)	1979 Frontage Road	Battle Mtn.					Mfg	
B	④J26	4-412-856/7	Argenta	Baker Hughes Oilfied Opns. Inc.	Frontage Rd., 13 mi. east of Battle Mtn.		Xld					
O	④J27	4-412-150	Mosel	UP team track	I-80 Frontage Road	Mosel						NUTS
B	④J28	4-412-854/868	Jayhawk	Saconix LLC/Dunphy Terminal	I-80 Frontage Road	Battle Mtn.	Xld					
O	④J29	4-412-858/9	Jayhawk	UP tracks	500' from T-S Road	Jayhawk						NUTS
R	④J30	4-412-158	Beowawe	UP house trk could swap with x-over	Highway 306 bisects	Beowawe					Mfg	
B	④J31	4-412-865/6	Barth	Saga Exploration	217 Cedar	Carlin	Mfg					
O	④J32	4-412-875	Carlin	UP house track	10th Street easterly	Carlin						NUTS
B	④J33	4-412-878	Carlin	Carlin Rail Terminal LLC	2001 Chestnut Street	Carlin	Mfg					
P	④J34	4-412-879	Carlin	Southwest Energy	Chestnut Street	Henderson		Xld				
R	④J35		Carlin	Modern Concrete Inc.	Chestnut Street	Carlin					Mfg	
b			Carlin	Komatsu Mining Corp.	4450 P&H Drive	Elko						
B	④J36	4-412-493,5	Vivian	Midstream Energy Partners (USA) LLC	3001 Chestnut Street	Carlin	Xld					
B	④J37	4-412-894	Vivian	Graymont Western US Inc.	3263 Chestnut Street	Carlin	Xld					
B	④J38	4-412-880	Vivian	Univar USA Inc.	3863 Chestnut Street	Carlin	Mfg					
B	④J39	4-412-881	Vivian	Lemm Corporation--Operations	4141 Old Highway 40	Carlin	Mfg					
B	④J40	4-412-771	Elko	Tricon Wear Solutions d/b/a Tricon Metals	1355 W. Idaho Street	Elko	Mfg					
B	④J41	4-412-473	Elko	Humboldt Lbr. d/b/a Franklin Bldg. Supply	1335 W. Idaho Street	Elko	Mfg					
R	④J42	4-409-766	Elko	Blach Distributing Co.	131 W. Main Street	Elko					Mfg	
O	④J43	4-409-585	Elko	Union Pacific Railroad Co. Inc.	5200 Union Pacific Way	Elko						NUTS
b			Elko	Shilon Corp.	ML: 10190 Haven St.	Las Vegas						
B	④J44	4-409-721/2	Osino	Northeastern NV Regional Railport	8800 E. Idaho Street	Elko	Xld					
B	④J45	4-409-?/?	Osino	National Oilwell Varco LP	9006 E. Idaho Street	Elko	Mfg					
R	④J46		Osino	SAS Global Corp.	9102 E. Idaho Street	Elko					Mfg	
B	④J47	4-409-723/4	Osino	Pacific Steel & Recycling	9250 E. Idaho Street	Elko	Mfg					
b			Osino	County of Elko Nevada	571 Idaho Street	Elko						
O	④J48	4-409-102	Halleck	UP spur track	abuts Highway 229	Halleck						NUTS
O	④J49	4-409-110	Deeth	UP house track	between Star Valley Rd & Starr Land	Deeth						NUTS
O	④J50	4-409-720	Wells	UP house track	N. Metropolis Road & 8th Street	Wells						NUTS
O	④J51	4-409-507	Wells	UP spur track	parallel to 7th St. & Ruby Ave.	Wells						NUTS
O	④J52	4-409-110	Moor	UP runaround	3500' dirt roads to I-80 ramps	Moor						NUTS
O	④J53	4-409-530	Cobre	UP setout track	3000' dirt road to Montello Rd.	Cobre						NUTS
O	④J54	4-409-130	Montello	UP house track, double-ended	off Montello Road	Montello						NUTS
O	④J55	4-409-531	Tacoma	UP setout track	375' NW of Tacoma Road	Tacma						NUTS

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Central Corridor Main Line (former Western Pacific)												
R	④K1		Wendover	Propane of Wendover	460 Mesa Street	W.Wendover					Mfg	
R	④K2		Wendover	City of West Wendover Landfill	1875 Florence Way	W.Wendover					Mfg	
B	④K3	4-404-530	Pilot	Graymont Western US Inc.	15 miles NW of Wendover Pilot Exit 398		Mfg					
O	④K4	4-404-528	Clifside	UP set out track	1 mi n to Frontage Road	Clifside						NUTS
O	④K5	4-404-526	Silver Zone	UP set out track	2 mi e to Frontage Road	Silver Zone						NUTS
O	③K6	4-404-126	Shafter	UP storage track	off BLM Road 1091	Shafter						NUTS
O	④K7	4-404-510	Ruby	UP set out track	7000' nw to Highway 93	Ruby						NUTS
R	④K8		Wells	Great Basin Beverage	534 Pacific Ave.	Wells					Mfg	
O	④K9	4-404-108	Deeth	UP set out track, 1/2 on Spratlin's property	off Starr Lane	Deeth						NUTS
O	④K10	4-404-105	Elburz	UP set out track	2 mi from Frontage Road	Elburz						NUTS
O	④K11	4-404-503	Elburz	UP spur track	2 mi from Frontage Road	Elburz						NUTS
B	④K12	4-404-701	Osino	Silver State Rock Products	6060 Last Chance Rd.	Elko	Mfg					
B	④K13	4-412-781	Elko	Ash Grove Cement Co.	320 Union Pacific Way	Elko	Mfg					
R	④K14		Elko	Theissen Team USA	1840 Sharp Access Road	Elko					Mfg	
R	④K15		Elko	Modern Concrete Inc.	1770 Sharp Access Road	Elko					Mfg	
			Elko	Al Park Petroleum Inc.	275 12th Street	Elko						
O	④K16	4-412-575	Hunter	UP spur track	off Maggie Creek Ranch Rd	Hunter						NUTS
R	④K17		Carlin		off Chestnut St. btwn Univar & Graymont						Mfg	
B	④K18	4-412-762	Beowawe	Thomas Petroleum	ML: 923 Spruce St.	Carlin	Mfg					
B	④K19	4-412-755/61	Dunphy	Halliburton Energy Services Inc.	ML: 912 Dunphy Ranch Rd	Battle Mtn.	Xld					
B	④K20	4-412-753/4	Dunphy	Newmont NV Energy Investment LLC	914 Dunphy Ranch Rd	Battle Mtn.	Mfg					
B	④K20	4-412-753/4	Dunphy	Newmont USA Ltd.	230 Dunphy Ranch Road	Battle Mtn.						
O	④K21	4-412-550	Kampos	UP storage track	1 mile west of T-S road	Kampos						NUTS
O	④K22	4-412-742/3	Rennox	Dyno Nobel Inc.	1 Hwy 305 AptS	Battle Mtn.	Mfg					
P	④K23	4-412-740/1	Rennox	Sierra Chemical Company	Rock Creek Rd. (tax map: Parcel A Chem Map)	Rennox		Mfg				
P	④K24	4-412-739	Rennox	Dyno Nobel Inc.	Rock Creek Rd. (tax map: 1 Hwy 305 AptS)	Battle Mtn.		Mfg				
B	④K25	4-412-720/4+1	Valmy	NV Energy	Stone House Exit	Interstate 80	Mfg					
O	④K26	4-412-726	Valmy	UP spur track	off Treaty Hill Road	Valmy						NUTS
O	④K27	4-412-410	Red House	UP storage track	off Red House Ranch Road	Red House						NUTS
B	④K28	4-412-504	Golconda	Southwest Energy LLC	Mobley Ranch Rd.	Golconda	Xld					
B	④K29	4-412-703,6	Golconda	Graymont Western US Inc.	205 Mobley Ranch Rd.	Golconda	Mfg					
B	④K30	4-412-704/5	Golconda	Diamond Plastics Corp.	1000 Eden Valley Rd.	Golconda	Mfg					
B	④K31	4-412-711a	Winnemucca	Amerigas Propane LP	Golconda Street ofc.: 4855W.WinnemuccaBlvd	Winnemucca	Mfg					
P	④K32	4-412-711b	Winnemucca	building for lease	78 Sonoma Street	Winnemucca				11,000		
O	④K33	4-412-701	Winnemucca	UP house track	off north end of Gould Street	Winnemucca						NUTS
O	④K34	4-412-705	Winnemucca	UP team track	along Gould Street	Winnemucca						In Use
B	④K35	4-412-712	Winnemucca	JR Simplot Co.	140 Pacific Ave.	Winnemucca	Mfg					
B	④K36	4-412-704/713	Winnemucca	Min-Ad Inc.	4210 Jungo Road	Winnemucca	Mfg					
B	④K37	4-412-714/5, 9	Winnemucca	Transwood Inc.	3109 Desert Gen Rd.	Winnemucca	Mfg					
B	④K38	2-204-716/8	Marcus	Cyanco	5505 Cyanco Dr.	Winnemucca	Xld					

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O	④K39	2-204-515	Raglan	UP MofW track	700 feet east of Pipeline Line Road	Raglan						NUTS
O	④K40	2-204-516	Gaskell	UP spur track	1.4 mi on dirt roads to Jungo Road	Gaskell						NUTS
O	④K41	2-204-517	Jungo	UP double-ended house track	200 feet south of Jungo Road	Jungo						NUTS
O	④K42	2-204-519	Antelope	SE leg of former WP wye track	3,500 feet NW of Highway 49	Antelope						NUTS
O	④K43	2-204-521	Floka	UP spur track	1.3 mi on dirt roads from Hwy. 49	Floka						NUTS
R	④K44		Sulphur	Hycroft Resources & Development Inc	54980 Jungo Road (54 mi. w of Winnemucca)	Sulphur					Mfg	
O	④K45	2-204-523	Ronda	UP spur track	100 feet south of UP dirt access rd.	Ronda						NUTS
O	④K46	2-204-525	Cholona	UP spur track	100 feet south of UP dirt access rd.	Cholona						NUTS
O	④K47	2-204-527	Trego	UP spur track	4,000 feet from Jungo Rd. on dirt roads	Trego						NUTS
O	④K48	2-204-015	Gerlach	UP double-ended house trac,	2,200 feet SW of Hwy. 447 crossing	Gerlach						NUTS
Empire Branch, private (out-of-service since 2011?)												
P	④K49	2-204-720	Empire	Empire Mining Company LLC	NV Highway 447 Mi. Marker 68	Empire		Mfg				
Central Corridor continued												
O	④K50	2-204-535	Phil	UP spur track	100 feet south of UP dirt access rd.	Phil						NUTS
O	④K51	2-204-536	Reynard	UP spur track	900 feet south of UP dirt access rd.	Reynard						NUTS
O	④K52	2-204-537	Sano	UP spur track	100 feet west of UP dirt access rd.	Sano						NUTS
O	④K53	2-204-538	Sand Pass	UP double-ended spur track	1/2 mile from Surprise Valley Rd.	Sand Pass						NUTS
Modoc Line Stub												
P	④K54	2-204-152	Flanigan	property for sale	280 Flanigan Road	Reno/Washoe		Mfg				
Central Corridor continued												
O	④K55	2-204-539	Flanigan	UP spur track	1 miles west of Flanigan Road	Flanigan						NUTS
Region 4 Totals						**Facility counts**	36	9		1	12	52
						Warehouse square feet				11,000	0	
REGION 5, Fernley/Fallon												
Overland Main Line												
R	⑤A21		Vista	vacant new construction	12475 Mustang Road	Sparks					550,000	
b			Vista	Chicken Hawk Transport LLC	ML: 235 London Drive	McCarran						
B	⑤G1	2-205-525	Patrick	UP bad order spur		McCarran						NUTS
B	⑤G2	2-205-720/1	Wunotoo	Mars Petcare US Inc.	500 Waltham Way	Sparks	Mfg					
Tahoe-Reno Industrial Center (Innovation Park), lead #1 (Track 710)												
R	⑤G3		Wunotoo	Bi-Nutraceuticals	625 Waltham Way, Ste. 101	McCarran					100,000	
R	⑤G4		Wunotoo	Symbia Logistics d/b/a NV Dist. Svcs.	625 Waltham Way, Ste. 104	McCarran					300,000	
P	⑤G5	2-205-712	Wunotoo	Ach Foam Technologies	775 Waltham Way	Lockwood				300,000		
P	⑤G6	2-205-714	Wunotoo	Steel City Erecting	1799 Waltham Way	McCarran				330,000		
R	⑤G7	2-205-?	Wunotoo	vacant lot, 2300' of level RR frontage	1025 Waltham Way	McCarran					Mfg	
P	⑤G8	2-205-716	Wunotoo	Ardagh Metal Packaging	900 Waltham Way	McCarran		Mfg				
Overland Main Line continued												
P	⑤G9	2-205-718	Wunotoo	Nevada Energy	1799 Waltham Way	McCarran		Mfg				
P	⑤G10	2-205-724/5	Wunotoo	Duraflex International	160 Wunotoo Road	Sparks		Mfg				
R	⑤G11	2-205-?	Wunotoo	vacant parcel with turnout in place	? Waltham Way	McCarran					Mfg	

Legend

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Mfg Manufacturing **Xld** Transload **Intmdl** Intermodal **NUTS** Not Using Track Siding

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b			Wunotoo	Tahoe Reno Industrial Center LLC	8600 Technology Way	Reno						
Tahoe-Reno Industrial Center (Innovation Park), lead #2 (Track 722)												
P	⑤G12	not shown	Wunotoo	Ryse Renewables? (trks on TRIC prop)	615 Peru Drive	McCarran		Mfg				
B	⑤G13	2-205-719	Patrick	James Hardie Bldg. Products Inc.	3000 Waltham Way	Sparks	Mfg					
B	⑤G14	2-205-790/1	Patrick	Golden Gate Set Petrol. Partners of Nevada LL	500 Ireland Drive	Sparks	Mfg					
R	⑤G15		Patrick	Tire Rack	3300 Waltham Way	McCarran					585,000	
R	⑤G16		Patrick	PPG Architectural Coatings	201 Ireland Drive	Sparks					495,000	
B	⑤G17	2-205-333/4	Patrick	PPG Industries (Reno Plant)	500 Pittsburgh Ave.	McCarran	Mfg					
B	⑤G18	2-205-?	Patrick	Truckee Tahoe Lumber Co.	1800 USA Parkway	Sparks	Mfg					
R	⑤G19		Patrick	Chart Industries	1995 Peru Drive	McCarran					Mfg	
R	⑤G20		Patrick	Schluter Systems, Inc.	100 Germany Circle	McCarran					150,000	
R	⑤G21		Patrick	Bush Ind. Inc.	2555 USA Pkwy.	McCarran					750,000	
R	⑤G22		Patrick	Propak Corporation	2777 USA Pkwy.	McCarran					800,000	
R	⑤G23		Patrick	Battery Systems	3410 Peru Drive	McCarran					200,000	
R	⑤G24		Patrick	Fulcrum Bioenergy (bio-refinery)	? Peru Drive under const.	McCarran					Mfg	
R	⑤G25		Patrick	Aqua Metals	2500 Peru Drive	McCarran					125,000	
Overland Main Line continued												
B	⑤G26	2-205-728/9	Clark	EP Minerals LLC	640 Clark Staton Rd.	Sparks	Mfg					
O	⑤A22	2-205-533	Thisbee	UP setout track	1/2 mi east of I-85 ramps	Thisbee						NUTS
O	⑤A23	2-205-737	Fernley	UP coach track	1000 ft. from Logan Lane	Fernley						NUTS
B	⑤A24	2-205-738/9	Fernley	Nevada Cement Company LLC	1290 W. Main St.	Fernley	Mfg					
O	⑤A25	2-205-748/9	Fernley	UP, former Musket transload site	825 Commerce Center Drive	Fernley						NUTS
O	⑤A26A	2-205-759	Fernley	Union Pacific	between lead track & W. Main St.	Fernley						NUTS
R	⑤A26B		Fernley	Rheo Minerals	260 Logan Lane	Fernley					Mfg	
B	⑤A24	2-205-743	Fernley	Valley Joist Inc.	255 Logan Road	Fernley	Mfg					
B	⑤A25	2-205-742	Fernley	Rice Lake Weighing Systems	265 Logan Lane	Fernley	Mfg					
B	⑤A26C	2-205-745/6	Fernley	Imerys Minerals California Inc.	100 Front Street	Fernley	Mfg					
B	⑤A27	2-205-756/7	Fernley	Paramount Nevada Asphalt Co.	425 Logan Lane	Fernley	Mfg					
b			Fernley	Wade Development Company Inc.	ML: 5525 Kietzke Lane, Ste. 102	Reno						
Louisiana Pacific lead (Track 750)												
B	⑤H1	2-205-751	Fernley	Johns Manville Corp.	325 Industrial Drive	Fernley	Mfg					
B	⑤H2	2-205-752	Fernley	Fortifiber Corp.	300 Industrial Drive	Fernley	Mfg					
B	⑤H3	2-205-?	Fernley	Essential Industries	15 Salvadore Drive	Fernley	Mfg					
B	⑤H4	2-205-753	Fernley	RMAX Operating LLC	210 Lyon Drive	Fernley	Mfg					
R	⑤H5		Fernley	warehouse for sale	190 Resource Drive	Fernley					183,435	
B	⑤H6	2-205-747/754	Fernley	Agru America Inc.	238 Lyon Drive	Fernley	Mfg					
B	⑤H7	2-205-780/1	Fernley	Deceuninck North America LLC	240 Nevada Pacific Blvd.	Fernley	Mfg					
R	⑤H8		Fernley	21st Century Environmental Mgmt.	2095 Newlands Dr.	Fernley						
P	⑤H9	2-205-776/7	Fernley	vacant lot for sale	2185 Newlands Dr.	Fernley		Mfg				
R	⑤H10		Fernley	warehouse for lease	2275 Newlands Dr.	Fernley					256,000	
R	⑤H11		Fernley	warehouse for sale	2375 Newlands Dr.	Fernley					337,500	

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R	⑤H12		Fernley	Amazon	1600 E. Newlands Dr.	Fernley					550,000	
B	⑤H13	2-205-258	Fernley	Trex Company Inc.	1800 E. Newlands Dr.	Fernley	Mfg					
B	⑤H14	2-205-782/3	Fernley	Agru America Inc.	2000 E. Newland Dr.	Fernley	Mfg					
B	⑤H15	2-205-755	Fernley	Quad Graphics Inc.	2200 E. Newlands Dr.	Fernley		Mfg				
B	⑤H16	2-205-767/8/9	Fernley	The Sherwin-Williams Co.	1891 Duffy Road	Fernley	Mfg					
R	⑤H17		Fernley	warehouse for sale, 115,200 s.f.	385 Stanley Drive	Fernley					118,000	
Overland Main Line continued												
B	⑤A28	2-205-760/1	Darwin	Western Nevada Rail Park LLC	11000 Reno Highway	Fernley	Xld					
b			Darwin	Cody Group Inc.	ML: 527 E Weber Canyon Rd	Oakley						
B	⑤A29	2-205-105?	Hazen	Omaha Track Inc.	1006 Nevada Street	Hazen	Mfg					
O	⑤A30	2-205-570	Hazen	UP MofW track	Old Lincoln Highway	Hazen						NUTS
Fallon Branch												
P	⑤A31	2-205-840-4	Fallon	Falcon Ridge Investment Co.		Hazen		Xld				
B	⑤A32	2-205-850	Fallon	New Millennium Bldg. Systems	8200 Woolery Way	Fallon	Mfg					
B	⑤A33	2-205-849/851	Fallon	Wheeling Corrugating Company	8090 Woolery Way	Fallon	Mfg					
B	⑤A34	2-205-852	Fallon	Rocky Mountain Agronomics	500 Gummow Drive	Fallon	Mfg					
B	⑤A35	2-205-853	Fallon	Mills Farm & Industrial	Venturacci Lane, UP Team Track	Fallon	Mfg					
B	⑤A36	2-205-856	Fallon	SS Hert Trucking Inc.	380 N. Taylor Street	Fallon	Xld					
B	⑤A37	2-205-861/2	Fallon	Kents Supply Center Inc.	260 N. Maine Street	Fallon	Mfg					
b			Fallon	Dicaperl Minerals Corp. (Dicalite?)	7525 Rockwood Place	Fallon						
b			Fallon	JM Gomes Ranch Inc.	3025 Allen Road	Fallon						
b			Fallon	Dodge Brothers Inc.	455 Dodge Lane	Fallon						
b			Fallon	Storms Oasis Dairy LLC	7770 Flying K Ranch Lane	Fallon						
b			Fallon	Department of the Navy	4755 Pasture Road	Fallon						
b			Fallon	Perazzo Brothers Dairy	6555 Stillwater Road	Fallon						
b			Fallon	HFI Enterprises	1450 McLean Road	Fallon						
Mina Branch (north end)												
B	⑤A38	2-205-866/7	Diatom	Safety-Kleen Systems Inc.	22211 Bango Road	Fallon	Xld					
B	⑤A39	2-205-870	Diatom	former EP Minerals? Newmont?	? Farm District Road	Diatom		Mfg				
B	⑤A40	2-205-873	Appian	300 ft vacant track, mostly UP property	west of 3645 Lemon Street	Silver Springs						NUTS
B	⑤A41	2-205-875	Appian	NV Wood Preserving (see below)	1680 Spruce Street	Silver Springs		Mfg				
B	⑤A42	2-205-874	Appian	Art Wilson Co. d/b/a ACG Materials	1850 E. Spruce Street	Silver Springs	Mfg					
Region 5 Totals						**Facility counts**	30	9		2	20	7
						Warehouse square feet				630,000	5,499,935	

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REGION 6, Reno/Sparks												
Reno Branch (former N-C-O Rwy, then Western Pacific)												
B	⑥A1	2-204-700	Peavine	LP Terminal LLC	19975 S. Reno Park Blvd.	Reno	Mfg					
P	⑥A2	2-204-700	Peavine	Industrial Wood Products	19955 S. Reno Park Blvd.	Reno		Mfg				
b			Peavine	Cornerstone Propane Partners	9662 N. Virginia Street	Reno						
Leareno Industrial Lead (to Stead off of Reno Branch)												
R	⑥B1		Leareno	warehouse, 400,000 sf, vacant portions	12995 Echo Court	Reno					400,000	
P	⑥B2	2-204-724	Leareno	General Motors	6565 Echo Avenue	Reno				385,000		
P	⑥B3	2-204-722c	Leareno	Pacific Western Timbers	14551 Industry Cir. (last 10 docks)	Reno				180,000		
P	⑥B4	2-204-722b	Leareno	Warehouse Services	14551 industry Cir. (2nd 20 docks)	Reno				225,000		
P	⑥B5	2-204-722a	Leareno	ITS Logistics	14551 industry Cir. (1st 40 docks)	Reno				405,000		
R	⑥B6		Leareno	Birdrock Brands, Distribution Center	14525 Industry Cir., Suite 100	Reno					189,500	
R	⑥B7		Leareno	Hubert Company, Western D.C.	14525 Industry Cir., Suite 500	Reno					145,000	
R	⑥B8	2-204-729	Leareno	Geofortis Processing & Logistics LLC	0 Industry Cir. (but lot on Cocoa Ave.)	Reno					Mfg	
R	⑥B9		Leareno	Itronics Metalurgical Inc.	14305 Cocoa Avenue	Reno					Mfg	
R	⑥B10		Leareno	Waste Mgmt. (former Refuse Inc.)	13890 Mt. Anderson St.	Reno					Mfg	
R	⑥B11		Leareno	vacant bldg.	13805 Mt. Anderson St.	Reno					60,000	
R	⑥B12		Leareno	A&B Precision Metals	13715 Mt. Anderson St.	Reno					Mfg	
R	⑥B13		Leareno	ACH Foam Technologies	13695 Mt. Anderson St.	Reno					Mfg	
B	⑥B14	2-204-719/20	Leareno	Hidden Valley Manufacturing	12150 Moya Blvd.	Reno	Mfg					
R	⑥B15		Leareno	partly vacant + Pods Moving & Storage	12040 Moya Blvd.	Reno					30,000	
B	⑥B16	2-204-718	Leareno	Performance Pipe/Spirolite Corp.	14381 Lear Blvd.	Reno	Mfg					
P	⑥B17	2-204-715	Leareno	Star Logistics Trucking Co.	14331 Lear Blvd.	Reno		Mfg				
R	⑥B18		Leareno	Daimler Trucks, annex to 14444 Lear	14291 Lear Blvd.	Reno					130,000	
P	⑥B19	2-204-715/6/7	Leareno	LSC Communications US	14100 Lear Blvd.	Reno				105,000		
P	⑥B20	2-204-721	Leareno	Veca West Inc.	ML: 14250 Lear Blvd.	Reno		Mfg				
R	⑥B21	2-204-710	Leareno	JC Penney Corp. Inc.	1111 Stead Blvd.	Reno					1,375,000	
R	⑥B22		Leareno	Sierra Packaging & Converting	11005 Stead Blvd.	Reno					Mfg	
Reno Branch continued												
B	⑥A3	2-204-741	Panther	Ferrellgas LP	7757 N. Virginia Street	Reno	Mfg					
B	⑥A4	2-204-745	Panther	Amerigas Propane LP	7700 N. Virginia Street	Reno	Mfg					
P	⑥A5	2-204-747/8	Panther	Rosen Materials	7970 Security Circle	Reno		Mfg				
P	⑥A6	2-204-746	Panther	Kappes Cassiday & Associates	7950 Security Circle	Reno		Mfg				
R	⑥A7		Panther	Radians	880 N. Hills Blvd.	Reno					155,000	
R	⑥A8		Panther	US Foods	850 N. Hills Blvd.	Reno					62,500	
R	⑥A9		North Reno	GNG Logistics	1080 Standard Street, Suite A	Reno					50,000	
R	⑥A10		North Reno	Sierra Pallet	400 Western Road	Reno					62,000	
P	⑥C1	2-204-791b	North Reno	Bender Group (gen'l warehousing)	345 Parr Circle	Reno				200,000		
P	⑥C2	2-204-791a	North Reno	Trend Offset Printing	365 Parr Circle	Reno		Mfg				
P	⑥C3	2-204-706	North Reno	Glasfloss Ind. Inc.	300 Parr Circle	Reno				110,000		
P	⑥C4	2-204-703	North Reno	ZLine Kitchens	350 Parr Circle	Reno				55,000		

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P	⑥C5	2-204-701	North Reno	Bender Group (gen'l warehousing)	205 Parr Blvd.	Reno				190,000		
R	⑥C6		North Reno	Reno Iron Works	333 E. Parr Circle	Reno					Mfg	
P	⑥C7	2-204-797/8	North Reno	for lease/sale (former Packer Term.)	200 Parr Blvd.	Reno				11,266		
P	⑥C8	2-204-758a/b	North Reno	Workpak Flexible Packaging LLC	300/350 Parr Blvd.	Reno		Mfg				
P	⑥C9	2-204-758c	North Reno	Bender Group (gen'l warehousing)	380 Parr Blvd.	Reno				50,000		
P	⑥C10	2-204-757	North Reno	Sears Repair & Redistribution Center	400 Parr Blvd.	Reno				175,000		
B	⑥C11	2-204-810	North Reno	High Desert Truss & Lumber	500 E. Parr Blvd.	Reno	Mfg					
O	⑥C12	2-204-811	North Reno	UP "ramp track," double-ended team track	500 E Parr Blvd.	Reno						NUTS
			North Reno	Standard Motors Prod.	305 Western Road	Reno						
			North Reno	Vaughn Materials Co. Inc.	2400 Valley Road	Reno						
R	⑥A11		North Reno	Timber Guys LLC, d/b/a Capital Plywood	1955 Timber Way	Reno					45,000	
B	⑥A12	2-204-933	Reno	Schnitzer Steel Ind. Inc.	490 Valley Road	Reno	Xld					
P	⑥A13	2-206-180	Reno	Martin Iron Works Inc.	530 E 4th Street	Reno		Mfg				
O	⑥A14	2-206-886a	Reno	UP team track, double-ended	White Fir Street	Reno						NUTS
Overland Main Line (Cal-P, former Central Pacific, then Southern Pacific)												
P	⑥A15	2-206-885/6b	Reno	Twisted Metal Works	130 Woodland Avenue	Reno				60,000		
R	⑥A16		Reno	Waste Management of NV	1390 E. Commercial Row	Reno					Mfg	
R	⑥A17		Reno	Hunt & Sons (formerly Casazza Oil)	1575 E. Commercial Row	Reno					Mfg	
B	⑥A18	2-206-830	Reno	Reno Salvage Co, New Metals Div	333 Toano Street Reno 89512	Reno	Mfg					
b			Reno	Reno Gazette Journal	955 Kuenzli	Reno						
b			Reno	Porsche Cars North America Inc.	ML: One Porsche Dr	Atlanta						
b			Reno	NV Energy	6100 Neil Road	Reno						
b			Reno	Gruners Furniture Inc.	9095 S. Virginia St.	Reno						
b			Reno	US Postal Service	2000 Vassar St.	Reno						
b			Reno	Ennis Furniture Co.	1350 Neil Way	Reno						
b			Reno	Custom Glass	1095 E 2nd Street	Reno						
b			Sparks	FN Logistics LLC	ML: 12710 Thuderbolt Dr.	Reno						
b			Sparks	Pronghorn Transload LLC	ML: 12710 Thuderbolt Dr.	Reno						
R	⑥A19		Sparks	RMC Nevada Inc.	333/350 Galleti Way	Sparks					Mfg	
G	⑥D1	2-205-800/1	Sparks	UP intermodal tracks	1151 Nugget Avenue	Sparks						In Use, Term
B	⑥D2	2-205-769	Sparks	Kinder Morgan Liquid Terminals	301 Nugget Ave.	Sparks	Xld					
O	⑥D3	2-205-766/7	Sparks	Sparks Yard, team tracks	S. Stanford Way	Sparks						NUTS
R	⑥D4		Sparks	warehourse for lease (158,000 s.f.)	240 S. Stanford Way	Sparks					158,000	
P	⑥D5	2-205-761	Sparks	Colonial Van & Storage	150 S. Stanford Way	Sparks				140,000		
R	⑥D6		Sparks	Geodis Logistics LLC	251 S. McCarran Blvd.	Sparks					200,000	
R	⑥D7		Sparks	New West Distributing	325 E. Nugget Avenue	Sparks					162,000	
R	⑥D8	2-205-822a	Sparks	warehouse for lease	1555 Crane Way	Sparks					50,000	
R	⑥D9	2-205-822b	Sparks	warehouse for lease	1575 Crane Way	Sparks					50,000	
B	⑥D10	2-205-817	Sparks	Nexxt Rail LLC	1490 Hymer Ave.	Sparks	Xld					
R	⑥D11	2-205-815	Sparks	Truckee Tahoe Lumber Co.	1550 Hymer Ave.	Sparks					20,000	
B	⑥D12	2-205-816	Sparks	Western Metals Recycling LLC	1325 Hymer Ave.	Sparks	Mfg					

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P	⑥D13	2-205-814	Sparks	warehouse for sale	1280 Icehouse Ave.	Sparks				75,000		
R	⑥D14		Sparks	2 buildings for sale	555 Dermoday Way	Sparks					91,773	
B	⑥D15	2-205-770/1	Sparks	Cashman Equipment Company	620 Glendale Ave.	Sparks		Mfg				
B	⑥D16	2-205-811	Sparks	Suburban Propane Partners LP	400 Wolverine Way, Ste. A	Sparks	Mfg					
R	⑥D17		Sparks	Pallet Broker	250/350 Wolverine Way	Sparks					Mfg	
B	⑥D18	2-205-810	Sparks	Amerigas Propane LP	655 S. Stanford Way	Sparks	Mfg					
R	⑥D19	2-205-752/3	Sparks	Jensen Precast	625 Bergin Way	Sparks					Mfg	
Sparks West Running Track (Track 160)												
R	⑥D20	2-205-773	Sparks	Fernco Inc. West	855 Linda Way	Sparks					Mfg	
R	⑥D21		Sparks	The Pillow Factory	900 Southern Way	Sparks					25,000	
R	⑥D22		Sparks	Calvada Food Sales	950 Southern Way	Sparks					20,000	
P	⑥D23	2-205-772	Sparks	Encompass Group LLC warehouse	1000 Southern Way	Sparks				55,000		
P	⑥D24	2-205-775a	Sparks	vacant	1150 Southern Way	Sparks				20,000		
B	⑥D25	2-205-775b	Sparks	South/Win Ltd.	1280 Southern Way	Sparks	Mfg					
R	⑥D26	2-205-776	Sparks	Just Refiners USA Inc.	540/620 Greg Street	Sparks					Mfg	
R	⑥D27		Sparks	bldg. half vacant, w. side towards RR	1475 Linda Way	Sparks					60,000	
P	⑥D28	2-205-777	Sparks	Paterson Paper	545/625 Greg Street	Sparks		Mfg				
P	⑥D29	2-205-778	Sparks	Paterson Paper	550 Coney Island Drive	Sparks		Mfg				
R	⑥D30		Sparks	Basalite	345/355 Greg Street	Sparks					Mfg	
P	⑥D31	2-205-782	Sparks	French Gourmet	245 Coney Island Drive	Sparks				66,000		
P	⑥D32	2-205-781b	Sparks	Blue Frog Screen Printing	345 Coney Island Drive	Sparks		Mfg				
P	⑥D33	2-205-781a	Sparks	Innovative Cabinets & Design	445 Coney Island Drive	Sparks		Mfg				
P	⑥D34	2-205-780	Sparks	Ranshu Parts Co.	525 Coney Island Drive	Sparks				275,000		
P	⑥D35	2-205-785	Sparks	vacant warehouse	725 Greg Street	Sparks				73,000		
P	⑥D36	2-205-785	Sparks	partially vacant whse., 226k s.f.	1285 Southern Way	Sparks				226,000		
P	⑥D37	2-205-786	Sparks	MicroMetl	905 Southern Way	Sparks		Mfg				
Overland Main Line continued												
R	⑥E1	2-205-751	Sparks	Tom Duffy Wholesale Products	656 Dunn Circle	Sparks					30,000	
P	⑥E2	2-205-750	Sparks	Leach Logistics	810/830 E. Glendale Ave.	Sparks				73,000		
Sparks East Running Track (Track 130)												
P	⑥E3	2-205-730a	Sparks	Hodel-Natco Ind.	800 E. Glendale Ave.	Sparks				46,000		
P	⑥E4	2-205-730b	Sparks	Store Supply Warehouse	800 E. Glendale Ave.	Sparks				40,000		
P	⑥E5	2-205-731a	Sparks	Frito-Lay Inc.	980 Packer Way	Sparks				33,000		
P	⑥E6	2-205-731b	Sparks	Legend, Inc.	988 Packer Way	Sparks				30,000		
B	⑥E7	2-205-732/4	Sparks	Plastic Spec. & Tech. d/b/a ColoRite	909 E. Glendale Ave.	Sparks	Mfg					
P	⑥E8	2-205-734b	Sparks	Online Tech Stores	1001 E. Glendale Ave.	Sparks				63,000		
R	⑥E9	2-205-736	Sparks	vacant whse., east end	1400 S. McCarran Blvd.	Sparks					570,000	
B	⑥E10	2-205-746	Sparks	The HC Companies Inc.	550 Spice Island Drive	Sparks	Mfg					
P	⑥E11	2-205-747	Sparks	Across International	600 Spice Island Drive	Sparks				53,000		
R	⑥E12		Sparks	Geodis Logistics LLC	620 Spice Island Drive	Sparks					175,000	
B	⑥E13	2-206-749	Sparks	Reno/Carson Lumber	680 Spice Islands Dr.	Sparks	Mfg					

Legend

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b=Blue Customers in Railinc SCRS database but not found

Mfg Manufacturing **Xld** Transload **Intmdl** Intermodal **NUTS** Not Using Track Siding

Inventory of Nevada Industry
Businesses with Sidetracks & Nearby Truckload Shippers

Code	Region/ Inset Map SRF Ref. #	UP Hub Book Track UP ZTS #	Station	Sidetrack Owner	Street Address	City	Mfg or Xload Track in Use? yes	no	Warehouse Space (SF) Track Used	Track Unused	Track easy to build	UP Sidetracks Available
P	⑥E14	2-206-130end	Sparks	Watts Regulator	750 Spice Island Dr.	Sparks						
R	⑥E15		Sparks	vacant building for lease	850 Spice Island Dr.	Sparks					85,000	
P	⑥E16	2-206-748a	Sparks	Bimbo D.C./Sara Lee Food Service	950 United Circle	Sparks				29,000		
B	⑥E17	2-206-748b	Sparks	vacant warehouse (1/2 with Bimbo)	956/958 United Circle	Sparks				29,000		
R	⑥E18		Sparks	vacant portion of building	960 United Circle	Sparks					70,000	
P	⑥E19	2-205-741	Sparks	ArcBest	1755 Purina Way	Sparks				128,000		
R	⑥E20	2-205-742	Sparks	Advanced	1750 Purina Way	Sparks					130,000	
B	⑥E21	2-206-740	Sparks	Sims Group USA Corp.	1655 Franklin Way/1690 Deming Way	Sparks	Mfg					
B	⑥E22	2-206-744	Sparks	Lehigh Southwest Cement Co.	1465 East Greg	Sparks	Mfg					
B	⑥E23	2-206-743	Sparks	Waste Mgmt. Recycling Center	1455/1555 E. Greg Street	Sparks		Mfg				
B	⑥E24	2-205-737/8/9	Sparks	Conagra Brands	1055 E. Greg Street	Sparks	Mfg					
Overland Main Line continued												
B	⑥E25	2-205-721	Sparks	Dura-Line Corp.	1284/1285 E. Glendale Ave.	Sparks	Mfg					
P	⑥E26	2-205-722a,c	Sparks	other space in 1141 E. Glendale Ave.	1141 E. Glendale Ave.	Sparks				360,000		
B	⑥E27	2-205-722b	Sparks	LSC Communications d/b/a BNSF QDC	1141 E. Glendale Ave.	Sparks	Mfg					
B	⑥E28	2-205-720	Sparks	PDM Steel Service Centers Inc.	1210/1213/1250 Kleepe Lane	Sparks	Mfg					
P	⑥E29	2-205-125	Sparks	Tommy's Grandstand	830 Meredith Way	Sparks				28,000		
P	⑥E30	2-205-715	Sparks	warehouse for lease	1450 Kleppe Lane	Sparks				42,600		
GM lead (Track 120)												
R	⑥F1	2-206-703	Sparks	McKillican American Inc.	1802 Brierley Way	Sparks					Mfg	
R	⑥F2		Sparks	multiple occupants	55 Vista Boulevard	Sparks					115,000	
R	⑥F3	2-206-705a	Sparks	vacant warehouse (1/2 still CES Machine)	45 Vista Blvd., Ste. 101 (1/2? Bldg)	Sparks					170,000	
R	⑥F4	2-206-705b	Sparks	ProLogis	255 Vista Blvd.	Sparks					96,000	
R	⑥F5	2-206-704b	Sparks	American Tire Distributors Inc.	250 Lillard Dr. #100	Sparks					115,000	
R	⑥F6	2-206-704a	Sparks	Southern Wine & Spirits	250 Lillard Dr. #101A	Sparks					147,000	
R	⑥F7		Sparks	Allstates Warehousing & Distribution	350 Lillard Drive, Suite 171	Sparks					150,000	
B	⑥F8	2-206-707	Sparks	Geodis Logistics LLC	450 Lillard Drive	Sparks				300,000		
B	⑥F9	2-206-708	Sparks	ITS Logistics	555 Vista Blvd.	Sparks				620,000		
B	⑥F10	2-206-709	Sparks	Associated Bag Company	550 Lillard Blvd.	Sparks				87,000		
B	⑥F11	2-206-710	Sparks	Laddawn Inc.	659/550/540 Lillard Drive	Sparks	Mfg					
R	⑥F12		Sparks	J. Hofert Company	1755 E. Prater Way	Sparks					83,000	
R	⑥F13		Sparks	Coca-Cola Bottling Company	675 Cola Court	Sparks					78,000	
R	⑥F14		Sparks	vacant lot	0 E. Prater Way	Sparks					Mfg	
b			Sparks	Morrey Distributing Co.	1850 E Lincoln Way	Sparks						
Overland Main Line continued												
B	⑥A20	2-205-701/2	Vista	Thatcher Company of Nevada Inc.	2302 Larkin Circle	Sparks						
Region 6 Totals						**Facility counts**	24	15		37	53	4
						Warehouse square feet				5,042,866	5,554,773	

Legend

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Mfg Manufacturing **Xld** Transload **Intmdl** Intermodal **NUTS** Not Using Track Siding

Inventory of Nevada Industry
Businesses with Sidetracks & Nearby Truckload Shippers

Code	Region/ Inset Map SRF Ref. #	UP Hub Book Track UP ZTS #	Station	Sidetrack Owner	Street Address	City	Mfg or Xload Track in Use? yes	no	Warehouse Space (SF) Track Used	Track Unused	Track easy to build	UP Sidetracks Available
REGION 7, Mina Branch												
Mina Branch (south end)												
O	⑦I1		Wabuska	UP Prevett team track, double-ended	1/2 mi west of 95 Alt.							NUTS
O	⑦I2		Wabuska	UP former wye	immediately west of 95 Alt.							NUTS
O	⑦I3	2-205-881	Wabuska	UP team track, double-ended, 900 ft.	N. Highway 95Alt.	Yerington						In Use
P	⑦I4	2-205-879	Wabuska	Itronics Metalurgical, Inc.	N. Highway 95 Alt.	Mason Valley		Mfg				
P	⑦I5	2-205-885/6/7	Wabuska	Sierra Pacific Power (NV Energy)	1000 Sierra Way	Yerington		Mfg				
P	⑦I6	past MP 331.12	Thorne	Hawthorne Army Depot	United States Army	Hawthorne	Mfg					
Region 7 Totals						**Facility counts**	1	2		0	0	3
						Warehouse square feet				0	0	
					Totals of all Regions	**Facility counts**	139	51	1	48	139	85
						Warehouse square feet			100,000	6,286,866	17,476,081	

Legend

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Mfg Manufacturing **Xld** Transload **Intmdl** Intermodal **NUTS** Not Using Track Siding

Nevada Truckload Shippers

Truckload Quantity Shippers (573) that are not located adjacent to a rail line

Name	Address	City	ZIP	Phone	Region
Flowers Baking Co. Of Henderson	501 Conestoga Way	Henderson	89002	(702) 567-6401	1
Poly West	251 Conestoga Way	Henderson	89002	(702) 207-5600	1
Alpha Video Surveillance	900 West Warm Springs Rd #101	Henderson	89011	(702) 990-1454	1
Bassett Direct Furniture Warehouse	470 Mirror Court	Henderson	89011	(702) 914-2179	1
Bon Tool	Suite #, 108 W Warm Springs Road	Henderson	89011	(702) 558-3752	1
Creative Tent International	451 Mirror Court #101	Henderson	89011	(702) 789-2620	1
Deslauriers	900 West Warm Springs Road Building C	Henderson	89011	(702) 568-9177	1
EFCO Corporation	451 Mirror Court #103	Henderson	89011	(702) 564-9176	1
Geary Pacific Supply	900 West Warm Springs Rd #107	Henderson	89011	(844) 695-3517	1
Goodman Distribution Inc	751 W Warm Springs Rd #155	Henderson	89011	(702) 558-2183	1
GT Ventures LLC	#104, 4045, 470 Mirror Court	Henderson	89011	(702) 605-3991	1
Jimenez Arms	7380 Eastgate Rd #150	Henderson	89011	(877) 241-9938	1
Makaboo	451 Mirror Court #105	Henderson	89011	(866) 746-1596	1
Metalwest	451 Mirror Court	Henderson	89011	(702) 566-3551	1
Ocean Spray	7600 Commercial Way	Henderson	89011	(702) 568-8850	1
Patriot Exhibit Services	451 Mirror Court e106	Henderson	89011	(702) 538-7967	1
Procaps Laboratories	430 Parkson Road	Henderson	89011	(888) 888-2876	1
ReadyLIFT Suspension	7490 Commercial Way	Henderson	89011	(702) 410-2300	1
Res Exhibit Services	7420 Commercial Way	Henderson	89011	(800) 482-4049	1
Salus Uniforms	7390 Eastgate Road #170	Henderson	89011	(702) 260-4658	1
Samara Bags	7391 Eastgate Road #130	Henderson	89011	514-726-0777	1
Silver Springs Water	480 Mirror Court #109	Henderson	89011	(702) 897-4853	1
Sourcewell Nutrition	751 W Warm Springs Rd #100	Henderson	89011	(702) 715-8241	1
Sunshine Minting	7600 Eastgate Road	Henderson	89011		1
Vegas Valley Winery	7360 Eastgate Rd Suite 123	Henderson	89011	(702) 823-4065	1
Wells Enterprises-Henderson Ice Cream Plan	1001 Olsen Street	Henderson	89011		1
Artificial Grass Liquidators	150 Cassia Way # 100	Henderson	89014	(702) 766-7882	1
Berry Plastics	1055 American Pacific Dr #150	Henderson	89014	(702) 800-4328	1
Canamould Nevada	150 Cassia Way	Henderson	89014	(702) 629-3777	1
Core Mark International	855 Wigwam Parkway	Henderson	89014	(702) 876-5220	1
Dana Kepner	180 Cassia Way # 500	Henderson	89014	(702) 566-4101	1
Good Spirits Distributing	880 Wigwam Pkwy Suite 130	Henderson	89014	(702) 567-5007	1
High Impact Sign & Design	820 Wigwam Pkwy #100	Henderson	89014	(702) 736-7446	1
KCI USA	180 Cassia Way #510	Henderson	89014	(702) 888-3428	1
Maintenance Supply HQ	880 Wigwam Pkwy # 140	Henderson	89014	(702) 558-2200	1
Mars Retail Group	1 Sunset Way	Henderson	89014	(702) 458-8864	1
Progress Rail Services Corporation	860 Wigwam Parkway	Henderson	89014		1
Rakuten Super Logistics Fulfillment Center	880 Wigwam Pkwy	Henderson	89014	(866) 955-7793	1
Scott Drake Enterprises	130 Cassia Way # 100	Henderson	89014	(702) 853-2060	1
YourDeals.Vegas	16 Sunset Way #120	Henderson	89014	(800) 603-0004	1
Americold Logistics	830 East Horizon Drive	Henderson	89015	(702) 566-5810	1
Berry Plastics	800 East Horizon Drive	Henderson	89015	(702) 564-7770	1
Do It Best Corp	1450 West Pioneer Blvd	Mesquite	89027	(702) 346-2161	1
Primex Plastics Corporation	752 Turtleback Road	Mesquite	89027	(702) 346-7100	1
American Locker	4170-103 Distribution Cir	North Las Vegas	89030	(800) 828-9118	1
Bake Mark USA	2570 Kiel Way	North Las Vegas	89030	(702) 642-4500	1
Bake Mark USA	2570 Kiel Way	North Las Vegas	89030	(702) 642-4500	1
Basic Food Flavors	3950 E Craig Road	North Las Vegas	89030	(702) 643-0043	1
Biofloral USA	2711 East Craig Road B	North Las Vegas	89030	(702) 485-3711	1
Brady Linen Services	2501 Losee Rd	North Las Vegas	89030	(702) 642-0914	1
Brady Linen Services	1 W Mayflower Ave	North Las Vegas	89030	(702) 639-2500	1
Brady Linen Services	2501 Losee Road	North Las Vegas	89030	(702) 642-0914	1
Bunzl Distribution	4151 Industrial Center Dr	North Las Vegas	89030	(702) 644-2900	1
C B Motor Sports	3888 Civic Center Drive	North Las Vegas	89030	(702) 643-5110	1
Caesars Entertainment Laundry	100 W Carey Ave	North Las Vegas	89030	(702) 639-6100	1
CertainTeed Gypsum	3838 Civic Center Drive	North Las Vegas	89030	(702) 643-1181	1
Christie Lites Las Vegas	4325 Corporate Center Dr	North Las Vegas	89030	(702) 222-0363	1
Clark County Election Department	965 Trade Drive	North Las Vegas	89030	(702) 455-6552	1
Clearwater Paper Corporation	755 E Gilmore Ave	North Las Vegas	89030		1
Clearwater Paper Corporation	3901 Donna Street	North Las Vegas	89030	(702) 657-2400	1
Cold Storage Solutions	3840 Civic Center Dr	North Las Vegas	89030	(702) 940-3800	1
Czarnowski	4150 Industrial Center Dr #650	North Las Vegas	89030	(702) 891-0181	1

Truckload Quantity Shippers (573) that are not located adjacent to a rail line

Name	Address	City	ZIP	Phone	Region
Derse	3200 E Gowan Rd Suite 115	North Las Vegas	89030	(702) 895-9998	1
Dottys		North Las Vegas	89030	(702) 531-7173	1
DRS Product Returns	4031 Market Center Drive	North Las Vegas	89030	(610) 327-1133	1
Encompass	4031 Market Center Dr #301	North Las Vegas	89030	(800) 432-8542	1
Fastenal/Beno's Flooring	4310 Loose Road	North Las Vegas	89030		1
Firestone Building Products	4272 Corporate Center Dr	North Las Vegas	89030	(702) 880-8012	1
Foster West Corporation/Solar Industries	4336 Losee Road	North Las Vegas	89030		1
Frito-Lay DC Vegas	1209 Trade Drive	North Las Vegas	89030	(269) 830-4791	1
Global Industrial	3700 Bay Lake Trail	North Las Vegas	89030	(702) 333-4212	1
Goodwill Clearance Center and Donation Site	280 W Cheyenne Ave	North Las Vegas	89030	(702) 214-2008	1
Harney & Sons Tea Corporation	3850 Civic Center Dr	North Las Vegas	89030	(702) 367-0888	1
HD Supply White Cap	4171 Distribution Cir Ste 107	North Las Vegas	89030	(702) 639-0380	1
Hostess	4030 Industrial Center Dr	North Las Vegas	89030		1
Impact XM	4265 Corporate Center Dr	North Las Vegas	89030	(877) 867-8868	1
Infinity Air	580 W Cheyenne Ave Set. 70	North Las Vegas	89030	(702) 489-6452	1
Joto Paper	705-4031 Industrial Center Dr	North Las Vegas	89030	(800) 565-5686	1
Jumper Man Party Rentals	3870 Civic Center Dive	North Las Vegas	89030	(702) 387-5867	1
LAS2 - Amazon Returns Center	3837 Bay Lake Trail	North Las Vegas	89030	(888) 280-3321	1
Lift-All Company	2629 E Craig Rd # L	North Las Vegas	89030	(702) 639-3900	1
LIOHER	(702) 507-0503	North Las Vegas	89030	(702) 507-0503	1
Liquidity Services Warehouse	3010 E Alexander Rd #1001	North Las Vegas	89030	(702) 727-2438	1
Mac's Delivery Service	2740 Losee Rd	North Las Vegas	89030	(702) 639-0343	1
Moen	4335 Arcata Way	North Las Vegas	89030	(702) 644-1082	1
Monster Cable Products	3837 Bay Lake Trail	North Las Vegas	89030	(702) 589-7000	1
Next Level Door & Millwork	2711 E Craig Road	North Las Vegas	89030	(702) 641-8100	1
Paccar Parts Division	4141 Distribution Circle	North Las Vegas	89030	(702) 399-7820	1
Palm Tree Warehouse	4345 Corporate Center Dr	North Las Vegas	89030		1
Park Pro Playgrounds	3878 Civic Center Dr	North Las Vegas	89030	(702) 254-4111	1
PLI Card Marketing Solutions	1220 Trade Dr # 101	North Las Vegas	89030	(702) 352-1773	1
Pride Mobility	3200 E Gowan Rd #101	North Las Vegas	89030	(702) 651-0110	1
Quantum Western America	3200 E Gowan Rd #10	North Las Vegas	89030	(702) 651-0110	1
Ruby Has	3717 Bay Lake Trail #101	North Las Vegas	89030	(888) 627-6963	1
SCP Distributors	580 W Cheyenne Ave building C	North Las Vegas	89030	(702) 871-5006	1
Service Partners	4030 Industrial Center Dr Ste 503	North Las Vegas	89030	(702) 792-9400	1
Shetakis Wholesalers	3840 Civic Center Dr A	North Las Vegas	89030	(702) 940-3663	1
Silver State Specialties	4030 Industrial Center Dr Suite 502	North Las Vegas	89030	(702) 383-8191	1
Southern Tire Mart	3420 Losee Rd	North Las Vegas	89030	(702) 643-0712	1
Superior Meat	3840 Civic Center Dr	North Las Vegas	89030	(702) 558-4969	1
Tapia Brothers	1035 W Cheyenne Avenue	North Las Vegas	89030	(702) 644-2323	1
Technibilt	4030 Industrial Center Dr #500	North Las Vegas	89030		1
The Home Depot Pro Institutional	4031 Industrial Center Dr #701	North Las Vegas	89030	(866) 412-6726	1
Torque Converter Rebuilders	3880 Civic Center Drive	North Las Vegas	89030	(702) 222-9038	1
Victory Wholesale Grocers	4151 Market Center Dr # 400	North Las Vegas	89030	(702) 643-5299	1
Water Shark Systems	3828 Civic Center Dr Suite 110	North Las Vegas	89030	(866) 605-1190	1
Wayfair	4031 Industrial Center Dr ste 100	North Las Vegas	89030		1
Western Group Packaging	3330 E Gowan Road	North Las Vegas	89030	(702) 751-2899	1
Clearwater Paper Corporation	3750 North 5th Street	North Las Vegas	89032		1
D & T Custom Audio Accessories	2750 W Brooks Avenue	North Las Vegas	89032		1
Flavor Consultants	2875 Coleman Street	North Las Vegas	89032	(702) 643-4378	1
Nevada Wine Agents	1849 W Cheyenne Ave	North Las Vegas	89032	(702) 895-7592	1
Saratoga Foods	2790 Coleman Street	North Las Vegas	89032		1
Show Group Production Services	2845 Coleman St # A	North Las Vegas	89032	(702) 270-4240	1
Sin City Auto Wraps	3040 Simmons St Suite # 103	North Las Vegas	89032	(702) 631-9280	1
US Foods	1685 W Cheyenne Ave	North Las Vegas	89032	(702) 636-3663	1
Weller Truck Parts	3824, 2985 Coleman Street Suite North	North Las Vegas	89032	(702) 638-8222	1
Cole Kepro	4170 Distribution Circle	North Las Vegas	89039	(702) 633-4270	1
Color Gamut Digital Imaging	1550 Executive Airport Dr Suite 140	Henderson	89052	(702) 269-6989	1
Kroger Distribution Warehouse	1775 Executive Airport Drive	Henderson	89052	(702) 765-0099	1
Levi Strauss	501 Executive Airport Drive	Henderson	89052	(702) 269-8700	1
Smith's Warehouse	1775 Executive Airport Drive	Henderson	89052	(702) 301-2669	1
The Countertop Factory	1520 Executive Airport Drive	Henderson	89052	(562) 944-2450	1
Angelica	1080 Mary Crest Rd	Henderson	89074	(702) 257-0323	1
Farmer Brothers	1051 Mary Crest Rd ste j	Henderson	89074	(702) 737-7224	1

Truckload Quantity Shippers (573) that are not located adjacent to a rail line

Name	Address	City	ZIP	Phone	Region
Hoodlum Steelworks	1065 American Pacific Dr #120	Henderson	89074	(702) 494-9443	1
Nationwide Power	1060 Mary Crest Rd	Henderson	89074	(800) 868-2780	1
Parpro	194 Gallagher Crest Rd	Henderson	89074		1
Pierson Productions	190 Gallagher Crest Rd	Henderson	89074	(702) 262-2229	1
Quality Custom Distribution Services	1051 Mary Crest Rd	Henderson	89074	(702) 832-3040	1
Ritz Safety	1065 American Pacific Dr #140	Henderson	89074	(702) 558-4194	1
TH Foods	160 Gallagher Crest Rd	Henderson	89074	(815) 636-9500	1
AG Light & Sound	4660 Berg St Suite 130	North Las Vegas	89081	(631) 471-3700	1
Amazon Fulfillment Center LAS6	4550 Nexus Way	North Las Vegas	89081		1
Archway	4855 Engineers Way	North Las Vegas	89081	(702) 648-6600	1
Arrow Tru-Line	3115 East Lone Mountain Road Ste. 1500	North Las Vegas	89081	(702) 632-3900	1
Comoto Fulfillment Center for RevZilla, Cycle	4060 Frehner Road	North Las Vegas	89081	(877) 792-9455	1
Custom Building Products	3115 E Lone Mountain Rd # 1000	North Las Vegas	89081	(702) 583-4974	1
Dashes Direct	4201 E. Lone Mountain Road	North Las Vegas	89081	(702) 643-3626	1
Drop Shade	2547 E Washburn Road	North Las Vegas	89081	(702) 456-7742	1
Feiss	3035 E Lone Mountain Rd # 1500	North Las Vegas	89081	(702) 396-8100	1
GigaCrete	4550 Engineers Way #101	North Las Vegas	89081	(702) 643-6363	1
Honest Company	5550 Donovan Way	North Las Vegas	89081	(888) 862-8818	1
Hosoda Brothers	4500 Andrews St # G	North Las Vegas	89081	(702) 644-0300	1
Image Exhibit Services	2643, 4980 Statz St #150	North Las Vegas	89081	(702) 657-0600	1
JLG parts distibution	4140 Frehner Road	North Las Vegas	89081		1
Jones Fiber Products	4450 North Walnut Road	North Las Vegas	89081	(702) 319-6400	1
L C Industries	3115 E Lone Mountain Rd #1400	North Las Vegas	89081	(702) 643-9955	1
LKQ	3370 East Lone Mountain Road	North Las Vegas	89081	(702) 789-4000	1
Marmaxx Distribution Center	4100 E Lone Mountain Road	North Las Vegas	89081	(702) 643-3224	1
Metl-Span	4700 Engineers Way # 103	North Las Vegas	89081	(702) 633-5290	1
Northgate Distribution Center	4490 N Lamb Blvd & I-15	North Las Vegas	89081	(602) 732-4210	1
Orbus Exhibit & Display Group	4850 Statz Street	North Las Vegas	89081	(702) 633-9292	1
P & R Paper Supply	2855 E Lone Mountain Rd #130	North Las Vegas	89081	(702) 818-2491	1
Phoenix Auto Cores	2567 E Washburn Rd	North Las Vegas	89081	(702) 632-3159	1
Raymond Handling Solutions	2555 E Washburn Rd	North Las Vegas	89081	(702) 651-6480	1
Reliable Steel	4724 Mitchell St # B	North Las Vegas	89081	(702) 642-8390	1
Sparks	4975 N Pecos Rd	North Las Vegas	89081	(702) 476-5658	1
Spoon Exhibit Services	3917 E Lone Mountain Rd # D	North Las Vegas	89081	(702) 643-7775	1
Tri-Dim Filter Corporation	4980 Statz St #130	North Las Vegas	89081		1
VDC	5430 Donovan Way	North Las Vegas	89081		1
Wayland SW Wire Rope & Rigging	4401 McGuire Street	North Las Vegas	89081	(702) 632-3039	1
Deco West	80 N Mojave Road	Las Vegas	89101	(702) 644-8839	1
Reyes Coca-Cola Bottling	230 N Mojave Rd	Las Vegas	89101	(702) 437-7300	1
Universal Laundry & Linen	240 Spectrum Blvd	Las Vegas	89101	(702) 452-4363	1
Pebble Stone Coatings	3210 W Desert Inn Rd	Las Vegas	89102	(702) 243-7866	1
Pilkington North America	3205 Polaris Ave	Las Vegas	89102	(702) 367-2136	1
Thomas Floors	3212 West Desert Inn Road	Las Vegas	89102	(702) 871-4842	1
Direct Wholesale Las Vegas	3625 W Harmon Ave suite d	Las Vegas	89103	(702) 768-2245	1
VER	4155 W Russell Rd e	Las Vegas	89103	(702) 895-9777	1
Wholesale Granite Countertops Las Vegas	4050 W Harmon Ave	Las Vegas	89103	(702) 749-6698	1
Bimbo Bakeries USA	300 W Bonanza Rd	Las Vegas	89106	(702) 464-6800	1
Costco Business Center	222 S M.L.K. Blvd	Las Vegas	89106	(702) 384-6247	1
El Tiempo	1111 W Bonanza Rd	Las Vegas	89106	(702) 477-3846	1
Las Vegas Review-Journal	1111 W Bonanza Rd	Las Vegas	89106	(702) 383-0211	1
Nifty Nickel Publications	1111 W Bonanza Rd	Las Vegas	89106	(702) 224-5500	1
Outwest Meat	300 W Bonanza Rd	Las Vegas	89106	(702) 876-9000	1
US Foods	300 W Bonanza Rd	Las Vegas	89106	(702) 876-9000	1
View Neighborhood Newspapers	1111 W Bonanza Rd	Las Vegas	89106	(702) 383-0388	1
Agiliti	7061 W Arby Ave	Las Vegas	89113	(702) 914-2601	1
Agiliti	7061 West Arby Avenue	Las Vegas	89113	(702) 914-2601	1
Aramsco	7001 West Arby Ave #130	Las Vegas	89113	(702) 946-1055	1
Aries Technology	6365 Montessouri St	Las Vegas	89113	(702) 207-7070	1
Arroyo North Business Center	6560 S Tioga Way	Las Vegas	89113	(702) 597-1852	1
Arroyo South Business Center	7200 Warm Springs Road	Las Vegas	89113	(702) 597-1852	1
BriovaRx	8350 Briova Drive	Las Vegas	89113	(866) 618-6741	1
Campus Club School Uniforms- South	7575 W Sunset Rd	Las Vegas	89113	(702) 360-0555	1
Cort Furniture Rental	6625 Arroyo Springs St Suite 130	Las Vegas	89113	(702) 822-7368	1

Truckload Quantity Shippers (573) that are not located adjacent to a rail line

Name	Address	City	ZIP	Phone	Region
Destinations by Design	7608 W Teco Ave	Las Vegas	89113	(702) 798-9555	1
In-n-Out Warehouse	6450 Montessouri St	Las Vegas	89113	(800) 786-1000	1
Inovatex	6625 Arroyo Springs St #100	Las Vegas	89113	(702) 761-2600	1
JS Products	6445 Montessouri St	Las Vegas	89113	(800) 255-7011	1
Landsberg Orora	6625 Arroyo Springs St #140	Las Vegas	89113	(702) 430-9730	1
Shipp Distribution	6630 Arroyo Springs #100	Las Vegas	89113	(702) 207-4477	1
6755 Speedway Blvd Suite A-102	6775 Speedway Blvd	Las Vegas	89115	(702) 430-5160	1
All American Convention Services	3125 Marco St, Las Vegas	Las Vegas	89115	(702) 563-1981	1
Alliance Plastic	4680 Calimesa Street	Las Vegas	89115	(702) 643-0133	1
Amazon LAS5 Sort Center	4410 Nexus Way	Las Vegas	89115		1
Amazon LAS7	6001 E Tropical Pkwy	Las Vegas	89115		1
Amazon Sort Center LAS5	4410 Nexus Way	Las Vegas	89115		1
American Barbell	2695 Suit 120, N Lamb Blvd	Las Vegas	89115	(888) 473-0108	1
American Tire Distributors	3101 N Lamb Blvd # 110	Las Vegas	89115	(702) 452-1444	1
AMSOIL Distribution Center	6140 N Hollywood Blvd Suite 106	Las Vegas	89115	(877) 822-4206	1
Art Guild	4490 Nexus Way #101	Las Vegas	89115	(856) 853-7500	1
ASTOUND Large Facility	5675 E Ann Rd Suite 101	Las Vegas	89115	(702) 462-9718	1
Bed Bath & Beyond E Commerce Center	5835 E Ann Road	Las Vegas	89115	(725) 201-6100	1
Beyond the Racks	4031 N Pecos Road	Las Vegas	89115	(702) 643-5170	1
CCSD FOOD SERVICE DEPT	6350 E Tropical Parkway	Las Vegas	89115	(702) 799-8123	1
CJ Pony	2730 N Lamb Blvd	Las Vegas	89115	(702) 680-1701	1
Clearwater Paper	4775 E Cheyenne Ave #110	Las Vegas	89115	(702) 643-3238	1
Competitive Components	4031 N Pecos Rd #107	Las Vegas	89115	(702) 399-4060	1
Creative Foam Shapes	6775 Speedway Blvd M103	Las Vegas	89115	(702) 270-6572	1
Curtis 1000	4151 N Pecos Rd # 203	Las Vegas	89115	(800) 537-5667	1
Dr Pepper Snapple Group	4215 Corporate Center Drive	Las Vegas	89115		1
Fanatics	4490 Nexus Way	Las Vegas	89115	(702) 936-5110	1
Fellowes	3051 Marion Dr # 105	Las Vegas	89115	(702) 948-3100	1
Flexaust	4584 Calimesa Street	Las Vegas	89115	(702) 227-6881	1
Four Seasons Building Products	4601 E Cheyenne Ave Unit 115	Las Vegas	89115	(702) 657-8857	1
Franchise Warehouse	4114 N Pecos Rd	Las Vegas	89115		1
GDB International	6755 Speedway Blvd Suite A-102	Las Vegas	89115		1
GE Transportation	5406 E El Campo Grande Avenue	Las Vegas	89115	(702) 293-2205	1
Genssi HQ	4150 N Pecos Rd suite B	Las Vegas	89115	(702) 956-0506	1
Glass and Growlers	80 N Mojave Rd #190	Las Vegas	89115	(702) 644-8879	1
Global Transmission Parts	6160 N Hollywood Blvd Suite #108	Las Vegas	89115	(844) 298-6404	1
Goodman Distribution	4464 Calimesa Street	Las Vegas	89115	(702) 651-0621	1
GuineaDad	6255 N Hollywood Blvd Suite 150	Las Vegas	89115		1
Harmon Face Values	5402 E El Campo Grande Avenue	Las Vegas	89115	(702) 644-1079	1
HD Supply Facilities Maintenance	4825 E Cheyenne Ave	Las Vegas	89115	(800) 431-3000	1
IB Roof Systems	2965 Lincoln Road	Las Vegas	89115	(800) 426-1626	1
InProduction	4340 N Lamb Blvd Suite 120	Las Vegas	89115	(702) 643-8141	1
International Truck & Engine	3101 N Lamb Blvd # 100	Las Vegas	89115	(702) 632-0884	1
Iron Born Offroad	6180 N Hollywood Blvd #106	Las Vegas	89115	(702) 524-5202	1
J D International Lighting	4305 N Lamb Blvd	Las Vegas	89115	(702) 644-3002	1
Johnstone Supply Distribution Center	4875 E Cheyenne Ave # 100	Las Vegas	89115	(702) 322-9821	1
Jones Fiber Products	4588 E Craig Road	Las Vegas	89115	702.319.6400	1
KapStone Container Corp		Las Vegas	89115		1
Kichler	4750 N Lamb Blvd # 100	Las Vegas	89115	(702) 643-7292	1
Kroger Nevada consolidation center	2695 N Lamb Blvd	Las Vegas	89115		1
Lacer Motorsports	6180 N Hollywood Blvd	Las Vegas	89115	(702) 816-7143	1
Lakeview Cheese	3030 N Lamb Blvd #114	Las Vegas	89115	(702) 233-2439	1
Las Vegas Exhibit Rentals	6120 N Hollywood Blvd #107	Las Vegas	89115	(702) 789-0103	1
Living Spaces	2720 Lincoln Road	Las Vegas	89115		1
Lux Lounge EFR - Las Vegas Event Furniture F	6120 N Hollywood Blvd #109	Las Vegas	89115	(888) 247-4411	1
Meadow Gold Dairy	6350 E Centennial Parkway	Las Vegas	89115	(702) 399-6455	1
Metals USA	4601 E Cheyenne Ave	Las Vegas	89115	(800) 586-4686	1
Motion Industries	6180 N Hollywood Blvd # 110	Las Vegas	89115	(702) 651-9490	1
National Tire Wholesale	4031 N Pecos Rd #105	Las Vegas	89115	(702) 632-0975	1
Navistar	3101 N Lamb Blvd	Las Vegas	89115	(702) 895-7089	1
Nevada Assembly Service	4031 N Pecos Rd #107	Las Vegas	89115	(702) 633-5331	1
Nevada Beverage	4250 E Cheyenne Ave	Las Vegas	89115		1
Nevada RV	6957 Speedway Blvd #108	Las Vegas	89115	(844) 763-1200	1

Truckload Quantity Shippers (573) that are not located adjacent to a rail line

Name	Address	City	ZIP	Phone	Region
PAC Worldwide Corporation	4601 E Cheyenne Ave # 105	Las Vegas	89115	(800) 535-0039	1
Pacific Paper Tube	2695 N Lamb Blvd	Las Vegas	89115	(888) 377-8823	1
Premium Waters	3355 N Lamb Blvd	Las Vegas	89115	(702) 820-7491	1
Priority Wire & Cable	4025 E Cheyenne Ave Suite 100	Las Vegas	89115	(800) 945-5542	1
Priority Wire & Cable	3489, 2970 N Lamb Blvd # 113	Las Vegas	89115	(702) 696-0001	1
Pro Towels	4588 E Craig Road Suite 200	Las Vegas	89115	(702) 342-5542	1
Progressive Alloy Steel Unlimited	6335 N Hollywood Blvd Suite 130	Las Vegas	89115	(702) 405-2710	1
Providence Outdoor Living	Providence Outdoor Living	Las Vegas	89115		1
RC Willey Nevada Distribution Center	4300 Flossmoor Street	Las Vegas	89115	(702) 632-3650	1
Redburn Tire Company	3921 N Pecos Road	Las Vegas	89115		1
Restaurant Week Las Vegas	4190-4186 Pic Dr	Las Vegas	89115		1
Reusable Revolution	4151 N Pecos Rd #200	Las Vegas	89115	(866) 806-2072	1
RevUp Graphics	6160 N Hollywood Blvd STE 107	Las Vegas	89115	(702) 951-5750	1
RW Garcia	4780 N Lamb Blvd	Las Vegas	89115	(702) 960-0200	1
Safeguard Industries	6335 N Hollywood Blvd Suite 140	Las Vegas	89115	(888) 936-0752	1
Safelite AutoGlass	4601 E Cheyenne Ave Ste 113	Las Vegas	89115	(702) 289-4689	1
sbyke	6160 N Hollywood Blvd	Las Vegas	89115	(702) 778-5295	1
Scholastic Book Fairs	6255 N Hollywood Blvd Suite #110	Las Vegas	89115	(702) 399-2285	1
SEPHORA Distribution Center	6260 E Ann Road	Las Vegas	89115	(725) 726-2458	1
Sherwin-Williams Product Finishes	4168 N Pecos Rd Ste 105	Las Vegas	89115	(702) 366-7043	1
Silver Service Refreshment	6255 N Hollywood Blvd Unit 125	Las Vegas	89115	(702) 242-8155	1
Silverhooks	4151 N Pecos Rd #200	Las Vegas	89115	(866) 926-3223	1
Simplicity Office Systems	6120 N Hollywood Blvd # 110	Las Vegas	89115	(702) 632-2966	1
SOFIDEL America US Las Vegas	3515 Las Vegas Blvd North	Las Vegas	89115		1
Structure Exhibits	4548 Calimesa Street	Las Vegas	89115	(888) 633-4162	1
STV Motorsports	6160 N Hollywood Blvd #106	Las Vegas	89115	(702) 701-7101	1
Sun Delivery	4025 E Cheyenne Ave	Las Vegas	89115	(336) 472-5000	1
Supercar Systems	6120 N Hollywood Blvd #104	Las Vegas	89115	(530) 500-0005	1
Sysco Las Vegas	6201 E Centennial Parkway	Las Vegas	89115	(702) 632-1800	1
TemperPack Technologies	4390 Flossmoor St #400	Las Vegas	89115		1
Three Square	4220 N Pecos Rd	Las Vegas	89115	(702) 644-3663	1
Trend Nation	4151 N Pecos Rd #200	Las Vegas	89115	(702) 435-0076	1
Ugly Snuglies	2880 N Lamb Blvd	Las Vegas	89115	(844) 249-2996	1
VMInnovations	5675 E Ann Road	Las Vegas	89115	(323) 559-9496	1
von Drehle Corporation - Production Facility	4200 Flossmoor Street	Las Vegas	89115	(702) 644-5065	1
Walker Outlet Warehouse on Cheyenne	4150 E Cheyenne Ave	Las Vegas	89115	(702) 384-9302	1
World Pack Distribution Center	2880 N Lamb Blvd	Las Vegas	89115	(855) 507-1518	1
Xtreme Electric Vehicles	2821 N Marion Dr #111	Las Vegas	89115	(702) 800-7342	1
RumbleOn Fulfillment Center	6335 N Hollywood Blvd #125	North Las Vegas	89115	(702) 659-9130	1
4Wall Entertainment	3165 W Sunset Rd #100	Las Vegas	89118	(702) 263-3858	1
Acrylic Tank Manufacturing	3451 W Martin Ave C	Las Vegas	89118		1
Albertsons Liquor Warehouse	6065 Polaris Ave	Las Vegas	89118	(702) 895-7661	1
All-Wall Equipment	6561 W Post Rd	Las Vegas	89118	(800) 929-0927	1
Amazon DLV1	3165 W Sunset Rd Suite 120	Las Vegas	89118		1
American Olean / Marazzi Sales Service Cent	6975 S Decatur Blvd #100	Las Vegas	89118	(702) 248-3040	1
American Olean / Marazzi Sales Service Cent	6975 S Decatur Blvd #100	Las Vegas	89118	(702) 248-3040	1
Aristocrat	3300 Birtcher Dr	Las Vegas	89118	(702) 263-1497	1
Big D Floor Covering Supplies	4155 W Russell Rd ste b	Las Vegas	89118	(702) 736-4500	1
Brady	7055 Lindell Road	Las Vegas	89118	702-876-3990	1
Carpets N More	4580 W Teco Ave	Las Vegas	89118	(702) 458-9999	1
CEP	3540 Birtcher Dr	Las Vegas	89118	(702) 312-0703	1
Chefs warehouse	4248 W Post Rd	Las Vegas	89118	(702) 247-7700	1
Coastal International	5475 S Wynn Rd #400	Las Vegas	89118	(702) 645-4300	1
CORT Events	3455 W Sunset Rd Suite A	Las Vegas	89118	(888) 710-2525	1
Crate and Barrel	7015 Corporate Plaza Drive Suite 170	Las Vegas	89118	(702) 739-6772	1
Creel Printing	6330 W Sunset Rd	Las Vegas	89118	(702) 735-8161	1
Daltile Tile & Stone Gallery	3455 W Sunset Rd Ste G	Las Vegas	89118	(702) 871-8453	1
Dawn Food Products	7055 S Decatur Blvd # 110	Las Vegas	89118	(702) 876-9946	1
Dawn Food Products	7055 S Decatur Blvd # 110	Las Vegas	89118	(702) 876-9946	1
Eagle Promotions	4575 W Post Rd #100	Las Vegas	89118	(702) 388-7100	1
Freeman Audio Visual	3325 W Sunset Rd A	Las Vegas	89118	(702) 263-1484	1
Freeman Expo	6555 West Sunset Road	Las Vegas	89118	(702) 579-1400	1
GES	4702, 7000 S Lindell Road	Las Vegas	89118	(702) 515-5500	1

Truckload Quantity Shippers (573) that are not located adjacent to a rail line

Name	Address	City	ZIP	Phone	Region
Graybar Electric Supply	7055 S Decatur Blvd Suite 100	Las Vegas	89118	702-889-5444	1
Hotel Restaurant Furniture Liquidators	3585 W Diablo Dr #6	Las Vegas	89118	(702) 449-1011	1
Las Vegas Artificial Lawns	6975 S Decatur Blvd	Las Vegas	89118	(702) 365-8873	1
Main Electric Supply	6425 S Jones Blvd Suite 101	Las Vegas	89118	(702) 805-5052	1
Marshall Retail Group	3755 W Sunset Rd suite a	Las Vegas	89118	(702) 385-5233	1
Montroy Sign & Graphic Products - Las Vega	5385 Wynn Road	Las Vegas	89118	(800) 666-8769	1
NMR Events	5475 Wynn Rd #200	Las Vegas	89118	(702) 933-3025	1
Origin Acoustics	6975 S Decatur Blvd Suite 140	Las Vegas	89118	(844) 674-4461	1
ORR Safety	5385 Wynn Rd b	Las Vegas	89118	(702) 566-1030	1
Pacific Seafood	5845 Wynn Rd E	Las Vegas	89118	(702) 566-8670	1
Patriot Gaming & Electronics West Coast	3350 W Ali Baba Ln k	Las Vegas	89118	(702) 597-1676	1
Pepsi	6500 West Sunset Road	Las Vegas	89118	(702) 362-7000	1
PinkCherry Wholesale	6165 S Valley View Blvd suite d	Las Vegas	89118	(888) 740-7465	1
Production Resource Group	6050 S Valley View Blvd	Las Vegas	89118	(702) 942-4774	1
Renewal by Andersen	5175 W Diablo Dr #110	Las Vegas	89118	(702) 270-4545	1
Rincon Technology	6670 S Valley View Blvd	Las Vegas	89118		1
Rugby Architectural Building Products	4545 W Diablo Dr B	Las Vegas	89118	(702) 248-0050	1
Seamless Flooring	5175 W Diablo Dr	Las Vegas	89118	(702) 431-7900	1
Shepard Exposition Services	5845 Wynn Road Suites A, B, C, D	Las Vegas	89118	(702) 507-5278	1
Skyline Exhibits Las Vegas	6975 S Decatur Blvd #170	Las Vegas	89118	(702) 216-9012	1
Southshore Fine Linens	6521 W Post Rd #2	Las Vegas	89118	(702) 463-1475	1
Southwest Hardwood Floors, Inc.	5175 W Diablo Dr # 109	Las Vegas	89118	(702) 850-8511	1
Western Pacific Pulp & Paper	5475 Wynn Rd #100	Las Vegas	89118	(702) 262-6307	1
Bonanza Beverage	6333 Ensworth St	Las Vegas	89119	(702) 361-4166	1
Closet World	6672 Spencer St Suite 1000	Las Vegas	89119	(800) 434-6018	1
E-Cig Distributors	1100 Palms Airport Dr	Las Vegas	89119	(855) 698-7110	1
Foliot Furniture	7000 Placid Street	Las Vegas	89119	(702) 385-2010	1
Frontier Radio	212 Carpenters Union Way # 800	Las Vegas	89119	(702) 739-2940	1
Get Fresh	6745 Escondido St	Las Vegas	89119	(702) 897-8522	1
Lv Power Max 2000		Las Vegas	89119	(702) 637-0464	1
Shelby Performance Parts	6405 Ensworth St	Las Vegas	89119	(702) 405-3500	1
Veritiv	845 E Pilot Rd	Las Vegas	89119	(702) 896-4500	1
Vitacost	840 E Pilot Rd	Las Vegas	89119	(800) 381-0759	1
Amazon Prime Now	3650 E Post Rd	Las Vegas	89120	(888) 280-4331	1
Action Home Appliance Liquidation Center	7570 Dean Martin Dr #608	Las Vegas	89139	(702) 778-5290	1
Aramark Uniform Services	101 South Pavilion Circle	Las Vegas	89139	(702) 577-2397	1
Aramark Uniform Services	8298 Arville St	Las Vegas	89139	(702) 577-2397	1
Assured Document Destruction	8050 Arville Street #105	Las Vegas	89139	(702) 614-0001	1
Bedtime Mattress Corporation Inc	7570 Dean Martin Drive	Las Vegas	89139	(702) 641-9200	1
Bella Grande Entrances	7485 Dean Martin Dr STE 107	Las Vegas	89139	(702) 732-3440	1
Brick and Mortarless Furniture	7650 Dean Martin Dr Suite 102	Las Vegas	89139	(702) 809-0778	1
Builders Design Group	7570 Dean Martin Drive #601	Las Vegas	89139	(702) 616-0494	1
Cover It Window Fashions	7570 Dean Martin Dr #601	Las Vegas	89139	(702) 897-1314	1
DAWGS Footwear	4120 W Windmill Ln #106	Las Vegas	89139	(702) 260-1060	1
E. B. Bradley Co.	4120 W Windmill Ln Ste 103	Las Vegas	89139	(702) 818-2320	1
Elmco Silver State	7850 Dean Martin Dr #504	Las Vegas	89139	(702) 871-1966	1
Ernest Packaging Solutions	3930 W Windmill Ln #110	Las Vegas	89139	(888) 744-7221	1
Fortessa	4120 W Windmill Ln # 104	Las Vegas	89139	(703) 787-0357	1
Global Cash Access	5855, 4120 W Windmill Ln # 101	Las Vegas	89139	(702) 951-9517	1
Goodwill Clearance Center and Donation Site	7570 Dean Martin Dr #605	Las Vegas	89139	(702) 906-2205	1
Horizon Distributors	8298 Arville Street, #101	Las Vegas	89139	(702) 362-4224	1
I G M Solutions Inc	7445 Dean Martin Drive	Las Vegas	89139	(702) 629-2222	1
Ken's Food	8925 Kens Court	Las Vegas	89139	(702) 932-6400	1
Las Vegas Home Gallery – Richmond Americ	7770 Dean Martin Drive	Las Vegas	89139	(877) 420-1868	1
Las Vegas Review Journal	4280 W Windmill Lane	Las Vegas	89139	(702) 407-2620	1
LMG	7060 Windy Street	Las Vegas	89139	(702) 407-7200	1
Monark Premium Appliance	7370 Dean Martin Dr #401	Las Vegas	89139	(702) 798-6060	1
New Life Office	7850 Dean Martin Dr #505	Las Vegas	89139	(702) 213-9513	1
Quest Events	3930 W Windmill Ln Ste. 160	Las Vegas	89139	(702) 270-0534	1
Solotech	7465 Dean Martin Dr Suite 108	Las Vegas	89139	(702) 614-8882	1
Steelhead Productions	4220 W Windmill Ln #100	Las Vegas	89139	(702) 405-0190	1
Trigg Laboratories, Inc.	4220 W Windmill Ln Suite #140	Las Vegas	89139	(702) 957-4400	1
Vegas Furniture	7850 Dean Martin Dr #507	Las Vegas	89139	(702) 886-0242	1

Truckload Quantity Shippers (573) that are not located adjacent to a rail line

Name	Address	City	ZIP	Phone	Region
Turano Nevada Baking Company	490 East Bruner Avenue	Henderson	89502	(702) 936-8877	1
Daehan Solution	1600 East Newlands Road	Fernley	89408	(734) 857-1430	5
MSC Industrial Supply	2300 East Newlands Road	Fernley	89408	(800) 645-7270	5
Polaris Industries	1755 Nevada Pacific Parkway	Fernley	89408		5
Stericycle Environmental Solutions	2095 East Newlands Road	Fernley	89408	(775) 575-2760	5
Bi Nutraceuticals	625 Waltham Way	McCarran	89434	(310) 669-2100	5
PPG Architectural Coatings	201 Ireleand Drive	McCarran	89434	(775) 343-1012	5
ADI	695 Vista Blvd	Sparks	89434	(775) 355-5050	5
Amazon	555 Milan Drive	Sparks	89434		5
Benco Dental	625 Waltham Way, Suite 107	Sparks	89434	(775) 343-1831	5
Chewy.com McCarran Warehouse	385 Milan Drive	Sparks	89434	(775) 221-7220	5
Cintas	250 Vista Blvd	Sparks	89434		5
Complemar	200 Vista Blvd	Sparks	89434	(775) 355-6800	5
Ernest Packaging Solutions	360 Lillard Drive	Sparks	89434	(775) 829-9700	5
Fort Dearborn	295 Lillard Drive	Sparks	89434	(775) 359-1703	5
Henry Schein	255 Vista Blvd	Sparks	89434	(775) 352-3700	5
Hose Master	750 Vista Blvd	Sparks	89434	775-360-2947	5
Jet.com	235 East Sydney Drive	Sparks	89434	(855) 538-4323	5
Keefe Supply	55 Vista Blvd #101	Sparks	89434	(775) 355-7006	5
Laddawn	650 Lillard Drive	Sparks	89434	(775) 284-7452	5
Menezes Brothers	500 Menezes Way	Sparks	89434	(775) 342-0414	5
Merit Brass	200 Vista Blvd #106	Sparks	89434	(800) 726-9800	5
Metric & Multistandard	750 Vista Blvd #403	Sparks	89434	(775) 355-7200	5
Monsoon Pacific	350 Lillard Drive #151	Sparks	89434	(775) 356-8725	5
Mor Furniture for Less Warehouse	250 Vista Blvd #108	Sparks	89434	(775) 828-4646	5
NOW Foods	575 Vista Blvd	Sparks	89434	(888) 669-3663	5
PetSmart Distribution Center 41	1200 Venice Way	Sparks	89434		5
Pfizer Inc	1802 Brierley Way	Sparks	89434	(775) 353-5800	5
Radial	2777 USA Parkway	Sparks	89434		5
Tesla Warehouse	1200 Venice Way	Sparks	89434	(775) 352-5700	5
Thrive Market	700 Milan Drive #101	Sparks	89434	(855) 419-9919	5
Uinsource	750 Vista Blvd	Sparks	89434		5
Veritiv	750 Vista Blvd #401 & 402	Sparks	89434	(775) 358-0510	5
Via Seating	205 Vista Blvd #101	Sparks	89434	(800) 433-6614	5
Walmart Distribution Center	2195 Nevada 439	Sparks	89434	(775) 356-5000	5
Food Bank of Northern Nevada	550 Italy Drive	Sparks	89437	(775) 331-3663	5
Zulily	3200 USA Parkway	Sparks	89437	(877) 779-5615	5
Ritemade Paper Converters	900 North Hills Blvd	Reno	85906		6
InMusic Brands	12995 Echo Court	Reno	89056	(775) 677-9800	6
Urban Outfitters	12055 Moya Blvd	Reno	89056	(775) 971-1303	6
AmerisourceBergen	1195 Trademark Drive #102	Reno	89251		6
Angie's BoomChickaPop Reno	1025 Sandhill Road c	Reno	89251	(775) 236-0509	6
Aramark Uniform Services	1195 Trademark Drive # 103	Reno	89251	(775) 852-1122	6
Barnes & Noble Distribution Center	12660 Old Virginia Road	Reno	89251	(775) 327-6500	6
Bloch For Dancers	1170 Trademark Drive # 112	Reno	89251	(775) 824-2550	6
Dipaco Dtech	12693 Old Virginia Road	Reno	89251	(800) 648-4720	6
International Game Technology	9295 Prototype Drive	Reno	89251	(775) 448-7777	6
Krone North America	1190 Trademark Drive #107	Reno	89251	(775) 358-0907	6
LACO	1150 Trademark Drive	Reno	89251	(775) 461-2960	6
Lincoln Electric Cutting Systems	1170 Trademark Drive #101	Reno	89251	(775) 673-2200	6
Macpherson's	8770 Technology Way	Reno	89251	(775) 853-8700	6
Natures Bakery	1150 Trademark Dr Suite #101	Reno	89251	(775) 883-2253	6
Pacific Cheese	8950 Double Diamond Parkway	Reno	89251	(775) 852-7200	6
Pfizer Inc	1170 Trademark Drive # 111	Reno	89251	(775) 850-9244	6
Springs Global	1190 Trademark Drive #108	Reno	89251	(775) 358-8778	6
Superior Products Outlet Center	12663 Old Virginia Road	Reno	89251	(775) 329-0003	6
US Foods Culinary Equipment & Supplies	12663 Old Virginia Road	Reno	89251	(775) 329-0003	6
Vericom Global Solutions	1150 Trademark Dr Suite #102b	Reno	89251	(865) 671-4455	6
C & M Food Distributing	7935 Sugar Pine Court	Reno	89253	(775) 787-3020	6
Aervoe	1100 Mark Circle	Gardnerville	89410	(775) 782-0100	6
Starbucks Roasting Plant	2525 Starbucks Way	Minden	89423	(775) 267-6143	6
Accent Food Services	978 E Greg Street	Sparks	89431	(775) 323-3224	6
Apria Healthcare	1395 Greg St #113	Sparks	89431	(775) 352-7742	6

Truckload Quantity Shippers (573) that are not located adjacent to a rail line

Name	Address	City	ZIP	Phone	Region
Barone Distribution	2225 East Greg Street	Sparks	89431	(775) 359-1554	6
Berlin Packaging	1385 Greg St Suite 102	Sparks	89431	(800) 363-9822	6
Bimbo Bakeries USA	855 East Greg Street #105	Sparks	89431	(775) 359-8661	6
Bonanza Produce	1925 Freeport Blvd	Sparks	89431	(775) 358-2442	6
Brooks Equiptment	960 East Greg Street	Sparks	89431	(800) 826-3473	6
Camelot Party Rentals	152 Coney Island Drive	Sparks	89431	(775) 355-9004	6
Clean Harbors Environmental	1200 Marietta Way	Sparks	89431	(775) 624-8060	6
Damon Packaging	822 Packer Way	Sparks	89431	(775) 331-3200	6
Dreyer's Grand Ice Cream	1800 Deming Way	Sparks	89431	(775) 356-6556	6
DSG	945 Spice Island Drive	Sparks	89431	(775) 358-5003	6
Eiko Limited	1485 Southern Way	Sparks	89431	(775) 355-7733	6
Elite Spice	1225 East Greg Street # 102	Sparks	89431		6
Fracht	1400 S McCarran Blvd	Sparks	89431		6
Genova Products	1455 Linda Way	Sparks	89431	(775) 358-8566	6
Hodell-Natco Industries	880 E Glendale Avenue	Sparks	89431	(775) 358-2638	6
Intelligent Lifecycle Solutions	962 East Greg Street	Sparks	89431	(775) 391-1319	6
Jenny Service	150 Greg Street # 101	Sparks	89431	(775) 358-8585	6
Laguna Manufacturing	716 Spice Island Drive	Sparks	89431	(775) 358-4200	6
Landsberg Orora	150 East Greg Street #104	Sparks	89431	(775) 826-5833	6
LoKa Tile Group	972 East Greg Street	Sparks	89431	(775) 359-4388	6
Micro Metl Corporation	905 Southern Way	Sparks	89431	(775) 356-9181	6
Nelson Electric Co	1410 Freeport Blvd	Sparks	89431	(775) 358-0643	6
Nevada Nanotech Systems	1395 Greg St #102	Sparks	89431	(775) 972-8943	6
New West Distributing	325 Nugget Ave #101	Sparks	89431	(775) 355-5500	6
nvision Glass	667 Spice Islands Dr #101	Sparks	89431	(775) 336-2881	6
Perfect Equiptment	1498 Kleppe Lane	Sparks	89431	(775) 359-4200	6
Petra-1	996 United Circle	Sparks	89431	(775) 356-9501	6
Racetech Seats	750 Spice Islands Drive	Sparks	89431	(775) 351-2250	6
Refrigeration Supplies Distributor	1650 Hymer Ave	Sparks	89431	(775) 329-1067	6
Riddio Construction	2225 East Greg Street #105	Sparks	89431	(775) 359-9933	6
Sage Electronics	625 Spice Islands Drive	Sparks	89431		6
Sanofi Aventis	655 Spice Islands Dr # 101	Sparks	89431	(775) 356-7799	6
Sears Outlet	350 Glendale Ave Suite 100	Sparks	89431	(775) 358-5800	6
Silver State Petroleum	2225 East Greg Street #103	Sparks	89431	(775) 355-6706	6
Simco Imported Shoes	1480 Kleppe Lane	Sparks	89431	(775) 359-4200	6
Store Supply Warehouse	860 E Glendale Avenue	Sparks	89431	(775) 358-6765	6
Strategic Equipment & Supply	1280 Southern Way	Sparks	89431	(775) 358-2709	6
Tool Source Warehouse	550 Coney Island Drive	Sparks	89431	(775) 358-5122	6
Treehouse Foods	1055 E Greg Street	Sparks	89431	(775) 359-4000	6
Tyres International	1425 Hulda Court	Sparks	89431	(775) 356-9040	6
Universal Industries	1840 Deming Way	Sparks	89431	(775) 359-4378	6
Watts Regulator	780 Spice Islands Drive	Sparks	89431	(775) 825-9288	6
Wesco	1161 E Glendale Avenue	Sparks	89431	(775) 353-5417	6
West Pack Industries	2225 East Greg Street #107	Sparks	89431	(775) 351-2345	6
Western Pacific Distributors	1201 E Glendale Avenue	Sparks	89431	(775) 355-0800	6
Clasen Quality Chocolate	699 Hawco Court	Spanish Springs	89441	(877) 459-4500	6
Fluid Research	95 Distribution Drive	Spanish Springs	89441	(800) 600-3675	6
Mishimoto Automotive	38 Isidor Court #160	Spanish Springs	89441	(877) 466-4744	6
Velux America	38 Isidor Court #102	Spanish Springs	89441	(775) 424-4052	6
Breakthru Beverage	100 Distribution Drive	Sparks	89441	(775) 331-3400	6
Cleaners Supply	46 Isidor Court #104	Sparks	89441	(775) 351-1210	6
Leviton Manufacturing Co	96 Isidor Court	Sparks	89441	(775) 424-4500	6
Massimo Zanetti Beverage	46 Isidor Court	Sparks	89441	(775) 424-1500	6
Parts Unlimited	45 Isidor Court	Sparks	89441	(775) 425-0700	6
Swanson Health Products	46 Isidor Court	Sparks	89441	(800) 824-4491	6
Wurth West Distribution Center	150 Circuit Court	Sparks	89441	(775) 425-8501	6
7C'S Manufacturing	3895 Corsair St # D	Reno	89502	(775) 829-1717	6
Alhambra Water	1312 Capital Blvd Suite 104	Reno	89502	(800) 201-6218	6
Gary Platt Manufacturing	4643 Aircenter Circle	Reno	89502	(775) 824-0999	6
Great Basin Brewing Company	1155 S Rock Blvd #490	Reno	89502	(775) 856-1177	6
ITR America	4875 Aircenter Circle #105	Reno	89502	(775) 636-9426	6
K P Aviation	1316 Capital Blvd bldg 101	Reno	89502	(775) 852-1174	6
Lawson Products	1381 Capital Blvd	Reno	89502	(775) 856-1381	6

Truckload Quantity Shippers (573) that are not located adjacent to a rail line

Name	Address	City	ZIP	Phone	Region
Leisure Supply	4965 Energy Way	Reno	89502	(775) 856-4300	6
Milbank Manufacturing Co	4649 Aircenter Cir # 102	Reno	89502	(775) 827-6766	6
Model Dairy	500 Gould Street	Reno	89502	(775) 788-7900	6
MoldMan Systems	4649 Aircenter Circle #101	Reno	89502	(775) 332-1600	6
Mt Rose Drinks	822 Packer Way	Reno	89502		6
Natural Organics Inc	4660 Aircenter Circle	Reno	89502	(775) 828-8188	6
Nordic Cold Chain Solutions	4689 Aircenter Cir #104	Reno	89502	(866) 427-1919	6
Pepsi Bottling Group	355 Edison Way	Reno	89502	(775) 856-1387	6
Pet Squeak	1135 S Rock Blvd #330	Reno	89502		6
Petedge	3875 Corsair Street	Reno	89502	(775) 825-1156	6
Ranpak Corp	4681 Aircenter Circle	Reno	89502		6
Rittal	655 Edison Way	Reno	89502	(937) 399-0500	6
Sampco	575 Reactor Way	Reno	89502	(775) 356-3636	6
Seven-Up Bottling	1000 Terminal Way	Reno	89502	(775) 322-3456	6
Sierra Meat & Seafood	1330 Capital Blvd	Reno	89502	(775) 322-4073	6
Silver State Volleyball Club	4675 Aircenter Circle	Reno	89502	(775) 825-5400	6
Snow Lion	1312 Capital Blvd #103	Reno	89502	(775) 502-3500	6
Tessco Technologies	4755 Aircenter Circle	Reno	89502	(800) 472-7373	6
TKO Motorsports	1316 Capital Blvd # 103	Reno	89502	(775) 857-1913	6
Tool Source Warehouse	5360 Capital Court	Reno	89502	(775) 358-5122	6
US Granite Nevada	5350 Capital Court	Reno	89502	(775) 857-4700	6
Vogue Linen Supply	4940 Brookside Court	Reno	89502	(775) 356-8894	6
Wooster Brush	4960 Joule Street	Reno	89502	(775) 856-1950	6
Worldwide Fittings	5350 Capital Ct # 106	Reno	89502	(775) 857-3022	6
ACH Foam Technologies	13695 Mt Anderson Street	Reno	89506	(775) 343-3400	6
Almo Distributing Nevada	9085 Moya Blvd	Reno	89506	(267) 350-2738	6
Anixter	990 North Hills Blvd	Reno	89506	(775) 677-7200	6
Barnes Distribution	12755 Moya Blvd	Reno	89506	(775) 335-1120	6
Belnick	6650 Echo Ave Suite A	Reno	89506	(775) 677-0460	6
Better World Books	14525 Industry Cir Suite 200	Reno	89506	(800) 894-0242	6
Burrows Packaging Division	6650 Echo Ave	Reno	89506	(775) 356-8046	6
CCP Industries	6995 Resource Dr # 107	Reno	89506		6
Cold Chain Technologies	6640 Echo Ave	Reno	89506	(775) 971-1500	6
Contec	9175 Moya Blvd	Reno	89506		6
Daimler Trucks NA	14444 Lear Blvd	Reno	89506	(775) 971-5000	6
Fulfillment Works	900 North Hills Blvd	Reno	89506	(888) 717-7511	6
GM Customer Care & Aftersales	6565 Echo Avenue	Reno	89506	(775) 677-7400	6
Hedwin Corporation	9175 Moya Blvd # D	Reno	89506	(775) 677-9403	6
Hubert Western Distribution Center	14525 Industry Cir #500	Reno	89506	(513) 367-8879	6
HV Manufacturing	12150 Moya Blvd	Reno	89506	(775) 677-0900	6
id Tech	945 North Hills Blvd	Reno	89506		6
JCPenney Logistics Center	1111 Stead Blvd	Reno	89506	(775) 972-2000	6
Legend Valve & Fitting	12995 Echo Ct # F	Reno	89506	(775) 677-7957	6
National Cart	305 Western Road	Reno	89506	(775) 355-0899	6
SA Automotive	6645 Echo Ave Suite B	Reno	89506		6
Sally Beauty Supply	9975 Moya Blvd	Reno	89506	(775) 677-6300	6
Sherwin-Williams Distribution Center	12090 Sage Point Court	Reno	89506		6
Thrift Books	880 North Hills Blvd	Reno	89506	(775) 473-1660	6
Uniters NA / Palladio US	990 North Hills Blvd	Reno	89506	(800) 601-6458	6
Urban Outfitters	6640 Echo Ave	Reno	89506	(775) 412-7934	6
Veka West	14250 Lear Blvd	Reno	89506	(775) 972-4090	6
Volvo Parts North America	10991 Lear Blvd # 103	Reno	89506	(775) 971-1100	6
Yajima USA	6640 Echo Ave Suite C	Reno	89506	(775) 336-4422	6
QPB	10990 Lear Blvd Suite 101	Reno	89506		6
Petco Distribution Center #600	9050 North Red Rock Road	Reno	89508	(775) 453-7816	6
American Musical Supply	450 Maestro Drive	Reno	89511		6
Arrow Electronics	665 Maestro Drive # 100	Reno	89511	(775) 334-2800	6
Bake Mark USA	5455 Louie Lane	Reno	89511	(775) 850-8500	6
GTG Packaging	650 Innovation Drive	Reno	89511	(775) 355-0233	6
Lambro Industries-California	665 Maestro Drive	Reno	89511	(775) 358-8322	6
S K Food Group	5555 Quail Manor Ct # 100	Reno	89511	(775) 284-2629	6
Slakey Brothers	650 Innovation Drive	Reno	89511	(775) 359-7106	6
Sysco Corporation	640 Maestro Drive Unit # 111	Reno	89511	(775) 851-3188	6

Truckload Quantity Shippers (573) that are not located adjacent to a rail line

Name	Address	City	ZIP	Phone	Region
The AMES Companies	3450 Airway Drive	Reno	89511	(775) 853-4863	6
Koyo Corporation of USA	640 Maestro Dr # 103	Reno	89511	(775) 852-4493	6
Chesapeake Spice	8760 Technology Way	Reno	89521	(775) 954-0872	6
Imperial Supplies	12845 Old Virginia Road	Reno	89521	(775) 852-9200	6
Garlock Printing & Converting	127 Woodland Ave	Reno	89523	(800) 473-1328	6
Nutrient	110 Woodland Ave #8909	Reno	89523	(877) 633-6637	6
Patagonia Service Center	8550 White Fir Street	Reno	89523	(775) 747-1887	6

Note - TRIC ZIP Code is 89437 and 89434

Nevada Active Mines 2019

Nevada Active Mines 2019

FID	ID_NUM	NAME	OPERATOR	COMMODITY	COUNTY	Y_U83N	X_U83E
0	1	Aurora Mine (reprocessing)	Hecla Mining Co.	Gold, silver	Esmeralda	4240220	334720
1	2	Bald Mountain Mine (open pit)	KG Mining (Bald Mountain), Inc.	Gold, silver	White Pine	4422307	624496
2	3	Borealis Mine (leaching old pads)	Borealis Mining Co., LLC	Gold, silver	Esmeralda	4250000	347250
3	4	Chukar (underground mine)	Newmont Mining Corp.	Gold, silver	Eureka	4514625	565713
4	5	Coeur Rochester Mine (open pit)	Coeur Rochester, Inc.	Silver, gold	Pershing	4460022	402550
5	6	Cortez Hills (open pit)	Barrick Cortez, Inc.	Gold, silver	Lander	4446701	533501
6	7	Cortez Hills (underground mine)	Barrick Cortez, Inc.	Gold, silver	Lander	4446420	533387
7	8	Cortez Pipeline Mine (open pit)	Barrick Cortez, Inc.	Gold, silver	Lander	4455317	524233
8	9	Denton-Rawhide Mine (open pit)	Rawhide Mining, LLC	Gold, silver	Mineral	4319430	379657
9	10	Emigrant Mine (open pit)	Newmont Mining Corp.	Gold, silver	Elko	4496802	586981
10	11	Exodus Mine (underground)	Newmont Mining Corp.	Gold, silver	Eureka	4530175	553868
11	12	Fire Creek Mine (underground)	Hecla Mining Co.	Gold, silver	Lander	4479271	529591
12	13	Florida Canyon Mine (open pits)	Alio Gold (US), Inc.	Gold, silver	Pershing	4492602	395130
13	14	Hollister Mine (underground mine)	Hecla Mining Co.	Gold, silver	Elko	4550620	536640
14	15	Gold Hill Mine (open pit)	Round Mountain Gold Corp.	Gold, silver	Nye	4291260	495570
15	16	Gold Quarry (open pit)	Newmont Mining Corp.	Gold, silver	Eureka	4515151	565991
16	17	Goldstar (formerly West Genesis) (open pit)	Newmont Mining Corp.	Gold, silver	Eureka	4533815	552725
17	18	Goldstrike Arturo Mine Project (open pit)	Barrick Goldstrike Mines, Inc. (joint venture with Premier Mines Ltd., 40%)	Gold, silver	Eureka	4543001	548221
18	19	Goldstrike Betze-Post (open pit)	Barrick Goldstrike Mines, Inc.	Gold, silver	Eureka	4537038	551878
19	20	Goldstrike Meikle Mine (underground mine)	Barrick Goldstrike Mines, Inc.	Gold, silver	Elko	4539278	551865
20	21	Hycroft Mine (open pits)	Hycroft Resources and Development, Inc.	Gold, silver	Humboldt	4526602	358640
21	22	Jerritt Canyon Mine (underground mines)	Jerritt Canyon Gold LLC (joint venture with Sprott Mining Inc., 80%; Whitebox Asset Management, 20%)	Gold, silver	Elko	4579621	583571
22	23	Leeville Mine (underground mine)	Newmont Mining Corp.	Gold, silver	Eureka	4531532	556645
23	24	Lone Tree Complex (leaching old pads)	Newmont Mining Corp.	Gold, silver	Humboldt	4520101	482251
24	25	Lone Tree Mine (Brooks Pit) (open pit)	Newmont Mining Corp.	Gold, silver	Humboldt	4518782	479712.1
25	26	Long Canyon Mine (open pit)	Newmont Mining Corp.	Gold	Elko	4539742	708395
26	27	Marigold Mine (open pits)	SSR Mining	Gold, silver	Humboldt	4507224	485220
27	28	Midas Mine (underground mine)	Hecla Mining Co.	Gold, silver	Elko	4565942	518521
28	29	Mineral Ridge Mine (open pits)	Mineral Ridge Gold LLC	Gold, silver	Esmeralda	4183158	437800
29	30	Pan Mine (open pits)	Fiore Gold, Ltd.	Gold, silver	White Pine	4349710	609300
30	31	Pete-Bajo Mine (underground mine)	Newmont Mining Corp.	Gold, silver	Eureka	4528190	559441
31	32	Phoenix Mine (open pits)	Newmont Mining Corp.	Gold, copper, silver	Lander	4488081	488921
32	33	Robinson Mine (open pits)	KGHM International, Ltd.	Copper, gold, molybdenum, silver	White Pine	4347450	674222
33	34	Round Mountain Mine (open pit)	Round Mountain Gold Corp.	Gold, silver	Nye	4283750	493240
34	35	Ruby Hill Mine (leaching old pads)	Ruby Hill Mining Co., LLC	Gold, silver	Eureka	4375649	587385
35	36	Silverstar (formerly Genesis) (open pit)	Newmont Mining Corp.	Gold, silver	Eureka	4533745	553720
36	37	Sterling Mine (pemritted open pit)	Coeur Rochester, Inc.	Gold	Nye	4075340	532100
37	38	Sunrise Gold Placer Mine	Sunrise Minerals LLC	Gold	Pershing	4509602	419820
38	39	Turquoise Ridge Joint Venture (underground m	Barrick Gold Corp. (joint venture with Newmont Mining Corp., 25%)	Gold	Humboldt	4562779	479465
39	40	Twin Creeks Mine (open pit and underground m	Newmont Mining Corp.	Gold, silver	Humboldt	4566061	485471
40	41	Adams Claim Gypsum Mine	Art Wilson Co.	Gypsum, limestone	Lyon	4345271	267860
41	42	Amargosa Clay Operation (IMV Pits)	Lhoist North America of Arizona	Clay	Nye	4034845	568580
42	43	Apex Landfill Pit	Las Vegas Paving Corp.	Aggregate	Clark	4027000	691000
43	44	Apex Lhoist Quarry	Las Vegas Paving Corp.	Aggregate, sand	Clark	4026900	687340
44	45	Apex Lhoist Quarry	Lhoist North America	Limestone, dolomite	Clark	4026900	687340
45	46	Argenta Mine	Baker Hughes Oilfield Operations, Inc.	Barite	Lander	4498100	523540
46	47	Basalite Dayton Pit	Basalite Concrete Products, LLC	Sand, gravel	Storey	4357606	282597
47	48	Basalt Mine	Grefco Minerals, Inc.	Diatomite	Esmeralda	4205478	393380
48	49	Beatty Quarry	Kalamazoo Materials, Inc.	Landscape rock	Nye	4094750	521840
49	50	Bella Vista Pit	A and K Earthmovers	Rock, sand	Washoe	4371320	265930
50	51	Bing Materials Pit	Bing Materials Co.	Sand, gravel	Douglas	4308700	261500
51	52	Black and Red Cinder Pits	Cinderlite Trucking, Inc.	Cinder, landscape rock	Carson City	4346880	264860
52	53	Blanco Mine	Vanderbilt Minerals Corp.	Clay	Esmeralda	4196340	425740
53	54	Blue Diamond Hill Mine	Gypsum Resources, LLC	Gypsum, limestone	Clark	3994300	643650
54	55	Blue Diamond Pit	Las Vegas Paving Corp.	Sand, gravel	Clark	3986500	659800
55	56	Boehler Pit	Staker Parson Co.	Sand, gravel	Elko	4522100	606780
56	57	Boulder Ranch Quarry	CTC Crushing LLC	Sand, gravel	Clark	3978450	687100
57	58	Buff-Satin Mine (stockpile)	Vanderbilt Minerals Corp.	Clay	Pershing	4454650	385140
58	59	Churchill Mine	Nevada Cement Co.	Limestone	Churchill	4427500	349540
59	60	Cinder Cone Pit	Allied Building Materials, Inc./Cind-R-Lite Co.	Cinder	Nye	4060140	543740
60	61	Clark Mine	EP Minerals, LLC	Diatomite	Storey	4381500	295120
61	62	Colado Mine	EP Minerals, LLC	Diatomite, perlite	Pershing	4460730	352910
62	63	Dayton Materials (Mustang Pit)	3D Concrete, Inc.	Aggregate, sand	Lyon	4346000	277000
63	64	Donovan Pit	R.T. Donovan Co., Inc.	Decomposed granite	Washoe	4395000	270000
64	65	El Dorado Quarry	Portable Aggregate Producers, LLC	Sand, gravel	Clark	3980374	687952
65	66	Elburz Pit	Vega Construction and Trucking Co.	Sand, gravel	Elko	4533600	622900
66	67	Empire Mine	Empire Mining Co.	Gypsum	Pershing	4485750	304800
67	68	Fernley Operation Mine	EP Minerals, LLC	Diatomite	Churchill	4410158	332267
68	69	Fernley Quarry	Nevada Cement Co.	Limestone	Lyon	4380020	310490
69	70	Gamebird Pit	Wulfenstein Construction Co., Inc.	Sand, gravel	Nye	4001996	599697.5
70	71	Golden Valley Pit	A and K Earthmovers	Aggregate	Washoe	4388960	259020
71	72	Goni Pit	Cinderlite Trucking Corp.	Decomposed granite, sand, grave	Carson City	4344430	263820
72	73	Greystone Mine	M-I Swaco	Barite	Lander	4457850	510540
73	74	Gypsum Mountain Mine	Silver State Minerals, LLC	Gypsum	Pershing	4448381	382857
74	75	Hazen Pit	EP Minerals, LLC	Diatomite	Lyon/Churchill	4377320	320220
75	76	Heart of Nature Alum/Sulfur Mine	Heart of Nature, LLC	Alum, sulfur	Esmeralda	4195570	441510
76	77	Henderson Community Pit	Various (Bureau of Land Management manages pit)	Sand, gravel	Clark	3980500	687800
77	78	Huck Salt	Huck Salt Co.	Salt	Churchill	4346860	374550
78	79	Lima Nevada Gypsum Mine	H. Lima Nevada LLC	Gypsum	Clark	4006000	692840
79	80	Lockwood Quarry	Granite Construction Co.	Aggregate	Washoe	4377267	271751
80	81	Lone Mountain	Las Vegas Paving Corp.	Aggregate	Clark	4012520	648880
81	82	Lone Mountain	Mel Clark, Inc.	Sand, gravel	Clark	4008000	650340
82	83	Lone Mountain	Nevada Ready Mix Corp.	Sand, gravel	Clark	4013180	650790
83	84	Lone Mountain	Wells Cargo, Inc.	Sand, gravel	Clark	4013069	649059.9
84	85	Lone Mountain Community Pit	Various (Bureau of Land Management manages pit)	Sand, gravel	Clark	4013220	648880
85	86	Mesquite Community Pit	BJ Rees's Enterprise	Sand, gravel	Clark	4074700	760420
86	87	Mesquite Community Pit	Various (Bureau of Land Management manages pit)	Sand, gravel	Clark	4074700	760420
87	88	MIN-AD Mine	MIN-AD, Inc.	Dolomite	Humboldt	4525800	440120
88	89	Money Pit	Southern Nevada Liteweight, Inc.	Silica sand	Clark	3961020	665500
89	90	Mount Moriah Quarry	Mount Moriah Stone Quarries, LLC	Building stone, landscape rock	White Pine	4343795	751603
90	91	Mountain Springs Mine	M-I Swaco	Barite	Lander	4462620	496480
91	92	Mustang Quarry	Sierra Nevada Construction, Inc.	Aggregate	Washoe	4379650	273880
92	93	Nassau (Section 8) Mine (stockpile)	American Colloid Co.	Clay	Pershing	4453880	388920
93	94	Nevada Barth Iron Mine	Saga Exploration Co.	Iron ore	Eureka	4492240	562180
94	95	New Discovery Mine	Vanderbilt Minerals Corp.	Clay	Nye	4081905	520520
95	96	Nightingale Pit	Imerys Filtration Minerals, Inc.	Diatomite	Churchill	4422800	321060
96	97	PABCO Apex Quarry	Pacific Coast Building Products, Inc.	Gypsum	Clark	4009484	691057

Nevada Active Mines 2019

FID	ID_NUM	NAME	OPERATOR	COMMODITY	COUNTY	Y_U83N	X_U83E
97	98	Pahrump Community Pit	Various (Bureau of Land Management manages pit)	Sand, gravel	Nye	4004300	596780
98	99	Paiute Pit	CEMEX Construction Materials Pacific, LLC	Sand, gravel	Washoe	4391040	304400
99	100	Pilot Peak Quarry	Graymont Western US., Inc.	Limestone	Elko	4522627	731144
100	101	Pole Line Pit	Boulder Sand and Gravel, Inc.	Sand, gravel	Clark	4009352	678819
101	102	Popcorn Mine	EP Minerals, LLC	Perlite	Churchill	4344290	345870
102	103	Premier Chemicals, LLC, Mine	Premier Chemicals, LLC	Magnesite	Nye	4302120	422900
103	104	Rainbow Quarries	Las Vegas Rock, Inc.	Landscape rock, sand, gravel	Clark	3974880	638780
104	105	Relief Canyon Quarry	Nevada Cement Co.	Limestone	Pershing	4449781	401478
105	106	Rilite Aggregate	Rilite Aggregate Co.	Sand, rock	Washoe	4365881	266702
106	107	River Canyon III	Joy Engineering	Aggregate	Storey	4379781	286375
107	108	Rocks Road Pit	Desert Engineering	Sand, gravel	Lyon	4312626	316830.3
108	109	Sexton Mine	Nutritional Additives Corp.	Dolomite	Pershing	4522140	438740
109	110	Sierra Ready Mix Quarry	Sierra Ready Mix, LLC	Sand, gravel	Clark	3953030	653740
110	111	Sierra Stone Quarry	CEMEX Construction Materials Pacific, LLC	Aggregate	Storey	4372283	274829
111	112	Silver Peak Operations	Rockwood Lithium, Inc.	Lithium carbonate	Esmeralda	4178350	443700
112	113	Simplot Silica Products Pit	J. R. Simplot Co.	Silica sand	Clark	4039110	727470
113	114	Sloan Quarry	Aggregate Industries	Crushed stone	Clark	3978918	661472
114	115	South Jean Pit	Service Rock Products	Sand, gravel	Clark	3955100	657120
115	116	Spanish Springs Quarry	Martin Marietta Materials, Inc.	Aggregate, decomposed granite	Washoe	4395944	266114
116	117	Spring Mountain Pit	Wells Cargo, Inc.	Sand, gravel	Clark	3990171	657163
117	118	Tenacity Perlite Mine	Wilkin Mining and Trucking Co., Inc.	Perlite	Lincoln	4157600	675240
118	119	Terraced Hill Clay (Flanigan) Mine	Nevada Cement Co.	Clay	Washoe	4455060	261500
119	120	Tracy Pit	BJ Rees's Enterprise	Sand, gravel	Washoe	4383361	284683
120	121	Trico Pit	Gopher Construction Co.	Aggregate	Storey	4382000	283800
121	122	Wade Sand Pit	Granite Construction Co.	Sand	Washoe	4388890	305170
122	123	Wulfenstein (BLM) Pit	Wulfenstein Construction Co., Inc.	Sand, gravel	Nye	4004300	596800
123	124	Bonanza Opal Mine	Bonanza Opal Mines, Inc.	Precious opal	Humboldt	4633240	327520
124	125	Gemfield Gems	Gemfield Gems	Chalcedony	Esmeralda	4176832	474068
125	126	Lone Mountain Turquoise Mine	Lone Mountain Mining, LLC	Turquoise	Esmeralda	4201200	463200
126	127	May Turquoise Mine	Red Widow Mine Co.	Turquoise	Lander	4466496	527135.9
127	128	Rainbow Ridge Opal Mine	Rainbow Ridge Opal Mines, Inc.	Opalized wood, precious opal	Humboldt	4628820	332830
128	129	Royal Peacock Opal Mine	Royal Peacock Opal Mine, Inc.	Precious opal	Humboldt	4628180	326360
129	130	Beowawe	Terra-Gen Power, LLC	Electricity	Lander	4489415	532398
130	131	Blue Mountain	AltaRock Energy	Electricity	Humboldt	4538407	404447
131	132	Brady Hot Springs	Ormat Nevada, Inc.	Electricity	Churchill	4407088	327912
132	133	Brady Hot Springs	Olam Spices and Vegetables, Inc.	Vegetable dehydration	Churchill	4406553	327273
133	134	Burdette (Galena 3)	Ormat Nevada, Inc.	Electricity	Washoe	4363504	263276
134	135	Desert Peak II	Ormat Nevada, Inc.	Electricity	Churchill	4402148	332634
135	136	Dixie Valley	Terra-Gen Power, LLC	Electricity	Churchill	4424433	426925
136	137	Don A. Campbell, Don A. Campbell II	Ormat Nevada, Inc.	Electricity	Mineral	4299493	384894
137	138	Elko Hot Springs	Elko County School District	Space Heating	Elko	4521706	604406
138	139	Galena 1	Ormat Nevada, Inc.	Electricity	Washoe	4364213	263433
139	140	Galena 2	Ormat Nevada, Inc.	Electricity	Washoe	4361796	261800
140	141	Jersey Valley	Ormat Nevada, Inc.	Electricity	Pershing	4448142	458876
141	142	McGinness Hills, McGinness Hills II, III	Ormat Nevada, Inc.	Electricity	Lander	4382385	507530
142	143	Moana Hot Springs	Avalon Geothermal, LLC	Space heating	Washoe	4374819	258439
143	144	Moana Hot Springs	Peppermill Casinos, Inc.	Space heating	Washoe	4375822	258958
144	145	Patua	Cyrq Energy	Electricity	Churchill	4383471	321797
145	146	Salt Wells	Enel North America, Inc.	Electricity	Churchill	4352375	364296
146	147	San Emidio	Ormat Nevada, Inc.	Electricity	Washoe	4472701	296269
147	148	Soda Lake Nos. 1, 2	Cyrq Energy	Electricity	Churchill	4380171	341112
148	149	Steamboat II, III	Ormat Nevada, Inc.	Electricity	Washoe	4363738	262756
149	150	Steamboat Hills	Ormat Nevada, Inc.	Electricity	Washoe	4361484	261630
150	151	Stillwater 2	Enel Stillwater, LLC	Electricity	Churchill	4378439	366194
151	152	Tungsten Mountain	Ormat Nevada, Inc.	Electricity	Churchill	4391619	440784
152	153	Tuscarora	Ormat Nevada, Inc.	Electricity	Elko	4590782	570913
153	154	Wabuska	Open Mountain Energy	Electricity	Lyon	4337262	311667
154	155	Bacon Flat	Grant Canyon Oil and Gas, LLC	Oil	Nye	4258061	622592
155	156	Blackburn	Grant Canyon Oil and Gas, LLC	Oil	Eureka	4453769	573200
156	157	Eagle Springs	Kirkwood Oil and Gas, LLC	Oil	Nye	4273541	627598
157	158	Ghost Ranch	Kirkwood Oil and Gas, LLC/Makoil, Inc.	Oil	Nye	4272319	627902
158	159	Huntington	Noble Energy, Inc.	Oil	Elko	4474961	607223
159	160	Grant Canyon	Grant Canyon Oil and Gas, LLC	Oil	Nye	4256983	624095
160	161	Kate Spring	Western General/Makoil, Inc.	Oil, gas	Nye	4271057	627115
161	162	Sand Dune	Kirkwood Oil and Gas, LLC	Oil	Nye	4272249	627722
162	163	Sans Spring	Grant Canyon Oil and Gas, LLC	Oil	Nye	4258648	617622
163	164	Tomera Ranch	Tomera Oil Fields, LLC	Oil	Eureka	4485941	574331
164	165	Trap Spring	Makoil, Inc./Frontier Exploration Co.	Oil	Nye	4274130	617171

Connect Rail Nevada Catalogued Groups

ConnectRailNevada Catalogued Groups in Contact Database-520 Contacts

- Geographic Zones
  - Overall
  - Region 1 - Southern Nevada [Clark County]
  - Region 2 - Lincoln County
  - Region 3 - Ely-North to W. Wendover [White County; some Elko County]
  - Region 4 - I-80 Corridor, Lovelock to Wendover [Elko; Eureka, Lander; Humboldt; Pershing]
  - Region 5 - TRIC-Fernley-Fallon-Silver Springs [Washoe; Storey; Douglas; Lyon; Churchill]
  - Region 6 - Carson City-Reno
  - Region 7 – So. of Silver Springs-Wabuska-Yerington-Hawthorne [Mineral, Esmeralda]
  - Region 8 - Beatty – Pahrump-[Nye County]
- IntelliConference Invite List
- Interviewees
- Nevada Academics
- Nevada Agriculture
- Nevada Architects, Urban Planners
- Nevada Citizen Groups
- Nevada Civil Engineering Companies
- Nevada Developers
  - Fernley - Hazen - Silver Spring
- Nevada Distribution Companies
- Nevada DOT
- Nevada Energy
- Nevada Federal Gov't
  - Congressional Delegation
- Nevada Foundations
- Nevada Funding
- Nevada High Speed Rail Authority
- Nevada Investors
- Nevada Journalists
- Nevada Lenders
- Nevada Lobbyists
- Nevada Mining

Nevada MPOs/RPOs

Nevada Planning

Nevada Project Sponsors

Nevada Rail Consultants

Nevada Rail Growth Projects

Nevada Rail Suppliers

Nevada Railroad Materials + Services

Nevada Railroad Societies

Nevada Railroad Staff

Nevada Realtors

Nevada Regional Development Authorities

Nevada Shippers

- Nevada Agriculture
- Nevada Energy
- Nevada Waste and Recycling

Nevada State & Local Government

- Caliente
- Ely
- Las Vegas
- Nevada High Speed Rail Authority

Nevada Transportation Service Providers

Nevada Tribes

Nevada Utilities

NNDA-Northern Nevada Development Authority

SLUPAC-State Land Use Planning Advisory Council

NVSRP Stakeholder List

NVSRP Stakeholder List

First Name	Last Name	Affiliation
Weston	Adams	Western States Contracting
Lamar	Aiazzi	Nevada Intercity Passenger Railroad Co.
Randel	Aleman	Encore Commercial Real Estate
Judie	Allen	Lander County
Mark	Anderson	Nevada Industry Excellence
Delmo	Andreozzi	Elko County
Brett	Andrews	Interstate Oil
Ron	Annesley	Nevada Copper, Inc.
Katie	Armstrong	State of Nevada
Chris	Ault	Economic Development Authority of Western Nevada
Kristen	Averyt	Nevada Department of Conservation and Natural Resources
Ray	Bacon	Nevada Manufacturers Association
James	Barbee	Churchill County
Kellie	Bartley	Top Rail Solutions, Inc.
Mark	Bassett	Nevada Northern Railway
Donna	Bath	Silver Lion Farms
Kimon	Beckmann	EP Minerals
Jodi	Bectel	Clark County
Michelle	Beecher	City of Ely Nevada
Brian	Beffort	Sierra Club Toiyabe Chapter
Robert	Bilbray	Laughlin Economic Development Corporation
Buddy	Borden	University of Nevada Cooperative Extension
Jim	Bowen	Geofortis Processing & Logistics LLC
Roger	Bowers	Nevada Northern Railway
Gerry	Bowers	Nevada Gold
Douglas	Boyle	University of Nevada, Reno
Jared	Brackenbury	Lincoln County Commissioners
Mark	Brady	Nevada Governor's Office of Energy
Ray	Breedlove	Citizen
Jenny	Brekhus	Reno City Council
Bruce	Breslow	Nevada Strategies
Kyla	Bright	Lander County
Michael	Brown	Nevada Governor's Office of Economic Development
Ian	Bullis	White Pine County
Bill	Calderwood	White Pine County
Joe	Campos	Blockchains, Inc.
Scott	Carey	Nevada Division of State Lands
Lucy	Carnahan	Fallon Chamber of Commerce
Eileen	Christensen	BEC Environmental, Inc.
Zeny	Cieslikowski	Expeditors International
Art	Clark	Lander County
Stephen	Clarke	QuanVerge Inc.
Mark	Costa	Nevada Department of Transportation
Curtis	Coulter	Coulter Harsh Law
Tim	Crowley	Lithium Nevada Corporation
Husein	Cumber	Florida East Coast Industries
Amy	Cummings	Regional Transportation Commission (RTC) of Washoe County
Matthew	Cunningham	Hudbay Minerals

NVSRP Stakeholder List

First Name	Last Name	Affiliation
Jason	Daily	Savage
Jenine	Dalrymple	Southwestern Energy
Ron	Damele	Eureka County
Dillon	Davidson	State of Nevada Department of Agriculture
Corrado	De Gasperis	Comstock Mining, Inc.
Kirk	DeJesus	Kinder Morgan
Jack	Desai	Hawthorne Best
Barry	Devlin	Gold Resource Corporation
Dale	Diulus	Salt River Materials Group
Ken	Dixon	City of Caliente
Scott	Dockter	U.S. Mine Corp.
Daniel	Doenges	Regional Transportation Commission (RTC) of Washoe County
Jason	Doering	SMART-TD
Graham	Dollarhide	Nevada Department of Transportation
Charles	Donohue	Nevada Division of State Lands
Eric	Dougherty	Gemfield Resources, LLC (Waterton Global Resource Management)
Matthew	Duplantis	Link Industrial Properties
Michele	Duttlinger	Cyanco Company LLC
Tim	Dyhr	Nevada Copper, Inc.
Roy	Edgington	City of Fernley
Fred	Elenbaas	Citizen
Kenneth	Elgan	Esmeralda County Sheriff
Sherry	Ely-Mendes	Pyramid Lake Paiute Tribe
Paul	Enos	Nevada Trucking Association
Dominique	Etchegoyhen	State of Nevada Department of Conservation & Natural Resources
Darren	Eyre	CRS Consulting Engineers
Tyson	Falk	ioneer Ltd.
Lee	Farris	Landwell/Basic Remediation Company
James	Faulds	University of Nevada, Reno
George	Fennemore	Citizen
Marco	Fiorello	Allied Plasma, Inc.
Jeff	Fontaine	Lincoln County Regional Development Authority
David	Foster	RAIL Solution
Jim	French	Humboldt County
Michael	Fuess	Nevada Department of Transportation
Nick	Gaeta	Tesla
Jim	Gee	Regional Transportation Commission (RTC) of Washoe County
John	Gianoli	Nevada Northern Railway Foundation
Mike	Giles	City of Lovelock
Lance	Gilman	L. Lance Gilman Real Estate
Jeremy	Gilpin	Greater Commercial Lending
Dirk	Goering	Carson Area Metropolitan Planning Organization
J.J.	Goicoechea	Board of Eureka County Commissioners
Sheryl	Gonzales	Western Nevada Development District
Herb	Grabell	Kidder Mathews
Tyre	Gray	Nevada Mining Association
Thomas	Gray	Virginia & Truckee Railroad
Vince	Griffith	Reno Engineering Corp.

NVSRP Stakeholder List

First Name	Last Name	Affiliation
Vinson	Guthreau	Nevada Association of Counties
Maureen	Haney	Union Pacific Railroad
Johnny	Hargrove	NV Energy
Jerry	Harris	Southwestern Energy
Matthew	Harris	Avison Young
Tom	Harris	University of Nevada
Earl	Harrison	U.S. Mine Corp.
Andrew	Haskin	Northern Nevada Development Authority
Nick	Haven	Tahoe Regional Planning Agency
Christopher	Hayward	Dicalite Management Group, Inc.
Chris	Hegg	Mineral County Commissioners
Alicia	Heiser	City of Winnemucca
Emily	Hendrickson	Round Mountain Gold Corp.
Rick	Hendrix	Robinson Mine
Rob	Herr	City of Henderson
Steven	Hert	SS Hert Trucking
Patricia	Herzog	Nevada Governor's Office of Economic Development
Varlin	Higbee	Lincoln County Commissioners
Jim	Hill	Premier Magnesia, LLC
Christine	Hoferer	Mineral County Commissioners
Rob	Hooper	Northern Nevada Development Authority
Daphne	Hooper	City of Fernley
Miranda	Hoover	Capitol Partners
David	Hornsby	Empire Mining Co. LLC
Tony	Hsieh	DTP
Martin	Huenes	Nevada Gold
Corey	Hunt	Tolles Development Company
Gary	Hunter	Railroad Industries Incorporated
Michael	Ingram	Dicalite Management Group, Inc.
Scott	Jarvis	City of Henderson
Michael	Johnson	Churchill County Planning
Margaret	Johnston	City of Carlin
Scott	Jolcover	Comstock Mining, Inc.
Ron	Kaminkow	Railroad Workers United
John	Kaseroff	Nevada Hay Growers Association
Mike	Kazmierski	Economic Development Authority of Western Nevada
Vida	Keller	Lyon County Commissioner District 2
John	Key	itronics
Ralph	Keyes	Esmeralda County Commissioners
Jim	Kingzett	GRID
Alexandra	Kingzett	GRID
Paul	Kinne	Panattoni Development
Marilyn	Kirkpatrick	Clark County
Andrew	Kjellman	Regional Transportation Commission of Southern Nevada
Jason	Klimek	Tesla
Marty	Knauss	City of Laughlin
Darryl	Lacey	Nye County NWRPO
Kim	Lee	Salt River Materials Group

NVSRP Stakeholder List

First Name	Last Name	Affiliation
Jennifer	Lee	City of Ely Nevada
Justin	Lichter	Industrial Realty Group
Michelle	Lindsay	NV Energy
Heidi	Lusby-Angvick	Pershing County Economic Development Authority
Anne	Macquarie	Sierra Club Toiyabe Chapter
Madison	Mahon	City of Carlin
Mark	Maloney	Regional Transportation Commission (RTC) of Washoe County
Lucia	Maloney	Carson Area Metropolitan Planning Organization
Paul	Marcinko	Union Pacific Railroad
Cadence	Matijevich	State of Nevada Department of Agriculture
Julie	Maxey	Nevada Department of Transportation
John	McCafferty	Union Pacific Railroad
Nancy	McCormick	Economic Development Authority of Western Nevada
Rich	McKay	Eureka County
Courtney	Mckimmey	Nevada Lieutenant Governor
Dave	Mendiola	Humboldt County
Mark	Menezes	Menezes Brothers
Randy	Messer	Advanced Carbonate Technologies, LLC
Amy	Miller	Northern Nevada Development Authority
Tom	Miller	Miller Industrial Properties
Paul	Miller	Nye Co & Esmeralda Regional Economic Dev Authority (NCREDA)
Cash	Minor	Elko County
Jan	Morrison	Humboldt Development Authority
Joe	Mortenson	Lyon County
Dave	Mough	ioneer Ltd.
Sheldon	Mudd	Northeastern Nevada Regional Development Authority
Sean	Mueller	Symbia
John	Muntean	University of Nevada, Reno
Mark	Nixon	Board of Mineral County Commissioners
Kyle	Noyes	Winnemucca Farms Inc.
Herb	Okada	Southwest Transload
Brian	Oneal	Savage
Ron	Opfer	Coldwell Banker Premier Realty
Austin	Osborne	Storey County
Jennifer	Ott	State of Nevada Department of Agriculture
Jeff	Page	Lyon County
Mark	Paris	Landwell/Basic Remediation Company
Dean	Patterson	Churchill County Planning
Keith	Pearson	Lincoln County Commissioners
Kirk	Peterson	Friends of Nevada Wilderness
John	Peterson	Hawthorne Army Depot
Ross	Pfautz	Mark IV Capital
Lee	Plemel	Carson City
Todd	Poland	Top Rail Solutions, Inc.
Bob	Potts	Nevada Governor's Office of Economic Development
Neil	Prenn	Mine Development Associates Inc.
Garth	Price	Mineral County Commissioners
Colby	Prout	Nevada Association of Counties

NVSRP Stakeholder List

First Name	Last Name	Affiliation
Rob	Pyzel	Lyon County
Brett	Rabe	Lithium Nevada Corporation
Craig	Raborn	Regional Transportation Commission of Southern Nevada
Meg	Ragonese	Nevada Department of Transportation
Bert	Ramos	Lander County
John	Ramous	Dermody Properties
Tyler	Reddington	BNSF
John	Restrepo	RCG Economics
Doug	Roberts	Panattoni Development
Chuck	Roberts	Silver State Millwork LLC
Nathan	Robertson	City of Ely Nevada
Victor	Rodriguez	Nellis Air Force Base
Jonathan	Rodriguez	City of Henderson
Pat	Rogers	General Moly Inc.
Drew	Roschli	Roschli Rail Consulting
Steve	Rowe	City of Caliente
Sean	Rowe	Mineral County District Attorney
Heath	Rushing	New Nevada Resources
Tyler	Samson	Moapa Band of Paiutes
Brad	Schnepf	Marnell Properties
Jenna	Schonlau	Lithium Nevada Corporation
Jonetta	Schrick	Nellis Air Force Base
Ronald	Sheehan	Avison Young
Melanie	Sheldon	Governor's Office of Economic Development
Barry	Simcoe	Friends of the Nevada State Railroad Museum
Jared	Smith	Las Vegas Global Economic Alliance
Elaine	Spencer	Virginia & Truckee Railroad Commission
Ellery	Stahler	Nevada Division of State Lands
Dagny	Stapleton	Nevada Association of Counties
Derek	Starkey	City of Fernley
Frederick	Steinmann	University of Nevada, Reno
Dan	Stewart	Nevada Gold
Robert	Stokes	Elko County
Nelson	Stone	T.Y. Lin International
Richard	Stone	City of Winnemucca
Tom	Sullivan	Nevada Copper, Inc.
Robert	Summerfield	City of Las Vegas
Jolene	Supp	City of Wells
Michael	Sussman	Strategic Rail Finance
Michael	Sutphin	Tesla
Ken	Tavener	ITS Logistics
Glenn	Taylor	Citizen
Garrett	TerBerg	Clark County
Stan	Thomas	Economic Development Authority of Western Nevada
Bill	Thompson	Nevada Department of Transportation
Jake	Tibbitts	Eureka County
Robin	Titus	State of Nevada
Amber	Torres	Walker River Paiute

NVSRP Stakeholder List

First Name	Last Name	Affiliation
Tim	Tucker	TOT, LLC
Perry	Ursem	Las Vegas Global Economic Alliance
Lindsay	Van Meter	BNSF
Nick	Vander Poel	Capitol Partners
Rosemary	Vassiliadis	Clark County Department of Aviation
Jasmine	Vazin	Sierra Club Toiyabe Chapter
Marco	Velotta	City of Las Vegas
Ben	Viljoen	Nevada Rand LLC
Mike	Visher	State of Nevada Commission on Mineral Resources
Tatjana	Vukovic	Nevada Governor's Office of Economic Development
Frank	Wagener	Round Mountain Gold Corp.
Patsy	Waits	Nevada Association of Counties
Lorayn	Walser	Nevada Governor's Office of Energy
Michael	Warren	Union Pacific Railroad
Justin	Watkins	Nevada Conservation League
Chris	Wessel	Western Regional Water Commission
Ryan	Wheeler	Nevada Department of Transportation
John	Whitney	Itronics Inc.
Harvey	Whittemore	Abbey, Stubbs & Ford, LLC
De	Winsor	Esmeralda County
Beth	Xie	Regional Transportation Commission of Southern Nevada
Alexi	Zawadzki	Lithium Nevada Corporation

NVSRP IntelliConference Synthesis

NVSRP

IntelliConference Responses

Round One-April 2020

PART 1

Digest.....page 3
Stakeholder responses in overview (12 – 15 min read)

PART 2

Synthesis.....page 16
Stakeholder responses in depth (30 - 45 min read)

Note: Aggregate stakeholder totals on multiple choice selections may vary by 2-3%, as some tabulations were conducted as late IntelliConference participants were accommodated.

PART 1

IntelliConference Response Digest

Stakeholder responses in brief

Introduction

Over two weeks in in early April 2020, 81 Nevada transportation and planning-related stakeholders participated in the Opening NVSRP online IntelliConference. The responses were on the whole thoughtful and well-developed.

This Digest version, Part 1, is highly condensed to offer the reader an overview of Round One of the IntelliConference. The longer Summary version, Part 2 offers the reader a wider range of stakeholder perspectives

You can also use this Digest version to find your way to specific areas of interest. The *links in blue* will lead you to the page containing the wider set of stakeholder responses in the Summary version.

2. Which of the following describes your general impression of the presentation?

- o **I understood it and, in general, it helped me grasp the work the NVSRP is undertaking.**
- o **Some parts made sense, but not others.**
- o **I understood the presentation but have some immediate disagreements with what it communicated.**
- o **I'll add an important idea that I think the presentation missed.**
- o **I find that I'm not that interested in these issues**
- o **I'll use the space below to share thoughts not categorized above.**

	Tallied	Understood	Some parts not others	Have disagreements	I have an important Idea to add	Not interested	Will share otherwise
Presentation							
	Number of Stakeholders	45	1	0	7	0	2

3. QUESTION: In reference to the question above, please share your comments about the NVSRP presentation.

SAMPLING OF STAKEHOLDER RESPONSES

Much of the stakeholder group communicated favorably about the presentation:

> "The presentation was effective in presenting the key points of the process that will culminate into the Rail Plan. Clear, precise and thorough."

Two in the favorable group brought up Covid-19 concerns as it relates to the subjects at hand:

> "There could be transportation changes from experience of the COVID-19."

- LESS FAVORABLE

There were a few who were eager to wade more substantially into the subject matter. One commented:

> "I think the intro is a bit too generic. It would help me if we had more specifics and examples of what is meant by 'Enhanced Rail' and how it can deliver the benefits listed."

As well a stakeholder offered an alternative viewpoint on the presentation's characterization of Nevada's last rail plan.

> "Parts of the 2012 Plan were implemented. I would not agree that it was 'shelved'. This is the challenge with NDOT sponsoring the rail plan… We can discuss how this plan will be transformative without criticizing past efforts."

See more Question 3 stakeholder responses

4. QUESTION: What rail-related benefits are most important to Nevada? Please prioritize as High, Medium or Low:

- Mitigation of environmental impacts, particularly emission-related air quality
- Relieving highway traffic congestions
- Improvement of supply chain efficiency
- Moving goods as safely as possible

	Benefits:	Environmental	Congestion	Supply chain	Goods movement safety
Stakeholder choices					
	Highest	38	19	25	34
	Medium	11	23	24	17
	Lower	3	12	4	2

5. QUESTION: In thinking about the above list, do you have any additional thoughts to share?

STAKEHOLDER RESPONSES

Quite a few stakeholders pointed to an interrelatedness of the set of benefits.

> "Through attainment of some or all of the stated goals, the overall transportation system will benefit and will have a ripple effect on the performance, quality, and benefits of the system."

Others placed heavier emphasis on economic opportunity:

> "Heavy rail transport in Nevada may allow new manufacturing industries to develop to offset the economic contribution to the service and entertainment industries.

The subject of rail-served economic opportunity was addressed from another perspective:

> "The creation of rail-served economic opportunity is not really the role of NDOT."

An equal portion of stakeholders emphasized environmental concerns…

"Of all, the highest priority will be to create a system that does not create negative impacts upon our environment."

One stakeholder was less concerned about Nevada's environment:

"Pollution is not much of an issue in most of the state, the Las Vegas Valley being the only exception really. "

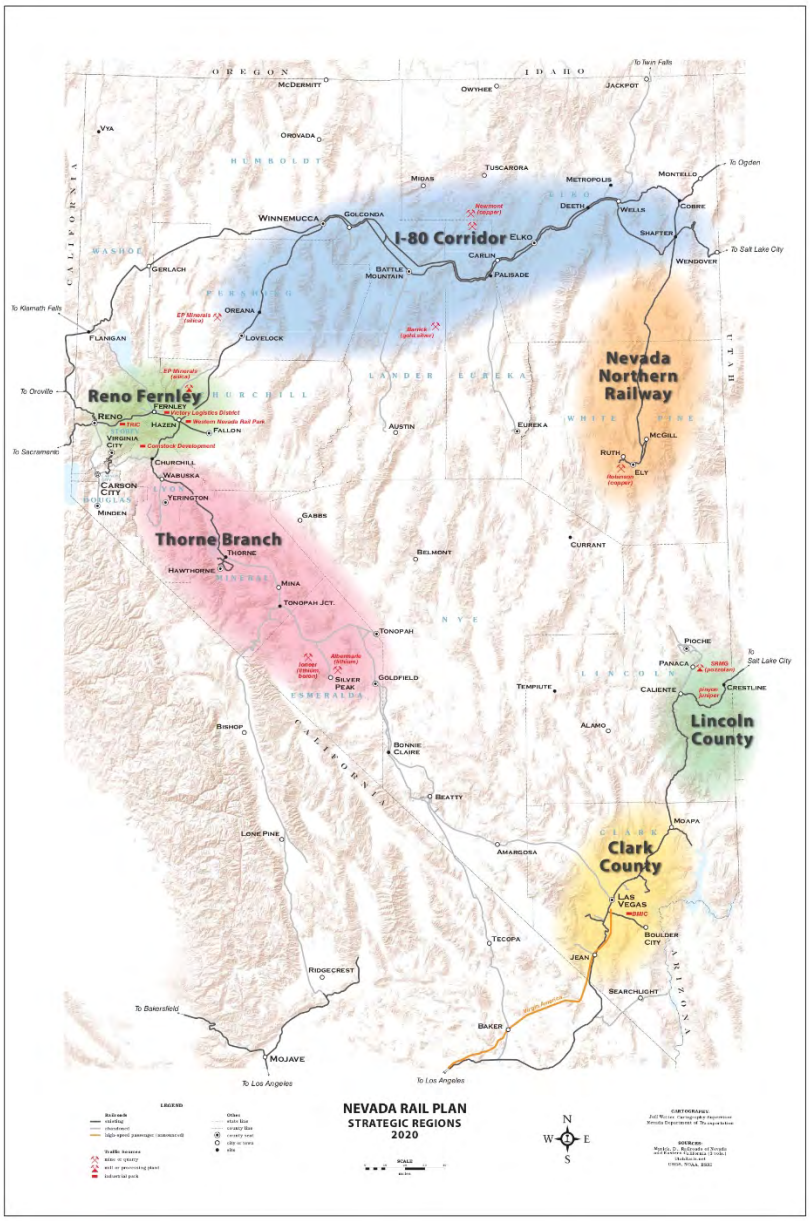
See more Question 5 stakeholder responses

7. QUESTION: What industries that rail serves are the highest priority for the rail plan?

- Mining materials
- Building products
- Construction aggregates
- Warehousing/ Distribution
- Food & Beverage
- Agriculture
- Energy
- Manufacturing

		Mining Materials	Building Products	Construction Aggregates	Warehousing/ Distribution	Food & Beverage	Agriculture	Energy	Manufacturing
Priorities									
	Highest	71%	73%	36%	39%	57%	16%	35%	24%
	Medium	24%	18%	52%	49%	37%	37%	47%	43%
	Lower	6%	10%	12%	12%	6%	47%	18%	33%

8. Can we make improvements to this six-region planning framework? Is any part of Nevada left out of the 6 regions that could benefit in the short term from rail?



STAKEHOLDER RESPONSES

Many participants indicated that they were in basic agreement with the region map but offered numerous suggestions for improvement.

9. What do you consider the top two regions for prioritization regarding implementing rail?

- Clark County
- Lincoln County
- Nevada Norther Railway: Ely – W. Wendover
- I-80 Corridor: Lovelock to Wells
- Reno – Sparks – Fernley – Fallon – Silver Springs

Tallied						
Counties:	Clark	Lincoln	Nevada Northern Railway: Ely-W. Wendover	I-80 Corridor: Lovelock to Wells	Reno-Sparks—Fernley—Fallon—Silver Springs	Thorne Branch: Lyon-Mineral—Esmeralda
Selected	26	3	5	16	37	16

10. Please share the reasoning for your choices

IN ORDER OF TOTAL STAKEHOLDER PREFERENCE

- RENO – SPARKS – FERNLEY – FALLON – SILVER SPRINGS

Reno-Sparks was the most selected, followed by Clark and the I-80 corridor. Similar to Clark, answers consistently made references to population, industry and economic activity. Reno was cited as topography-challenged in regards to rail by one respondent.

- CLARK COUNTY

The vast majority of those who chose Clark County as one of their two choices also chose Reno as their other choice. Most repeated reason had to do with population density, industry hubs, economic centers.

- I-80 CORRIDOR: LOVELOCK TO WELLS

The case for this region was made by highlighting its agricultural assets.

- THORNE BRANCH: LYON – MINERAL– ESMERALDA

Many who called for greater rail development in this area referred to mining activity.

- LINCOLN COUNTY

A few stakeholders drew attention the mineral resources in Lincoln County that could be leveraged by rail infrastructure.

See more Question 10 stakeholder responses

11. QUESTION: Agree or disagree: Expanding Nevada's use of rail for freight movement will be dependent on how effectively land near existing tracks is preserved for rail-served development

- o Agree
- o Disagree
- o Undecided

Tallied		
	Agree	40
	Disagree	1
	Undecided	12
	No Response	26

12. Please share any thoughts you have about the statement you previously read: "Expanding Nevada's use of rail for freight movement will be dependent on how effectively land near existing tracks is preserved for rail-served development."

Many stakeholders seem to agree with the statement's basic premise:

> "Land that is near or adjacent to existing rail lines should be prioritized for rail uses."

Numerous stakeholders pointed out Nevada's relationship to the federal government.

> "Rural Nevada is over 90% public lands, understanding the BLM process and including in future BLM planning (RMP process) is imperative."

See more Question 12 stakeholder responses

13. If an enhanced rail system depends on how the land along the tracks is used, who should be responsible for that oversight?

- The oversight needs to happen at the state level
- This is a county or local matter
- There does not need to be any oversight in this matter
- I'm not sure
- This issue doesn't matter to me

Tallied						
	The oversight needs to happen at the state level	This is a county or local matter	There does not need to be any oversight in this matter	I'm not sure	This issue doesn't matter to me	No Response
	17	24	1	12	0	25

14. Please share your thoughts about the previous question: "If an enhanced rail system depends on how the land along the tracks is used, who should be responsible for that oversight?"

Of the stakeholders who chose to explain their responses here, there was a near split down the middle of those would call for state oversight, and the next group below who preferred to think of these matters best handled at the county of local levels.

15. If the efficiency of a supply chain is dependent on the transportation system, then what contributions do you think NDOT, MPOs and other agencies can make to that efficiency?

The major theme that emerged from the responses to this question was a call for multi-level collaboration.

> "Data sharing and communication will be key in having alignment between various planning documents that lead to on the ground decision making."

Several other stakeholders drew a relationship between transportation and economic opportunity.

"NDOT can help with the needed planning as it is doing now. Developing rail in Nevada needs to be recognized as an important factor in economic development. That brings GOED into the picture. Also NDOT can assist in securing federal grants for track improvement projects."

Another stakeholder draws distinctions around agency responsibilities:

"NDOT does not oversee rail operations and cannot own a railroad by state law. Likewise, NDOT does not have a role in land use policy setting or administration."

In distinct contrast, another suggested a wider role for NDOT

"Planning, oversight, acquisition of land if necessary."

See more Question 15 stakeholder responses

16. Designing smarter supply chains on a statewide basis often involves more thoughtful land-use policies that make better use of transportation infrastructure. Do you have concerns that you would want addressed in how those protocols are developed and implemented? What are they?

The question was designed to help stakeholders examine the relationship (or lack thereof) between transportation infrastructure and land use. It inspired a wide range of responses from which a consistent theme did not emerge.

"First/last mile connectivity and availability of loading/staging areas in the right locations is something that will need to be thought-out.

Another, in the same subject territory, suggested a more top-down approach:

"Needs to be a true master plan that receives buy-in from all stakeholders (and others impacted that may not participate) and that is implemented at all levels."

And another suggested that the multi-level approach could be assisted by an informative tool.

"Development of a tool kits or other resources that can help local governments make more informed polices and decisions that are aligned with state and local goals may help drive action."

Another stakeholder communicated disagreement with the question's premise:

"State DOT and MPOs can provide data analysis and policy direction.

Transportation agencies are not involved in land-use decisions. A more coordinated effort between County land-use decisions, economic development and transportation would be helpful."

17. What are the top needs for passenger rail service around the state?

- Onboard Las Vegas
- Tahoe passenger
- Reno to Tahoe-Reno Industrial Center
- South Reno to Reno
- North Valleys to Reno
- Minden to Reno
- Las Vegas to Reno

Tallied								
		Onboard Las Vegas	Tahoe Passenger	Reno to Tahoe-Reno Industrial Center	South Reno to Reno	North Valleys to Reno	Minden to Reno	Las Vegas to Reno
Priorities	Highest	20	25	5	27	6	10	6

18. Please add any comments you have regarding Nevada's passenger rail needs.

GENERAL COMMENTS

Some stakeholders took the opportunity to champion advancement of passenger rail in the state.

"Passenger rail needs to be elevated in priority in the state rail plan…."

One stakeholder favoring enhancement of Nevada's passenger rail suggests starting with existing infrastructure:

"Notice I've marked them all high priority, but perhaps Minden/Carson/Reno/North Valleys/TRIC are the top priority because along a lot of these routes there is existing ROW, existing track, or both"

Others voiced viability concerns:

"I believe the biggest challenge is the end user. Unless there is support from the end user to utilize passenger rail instead of a vehicle, then passenger rail will struggle."

Another wanted to remind other stakeholders of the state's long-term plan:

"The legislature passed SB 254 with goals for zero carbon by 2050 that include transportation, electric passenger rail should be in any planning activities to minimize air transport."

REGIONAL COMMENTS

There were numerous comments that detailed particular regional needs.

See more Question 18 stakeholder responses

19. QUESTION: What should the state's responsibility be regarding passenger rail?

- The state should be in the passenger rail industry
- Local government should be responsible for passenger rail service
- Passenger service should be privately owned/ operated
- Amtrak should take responsibility
- Passenger rail should be a public private partnership
- None of the above

Tallied							
	The state should be in the passenger rail industry	Local government should be responsible for passenger rail service	Passenger service should be privately owned/ operated	Amtrak should take responsibility	Passenger rail should be a public private partnership	None of the above	No Response
	5	2	4	2	30	8	28

20. Should the state invest in passenger rail?

- Yes
- No
- Undecided

Tallied		
	Yes	20
	No	10
	Undecided	21
	No Response	28

PART 2

IntelliConference Response Synthesis

Stakeholder responses in depth

Introduction

Over two weeks in in early April 2020, 79 Nevada transportation and planning-related stakeholders participated in the Opening NVSRP online IntelliConference. The responses were on the whole thoughtful and well-developed. Following is a synthesis of the overall input, with key comments organized by major themes, opposing voices, and outlier opinions that brought a fresh perspective. Comments that call for response and/or follow-up are also identified.

2. Which of the following describes your general impression of the presentation?

- o I understood it, and in general it helped me grasp the work NVSRP is undertaking.
- o Some parts made sense, but not others.
- o I understood the presentation but have some immediate disagreements with what it communicated.
- o I'll add an important idea that I think the presentation missed.
- o I find that I'm not that interested in these issues
- o I'll use the space below to share thoughts not categorized above.

	Tallied	Understood	Some parts not others	Have disagreements	I have an important Idea to add	Not interested	Will share otherwise
Presentation							
	Number of Stakeholders	45	1	0	7	0	2

3. In reference to the question above, please share your comments about the NVSRP presentation.

STAKEHOLDER RESPONSES

Much of the stakeholder group communicated favorably about the presentation:

"The presentation was effective in presenting the key points of the process that will culminate into the Rail Plan. Clear, precise and thorough."

"This is the type of blueprint that meets the needs of both shippers and transportation providers alike. Very easy to consume and understand."

Of the group that expressed a favorable impression one voiced a suggestion that offered concern others may have not spoken:

"The presentation was a good overview. It would be helpful to know if any constraints have been placed on the project/plan and if there are any underlying assumptions we should know about as we continue through this process."

Two in the favorable group brought up Covid-19 concerns as it relates to the subjects at hand:

"The presentation was great but since it was done, we are experiencing the COVID-19 virus problem. I know for many ag products there are transportation bottle necks. Primarily the workforce not being at shipping nodes to load and unload shipments. However, this panel could address how rail can help the current situation but also assist in making the shift from closure of the economy to opening up the economy more efficient. There could be transportation changes from experience of the COVID-19."

- LESS FAVORABLE

There were a few who were eager to wade more substantially into the subject matter. One such commented:

"I think the intro is a bit too generic. It would help me if we had more specifics and examples of what is meant by "Enhanced Rail" and how it can deliver the benefits listed.
I think it would be very helpful to include some examples of what has been achieved elsewhere from modern integrated rail and inter-modal transport. This should include some example metrics and data showing improvements on factors such as:

1) end-to-end time and cost
2) total value of goods in transit
3) transport disruption and impact on both time-critical and bulk transport. "

Another stakeholder wrote:

"The presentation was fine but seemed like more of a sales pitch than actual content on what's been developed or learned so far in the process or how the process will use this information for the plan development. The presentation stated the number of stakeholder meetings and information gathered, but no maps, or summary of what has been gathered/learned so far. "

As well a stakeholder offered an alternative viewpoint on the presentation's characterization of Nevada's last rail plan.

"Parts of the 2012 Plan were implemented. I would not agree that it was "shelved". This is the challenge with NDOT sponsoring the rail plan. We cannot implement it. However, our role is to provide information and cooperation to inform others of potential opportunities. The prior plan helped identify and support several siding improvements, for example. I realize that is relatively minor, but we can discuss how this plan will be transformative without criticizing past efforts."

- FOCUSED SUBJECT MATTER COMMENTS

Several responses spoke directly to particular content portions of the presentation. We moved these comments further into the Inquiry where the related subjects were discussed.

4. QUESTION: What rail-related benefits are most important to Nevada? Please prioritize as High, Medium or Low:

- Mitigation of environmental impacts, particularly emission-related air quality
- Relieving highway traffic congestions
- Improvement of supply chain efficiency
- Moving goods as safely as possible

	Benefits:	Environmental	Congestion	Supply chain	Goods movement safety
Stakeholder choices					
	Highest	38	19	25	34
	Medium	11	23	24	17
	Lower	3	12	4	2

5. In thinking about the above list, do you have any additional thoughts to share?

STAKEHOLDER RESPONSES

Quite a few stakeholders pointed to an interrelatedness of the set of benefits.

"Through attainment of some or all of the stated goals, the overall transportation system will benefit and will have a ripple effect on the performance, quality, and benefits of the system."

"All five of these are core to focus on improving rail in Nevada."

Others placed heavier emphasis on economic opportunity:

"Heavy rail transport in Nevada may allow new manufacturing industries to develop to offset the economic contribution to the service and entertainment industries. Diversification of business types and occupational path growth disciplines increase the competitive nature of the state's economy. Smart-growth in the future will be critical."

The subject of rail-served economic opportunity was addressed from another perspective:

> "The creation of rail-served economic opportunity is not really the role of NDOT. While this could be a benefit of an enhanced rail system in the state and it's good to note if stakeholders support that, other factors should be bigger priorities from NDOT's perspective."

And then another equal portion of stakeholders emphasized environmental concerns, approaching the subject from a few different angles:

> "Of all, the highest priority will be to create a system that does not create negative impacts upon our environment."

> "I ranked emission reduction as a high priority due to recent GHG thresholds as well as having two areas of the state in non-attainment/maintenance."

> "Another measure that might be worth noting is the wear and tear on the roadways. You could potentially link that with environmental impacts to be a sustainability measure or add to the list separately."

In terms of environmental considerations, one stakeholder was less concerned:

> "Pollution is not much of an issue in most of the state, the Las Vegas Valley being the only exception really. It would be nice to relieve some of the truck traffic on our rural two-lane roads."

Another questioned the nature of congestion relief:

> "Congestion relief would be great, however, the shift of some goods from truck to rail may just increase total demand and congestion is likely to remain the same (just like adding lanes to the freeway doesn't help - just increases demand)."

Other stakeholders took the opportunity to relate particular challenges related to specific industries and state regions.

> "Nevada must have a comprehensive approach to a dual-use transportation system between Nevada and California, and an intercity network between Nevada's three major population-industrial centers (Reno and Las Vegas and Elko), as well as urban commuter, utilizing hydrogen powered trainsets, for Reno and Las Vegas on existing freight track infrastructure."
>
> "Lincoln County in particular has rail siding properties available for a relativity low development cost of improving existing roadways for rail access, primarily the Crestline siding area southeast of Panaca. Elimination of or improving the flooding hazard for the rail line through the Clover Creek/Meadow Valley Wash area in Lincoln County would greatly lower the long-term safety, reliability and maintenance of that rail line."
>
> "In White Pine and Elko Counties moving the copper concentrate and millions of gallons of diesel fuel off of the highways would reduce the maintenance cost with the highways. It would also take advantage of the efficiencies of rail over truck helping to stabilize the economics of the mine."
>
> "With respect to the supply chain efficiencies, typical logistics or supply chain users rarely demand rail served properties. As noted above, outside of the Fernley area, there is a serious lack of develop-able rail served sites in the Reno Sparks MSA. While access to rail served sites in Fernley is nice, access develop-able rail sites in the larger population center of Reno/Sparks could prove to be a major obstacle from an access to labor standpoint."

- OTHER SUBJECTS

A few other stakeholders mentioned covid-19 in their responses, suggesting that the near future economy would have to be a factor in this content area, and suggesting that lessons could be learned and applied for similar future pandemic situations.

Another stakeholder added to the priority list:

> "Rural development opportunity is also a high priority."

7. What industries that rail serves are the highest priority for the rail plan?

- o Mining materials
- o Building products
- o Construction aggregates
- o Warehousing/ Distribution
- o Food & Beverage
- o Agriculture
- o Energy
- o Manufacturing

	Tallied	Mining Materials	Building Products	Construction Aggregates	Warehousing/ Distribution	Food & Beverage	Agriculture	Energy	Manufacturing
Priorities									
	Highest	36	37	18	20	29	8	18	12
	Medium	12	9	26	25	19	19	24	22
	Lower	3	5	6	6	3	24	9	17
	No Response	28	28	29	28	28	28	28	28
Total Responses:		79	79	79	79	79	79	79	79
	Percentage Including Non-responses	Mining Materials	Building Products	Construction Aggregates	Warehousing/ Distribution	Food & Beverage	Agriculture	Energy	Manufacturing
Priorities									
	Highest	46%	47%	23%	25%	37%	10%	23%	15%
	Medium	15%	11%	33%	32%	24%	24%	30%	28%
	Lower	4%	6%	8%	8%	4%	30%	11%	22%
	No Response	35%	35%	37%	35%	35%	35%	35%	35%

	Percentage Not Including Non-responses	Mining Materials	Building Products	Construction Aggregates	Warehousing/ Distribution	Food & Beverage	Agriculture	Energy	Manufacturing
Priorities									
	Highest	71%	73%	36%	39%	57%	16%	35%	24%
	Medium	24%	18%	52%	49%	37%	37%	47%	43%
	Lower	6%	10%	12%	12%	6%	47%	18%	33%

8. Can we make improvements to this six-region planning framework? Is any part of Nevada left out of the 6 regions that could benefit in the short term from rail?

STAKEHOLDER RESPONSES

Many participants indicated that they agreed with the region map but there were numerous comments. They didn't lend themselves to grouping, so any comment beyond an indication of agreement is included below.

"Yes, Nevada Intercity has planned a high-speed, dual-use rail route between the Reno Region and Las Vegas-Clark County. The six-region planning framework entirely ignores Esmeralda and Nye Counties where our plan does not."

"Clark County should include the Laughlin area and the connection to the rail line south of that area."

"Should it ever come to pass, a rail link between Clark County and Northern Nevada would be a game changing event for the state of Nevada in terms of both freight and passenger rail."

"Would like rail link between Washoe and Clark Counties"

"Thorne to Clark?"

"McDermott Area, Owyhee Area, Goldfield Area, Beatty Area, Pahrump Area"

"Tahoe Area should be included. Areas north of Reno and all the way US 95 south to Las Vegas should be included. There is a big empty space in the center of Nevada. Has central Nevada been considered?"

"I understand that there is an old dilapidated rail line running from Wells to Twin Falls, Idaho (along US93). With all of the growth in Southern Idaho and rural

Nevada's natural connection with that area, I think the idea of resurrecting that line should be on the table. Further, a rail line in this area would reduce traffic accidents and annual death rates significantly - we either need a 4 lane through there or a rail line - otherwise it will remain a very dangerous stretch of road."

"Palisade to Eureka for movement of mining and agriculture products. Our State Routes are being tremendously impacted by heavy loads on trucks, a rail system would greatly alleviate these impacts. This is a central corridor that will continue to see tremendous growth in mining with just the currently permitted projects and those undergoing NEPA analysis. While access to the Nevada Northern may be an option, 5-6 mountain summits (depending on origin) are a problem and most truck traffic may elect to not use this option."

"I would suggest changing the scope of the Reno-Fernley region to be more like the Reno-Fernley-Churchill County region.

The region map implies that 1/3 of the length of the existing Thorne Branch is in the Reno-Fernley region."

"Should Reno Fernley be extended to include Fallon?"

"Really feel improvements to the Thorne Branch should be a high priority given the number of mining companies impacted. I believe you have captured the main 6 regions for rail."

"This looks great. We tore down the rail infrastructure in Ely with the closure of the copper mine and smelter. Now with electric cars and etc and with probable expansion of the economy as we address the COVID-19 crisis. This are with the push of green energy and its isolation could be a focal point for inclusion in the clean energy cluster."

"The focus on these 6 regions, gives the impression that NV exists in isolation and these regions only communicate with each other - when its probably that the opposite is closer to what drives logistics within the state. We need to understand the actual logistical flows through and within the state, and to optimize for that."

"For example, and from my own experience, I see the Reno/Fernley region booming but largely because this area serves out of state demand to the West with materials from both the east and West."

"Can we get rail from Las Vegas to Hawthorne? And then north to Oregon and Washington? To take a load off the north -south rail system in California?"

"Thorne to Clark is a big void"

"North south rail connecting the Thorne branch to Clark County along sh 95."

"No box is provided for answering question 7 - Answer - any business that rail serves is important. If you are developing a rail park you consider them all. User interest will define your overall project."

"I think this is pretty well covered--not sure if there would be reason to look into Vegas-Ely or Elko-Twin Falls/Boise."

"I am not sure if it can be accomplished due to lack of large entitled sites and topography, but from my standpoint the lack of significantly sized rail sites in Reno/Sparks is a concern."

"Is there any consideration with respect to linking Clark county/ Southern NV with the north. You have a gap between the Thorne Branch and Clark County as well as Lincoln County to NV Northern RR."

"Previous studies (Freight Plan and I-11) have highlighted the importance of connecting Clark County to the rest of the state. It may not be a big priority but should be considered."

"There is a gap between the Reno-Fernley and the I-80 corridor bubbles. Unfortunately, that bubble is the Churchill Hazen Business Park (CHIP). CHIP is a 20,000-acre industrial park at final build-out and has key rail lines running through its park and area of future development. EKAY Economics shows this as having extremely high potential for the future industrial rail project and job creation for three counties. It consists of 3 and half sections of land along and South of Highway 50 and 18,000 acres of land (much of it checkerboarded around rail lines) going North and East to meet up with Highway 95 and I-80. It is Churchill Counties future for jobs and economic development!"

"Future connection to Carson City."

"I believe that adding rail spurs and ports in the I-80 Corridor will be helpful to the mining industry throughout that region. I also believe that this will make a great economic impact for the region in the sense that this will attract a more diverse workforce to the area."

9. What do you consider the top two regions for prioritization regarding implementing rail?

- Clark County
- Lincoln County
- Nevada Norther Railway: Ely – W. Wendover
- I-80 Corridor: Lovelock to Wells
- Reno – Sparks – Fernley – Fallon – Silver Springs

Tallied						
Counties:	Clark	Lincoln	Nevada Northern Railway: Ely-W. Wendover	I-80 Corridor: Lovelock to Wells	Reno-Sparks--Fernley--Fallon--Silver Springs	Thorne Branch: Lyon-Mineral--Esmeralda
Selected	26	3	5	16	37	16
No Response	59					
Total Responses	162					
Percentage Including Non-Responses						
Counties:	Clark	Lincoln	Nevada Northern Railway: Ely-W. Wendover	I-80 Corridor: Lovelock to Wells	Reno-Sparks--Fernley--Fallon--Silver Springs	Thorne Branch: Lyon-Mineral--Esmeralda
Selected	16%	2%	3%	10%	23%	10%
No Response	36%					
Percentage Not Including Non-Responses						
Counties:	Clark	Lincoln	Nevada Northern Railway: Ely-W. Wendover	I-80 Corridor: Lovelock to Wells	Reno-Sparks--Fernley--Fallon--Silver Springs	Thorne Branch: Lyon-Mineral--Esmeralda
Selected	25%	3%	5%	16%	36%	16%

*Notes: Some people only answered with 1 selection and others answered with more than 2. All were included in calculations.

10. Please share the reasoning for your choices

IN ORDER OF TOTAL STAKEHOLDER PREFERENCE

- RENO – SPARKS – FERNLEY – FALLON – SILVER SPRINGS

Reno-Sparks was the most selected, followed by Clark and the I-80 corridor. Similar to Clark, answers consistently made references to population, industry and economic activity. Reno as topography-challenged is also mentioned by one respondent. A typical explanation:

> "These are Nevada's urbanized areas and the economic hubs of the State with significant connections to neighboring cities and the national network."

> "Donner Pass closures in the winter greatly affect the northern Nevada businesses."

- CLARK COUNTY

The vast majority of those who chose Clark County as one of their two choices also chose Reno as their other choice. Most repeated reason had to do with population density, industry hubs, economic centers.

> "These are Nevada's urbanized areas and the economic hubs of the State with significant connections to neighboring cities and the national network."

Another stakeholder shared the following:

> "NIPR's plan to re-establish passenger rail between Las Vegas and the_ actual_ L.A. Basin on existing BNSF and UP freight track must be a high priority due to the very large populations it would serve, and the national attention it would attract. As stated in conversations with the State Rail Coordinator, the PTC system NIPR would create for this service would allow facilitate our planned urban commuter overlay for the Las Vegas Valley, and permit rapid implementation of a badly needed urban commuter overlay for the Reno Region (Reno-Sparks-Fernley-Fallon-Silver Springs). The required track improvements would set the stage for improvements to the Thorne Branch (Mina Subdivision), and the eventual extension of track between the Reno Region and Las Vegas."

- I-80 CORRIDOR: LOVELOCK TO WELLS

> "These are regional areas in need of economical assistance as well as the areas of available minerals, agriculture and livestock that will provide the necessary raw materials for marketable products."

One stakeholder made the case for the region along with its neighboring regions this way:

"Northeastern Nevada continually entertains RFI's from prospective companies - 30% of which request direct or indirect rail access - a factor we simply cannot supply at the moment. Further, with emerging industries taking off on the east side of the state (particularly White Pine County), we see enormous potential for growth. Quite frankly, between the abundance of land, local stakeholder interest in economic development, and all of the industrial opportunities that are emerging within the Northeastern region as a whole (Lithium, Hemp, Indoor Ag, Copper, etc.) we contend that the ROI produced from the bolstering of these rail lines would be tremendous - simply put - more bang for the buck."

- THORNE BRANCH: LYON – MINERAL– ESMERALDA

Many who called for greater rail development in this area referred to mining activity.
For instance:

"The Thorne Branch is key to opening possible expansion further south. This will help the mining companies as well as starting the process of possibly opening a North-South Rail Corridor in Nevada."

Another made a topographical point:

"Because there was rail between these two regions in the past, with the way we view supply chain today (vs the past) it makes sense to reconnect the North to the South. There isn't much land throughout the U.S. where you have a landscape that isn't either over developed, protected or faced with extreme landscape conditions. Nevada is perfect because of it gentle slopes and lack of development."

- LINCOLN COUNTY

A few stakeholders drew attention to Lincoln County:

"Lincoln county has mineral resources that cannot be economically developed due to the lack of rail infrastructure"

11. Expanding Nevada's use of rail for freight movement will be dependent on how effectively land near existing tracks is preserved for rail-served development

- Agree
- Disagree
- Undecided

Tallied		
	Agree	40
	Disagree	1
	Undecided	12
	No Response	26
Total Responses:		79
Percentage Including Non-responses		
	Agree	51%
	Disagree	1%
	Undecided	15%
	No Response	33%
Percentage Not Including Non-responses		
	Agree	75%
	Disagree	2%
	Undecided	23%

12. Please share any thoughts you have about the statement you previously read: "Expanding Nevada's use of rail for freight movement will be dependent on how effectively land near existing tracks is preserved for rail-served development."

Many stakeholders seem to agree with the statement's basic premise:

> "I believe that expanding the use of rail for freight will highly depend on how effective we are by strategically preserving land suitable for rail-served development. As I previously stated, it is important that we plan for diversified workforce development in and around our towns/cities that have roadway connection in opposite directions of the running railway. These hubs can enhance the freight system greatly. So, I should say that the Success of expanding Nevada's use of rail for freight movement will depend on how well we plan for rail-served development moving forward."

"Land that is near or adjacent to existing rail lines should be prioritized for rail uses."

> "A rail line is useless if there are no means to access it."

> "It's just common sense."

Numerous stakeholders pointed out Nevada's relationship to the federal government.

> "Rural Nevada is over 90% public lands, understanding the BLM process and including in future BLM planning (RMP process) is imperative."

> "There are private, federal and tribal lands along the Thorne Line where rail uses should be allowed or designated to facilitate development of rail facilities. We found it a barrier to development at Wabuska, a site that should not require a use permit, but rather zoned for rail. If local jurisdictions want rail service, they should identify optimum sites and zone them for rail. Potential sites located on federal land adjacent to rail should identified in Resource Management Plans and designated for disposal (sale into private ownership)."

> "One example is the extensive constraints the BLM regulations place on access and use of land where access is needed"

On the subject of statewide planning a stakeholder contributed:

"As a land use planner, I have observed many instances where costly facilities are squandered by poor land use planning. Uses are encouraged that do no need the facility, or ineffectively use the facility. The result is that the effectiveness of the facility to operate is degraded over time, until land uses that DO need the facility cannot reasonably gain access to it."

Another looks to the need for new levels of coordination between freight and passenger rail.

"Preserving existing ROW, and planning for rail served warehousing, and manufacturing is a good idea. However, expanding freight rail service should go hand-in-hand with passenger service on those same tracks. Dual-use planning would also result in rail-served residential communities planning. Right now, freight railroads are seeing a permanent decline in revenue due to the U.S.'s move away from coal based electrical generation. In addition, many companies look at trucking as their primary means to move goods and materials, so precision scheduled railroading would have to be implemented to increase on-time service and allow for passenger operations without conflicting with freight."

13. If an enhanced rail system depends on how the land along the tracks is used, who should be responsible for that oversight?

- The oversight needs to happen at the state level
- This is a county or local matter
- There does not need to be any oversight in this matter
- I'm not sure
- This issue doesn't matter to me

Tallied						
	The oversight needs to happen at the state level	This is a county or local matter	There does not need to be any oversight in this matter	I'm not sure	This issue doesn't matter to me	No Response
	17	24	1	12	0	25
Total Responses:	79					
Percentage Including Non-responses						
	The oversight needs to happen at the state level	This is a county or local matter	There does not need to be any oversight in this matter	I'm not sure	This issue doesn't matter to me	No Response
	22%	30%	1%	15%	0%	32%
Percentage Not Including Non-responses						
	The oversight needs to happen at the state level	This is a county or local matter	There does not need to be any oversight in this matter	I'm not sure	This issue doesn't matter to me	
	31%	44%	2%	22%	0%	

14. Please share your thoughts about the previous question: "If an enhanced rail system depends on how the land along the tracks is used, who should be responsible for that oversight?"

Of the stakeholders who chose to explain their responses here, there was a near split down the middle of those would call for state oversight, and the next group below who preferred to think of these matters best handled at the county of local levels.

THE OVERSIGHT NEEDS TO HAPPEN AT THE STATE LEVEL

"I'm not typically in favor of significant state oversight; however, access to and benefits from rail can't be driven by deep pocket commercial development, potentially excluding some industry. Call it equal access."

"Because there are so many cities, counties, regions within the state, that the planning could be impacted if not centralized at the highest level."

Others in this group tempered their call for state oversight, suggesting a collaborative approach:

"This should be a joint effort of federal, state, county, local government and private industry in order to be a successful venture.

Federal, (BLM) should be involved primarily because the environmental issues may need to be streamlined in order to expedite the timelines involved. Otherwise the paperwork and/or legislation involved will take decades before a shovel full of earth can be moved to make it happen.

The only alternative to that is doing all projects on local government owed property and existing rights of way."

THIS IS A COUNTY OR LOCAL MATTER

Some in this group favored a more localized approach to planning:

"I believe that local master plans should control the development to fit the local community plans."

"Counties should have ultimate responsibility for the land along the tracks based solely on the fact that they have the ability to control the growth in their counties."

But others in this group shared suggestions that leaned toward a hybrid approach.

"Land use is a local matter. However, decisions should happen in coordination with state partners in order to make a inter-county/regional/statewide network functional."

"I believe that this should be a state and local mater. Just as we have state wide land use plans, and county/local land use plans that mirror the state yet stay true to the localities. Working together through a state master land use plan, and then creating local land use plans based off of the states would be the best route in my opinion. However when it comes down to what businesses are approved to locate to the area, it should be left up to the localities."

THERE DOES NOT NEED TO BE ANY OVERSIGHT IN THIS MATTER

An outlier perspective:

"Landowners must be allowed to develop as they choose. The last thing we need is an increase in regulatory oversite. County Zoning codes are the only vehicle that could address this, and this must be done in an open forum."

I'M NOT SURE

A few stakeholders voiced their acknowledgement of the question's complex set of considerations.

"I believe that land that is rail serviceable is important to preserve, I don't believe the Government should tell someone how they have to develop their property."

15. If the efficiency of a supply chain is dependent on the transportation system, then what contributions do you think NDOT, MPOs and other agencies can make to that efficiency?

The major theme that emerged from the responses to this question was a call for multi-level collaboration.

> "Continue ongoing communications and planning collaboratively in partnerships to anticipate greater efficiency and how agencies can contribute towards that. Ongoing evaluations and assessment to ensure system is achieving its goals/outcomes and correct and adjustment as is needed."

> "Data sharing and communication will be key in having alignment between various planning documents that lead to on the ground decision making."

A public agency related stakeholder contributed:

> "We each have our own level of expertise for the specific areas we oversee and have valuable insights to contribute relating to integration of rail with other modes, opportunities and challenges associated with those modal connections, and possible opportunities that can be used to improve feasibility/effectiveness of rail's touchpoints with the broader transportation network."

Several other stakeholders drew a relationship between transportation and economic opportunity.

> "It's important for NDOT to add key service and connector roads everywhere that a rail and business hub can be created. If the infrastructure is in place, it becomes a viable interstate commerce location."

> "NDOT can help with the needed planning as it is doing now. Developing rail in Nevada needs to be recognized as an important factor in economic development. That brings GOED into the picture. Also NDOT can assist in securing federal grants for track improvement projects."

Another stakeholder draws distinctions around agency responsibilities:

> "NDOT does not oversee rail operations and cannot own a railroad by state law. Likewise, NDOT does not have a role in land use policy setting or administration."

In distinct contrast, another suggested a wider role for NDOT

"Planning, oversight, acquisition of land if necessary."

Another stakeholder contributed the following specifics:

"Trucking and rail are inextricably linked in transportation supply chains. The T in NDOT stands for transportation. Would recommend beginning with NDOT assessing how well it integrates rail and trucking presently and how it will do so in the future. Specifically, the completion of I-11 connecting I-80 at Fernley to Vegas - Phoenix - Mexico should be given high priority. The I-ll project will enable Nevada to have its own North-South Interstate to move freight. Presently California's freeway systems must accommodate this traffic. These routes are over capacitated, particularly in ever expanding urban areas. The movement of freight in a Nevada corridor would relieve California of that burden and provide Nevada with a competitive route for movement of freight/rail transportation. The flow of traffic on I-11 will not significantly be compromised by urban traffic. The Port of Oakland would likely co-operate in numerous ways to take advantage of intermodal and transshipping efficiencies that would be available at the I-80 - I-11 hub in the Fernley area. Specifically such an extension of the Port's activities into Nevada will enhance its mission to be "Port of First Call" in its competition with Long Beach which is boxed in on all sides with a freeway system paralyzed by urban traffic."

16. Designing smarter supply chains on a statewide basis often involves more thoughtful land-use policies that make better use of transportation infrastructure. Do you have concerns that you would want addressed in how those protocols are developed and implemented? What are they?

The question was designed to help stakeholders examine the relationship (or lack thereof) between transportation infrastructure and land use. It inspired a wide range of responses from which very little consistent theme emerged.
That said, there were many thoughtful contributions.
Some forwarded the general concept that there is a need for conscious design:

> "First/last mile connectivity and availability of loading/staging areas in the right locations is something that will need to be thought-out. There may be different opportunities/challenges for specific areas/jurisdictions that will require unique and/or custom-tailored ideas to work through."

Some touched, once again, on a collaborative approach between levels of government:

> "Coordinate on a multimodal level, we currently have rail, highway and electric working on separate activities. with no coordination they will each develop different routes at different times with no synergy."

> "Naturally, local input is crucial from both the public and the private sectors. Further, ensuring impacts from policy are based on ratios of individuals/companies as opposed to just overall dollar amounts - keeping the full scope of the impact in mind - how it will effect both urban and rural Nevadans. Also, understanding that NOT all policy works on a state-wide level - some may have to be adjusted to best suit the area in which they are implemented."

Another, in the same subject territory, suggested a more top-down approach:

"Needs to be a balance and conscious planning between economic factors and long-term goals of the supply chain and transportation infrastructure. Needs to be a true master plan that receives buy-in from all stakeholders (and others impacted that may not participate) and that is implemented at all levels."

"Consider and implement land-use policies that protect and enhance business access to rail."

One stakeholder suggested that the questioned could be better approached if the process were re-ordered:

"I think this comes towards the end of the process. First, we need to understand the opportunity, develop the plan and then determine the land use policy issues. It would seem to be easier to generate a consensus around land use policy if stakeholder have already developed a consensus on the infrastructure needs and benefits."

And another suggested that the multi-level approach could be assisted by an informative tool.

"Development of a tool kits or other resources that can help local governments make more informed polices and decisions that are aligned with state and local goals may help drive action."

Another stakeholder communicated disagreement with the question's premise:

"State DOT and MPOs can provide data analysis and policy direction.

This question does not ask if I agree with the premise. I would argue that land use determines the efficiency of the supply chain. State DOTs and MPOs provide transportation policy. A better, more robust conversation about the impacts of various land-use decisions have on the transportation system efficiency and vice-versa is what is needed.

Transportation agencies are not involved in land-use decisions. A more coordinated effort between County land-use decisions, economic development and transportation would be helpful."

An outlier brought an as-yet unaddressed layer to the conversation:

"Specific interest in aviation are rail lines adjacent to airports and industries that support those businesses."

17. What are the top needs for passenger rail service around the state?

- Onboard Las Vegas
- Tahoe passenger
- Reno to Tahoe-Reno Industrial Center
- South Reno to Reno
- North Valleys to Reno
- Minden to Reno
- Las Vegas to Reno

Tallied								
		Onboard Las Vegas	Tahoe Passenger	Reno to Tahoe-Reno Industrial Center	South Reno to Reno	North Valleys to Reno	Minden to Reno	Las Vegas to Reno
Priorities	Highest	20	25	5	27	6	10	6
	Medium	11	15	16	16	12	18	11
	Lower	15	5	25	3	28	18	29
	No Response	33	34	33	33	33	33	33
Total Responses:		79	79	79	79	79	79	79

Percentage Including Non-responses								
		Onboard Las Vegas	Tahoe Passenger	Reno to Tahoe-Reno Industrial Center	South Reno to Reno	North Valleys to Reno	Minden to Reno	Las Vegas to Reno
Priorities	Highest	25%	32%	6%	34%	8%	13%	8%
	Medium	14%	19%	20%	20%	15%	23%	14%
	Lower	19%	6%	32%	4%	35%	23%	37%
	No Response	42%	43%	42%	42%	42%	42%	42%
Percentage Not Including Non-responses								
		Onboard Las Vegas	Tahoe Passenger	Reno to Tahoe-Reno Industrial Center	South Reno to Reno	North Valleys to Reno	Minden to Reno	Las Vegas to Reno
Priorities	Highest	43%	56%	11%	59%	13%	22%	13%
	Medium	24%	33%	35%	35%	26%	39%	24%
	Lower	33%	11%	54%	7%	61%	39%	63%

18. Please add any comments you have regarding Nevada's passenger rail needs.

GENERAL COMMENTS

Some stakeholders took the opportunity to champion advancement of passenger rail in the state.

"Passenger rail needs to be elevated in priority in the state rail plan. The opportunities to relieve congestion and improve GHG emissions according to new state mandates justify higher consideration. Commuter and recreation travel patterns are reaching levels that justify consideration of rail connections in certain locations/corridors. The state will be critical in discussion with rail operators about the importance of reserving capacity for passenger rail services while considering growing freight demands."

"It's absolutely vital that Nevada pursue a policy of urban rail transportation. The projected billions of dollars in expense to improve and build new highways in Reno and Las Vegas is far more expensive than improving the tracks in the Truckee Meadows and the Las Vegas Valley to handle urban commuter overlays. The track improvements can be implemented far more quickly, and reduce the highway traffic load, saving lives and attracting and retaining businesses and the jobs they offer to Nevadans as well as reducing the upward pressure on housing prices in our urban areas."

One stakeholder favoring enhancement of Nevada's passenger rail suggests starting with existing infrastructure:

"Notice I've marked them all high priority, but perhaps Minden/Carson/Reno/North Valleys/TRIC are the top priority because along a lot of these routes there is existing ROW, existing track, or both"

Others voiced viability concerns:

"Outside of the larger metro areas, this is going to be hard to fund and justify. This is my biggest concern with rail travel within Nevada."

"I believe the biggest challenge is the end user. Unless there is support from the end user to utilize passenger rail instead of a vehicle, then passenger rail will struggle."

Another wanted to remind other stakeholders of the state's long-term plan:

"The legislature passed SB 254 with goals for zero carbon by 2050 that include transportation, electric passenger rail should be in any planning activities to minimize air transport."

REGIONAL COMMENTS

Comments that placed emphasis on particular regional needs:

"Las Vegas to Reno passenger rail would be a would be a giant step in improving the overall efficiency and lower the cost involved in statewide government."

"Drive from Reno to Las Vegas is too long. Flights too expensive."

"Development of high speed rail between southern Nevada and southern California needs to be a top priority."

"The Salt Lake City - to Las Vegas to LA route formerly hosted a passenger train until 25 years or so ago. It could easily return. Dail Reno to Bay Area service (in addition to the Zephyr) has been suggested for years and would be highly successful. Stops at Lovelock and West Wendover would help boost Zephyr ridership and connect rural NV communities. And startup commuter rail service in Northern Nevada on both existing and abandoned rights-of-way would be a very popular development. Bordertown to Reno. Reno to Carson to Minden/Gardnerville. CA line to Fernley. From Question #3: I see the potential for greatly expanded passenger rail service in Nevada."

"Fallon and Fernley will become more prominent residential markets for TRIC and Reno. Passenger service could become a need between those areas."

"We used to have passenger rail lines between Reno and Carson City. We could certainly reduce road traffic and enhance the environment with rail. Some areas like Reno to the Tahoe-Reno Industrial Center would help mitigate the I-80 transportation nightmare. If Hazen takes off as I expect it to, that same line could run to businesses there. In Southern Nevada anything you can do to mitigate

traffic from business parks to train stations in communities would be a big help. Self-Driving Electric Vehicle Fleets are our future for cars and trucks. Clean Rail would do the same."

"Passenger rail, if done right, can reduce congestion. It must be connected to inter-modal facilities that can get passengers to their destinations, and must answer the value-of-time question for those passengers in order for it to be useful. If Tahoe cannot solve their in-basin transit/bike/ped issues, then getting passenger rail to dump people up in Truckee with no place to go from there is not going to be a utilized service. On the other hand, passenger rail from Reno to the TRIC, where on-site shuttles exist to transport passengers to jobs, is something that would likely be utilized and effective. Likewise, passenger rail from Minden to Reno could accommodate shoppers/commuters that could connect to their destinations via RTC Washoe transit buses, etc., which may also be feasibly utilized."

And another stakeholder anticipates a starkly shifted economy in the post-Covid-19 near future, and suggests an approach:

"Funding for passenger rail comes largely from the Federal government. Given the laundry list of high priority neglected infrastructure projects and, more recently, the massive funding required to recover from Covid-19, it is not realistic and perhaps even advisable for Nevada to devote too much energy to finding funds for any significant passenger rail initiatives. A private sector initiative could be much more effective by targeting, say, the Tahoe Sac - Bay Area link. Work with local transportation, hospitality, food and beverage, entertainment etc. businesses to set up a comprehensive weekend/week package plans specifically targeted to young people in the Bay Area many of whom don't own cars and are very inclined to engage in green/sustainable promoted activities (think travel by train carbon footprint vs. renting a car). A stem to stern package that includes all the mentioned components and is marketed to the target using e-communication they access to chose their free time activities. It would only be effective if comprehensively designed, launched and orchestrated but it could be done mostly with support from the applicable private sector. Prove it will work in terms of patronage and you'll have an improved chance of obtaining public funds to grow to the program."

19. What should the state's responsibility be regarding passenger rail?

- o The state should be in the passenger rail industry
- o Local government should be responsible for passenger rail service
- o Passenger service should be privately owned/ operated
- o Amtrak should take responsibility
- o Passenger rail should be a public private partnership
- o None of the above

Tallied							
	The state should be in the passenger rail industry	Local government should be responsible for passenger rail service	Passenger service should be privately owned/ operated	Amtrack should take responsibility	Passenger rail should be a public private partnership	None of the above	No Response
	5	2	4	2	30	8	28
Total Responses:	79						
Percentage Including Non-Responses							
	The state should be in the passenger rail industry	Local government should be responsible for passenger rail service	Passenger service should be privately owned/ operated	Amtrack should take responsibility	Passenger rail should be a public private partnership	None of the above	No Response
	6%	3%	5%	3%	38%	10%	35%
Percentage Not Including Non-Responses							

	The state should be in the passenger rail industry	Local government should be responsible for passenger rail service	Passenger service should be privately owned/ operated	Amtrack should take responsibility	Passenger rail should be a public private partnership	None of the above	
	10%	4%	8%	4%	59%	16%	

20. Should the state invest in passenger rail?

- Yes
- No
- Undecided

Tallied		
	Yes	20
	No	10
	Undecided	21
	No Response	28
Total Responses:		79
Percentage Including Non-responses		
	Yes	25%
	No	13%
	Undecided	27%
	No Response	35%
Percentage Not Including Non-responses		
	Yes	39%
	No	20%
	Undecided	41%

21. Do you have any questions for NDOT about the NVSRP that you would like addressed in future stakeholder meetings?

STAKEHOLDER RESPONSES

"Comment on question 20 - This is a very delicate subject, some thought should be given to a combination of D and E."

"Yes, when will Nevada abandon granting monopolies to passenger rail companies, and dissolve the Nevada High-Speed Rail Authority?"

"How can NDOT's priorities be shifted to be more inclusive of rail and air transport from being so heavily focused on roads and highways?"

"How are future spur lines integrated into the Nevada's plan?"

"Is the goal of the project the consideration of new Passenger Rail Service in NV exclusively or is it all being considered together?"

"In question #19, just one answer is inappropriate. Amtrak should be responsible for the interstate long-distance routes. While the state in conjunction with cities and counties can be jointly responsible for developing and running regional rail systems."

"Interests surround the Ivanpah proposed airport area in Clark County. Coordination of both rail and airport land use planning requirements are critical for the development of both."

"The nature of these questions indicated they should have been asked about three months earlier in the study. Maybe they were asked during the 150+ interviews that were conducted but I haven't seen those results."

"More examples and data to inform our input."

"Question 18 my answer was Are we talking light rail (commuter transit) or freight rail. my priority would be different. ? So is it light or heavy freight? Can we expand that question to light rail or/and freight? "

"Nye County did a rail economic study about a dozen years ago and provided to DOT. I can submit again if needed."

	"How will State agencies integrate rail in overall initiatives to make Nevada a green sustainable leader? When we talk about going renewable are we just thinking about the ratio of solar/geothermal, etc, energy as opposed to energy produced from conventional sources/resources? Freight transportation in Nevada has a substantive impact on how green we are and in assessing our overall carbon footprint. "The two (energy produced green/conventional - energy consumed truck/rail) will inevitably merge when trucking (nearer term) and rail (longer term) begins to convert from diesel to electric. Then Nevada green energy can be used as a transportation fuel source. Our rail center plans include the States largest passenger and freight vehicle charging/service facilities utilizing geothermal and solar electricity produced within our project. These services will be available not only for trucks involved with rail transloading/shipping but general passenger/truck traffic on the highway and from I-80." "Several of the above questions either did not provide enough background or did not provide space to elaborate. I'm not sure why most did (some that didn't need it), but others didn't. "For example - Q7 is difficult without background information about the current state of the industries in the state. How much do these industries move goods in NV by weight or dollar amount, which are more conducive to rail movement, etc. ? "Questions 19 and 20 should be prefaced with current state and federal law and/or examples of where other states maybe do have a role. What would that even look like? At what level - interstate/intrastate/regional, etc.

Nevada Shipper Interviews

Date of Visit or Call	Name	Address	City	Contact	Sidetrack Status
01/23/20	LP Terminal LLC	19975 S. Reno Park Blvd.	Reno		in service
09/26/19	Industrial Wood Products	19955 S. Reno Park Blvd.	Reno	Kathleen	easy build
11/15/19	General Motors	6565 Echo Avenue	Reno		car storage
11/15/19	Pacific Western Timbers	14551 Industry Cir. (last 10 docks)	Reno	John Wagner, owner	out of service
11/15/19	Warehouse Services	14551 industry Cir. (2nd 20 docks)	Reno	Carlos	out of service
11/15/19	ITS Logistics	14551 industry Cir. (1st 40 docks)	Reno		out of service
11/15/19	Birdrock Brands, Distribution Center	14525 Industry Cir., Suite 100	Reno		easy build
11/15/19	Hubert Company, Western D.C.	14525 Industry Cir., Suite 500	Reno		easy build
01/24/20	Geofortis Processing & Logistics LLC	0 Industry Cir. (but lot on Cocoa Ave.)	Reno	Jim Bowen, founder	out of service
11/15/19	Itronics Metalurgical Inc.	14305 Cocoa Avenue	Reno	Dr. John Whitner	easy build
11/15/19	Waste Mgmt. (former Refuse Inc.)	13890 Mt. Anderson St.	Reno		easy build
11/15/19	vacant bldg.	13805 Mt. Anderson St.	Reno		easy build
11/15/19	A&B Precision Metals	13715 Mt. Anderson St.	Reno		easy build
11/15/19	Hidden Valley Manufacturing	12150 Moya Blvd.	Reno		in service
11/15/19	partly vacant + Pods Moving & Storage	12040 Moya Blvd.	Reno		easy build
11/15/19	Performance Pipe/Spirolite Corp.	14381 Lear Blvd.	Reno		in service
11/15/19	Star Logistics Trucking Co.	14331 Lear Blvd.	Reno		out of service
11/15/19	LSC Communications US	14100 Lear Blvd.	Reno		in service
11/15/19	Veca West Inc.	ML: 14250 Lear Blvd.	Reno		in service
11/15/19	JC Penney Corp. Inc.	1111 Stead Blvd.	Reno		easy build
11/15/19	Sierra Packaging & Converting	11005 Stead Blvd.	Reno		easy build
11/15/19	Ferrellgas LP	7757 N. Virginia Street	Reno		in service
11/15/19	Amerigas Propane LP	7700 N. Virginia Street	Reno		in service
01/24/20	Rosen Materials	7970 Security Circle	Reno		out of service
01/27/20	Kappes Cassiday & Associates	7950 Security Circle	Reno	Jim Estes, ext. 104	car storage
01/14/20	Bender Group (gen'l warehousing)	345 Parr Circle	Reno	John Stimm, Bus. Devel.	out of service
01/14/20	Trend Offset Printing	365 Parr Circle	Reno	James	out of service
01/27/20	Glasfloss Ind. Inc.	300 Parr Circle	Reno	Efrain Mondragon, PM	out of service
01/14/20	ZLine Kitchens	350 Parr Circle	Reno	Mike Zuro (sp?)	out of service
01/14/20	Bender Group (gen'l warehousing)	205 Parr Blvd.	Reno	John Stimm, Bus. Devel.	out of service
01/27/20	for lease/sale (former Packer Term.)	200 Parr Blvd.	Reno	Scott Gaughvan	out of service
01/25/20	Workpak Flexible Packaging LLC	300/350 Parr Blvd.	Reno	Bill Cho, Mgr., ext.1103	out of service
01/14/20	Bender Group (gen'l warehousing)	380 Parr Blvd.	Reno	John Stimm, Bus. Devel.	out of service
01/14/20	Sears Repair & Redistribution Center	400 Parr Blvd.	Reno		out of service
01/13/20	High Desert Truss & Lumber	500 E. Parr Blvd.	Reno	Leif Erickson, Opns Mgr.	in service
01/24/20	UP "ramp track," double-ended team trac	500 E Parr Blvd.	Reno	Gary Mason, Chandler AZ	in service
	Standard Motors Prod.	305 Western Road	Reno		no track
01/14/20	Schnitzer Steel Ind. Inc.	490 Valley Road	Reno		team track?
01/14/20	Martin Iron Works Inc.	530 E 4th Street	Reno	Trish & Mario Bulantini	out of service
01/27/20	Twisted Metal Works	130 Woodland Avenue	Reno	Charlie&Todd Giguiere	out of service
	Waste Management of NV	1390 E. Commercial Row	Reno	Ryan West, Sr Dist Mgr	easy build
11/12/19	Hunt & Sons (formerly Casazza Oil)	1575 E. Commercial Row	Reno	Ed Wagner, Manager	easy build
01/27/20	Reno Salvage Co, New Metals Div	333 Toano Street Reno 89512	Reno	Melissa	in service
01/28/20	Reno Gazette Journal	955 Kuenzli	Reno		no track
01/28/20	Porsche Cars North America Inc.	ML: One Porsche Dr	Atlanta	Andy North	listing error
11/14/29	NV Energy	6100 Neil Road	Reno	Johnny Hargrove, Jeff Sutich	no track
01/28/20	Gruners Furniture Inc.	9095 S. Virginia St.	Reno		no track
01/28/20	US Postal Service	2000 Vassar St.	Reno		no track
01/28/20	Ennis Furniture Co.	1350 Neil Way	Reno		no track
01/28/20	Custom Glass	1095 E 2nd Street	Reno		no track
01/30/20	FN Logistics LLC	ML: 12710 Thuderbolt Dr.	Reno	Craig Brinkman	listing error
01/30/20	Pronghorn Transload LLC	ML: 12710 Thuderbolt Dr.	Reno	Craig Brinkman	listing error
01/30/20	Kinder Morgan Liquid Terminals	301 Nugget Ave.	Sparks	Gary Kulichevsky	in service
10/13/19	Jensen Precast	625 Bergin Way	Sparks	Klaus Zieschang	easy build
10/12/19	Fernco Inc. West	855 Linda Way	Sparks	renamed Cooper Companies	easy build
10/12/19	The Pillow Factory	900 Southern Way	Sparks		easy build
10/12/19	Calvada Food Sales	950 Southern Way	Sparks	Rich Patton, Whse Mgr	need dock access
10/12/19	vacant	1150 Southern Way	Sparks		not used
10/12/19	South/Win Ltd.	1280 Southern Way	Sparks		in service
01/30/20	Just Refiners USA Inc.	540/620 Greg Street	Sparks	Beverly Boekhoud	in service
10/13/19	Paterson Paper	545/625 Greg Street	Sparks	Scott, Maint. Mgr.	out of service
10/13/19	Basalite	345/355 Greg Street	Sparks	Rich Guinn, Retail Sales	easy build
10/13/19	Blue Frog Screen Printing	345 Coney Island Drive	Sparks		out of service
10/13/19	Innovative Cabinets & Design	445 Coney Island Drive	Sparks		out of service
10/13/19	Ranshu Parts Co.	525 Coney Island Drive	Sparks	Jodi Marwell, Shp. Mgr.	out of service
10/13/19	vacant warehouse	725 Greg Street	Sparks		out of service
10/13/19	MicroMetl	905 Southern Way	Sparks	Freddie Garcia	out of service
10/13/19	Tom Duffy Wholesale Products	656 Dunn Circle	Sparks		easy build

Date of Visit or Call	Name	Address	City	Contact	Sidetrack Status
10/13/19	Leach Logistics	810/830 E. Glendale Ave.	Sparks		car storage
10/07/19	Reno/Carson Lumber	680 Spice Islands Dr.	Sparks	Rick	in service
10/13/19	Watts Regulator	750 Spice Island Dr.	Sparks	Dan Hernandez, Shipping	not used
10/13/19	Bimbo D.C./Sara Lee Food Service	950 United Circle	Sparks		out of service
10/13/19	vacant warehouse (1/2 with Bimbo)	956/958 United Circle	Sparks		out of service
10/13/19	ArcBest	1755 Purina Way	Sparks		out of service
01/31/20	Sims Group USA Corp.	1655 Franklin Way	Sparks	Gabby	in service
10/13/19	LSC Communications d/b/a BNSF QDC	1141 E. Glendale Ave.	Sparks	Bill Staab, Manager	in service
11/12/19	McKillican American Inc.	1802 Brierley Way	Sparks	switch removed	easy build
11/12/19	vacant warehouse (1/2 still CES Machine)	45 Vista Blvd., Ste. 101	Sparks		easy build
11/12/19	ProLogis	255 Vista Blvd.	Sparks		easy build
11/12/19	American Tire Distributors Inc.	250 Lillard Dr. #100	Sparks		easy build
11/12/19	Southern Wine & Spirits	250 Lillard Dr. #101A	Sparks		easy build
11/12/19	Allstates Warehousing & Distribution	350 Lillard Drive, Suite 171	Sparks		easy build
11/12/19	Geodis Logistics LLC	450 Lillard Drive	Sparks		not used
11/12/19	ITS Logistics	555 Vista Blvd.	Sparks	Chris Abbott	not used
11/12/19	Associated Bag Company	550 Lillard Blvd.	Sparks		not used
11/12/19	Laddawn Inc.	659/550/540 Lillard Drive	Sparks		in service
11/12/19	J. Hofert Company	1755 E. Prater Way	Sparks	Dan Webb	easy build
01/30/20	Chicken Hawk Transport LLC	ML: 235 London Drive	McCarran	Craig	no track
01/28/20	vacant lot, 2300' of level RR frontage	1025 Waltham Way	McCarran	Marcia Giordano	easy build
01/31/20	Ardagh Metal Packaging	900 Waltham Way	McCarran	Lawrence Sparks	not used
12/14/19	Nevada Energy	1799 Waltham Way	McCarran	Jeff Sutich	not used
02/03/20	Duraflex International	160 Wunotoo Road	Sparks	Catina Hotchton	car storage
01/28/20	vacant parcel with turnout in place	? Waltham Way	McCarran	Bob Code, Seattle WA	easy build
01/31/20	Golden Gate Set Petrol. Partners of Neva	500 Ireland Drive	Sparks	Eddie, rail manager	in service
01/31/20	PPG Industries (Reno Plant)	500 Pittsburgh Ave.	McCarran	Terry McGinnis, Plt Mgr	in service
10/15/19	Truckee Tahoe Lumber Co.	1800 USA Parkway	Sparks	Brad Benamati, GM	in service
10/15/19	Battery Systems	3410 Peru Drive	McCarran	Roberto Melendrez	easy build
repeated	Fulcrum Bioenergy (bio-refinery)	? Peru Drive under const.	McCarran	Flyn van Ewijk	easy build
04/16/20	Rice Lake Weighing Systems	265 Logan Lane	Fernley	Kevin McCarthy	in service
10/16/19	Johns Manville Corp.	325 Industrial Drive	Fernley	Drew Roschli, RR	in service
02/03/20	vacant lot for sale	2185 Newlands Dr.	Fernley	deal with Meek's Lumber	not unsed
10/16/19	Mills Farm & Industrial	Venturacci Lane, UP Team Track	Fallon		in service
10/17/19	SS Hert Trucking Inc.	380 N. Taylor Street	Fallon	Steven Hert, Manager	in service
02/03/20	NV Wood Preserving (see below)	1680 Spruce Street	Silver Springs	Stella Jones	in service
01/14/20	UP team track, double-ended, 900 ft.	N. Highway 95Alt.	Yerington	truck driver	in service
02/03/20	Itronics Metalurgical, Inc.	N. Highway 95 Alt.	Mason Valley	Tracy	not used
various	Sierra Pacific Power (NV Energy)	1000 Sierra Way	Yerington	Johnny Hargrove	out of service
01/15/20	Hawthorne Army Depot	United States Army	Hawthorne	Johnny Peterson	in service
04/17/20	Oreana Energy LLC	leased UP track on NV Blvd	Lovelock	George Trabits, owner	in service
03/12/20	Winnemucca Farms Inc.	1 Potato Pl. Unit 1	Winnemucca	Sam Routser	in service
03/12/20	Sexton & Sons d/b/a Mezotrace	415 Wellington Street	Winnemucca	Dave Sexton, owner	not used
03/06/20	Interstate Oil Co.	ML: 50 Lillard Dr.	Sparks	Jeff Barnes	no track
10/25/19	Carlin Rail Terminal LLC	2001 Chestnut Street	Carlin	James	in service
02/20/20	Southwest Energy	Chestnut Street	Henderson	Thatcher Co. ended lease	in service
03/06/20	Komatsu Mining Corp.	4450 P&H Drive	Elko	Sterling Skinner	no track
03/04/20	Lemm Corporation--Operations	4141 Old Highway 40	Carlin	Marley Fac. Mgr.	in service
03/04/20	Blach Distributing Co.	131 W. Main Street	Elko	George Richards, whse	no track
03/13/20	Graymont Western US Inc.	15 miles NW of Wendover Pilot Exit 39	Wendover		in service
03/04/20	Al Park Petroleum Inc.	275 12th Street	Elko		in service
04/21/20	Southwest Energy LLC	Mobley Ranch Rd.	Golconda	Jenine Dalrymple	in service
03/05/20	Precast Management Corp.	HQ: 3664 Susana Street	Las Vegas	David Wallis, Pres.	no track
03/04/20	Certainteed Gypsum Manufacturing Inc.	Highway 159	Blue Diamond	Damian Nottingham	no track
03/04/20	Southern Glazer's Wine & Spirits	8400 S. Jones Blvd.	Las Vegas	Ian Staller, EVP & GM	easy build
03/10/20	Americold Logistics	830 E. Horizon Dr.	Henderson	Jack Wilson, Plant Mgr.	easy build
04/27/20	Rugby Architectural Bldg. Products	3585 W. Diablo Rd. Ste. 6	Las Vegas	Carol	no track
04/27/20	Steel Engineers Inc.	716 W. Mesquite Ave	Las Vegas	Keith in Shipping to call back	not used
04/27/20	Nevada Ready Mix Corp.	601 W. Bonanza Road	Las Vegas	Larry Miller	in service
04/27/20	On Time Oil LLC	715 W. Bonanza Road	Las Vegas	receptionist asked	not used
04/27/20	Keenan Pipe & Supply	831 W. Bonanza Road	Las Vegas	?	in service
04/27/20	Remac Inc.	2123 W. Bonanza Road	Las Vegas	?	no track
05/05/20	Parker Plastics	4700 Engineers Way	N. Las Vegas	Brad Hayes, VP Finance	not used
05/05/20	Lighthouse Holdings dba L/H Logistics	4501 Mitchell Street	N. Las Vegas	Ms. ?	in service
04/29/20	Tri-Dim Filter Corp.	4980 Statz Street	N. Las Vegas	Luciano Rielman	not used
04/29/20	CalPortland Company	4938 Donovan Way	N. Las Vegas	Jamie Padia	in service
04/20/20	Strategic Materials Inc.	4910 Donovan Way, Ste. A	N. Las Vegas	referred to Jamie Padia	in service
04/20/20	Las Vegas Paving Corp.	4910 Donovan Way	N. Las Vegas		in service

Date of Visit or Call	Name	Address	City	Contact	Sidetrack Status
04/20/20	Thermo Fluids (div. of Clean Harbors)	4910 Donovan Way	N. Las Vegas	Kathy ref. to Samantha	in service
03/10/20	ProPetroleum Terminal	4800 El Campo Grande Ave.	Las Vegas	Mark Lytle	in service
various	Rebel Oil Company	5095 E. El Campo Grande Ave.	Las Vegas	Jason Case, Caitlin Scherr	in service
05/01/20	Plastic Express		Moapa	Tom McKellar, VP Rail	in service
05/01/20	Ecology Recycling Services LLC	ML: 785 E. M Street	Colton	Laney Jr.	no track

Land Development Progress Assessment Form

Land Development Progress Assessment

Development Name _____ Date _____

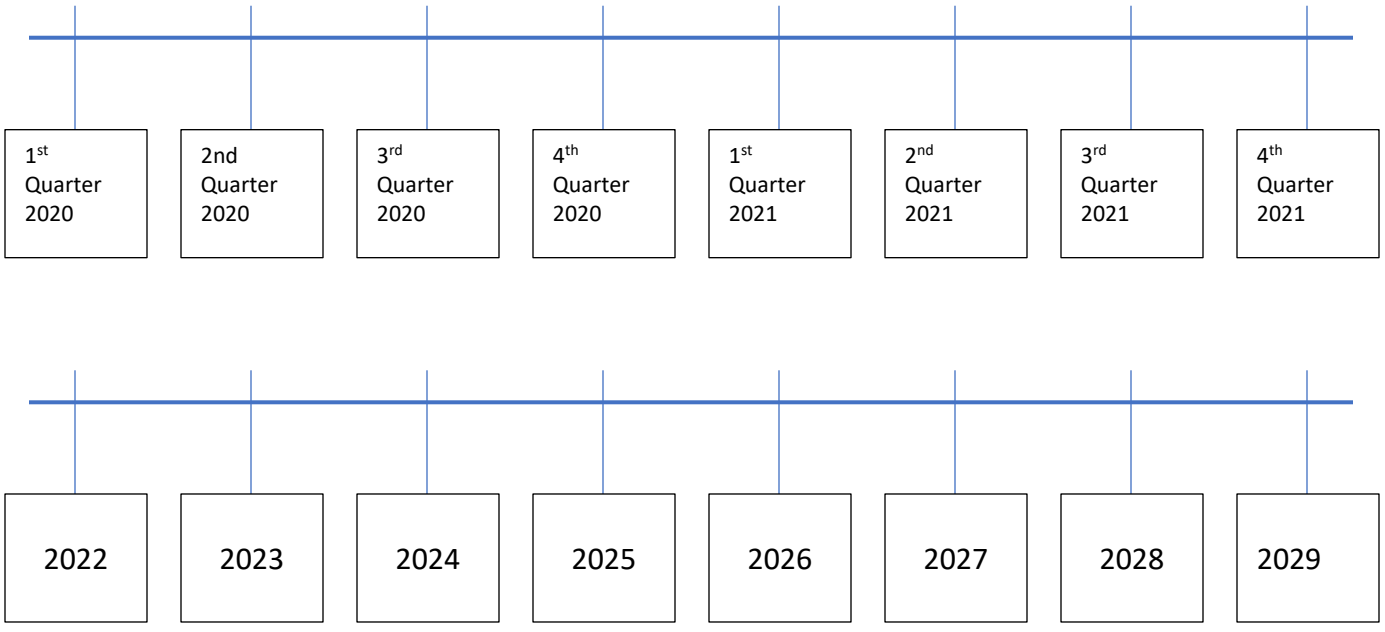
Individual Name _____

Status

Existing Pre-development Development

Remaining permitting:

Projected opening



Project Description

Acres under control:

Acres under option:

Acres teed up (can remain confidential):

Description of project focus, including targeted markets and targeted services:

Square footage of industrial space projected:

Percent of industrial space to be rail-served:

Percent of acreage to be rail-served:

Water rights status (including both supply and sewer):

Electric, gas, geothermal, and internet access:

Rail Status

ROW existing: Yes No

Track distance to mainline rail:

Industrial lead track status:

In place? Yes No

Accessible Yes No

Impediments or challenges:

Is it rail engineered? Yes No

Comments:

UP site plan approval status:

No 10% 30% 60% 100%

Geographic advantages and challenges e.g. - If not flat, what is maximum grade?:

Capital Status

Predevelopment funding:

In-house Teed Up Need Support

Development funding:

In-house Teed Up Need Support

Rail Funding:

In-house Teed Up Need Support

Comments:

Management Team Status

Management Strength-competency

Short-handed Adequate Strong

Management drive-personal energy, time, and commitment

Short-handed Adequate Strong

Rail Experience:

None Minimal Significant Operator selected

Other Comments:

Fernley Multimodal Freight Facility Feasibility Study

Fernley Multimodal Freight Facility Feasibility Study

September 18th, 2020

STRATEGIC RAIL FINANCE

1700 Sansom Street, Suite 500
Philadelphia, PA 19103
(215) 564-3122

NNDA Northern Nevada Development Authority

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A. Introduction

The Nevada Department of Transportation, recognizing that the City of Fernley region was in line to experience the next surge of Nevada commercial land development, requested Northern Nevada Development Authority services to determine how the public sector can encourage and support freight-based economic development.

The Fernley region promises to be well-positioned for a multimodal freight facility with existing and future freight rail capabilities as the core. The objective of this Feasibility Study is to research the achievability and practicality of such a multimodal freight facility in the study region, qualify Fernley as the optimal location for a facility and assess the potential economic impact on the surrounding region.

While the focus of the project is Fernley, Hazen, Fallon, Silver Springs, and the Tahoe-Reno Industrial Center, it is important to understand the logistics dynamics, needs, and opportunities of nearby Mineral County and points east along the I80 corridor to determine the full set of shipper needs that new rail infrastructure can serve. This wider regional understanding has been developed through a combination of this engagement and the ongoing work on the new Nevada State Rail Plan.

The deliverable for this Fernley Multimodal Facility Freight Feasibility Study engagement is a report that communicates a set of recommendations and related background for a multimodal freight facility and related rail infrastructure and services that can be built and provided in the primary study area. This discrete Fernley Study will also be incorporated into the Nevada State Rail Plan. Rail infrastructure and service recommendations outside of the primary study area will be advanced and covered in the state plan.

SRF early-on ascertained that there are twelve private-sector land development projects underway in the region that all feature freight-generating industrial activity. Discussions with NNDA resulted in alignment on these key engagement elements:

- Support these private-sector project sponsors with logistics knowledge and relationships with transportation providers is a productive use of limited public-sector resources
- Identify ways for the Fernley region to become a rail-centric hub of intermodal and bulk cargo shipping to and from the California marketplace and its ports
- Develop a multifaceted industrial logistics strategy that is attractive to shippers and transportation providers across multiple states
- Prepare for interactions with Union Pacific Railroad and BNSF Railway to secure optimal services, routing, and pricing

B. Executive Summary

This feasibility study illustrates there is a commercial business case for an Integrated Multimodal Cargo Transfer Facility (IMCTF) in the study region and identifies Fernley as an optimal location for siting the development. An IMCTF is a design for an "Inland Port" or "Intermodal Facility" that stimulates freight-based commercial activity beyond the transfer of containers from one mode to another and is described in detail in this report.

Implementing an IMCTF in northwest Nevada is an opportunity to transform freight transportation in the region by creating a sustainable system which balances the use of truck and rail. The IMCTF will also be a catalyst for industrial development, offering cheaper and more flexible transportation options for new companies attracted to the industrial land available in the region.

B.1 Freight flow conversion and generation

The business case analysis demonstrates the commercial viability of the IMCTF and its role in converting existing truck movements to intermodal truck/rail and generating new intermodal activity.

The primary opportunity for truck to rail freight conversion is associated with existing through-state international and domestic truck service between the California port regions and states east of Nevada. This bi-directional flow presently accounts for 1.39MM annual truck journeys carrying 26.9MM tons of freight. Significant portions of this through-freight would be attracted by the reduced costs and improved service to an IMCTF in northwest Nevada. Farm and food product commodities are a leading freight category targeted for this conversion from road to rail.

Another category of existing freight flows the IMCTF could convert from road to rail are extractive commodities transported from northwest Nevada to California. On this freight corridor the commodity categories of clay, concrete, glass, stone, and non-metallic minerals presently account for 1,000,000 truck journeys of which 50% are empty return trips. While a rail freight corridor already exists for the transportation of these commodities it handles only a fraction of total volume. Our initial analysis indicates that an IMCTF facility in northwest Nevada would support the conversion of a significant volume of the 11MM tons of this freight currently being trucked to California onto rail.

The IMCTF will go beyond supporting the conversion of existing and future truck freight flows to rail. We estimate, based on analysis and interviews with developers and shippers, a generative effect from the new facility. New companies locating in the Fernley area will be attracted by the opportunity to reduce transportation costs and optimize their supply chain performance by utilizing the IMCTF facility.

B.2 Fernley: The optimal location in the study region

An effective and sustainable intermodal freight facility needs to be strategically located on a major transportation corridor where truck cargo/shipments intersect with primary rail lines and has large-scale land available for cargo handling expansions. The study region is therefore ideally positioned for an Integrated Multimodal Cargo Transfer Facility (IMCTF) and Fernley is the obvious location due to the combination of available land and adjacencies to I-80, U.S. 95, and the Union Pacific Railroad. Our analysis identifies that Fernley is the sole area between the California border and Hazen with sufficient available space, and flat topography, in a commercial development zone, located aside the primary rail and highway network.

B.3 Strategic Partnership with Port of Oakland

The study highlights that developing an IMCTF facility introduces the opportunity for a strategic transportation partnership with the Port of Oakland. Analysis of truck traffic passing through the study region identifies a compelling business case for deflecting existing freight flows bound for Los Angeles ports to the Port of Oakland via an IMCTF at Fernley. Exploratory dialogue with the Port of Oakland captured their enthusiasm for supporting rail-based development in Northern Nevada to deflect a proportion of these 1,250,000 annual truck journeys from the Los Angeles ports. The Port of Oakland specifically identifies short haul rail serving Nevada distribution centers as a strategic initiative, offering the potential for a partnership with the port to develop existing and new freight flows. An alternative to the congested Los Angeles ports would make the IMCTF facility hugely attractive to shippers on one of the nation's highest volume trade corridors resulting in growing business for the facility and the Port of Oakland.

B.4 Competitive advantage of the IMCTF

The study recommends NNDA support the development of an IMCTF facility to serve the needs of today's diverse supply chains. The IMCTF has a competitive advantage over traditional intermodal facilities at ports or elsewhere, which are generally limited to container freight and have little or no logistics transloading capacity. Existing facilities at California ports or inland sites east of Nevada, do not have this capability nor the capacity to develop it. Case study analysis in the Business Case section of this study suggests transportation costs savings of between 15% and 20% when shippers have access to an IMCTF compared to a traditional multimodal facility.

B.5 Catalyst for industrial development and land revaluation

In contrast to many new transportation infrastructure projects, the proposed IMTCF at Fernley is not dependent upon a freight-intensive anchor tenant to justify development. The large volumes of organic through-traffic with a real commercial business case for both the deflection and diversion of truck-based traffic to the facility are sufficient to make this project feasible. This is an important benefit of the IMCTF at Fernley generating significant upside for developers of industrial properties. The in-motion development of the facility and its attributes will catalyze new tenant attraction, as the intended value proposition of co-location to the IMCTF is clearly defined.

Industrial land values will reflect this enhanced attractiveness, encouraging developers to convert more land to industrial use and support expansion of economic development areas in the Fernley hinterland.

B.6 Ensuring sustainable economic development

Northwestern Nevada is experiencing increasing freight activity because of the surge of regional industrial development and from its position on one of the nation's major continental trade arteries. Over 75% of all freight in the study region is currently moved by truck accounting for more than 50% of all Nevada's truck journeys. Such an overreliance on trucks can negatively impact the economic value of a region as congestion, pollution and road maintenance costs increase to unsustainable levels. The development of an IMCTF facility at Fernley directly addresses this issue by enabling a far more sustainable transportation system. This study identifies that large scale conversion of existing freight flows will result from the availability of an IMCTF facility balancing the use of truck and rail appropriately and supporting the continued growth and prosperity of the economy in northwest Nevada.

B.7 Critical Success factors

The study identifies three critical success factors for the IMCTF project to deliver the sustainable freight system envisaged by the NNDA:

1) A diversified IMCTF model that offers cargo transload options in addition to modal transfer is necessary to maximize the freight facility's utility for generating freight volume and ancillary freight activity.

2) A degree of public sector sponsorship is important for a project of such strategic importance to the region. This will assure developers and shippers of the long-term commitment to a facility crucial to their freight transportation and business operations. This sponsorship can take the form of financial, technical, managerial, or political support.

3) The third critical success factor is effective stakeholder engagement. Developing the IMCTF and ensuring its sustainable operation is dependent on the involvement and support of many stakeholders including rail operators, land developers, shippers, freight forwarders and 3PLs, and California port operators. As these stakeholders will have distinct and sometimes divergent priorities, the process of alignment is vital to the project's success.

B.8 Trusted Partners

The migration to a sustainable freight system in northwest Nevada can be accelerated with a Fernley-area IMCTF at its core. However, simply building the facility will not transform existing freight flows or engender the new use of rail for freight movements into, out of, and through the region. Multiple factors require attention and management during the implementation phase.

We recommend contracting a specialist organization with experience in the rail industry, logistics, stakeholder engagement, project management, financing, and land development in order to realize a sustainable freight system in northwest Nevada.

C. The Current Freight Picture – Fernley and Northwest Nevada

The region of Fernley, Hazen, Fallon, Silver Springs, and eastern Sparks is experiencing a surge in commercial development with over 160,000 acres of existing and planned industrial park projects. In addition, there are many more acres of confidential or smaller industrial developments also underway or planned in the region.

Table 4-1: Region 5 Industrial Parks Under Development

Industrial Parks in Fernley-Hazen-Fallon-Silver Springs-Sparks			
Name	**Acreage**	**Location**	**Distance from Rail**
Pyramid Commercial Center*	3,333	NW of Wadsworth	2 mi., former R-O-W
Victory Logistics	3,894	NE of Fernley	Abuts 2 branch lines
Tahoe Reno Industrial II	6,345	SW of Fernley	3 mi. to closest parcel
Northern Nevada Industrial Center	20,251	Stagecoach	7 mi. to Mina Branch
Silver Springs Opportunity Fund	2,746	Silver Springs	½ mi. to 4 parcels
Geothermal Rail/Dark Horse Rail	3,177	NW of Hazen	2 parcels abut main line
Western Nevada Rail Park	226	NW of Hazen	In operation on main line
Churchill Hazen Industrial Park	2,308	S of Hazen	Abuts 2 branch lines
Lahontan Rail Industrial Park	620	NE of Silver Springs	Abuts Mina Branch
Tahoe-Reno Industrial Center	19,749	Storey County	Limited rail is present
Innovation Park	67,000	Storey County	Rail is adjacent
40-Mile Desert Project	25,000	Churchill County	Abuts UP main east of Hazen
Unnamed project, City of Fallon*	3,625	NW of Fallon	1 mi to Fallon Branch
Unnamed project, City of Fallon*	3,070	NE of Fallon	1 mi to Fallon Branch
Total	**161,344**	**acres**	

**land deals not finalized*

Integrating these Fernley area developments with rail infrastructure and service is important to the state as well as the country, given their size and location on the corridor to and from California. For reference, the entire land mass of Salt Lake City, UT is 70,000 acres and San Francisco, CA covers 71,000 acres.

While some land and economic development leaders do not consider rail service to be a salient selling point, most of the current project sponsors are working on rail-served industrial parks. Even those developers that have been low-key about rail in the past are expressing their interest in providing rail service to enhance the attractiveness of their properties.

Branch line in the Tahoe-Reno Industrial Center

Innovation Park is the name for the 67,000-acre development planned by Blockchains, Inc. acquired from the developers of the Tahoe-Reno Industrial Center. The brand may be in the process of also being applied to the 20,000-acres remaining within the Tahoe-Reno Industrial Center. Its total land mass of 107,000 acres makes it one of the top three largest industrial parks in the world.[1] The Tahoe-Reno Industrial Center is a vibrant industrial park, yet largely dependent upon trucks for freight. Of its 35 tenants with shipping needs of at least truckload quantities only 6 (17%) use rail. Our analysis suggests only 2-4% of freight flowing into and out of this development utilizes rail. Tesla, for instance ships an average of 52 truckloads of auto parts per night (round trip) from its Gigafactory over the Donner Pass to its assembly plant in Fremont, CA. The Fremont facility already has adjacent rail, and a routing for a new 2.5-mile spur to connect the Gigafactory to rail has been identified. This one project would enable the elimination of 36,400 truck trips a year on I-80 through Sparks, Reno, and northern California.

[1] World Atlas website, "The World's Largest Industrial Areas" article, source link, published June 10, 2019.

Key Strategies

- Support existing industrial parks and shippers in connecting to rail by attending to their specific logistics requirements and current rail infrastructure.
  In our engagement with land developers some believed rail could not be constructed to their properties. Months of dialogue in the Region uncovered a series of conflicting beliefs about where in the Tahoe-Reno Industrial Center rail could and could not be constructed and used, due to possible steep grades, tight curves, or poor engineering and construction. However, track inspection has shown the existing track to be adequate for servicing the park's tenants located adjacent to the rail corridor and topographical analysis conducted by the NVSRP team and NDOT in 2020 has identified a viable route to connect the remainder of the park tenants to rail, including Tesla, as well as the nearby Innovation Park acreage.

- Support new land developers in the Fernley/Hazen/Fallon/Silver Springs corridor in their efforts to develop rail service.
  The high number of vast land developments underway in Region 5 presents one of the state's most urgent opportunities to improve economic well-being and environmental sustainability through the logistics efficiencies of rail. Continuing the engagement with new land developers in this part of the region is needed to encourage their utilization and promotion of rail freight service in their industrial developments. It is crucial to continue to provide on-going support to these developers as they navigate the often-challenging process of dealing with railroads, tenants, federal government, state entities and other stakeholders when trying to enable rail service to their sites.
  One 4,000-acre development in the region was operating under the misunderstanding that a viable rail connection could not be constructed to their property. NDOT and the NVSRP team's preliminary topographical analysis has established two rail right-of-way alignments that could be used to build in rail service. This is a major opportunity for the region to secure rail freight service and address the current over-dependence on trucking freight because of the large scale of these new industrial sites. The largest land developers in Region 5 contacted by SRF have indicated they see rail as a core element of their land development. The developments that were accounted for via Land Development Project Assessment forms (Appendix Item) completed by developers include approximately 40,000 acres of land with 9,000 acres of industrial space being available in 2021 and 2022. All these developers are located aside or close to the UPRR Main line and 75% have industrial lead track status in place or accessible. The majority also have their industrial sites rail engineered with Union Pacific approval in place.

- Complete a detailed business case analysis of Fernley Multimodal Freight Facility.
  In parallel to the NVSRP report, SRF has also completed a feasibility study for the Northern Nevada Development Agency (NNDA) (Appendix Item) The study concluded that locating a new multimodal freight facility at Fernley is commercially feasible and will result in a significant conversion of truck freight to rail. The feasibility study identifies the potential for:

1) conversion of existing through-region truck freight,

2) conversion of existing truck freight out of the region, and

3) generation of new out of region freight flows.

The study proposes an Integrated Multimodal Cargo Transfer Facility (IMCTF) model for the Region to maximize the economic benefits of freight rail utilization. Unlike traditional multimodal terminals which are focused on container freight, the IMCTF model accommodates multiple freight types and a large land footprint. These aspects are important because the Fernley IMCTF will be able to capture the regional demand for mining and manufactured freight as well as containers. The additional land capacity of the Region is also a key factor as it enables the Fernley facility to offer extended freight services such as transloading and warehouse operations.

- Focus on rail development opportunities along the Fallon Branch, especially near the town of Fallon
- Reinstitute commercial service on the Mina Branch to Hawthorne, thereby stimulating rail activity that can utilize new logistics services in Fernley area
- Continue and expand stakeholder engagement and collaboration

This region is currently dominated by truck freight, accounting for 90% of all current freight flows. Although this report has identified major opportunities for increasing rail freight traffic, supported by land developers openly encouraging rail development, successfully achieving this potential will be dependent upon numerous stakeholders. Stakeholder engagement and collaboration is therefore of crucial importance.

A Guide to Region 5 Industrial Park Insets

The following nine maps, beginning with an overview map of all major industrial developments (Tim Tucker's planned 40-mile Desert Project is not shown) zoom in on the planned industrial parks listed previously. Region 5 is a hotbed of such activity due to the proximity of California and the lack of such large areas of developable land to the west in Region 6. Intense pressure on I-80 from traffic congestion, pavement degradation, and the incidence of truck accidents can be relieved through the proactive facilitation of rail service into these developments.

Figure 4-1: Region 5 – Industrial Parks

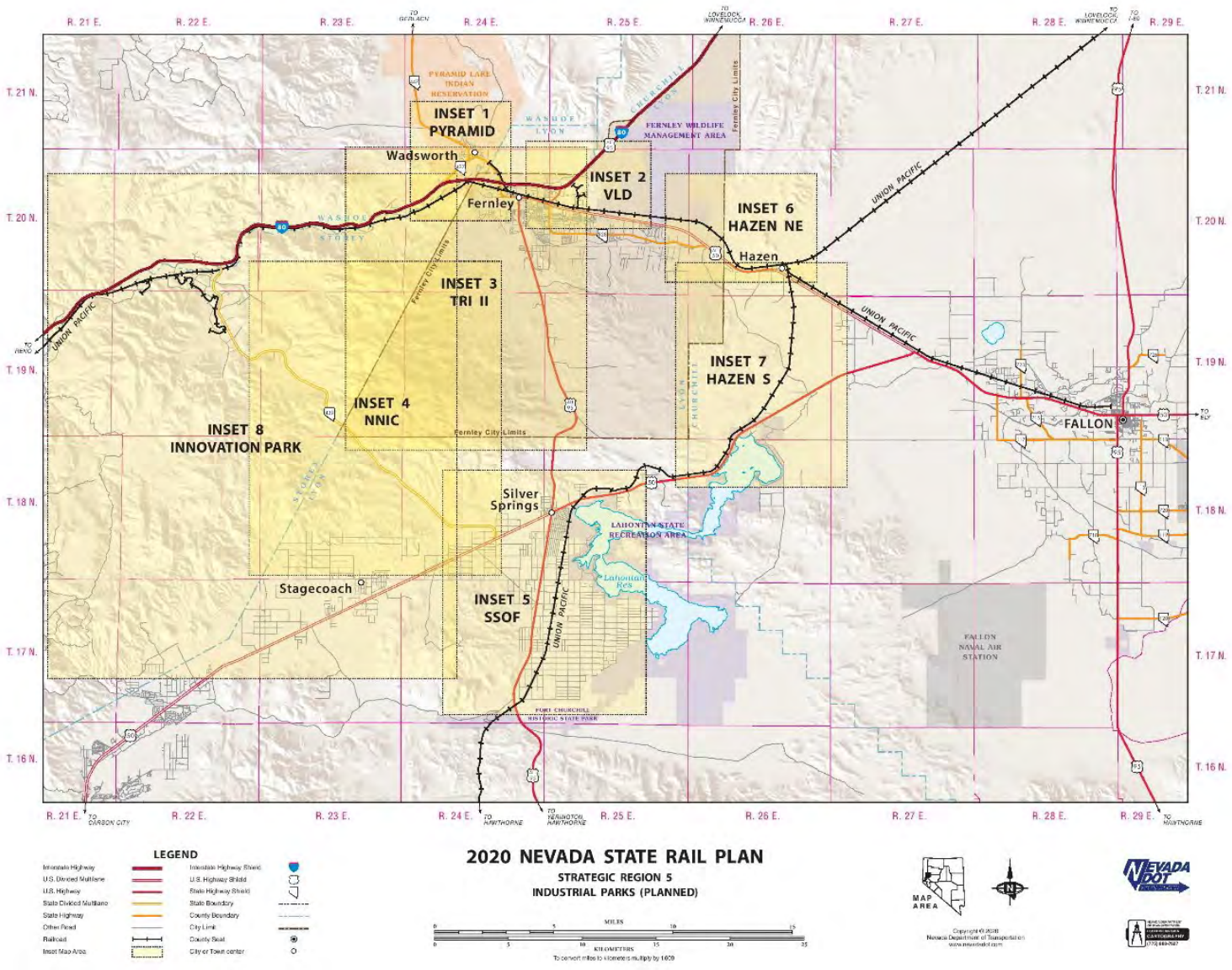


Figure 4-2: Region 5 – Pyramid Commercial

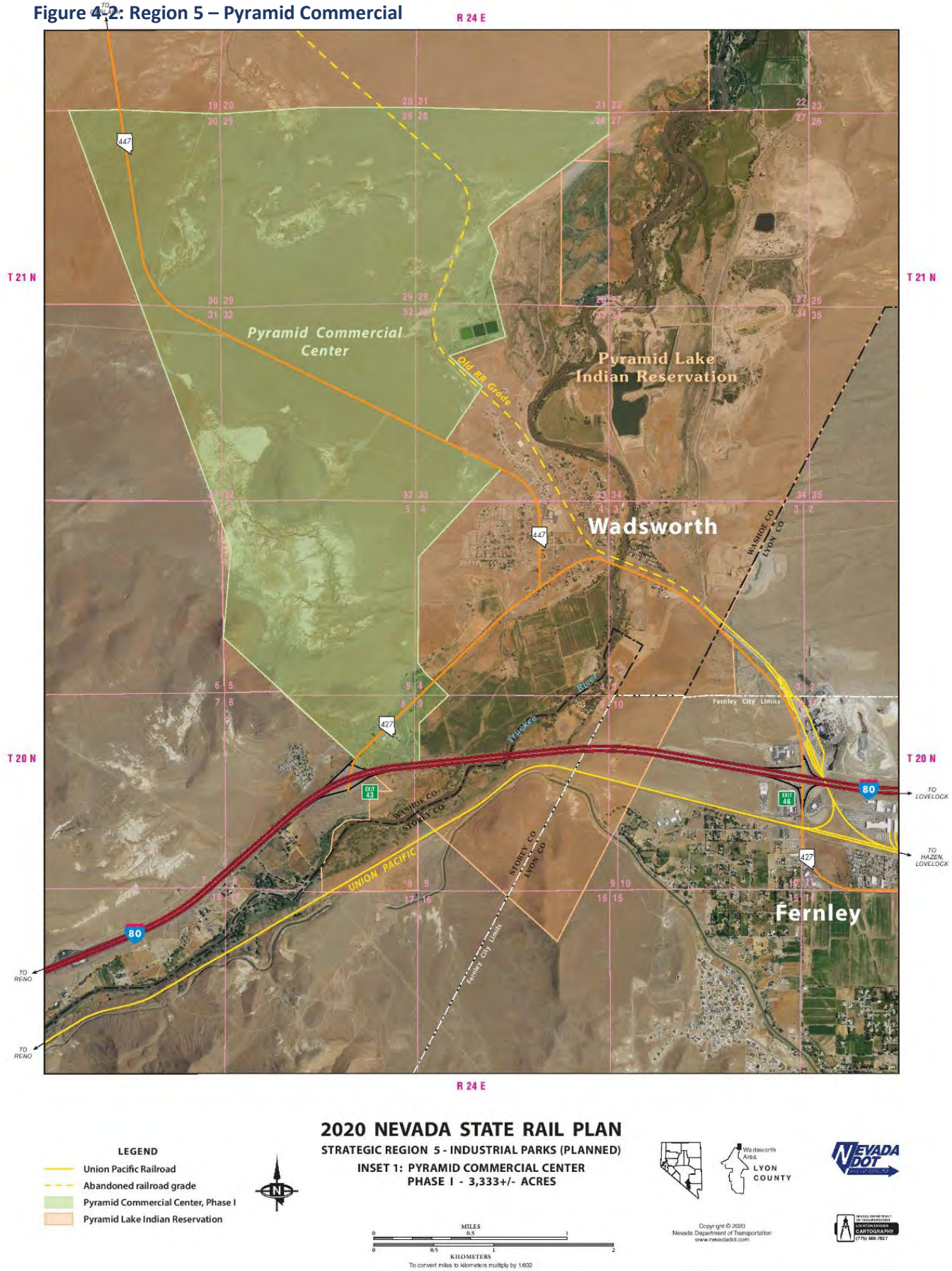


Figure 4-3: Region 5 – Victory Logistics District

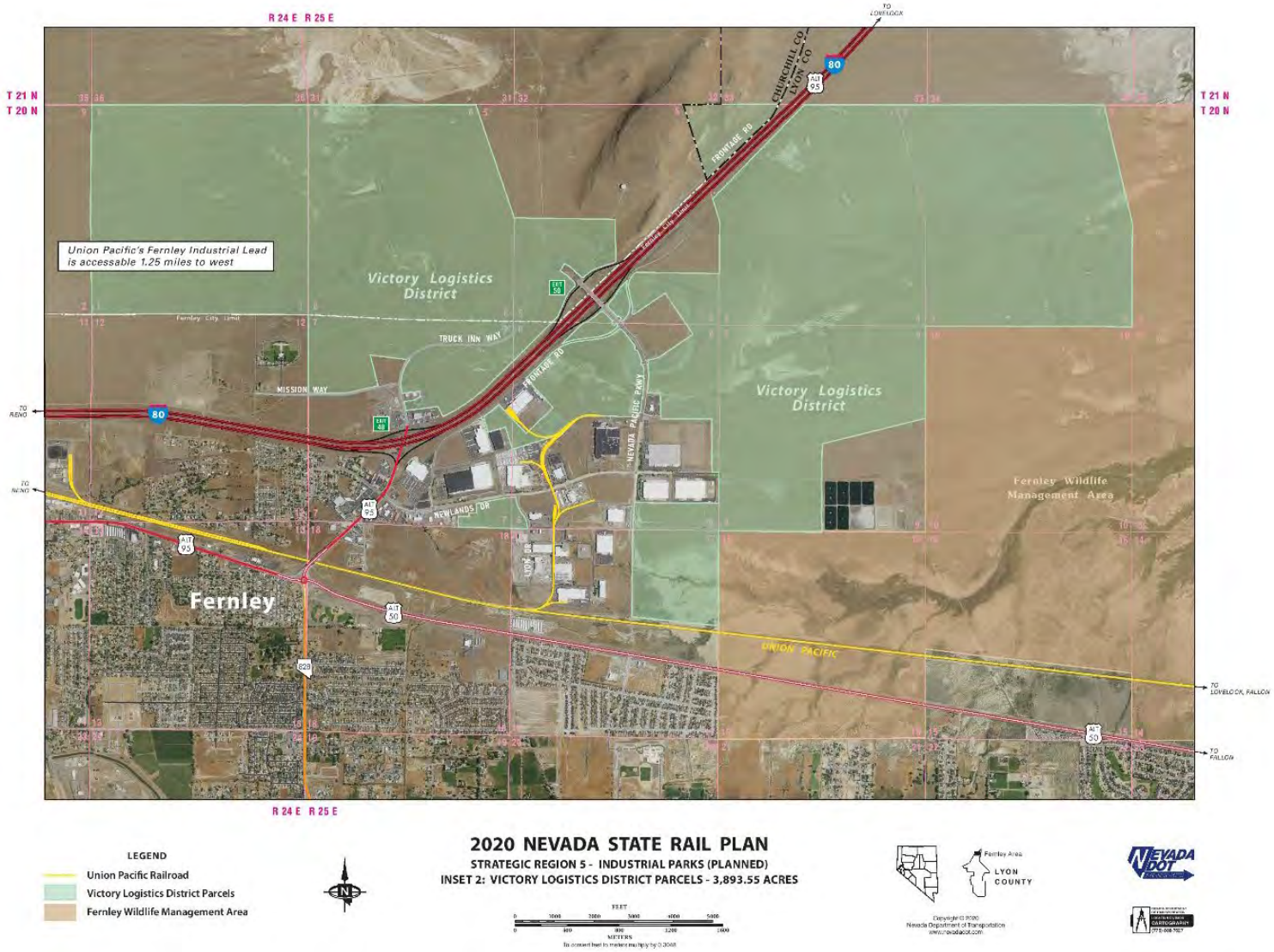
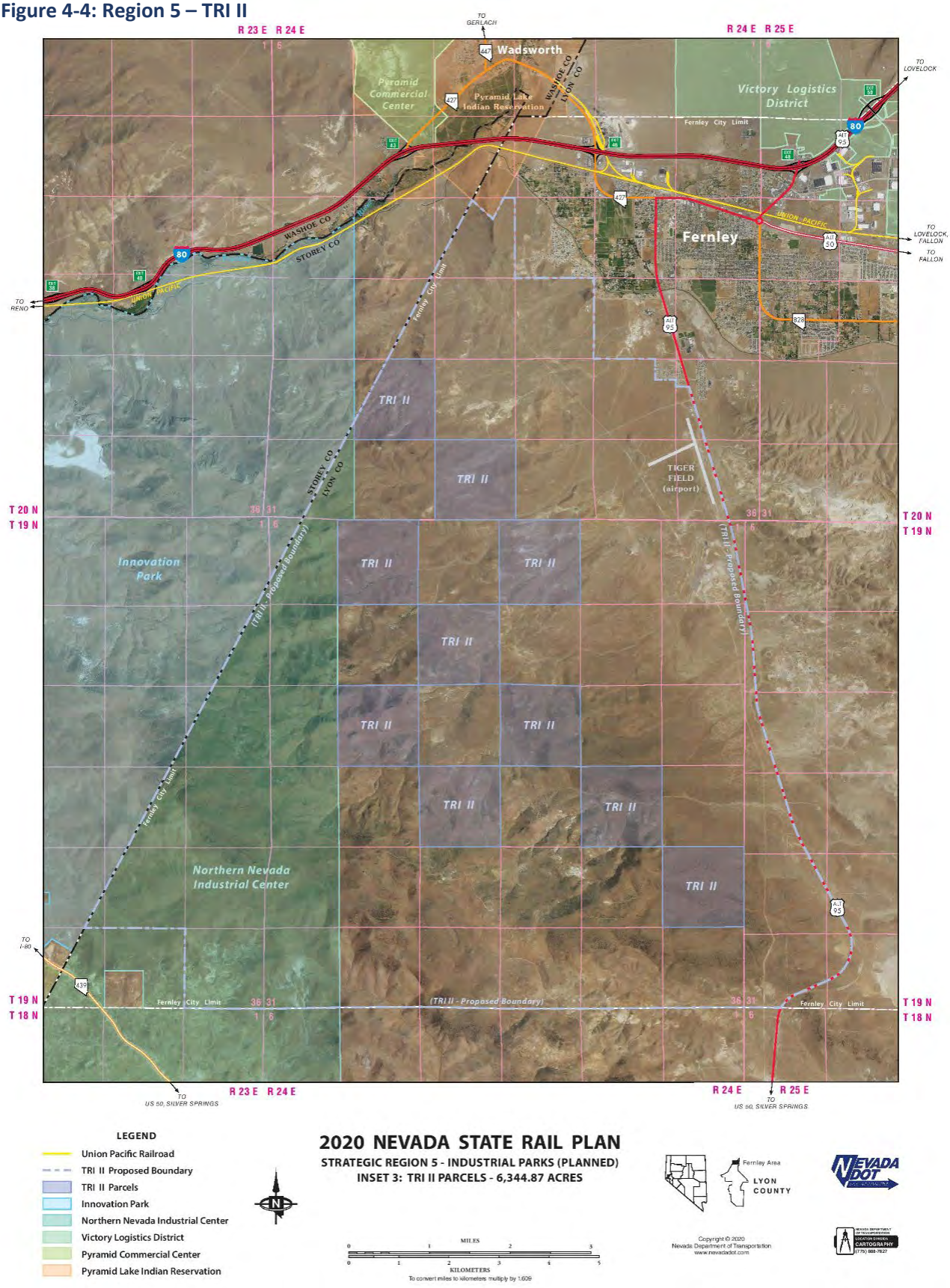


Figure 4-4: Region 5 – TRI II



LEGEND

- Union Pacific Railroad
- TRI II Proposed Boundary
- TRI II Parcels
- Innovation Park
- Northern Nevada Industrial Center
- Victory Logistics District
- Pyramid Commercial Center
- Pyramid Lake Indian Reservation

2020 NEVADA STATE RAIL PLAN

STRATEGIC REGION 5 - INDUSTRIAL PARKS (PLANNED)

INSET 3: TRI II PARCELS - 6,344.87 ACRES

Fernley Area
LYON COUNTY

MILES
KILOMETERS
To convert miles to kilometers multiply by 1.609

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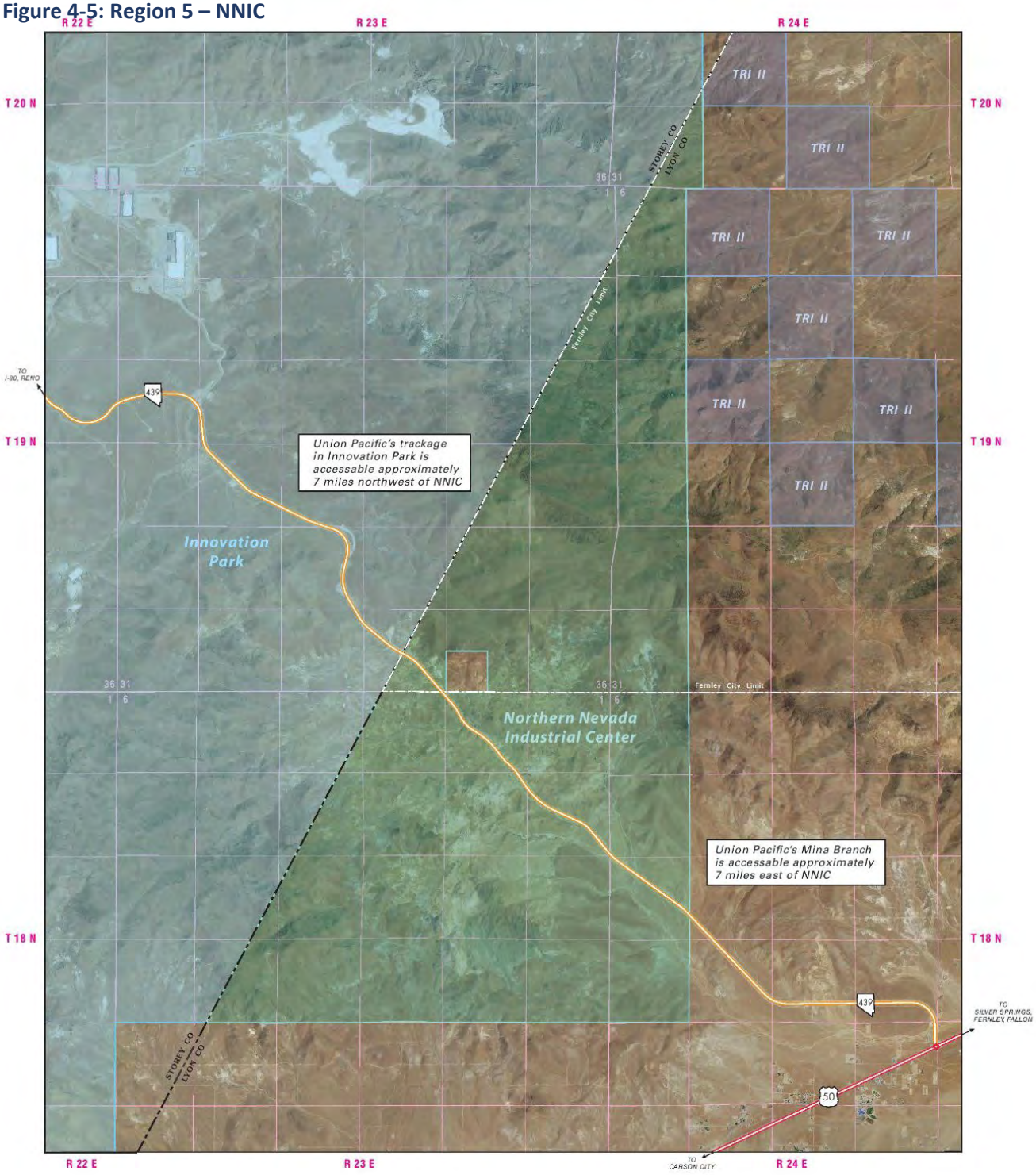
Figure 4-5: Region 5 – NNIC



2020 NEVADA STATE RAIL PLAN

STRATEGIC REGION 5 - INDUSTRIAL PARKS (PLANNED)

INSET 4: NORTHERN NEVADA INDUSTRIAL CENTER PARCELS - 20,251 ACRES

LEGEND

- Northern Nevada Industrial Center (NNIC)
- Innovation Park
- TRI II Parcels

Northern Nevada Industrial Center Area

LYON COUNTY

MILES 0 1 2 3

KILOMETERS 0 1 2 3 4 5

To convert miles to kilometers multiply by 1.609

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Figure 4-6: Region 5 – SSOF

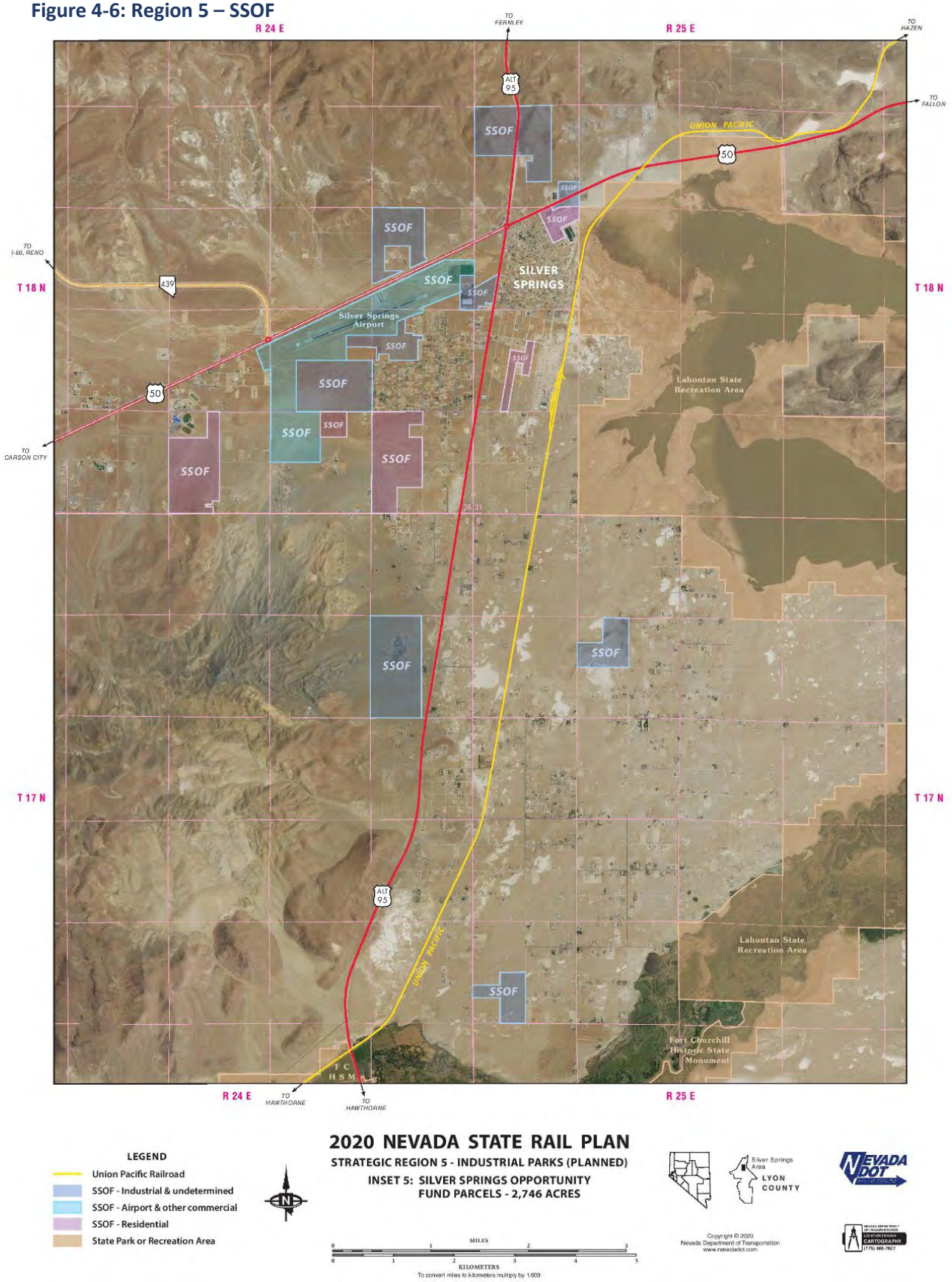


Figure 4-7: Region 5 – Hazen NW

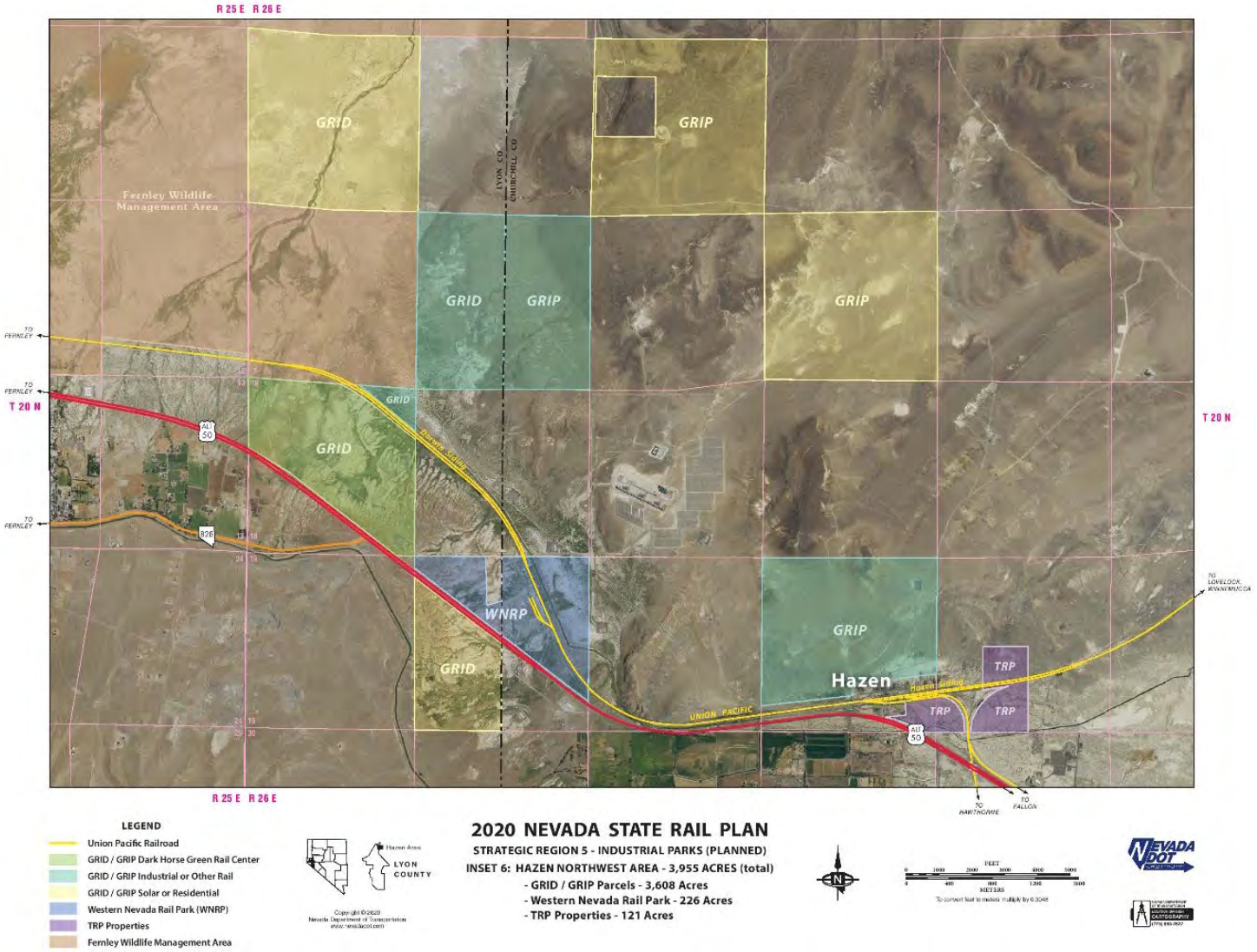
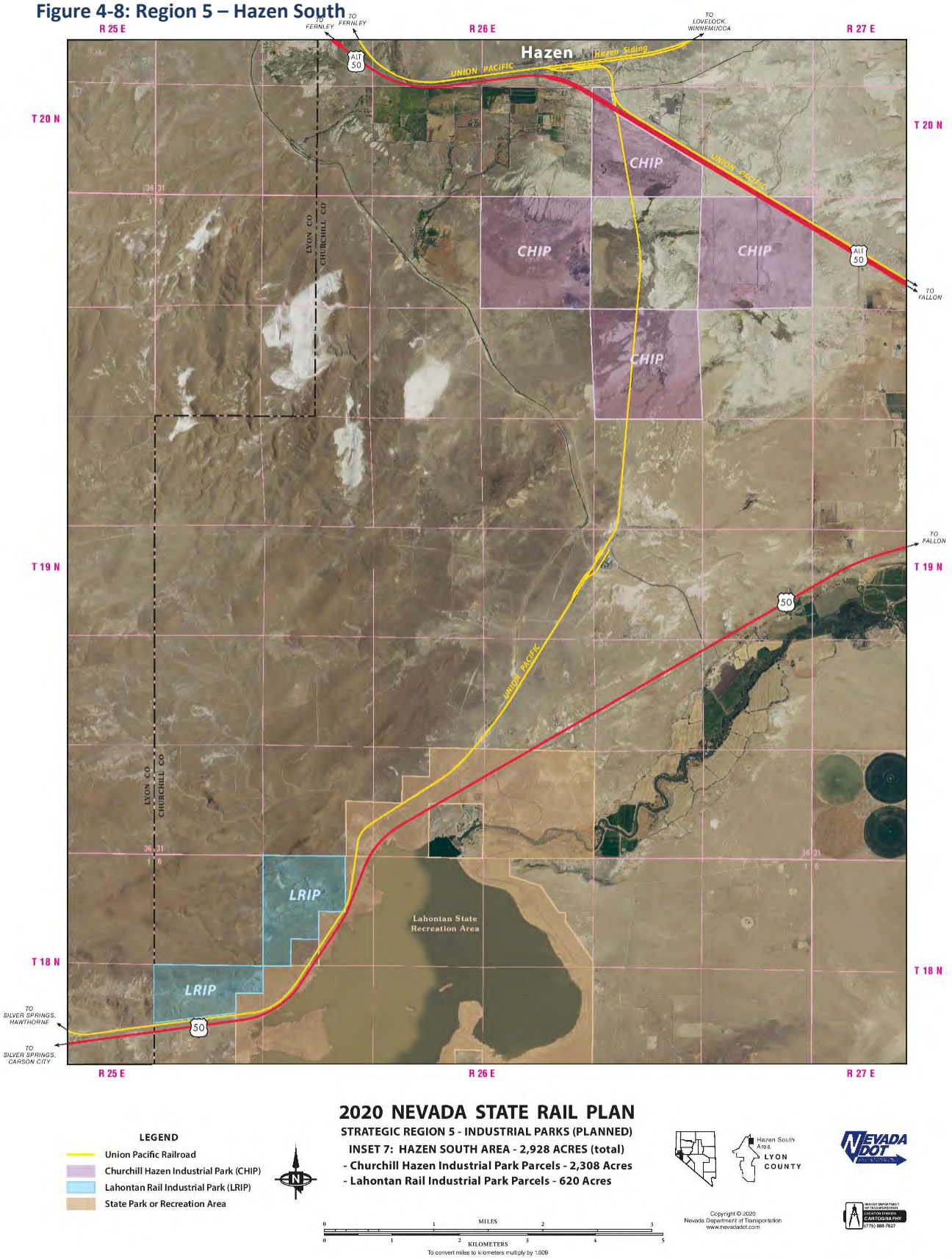


Figure 4-8: Region 5 – Hazen South



2020 NEVADA STATE RAIL PLAN

STRATEGIC REGION 5 - INDUSTRIAL PARKS (PLANNED)

INSET 7: HAZEN SOUTH AREA - 2,928 ACRES (total)

- Churchill Hazen Industrial Park Parcels - 2,308 Acres
- Lahontan Rail Industrial Park Parcels - 620 Acres

LEGEND

- Union Pacific Railroad
- Churchill Hazen Industrial Park (CHIP)
- Lahontan Rail Industrial Park (LRIP)
- State Park or Recreation Area

Hazen South Area
LYON COUNTY

MILES 0 1 2 3
KILOMETERS 0 1 2 3 4 5
To convert miles to kilometers multiply by 1.609

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Figure 4-9: Region 5 – Innovation Park

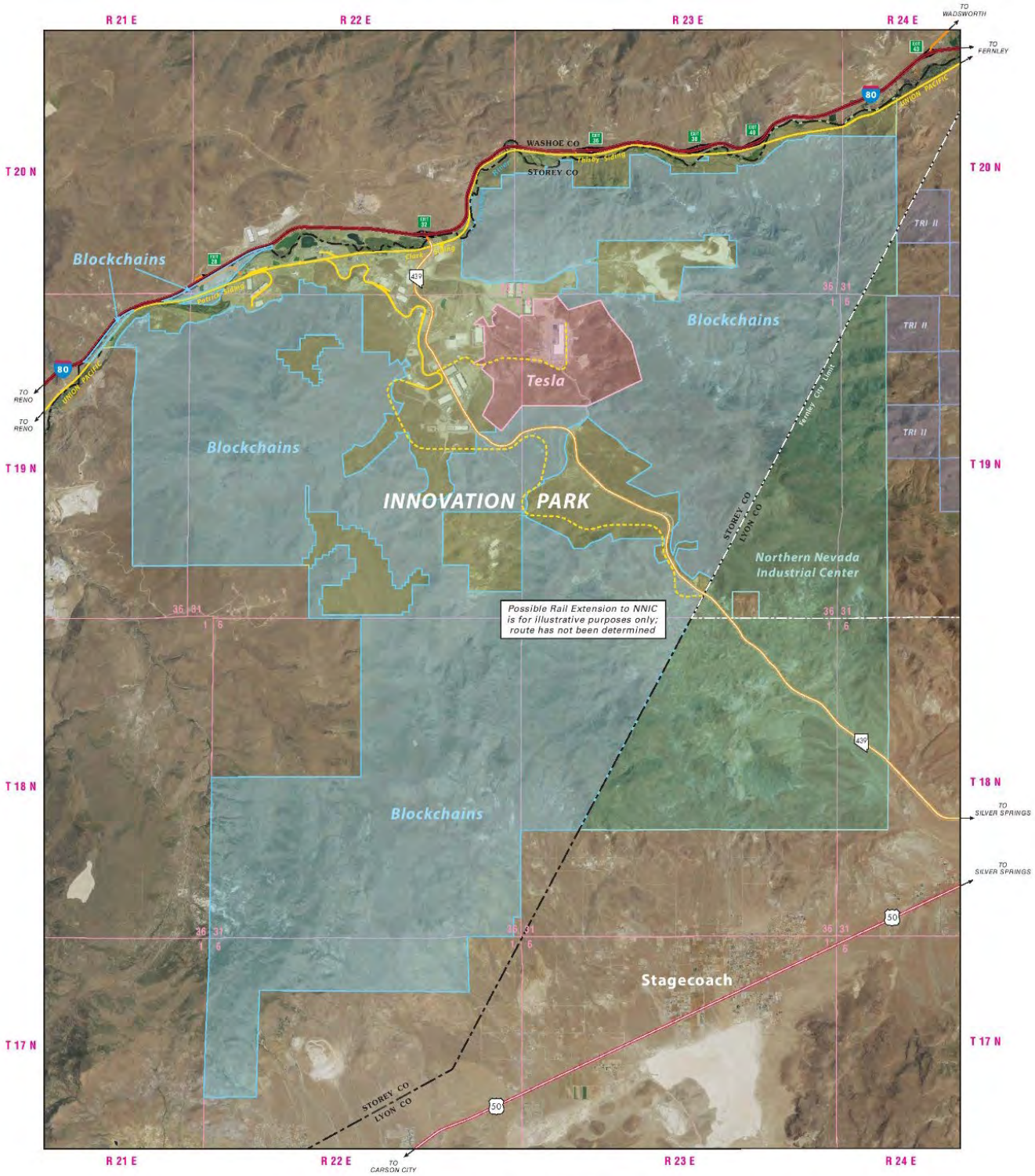
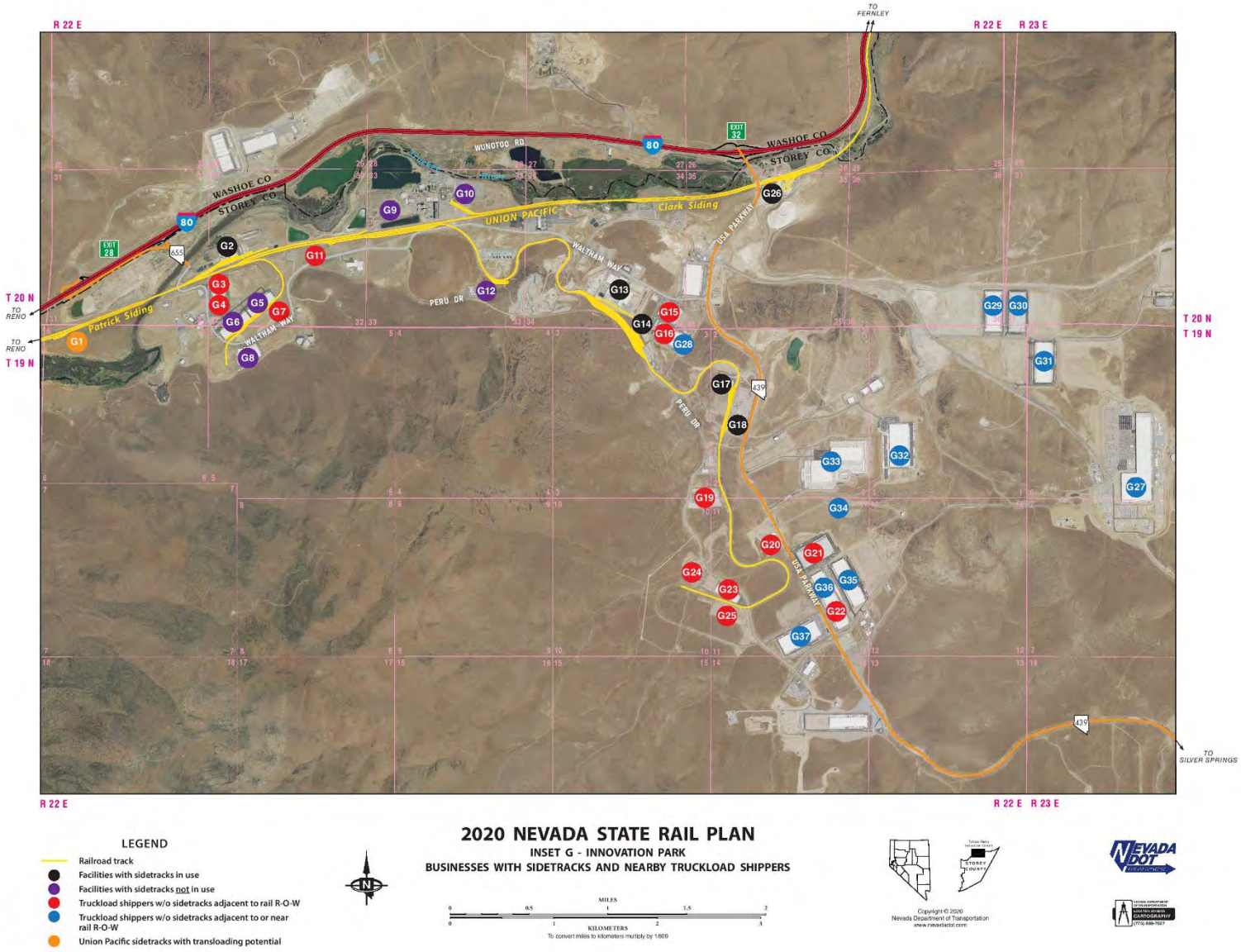


Figure 4-10: Innovation Park-Tahoe Reno Industrial Center (Inset)



The above map and the following map show details of the existing rail infrastructure where existing and potential rail customers are clustered in Region 5. Notice that Tesla's Gigafactory (blue disk G27 in lower right), which ships an average of 52 truckloads per night via I-80 over the Donner Pass to Tesla's assembly plant in Fremont, CA, is only 2.5 miles away from an active branch line. The rail right-of-way for this connection (not shown) has already been set aside by the TRI General Improvement District and Tesla.

Figure 4-11: Fernley Northeast Area

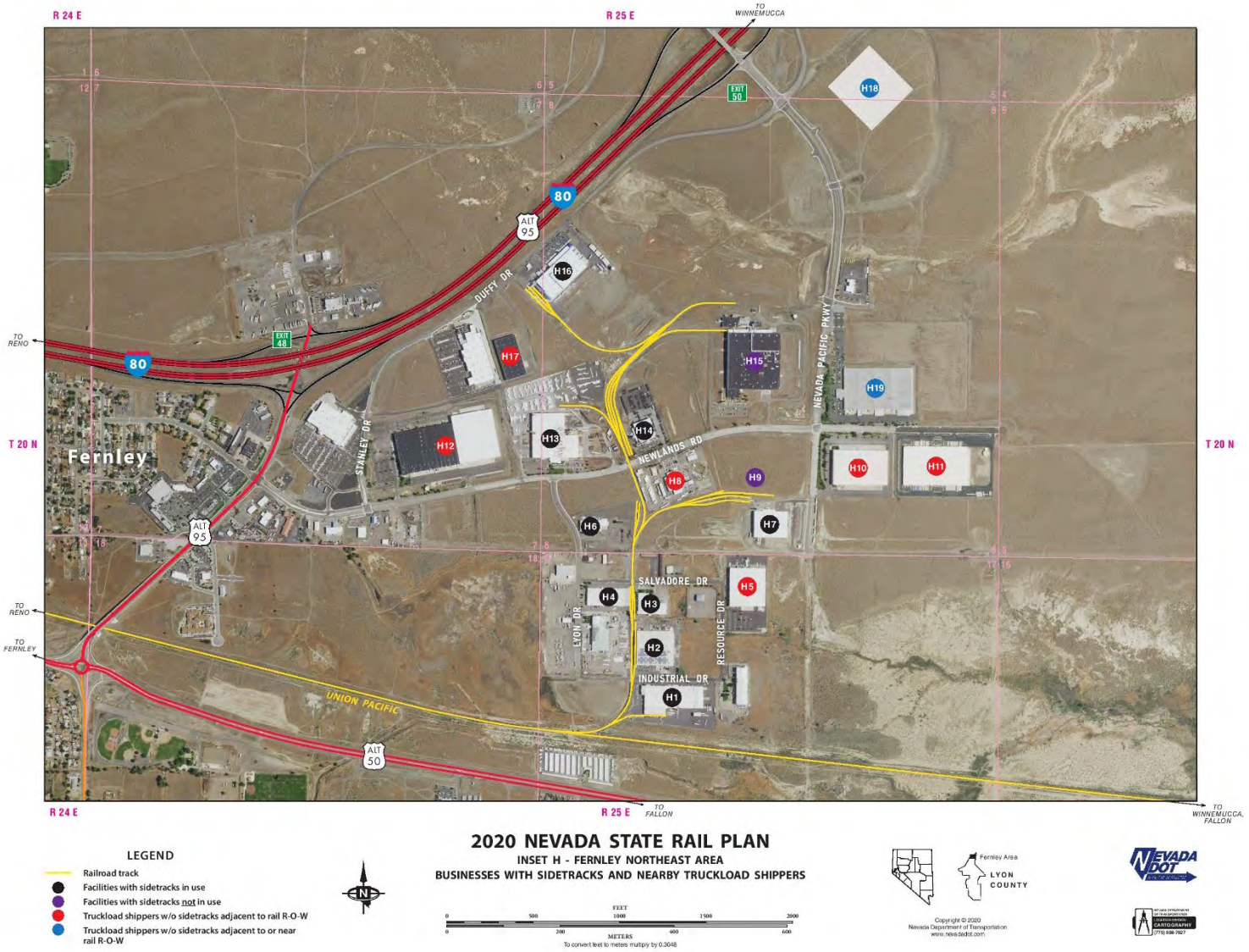


Table 4-2: Region 5 Project List

Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
40-Mile Desert Land Development	Churchill	Connect to UP main line	Rail Connection	TBD	0.1	$4,000,000	TOT, LLC	5	4
Lahontan Rail Industrial Park	Churchill	Connect to Mina Branch	Rail Connection	TBD	0.2	$400,000	TOT, LLC	5	4
Geothermal Resources Industrial Park	Churchill	Connect to UP main line	Rail Connection	TBD	0.1	$4,000,000	GRIP LLC	5	4
Limestone Mine	Churchill	Transloading site off main	Transload	specialized limestone	0.2	$4,000,000	Advanced Carbonate Technologies, LLC	5	4

Project Name	County	Short Description	Contracted Description	Commodities	Track Mi*	Cost	Company	Region	Horizon
Victory Logistics	Churchill	Connect to Fernley Industrial Lead Connect to LA Pacific Lead	Rail Connection	TBD	0.4 1.25	$4,000,000	Mark IV Capital	5	4
TRP Properties	Churchill	Connect to Fallon Branch	Rail Connection	TBD	0.1	$300,000	Omaha Track Hazen Project	5	4
Churchill Hazen Industrial Park	Churchill	Connect to Fallon Branch	Rail Connection	TBD	0.1	$300,000	TOT, LLC	5	4
Northern Nevada Industrial Center	Lyon	Connect to TRIC lead	Rail Connection	TBD	7	$14,000,000	Reno Engineering	5	4
Sierra Springs Opportunity Fund	Lyon	Connect 15-591-09 (120 ac.) Connect 15-581-03 (91 ac.)	Rail Connection	TBD	0.6 0.6	$2,000,000	Sierra Springs Opportunity Fund	5	4
Geothermal Rail Industrial Development	Lyon	Connect to UP main line	Rail Connection	TBD	0.1	$4,000,000	GRID LLC	5	4
Gigafactory Project	Storey	Connect to TRIC lead	Rail Connection	battery packs, drivetrains	2.5	$5,000,000	Tesla	5	4
Sierra Biofuels Plant	Storey	Connect to TRIC lead	Rail Connection	O/B syncrude feedstock	0	$0	Fulcrum BioEnergy	5	4
Innovation Park	Storey	Industrial Park	Rail Connection	TBD	0.1	$4,000,000	Blockchains, Inc.	5	4
Pyramid Commercial Center	Washoe	Connect to Fernley Industrial Lead	Rail Connection	TBD	1.7	$5,000,000	Reno Engineering	5	4

Table 4-3: Region 5 – Active Mines

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
58	59	**Churchill Mine**	Nevada Cement Co.	Limestone	Churchill	4427500	349540
67	68	**Fernley Operation Mine**	EP Minerals, LLC	Diatomite	Churchill	4410158	332267
77	78	**Huck Salt**	Huck Salt Co.	Salt	Churchill	4346860	374550
95	96	**Nightingale Pit**	Imerys Filtration Minerals, Inc.	Diatomite	Churchill	4422800	321060
101	102	**Popcorn Mine**	EP Minerals, LLC	Perlite	Churchill	4344290	345870
131	132	**Brady Hot Springs**	Ormat Nevada, Inc.	Electricity	Churchill	4407088	327912
132	133	**Brady Hot Springs**	Olam Spices and Vegetables, Inc.	Vegetable dehydration	Churchill	4406553	327273
134	135	**Desert Peak II**	Ormat Nevada, Inc.	Electricity	Churchill	4402148	332634
135	136	**Dixie Valley**	Terra-Gen Power, LLC	Electricity	Churchill	4424433	426925
144	145	**Patua**	Cyrq Energy	Electricity	Churchill	4383471	321797
145	146	**Salt Wells**	Enel North America, Inc.	Electricity	Churchill	4352375	364296
147	148	**Soda Lake Nos. 1, 2**	Cyrq Energy	Electricity	Churchill	4380171	341112
150	151	**Stillwater 2**	Enel Stillwater, LLC	Electricity	Churchill	4378439	366194
151	152	**Tungsten Mountain**	Ormat Nevada, Inc.	Electricity	Churchill	4391619	440784
46	47	**Basalite Dayton Pit**	Basalite Concrete Products, LLC	Sand, gravel	Storey	4357606	282597
60	61	**Clark Mine**	EP Minerals, LLC	Diatomite	Storey	4381500	295120
106	107	**River Canyon III**	Joy Engineering	Aggregate	Storey	4379781	286375

FID	ID #	Name	Operator	Commodity	County	Y_U83N	X_U83E
110	111	**Sierra Stone Quarry**	CEMEX Construction Materials Pacific, LLC	Aggregate	Storey	4372283	274829
120	121	**Trico Pit**	Gopher Construction Co.	Aggregate	Storey	4382000	283800

This industrial development in northwest Nevada is generating increased freight activity. The region currently accounts for over 50% of all freight movements in the entire state of Nevada and this continued commercial development will lead to further increases in freight volumes.

Freight flow data from TRANSEARCH®, a transportation database developed by IHS Global Insights, reveals that 75% of all freight by tonnage in northwest Nevada moves by truck. This equates to 5.5MM loaded truck movements annually. The actual number of truck movements on the region's roads and highways is even higher because many loaded truck movements create empty return trips.

Limited freight rail service is available in northwest Nevada but only 4.6MM tons of freight is transported by rail into or out of the region. This compares to 29.2MM tons of freight traveling by truck. There are several reasons, listed below, for the relatively small volume of rail tonnage. All of these issues are eminently addressable through better coordination, education, and strategic infrastructure development.

- Prospective and current property buyers and lessees who are making site location and logistics decisions are skeptical about rail service
- Developers and shippers often have limited knowledge of rail service design, including engineering, loading, unloading and transloading, and may not understand the physical suitability of their property for freight rail development
- Existing rail intermodal facilities serve only container-based freight with limited frequencies and routings

As thousands of acres of new industrial development create more freight activity there is a compelling need to implement a balanced freight transportation system in the region. Otherwise, increasing truck traffic in northwest Nevada will negatively impact quality of life and reduce the region's attractiveness for businesses, developers, and residents. The future without this intervention can be viewed firsthand with a visit to the Pennsylvania towns of Easton, Allentown, Lancaster, and Carlisle, now overburdened by trucks on local roads and interstates to and from non-rail served industry. Eastern Pennsylvania, like Nevada has become a hotbed of warehouse and distribution activity in support of its more-densely populated adjacent states.

C.1 Northwest Nevada Freight Transportation Statistics Report

C.1.1 Overview of Data Sources and Reporting

The 2020 Northwest Nevada Freight Transportation Statistics report utilized a variety of data sources to determine the estimated road and rail traffic that impact the region's surface-based freight transportation network. In this report, the following counties and regions were analyzed in relation to the rest of Nevada (RONV). Herein the "Region" analyzed is comprised of the following jurisdictions:

- Reno-Sparks
- Churchill County
- Lyon County

- Storey County
- Unincorporated Washoe County

Rail-based cargo flow data from the Surface Transportation Board (STB), combined with the truck-based flows provided by TRANSEARCH® data capture the unit volume, commodity descriptions, units, and tonnage. This enables detailed analysis of surface freight movements in the Region and the potential opportunities for modal conversion and other strategies for more efficient freight movement.

The data sources employed were:

1. The Surface Transportation Board's (STB) 2018 stratified rail carload waybill sampling
2. IHS-Markit TRANSEARCH® 2018 Truck Freight Flows

C.1.2 The STB Waybill Sampling of Rail Data

The STB Waybill Sampling is a stratified look at carload waybills (usually 1-3%) for all U.S. rail traffic submitted by those rail carriers terminating 4,500 or more revenue carloads annually. The data provided was for 2018, the most current year available. Waybill data has broad applications and is used by transportation practitioners as a primary source of information for the development of state transportation plans. In the case of the 2020 Northwest Nevada (NWNV) freight report, the STB dataset was transmitted to TRANSEARCH® where it was processed and formatted in a Microsoft Access database and transmitted to Strategic Rail Finance for analysis and reporting.

C.1.3 TRANSEARCH® Truck Data

Developed by IHS Global Insight, TRANSEARCH® is an extensive database of North American freight flows, compiled from more than one hundred industry, commodity, and proprietary data-exchange sources. The truck data provided was for 2018, the most current year available. TRANSEARCH® combines primary shipment data obtained from some of the nation's largest truck freight carriers with information from public, commercial, and proprietary sources to generate a base-year estimate of freight flows at the county level. Furthermore, TRANSEARCH® establishes market-specific production tonnages by industry or commodity, drawn mostly from IHS Global Insight's Business Markets Insights (BMI) database.

C.1.4 Commodity Code Descriptions

Both the STB Waybill Sampling and the TRANSEARCH® truck data classify and report using the Standard Transportation Commodity Code (STCC) scheme. STCC is a publication containing specific product information used on waybills and other shipping documents. A STCC code is a seven-digit numeric code consolidating into and representing 38 commodity groupings (STCC2) on which this Plan reports.

With respect to TRANSEARCH® truck data reporting, there is a unique commodity code that is particularly insightful and that requires additional explanation.

- **STCC2 42: Semi-trailers Returned Empty.** While these truck movements do not represent a physical commodity, they are significant in terms of unit traffic volume and illustrate the degree to which many truck moves are one-way loaded moves, returning in many instances to home terminals without return freight. STCC2-42 is reported throughout the document in the assessment of truck-flows.

C.1.5 Reporting Structure

The reporting of freight data is in tabular ranking format with additional supporting charts. Reporting covers three primary areas:

1. Top commodities for truck and rail expressed in units and tons covering all freight traffic flows
2. Top out-of-state trading partners to the region, expressed in units and tons covering all freight traffic flows
3. Comparative charts of unit and tonnage of the NWNV Region versus the rest of Nevada

Reporting on freight traffic flows is organized in the following order:

- **Outflows:** Freight originating in the region that terminates in out-of-state destinations
- **Inflows:** Freight originating in out-of-state locations and terminating in Nevada overall and the NWNV region
- **Intrastate:** Freight that both originates and terminates within Nevada and/or NWNV region
- **Through Traffic:** Freight passing through the State and Region with both originations and destinations outside of the State and the NWNV Region

C.2 Northwest Nevada Freight Flows Overview:2018 Truck and Rail Traffic

The 2020 Northwest Nevada freight statistics report incorporates the latest available 2018 freight data that reports traffic and commodity flows across the Region's road and rail transportation networks. SRF processed over 12MM records for the period and applied filtering to arrive at nearly 6.2MM records of truck and rail movements associated with NWNV.

The NWNV region and the overall Nevada data reflect an overwhelming reliance on trucking of commodities versus rail. For the NWNV region and the rest of Nevada, over 78% of all commodity flows are conducted by truck versus 22% by rail. In general, this datapoint may lead to the conclusion that there exists a long-term opportunity for the investment in rail-cargo infrastructure that would lead to truck-to-rail modal conversion.

C.2.1 Overview: Trucking Statistics

Table 2 depicts truck traffic expressed in both units and tonnage. This table, in combination with **Figures 1 and 2** provide a clear over-all depiction of truck-based traffic flows and the comparative context between the NWNV Region and the rest of Nevada. While the overall distribution of truck traffic between NWNV and the rest of the state is nearly equal (52% NWNV vs. 48% Rest of Nevada), individual flow types reveal unique characteristics. As an example, and as identified below, nearly 80% of the State's truck-based outflow tonnage originates from the NWNV Region. In the following sections of this report, a detailed presentation of traffic flow types will be addressed.

Table 2: 2018 NWNV Freight Flow Matrix: Distribution of Freight Flows: Truck Units and Tons[2]

Description	NWNV Truck Flows	Rest of Nevada Truck Flows	Total Nevada Truck Tonnage	NWNV Truck Flows	Rest of Nevada Truck Flows	Total Nevada Truck Flows
Traffic Flow	**Tonnage**	**Tonnage**	**Tonnage**	**Units**	**Units**	**Units**
Outflow	19,814,465	5,334,857	25,149,322	1,130,872	700,308	1,831,180
Inflow	9,482,497	14,956,982	24,439,479	1,243,946	771,173	2,015,119
Intrastate	18,092,477	21,567,750	39,660,227	1,784,028	2,073,792	3,857,820
Through	26,991,174	29,043,365	56,034,539	1,387,384	1,486,859	2,874,243
Total	**74,380,613**	**70,902,954**	**145,283,567**	**5,546,230**	**5,032,132**	**10,578,362**

Figure 1: Truck Unit Volume Percentage NWNV vs. Rest of Nevada[3]

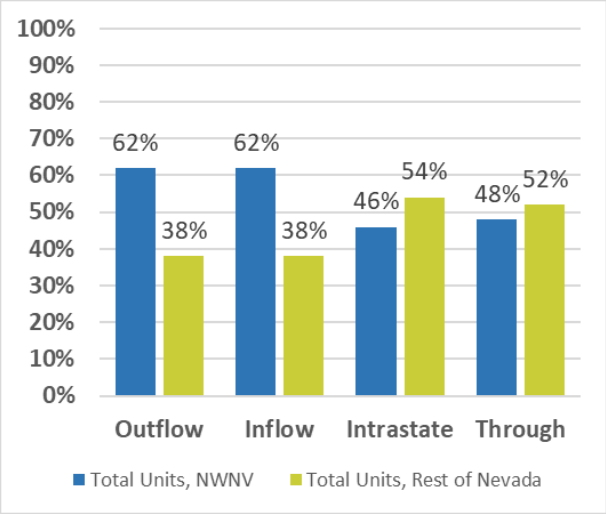
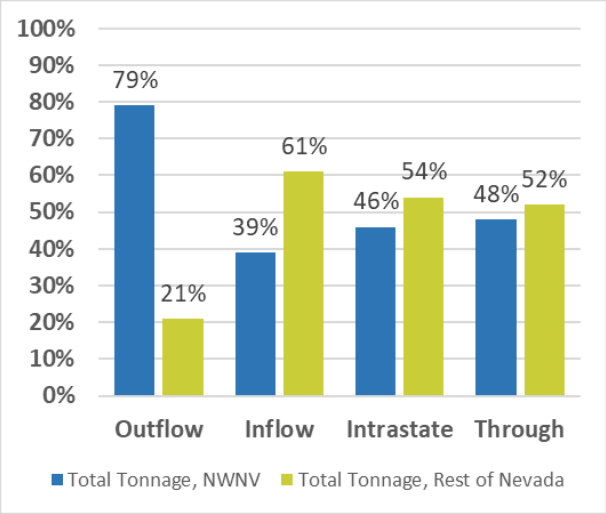


Figure 2: Truck Tonnage Volume Percentage NWNV vs. Rest of Nevada [4]



C.2.2 Overview: Rail Statistics

Table 3 depicts rail-based traffic expressed in both tonnage and units. This table, in combination with **Figures 3 and 4** provide a clear over-all depiction of rail-based traffic flows and a comparative context between the NWNV Region and the rest of Nevada. As with truck flows, there exists a near equal balance of overall rail-based traffic between NWNV and the rest of Nevada (51% NWNV vs. 49% Rest of Nevada). As with trucking, individual rail-based freight flow types reveal unique characteristics. As an example, and as identified below, nearly 63% of the State's rail-based inflow tonnage is destined for the NWNV Region. In the following sections of this report, a detailed presentation of traffic flow types will be addressed.

[2] Source: TRANSEARCH® Truck Data 2018
[3] Source: TRANSEARCH® Truck Data 2018
[4] Source: TRANSEARCH® Truck Data 2018

Table 3: 2018 NWNV Freight Flow Matrix: Distribution of Freight Flows: Rail Tons and Units[5]

Description	NWNV Rail Flows	Rest of Nevada Rail flows	Total Nevada Rail flows	NWNV Rail flows	Rest of Nevada Rail flows	Total Nevada Rail Units
Traffic Flow	*Tonnage*	*Tonnage*	*Tonnage*	*Units*	*Units*	*Units*
Outflow	1,264,581	**989,604**	**2,254,185**	**22,312**	**11,252**	**33,564**
Inflow	3,342,102	**1,936,898**	**5,279,000**	**47,392**	**31,064**	**78,456**
Intrastate	55,548	**7,080**	**62,628**	**564**	**100**	**664**
Through	17,757,491	**18,329,509**	**36,087,000**	**466,143**	**662,395**	**1,128,538**
Total	**22,419,722**	**21,263,091**	**43,682,813**	**536,411**	**704,811**	**1,241,222**

Figure 3: Rail Tonnage NWNV vs. Rest of Nevada[6]

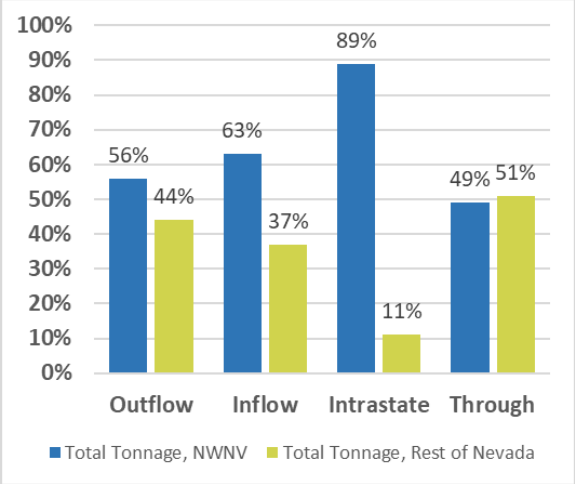
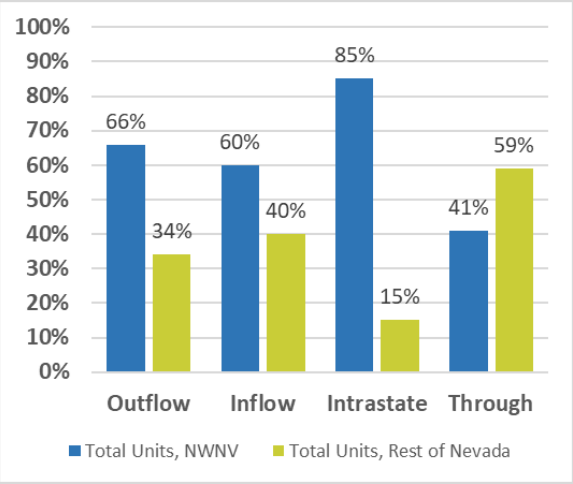


Figure 4: Rail Units NWNV vs. Rest of Nevada[7]



C.3 NWNV Road and Rail Freight Outflows:(NWNV Originations)

C.3.1 Truck Outflow Statistics

Table 4 ranks the top five commodities shipped by truck from NWNV to other states and is presented in both units and tonnage. As depicted in the table, the top five commodities represent an overwhelming percentage of overall shipments from the Region. The top five ranked commodities represent 90% of all truck-based commodity outflows. Thematic throughout this report is the magnitude of shipments of Non-Metallic Minerals (STTC2-14) and Clay, Concrete, Glass, and Stone (STTC2-32) from the Region. In terms of tonnage, these two commodities combined represent 70% of all truck-based commodity outflows.

Also, of importance, all tables that rank truck-based commodity flows include Return of Empty Trailers (STTC2-42). While these transportation movements do not represent a specific commodity and carry no

[5] Source: STB Waybill Sample 2018
[6] Source: TRANSEARCH® Truck Data 2018
[7] Source: TRANSEARCH® Truck Data 2018

tonnage, they do represent a critical component of truck volume activity, and its inclusion is a material element in the freight study report.

Table 4: 2018 NWNV Top Five Commodity Ranking: Truck Outflows[8]

NWNV Truck Outflow Traffic: Top Five Commodities					
STCC2	**Commodity Name**	**Units**	**% Units**	**Tons**	**% Tons**
32	Clay, Concrete, Glass, or Stone	346,789	31%	6,344,296	32%
14	Nonmetallic Minerals	313,796	28%	7,628,487	38%
42	Return of Empty Trailers	196,288	17%	0	0%
1	Farm Products	76,703	7%	1,376,786	7%
29	Petroleum or Coal Products	67,042	6%	1,614,907	8%
40	Waste or Scrap Materials	38,054	3%	953,114	5%
	All Other Commodities	92,201	8%	1,896,875	10%
	Total NWNV Commodities	**1,130,872**	**100%**	**19,814,465**	**100%**

Table 5: 2018 NWNV Top State Trading Partners: Truck Outflows[9]

NWNV Truck Outflows: State Partners				
State	**Units**	**% Units**	**Tons**	**% Tons**
CA	849,334	75%	15,254,291	77%
TX	31,422	3%	586,206	3%
UT	29,294	3%	433,677	2%
IN	15,110	1%	277,654	1%
WA	13,830	1%	271,173	1%
ALL Others	191,882	17%	2,991,465	15%
Total	**1,130,872**	**100%**	**19,814,465**	**100%**

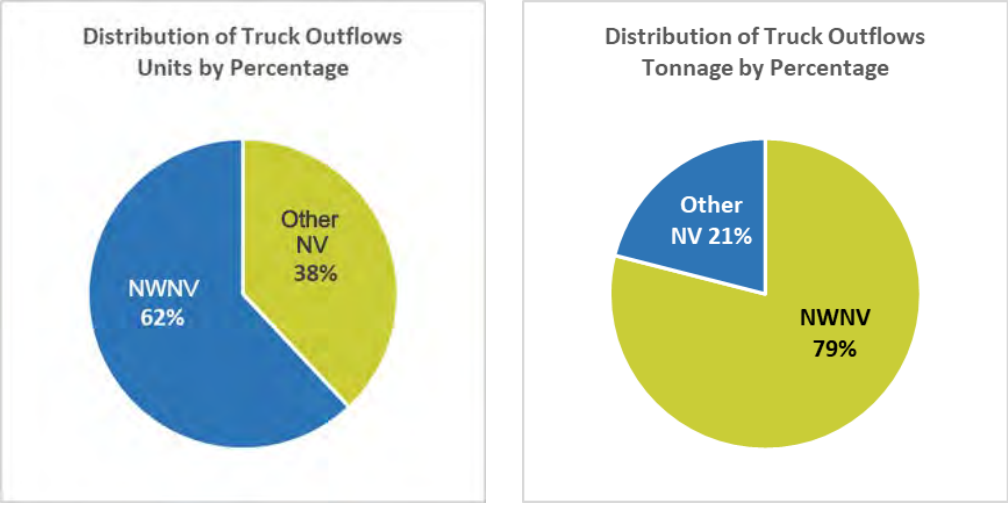
Table 5 identifies the NWNV's top five state partners for trucking outflows. The State of California leads with over 75% of all trucking volume. The next ranked trading partners of Texas, Utah, Indiana, and Washington account for 8% of the volume. The rest of the country with no state over 1%, comprises the remaining 15%.

Figure 5 demonstrates the concentration of truck-based outflow traffic from the NWNV region vs. the rest of Nevada. With over 62% of truck unit volume and nearly 80% of truck tonnage volume, it is clear that the Region is largely a production-based economy when compared to the rest of Nevada, especially compared to the consumption-based markets of the Las Vegas Region.

[8] Source: TRANSEARCH® Truck Data 2018

[9] Source: TRANSEARCH® Truck Data 2018

Figure 5: Truck-Based Outflows Versus the Rest of Nevada



C.3.2 Rail Outflow Statistics

Table 6 represents the top five rail-based commodity outflows. When compared to trucking, rail represents only 16% of the total regional outflow of commodities. While rail-based outflows represent a more diverse distribution of commodity haulage, the primary commodities of Non-metallic Minerals and Clay, Concrete, Glass, and Stone dominate rail-based cargo outflows, representing over 66% of all rail-based commodity outflow tonnage. Also, of note is STCC2-46 – Misc. Mixed Shipments which is directly tied to the movement of individual intermodal containers rather than rail cars. While intermodal containers represent only 8% of the total rail tonnage, they represent 29% of the unit movements.

Table 6: 2018 NWNV Top Five Commodity Ranking: Rail Outflows[10]

NWNV Rail Outflow Traffic: Top Five Commodities					
STCC2	**Commodity Name**	**Tons**	**% Tons**	**Units**	**% Units**
14	Nonmetallic Minerals	418,800	33%	5,356	24%
32	Clay, Concrete, Glass, or Stone	413,145	33%	3,900	17%
46	Miscellaneous Mixed Shipments	104,400	8%	6,440	29%
28	Chemicals or Allied Products	79,720	6%	1,160	5%
40	Waste or Scrap Materials	74,340	6%	944	4%
	All Other Commodities	174,176	14%	4,512	20%
	Total NWNV Commodities	**1,264,581**	**100%**	**22,312**	**100%**

Table 7 identifies the top five state rail trading partners. While California ranks number one in terms of tonnage, it does not represent the same degree of concentration as truck-based traffic to California. This

[10] Source: TRANSEARCH® Truck Data 2018

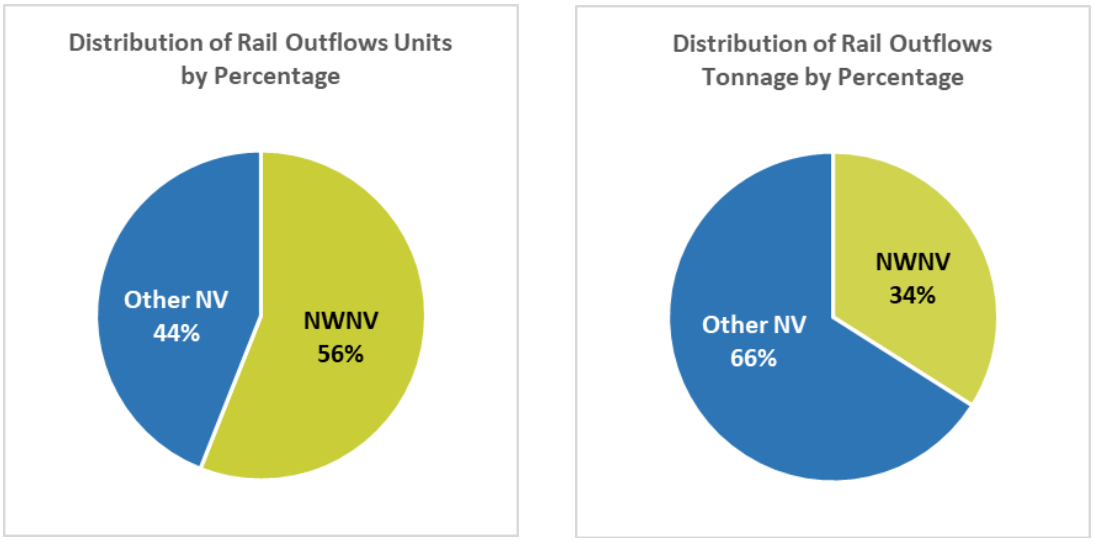
is due to the proximity between the two states and the economic rationale for rail-based transport versus trucking.

Table 7: 2018 NWNV Top State Trading Partners: Rail Outflows[11]

NWNV Rail Outflows: State Partners				
State	Tons	% Tons	Units	% Units
CA	524,485	41%	53,556	24%
IL	148,204	12%	7,820	35%
WY	93,360	7%	960	4%
PA	61,280	5%	1,320	6%
WA	52,004	4%	620	3%
ALL Others	385,248	30%	6,236	28%
Total	1,264,581	100%	22,312	100%

Figure 6 presents the distribution of rail-based outflow for the NWNV Region versus the rest of the state. While there is a concentration of rail freight tonnage from the region versus the rest of the State (56% vs. 44%), it does not demonstrate the significant bias toward truck-based movements, where nearly 80% of the outflow tonnage was moved by truck.

Figure 6: Rail-Based Outflows Versus the Rest of Nevada[12]



[11] Source: STB Waybill Sample 2018
[12] Source: STB Waybill Sample 2018

C.4 NWNV Road and Rail Freight Inflows (NWNV Destinations)

C.4.1 Truck Inflow Statistics

Relative to freight outflows, freight inflow traffic for both road and rail to the NWNV region is substantially lower in terms of tonnage. Whereas outflow tonnage from the region exceeds 21MM tons, inflow traffic is less than 13MM tons. This imbalance supports the fact that the Region is substantially a production-based economy rather than a consumption-based economy, especially when compared to the rest of Nevada, and in particular the Clark County-Las Vegas region. This indicates a positive result of the economic diversification work that has been done in Northern Nevada which may inform future opportunities for diversification in Southern Nevada.

Table 8 ranks the top truck inflow commodities. In terms of truck unit volume, inflow traffic of commodities is substantially more diverse when compared to outflows, which are dominated by extractive aggregates and byproducts. Attention should be paid to STCC2-42, Return of Empty Trailers. The return of these empty trailers represents 63% of all inflow truck traffic volume to the Region, nearly 800,000 units in 2018. This truck volume is primarily driven by the substantial volume of the outflow out-of-state traffic of non-metallic minerals and clay, concrete, glass, and stone, where there do not exist back-haul opportunities.

Table 8: 2018 NWNV Top Commodity Ranking: Truck Inflows[13]

NWNV Truck Inflow Traffic: Top Commodities					
STCC2	**Commodity Name**	**Units**	**% Units**	**Tons**	**% Tons**
42	Return of Empty Trailers	789,022	63%	0	0%
14	Nonmetallic Minerals	115,428	9%	2,806,094	30%
32	Clay, Concrete, Glass, or Stone	72,629	6%	1,169,282	12%
50	Warehouse/Distribution	56,556	5%	1,194,539	13%
20	Food or Kindred Products	47,286	4%	1,085,662	11%
1	Farm Products	41,668	3%	783,815	8%
	All Other Commodities	118,357	10%	2,443,106	26%
	Total NWNV Commodities	**1,243,946**	**100%**	**9,482,497**	**100%**

Table 9 represents the top state truck-based inflow trading partners to the NWNV region. California represents 84% of the total units and 65% of the truck freight tonnage. It is notable that the concentration of truck traffic from California is due to the significant volume related to the return of empty trailers. However, even absent that fact, California is a critical supply chain partner to the NWNV Region.

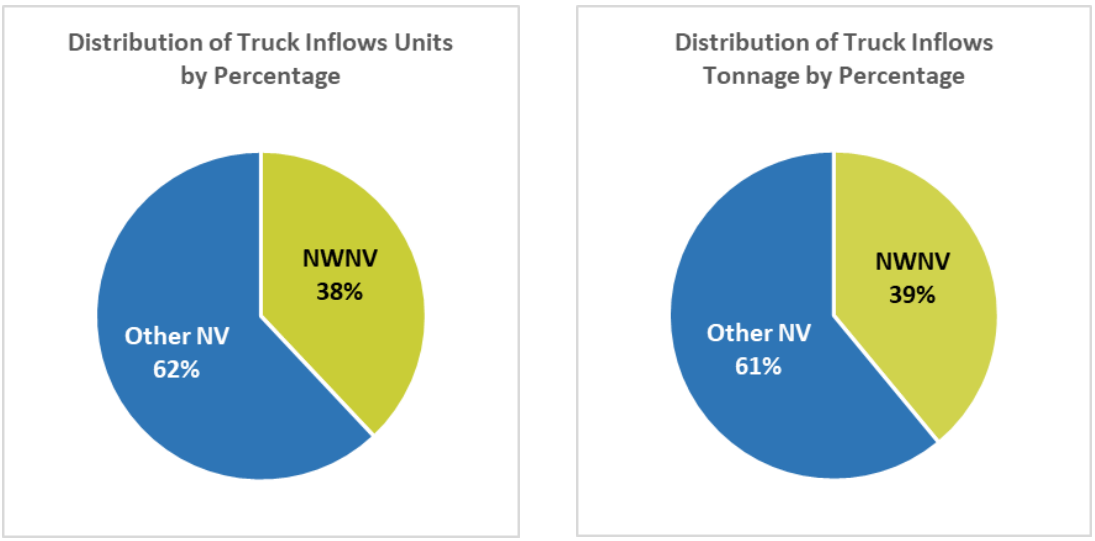
[13] Source: TRANSEARCH® Truck Data 2018

Table 9: 2018 NWNV Top State Trading Partners: Truck Inflows[14]

NWNV Truck Inflows: State Partners				
State	Units	% Units	Tons	% Tons
CA	1,040,716	84%	6,178,867	65%
ID	42,089	3%	640,043	7%
UT	39,371	3%	431,514	5%
OR	22,503	2%	396,312	4%
WA	16,390	1%	300,399	3%
All Others	82,877	7%	1,535,363	16%
Total	**1,243,946**	**100%**	**9,482,497**	**100%**

Figure 7 presents truck-based inflows for the NWNV Region versus inflows into the rest of Nevada. Thematic throughout the report, NWNV inflows of truck traffic units (62%) is largely due to the significant return of empty trailers. However, inflows of truck cargo tonnage demonstrate a majority of productive cargo tonnage inflows (61%) destined to consumption-based markets (Las Vegas Region).

Figure 7: Truck-Based Inflows Versus the Rest of Nevada[15]



C.4.2 Rail Inflow Statistics

Table 10 ranks the top 5 rail commodity inflows to the NWNV Region. While coal leads the way in terms of tonnage at 30%, it is on a steep decline relative to prior periods and this trend is expected to continue. Conversely, STCC2-28 Chemicals and Allied Products represents 27% of the total tonnage and based upon prior periods has risen dramatically and this trend is expected to continue. All other commodities represent 20% of the tonnage volume and a diverse array of commodities. Nevada electric power generation is projected to be completely coal-free by 2025.

[14] Source: TRANSEARCH® Truck Data 2018
[15] Source: TRANSEARCH® Truck Data 2018

Table 10: 2018 NWNV Top Commodity Ranking: Rail Inflows[16]

NWNV Rail Inflow Traffic: Top Five Commodities					
STCC2	Commodity Name	Units	% Units	Tons	% Tons
11	Coal	1,017,970	30%	8,804	19%
28	Chemicals or Allied Products	909,400	27%	10,260	22%
32	Clay, Concrete, Glass, or Stone	312,784	9%	2,900	6%
29	Petroleum or Coal Products	279,756	8%	3,384	7%
20	Food or Kindred Products	145,316	4%	1,912	4%
	All Other Commodities	676,876	20%	20,132	42%
	Total NWNV Commodities	**3,342,102**	**100%**	**47,392**	**100%**

Table 11 presents the top 5 State trading partners to the NWNV region. WY and UT represent nearly 40% of the inbound rail traffic and all other States represent 40% of the total tonnage. The Table demonstrates a significant diversity of inbound State trading partners, particularly of long-haul freight movements, which is traditionally the domain of rail.

Table 11: 2018 NWNV Top State Trading Partners: Rail Inflows[17]

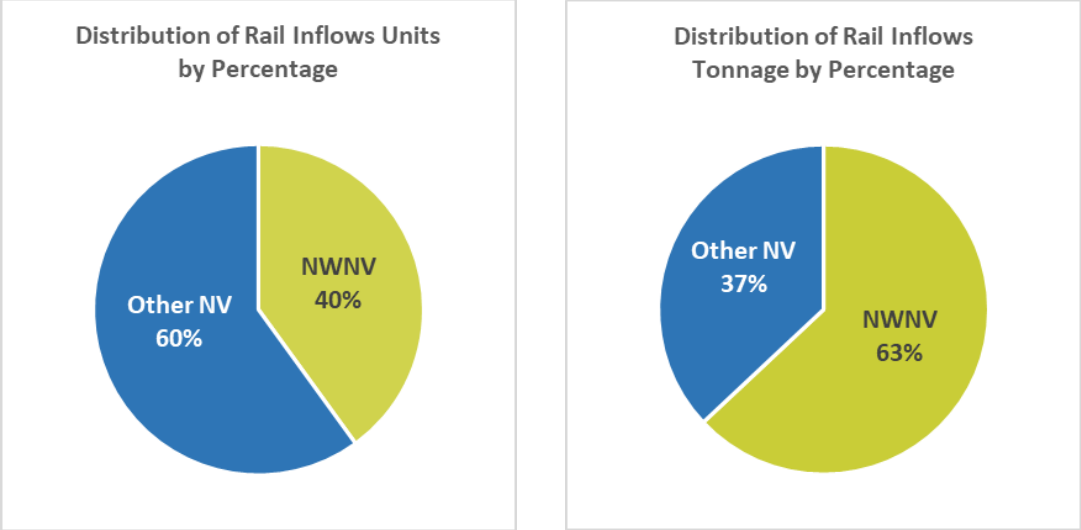
NWNV Rail Inflows: State Partners				
State	Tons	% Tons	Units	% Units
WY	877,770	26%	7,564	16%
UT	431,482	13%	4,122	9%
CA	304,952	9%	3,760	8%
IL	215,720	6%	10,440	22%
LA	174,320	5%	1,720	4%
All Others	1,337,858	40%	19,786	42%
Total	**3,342,102**	**100%**	**47,392**	**100%**

Figure 8 shows the distribution of rail inflow cargo in both tonnage and units for the NWNV region vs. the rest of Nevada. Note the inverse relationship between the tonnage and unit volume destined to the Region. This is because the NWNV region receives heavy weight car-load volumes while the rest of Nevada, particularly the Las Vegas region, receives a higher volume of low weight intermodal containers.

[16] Source: TRANSEARCH® Truck Data 2018

[17] Source: TRANSEARCH® Truck Data 2018

Figure 8: Rail-Based Inflows Versus the Rest of Nevada[18]



C.5 NWNV Road and Rail Intrastate Freight Flows

Intrastate traffic to and from the NWNV Region to the rest of Nevada is almost entirely truck based, representing 99.7% of total intrastate cargo tonnage. Intrastate rail traffic is virtually non-existent, and the State of Nevada's lack of intrastate rail infrastructure is a deficiency that should be addressed.

Table 12 ranks the top commodities moving into and out of the NWNV region to the rest of Nevada. Over 55% of the traffic is related to the return of empty trailers. Thus, virtually all intrastate truck moves are one-way loads and are returned to the station without any cargo, so only 45% of the truck units flowing into and out of NWNV carry productive cargo. Also as expected, intrastate flow of nonmetallic minerals and clay, concrete, glass, and stone represent 84% of the total tonnage and 38% of the unit volume.

Table 12: 2018 NWNV Top Commodity Ranking: Truck Intrastate Flows[19]

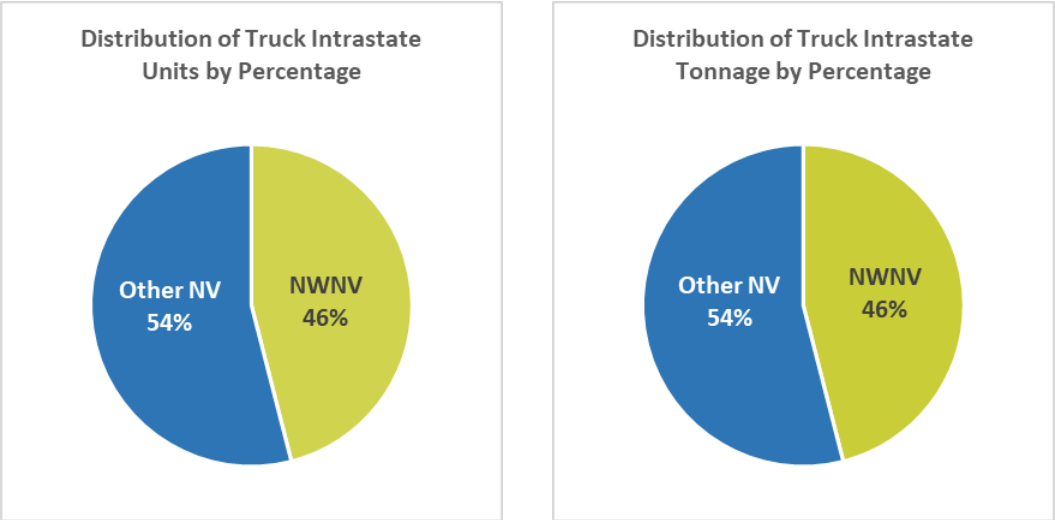
NWNV Truck Intrastate Traffic: Top Commodities					
STCC2	Commodity Name	Units	% Units	Tons	% Tons
42	Return of Empty Trailers	974,153	55%	0	0%
14	Nonmetallic Minerals	480,811	27%	11,688,684	65%
32	Clay, Concrete, Glass, or Stone	196,454	11%	3,484,789	19%
29	Petroleum or Coal Products	57,849	3%	1,404,053	8%
50	Warehouse/Distribution	36,905	2%	683,593	4%
1	Farm Products	16,551	1%	336,382	2%
	All Other Commodities	21,305	1%	494,976	3%
	Total NWNV Commodities	**1,784,028**	**100%**	**18,092,477**	**100%**

[18] Source: STB Waybill Sample 2018

[19] Source: TRANSEARCH® Truck Data 2018

Figure 9 presents the distribution of truck-based intrastate truck traffic between NWNV and the rest of Nevada. In terms of tonnage and units, NWNV represents 46% of Nevada's intrastate traffic.

Figure 9: Intrastate Truck Traffic vs. Rest of Nevada[20]



C.5.1 Truck Through-Traffic Statistics

As stated previously in this analysis, through-traffic is defined as cargo movements that neither originate nor terminate in the NWNV region, but simply pass through the Nevada road and rail system. **Table 13** represents the top truck-based commodities passing through NWNV Region. Farm and food products lead the way with over 52% of the unit volume and 56% of the tonnage. Remaining commodities represent a wide range, where All Other Commodities represent 28% of the volume and no single commodity represents more than 3% of the truck-based through traffic.

Table 13: 2018 NWNV Top Commodity Ranking: Truck Through-Traffic[21]

NWNV Truck Through Traffic: Top Five Commodities					
STCC2	Commodity Name	Units	% Units	Tons	% Tons
1	Farm Products	408,662	29%	7,848,964	29%
20	Food or Kindred Products	319,173	23%	7,326,221	27%
32	Clay, Concrete, Glass, or Stone	105,083	8%	1,766,396	7%
24	Lumber or Wood Products	60,221	4%	1,561,098	6%
40	Waste or Scrap Materials	52,864	4%	1,272,950	5%
42	Return of Empty Trailers	50,031	4%	0	0%
	All Other Commodities	391,350	28%	7,215,545	27%
	Total NWNV Commodities	**1,387,384**	**100%**	**26,991,174**	**100%**

[20] Source: TRANSEARCH® Truck Data 2018

[21] Source: TRANSEARCH® Truck Data 2018

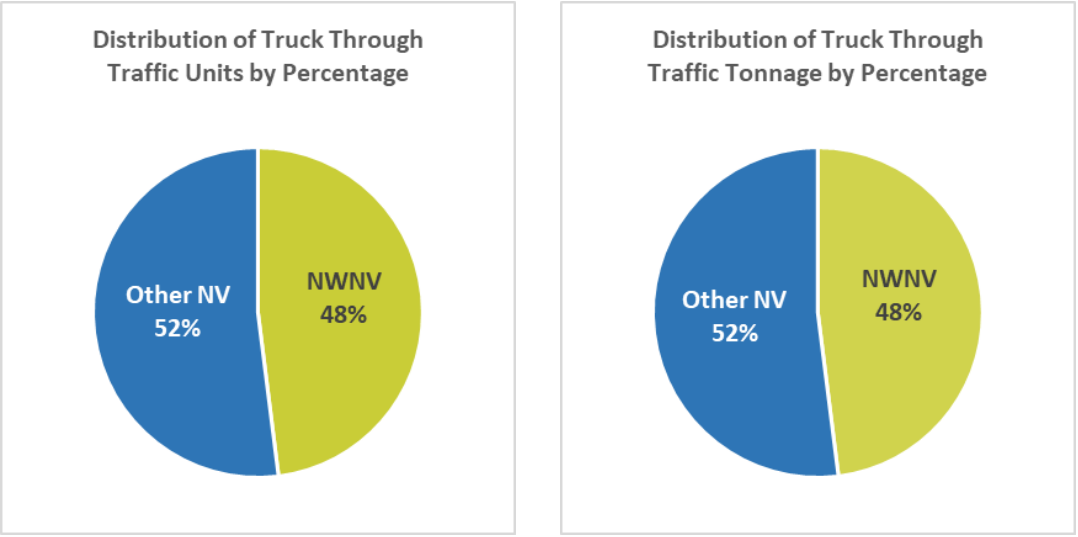
Table 14 presents the top 10 ranked State origin and destination pairs for truck-based commodities that pass through the NWNV Region. Of the 225+ identified State O-D pairs, the top 10 represent 54% of the total volume and the remaining 215 O-D pairs represent 46% of the total truck-based through traffic volume.

Table 14: 2018 NWNV Top State Origination/Destination Pairs for Truck Through Traffic[22]

NWNV Truck Through Traffic: State Partners					
Origination	Destination	Units	% Units	Tons	% Tons
ID	CA	211,891	15%	4,515,986	17%
UT	CA	98,414	7%	1,969,184	7%
CA	ID	98,394	7%	1,292,742	5%
CA	UT	68,611	5%	1,238,149	5%
MT	CA	55,281	4%	1,177,550	4%
WI	CA	53,059	4%	1,015,417	4%
MN	CA	52,036	4%	1,048,161	4%
CO	CA	40,790	3%	791,029	3%
IL	CA	37,123	3%	688,436	3%
OH	CA	36,098	3%	651,938	2%
All Others		635,688	46%	12,602,582	47%
Total		**1,387,384**	**100%**	**26,991,174**	**100%**

Figure 10 presents the distribution of truck- based unit and tonnage volume for the NWNV region versus the rest of Nevada. As can be seen, the NWNV region represents 48% of Nevada State truck-based through traffic in both truck units and tonnage.

Figure 10: Truck-Based Through-Traffic Versus the Rest of Nevada[23]



[22] Source: TRANSEARCH® Truck Data 2018
[23] Source: TRANSEARCH® Truck Data 2018

C.5.2 Rail Through-Traffic Statistics

Table 15 represents the top-ranked rail-based through-traffic commodities. As with trucking, farm and food products represent a significant proportion of the total rail-based commodity tonnage at over 52%.

It is important to note that the STB does not differentiate between the reporting of rail car units and domestic or international containers units. However, rail car units are likely to weigh three to four times more than containers, which are weight limited by truck regulations. As can be seen in the table below STCC2-46 Misc. Mixed Shipments is composed of a significant percentage of domestic and international containers. As illustrated, this commodity represents 31% of the total unit volume and only 14% of the tonnage. Conversely, farm products are transported primarily by much larger capacity rail cars and represent 26% of the total tonnage and only 10% of the total units. Domestic and international containers are also partially represented in the All Other Commodities category and represent 28% of the total units and 17% of the total tonnage.

Table 15: NWNV Top Commodity Ranking: Rail Through-Traffic[24]

NWNV Rail Through Traffic: Top Five Commodities					
STCC2	**Commodity Name**	**Tons**	**% Tons**	**Units**	**% Units**
1	Farm Products	4,661,869	26%	48,311	10%
20	Food or Kindred Products	4,630,017	26%	106,799	23%
46	Misc. Mixed Shipments	2,489,393	14%	144,648	31%
11	Coal	1,466,571	8%	12,022	3%
28	Chemicals or Allied Products	1,429,446	8%	23,483	5%
	All Other Commodities	3,080,195	17%	130,880	28%
	Total NWNV Commodities	**17,757,491**	**100%**	**466,143**	**100%**

Table 16 ranks the top origination and destination pairs for rail-based through traffic for the NWNV Region. Out of the 43 identified O-D State Pairs, the top 10 ranked State pairs represent 85% of the total tonnage. Of note are the 2nd and 3rd ranked trade partners of California and Illinois, which are heavily influenced by the movement of container traffic.

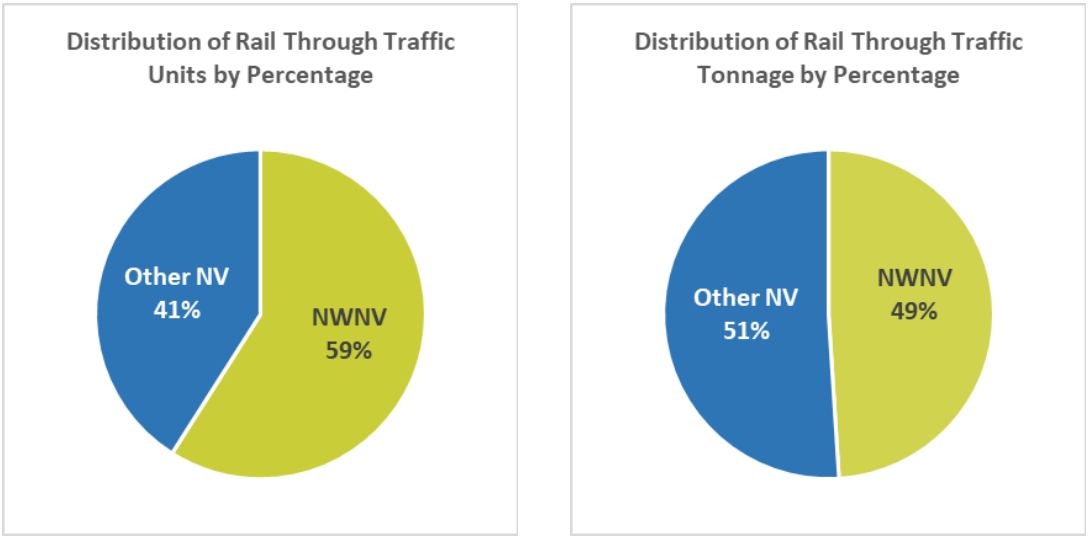
[24] Source: TRANSEARCH® Truck Data 2018

Table 16: 2018 NWNV Top State Origination/Destination Pairs for Rail Through Traffic[25]

NWNV Truck Through Traffic: State Partners					
Origination	Destination	Tons	% Tons	Units	% Units
NE	CA	3,078,686	17%	30,649	7%
IL	CA	2,308,348	13%	119,578	26%
CA	IL	2,081,481	12%	79,189	17%
UT	CA	2,079,103	12%	34,779	7%
IA	CA	199,813	11%	27,524	6%
MN	CA	1,442,505	8%	14,401	3%
CA	UT	845,974	5%	2,799	6%
ID	CA	412,705	2%	4,031	1%
CO	CA	388,857	2%	14,410	3%
MO	CA	374,472	2%	16,661	4%
All Other		2,745,551	15%	96,921	21%
Total		**17,757,491**	**100%**	**466,143**	**100%**

Figure 11 represents the distribution of rail cargo through-flows between the NWNV Region and the rest of Nevada. In terms of total rail tonnage, there is a near equal distribution. With respect to rail units, NWNV represents 41%. This is directly attributed to through-traffic of intermodal containers which are heavily biased towards the major ports of Los Angeles and Long Beach.

Figure 11: Rail-Based Through-Traffic Versus the Rest of Nevada[26]



[25] Source: TRANSEARCH® Truck Data 2018
[26] Source: TRANSEARCH® Truck Data 2018

D. The Goal of a Sustainable Freight System

Achieving the NNDA's vision of a prosperous, resilient economy for northwest Nevada requires a freight system that supports the economic ecosystem of the region. This system must balance the use of truck and rail appropriately. This provides economic, environmental, and social benefits to the state's businesses and residents in multiple ways:

- Improved quality of life in the community from a transportation system that uses rail as much and as safely as possible, replacing thousands of daily truck journeys
- Increased economic development opportunities from new logistics services and freight-oriented industrial development
- Local economic development with lower public burden for road construction and maintenance
- Land valued higher given its vital location on a trade corridor between the 5th largest economy in the world (California) and the rest of North America
- More profitable and growing businesses resulting from lower transportation costs, extended market reach, and integrated logistics services

This study considers the economic feasibility of a Multimodal Freight Facility, the practical options for locating this in the Fernley region, and the scale of freight-based economic development. This report is not an environmental impact study nor deep analysis of the quality of life implications from an enhanced freight system. However, the analysis reported herein uncovers the volume of existing and future truck trips that could be replaced by rail in the region. In 2015, the Congressional Budget Office reported[27] that trucks emitted 300% more PM, NO_x and CO_2 per ton-mile of freight than rail and the accident risk for trucks was between 700% and 1000% higher than rail. The implication of a sustainable freight system for the study region therefore includes many non-economic benefits such as safer roads, cleaner air, reduced congestion, and increased attractiveness of the region to incoming residents vital for its continued economic development.

E. Study Approach

This study, completed in conjunction with the Nevada State Rail Plan (NVSRP) detailed the following informational and geographic datasets for the region:

- Potential rail service growth projects
- Major land developments
- Active mines

[27] Source: Austin, D. (2015, March). Pricing Freight Transport to Account for External Costs [Editorial]. Working Paper Series. Retrieved 2015, from https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/workingpaper/50049-Freight_Transport_Working_Paper-2.pdf.

- Truckload shippers that are not located adjacent to a rail line
- Nevada Inventory of Industry—Businesses with sidetracks and nearby truckload shippers including:
    - Private sidetracks owned by active and inactive rail shippers and receivers
    - UP-owned in-service sidetracks that are not used for linehaul or switching operations
    - Future sidetracks that could be built by truckload users adjacent to UP right-of-way

The databases used as sources were:

1. The SCRS (Serving Carrier Reciprocal Switching) database maintained by Railinc, which is a wholly owned subsidiary of the large U.S. railroad trade association, The Association of American Railroads. SCRS purports to itemize all private sidings in the U.S. by Customer Name, Station Name, Street Address, Serving Carrier, Phone, and other information. This resource proved to be only about 70 percent accurate for Nevada but was a good starting point.
2. Google Maps, to verify the existence of sidings in SCRS, to identify sidings not listed in SCRS, and to identify facilities that appear to be handling truckload lots next to railroad R-O-W.
3. Nevada county online tax maps, to identify the parcel ID number for specific lots where the operator of the facility is not shown on Google Maps.
4. Nevada county online property records, to find the owner, address, and acreage of specific parcels using the parcel ID number.
5. Internet search engines, to find the customer name associated with an address.
6. Web pages, to gather specific information about their products and telephone numbers.
7. Union Pacific maps, specifically ZTS maps that show track numbers designated by UP for individual customers and other UP-owned tracks.

The information gleaned from these databases was supplemented and confirmed when necessary by on-site visits and telephone calls. The SRF team has developed, as part of the NVSRP, an innovative set of data tools custom-designed to assist rail development in the region and state. These data tools, including maps, identify active and non-active rail sidings, truckload shippers, truckload shippers located adjacent to a rail line, and commercial projects that can benefit from expanded rail service.

All location data includes addresses and contact information and this catalogued data is accessible to stakeholders and interested third parties through an interactive database, spreadsheets, and digital mapping system.

In addition to the above sources utilized in the NVSRP, highly detailed truck and rail freight data for Reno, Churchill, Lyon, Storey, and Washoe Counties was specifically obtained for this study from TRANSEARCH®, a transportation database developed by IHS Global Insights.

E.1 Engagement with Land Developers

Our approach did not rely solely on statistical records and datasets. During the assignment SRF reached out to multiple land developers that are actively investing in Fernley area projects to understand their objectives and interest in sustainable freight systems and specifically an intermodal facility. Our analysis pinpoints specific land holdings and adjacent road and rail infrastructure of each development with maps of each project and their relation to each other. Stakeholders were all open and forthcoming with details

of their projects and expressed appreciation for the attention to rail development that NNDA and NDOT are bringing to the area.

Nine developers in Region 5, the Fernley, Hazen, Fallon, and Silver Springs area of Northern Nevada were contacted in August 2020 by SRF and requested to complete a short questionnaire regarding their development plans for land use, target markets and utilization of rail.

The developers contacted control roughly 40,000 acres of land and are planning to develop over 250,000,000 square feet of industrial space. All the respondents projected opening in 2021 or 2022.

All these developers are located aside or close to the UPRR Main line and 75% of respondents had industrial lead track status in place or accessible. Five of the eight respondents already had their industrial sites rail engineered with Union Pacific approval in place. These five development sites equate to over 9,000 acres of industrial space.

Three quarters of respondents shared their projected industrial use and markets, and these were overwhelmingly related to intermodal and transload services supporting high-tech manufacturing and logistics tenants. One developer also planned to include affordable housing in addition to industrial development.

All developers reported a flat or gently sloping land topography, well suited for rail.

The majority of developers felt they had adequate or strong management strength but were mixed on rail experience where 25% already stated 'operator selected', 25% reported 'significant' and the remaining 50% responded they had minimal rail experience.

Regarding capital status all but one of the respondents reported having capital for development already available or in process. However, when questioned on specific rail funding a majority, 63% of respondents, stated they required capital support.

Three respondents had obtained switching quotes from Union Pacific and a further respondent had conceptual drawings approved by Union Pacific and BNSF.

E.2 Engagement with Transportation Stakeholders

In addition to land developers a broad eco-system of relevant stakeholders to the study were contacted. Existing shippers in the region, railroad operators UP and BNSF, and Caltrans and the Port of Oakland were all engaged directly to capture their views on, and potential support for, new rail infrastructure and specifically an intermodal facility in the study region. The Port of Oakland has subsequently made rail service to northern Nevada one of their top business development goals.

The study took a holistic and inclusive approach whereby detailed data, accurate maps and existing freight networks were utilized in conjunction with information from stakeholder liaison. This approach enabled 'real-world' testing of data accuracy, a continuous qualification of assumptions and, crucially, a platform to test the viability and stakeholder support for proposed solutions and subsequent recommendations in this report.

Port of Oakland's Executive Director Chris Lytle outlined in a 2017 Press Release[28] that he, "wants more rail business…rail transport is the preferred means of shipping cargo in and out of the Port. It takes trucks off the road," he said, "reducing freeway congestion and diesel emissions." His statement continued that in 2016 "the Port completed a $100 million rail storage yard with 41,000 feet of track."

In a December 2019 Business and Rail Overview Report, attached as Appendix 1, the port specifies short haul rail serving Nevada distribution centers as a strategic initiative.

F. Key Findings

- A sustainable freight system is necessary for the study region to manage dependency on truck transportation. The highway infrastructure cannot support the ongoing surge in the region's commercial development if this growth continues to be truck focused. More use of rail for freight flows is necessary for the continued economic development of the study region.

- A new multimodal freight facility situated in the study region would have a clear commercial business case converting international and domestic rail service between the Port of Oakland region and the eastbound geography that is currently serviced by truck. Furthermore, a new multimodal freight facility could attract a sizeable portion of existing international intermodal container unit volume and domestic railcar trade lane traffic between northwest Nevada and the high-volume consumption markets of San Francisco/Oakland and Los Angeles. Additionally, the facility would generate new rail-based freight flows.

- An Integrated Multimodal Cargo Transfer Facility (IMCTF) is required in preference to a traditional Intermodal Container Transfer Facility (ICTF). Optimizing the value and utilization of the Fernley facility requires freight type flexibility (for example bulk minerals as well as containers) and development of adjacent land for logistics services not available in traditional container facilities.

- The study region is ideally located for an Integrated Multimodal Cargo Transfer Facility (IMCTF) with its major east-west arteries serving California's markets and ports and its local growth as a growing economic development area. Fernley is the obvious location in the study region to build an intermodal facility, due to the combination of available land and adjacencies to I-80, U.S. 95, and the Union Pacific Railroad.

- The availability of land is a key success factor in developing an IMCTF. Northwest Nevada has a very high commercial space absorption rate having experienced seven continuous years of 3.5MM sq.

[28] Source: Zampa, M. (2017, May 27). Port of Oakland seeks to move more cargo via rails. Retrieved September 18, 2020, from https://www.portofoakland.com/press-releases/port-oakland-seeks-move-cargo-via-rails/

ft. of net absorption to 2019.[29] Our analysis identifies that Fernley is the sole area between the California border and Hazen with sufficient available space, and flat topography, in a commercial development zone, located aside the rail and highway network. (Two topographical maps are attached as Appendices 2 and 3 showing the paucity of available land in the region.)

G. Business Case

G.1 Overview

The objective of this report is to determine the commercial viability of establishing an Integrated Multimodal Cargo Transfer Facility (IMCTF) in the northwest Nevada region of Fernley. The basis and findings of this report rely heavily upon objective commodity truck flow data provided by TRANSEARCH®, a transportation database developed by IHS Global Insights. In some instances, the study relied upon reasonable estimates that are clearly noted in this report. Furthermore, the study employed an analytic process for this report.

From a commercial perspective, two primary questions need to be addressed in the affirmative:

- Does the freight data analysis support the required volume thresholds for the development and operation of the proposed facility?
- Will the design and service infrastructure of the IMCTF provide shippers with both service enhancement and cost savings that are sufficient enough to compel shippers to convert truck-based cargo to and from the Oakland and San Francisco region and the potential diversion of truck-based cargo currently destined and originating to the southern California Port region?

To attract the largest potential audience of shippers, the facility design will need to incorporate the latest thinking related to in-land transportation and logistics. Rather than a traditional intermodal container transfer facility (ICTF), it is highly recommended that this facility be designed as an integrated multimodal cargo transfer facility (IMCTF). Compared to traditional ICTFs, this facility design allows for:

- The receipt and discharge of cargo from all modes of transport and situations, including:
    a. the interception of domestic truck and rail-based traffic that is currently transloaded to international containers at or near ocean port facilities
    b. inbound transload and cross-docking of intermodal containers to domestic trucking
    c. truck-to-rail car transloading of domestically bound cargo
    d. conventional ICTF single-mode trucking (drayage) of preloaded and empty container transfers to and from intermodal rail ramps
- The siting of integrated cargo commodity handling infrastructure and services. This includes but is not limited to:
    - dry and cold chain storage
    - ground and open-pit discharge and storage

[29] "Reno Industrial MarketView Q2 2020," CBRE, source link, (2020)

- cross-docking
- private chassis service
- phytosanitary
- USDA and customs inspection services
- other specialized commodity handling requirements.

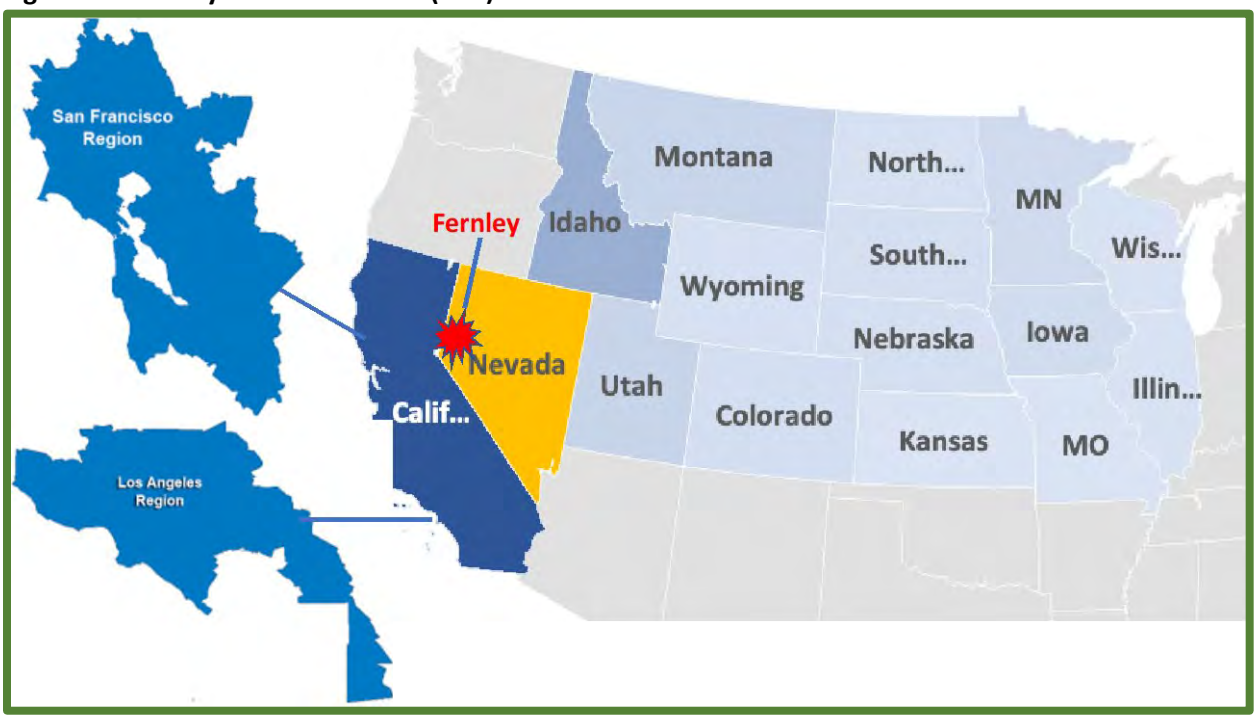
Our findings in this report suggest a clear commercial business case for an IMCTF facility in Fernley; providing intermodal and domestic rail service between the Port of Oakland region and the extensive eastbound geography that is primarily served by truck. Furthermore, based upon the above conditions and data analysis set forth in this study, SRF estimates that the Fernley IMCTF would attract a range of 160,000 to 215,000 of the existing international intermodal container unit volume and potentially significant domestic railcar trade lane traffic between the Fernley IMCTF and the high-volume consumption markets of San Francisco/Oakland and San Pedro Bay.

G.2 Defining the Geographic Market

An objective data-driven process was applied to determine the geographic markets that would support the unit volume threshold requirement for new rail infrastructure in the Fernley, NV region. This analysis identified all domestic and international truck-based through-traffic between the Oakland/San Francisco region and trade partner states east of Nevada that specifically pass through the Reno, NV corridor. For this report, this corridor region is called the Fernley Catchment Area (FCA) and consists of 14 states east and north east of Nevada.

Upon the identification of the FCA, the study also observed and reported domestic and international truck traffic from the FCA to and from the Los Angeles region and its Ports of Long Beach, Los Angeles, and San Diego. To the extent to which this cargo is destined to or from international markets, there is a compelling commercial business case for the deflection of this cargo from the Los Angeles area ports to the Port of Oakland via the IMCTF at Fernley.

Figure 12: Fernley Catchment Area (FCA)



G.3 Why Fernley

There are a host of strategic considerations and stakeholder requirements that must be met to ensure that the Fernley project becomes a successful operation. These considerations and requirements are intertwined. However, the over-arching key to success is simply volume. As depicted in **Table 17** and reported further in this study, there exists substantial truck-based traffic volume between Northern Nevada, the Fernley Catchment Area and the port regions of Oakland and Los Angeles. The following sections of this report identify strategic advantages of the proposed IMCTF at Fernley.

G.3.1 Strategic Location and Connectivity

The proposed facility in Fernley possesses strategic attributes that allow for substantial opportunities for road-to-rail conversion. Fernley is located along the east-west transit corridor of both I-80 and the Union Pacific Railroad, where an intermediate IMCTF would be ideally situated between the Fernley Catchment Area and the San Francisco/Port of Oakland region. In addition, Fernley is ideally situated to serve northern Nevada producers of domestically bound aggregates to the high-density markets of San Francisco and perhaps Los Angeles.

G.3.2 Existing Truck-Based Traffic

The Fernley region is a major thoroughfare for both domestic- and international-bound truck traffic to the high-density market regions of the San Francisco/Port of Oakland region and potential deflection of international traffic moving to the southern California ports. This report provides top-down truck-based volume reporting statistics in the section titled Northwest Nevada Freight Transportation Statistics Report. The study reveals substantial conditional volume available to the Fernley IMCTF.

Table 17: Comprehensive Truck Volume Table: FCA States and Corresponding Port Regions

Fernley Catchment Area (FCA)	Oakland/SF Domestic Truck	Oakland/SF Int'l Units	Oakland/SF Total Units	LA Region Domestic Units	LA Region Int'l Units	LA Region Total Units	Grand Total Units
Colorado	62,030	3,655	65,685	172,003	22,318	194,321	260,006
Idaho	185,713	4,341	190,054	136,771	8,509	145,280	335,334
Illinois	37,540	767	38,307	47,179	15,345	62,524	100,831
Iowa	30,857	1,684	32,541	32,035	10,974	43,009	75,550
Kansas	11,361	1,026	12,387	36,292	6,635	42,927	55,314
Minnnesota	49,357	1,886	51,243	74,945	13,283	88,228	139,471
Missouri	17,407	878	18,285	32,200	4,841	37,041	55,326
Montana	42,296	2,251	44,547	71,934	2,446	74,380	118,927
Nebraska	18,324	3,164	21,488	24,707	12,766	37,473	58,961
North Dakota	13,897	309	14,206	30,228	2,710	32,938	47,144
South Dakota	18,863	1,350	20,213	27,322	4,959	32,281	52,494
Utah	121,641	10,862	132,503	269,617	49,306	318,923	451,426
Wisconsin	49,580	1,543	51,123	74,162	9,808	83,970	135,093
Wyoming	32,107	1,940	34,047	53,001	5,490	58,491	92,538
Total	690,973	35,656	726,629	1,082,396	169,390	1,251,786	1,978,415

Source: TRANSEARCH® 2018 Truck Data

G.3.3 Land Availability

One key to the facility design of an IMCTF is land availability. In the absence of sufficient developable land adjacent to the Union Pacific Railroad, the opportunity at Fernley would be relegated to traditional ITCF design, which would lack adequate site capabilities to attract sufficient freight volume to justify further consideration. As it were, the Fernley region possesses significant large-scale land availability, both contiguous and non-contiguous, to support both an IMCTF single-site facility and adjacent non-contiguous parcels to support commercial and industrial development that would naturally arise from the advanced and highly efficient service provided by an IMCTF.

G.3.4 Fernley in Summary

So, why Fernley? It possesses ideal rail and road connectivity, evidence of sufficient potential freight volume, and substantial land availability.

G.4 About IMCTFs

To best understand contemporary thinking related to inland terminals and how they support effectiveness, efficiency, and value in the supply chain, particularly to the land transportation portion of the supply chain, one must understand the differences between the current intermodal container transfer facility (ICTF) models operating today as compared to the proposed IMCTF. We must understand their designed roles, their current limitations, and the pain points that have developed because of ever-growing changes within the cargo supply chain itself.

G.4.1 Traditional ICTF (Intermodal Container Transfer Facility)

The primary role of the traditional ICTF is to transfer loaded or empty containers to/from the train cars, to/from the ITCF facility, and then to/from trucks. This traditional model is typically run by an intermodal

operator, such as a Class I railroad (i.e. Union Pacific), which oversees the operations portion of transferring containers to and from railcars and trucks.

G.4.1.1 Pain Points of the Traditional ICTF model

Shipper/Trucker Perspective

- Facilities are typically open for 8-to-10-hour shifts Monday to Friday and closed on weekends and all major/traditional holidays.
- Process delays are common and include factors such as heavy truck volume accessing the terminal, onsite chassis availability, and limited electrical sources to power refrigerated containers.
- Multiple point processing, when truckers must make several stops to secure chassis and containers can add substantial time to the drayage process.
- Inland terminal locations in densely populated areas require truckers to manage congestion and safety issues that can add time to container moves.
- Land-locked urban areas lack available land for inland terminals and related operations.

G.5 Latest thinking in Integrated Multimodal Cargo Transload Facility (IMCTF) Design

The IMCTF model design allows for the inflow and outflow of cargo from all modes of transport, with integrated on-dock cargo handling and services resulting in significant shipper savings. **The IMCTF is built around identifying a strategic location where sufficient volumes of truck cargo/shipments intersect with primary rail lines that can provide the most efficient land transportation method to/from specific major destination points.** This concept design is limited only by the availability of large-scale land development, which in the case of Fernley is not a factor.

G.5.1 Important operational service differences of the IMCTF model

The IMCTF model focuses on driving efficiency through combining cargo transloading operations in a strategic location. The IMCTF provides for the following:

- Commodity specialization including in-gate processing infrastructure and dry- and cold-storage capabilities
- Bulk commodity transfer stations where aggregates and other bulk commodities can be received by truck and transloaded to rail
- Complete on-dock consolidation of logistics steps that provide un-paralleled ease of use relative to current practices
- Customs bonded operations to provide for multiple in-bond services
- Partnering Government Agencies (PGA) located onsite allowing access for efficient and timely processing of CBP, USDA, FDA, F&W, etc. as may be needed for shipments in review

G.5.2 IMCTF can remove pain points that result in inefficiencies and added costs

- IMCTF facilities, with supportive volumes, can operate 24/7 aligning with most Class I rail (i.e. Union Pacific) operations

- Drayage movements of containers from terminals to distant rail "ramps" are not necessary when cargo is transloaded directly to rail. Truckers thus avoid the empty miles of making additional stops to pick up and return chassis equipment, and the empty return trip to the terminal.
- Elimination of wait-time charges for shippers who face delays when their shipments are brought to third-party service providers for transloading from trailers to containers
- Detention charges from equipment providers can quickly add up to thousands of dollars. Because an IMCTF would be providing high-volume moves using precision scheduled railroad processes and systems, detention charges could be eliminated
- Timely onsite PGA processing of shipments allow for cargo reviews to be completed in a timely fashion and without travel to multiple third-party facilities in congested urban areas. With the IMCTF, cargo is brought directly to the on-site PGAs

G.5.3 Case Study: ICTF at Salt Lake City

The Union Pacific ITCF facility in Salt Lake City provides direct intermodal rail service to the Ports of Oakland and Los Angeles-Long Beach. Why do 250,000 international-bound trucks bypass this facility every year?

- No cargo transloading capabilities: The ICTF does not transload cargo in and out of different containers, it only moves the containers themselves from one mode to another. Therefore, the largest portion of international-bound loads, which are coming from states beyond Nevada, load their cargo into standard 53-foot trailers for truck delivery to near-dock transloading facilities in the Oakland/San Francisco or Los Angeles/Long Beach port regions for processing and last-mile transportation to the port.
- Limited equipment capabilities: This ICTF facility is limited to TOFC (Trailer on Flat Car) and COFC (Container on Flat Car) equipment transfer services.
- Container/chassis equipment access: Limited to truck carriers that are required to meet all equipment provider (ocean carrier, chassis provider, railroad, etc.) rules and requirements included in intermodal interchange agreements.
- Detention charges: These can add up very fast and are built into the equipment provider interchange agreements between the truck carriers and the facility. Costs accrue well in excess of $100/container per day for shippers unable to pick-up or return equipment within the allowable "free time" (which varies by equipment provider).
- Limited local service area: All international cargo loads outside of the local SLC area must make a trip to the SLC ICTF to first pick up a container on a chassis, then transport it back to the shipper for loading, and then return to the SLC ICTF to drop off the loaded container. This process adds excessive time and costs to moving the cargo, more so with increased distance from the ICTF.

G.6 Shipper Savings

The following section identifies the shipper savings gained through the elimination of the truck-based processes obviated for FCA international shippers using the IMCTF at Fernley. Also, in this section are two business cases identifying shipper cost savings in comparison to the most highly cost-competitive routing and utilization of the Union Pacific ITCF in Salt Lake City. These models stress-test the economics relating to the diversion of truck-based cargo to Fernley with rail-shuttling to the Port of Oakland.

G.6.1 Consolidated Logistics Steps

The traditional ICTF model is built around the transfer of equipment, not cargo. The ability to transition typical truckload cargo requires it to be loaded into rail-approved container equipment at the shipper or transload facility. This offsite requirement adds significant additional costs and time to get the cargo transported to the destination point.

The IMCTF model is based around cargo transloading and therefore removes the obstacles associated with container equipment positioning for seamless transition from truckload cargo to rail transportation.

Figure 13: ITCF 9-Step Logistics Process

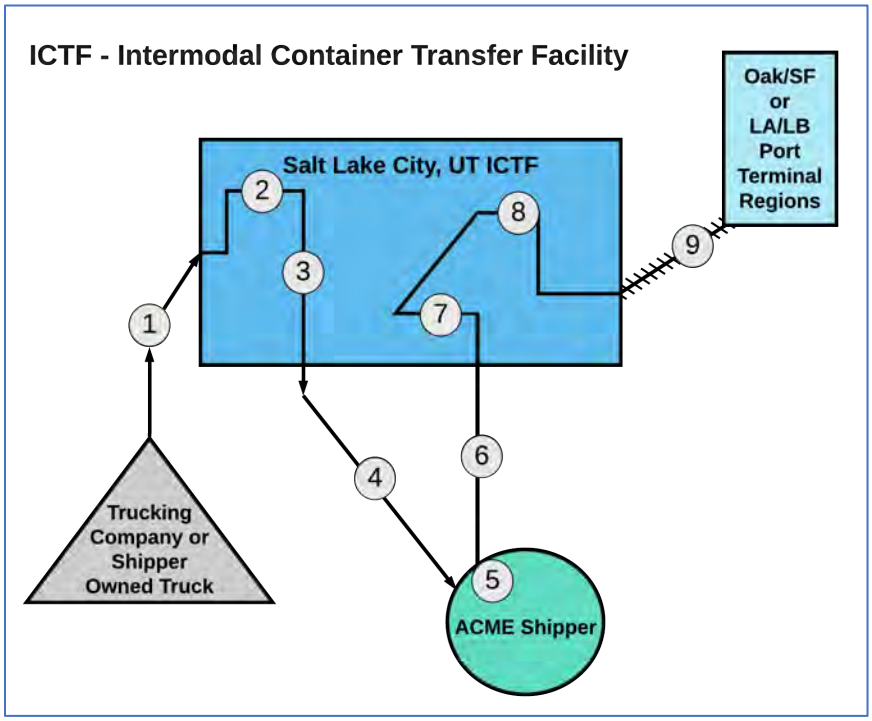


Exhibit 1 demonstrates the nine steps involved to accommodate an export container loaded via an ICTF operation. The ICTF process is driven by the need for cargo loading at the shipper location into special equipment necessary for rail transportation.

Step 1 – Shipper owns truck or hires a truck carrier to provide container drayage services to pick up a container and bring it to the shipper's loading dock to be loaded (export). Trucker gets the container booking information from the shipper and goes to the ICTF for the chassis and container equipment.

Step 2 – Truck carrier/driver arrives at the ICTF, checks in at the gate and proceeds to the chassis area where truck carrier/driver finds a chassis and connects safely.

Step 3 – Truck carrier/driver proceeds to the yard location for container. Truck carrier/driver waits for yard operator to load an empty export container on the chassis. Trucker then proceeds to the check-out area and does an outside visual inspection for any potential unsafe conditions before leaving.

Step 4 – Trucker leaves the ICTF and drives to shipper dock for loading.

Step 5 – Truck carrier/driver arrives at shipper's designated facility dock for loading (export). Most international shipments are shipped floor loaded. Time to load a floor loaded 40-foot container by a two-person team can vary greatly depending on the commodity and packaging characteristics but typically it takes four hours.

Step 6 – Truck carrier/driver leaves the shipper dock and returns to ICTF with the loaded (export) container.

Step 7 - Upon return to the ICTF, the truck carrier/driver checks in at the gate, moves to instructed yard position and awaits removal of the container from the chassis.

Step 8 – Upon removal of the container from the chassis, the truck carrier/driver takes the chassis to the chassis drop location in the yard and disconnects it.

Step 9 – The ICTF transfers the loaded container onto the train for transportation to the ocean port terminal destination for transfer to a pre-determined ocean carrier vessel.

Figure 14: IMCTF 5-Step Logistics Process

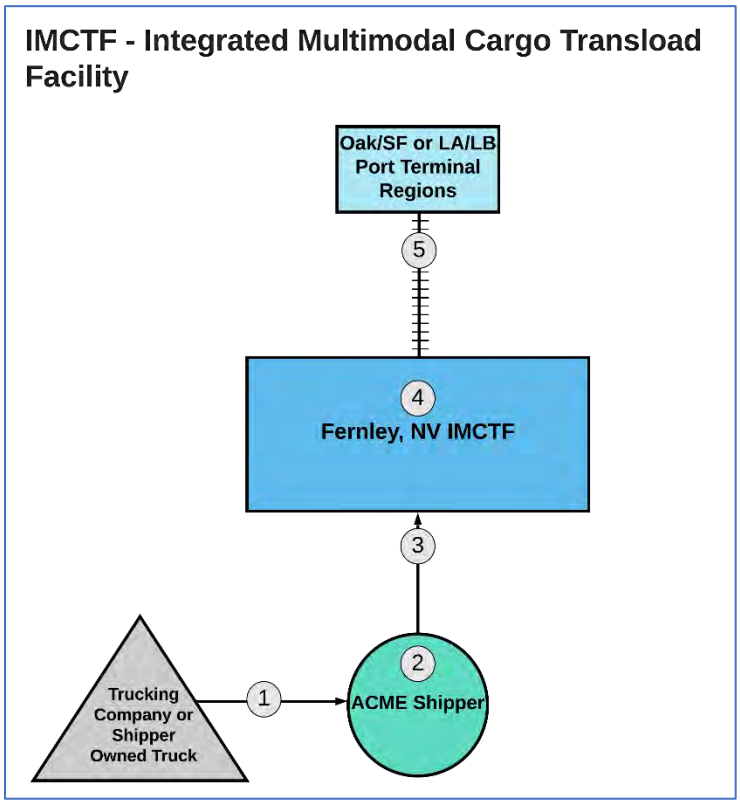


Exhibit 2 is the process diagram for an IMCTF operation. As demonstrated, the IMCTF significantly consolidates logistics activities from 9 steps to 5.

Step 1 – Shipper owns truck or shipper hires a truck carrier to provide standard 53-foot dry van to transport the shipper's cargo to the IMCTF. Shipper-owned truck process starts at Step 2.

Step 2 – Truck carrier/driver arrives at the shipper facility, checks in and backs into a designated dock and gets loaded. Once loaded the trucker is provided all necessary documents and ensures there is a seal attached to the trailer door to ensure no tampering prior to arrival at the IMCTF.

Step 3 – Truck carrier/driver transports the cargo truckload to the IMCTF in Fernley, NV.

Step 4 – Truck carrier/driver arrives at the IMCTF in Fernley, NV and is directed to a dock for transloading. The transload team unloads the cargo and the driver proceeds to the check-out gate and on to their next job.

Step 5 – Once the transload operator has completed the transload of the cargo into the international container, the IMCTF operator stages the loaded container for the intermodal operator where it will be loaded onto the train for transportation to the ocean port terminal.

In summary, and as demonstrated in the above exhibits, the consolidation of steps offered by the IMCTF translates to ease of use and significant internal cost savings.

G.6.2 Transportation Cost Improvement

Two scenarios are presented in **Tables 18** and **19** below to illuminate the savings difference between the traditional ICTF model and the IMCTF model. The study employed current sample western region truck rates of $2.65/mile 500 miles/day with 10 hours' drive time per day for cost calculations. It is important to note that we have applied an estimated $600.00 rail shuttle cost to and from the Fernley IMTCF and the Port of Oakland. Furthermore, in the model below, we show a $450.00 transloading revenue charge per truck, an appealing revenue line item for a Fernley IMCF investor/operator.

Table 18: Fernley IMCTF Vs. SLC ITCF: Shippers in 250 Mile Radius Drive

Shipper Savings Summary: ICTF vs IMCTF	Salt Lake City, UT ICTF	Fernley, NV IMCTF	
40' Intl. Export Food/Farm Cargo at 250 miles away	Year 1	Year 2	
Container Drayage 500 miles R/T (250 miles O/W)	$1,325.00	$0.00	
Shipping of cargo to IMCTF via 53' Dry Van 250 miles	$0.00	$662.50	
Chassis Charge @$40/day with 2 Day minimum	$80.00	$0.00	
Transload to 40' container floor load	$100.00	$450.00	
Rail to Oakland/SF Port Terminal Region	$600.00	$600.00	
Other	$0.00	$0.00	
Estimated Total Costs	$2,105.00	$1,712.50	Savings Percentage:
Shipper Savings per Unit		-$392.50	19%

Table 18 demonstrates the accrued shipper savings from the consolidation of logistics services at the IMCTF, versus the multiple movements required at UP's ICTF in Salt Lake City.

In this scenario:

- An international shipper of farm and food cargo located within the FCA and located 250 miles from the Salt Lake City ITCF is compared with a shipper located 250 miles from the Fernley IMCTF.
- Transporting the cargo via the ITCF at Salt Lake City to the Port of Oakland is estimated to cost $2,105.
- The re-routing of the truck-based cargo to the IMCTF at Fernley and with a final destination to the Port of Oakland is expected to cost $1,712.50.
- This yields a nearly $400 savings and eliminates a number of the logistics gymnastics relating to the use of the ITCF.

Table 19: Fernley IMCTF Vs. Through Trucking to Near Port Transload

Shipper Savings Summary: Truck Through vs IMCTF	Through Truck	Fernley, NV IMCTF	
40' Intl. Export Food/Farm Cargo at SLC region to destination to Oak/SF Port Terminal Region.	730 miles	486 miles	
Shipping of cargo to IMCTF via 53' Dry Van 486 miles	$0.00	$1,287.90	
Shipping of cargo to IMCTF via 53' Dry Van 250 miles	$1,934.50	$0.00	
Transload to 40' container floor load	$450.00	$450.00	
Container Drayage near dock	$300.00	$0.00	
Chassis Charge @$40/day with 2 Day minimum	$80.00	$0.00	
Rail to Oakland/SF Port Terminal Region	$0.00	$600.00	
Other	$0.00	$0.00	
Estimated Total Costs	$2,764.50	$2,337.90	Savings Percentage:
Shipper Savings per Unit		-$426.60	19%

Table 19 demonstrates the accrued shipper savings, with a cost comparison for shippers located within the FCA of trucking cargo to near west coast port transload facilities, versus their using the IMCTF at Fernley.

In this scenario:

- An international shipper of farm and food cargo is located within the FCA, 730 miles from the Port of Oakland region, and 486 miles from the Fernley IMCTF.
- Truck transporting the cargo to the Port of Oakland for container transloading is estimated to cost $2,764.50.
- The alternate routing of the truck-based cargo to the IMCTF at Fernley with a final destination to the Port of Oakland is expected to cost $2,337.90.
- This yields over $425 in savings to the shipper, and as previously discussed, the entire IMTCF design concept removes other soft costs related to complex transport supply-chain alternatives.

G.7 Survey of Relevant Rail Infrastructure and Port Partnerships

As addressed in the above sections, the ITCF in Salt Lake City is one of the most viable options within the FCA for international and domestic shippers to reach the California Port Regions. As explained, this facility has significant limitations to handling diverse truck-based commodity shipments, as its design and function is purely as an ICTF operation. Below is a brief description of the relevant rail interfaces, their

attributes, and their respective service schedules. Also, below is a broad differentiation between the Ports of Los Angeles and Long Beach relative to the Port of Oakland.

G.7.1 Current Inland Rail Interfaces

- Sparks, NV: Union Pacific: Rail carload service only to and from Chicago.
- Las Vegas, NV: Union Pacific: Domestic 53' container service only to and from UP ITCF Los Angeles.
- Salt Lake City, UT: Union Pacific.
    - International container service to Long Beach, CA. Four days per week, three-day transit time
    - International and domestic container service to Oakland, CA. Four days per week, two-day transit time.
    - Proximity from Fernley: 481 Miles (6:45)

G.7.2 Port Partnership Considerations

- Ports of Los Angeles and Long Beach
    - From an economic shipper savings perspective and to the extent that this traffic is international, a near-universal business case can be made to deflect this current trade lane to the Port of Oakland via the Fernley IMTCF. Current truck-based routing of the FCA westbound and eastbound originations that pass-through Nevada are concentrated on the Southwestern Nevada I-15 gateway to Southern California port regions, and currently avoid the routing to/from the Fernley/Reno I-80 gateway.
    - Perhaps even more important, neither the Port of Los Angeles or Long Beach possess the capacity to absorb any additional on-dock intermodal rail volume, thus eliminating them as a rail-based port partner for either Las Vegas, Sparks, or Fernley
- Port of Oakland and Union Pacific (UP) Bay Area
    - Geographically aligned with Nevada truck-based through-traffic
    - UP main line already provides domestic and international container service between Oakland and Salt Lake City
    - Enthusiastic Port Authority and no limitations for on-dock intermodal and carload service
    - Fernley is likely to deflect cargo from the Ports of Los Angeles and Long Beach, creating incremental new volume to Oakland
    - Fernley would modally convert truck-based traffic to rail, reducing port congestion and meeting Caltrans and NDOT objectives of highway to rail (H2R) conversion along the I- 80 corridor
    - Oakland is a major farm and food products port, which coincides with NV through-traffic of those commodities which represent nearly 50% of all NV truck-based through-traffic
    - In conjunction with Eagle Rock Aggregates (Vancouver), the Port of Oakland has opened an on-dock import and distribution operation for sand and gravel to supply Bay Area construction. Non-Metallic Mineral and Clay, Concrete, and Stone represent over 50

percent of the NWNV commodity production, with over 190,000 truckloads moving to the Bay Area region.

G.8 Trucking Statistics

The following tables and charts depict truck-based traffic flows between the FCA and California port regions of Oakland/San Francisco and the Southern California port regions of Long Beach, Los Angeles, and San Diego, collectively referred to here as the Port Regions. The data (from 2018) was furnished by TRANSEARCH®. To estimate potential cargo flows to the IMCTF at Fernley, the presented data has undergone filtering to isolate baseline truck-traffic between the FCA and the Port regions.

Table 20 depicts the total consolidated truck-based freight activity to and from the FCA and the Port Regions. Total current freight activity to and from the Oakland region exceeds 725,000 units annually and 1,250,000 units to the LA region. It is important to note that virtually all of the Oakland/San Francisco regional freight traffic passes through the Fernley region along I-80. Secondly, as demonstrated in the Shipper Savings section, **there is a compelling business case for the deflection of existing internationally bound domestic and international truck-based traffic to/from the Los Angeles area ports to the Port of Oakland via the IMCTF at Fernley.** This scenario is included in the potential volume study for the IMCTF at Fernley.

Table 20: Consolidated Truck-Based Freight Activity: FCA between Oakland and Los Angeles Regions

Fernley Catchment Area (FCA)	Oakland/SF Domestic Truck	Oakland/SF Int'l Units	Oakland/SF Total Units	LA Region Domestic Units	LA Region Int'l Units	LA Region Total Units	Grand Total Units
Colorado	62,030	3,655	65,685	172,003	22,318	194,321	260,006
Idaho	185,713	4,341	190,054	136,771	8,509	145,280	335,334
Illinois	37,540	767	38,307	47,179	15,345	62,524	100,831
Iowa	30,857	1,684	32,541	32,035	10,974	43,009	75,550
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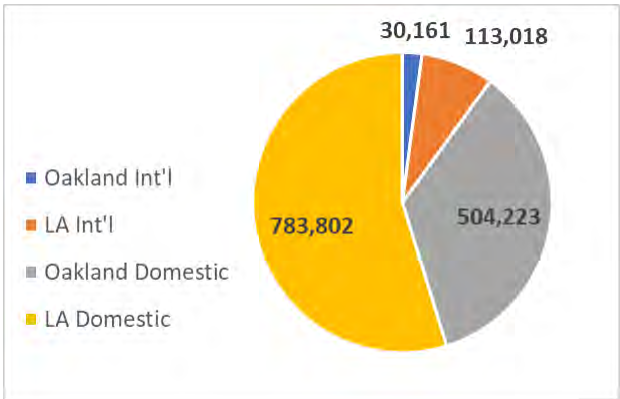
Missouri	17,407	878	18,285	32,200	4,841	37,041	55,326
Montana	42,296	2,251	44,547	71,934	2,446	74,380	118,927
Nebraska	18,324	3,164	21,488	24,707	12,766	37,473	58,961
North Dakota	13,897	309	14,206	30,228	2,710	32,938	47,144
South Dakota	18,863	1,350	20,213	27,322	4,959	32,281	52,494
Utah	121,641	10,862	132,503	269,617	49,306	318,923	451,426
Wisconsin	49,580	1,543	51,123	74,162	9,808	83,970	135,093
Wyoming	32,107	1,940	34,047	53,001	5,490	58,491	92,538
Total	**690,973**	**35,656**	**726,629**	**1,082,396**	**169,390**	**1,251,786**	**1,978,415**

Source: TRANSEARCH® 2018 Truck Data

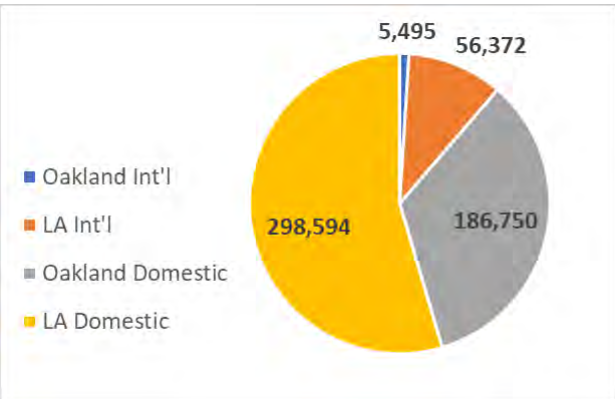
Figures 15 and **16** depict the directional flows of Nevada truck-based through traffic between the FCA and Port Regions. As demonstrated from the charts, over 72% is westbound from the FCA to the Port Regions, versus only 28% eastbound. This is largely explained by both the significant consumption and International shipping that occurs in the Port Regions of Oakland and Los Angeles.

Figure 15: Westbound Traffic to Port Regions



Source: TRANSEARCH® 2018 Truck Data

Figure 16: Eastbound Traffic to FCA



Source: TRANSEARCH® 2018 Truck Data

G.8.1 Consideration of Farm and Food Products Commodities

Commodities of farm and food products play a dominate role in transportation between the FCA and the Port Regions. Overall, 47% of all truck-based cargo shipped to and from the FCA and the Port Regions are farm and food products, nearly 900,000 truck units. This commodity concentration is even more pronounced when isolating shipments between the FCA and the Oakland region, where farm and food products represent over 54% of the westbound truck moves (291,000 moves) and 60% of the eastbound truck moves (116,000 moves).

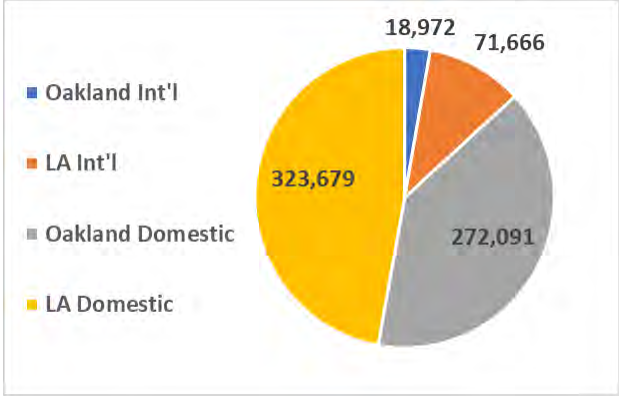
This commodity concentration represents a significant opportunity to attract freight volume to the IMCTF:

1) Allows for specialization of infrastructure to handle this large volume commodity sector, as this commodity group is likely to represent approximately 50% of the cargo volume.

2) Provides for the opportunity for highly targeted marketing strategies to an industry sector that is known for its collective organizational strength: large-scale food processing tenants.

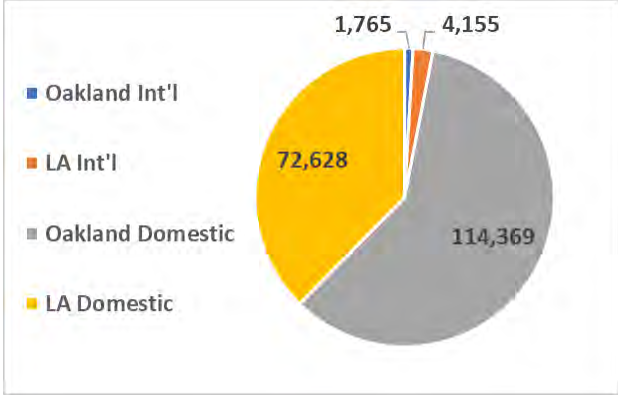
3) Served by a highly focused group of third-party logistics firms. **Figures 17** and **18** present the truck unit volume of Farm and Food Products by truck units, direction, and trade type.

Figure 17: Westbound Farm and Food Products Traffic



Source: TRANSEARCH® Truck Data

Figure 18: Eastbound Farm and Food Products Traffic



Source: TRANSEARCH® Truck Data

As Farm and Food Products are a significant contributor to overall truck flows, **Tables 21** and **22** focus on this commodity, including the domestic traffic activity and directional flow for Oakland Regional truck traffic, ranked by State truck volume.

Table 21: Domestic Westbound Commodity Traffic from the FCA to the Oakland Region

Cartchment Origination	Port Region Destination	Farm & Food Truck Units	Other Commodities Truck Units	Total Truck Units
Idaho	SF/OAK	103,550	23,212	126,762
Utah	SF/OAK	31,835	39,667	71,502
Minnesota	SF/OAK	19,803	20,809	40,612
Colorado	SF/OAK	13,338	27,104	40,442
Montana	SF/OAK	29,306	10,350	39,656
Wisconsin	SF/OAK	4,949	34,193	39,142
Wyoming	SF/OAK	8,941	18,763	27,704
Illinois	SF/OAK	5,105	21,155	26,260
Iowa	SF/OAK	17,387	8,707	26,094
Nebraska	SF/OAK	11,220	4,881	16,101
South Dakota	SF/OAK	10,457	5,377	15,834
Missouri	SF/OAK	3,756	9,922	13,678
North Dakota	SF/OAK	9,083	3,118	12,201
Kansas	SF/OAK	3,361	4,874	8,235
Total		**272,091**	**232,132**	**504,223**

Source: TRANSEARCH® Truck Data

Table 22: Domestic Eastbound Commodity Traffic from Oakland Region to the FCA

Port Region Origination	Catchment Destination	Farm & Food Truck Units	Other Commodities Truck Units	Total Truck Units
SF/OAK	Idaho	30,906	28,045	58,951
SF/OAK	Utah	32,172	17,967	50,139
SF/OAK	Colorado	11,208	10,380	21,588
SF/OAK	Illinois	8,205	3,075	11,280
SF/OAK	Wisconsin	8,787	1,651	10,438
SF/OAK	Minnesota	6,677	2,068	8,745
SF/OAK	Iowa	3,688	1,075	4,763
SF/OAK	Wyoming	938	3,465	4,403
SF/OAK	Missouri	2,592	1,137	3,729
SF/OAK	Kansas	2,299	827	3,126
SF/OAK	South Dakota	2,353	676	3,029
SF/OAK	Montana	1,842	798	2,640
SF/OAK	Nebraska	1,599	624	2,223
SF/OAK	North Dakota	1,103	593	1,696
Total		114,369	72,381	186,750

Source: TRANSEARCH® Truck Data

As with **Tables 21** and **22**, the following tables focus on Farm and Food Product data: **Tables 23** and **24** present the domestic traffic activity and directional flow for Los Angeles Regional, ranked by State truck volume.

Table 23: Domestic Westbound Commodity Traffic from the FCA to the LA Region

Cartchment Origination	Port Region Destination	Farm & Food Truck Units	Other Commodities Truck Units	Total Truck Units
Utah	LA Region	46,886	108,375	155,261
Idaho	LA Region	84,781	24,601	109,382
Colorado	LA Region	32,872	72,786	105,658
Minnesota	LA Region	22,662	40,458	63,120
Wisconsin	LA Region	6,746	56,316	63,062
Montana	LA Region	37,367	24,968	62,335
Wyoming	LA Region	10,757	33,526	44,283
Illinois	LA Region	7,172	22,651	29,823
Iowa	LA Region	13,619	13,653	27,272
Kansas	LA Region	9,575	17,005	26,580
Missouri	LA Region	6,875	19,175	26,050
North Dakota	LA Region	16,030	9,599	25,629
South Dakota	LA Region	14,378	9,543	23,921
Nebraska	LA Region	13,959	7,467	21,426
Total		323,679	460,123	783,802

Source: TRANSEARCH® Truck Data

Table 24: Domestic Eastbound Commodity Traffic from the LA region to the FCA Truck Data

Port Region Origination	Catchment Destination	Farm & Food Truck Units	Other Commodities Truck Units	Total Truck Units
LA Region	Utah	21,445	92,911	114,356
LA Region	Colorado	13,412	52,933	66,345
LA Region	Idaho	10,969	16,420	27,389
LA Region	Illinois	4,039	13,317	17,356
LA Region	Minnnesota	6,677	5,148	11,825
LA Region	Wisconsin	4,300	6,800	11,100
LA Region	Kansas	2,595	7,117	9,712
LA Region	Montana	1,829	7,770	9,599
LA Region	Wyoming	1,203	7,515	8,718
LA Region	Missouri	1,611	4,539	6,150
LA Region	Iowa	1,693	3,070	4,763
LA Region	North Dakota	636	3,963	4,599
LA Region	South Dakota	1,132	2,269	3,401
LA Region	Nebraska	1,087	2,194	3,281
Total		72,628	225,966	298,594

Source: TRANSEARCH®

G.9 IMCTF at Fernley—Estimated Traffic Volume

G.9.1 Preliminary Facility Requirements

In preparation of this report, an extensive truck-based freight study was performed to determine the range of cargo volumes that could be captured at the IMCTF at Fernley. This study first identified the target market catchment area—the FCA, and its truck-based commodity volume relationship with the California Port Regions. The reporting of freight statistics establishes the baseline of the available universe of relevant truck volume. Appropriate facility design and operating requirements are as follows:

- The facility design, operations and services need to extend beyond traditional ICTF's to the full services offered by an IMCTF.
- The IMCTF must clearly demonstrate to shippers compelling cost and service improvements over current transportation practices.
- Largely dependent upon volume, the frequency of intermodal rail service must meet a minimum threshold of three days per week, preferably 4 to 5 days per week. Any rail shuttle service must meet the Union Pacific Railroads' Precision Scheduled Railroading (PSR) operating requirements.
- Direct integrated ocean bill of lading service at the Fernley IMCTF must be provided by the broad range of ocean carriers that are currently calling on the Port of Oakland.
- The IMCTF should be a private operation and independent of the facility's core partners of Union Pacific and the Port of Oakland.
- Relating to the above, a detailed financial business case and model will need to demonstrate an appropriate rate of return on the infrastructure investment.

To estimate freight volume potential at the IMCTF at Fernley, a cascading volume sensitivity model has been developed. While the overall data is entirely objective, the model relies upon several major subjective considerations, for which there are no verifiable data-driven sources. They are:

G.9.2 Near-Port International Conversion of Domestic Cargo

The TRANSEARCH® Truck Data only reports cargo unit moves as international when the destination or origination is specifically identified as an international deep-water port. Otherwise, the move is identified as domestic. In the case of the Fernley IMCTF report, all domestic and international truck-based traffic reporting was refined to port region origins and destinations. By default, the Port Regions imply that both possess major international port gateways. The question then becomes, how much of this truck-based cargo is being consumed within those two regions and how much is being converted to and from international containers in near-port regions and then locally drayed to/from the international port. The estimated percentage of international cargo is a three-factor consideration:

1. The regions immediately surrounding the ports of Oakland, Los Angeles, Long Beach, and San Diego have extensive near-port logistics and transportation service providers whose core functions are to receive and discharge domestic trucks, provide dry and cold storage, consolidate and deconsolidate international containers, and provide drayage to and from the local port(s).
2. Within the FCA, international shipper and receiver locations are scattered, and often distant from intermodal container truck-to-rail transfer facilities; thus, trucking to and from international port regions is the only commercially viable option.

3. The composition of commodities shipped to and from the FCA are biased towards potential for international export and import. As an example, aggregate commodities such as sand and stone are almost entirely consumed domestically within their delivered market. Conversely, unprocessed food and farm products are more likely to be exported rather than locally processed and consumed within the major port regions. In the case of the FCA and Port Regions relationship, farm and food products represent nearly 50% of all commodities.

Based on the above, and considering the relative near-port population, and regional production-consumption characteristics in both the FCA and corresponding Port Regions, a subjective ratio was applied to domestic truck-based cargo flows that are transloaded from domestic truckloads into between internationally bound containers, herein known as International Conversion Ratio (ICR).

Table 25: Westbound Domestic to International Conversion Ratio ICR: FCA and Port Regions

Origination	Destination	Min. Conversion	Max. Conversion
Oakland Region	Oakland Region	30%	40%
FCA	LA Region	20%	30%

Table 26: Eastbound Domestic to International Conversion Ratio ICR: FCA and Port Regions

Origination	Destination	Min. Conversion	Max. Conversion
Oakland Region	FCA	45%	55%
La Region	FCA	35%	45%

G.9.3 Fernley IMCTF Interception of International Cargo

Of the nearly two million total truck-based through traffic trips between the FCA and the Port Regions, the above tables narrow the range of eligible cargo from 630,00 to 791,000 truck moves, or 32-40% of the total truck-based traffic. **Tables 27** and **28,** below depict the range of domestic truck-based cargo that is likely reclassified as international cargo. The final portion of the analysis relates to the interception of international cargo to the Fernley IMCTF for final rail shuttle service to the Port of Oakland. Again, this is a subjective exercise but is based upon the ability to market the facility's attributes of shipper savings, the broad service offering of the IMTCF, and its convenience versus current truck-based transport to and from the FCA and the Port Regions. See **Tables 27** and **28**:

Table 27: Westbound Fernley Interception Ratios (FIR): FCA and Port Regions from FCA to Oakland Region

Origination	Destination	Min. Conversion	Max. Conversion
FCA	Oakland Regon	30%	40%
FCA	LA Region	20%	25%

Origination	Destination	Min. Conversion	Max. Conversion
Oakland Region	FCA	35%	45%
La Region	FCA	25%	35%

Table 28: Eastbound Fernley Interception Ratios (FIR): FCA and Port Regions from FCA to Oakland Region

G.9.4 Summary of Findings for International Cargo Volumes at the Fernley IMCTF

Based upon the above range of ratios relating to truck-based domestic cargo reclassification to international, along with the Fernley interception ratio of inbound/outbound international cargo flows to and from the Port of Oakland, the schedules below present both estimated minimum and maximum anticipated truck-based unit volumes that the Fernley IMCTF could receive and discharge between the Port of Oakland and the FCA on an annual basis: See **Tables 29** and **30**.

Table 29 applies the minimum ratios to the entire truck-based data set and arrives at a minimum anticipated volume of international containerized traffic between the Fernley IMCTF and the Port of Oakland of approximately 160,000 units per year. This number essentially distills the overall through-traffic volumes between the FCA and the Port Regions of two million units to 16% market capture by the Fernley IMCTF.

Table 30 applies the maximum ratios to the entire truck-based data set and has arrives at a maximum anticipated volume international containerized traffic between the Fernley IMCTF and the Port of Oakland of approximately 215,000 units per year. This number essentially distills the overall through-traffic volumes between the FCA to the Port regions of two million units to 21.5% market capture by the Fernley IMCTF.

Table 29: Consolidated Total of Minimum International Volumes at the Fernley IMCTF: FCA and Port Regions

IMCTF at Fernley: Projected Volume Analysis, Westbound

Fernley Catchment Area (FCA)	Oakland/SF Domestic Truck	Oakland/ SF Int'l Units	Oakland/SF Total Units	LA Region Domestic Units	LA Region Int'l Units	LA Region Total Units	Grand Total Units
FCA to Port Regions	504,223	30,161	534,384	783,802	113,018	896,820	1,431,204
Domestic to Int'l Conversion Ratio	30%			20%			
Int'l Traffic Unit Values	151,267	30,161	181,428	156,760	113,018	269,778	451,206
Fernley IMCTF Interception Ratio	30%	30%		20%	20%		
Anticipated Volumes at Fernley IMCTF	45,380	9,048	54,428	31,352	22,604	53,956	108,384

IMCTF at Fernley: Projected Volume Analysis, Eastbound

Fernley Catchment Area (FCA)	Oakland/SF Domestic Truck	Oakland/ SF Int'l Units	Oakland/SF Total Units	LA Region Domestic Units	LA Region Int'l Units	LA Region Total Units	Grand Total Units
Port Regions to FCA	186,750	5,495	192,245	298,594	56,372	354,966	547,211
Domestic to Int'l Conversion Ratio	30%			20%			
Int'l Traffic Unit Values	56,025	5,495	61,520	59,719	56,372	116,091	177,611
Fernley IMCTF Conversion Ratio	35%	35%		25%	25%		
Anticipated Volumes at Fernley IMCTF	19,609	1,923	21,532	14,930	14,093	29,023	50,555

Grand Total (Min) Unit Volume at Fernley IMTCF, Westbound and Eastbound	**64,989**	**10,971**	**75,960**	**46,282**	**36,697**	**82,979**	**158,939**

Table 30: Consolidated Total of Maximum International Volumes at the Fernley IMCTF: FCA and Port Regions

IMCTF at Fernley: Projected Volume Analysis, Westbound

Fernley Catchment Area (FCA)	Oakland/SF Domestic Truck	Oakland/ SF Int'l Units	Oakland/SF Total Units	LA Region Domestic Units	LA Region Int'l Units	LA Region Total Units	Grand Total Units
FCA to Port Regions	504,223	30,161	534,384	783,802	113,018	896,820	1,431,204
Domestic to Int'l Conversion Ratio	40%			30%			
Int'l Traffic Unit Values	201,689	30,161	231,850	235,141	113,018	348,159	580,009
Fernley IMCTF Interception Ratio	30%	30%		20%	20%		
Anticipated Volumes at Fernley IMCTF	60,507	9,048	69,555	47,028	22,604	69,632	139,187

IMCTF at Fernley: Projected Volume Analysis, Eastbound

Fernley Catchment Area (FCA)	Oakland/SF Domestic Truck	Oakland/ SF Int'l Units	Oakland/SF Total Units	LA Region Domestic Units	LA Region Int'l Units	LA Region Total Units	Grand Total Units
Port Regions to FCA	186,750	5,495	192,245	298,594	56,372	354,966	547,211
Domestic to Int'l Conversion Ratio	40%			25%			
Int'l Traffic Unit Values	74,700	5,495	80,195	74,649	56,372	131,021	211,216
Fernley IMCTF Conversion Ratio	45%	45%		35%	25%		
Anticipated Volumes at Fernley IMCTF	33,615	2,473	36,088	26,127	14,093	40,220	76,308

Grand Total (Min) Unit Volume at Fernley IMTCF, Westbound and Eastbound	**94,122**	**11,521**	**105,643**	**73,155**	**36,697**	**109,852**	**215,495**

G.10 Additional Volume Considerations at the Fernley IMCTF

G.10.1 Industrial Development

Nearly all truck-to-rail facilities, such as inland ports, begin with securing a prospective freight-intensive anchor tenant to justify development of a transportation infrastructure project, for example the BMW facility at the South Carolina Inland Port at Greer. **Unlike many other transportation infrastructure projects, the proposed IMTCF at Fernley possesses extraordinary organic through-traffic where there is a real and actual commercial business case for both the deflection and diversion of truck-based traffic to the facility.** It is essentially the de-facto "anchor tenant" in terms of its potential volume through-put.

What this means for developers of industrial properties is that new freight-intensive tenant attraction will not be akin to a "field of dreams" approach, and the development of the IMCTF can proceed without first solving the tenant question. The in-motion development of the facility and its attributes will likely have a significant impact on new tenant attraction, as the intended value proposition of co-location to the IMCTF is clearly defined and not based upon singular outcomes that typically define the exhausting and long-term effort common with developing new transportation facilities.

G.10.2 Domestic Railcar Service of Aggregates

As addressed in the Aggregates Study below, the immediate region within the Fernley market locally produces significant quantities of construction aggregates consumed in the high-density trade lane markets of Sacramento, Oakland, and Los Angeles. With respect to the Oakland region alone, over 180,000 truckloads of material are shipped annually. The IMCTF at Fernley will possess the ability to transload this locally produced, truck-based material and, to the extent that there exists a corresponding rail-served deconsolidation facility, handle a potential market of over 45,000 railcars to the Oakland market.

Recently, the Port of Oakland has entered into an agreement with a Canadian importer of construction aggregates, (Eagle Rock Aggregates of Vancouver), and the port has provisioned land within their facility to serve as a truck-based transload and discharge operation to serve the Bay Area market from the Port of Oakland. This development is a natural fit for the Fernley IMCTF, where the design of the facility is likely to generate additional organic opportunities.

Included as Appendix 4 is a paper entitled *Modern Logistics and the Evolution of Multimodal Terminals*. This paper explains in detail the IMCTF and how it differs from traditional container terminals. The paper also describes how modern logistics and supply chain planning is migrating from restricted container port models to integrated models such as the IMCTF being proposed at Fernley.

G.11 Aggregates Study

G.11.1 Activities and Objectives

SRF conducted an extensive commodity freight flow study of both truck and rail activity for both the entire state and the northwest Nevada region (NWNV). For the NWNV region, over 6 million freight records were analyzed from the year 2018.

The objective of the Aggregates Study is to determine the economic feasibility for the modal conversion from trucking to lower cost rail, thus providing options and lower cost of transportation for Nevada shippers.

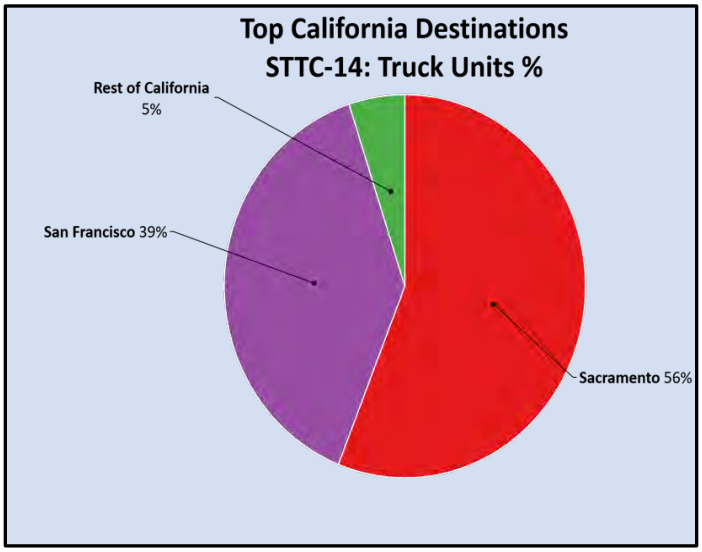
Table 31: Northwest Nevada Truck Units and Tons Outflow by Commodity

NWNV Truck Outflow Traffic: Top Five Commodities					
STCC2	**Commodity Name**	**Tons**	**% Tons**	**Units**	**% Units**
14	Clay, Concrete, Glass or Stone	6,344,296	32%	346,789	31%
32	Nonmetallic Minerals	7,628,487	38%	313,796	28%
42	Return of Empty Trailers	0	0%	196,288	17%
1	Farm Products	1,376,786	7%	76,703	7%
29	Petroleum or Coal Products	1,614,907	8%	67,042	6%
40	Waste or Scrap Materials	953,114	5%	38,054	3%
	All Other Commodities	1,896,875	10%	92,201	8%
	Total NWNV Commodities	**19,814,465**	**100%**	**1,130,872**	**100%**

Source: TRANSEARCH® Freight Flow Data 2018

From the above table, over 60% of all Nevada truck-based shipments to out-of-state destinations are comprised of two primary commodities: Non-Metallic Minerals, i.e. Sand (STTC2-14) and Clay, Concrete, Glass or Stone (STTC2-32). California is by far the single largest destination (97% for STCC 14 & 57% for STCC 32)

Figure 19: Top California Destinations - Clay, Concrete, Glass or Stone



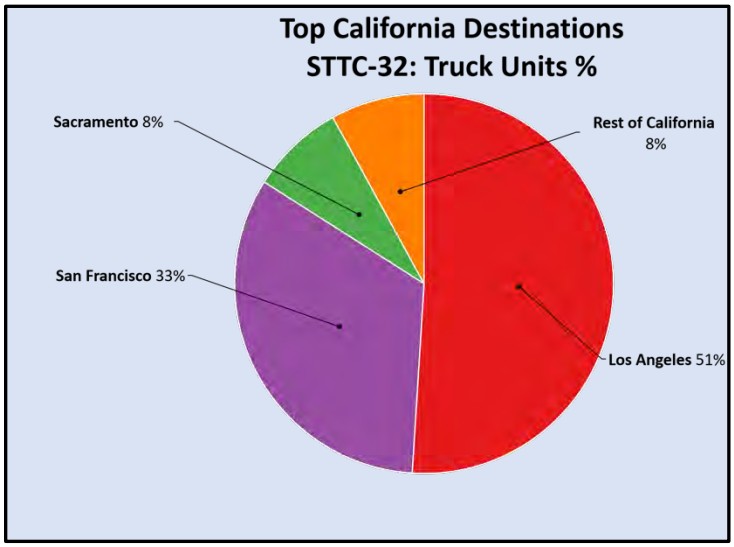
- California Accounts for 97% of the Destinations for Nevada's Production of Clay, Concrete, Glass or Stone Non-Metallic Mineral – Over 305,000 Truck Loads - All of Which Return to the Region Empty – Thus, over 600,000 Truck Movements
- 56% or 170,000 Truck Loads are Destined to the Sacramento Region
- 39% or 120,000 Truck Loads are Destined to the San Francisco Region
- 5% is Destined to All Other Regions of California

Source: TRANSEARCH® Freight Flow Data 2018

G.11.2 Questions and Inquiry Regarding Clay, Concrete, Glass or Stone

- Why is there such a concentration of shipments to the Sacramento Region – 56% of all California truck-based destinations?
  - Is there a major truck-to-rail transfer facility in Sacramento?
  - Is there a concentration of industrial raw material conversion activity in the Sacramento Region?
- Similar questions apply to the concentration of shipments to the San Francisco Region – 39% of all California truck-based destinations.
  - Is there a concentration of industrial raw material conversion activity in the San Francisco Region?
- Would northwest Nevada benefit from the development of localized truck-to-rail transfer facilities for this commodity group that would serve the destinations of Sacramento and San Francisco?
- Are there opportunities to convert these raw commodities into finished goods at the local level? What are the constraints: water, etc.?

Figure 20: Top California Destinations - Non-Metallic Minerals



- California Accounts for 57% of the nation's destinations for Nevada's Non-Metallic Minerals – Nearly 200,000 Truck Loads - All of Which Return to the Region Empty – Thus, over 400,000 Truck Movements
- 51% or over 100,000 Truck Loads are Destined to the Los Angeles Region
- 33% or 65,00 Truck Loads are Destined to the San Francisco Region
- 16% is Destined to All Other

Source: TRANSEARCH® Freight Flow Data 2018

G.11.3 Questions about Non-Metallic Minerals

- Why is there such a concentration of shipments to the Los Angeles Region – 51% of all California truck-based destinations?
- Is there a concentration of industrial raw material conversion industry in the Los Angeles Region?
- The same question applies to the concentration of shipments to the San Francisco Region – 33% of all California truck-based destinations?
- Would North-West Nevada benefit from the development of localized truck to rail transfer facilities for this commodity group?
- Are there opportunities to convert these raw commodities into finished goods at the local level? What are the constraints?

G.11.4 The Region Already Transports These Two Commodities by Rail

Rail movements are already occurring, representing defined trade lanes to the major truck markets of Los Angeles, San Francisco, and Sacramento.

Table 32: Northwest Nevada Rail Units and Tons by Commodity

NWNV Rail Outflow Traffic: Top Five Commodities					
STCC2	**Commodity Name**	**Tons**	**% Tons**	**Units**	**% Units**
14	Nonmetallic Minerals	418,800	33%	5,356	24%
32	Clay, Concrete, Glass or Stone	413,145	33%	3,900	17%
46	Misc. Mixed Shipments	104,400	8%	6,440	29%
28	Chemicals or Allied Products	79,720	6%	1,160	5%
40	Waste or Scrap Materials	74,340	6%	944	4%
	All Other Commodities	174,176	14%	4,512	20%
	Total NWNV Commodities	**1,264,581**	**100%**	**22,312**	**100%**

Source: TRANSEARCH® Freight Flow Data 2018

While total rail volume, at 6% of total tonnage, is only a fraction of truck-based volume, the commodity groups STTC2-14 and STTC2-32 represent 66% of total commodities shipped by rail to out-of-state destinations. Thus, a business case for conversion of road to rail has already been demonstrated.

G.11.5 In Summary

The freight corridor between northwest Nevada and California is subject to 1,000,000 annual truck journeys carrying the commodity categories of clay, concrete, glass, stone, and non-metallic minerals. Around 500,000 of these truck journeys are empty return trips back to Nevada from California. While a rail freight corridor already exists between northwest Nevada and California for the transportation of these commodities it handles only 6% of the total volume.

Our initial assessment indicates that an IMCTF facility located in northwest Nevada would support the conversion to rail of a significant volume of the 11MM tons of this freight currently being trucked to California.

We recommend a further study be commissioned to; 1) address the questions outlined in this Aggregates Study regarding the truck-based shipping behavior of northwest Nevada regional producers, 2) build an accurate modeling of the potential for truck to rail conversion, and 3) fully assess opportunities from converting these raw commodities into semi and finished goods within the study region thus stimulating job growth and economic vitality.

H. Implementation and Recommendations

As outlined in the Business Case section of this report, there is a viable opportunity and sufficient support from key stakeholders for the development of a multimodal transfer facility, specifically an IMCTF, at Fernley. Implementing the IMCTF involves various activities ranging from stakeholder engagement to financing.

H.1 Stakeholder Engagement

This study has referenced the eco-system of stakeholders whose engagement and active support will be crucial to the success of an IMCTF and the continued realization of its benefits. Each stakeholder has their own economic, commercial, environmental, and strategic objectives relative to a Fernley IMCTF. The project's success requires an appreciation of stakeholder priorities and objectives. Buy-in from certain stakeholders, such as the Union Pacific Railroad and the Port of Oakland is fundamental to the successful development and operation of an IMCTF. Other stakeholders such as land developers, NDOT, Caltrans, shippers, freight forwarders, and transport operators also form an important constituency whose contribution is key to the success of the Fernley IMCTF project.

We recommend stakeholders be engaged throughout the next phase of deeper analysis and conception to ensure that all commercial factors are included in the 'go forward' decision. Their involvement is necessary for securing the full set of commitments that will support the use of this facility.

H.2 Financing

Developing an IMCTF facility capable of handling these volumes of converted flows plus the newly generated volumes from planned industrial developments in northwest Nevada likely involves a major capital investment.

The *Integrated Multimodal Cargo Transfer Facility, Business Case for Fernley, Nevada* provides a detailed forecast of anticipated freight volumes. International traffic, combining eastbound and westbound freight flows, equates to between 165,000 and 215,000 annual shipments. In addition, the *Aggregates Study* reported in Section G.11 identifies the probability of converting a proportion of the 500,000 truckloads of aggregates and non-metallic minerals produced in northwest Nevada and shipped to the Sacramento, Oakland, and Los Angeles areas.

Even without a contribution of public funding the business case for Fernley IMCTF is such that its development may be funded by private investors who could be existing stakeholders or new financing partners. The NVSRP proposes an entity to create a framework for public-private collaboration sponsored by the Nevada Department of Transport (NDOT).

The role of that entity would be to coordinate contributions from NDOT, SRF, state economic development agencies, and an extensive network of stakeholder relationships for harnessing action across Nevada. A key function of that entity would be to facilitate private sector financing for rail projects in Nevada and the NVSRP recommends the establishment of a Nevada Freight Rail Development Fund for this purpose. This proposed Fund would raise and deploy debt capital for small and mid-sized rail projects, and service loans from origination to maturity. Additionally, it would use transaction fees to fund technical services provided by the entity.

More details on the proposed Fund and other rail financing initiatives are included in the NVSRP report.

H.3 Implementation Planning

The migration to a sustainable freight system in the study region has the Fernley IMCTF at its core. However, as outlined in this study, simply building the facility will not transform freight flows and foster the increased use of rail for freight movements into, out of and through the region. There are multiple success factors which require attention and management during the implementation phase.

Implementation therefore requires a multifaceted plan incorporating both ‘soft’ and ‘hard’ elements. Soft elements include communication plans, stakeholder engagement, marketing activity, and management of reputational risks and project opposition. Hard elements are traditional project steps such as land acquisition, construction design, contractor selection, project management, budgeting, financing, and statutory reporting.

The sponsoring entity for the Fernley IMCTF project must ensure implementation planning takes into consideration the entire range of activities. Proven experience and specific management skills should be utilized with the ultimate goal of a sustainable freight system through the development of the IMCTF.

H.4 Further Studies

In preparing this report we have identified additional study areas we recommend that should be commissioned to maximize the business case for a Fernley multimodal freight facility.

H.4.1 Aggregates market study

The Aggregates Study included in this report identifies the significant potential for converting large volumes of aggregate traffic from trucks to rail. An aggregates market study would dive deeper into the truck-based shipping behavior of northwest Nevada regional producers and build accurate modeling of the truck to rail conversion potential. This report could also expand to include an assessment of the opportunities for the study region from converting these raw commodities into semi and finished goods thus stimulating job growth and economic vitality.

A Note on Beneficiation

The economic development strategy known as "Beneficiation" holds the potential to drive Nevada towards higher value activities, and therefore its economic and environmental objectives. Beneficiation concentrates developmental resources on a region's established industry sector as the backbone for new enterprise. Expanding value chains within a region serve to attract new related businesses, and in turn offer the original businesses opportunities for service expansion. Naturally, these synergies produce an expanding set of employment opportunities.

An example of the beneficiation approach can be readily imagined as applied to Nevada's resources sector. Rather than simply exporting raw materials out of the state, new industries that process those materials could be encouraged. In time, this could beget businesses that receive the used, post-market material, recycle it, and sell it back into the supply chain. Such a vision of economic expansion is clearly dependent upon the ease and cost of intra-state commodity movement, facilitated by rail in many cases. Capacity, scalability, and sustainability must be considered crucial values toward the development of higher value industries through beneficiation.

As the freight data analysis in Chapter 2 reports, the share of intra-state freight rail activity (originate and terminate the same railcar load of freight within the state) is currently about .25% of overall rail traffic in Nevada. That statistic, as diminutive as it is, also expresses Nevada's vast potential for higher-value economic growth.

H.4.2 Fernley IMCTF growth generation

Development of a new integrated multimodal facility at Fernley has the potential to attract new industrial development to the region and generate additive freight volumes. A further study assessing the generative effects of the Fernley IMCTF and modeling new freight flows will further bolster the business case. This study should also consider how the IMCTF can improve land values.

I. Appendices

1. Port of Oakland Business and Rail Overview (12.10.2019)

2. Slope Map Fernley Wadsworth

3. Slope Map Reno Sparks

4. Modern Logistics and the Evolution of Multimodal Terminals

NEVADA DOT
SAFE AND CONNECTED

NNDA
Northern Nevada
Development Authority

Port of Oakland
Business and Rail Overview
12/10/2019

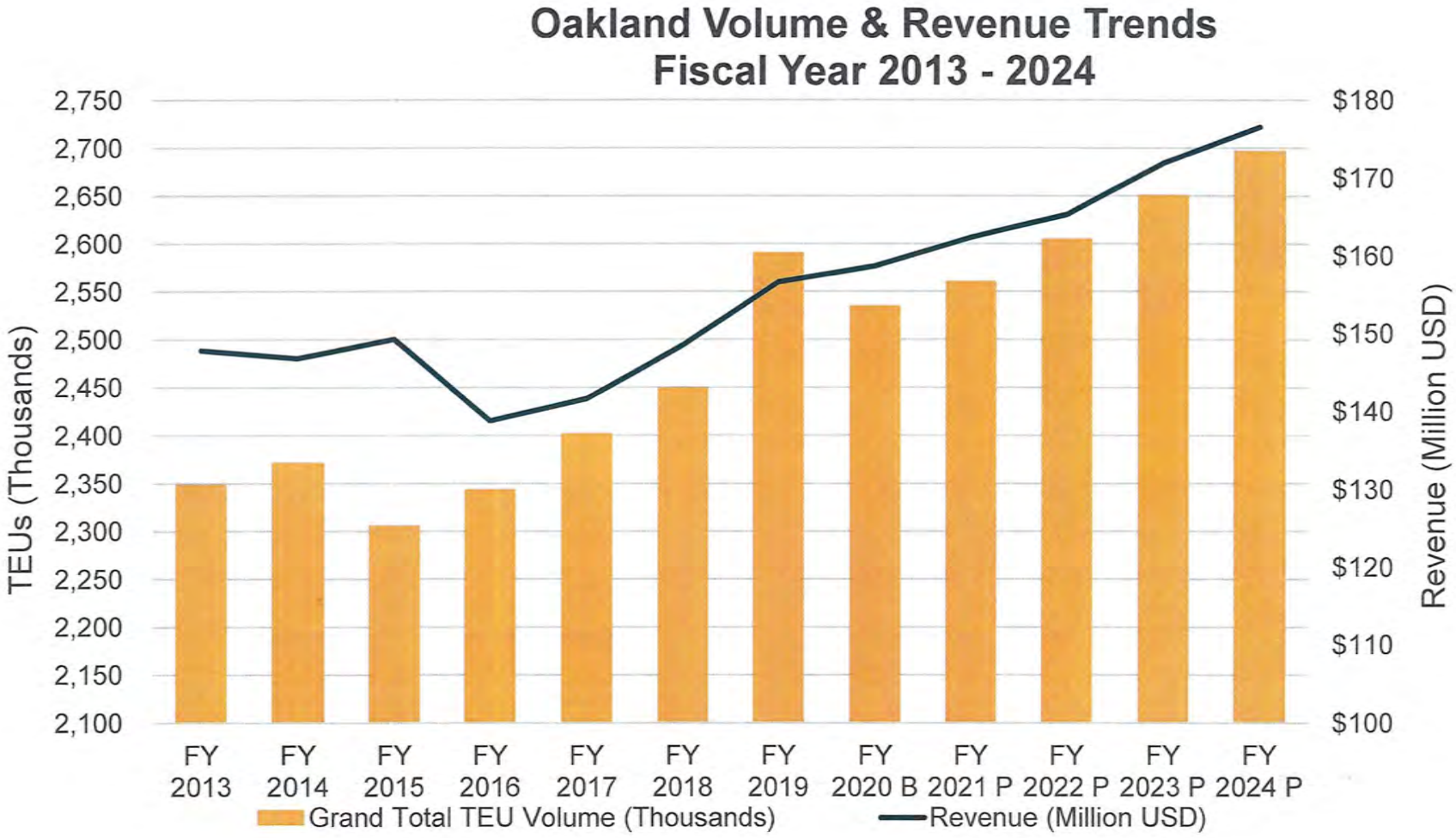
PORT OF OAKLAND
SEAPORT

Port of Oakland by the Numbers

- **4 active** marine terminals
- **3 terminal operators** SSA, Everport, & TraPac
- **33 Cranes** of which 23 are Port-owned
- **2.54 million TEUs** handled in 2018
- **20 ocean carriers** with service to/from Oakland
- **1,571 vessel calls** in 2018

PORT OF OAKLAND
SEAPORT

Port Volume & Revenue Trends



PORT OF OAKLAND SEAPORT

Notes: *For TEU and Revenue figures, B = Budget, F = Forecast, and all other numbers are Actual*
Revenue excludes utility sales
Fiscal Year is July 1 – June 30

Ongoing Key Events & Improvements

- Terminal **consolidation**
- Introduced industry-first online **measure of truck wait times**
- **Cool Port** operational since November 2018
- **TraPac Terminal** expansion completed
- CenterPoint Properties breaks ground, to launch **Seaport Logistics complex** in 2020
- **Tallest cranes in U.S.** ordered for 2020 delivery in addition to 4 cranes raised to accommodate larger ships

Port Investment$ for the Future

- **$100M** in rail manifest and support tracks
- **$78.5M** in Oakland International Container Terminal
  (**$42.5M** toward purchase of 3 cranes and raising 4)
- **$67M** in TraPac Terminal project
- **$28M** in Ben E. Nutter Terminal upgrades
- **$610M** in grade separation, intelligent transportation system, and traffic circulation improvements
- **$90M** in Cool Port
- **$52M** in Seaport Logistics Complex
- **$90M** in grain transload facilities

Preferred Export Gateway for Protein

US Port	Bills of Lading	Container Qty	TEUs	Total Calculated Value (US$)
OAKLAND,CA	**37,565**	**35,891**	**71,387**	**3,601,876,908**
SAVANNAH,GA	16,651	30,258	60,467	835,885,876
LOS ANGELES,CA	18,313	18,658	37,062	1,894,723,962
CHARLESTON, SC	13,061	18,374	36,727	828,167,656
LONG BEACH,CA	16,365	16,807	33,462	1,639,772,147
NORFOLK,VA	7,755	10,302	20,512	471,729,702
HOUSTON,TX	5,539	10,116	20,076	547,511,513
WILMINGTON, NC	6,058	6,661	13,322	271,784,880
NEW ORELANS, LA	2,614	6,497	12,983	160,446,601
TACOMA,WA	3,860	4,773	9,529	361,495,784
SEATTLE,WA	3,205	3,364	6,666	264,243,940
Total All U.S. Ports:	146,241	181,507	361,550	11,840,189,988

PORT OF OAKLAND
SEAPORT

Strategic Initiatives

- **First** port of call
- **Short haul** rail serving major DCs in Nevada
- **Diversity** of services
- **Environmentally** conscious upgrades
  - Electric trucks
  - Hybrid RTGs
  - 2020 & Beyond Plan
  - Truck Management Plan

R. 21 E. R. 22 E. R. 23 E. R. 24 E. R. 25 E.

T. 21 N. T. 20 N. T. 19 N.

TO GERLACH

(old RR grade)

447

Pyramid Lake Indian Reservation

Truckee River

Low Slope undeveloped land exists in the vicinity of Wadsworth and Fernley

Wadsworth

427

Fernley City Limit

80

TO LOVELOCK, WINNEMUCCA

Highlighted area shows land within approximately one mile of existing rail lines

Fernley

ALT 50

TO FALLON, WINNEMUCCA

TO FALLON

UNION PACIFIC

Thisby Siding

828

ALT 95

WASHOE

STOREY

80

Truckee River

Clark Siding

Patrick Siding

439

Tiger Field (airport)

Fernley City Limit

TO RENO

TO RENO

Future rail line extensions are possible to these areas of Innovation Park

Innovation Park

STOREY

LYON

439

ALT 95

TO SILVER SPRINGS

TO SILVER SPRINGS

LEGEND

- Railroads
- Flat and Low Slope Areas
- Moderate Slope Areas
- Steep Slope Areas

N

2020 NEVADA STATE RAIL PLAN

SLOPE ANALYSIS OF LAND ADJACENT TO RAIL LINES IN THE FERNLEY - WADSWORTH AREA

MILES 0 1 2 3 4 5 6

KILOMETERS 0 2 4 6 8 10

To convert miles to kilometers multiply by 1.609

MAP AREA

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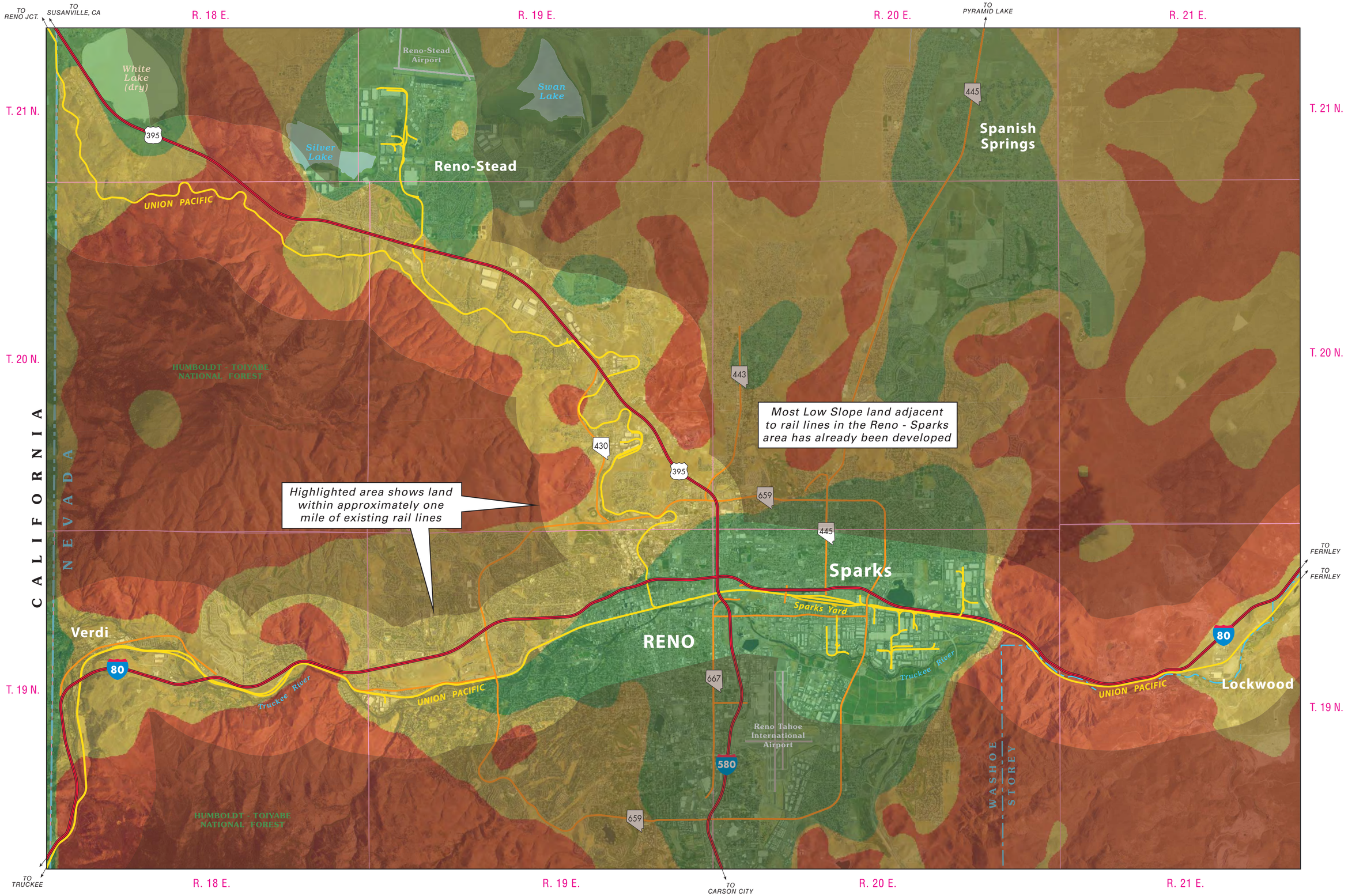

LEGEND

- Railroads
- Flat and Low Slope Areas
- Moderate Slope Areas
- Steep Slope Areas

2020 NEVADA STATE RAIL PLAN

SLOPE ANALYSIS OF LAND ADJACENT TO RAIL LINES IN THE RENO-SPARKS AREA

MILES: 0 1 2 3 4 5 6

KILOMETERS: 0 2 4 6 8 10

To convert miles to kilometers multiply by 1.609

MAP AREA

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Modern Logistics and the Evolution of Multimodal Terminals

This report explains in further detail the concept of the IMCTF terminal and how modern logistics and supply chains are migrating from traditional container-based multimodal facilities to integrated models such as the IMCTF being proposed at Fernley.

Introduction

The globalization of the world's economy over the past two decades has spotlighted the importance of supply chains. Companies and entire industry sectors have been able to take advantage of international outsourcing of production, supply, and distribution to reduce costs, increase output, extend product lines, improve quality, and lift profitability. Supply chains have always existed but in the modern global economy they have become more international and a highly sophisticated and complex aspect of the business value chain.

There have been significant advances in supply chain design and adoption of technology which has transformed goods tracking, route planning and order fulfilment. However, not all aspects of the modern supply chain have been optimized and there are sizeable opportunities to improve their resilience and performance. In the United States there are bottlenecks and other inefficiencies in the underlying transportation system which impact the performance of supply chains. A key area for improvement is land transportation at terminals where legacy operating models and the sub-optimal utilization of rail creates unnecessary costs and delays which degrades supply chain performance.

This report will describe how NNDA can utilize a new intermodal operations framework that optimizes land transportation at terminals and offers a major source of sustainable economic development for the region. The framework design, **Integrated Multimodal Cargo Transfer Facility (IMCTF),** addresses the fundamental inefficiencies in terminals and land transportation operations by identifying the optimal mode to reduce costs and enhance supply chain performance. The IMCTF reworks existing land transportation operations, which are traditionally designed around road trucking, and ensures that both rail and road options are taken into consideration by supply chain planners.

To understand the role of inland port terminals and how the IMCTF model is a catalyst for economic development it is important to understand the key areas impacting the efficient flow of cargo in the traditional transportation supply chain. There are four modes of transportation, Air, Ocean, Rail and Truck prevalent in today's supply chain.

Air Freight

The highest cost mode of transportation is air freight and is typically only utilized for high value items (such as pharmaceuticals, medical equipment, or electronics) or goods that are time critical (perishables such as flowers, livestock, or critical manufacturing components). Air freight is premium priced compared to other modes, especially when compared to ocean and rail modes. Inbound air freight arrives at a local airport cargo terminal where shipments are allocated into trucks delivering direct to customers covering specific areas in the region, generally over short distances.

Outbound shippers using air cargo typically arrange for a local truck to pick up individual consignments for delivery to an airport in a single stop. This same truck then handles the inbound deliveries collected from the airport.

The air cargo transportation model consists of one direction increments; from shipper by local route truck to the closest airport, then flown to the closest destination airport where another local route truck will collect and deliver multiple shipments direct to customers within the region. Due to the large number of international, regional, and local airports in the United States, the infrastructure exists to support consistent, efficient, and expedited transportation services. Air cargo transportation can typically move shipments faster and more efficiently than any other mode. However, air cargo is, relative to other modes, very expensive and not cost effective for most of the freight in the global supply chain. In addition, aircraft, including dedicated freighters, are limited in their ability to carry bulky, oversized, or heavy shipments. Although air cargo accounts for 35% of world trade by value it accounts for less than 1% of all trade by volume.

Ocean Freight

Accounting for 90% of world trade by volume, ocean freight's 50,000 vessels are the backbone of global supply chains. It is by far the most cost-efficient method for moving freight per ton. Ocean freight is also highly flexible, with the ability to transport any cargo type from containers to specialized or oversized items, such as bulk freight, liquids and roll-on/ roll-off (vehicle/equipment).

Although ocean freight is vital for the shipping of bulk commodities such as oil, coal, aggregates, and grain it is containerization that makes ocean shipping fundamental to the world economy and its global supply chains. There are an estimated 20 million shipping containers in active use, with the largest ocean vessels able to carry over 20,000 units. Containers use a global standard with only two designs: TEU (20 feet long) and FEU (40 feet long). This standardization has been crucial in the development of highly efficient global supply chains with rail, road and ocean transportation modes utilizing a standard design in ports, trailers, cars, terminals, and vessels.

The ocean freight transportation model involves one direction increments from port terminals to port terminals on specific routes. Two constraints associated with ocean freight relate to limitations at ports. Firstly, a port's capacity to handle the vessel's size and secondly a port's ability to handle the volume of cargo in terms of storage space or transloading facilities.

Rail Freight

Due to its large and scalable capacity and an extensive route network throughout the continental United States rail freight provides an important land transportation method accounting for 10% of surface freight[1]. Rail freight is significantly more cost effective than road trucking over distances greater than 300 miles but also competes with truck operators on shorter routes. Individual freight trains typically consist of over 100 rail cars providing a considerable fuel and labor cost advantage over trucks. In addition, rail can handle many types of freight; dry, liquid, bulk, containers, and vehicles. Rail freight also has fewer weight restrictions than road trucking. However, the reason why rail freight carries the minority of goods (by volume or by value) is that it is limited to operate only where tracks have been built, whereas roads are ubiquitous across the landscape. This means that unless the start and end points of a freight journey are both served by rail (such as coal mine to port) rail is dependent upon a modal transfer to road

[1] U.S. Ton-Miles of Freight, source link

transport to complete the final local carriage. In the United States intermodal transfers tend to be inefficient and add to journey times which can make road trucking equally or more attractive to shippers. In addition, although the United States has over 140,000 route miles in the rail network there are hundreds of freight rail operators and many freight flows require at least one operator transfer which extends delivery times.

Rail transportation is completed in one direction increments from railhead, port and intermodal terminals to other railhead, port, and intermodal terminals on specific routes. The primary constraint for rail is its inability to provide first and final mile service for the majority of freight flows. Rail transportation is therefore highly dependent on intermodal transfer of freight to play an effective role in modern supply chains. Unfortunately, the inefficiency of intermodal transfers in the U.S. transportation system, particularly between road and rail, proves to be a limiting factor in the utilization of rail by shippers and supply chain planners.

Truck Freight

Over 65% of U.S. surface freight is transported by road trucking[2] and trucks are required for an increasing number of the first and last mile freight moves. Unless a shipper or customer has a dedicated rail connection, is located at an inland terminal, airport, or marine port all freight flows must commence and end with road trucking. For most freight flows the shipment completes its journey on the same vehicle or is transloaded to another truck. Only a minority of shipments will be transferred to/from rail.

Truck transportation is typically reliable, highly flexible when compared with rail freight and benefits from publicly funded road infrastructure which keeps operating costs very low. Trucks are compatible with many types of cargo including containers, bulk goods, finished products, refrigerated perishables and commodities. The mode also offers 'less than truckload' (LTL) freight enabling small consignments to be collated into a single truck journey, providing a high level of flexibility for even the smallest of shipments.

The relative disadvantage of truck freight is the size and capacity limitations of individual vehicles and highway weight limits. Each truck and trailer combination can only transport the equivalent of one rail car, compared to over one hundred rail cars on a single freight train. Another disadvantage of truck transportation is the restriction on driver hours which delays longer distance freight journeys, especially compared to rail freight where a fixed network operation enables efficient crew changes and a seamless journey flow. Despite its flexibility compared to rail and lower operating costs, trucking generates thin operating margins. There are thousands of truck operators in the U.S., the majority being small, owner-operated businesses. The result of this fragmented operator base is a highly competitive industry and inefficient operations resulting from many return freight flows running empty for all or part of their journey. Although large, national trucking companies, such as Schneider National and JB Hunt, are able to optimize their routing and operations to avoid empty running, small operators, which account for most of the industry, struggle to secure return loads.

[2] U.S. Ton-Miles of Freight, source link

The demand for efficiencies in the supply chain

As outlined in the previous summary of the four core transportation modes there are significant inefficiencies in the twin surface modes of rail and truck. There are two fundamental deficiencies in the way land transportation is allocated and interchanged.

Land transport allocation

Despite the advantages rail offers in capacity, scalability and cost per ton rail freight accounts for only 9% of the volume of freight carried in trucks[3] . In Nevada only 4% of all the state's freight movement are made by rail to and from instate businesses with a significant number of truck borne freight flows operating on existing rail freight corridors.

There is clearly a misallocation of transportation modes on a national and state level. Despite the advantageous operating economics of rail freight, and the issues of congestion, pollution, and road safety associated with road freight, there remains an over-reliance on trucking. Considering the high degree of 'empty running' of trucked freight these social and environmental impacts are incurred with zero economic value for close to half of all trucking activity.

There are multiple contributors to the current misallocation; inadequate marketing of rail freight by operators, a fear of or bias against rail from shippers, ignorance of the accessibility of rail among companies, development agencies and freight forwarders, and inadequate service levels offered by rail operators. Each of these underlying reasons are addressable.

Interchanges

Intermodal interchange and transferring is typically inefficient and adds unacceptable delays (and sometimes risk) for shippers. As a result, single mode transit is preferred by supply chain planners. With trucks already serving the majority of first and last mile freight flows trucking becomes the default transportation mode.

Interchanges are inefficient for numerous reasons; outdated operating procedures, inadequate or incomplete technology, poor coordination between the transferring parties (truck and rail), poor coordination between interchange parties (rail and rail), requirement for and limited ability of specialized chassis equipment and a prevalence of empty running.

The IMCTF model being proposed for NNDA addresses these issues and would create a far more efficient supply chain in Northern Nevada. Generating a major shift to rail freight will open opportunities for economic development in the region, as existing and new companies can leverage the cost and competitive advantages of an optimized transportation and supply chain system.

The cost of inefficient land transportation in supply chains

The previous section described the inefficiencies in land transportation and the reasons why sub-optimal practices around modal allocation and intermodal operations continue in the United States. What are the implications of this inefficiency, and who would benefit from optimizing the land transportation component in supply chains?

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[3] Summary Freight Tables, source link

There are significant economic and environmental implications. Economic implications are first outlined below:

Congestion Costs

The present modal allocation which favors trucks for land transportation is adding millions of truck miles to the nation's roads. In Nevada, 96% of freight is currently hauled by truck exposing the fact that goods movement is not being efficiently integrated with railroads. The direct impact for Nevadans is congested highways, especially on corridors with growing economic activity or with limited highway capacity. Nationally, Americans as a whole lost an average of 97 hours a year due to traffic congestion, which cost them nearly $87 billion in 2018, or an average of $1,348 per driver[4]. Congestion is a serious and growing concern and with projected growth in U.S. freight transport of 40% in the next 25 years[5] an over-reliance on truck based freight is not sustainable without major development of the state's highway infrastructure.

Congestion creates numerous costs across the economy impacting individuals, companies, and the state. Citizens see their car journey times increase and are forced to trade productive time for wasted time sitting in their cars. Employers cannot attract talent as new hires are dissuaded by lengthy and congested commutes. Manufacturers are forced to re-schedule production as their suppliers cannot deliver as quickly or reliably. Distributors must reduce service levels as delivery schedules are longer and less predictable. Business owners avoid locating to areas with congestion reducing the land values and attractiveness in economic development zones.

Transportation Costs

All business sectors in Nevada incur some degree of transportation cost. For the extractive and manufacturing industries transportation can account for as much as 15% of all costs. Inefficient supply chains such as over-reliance on trucking when lower cost rail alternatives are available are typically responsible for higher than necessary transportation costs. A study of companies with inefficient networks identifies they can lower their transportation costs by 10-25%[6]. These efficiencies improve their competitive advantage due to lower prices, higher profits and added shareholder value. Business owners, particularly in extractive, processing, manufacturing, and distribution industries, will closely study transportation costs when selecting new site developments, making areas with optimized and efficient transportation options, such as intermodal road and rail facilities, more attractive. For economic development agencies the ability to offer reduced transport costs from intermodal options will increase the value of commercial land. Conversely, high transportation costs and limited modal flexibility reduces the attractiveness and value of sites to commercial developers.

One of the major contributors to higher transport costs is the prevalence of one-way loaded moves with over half resulting in empty returns. All empty moves still incur full operating and social costs. One-way or empty running costs are particularly acute at ports because time and access constraints severely restrict the flexibility of road truckers to identify and secure return loads. Beyond port operations supply chains across the U.S. are impacted by the additional costs associated with one-way loads. In Nevada there are

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[4] U.S. Ton-Miles of Freight, source link

[5] U.S. Ton-Miles of Freight, source link

[6] Ruffin, R., Shehorn, M., & Banerjee, D. (2020, April 01). Are Your Distribution and Transportation Costs Out of Control? source link

numerous examples of dump trucks transporting aggregate rock material to California which invariably return empty because there are no suitable loads for the return journey in these special-purpose vehicles. Freight flow data from TRANSEARCH®, a transportation database developed by IHS Global Insights, reveals that 200,000 loaded truck shipments of Clay, Concrete, Glass or Stone move annually from Northern Nevada to California, all of which return empty, making 400,000 truck movements in total.

Transportation Capacity Costs

An over-reliance on truck transportation causes capacity constraints in different aspects of the supply chain which reduces overall efficiency, increases costs, and generates delays. Two capacity challenges which add costs to everyone touching the supply chain are port space and chassis availability.

Ocean container ports mandate a modal interchange for every piece of freight arriving and departing; ocean vessels must transfer their cargo to either rail or road-based transportation. The largest U.S. ocean ports are located in some of the highest populated cities in the country such as Los Angeles, New York, Seattle, Oakland, Houston, and Miami. Although these ports have a large footprint, they are hemmed in by the adjoining urban areas which have swallowed up the adjoining port property as land prices rise. At the same time, ocean shipping has experienced a significant traffic growth and increased vessel size over the past two decades. As the amount of freight being handled has grown and the dimensions of cranes and vessels increase, ports are simply squeezed for space. This capacity constraint is a serious concern for supply chain planners. Port delays, affecting inbound and outbound flows on ocean vessels, trains, or trucks, increases shipping costs and has a serious impact on supply chain performance. In addition to the capacity crunch inside the port, road transport is constrained by the growing urban development and congestion around ports. Trucks are increasingly subjected to limited hours of access, added regulations, and congestion delays inside and outside the port.

Due to these capacity issues at ports and the impact on efficient movement of freight, efficiency in the landside supply chain is crucially important. Rail freight has a clear advantage over trucking at ocean ports. Rail is not impacted by road congestion or access restrictions and moves significantly more freight in a single operation. However, despite these advantages' trucks carry the vast majority of land transportation freight volumes at ports, estimated at 75-80%[7] by volume.

A secondary capacity cost is caused by the limited availability and reliability of chassis equipment. Chassis are the equipment required to transport a cargo container by road, the trucking equivalent of a railroad flat car. Despite the fundamental importance of chassis in the movement of container freight by truck the process of chassis allocation is ad hoc and highly fragmented making it highly inefficient. This inefficiency is exacerbated because of a shortage of available chassis at ports in the U.S. As a result, chassis equipment becomes a significant bottleneck impacting container movements in ports causing supply chain delays for inbound and outbound freight flows. An additional cost resulting from the shortage and inefficient allocation of chassis is demurrage fees, which can amount to thousands of dollars, incurred when containers are not transported from the port as scheduled.

State Infrastructure costs

Unlike railroad infrastructure, which is privately owned by rail and terminal operators, the nation's roads, bridges, and tunnels which form the trucking infrastructure are funded by the federal and state government. The frequency and costs of maintenance for highways is significantly impacted by the volume of trucks as these heavier vehicles cause far more wear and damage than cars. A Transport

[7] Weight of Shipments by Transportation Mode, source link

Research Board study in 1990 established that one heavy truck is equivalent to about 95 light trucks or passenger cars in terms of its impact on pavement maintenance cost.[8] Where trucks are not the most optimal transportation mode used in the supply chain the economic costs are not only borne by the mining company, manufacturer, or distribution company. The state and federal government are also bearing a substantial economic cost for the repair and maintenance of highways. In addition to economic costs there are environmental implications from an inefficient transportation model which has a bias towards truck.

Pollution

This report has referenced the many economic cost disadvantages of truck transportation compared to rail for freight movements. Rail freight provides a scale efficiency where a single train and crew moves the equivalent freight of a hundred truck loads. This operational efficiency of rail transportation also translates into an important environmental benefit whereby the present inefficient overallocation of freight towards trucking has a significant pollution cost.

Pollution is a serious consideration for the transportation industry and supply chains. In 2018 the U.S. Environmental Protection Agency (EPA) reported[9] that transportation is the nation's single largest source of U.S. greenhouse gas emissions, accounting for approximately 27% of total emissions. Medium and heavy-duty trucks account for 60% of all freight transport emissions compared to only 5% for rail freight. Considering that trucks account for 67% and rail 11% of freight in the US this means truck road transport emits 100% more emissions than rail per ton of freight carried.

Safety

A key difference between rail and truck transportation is the level of control and safety built into their network and operations. Rail operations utilize an integrated network where moving vehicles are controlled and operated within a set of safety regulations managed by the National Transportation Safety Board (NTSB). This highly regulated operation contrasts with truck operations which utilize the public highway systems.

Rail freight is one of the safest modes of transportation in the US. Rail also has limited interface with the public, with rail grade crossings over roads being the only touchpoint. In 2018 the U.S. Bureau of Transportation Statistics (BTS)[10] reported only 685 accidents at grade crossings for the year. In contrast to rail's closed operating system, trucks share the same highway infrastructure as passenger vehicles, pedestrians, and other road users. In the same BTS survey, large trucks (defined as >10,000lb weight) were involved in 531,000 crashes in 2018.

Trucks account for six times more freight volumes than rail but are involved in seven hundred and seventy times more crashes involving the public. Beyond the health and safety implications of having more trucks on the highways than necessary there is an economic cost associated with crashes which impacts the costs of transportation, supply chains, and society.

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[8] Gibby, R., Kitamura, R., and Zhao, H., *Evaluation of Truck Impacts on Pavement Maintenance Costs,* source link, (1990)

[9] Fast Facts on Transportation Greenhouse Gas Emissions. source link (2020, July 29).

[10] Transportation Accidents by Mode. source link

IMCTF – Addressing the inefficiencies in land transportation in Nevada

The previous sections of this report highlighted how an inefficient allocation of road transport freight between road and rail in supply chain in Nevada and the U.S. adds significant economic costs to supply chains. It also adds avoidable environmental and social costs. Fortunately, there are solutions to this inefficient process which have been tried and proven throughout the world. Nevada has a unique opportunity to implement solutions that address these inefficiencies to achieve significant economic and environmental benefits for the state's companies and residents.

An Integrated Multimodal Cargo Transfer Facility (IMCTF) is recommended to address the twin issues of modal misallocation and the ineffectiveness of modal interchange in Nevada's current supply chains.

The IMCTF is a flexible solution which accommodates all freight types; packaged/boxed/carton goods, equipment, bulk dry product, agriculture products, containers, and temperature-controlled goods. It can support Nevada's existing freight flows and generate new supply chains. It can work with existing multi-modal facilities with little or new investment required or it could take the form of a new multi-modal facility developed as an economic generator attracting new companies and industries to a development zone.

What is the IMCTF model?

An IMCTF is a facility for multi-modal interchange, which essentially means transferring freight between transportation modes. There are four transfer, or transloading, scenarios: road to rail, rail to road, rail to rail and road to road. Offering all four options in a single facility provides shippers and supply chain planners a flexible and integrated solution. The leading cause of the over-reliance on trucks in Nevada and across the U.S. is the absence of efficient interchange facilities to utilize rail transportation. Where intermodal interchanges do exist, they typically are not operated in an integrated manner and cannot support the time sensitive supply chains important to many businesses. Even when transport and supply chain planners want to alleviate the over reliance on trucks, they find few realistic alternatives enabling efficient modal interchange. IMCTF's provide planners with an alternative enabling them to transform supply chain performance by removing unnecessary financial and environmental costs.

Examples of how IMCTF transforms supply chains

EXAMPLE 1) Ocean Containerized Retail Freight

In this example a large retailer of fans orders multiple FEU (40 feet long) ocean containers per year of various boxed fans manufactured in Asia. Today these containers are imported to the U.S. and arrive at a Pacific port terminal where they are offloaded from the vessel and stacked in the terminal yard waiting for trucks to pick them up. Truck drivers receive instructions from a dispatcher, make an appointment with the terminal to collect the container, make an appointment to deliver the container to the receiver, go to an offsite location to pick up a chassis, then drive to the port and join a line awaiting access. The driver will then check-in and go to the yard location to pick up the container.

The truck will depart the port and drive to the receiver, which in this example is a large distribution center (DC). DC's could be located many hours' drive from the port area and trucks are often faced with urban traffic congestion around the port.

On arrival, the container is unloaded at the DC and the truck driver will schedule an appointment to drop his empty container back at the port. As ports have limited space, they restrict the volume of empty containers on site and the appointment could be a day or more in the future.

The boxed fans at the DC are checked, recorded, and managed (palletized and stretch wrapped) and will eventually be collected by truck for onward delivery. This onward journey could be direct to local customers or a longer distance haul to another DC and then distributed to local customers around that DC location.

In an IMCTF model, the ocean container is put directly onto a rail flat car as it is unloaded from the vessel. When the train has been loaded at the port (potentially up to 300 FEU containers can be loaded onto a single train) it runs to the IMCTF site. The shipper will have advised the IMCTF as to the consignment's arrival and provided instructions on dealing with the incoming container. On arrival at the IMCTF the container is offloaded and positioned in a neutral area by the intermodal rail operator at the IMCTF site. Once in the neutral area, the transload operator who oversees the managing of the trucking and transloading operations takes responsibility for the container. The container in this example is marked in the system for transloading, placed on a yard chassis and positioned to a dock door at the onsite transloading facility for unloading, palletizing and transloading for outbound shipping into a standard 53' dry van trailer for one way delivery to destination.

This example demonstrates several benefits in using the IMCTF:

- Using rail at the port avoids lengthy road transport journeys and avoids adding to congestion in the port and its urban environs. No road transport at all is required at the port. This is a significant cost saving and environmental benefit.
- There is no empty running back to the port as the empty container stays in the IMCTF yard and is available for an export shipment which will be transloaded from an incoming truck to rail at the IMCTF. This is a significant cost saving and environmental benefit.
- Utilizing rail at the port is more cost effective than trucking, a single train replacing 300 trucks entering and returning to the port.
- Large trucks with chassis carrying containers are not required. The IMCTF has eliminated trucks entering the road system at the port area, on the highway system between port and DC and the local roads around the DC.
- Utilizing the IMCTF avoids the capacity issues at ports where containers must be unloaded and reloaded onto trucks when they access the port. In addition, ports are spared the requirement of holding empty containers helping with space management and improving the efficiency of the port's operations.
- Eliminates the need for chassis equipment because the empty containers are processed within the IMCTF site. This removes the costs and challenges of locating and retuning chassis equipment.
- As no large trucks are used there is no requirement for a chassis. This eliminates the costs associated with identifying, collecting, and returning chassis.
- Relocating transloading from the ports provides an opportunity for those regional and local truck operators to take part in the first and final mile truck transportation. This helps boost the local and regional economy surrounding the IMCTF site.

EXAMPLE 2) Dry Bulk Freight

In this example a construction aggregates producer in Northern Nevada is shipping locally mined aggregate material to Sacramento, CA. The demand is high, and several dump truck loads are shipped per day.

Today dump trucks would load-up the day before and leave early the following morning for the drive to Sacramento. Once onsite in Sacramento they unload their trucks and return home with empty dump trucks. It is unlikely dump trunk compatible loads can be sourced around Sacramento for delivery to Northern Nevada so the return trip will be an empty run.

In an IMCTF model a facility located in the Northern Nevada area would receive these trucks and transload the aggregates into hopper rail cars or flat-bottomed gondola rail cars. The freight would then be transported by rail to the customer. In this example we assume the customer has a rail siding that the cars can be held whilst aggregates are unloaded.

If the customer is not situated on a rail line, an IMCTF or simple transloading point closer to his facility in Sacramento could be utilized with trucks collecting and delivering the aggregates.

This example demonstrates several benefits in using the IMCTF:

- Using a single rail train over most of the freight journey is significantly cheaper than running multiple trucks from northern Nevada to California.
- This model takes multiple truck journeys off the highways, providing environmental and safety benefits as well as reducing highway maintenance costs.
- The IMCTF model offers a far more efficient utilization of transportation equipment. Whereas empty trucks are forced to make the return journey back to the driver's home base, empty rail cars can be left at the customer site and utilized for the export of other goods or, more commonly, collected and brought to a local yard for re-allocation.
- The IMCTF model provides greatly improved throughput for the Nevada construction distributor since the company trucks can make multiple trips to/from a local IMCTF site as opposed to one trip per day on a long transit to Sacramento. The added opportunity for additional volume of business is a typical value-add of an IMCTF site.

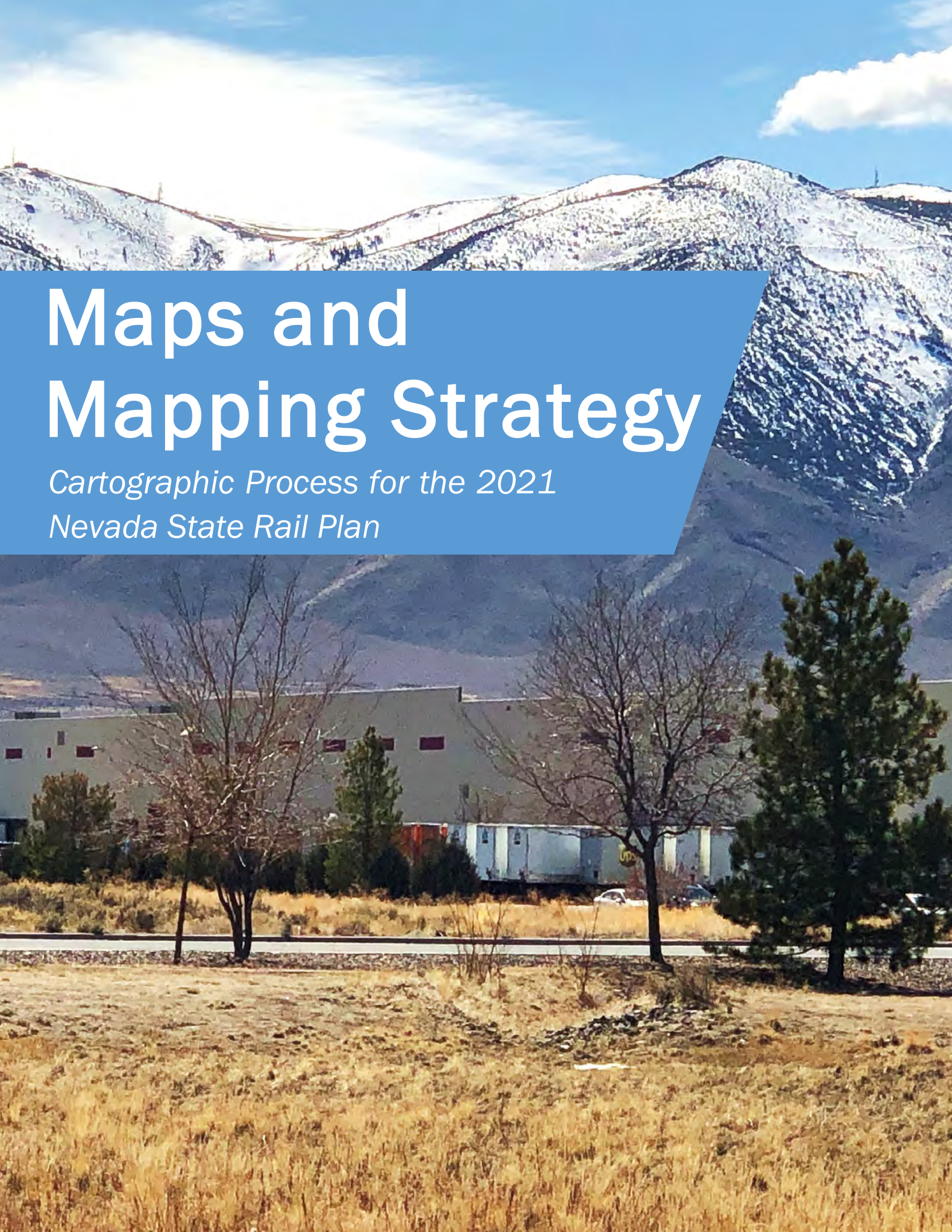
Locating IMCTFs

Although IMCTF's can handle all types of freight they do not need to be equipped for all cargo types. An analysis of current and projected freight flows in a region will define the optimal IMCTF design. IMCTF sites could be single or multiple use, for example container only or dry bulk only. Some IMCTF sites will incorporate substantial warehousing sites for container transloading to small trucks, others may incorporate open storage space for equipment, vehicles, or other large freight items.

IMCTF's stimulate additional economic activity and growth in the region. New companies will seek to locate close to a facility which can reduce their transport costs and provide a high performing supply chain operation which can open new markets and further boost growth. An IMCTF will encourage an eco-system of new distribution hubs attracted by the accessibility and efficiency gains.

An IMCTF is a strategic opportunity for economic development agencies seeking to grow commercial zones or catalyze underperforming regions. Where inland port terminals already exist, these can be easily converted into IMCTF sites and advantages of the integrated model can be quickly implemented.

The availability of existing rail lines and available land for constructing rail extensions from existing lines suggests the Fernley region is an optimal location for locating an IMCTF.



Maps and Mapping Strategy

Cartographic Process for the 2021 Nevada State Rail Plan

Maps and Mapping Strategy

Cartographic Process for the 2021 Nevada State Rail Plan M-4

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Cartographic Process for the 2021 Nevada State Rail Plan

The NVSRP approaches maps with the same level of inventiveness as it does freight data—using maps as the central tool for understanding a system that is as geographically- and topographically-based as railroads. Maps like data, are tools for knowledge, understanding, clarity, and productivity. Fortuitously, the Nevada Department of Transportation has a skilled cartography team who have stepped into collaboration with the NVSRP staff in applying their mapping skills. The NVSRP applies what may prove to be a breakthrough in the use of web technology to power-up statewide rail development.

NVSRP stakeholders will have the opportunity to explore new possibilities for the use of this technology. To wrap up the new Nevada State Rail Plan, we hear from Jeff Welter, NDOT's Cartography Supervisor in two statements, first on the fundamentals of print-map production, and then a forward-looking discussion on the advanced webmap system that the NVSRP has created:

Statement of Jeff Welter, NDOT Cartographer, August 21, 2020

> Producing the maps for the 2021 Nevada State Rail Plan is a straightforward, yet multifaceted process. The methodology varies depending on the type or theme of the map and its intended purpose, but in general follows the same steps in each instance.
>
> The initial organizing decisions made before creating a map determine how efficient and productive the eventual map and the map-making process. The goal is a product that clarifies and illuminates with minimal wasted effort on incorrect, outdated, or irrelevant information.
>
> Data is then gathered from many sources, including:
>
> - Aerial imagery from USDA National Agricultural Imagery Program
> - Railroads and highways from Nevada Department of Transportation datasets
> - Federal Land locations and classifications from the US Geological Survey
> - Public Land Survey System (PLSS) from the Bureau of Land Management
> - River and lake information from the USGS National Hydrology Dataset
>
> To these and other datasets are added proprietary information relative to the individual map which are obtained from other public sources, provided by stakeholders, or collected by consultants.
>
> The raw data is then organized and processed using ESRI ArcGIS, software specifically designed for geospatial data i.e., any data that has a locational aspect as opposed to being simply numerical in nature. This can be time consuming due to the sheer size of some files, especially imagery. The computational process can take many hours for each map.
>
> The map is then drawn using Adobe Illustrator, a scalable vector graphics (SVG) program. With SVG, lines are continuous curves instead of a series of pixels, as occurs in raster-based photo processing and some graphics software. Vectors do not change with a change of scale, which allows maps created using SVG to be printed at larger or smaller sizes with no loss of quality. Enlargements with SVG do not result in the 'pixelization' that is often seen when increasing the size of raster-based maps or images.

The key to this entire process is the use of Avenza MAPublisher software. MAPublisher 'translates' the geospatial information derived in ArcGIS to the SVG format used in Illustrator. Once the projection of the map is established, any new 'layers' of information added to the map will conform to the same projection – everything will be in alignment and any changes made to the base of the map will be made to all the features on the map simultaneously. This capability not only speeds the cartographic process, but also allows more creativity and responsiveness to changes as a project progresses.

Once the first draft of a map is created, there is a process of proofreading, review, correction, and amendment by various involved persons. This usually requires multiple subsequent drafts, and the process is repeated until a final version is obtained that satisfies the goals and requirements of the project. Finally, the map can then be published and distributed to stakeholders and the public. The extensive work invested in generating 77 maps in the NVSRP has been conducted with a high level of attention to accuracy, clarity, and usefulness.

Webmap Design and Creation, Jeff Welter, September 18, 2020

Designing a webmap to feature a specific set of data takes the cartographic process to a higher level of complexity. A well-designed webmap requires more work to create than the sum of its component parts but has the benefit of increased utility and flexibility of displaying information compared with traditional print maps.

A webmap consists of a number of maps at different scales portraying the same area. As the scale increases, the number of map sections to cover a particular area also increases i.e., an area portrayed at a scale of 1:100,000 will require four map sections to cover the same area at 1:50,000. Depending on the area and scales used, a webmap can consist of hundreds of individual maps or 'tiles.'

These tiles then are co-registered in six directions: north/south, east/west, and 'zoom in'/'zoom out.' This allows the user to both pan across and zoom into the map area seamlessly. This allows the user to quickly move to areas of interest within the map and then focus on the data of interest.

Once the extent of the area and the number of zoom levels have been decided and the functional structure has been created, geospatial data can then be entered into the map. Geospatial data is any data that has a physical location as one of its components. How the data was collected is a factor here – data collected with GPS coordinates can usually be incorporated into the map automatically; data with addresses often has to be entered manually. This can be a very time-consuming process. Also, the quality of the data and how it has been structured (i.e., how it is arranged in a spreadsheet) will affect the data entry process. Many man-hours can be spent correcting and standardizing data, or even searching for locations that have not been properly described.

After the data has been incorporated, the usual cartographic decisions on symbology, color, line weights and styles, labeling, etc. are then made. The difference here is that the design elements must work at different scales, which quite often is a challenge and, if the zoom levels of the map vary greatly, is actually impossible. So, a new set of decisions are required regarding at which zoom levels do features and data points become visible/disappear.

Along with this, quite often the style of the base map upon which the data is displayed may be suitable at one zoom level, but makes the lines, symbols, and labels difficult to read or interpret at another, so the base map must change as the user zooms in or out. This is another decision to be made and adds more complexity to the functional structure of the webmap.

A feature of web maps is the ability for the user to access all the information associated with each data point. This information is called 'attributes' and the 'attribute table' of the webmap corresponds generally to a typical spreadsheet. Using the example of businesses, clicking on the symbol will then open a pop-up box showing the name, address, phone, amount of traffic, accessibility, or any other type of information relating to that business. The only limitation of the data available to display is the quantity and quality of the data provided to the cartographer.

Another feature of webmaps is the capability for the user to make only certain types of information visible in order to focus on particular aspects of the data as a whole. As information is entered into the webmap, it is arranged in 'layers' by the cartographer. These layers are usually defined by some particular aspect of the data; for example, using businesses again, they could be grouped into layers based on the number of employees. The user then could 'turn off' (deselect) any layers not of interest leaving only the desired group of data points (in this case, business locations) that meet their criteria. This simplifies reading and interpreting the map and also allows a map to be 'customized' for presentation, highlighting the information that the user deems most important.

Web maps are a powerful tool, the possible uses of which are only beginning to be discovered and utilized. The extra effort needed for their creation is more than compensated by the benefits derived from them.

Figure 1-1: Nevada Rail Network

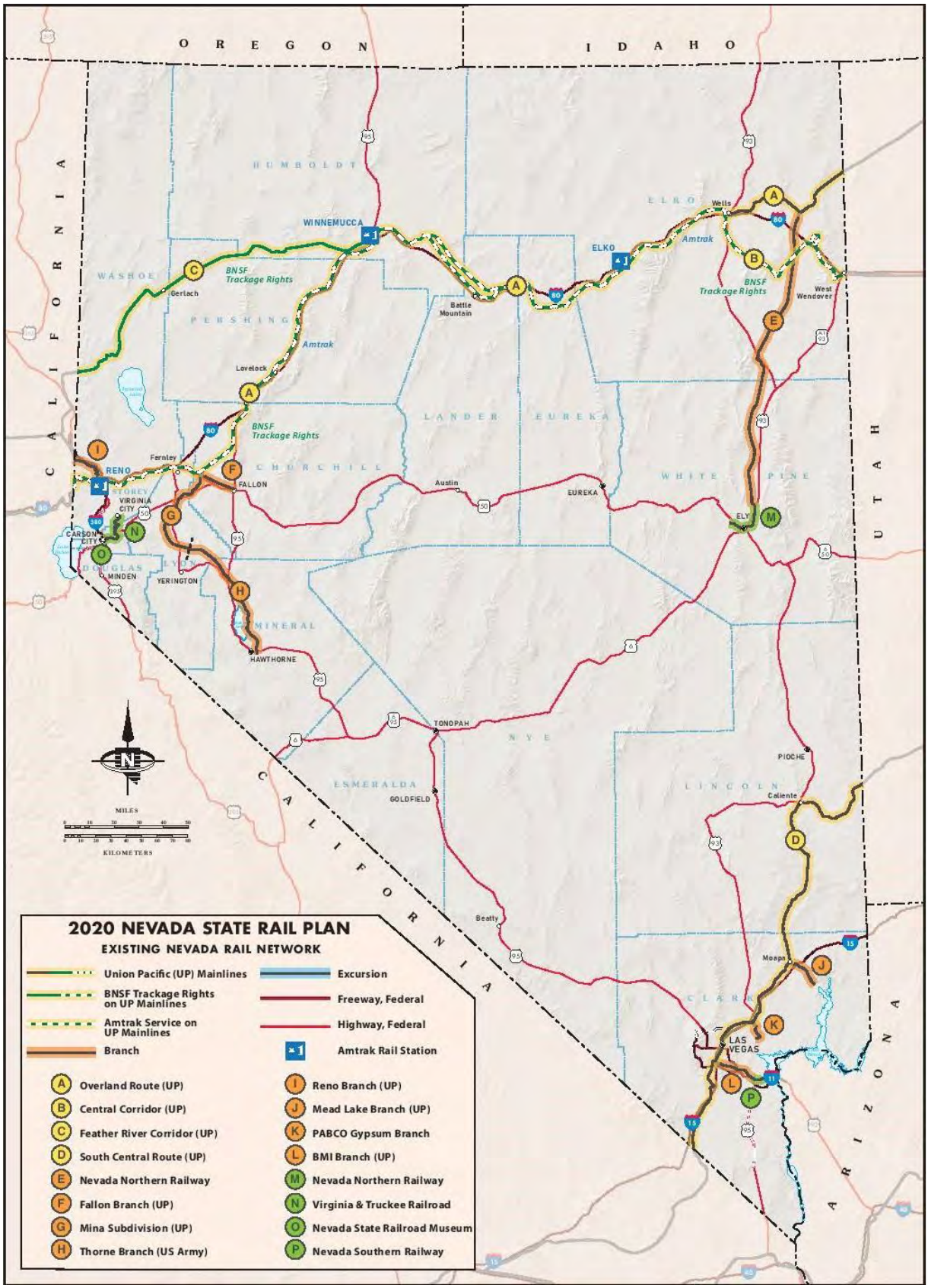
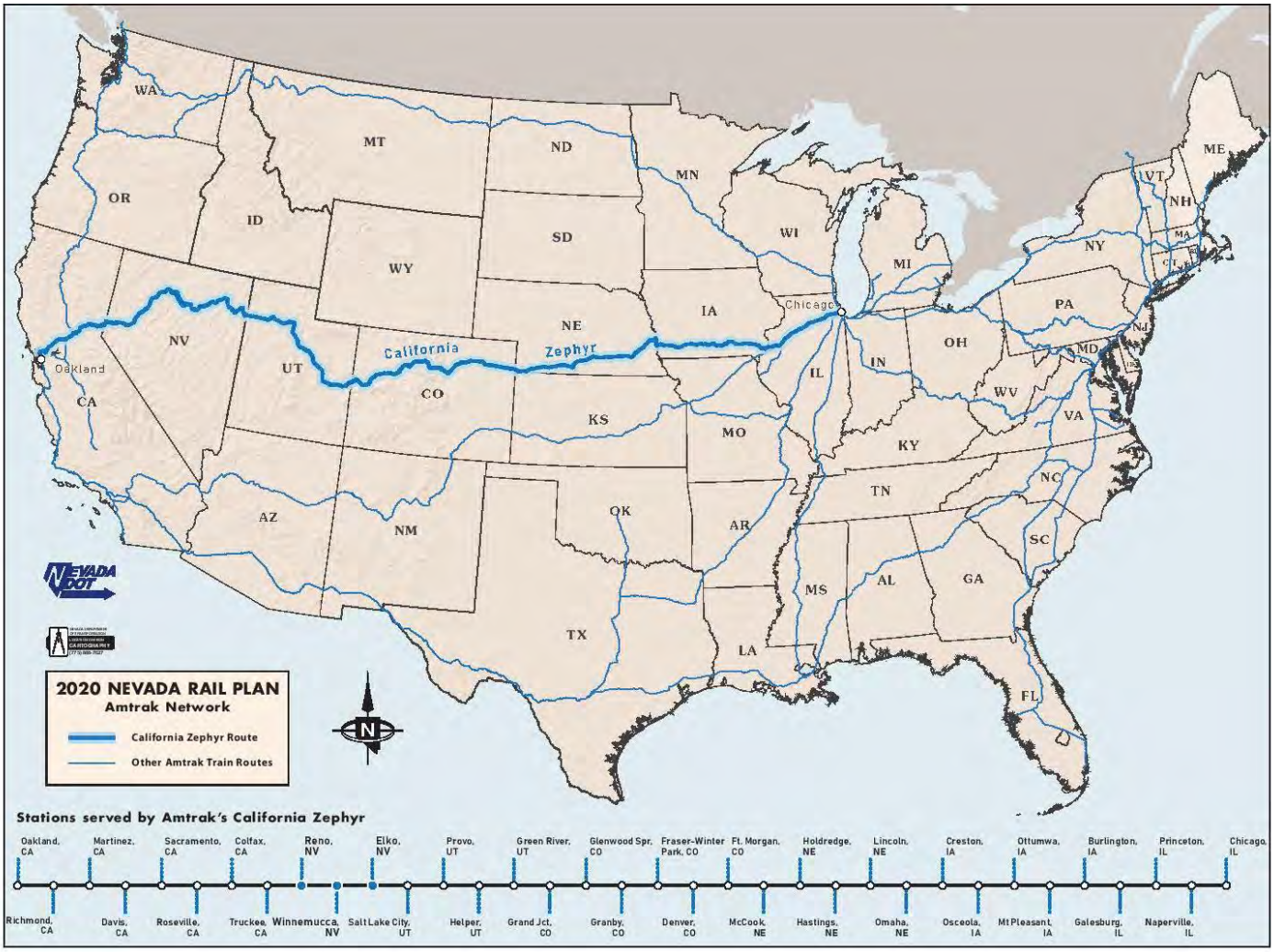


Figure 2-2: California Zephyr and Amtrak System[1]



[1] Amtrak website, source link, accessed June 9, 2020.

Figure 2-3: California Zephyr Station Stops in Nevada

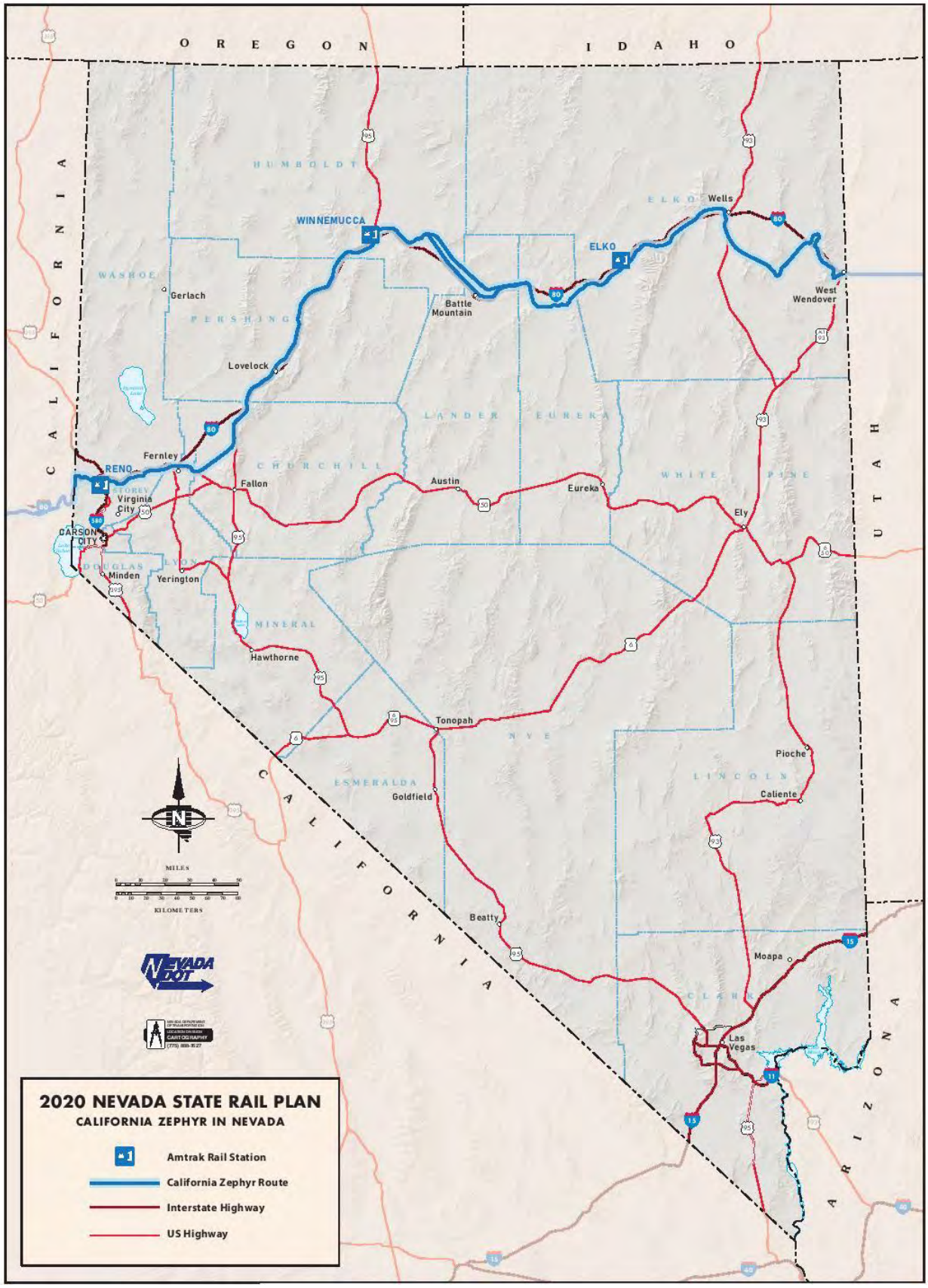


Figure 2-4: Connecting Amtrak Thruway Bus Service with Nevada

Figure 2-5: Excursion Lines

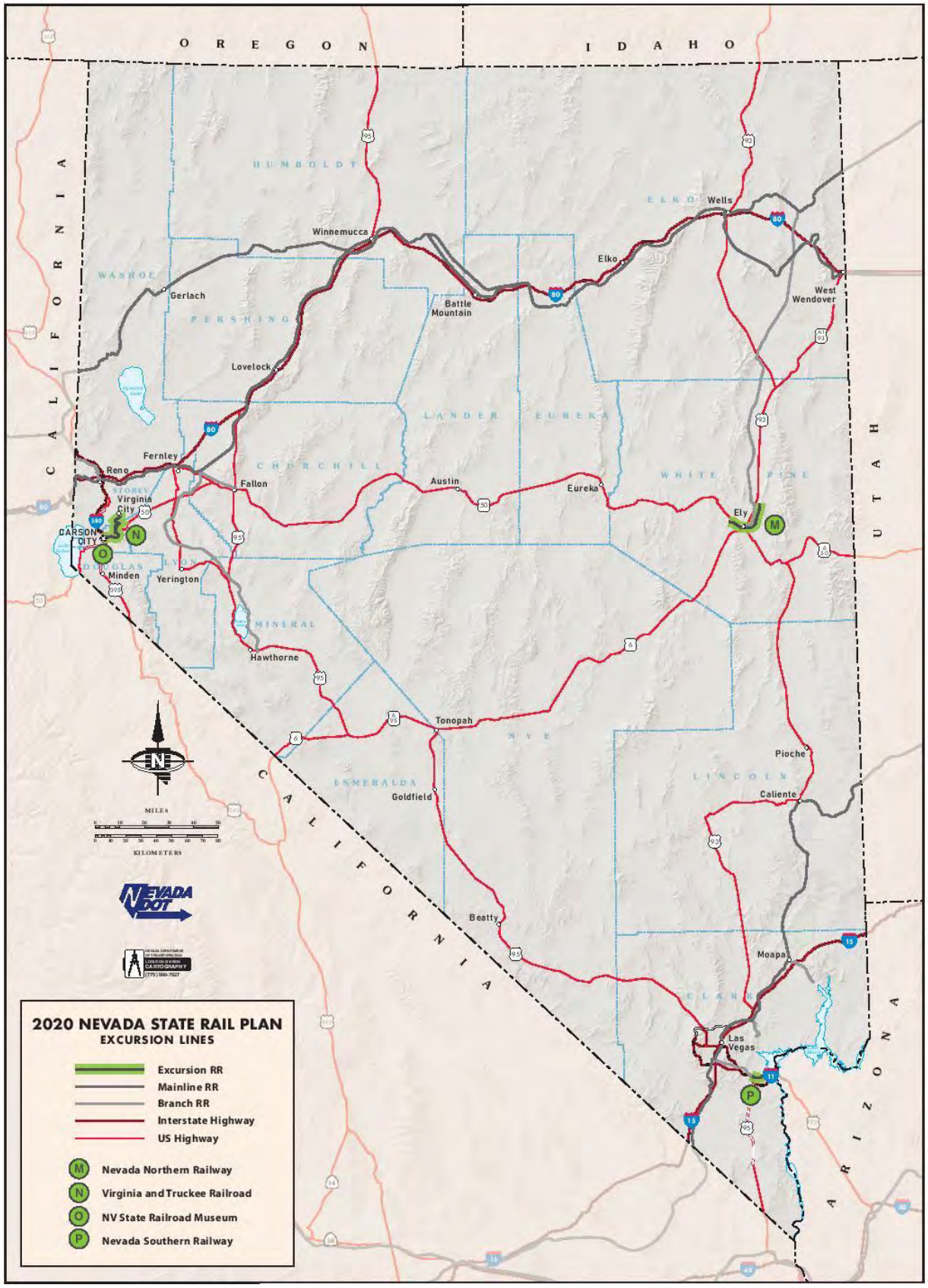


Figure 2-6: Las Vegas Multimodal Passenger Connections

Figure 2-7: Reno Multimodal Passenger Connections

Figure 2-8: Elko Amtrak Passenger Station

Figure 2-9: Winnemucca Amtrak Passenger Station

Figure 2-10: Sparks Multimodal Passenger Connections

Figure 2-11: Laughlin Multimodal Passenger Connections

Figures 2-12 and 2-14.1: Stateline Multimodal Passenger Connections

Figure 2-13: Nevada Main Lines

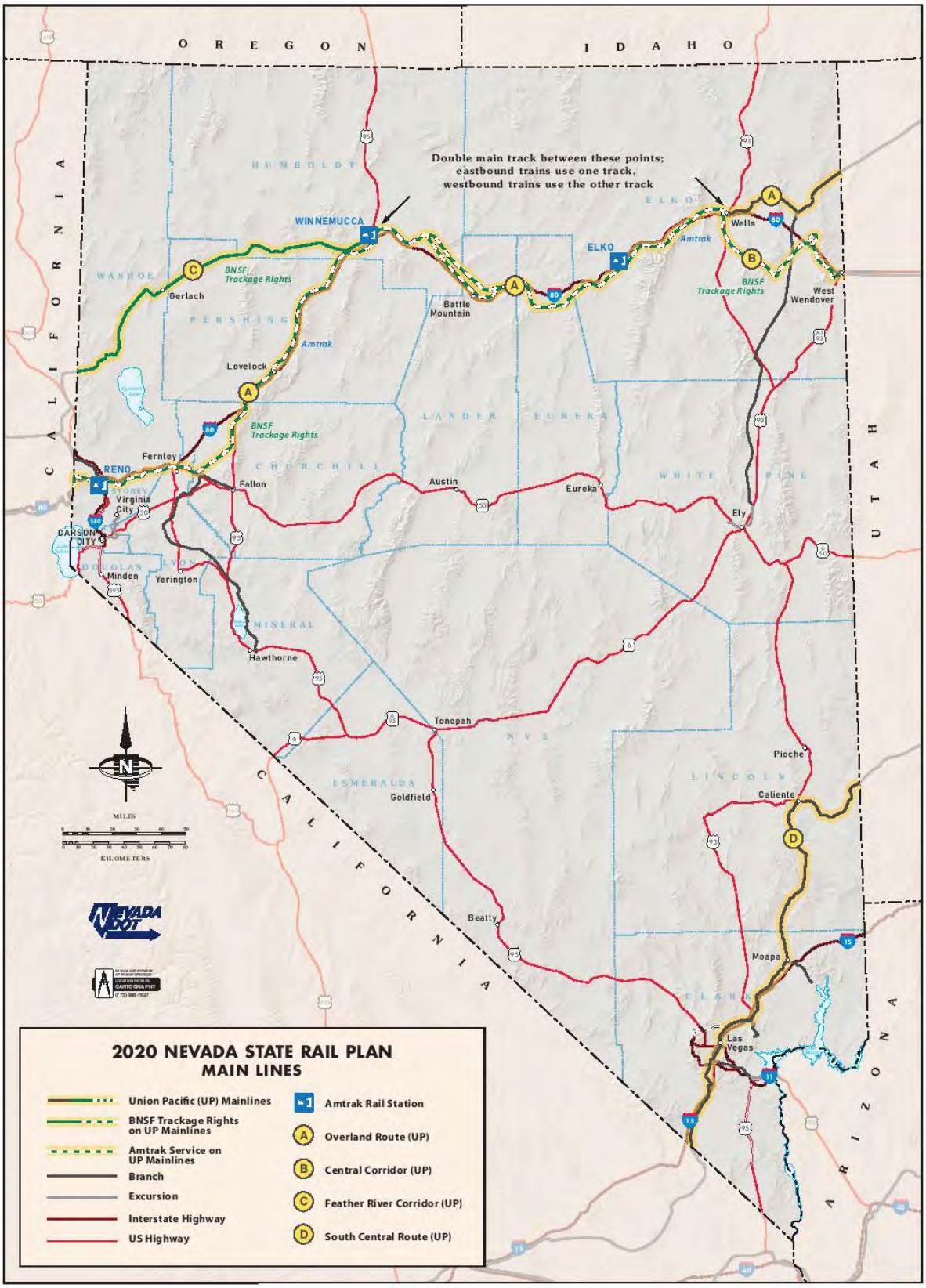


Figure 2-14: Major Line Network in Adjoining States

Figure 2-15: Nevada Branch Lines

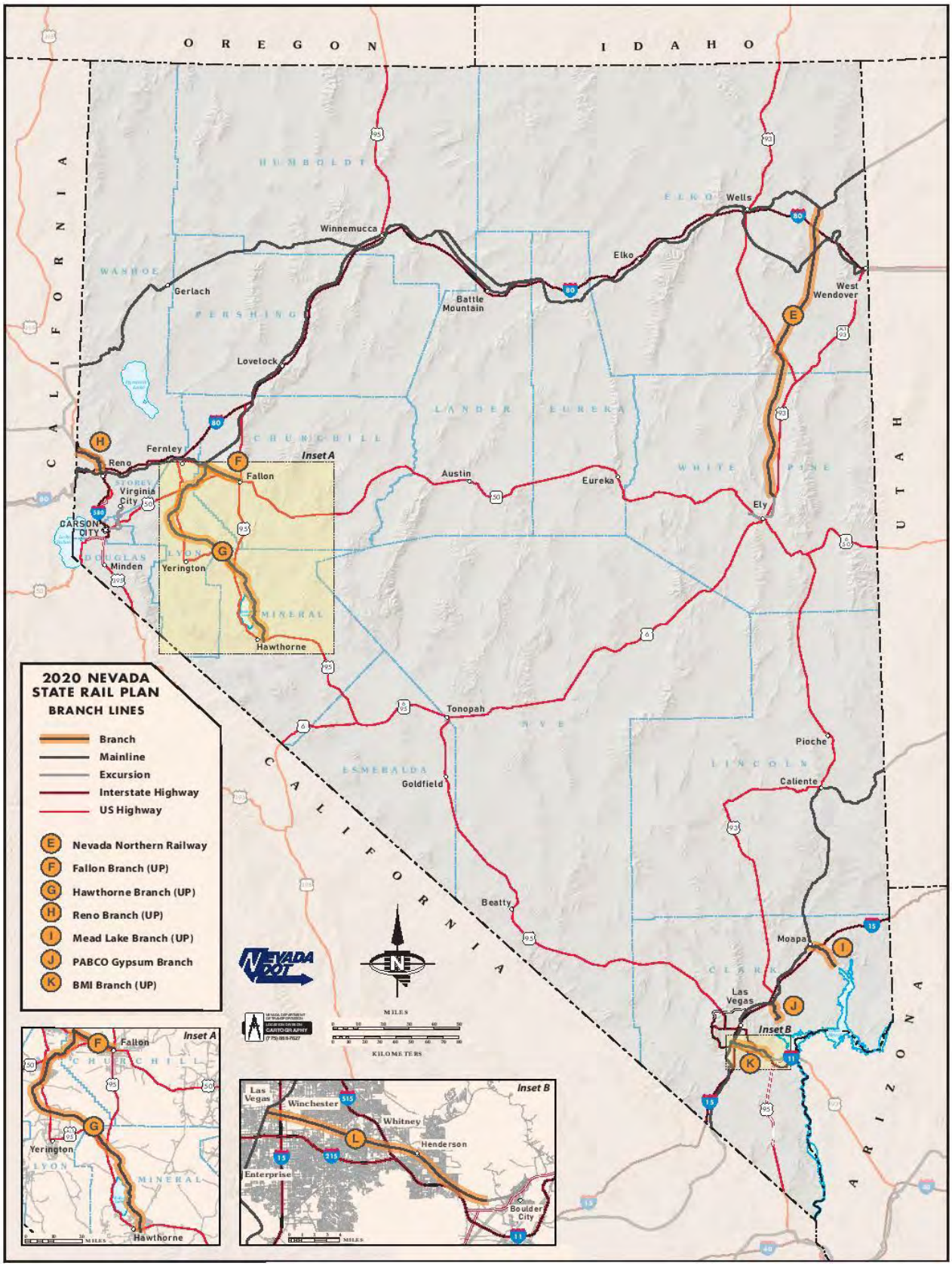


Figure 2-16: Freight Right-of-Way and Major Facilities in Nevada

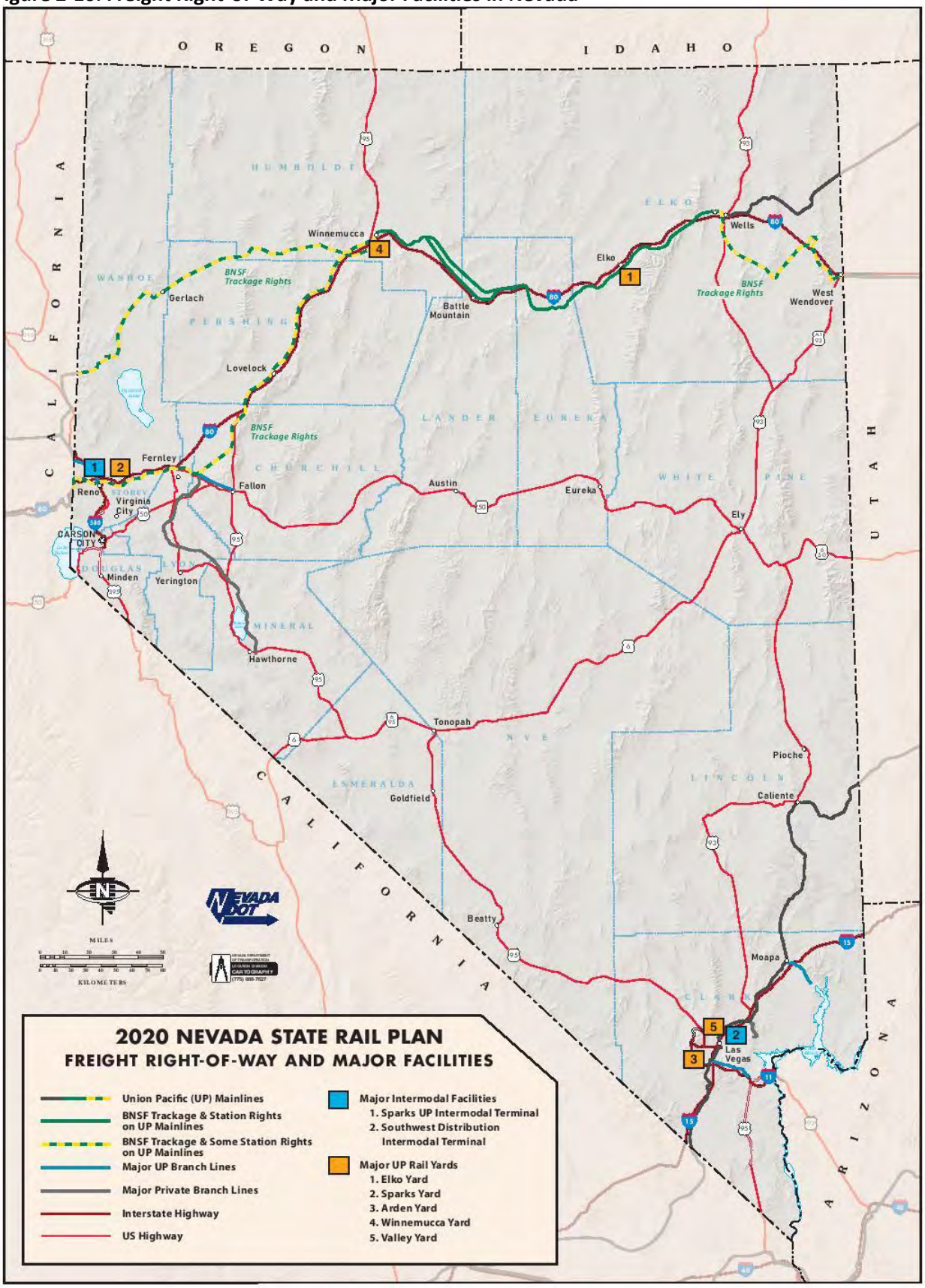


Figure 2-17: Abandoned Rail Line

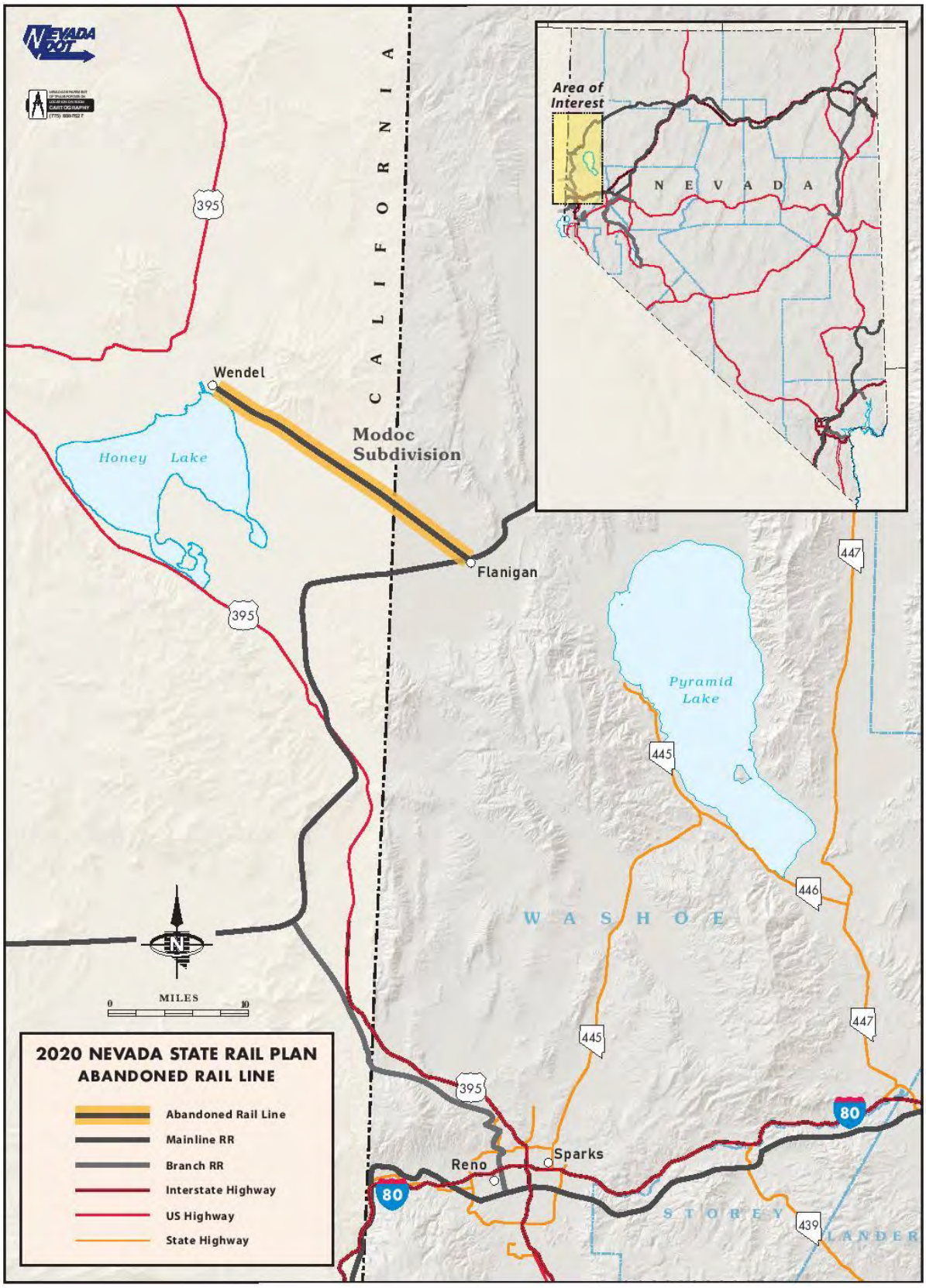


Figure 2-18: Destination of Rail Traffic Originating in Nevada (2018)

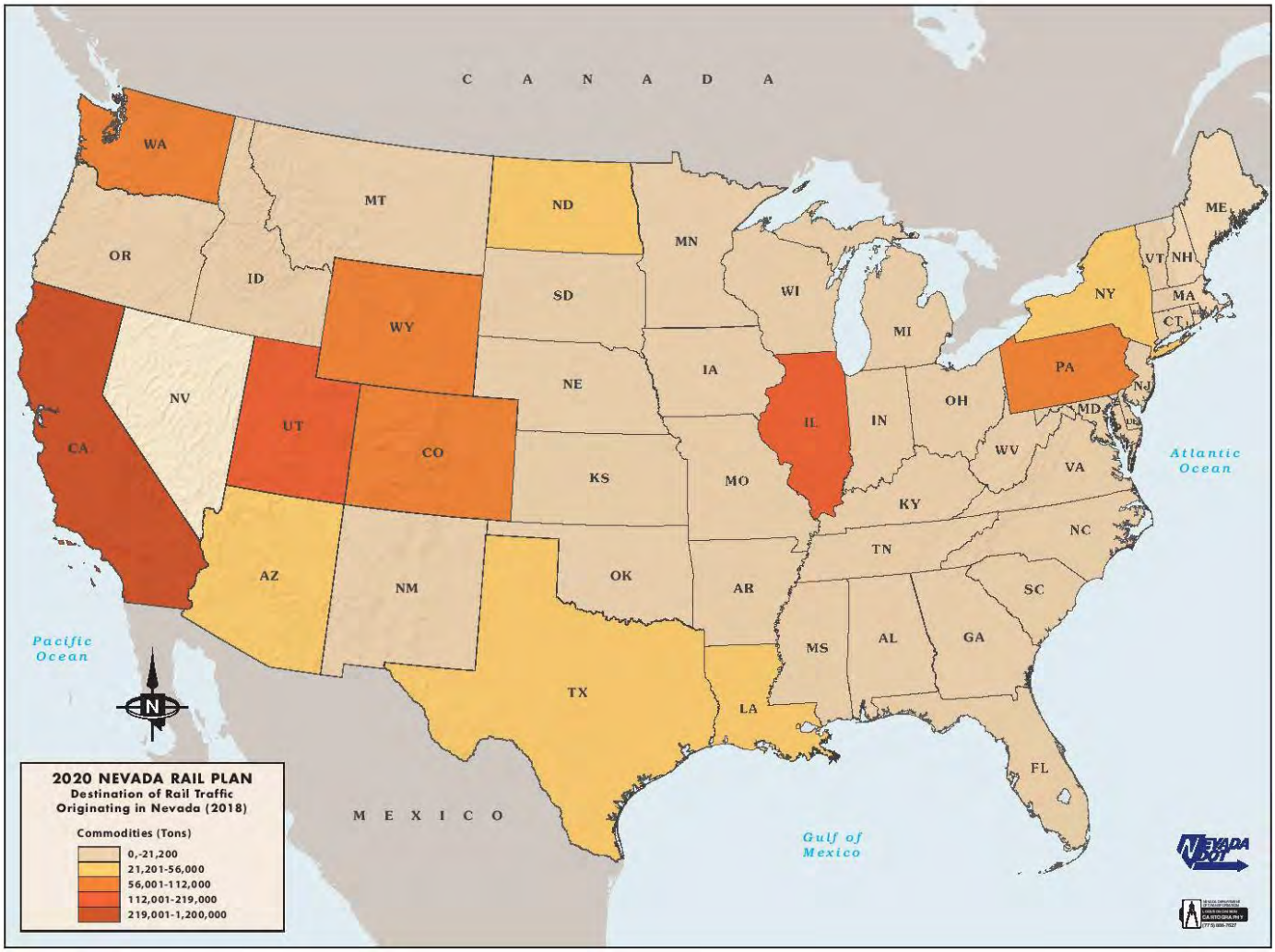


Figure 2-19: Origination of Rail Traffic Terminating in Nevada (2018)

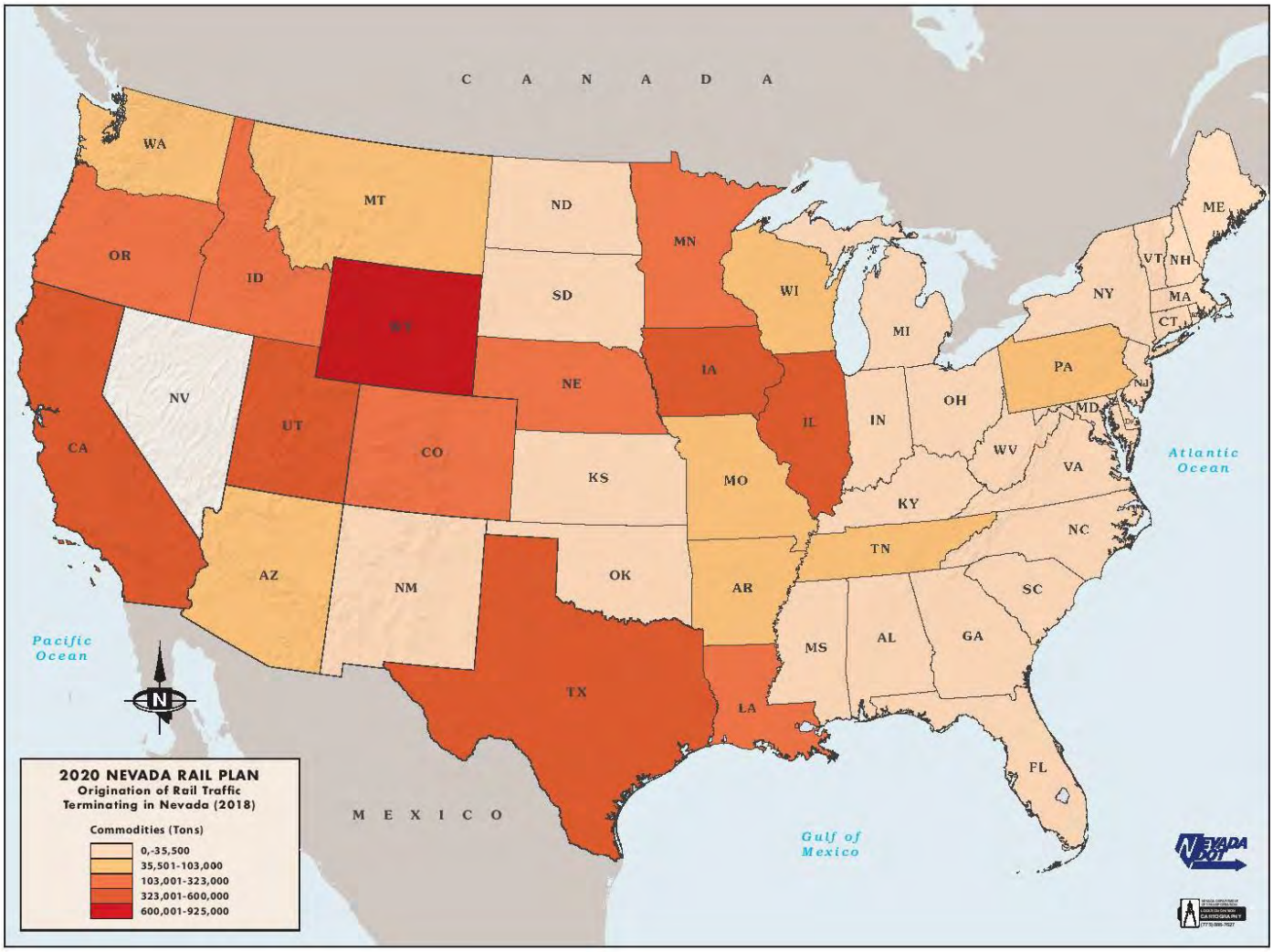


Figure 3-1 Proposed Amtrak California Zephyr Station Stops

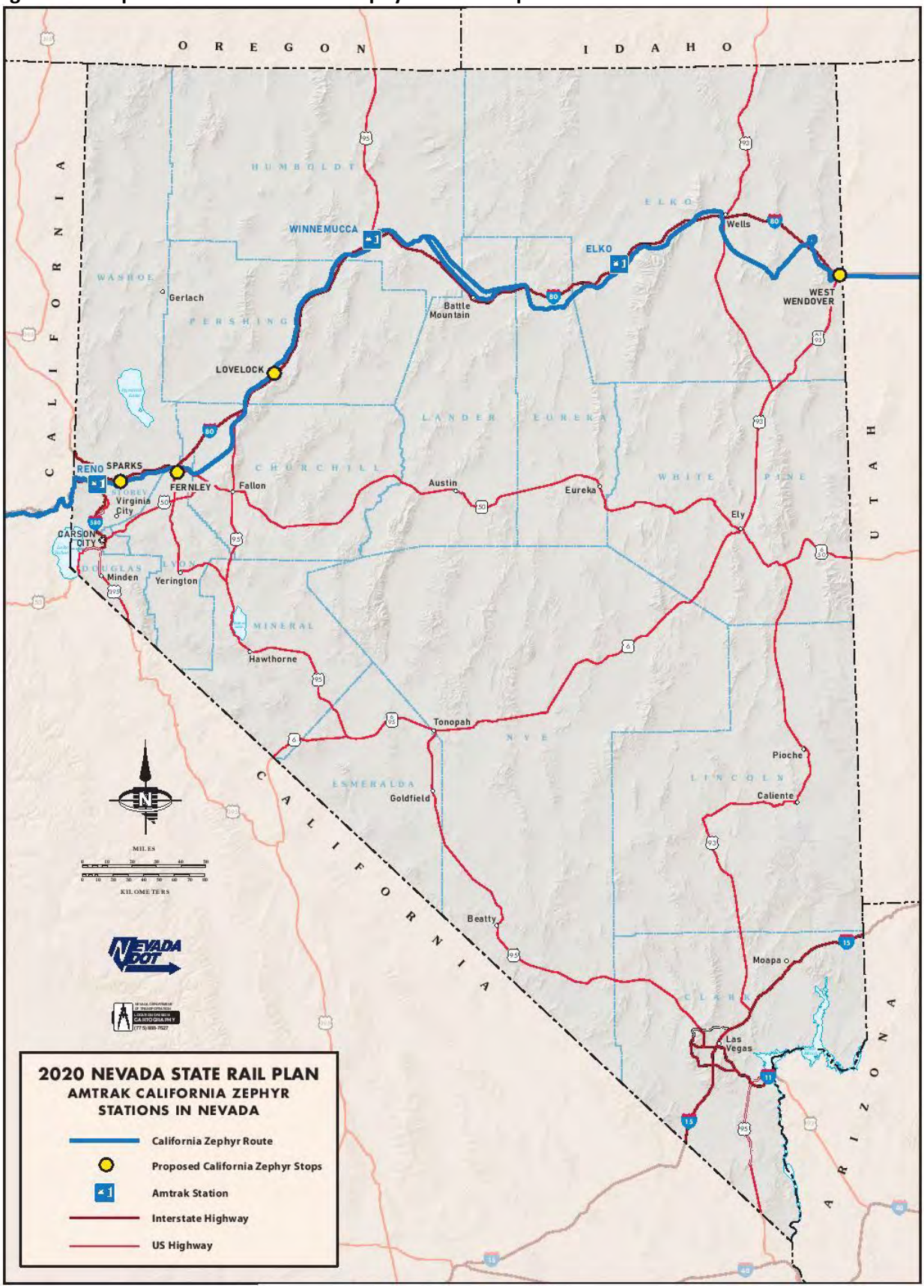


Figure 3-2 Proposed Amtrak Capital Corridor Extension to Reno/Sparks

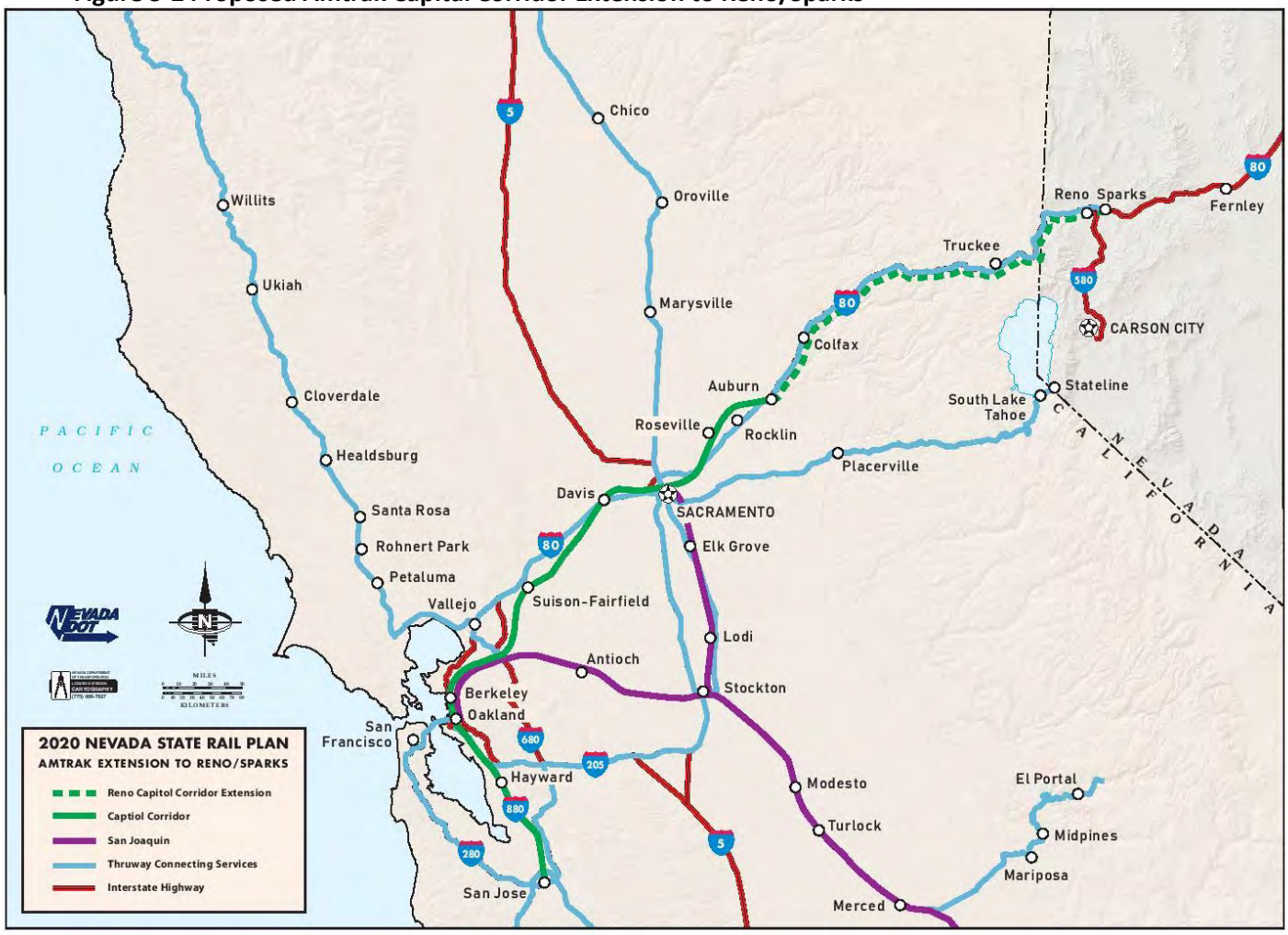


Figure 3-320 Brightline West Route Map

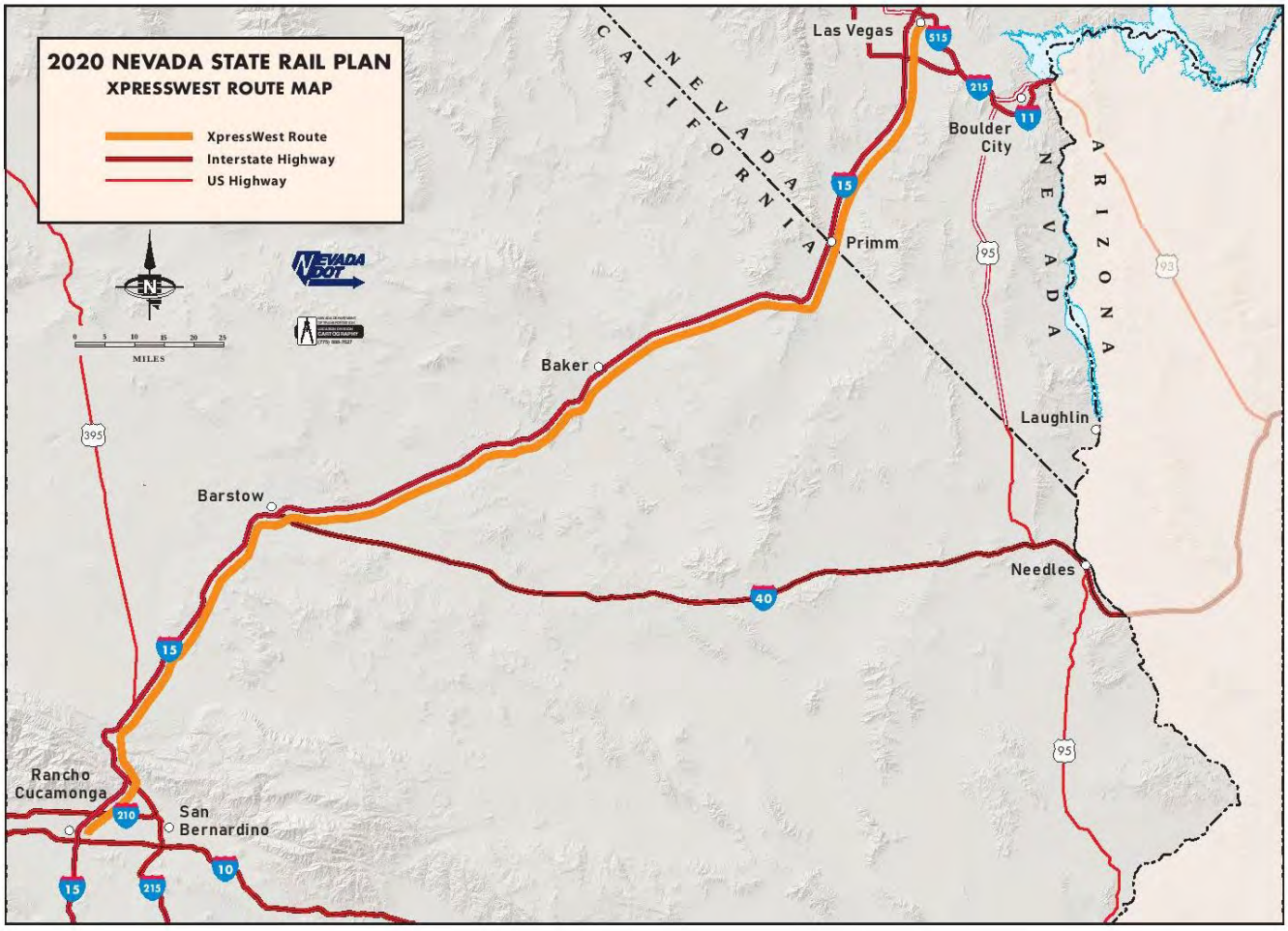


Figure 3-5: Las Vegas – Reno C Route

Figure 3-6: C Route Highlight Overlay on Population Heat Map

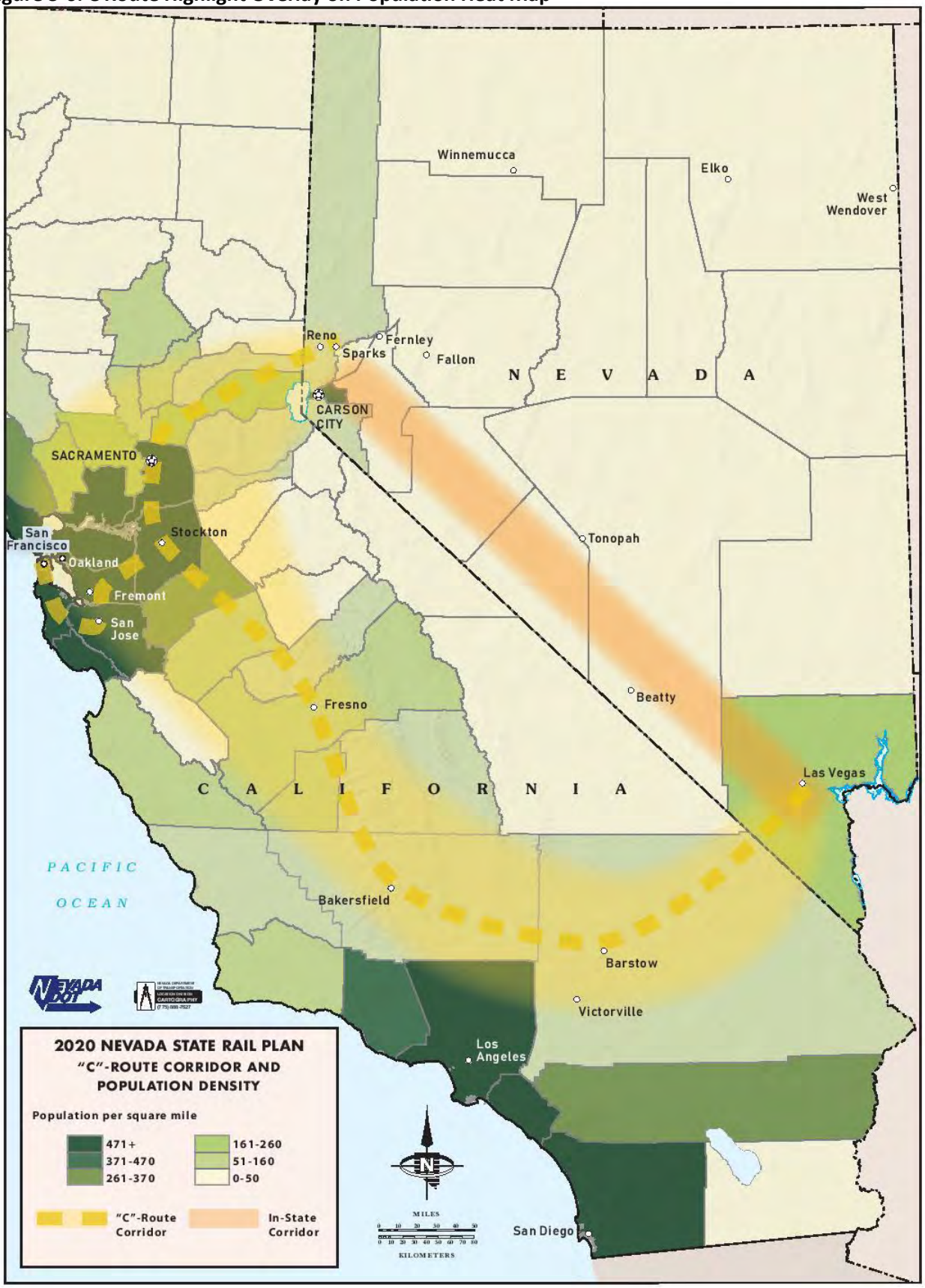


Figure 3-7: Desert Wind Corridor

Figure 3-8: Nevada Northern Railway McGill Extension

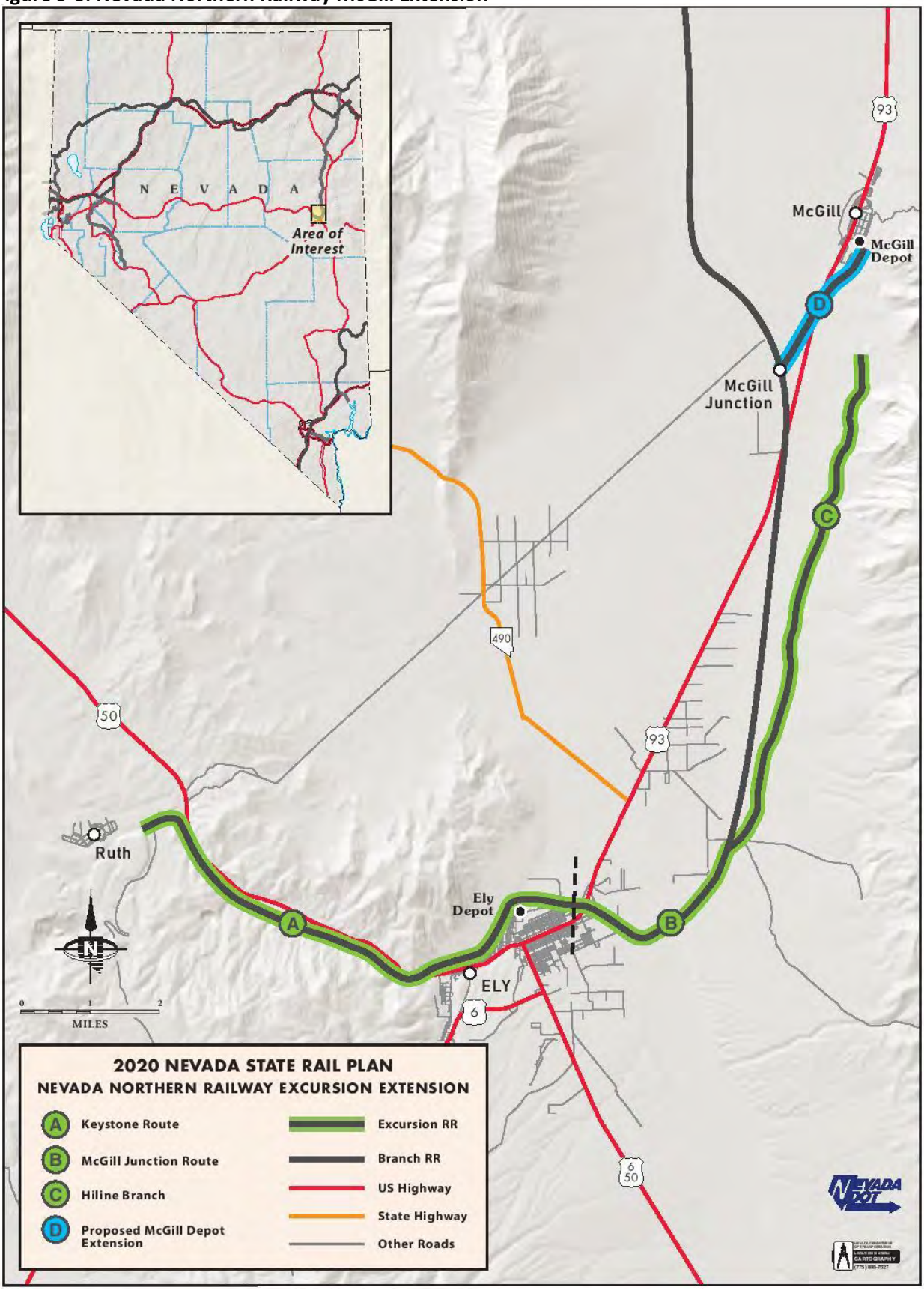


Figure 3-10: "The Hoover Dam Limited"

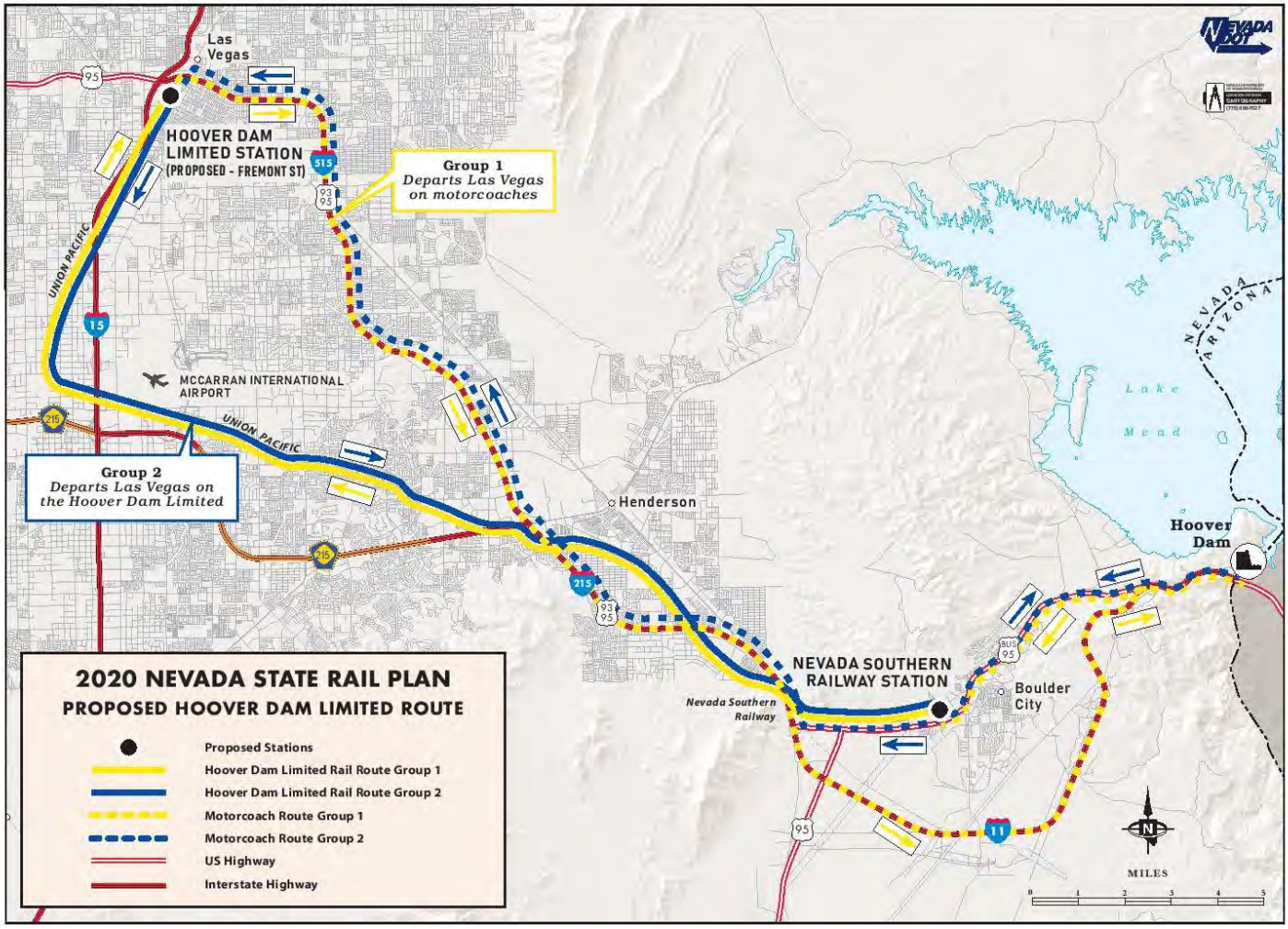


Figure 3-11: Innovation Park Commuter Rail Service

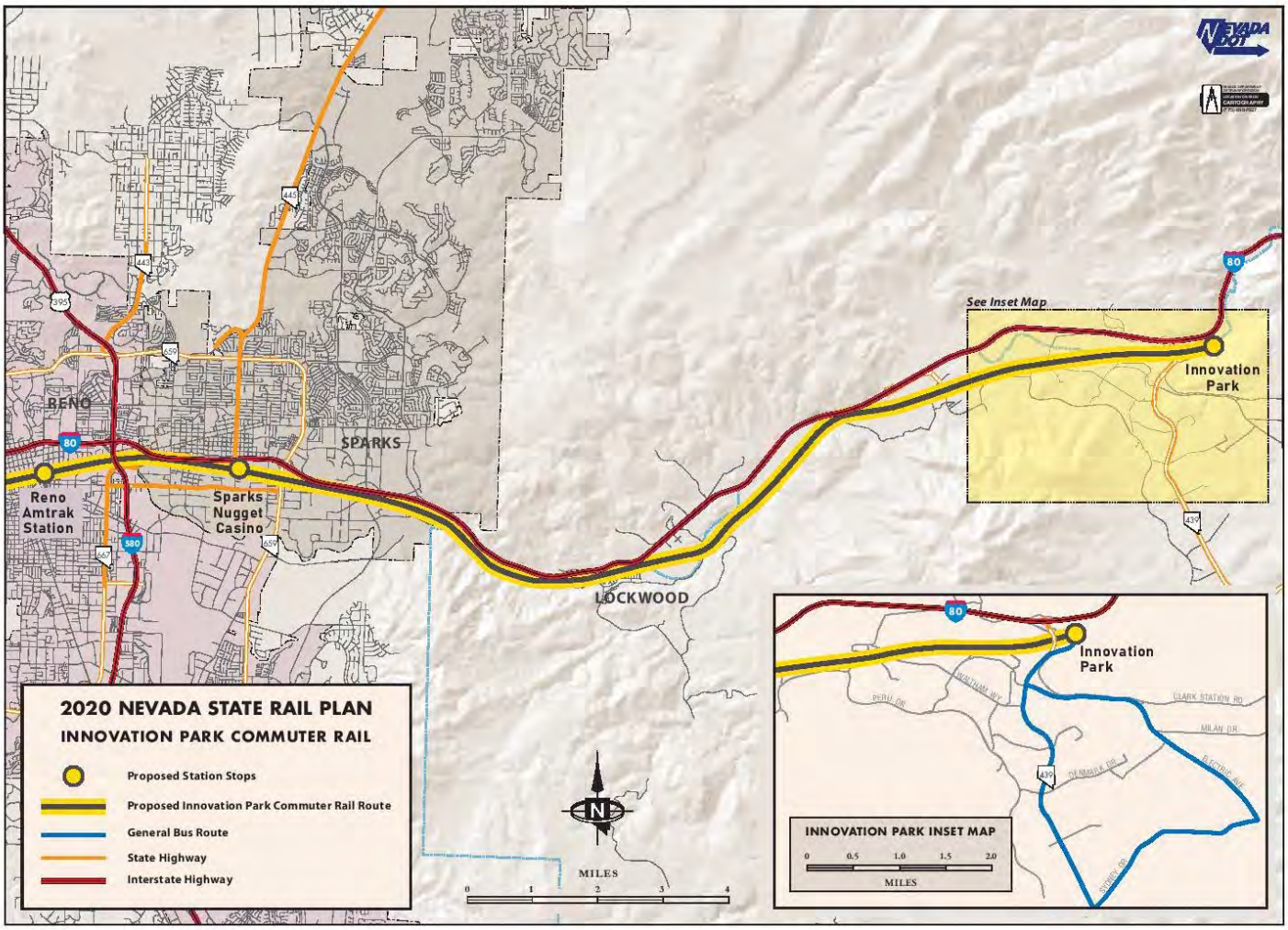


Figure 3-12: RailPAC Reno Corridor Proposals

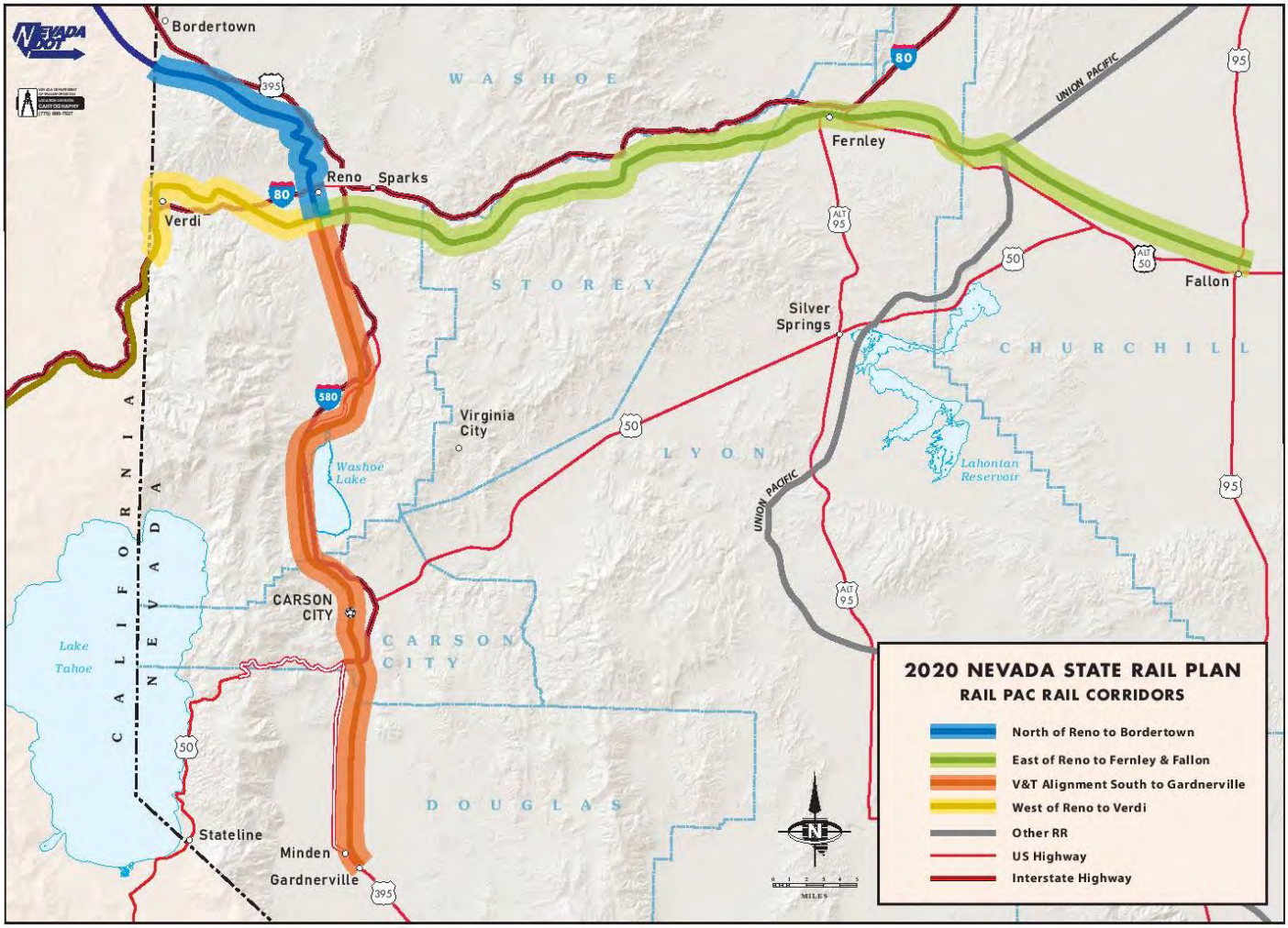


Figure 3-13: Las Vegas – Primm Regional Rail

Figure 3-14: Las Vegas Monorail Extension to Brightline West

Figure 3-15: Existing Nevada Rail Network

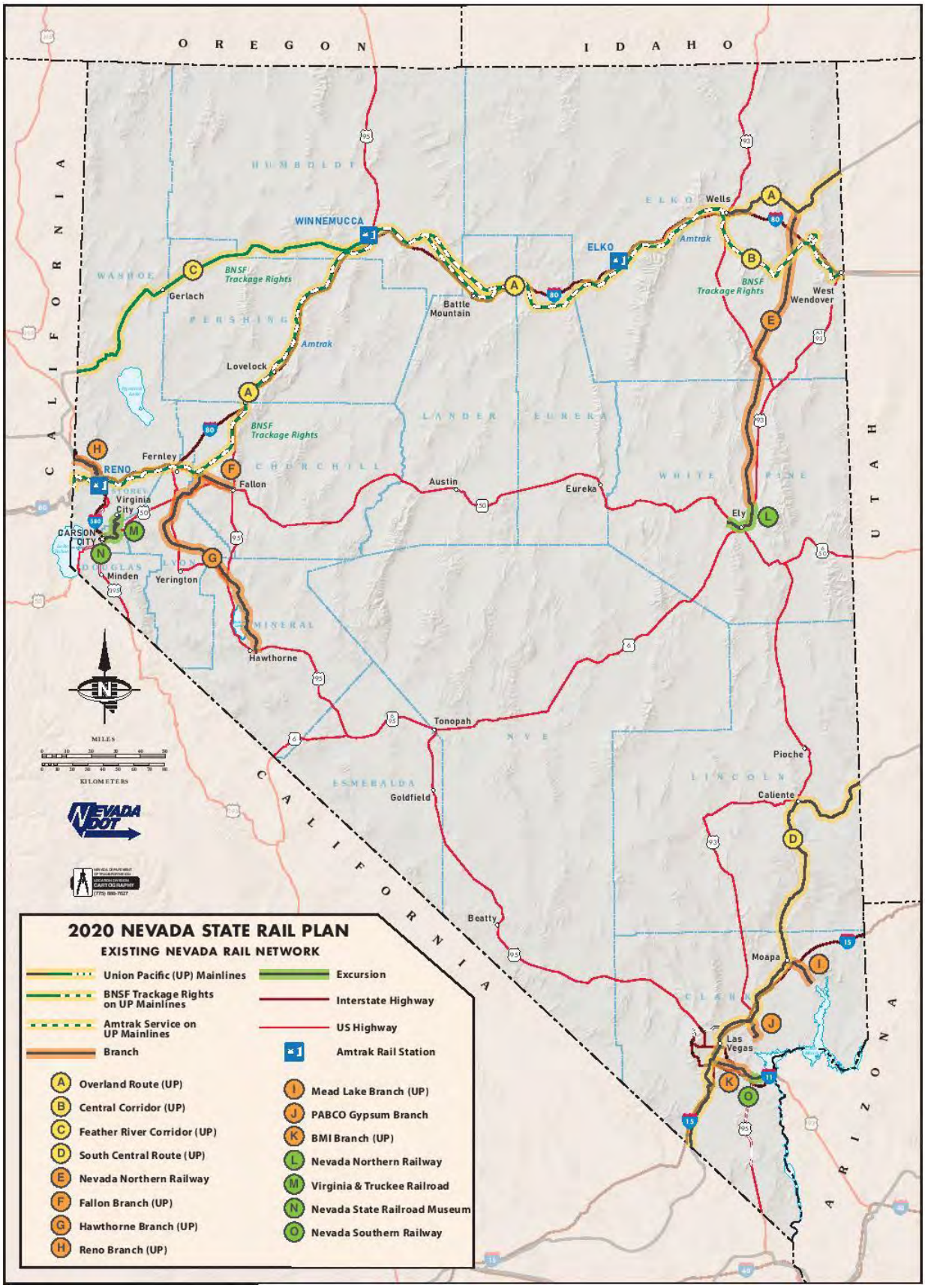


Figure 4-1: Nevada Active Mines Overview

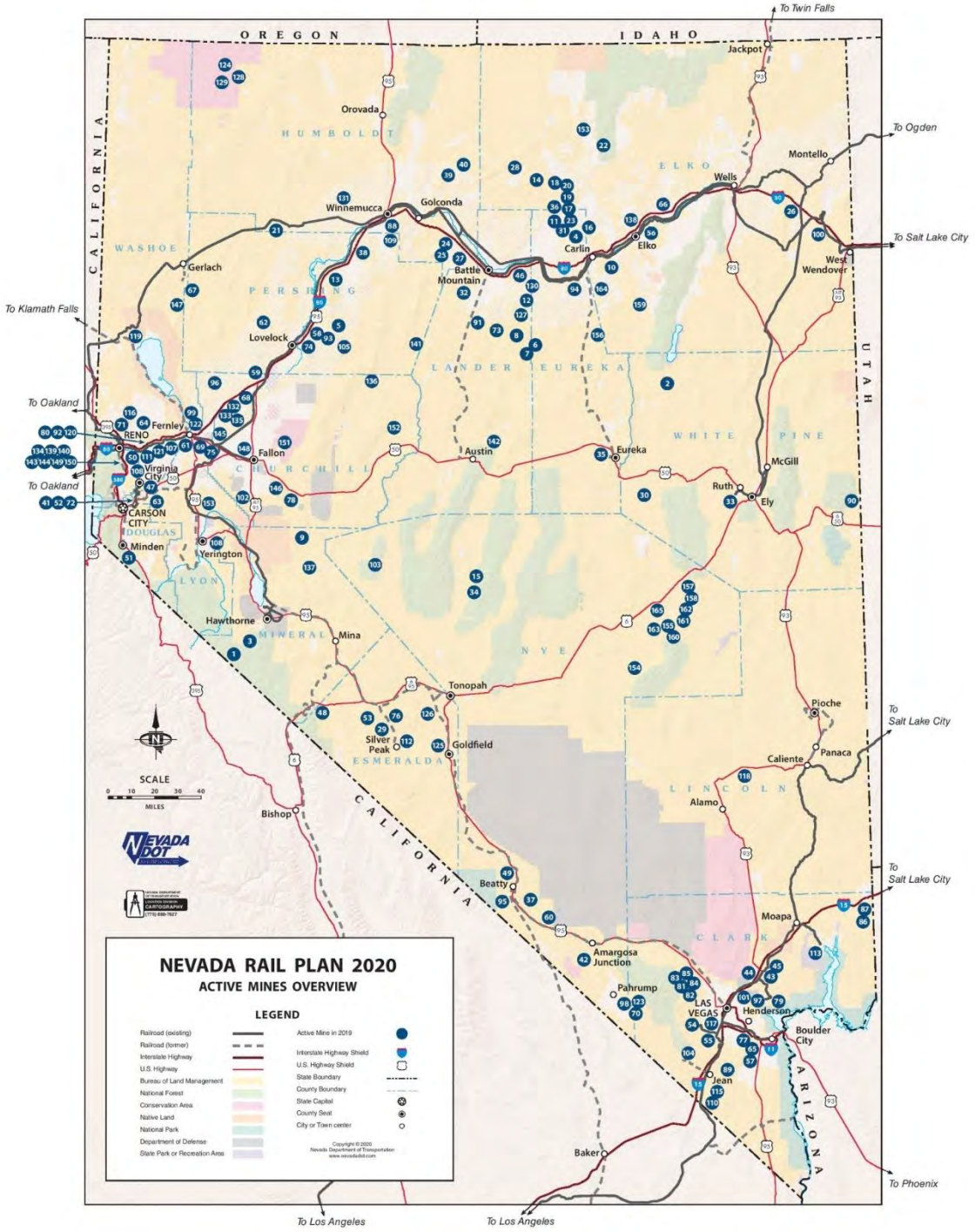


Figure 4-2: Nevada Strategic Regions

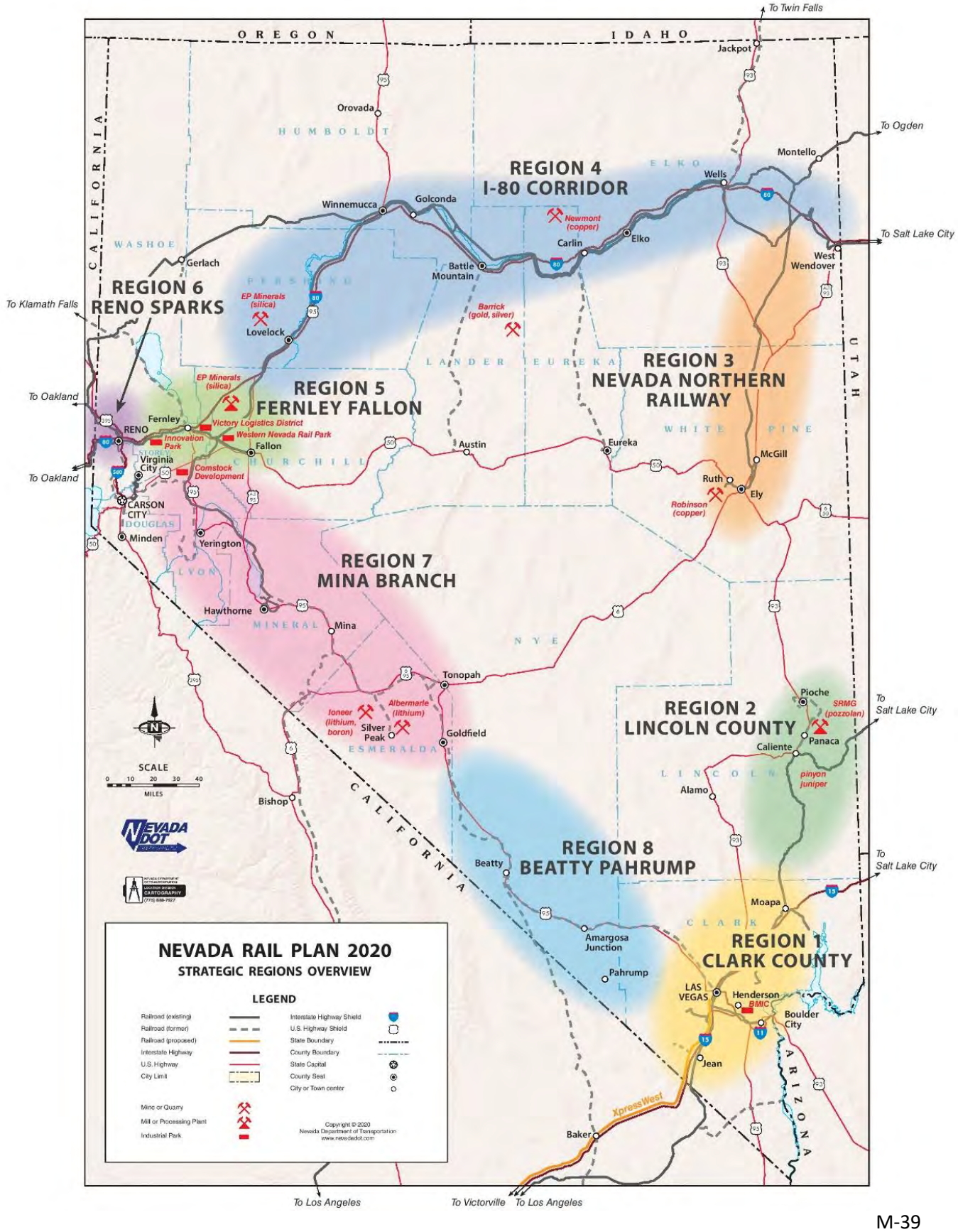


Figure 4-3: Region 1 - Clark County Area

Figure 4-4: Region 1 – Black Mountain Industrial Complex Area

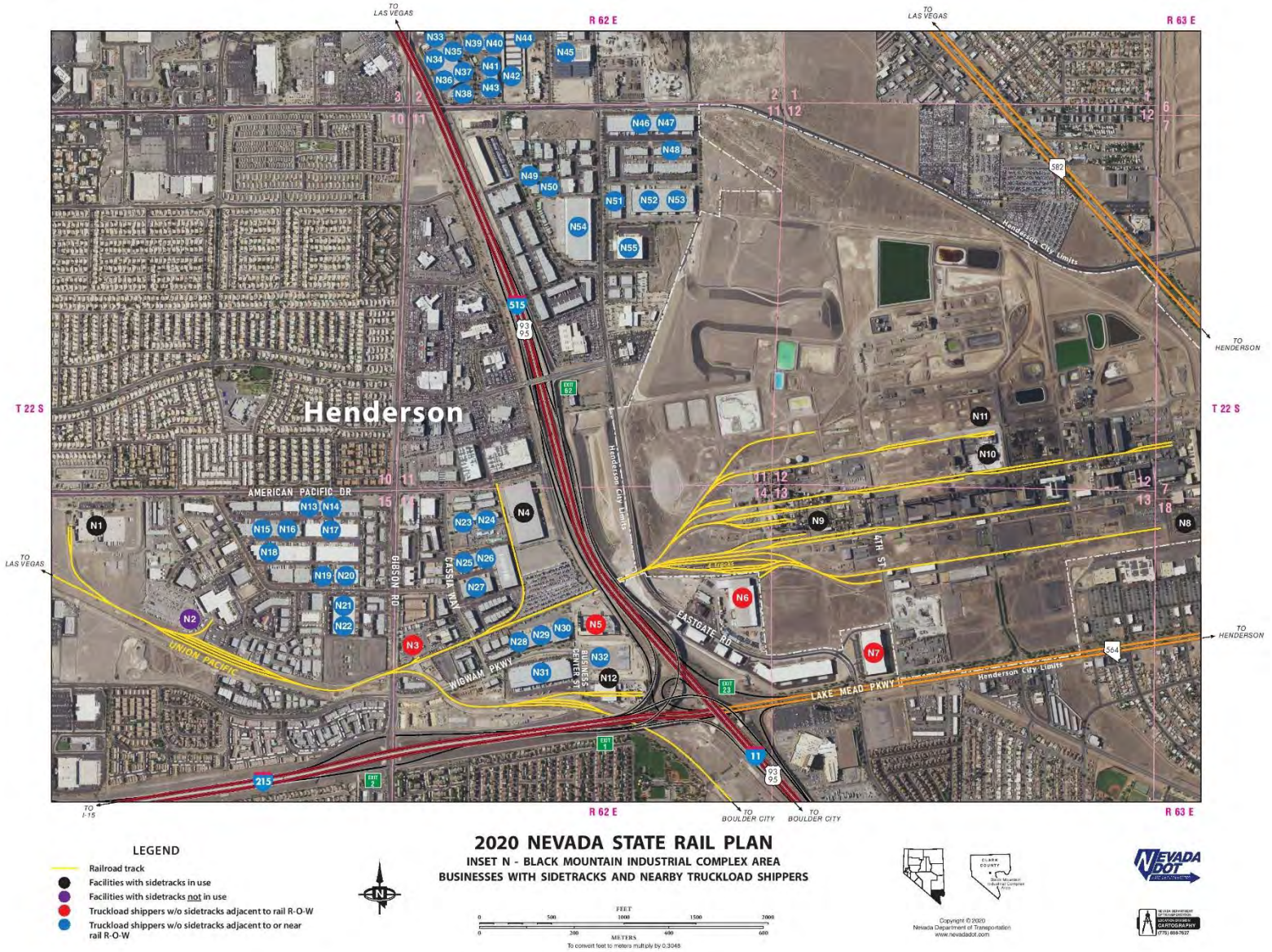


Figure 4-5: Region 1 – North Las Vegas Area

Figure 4-6: Region 1 – Nellis Area

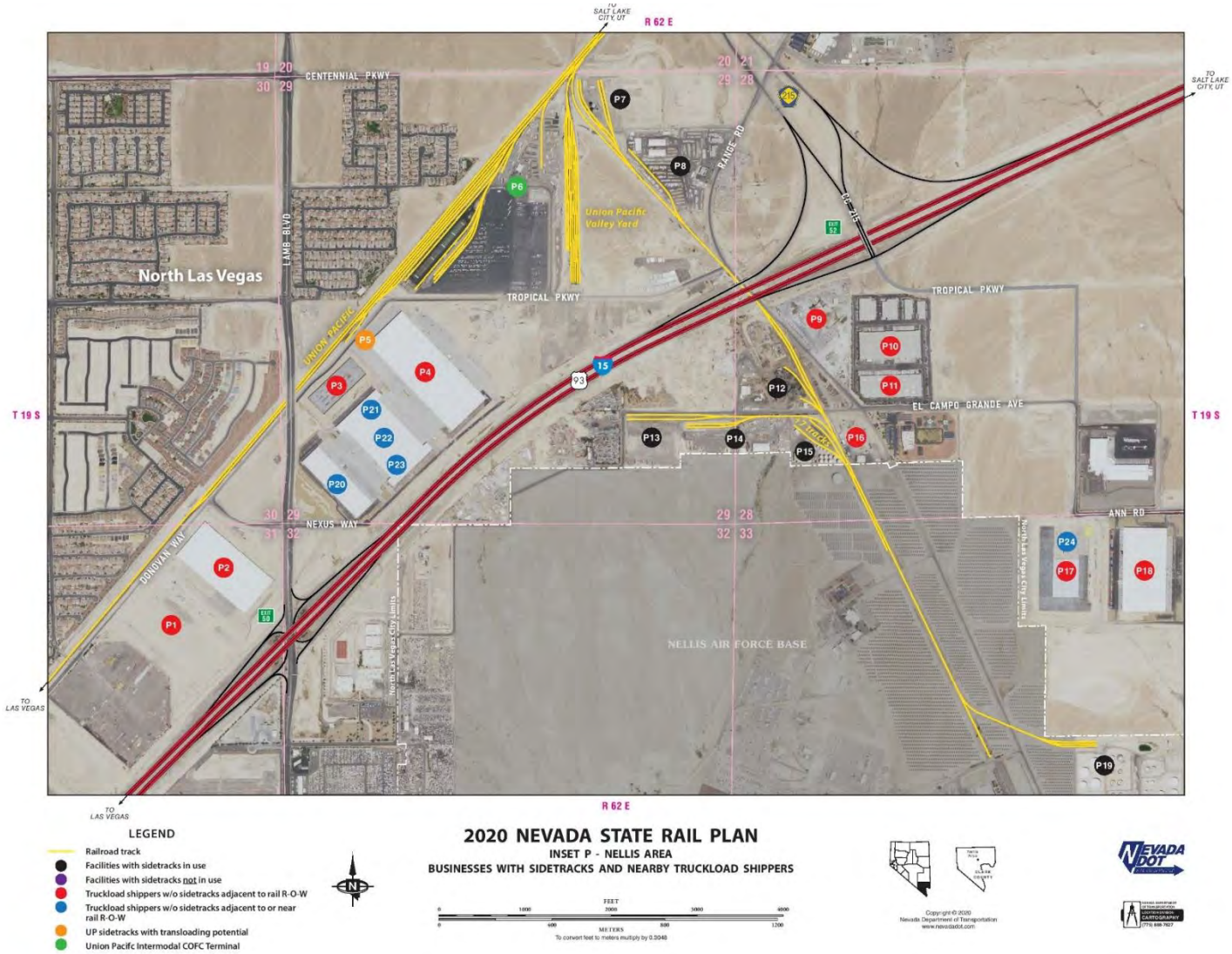
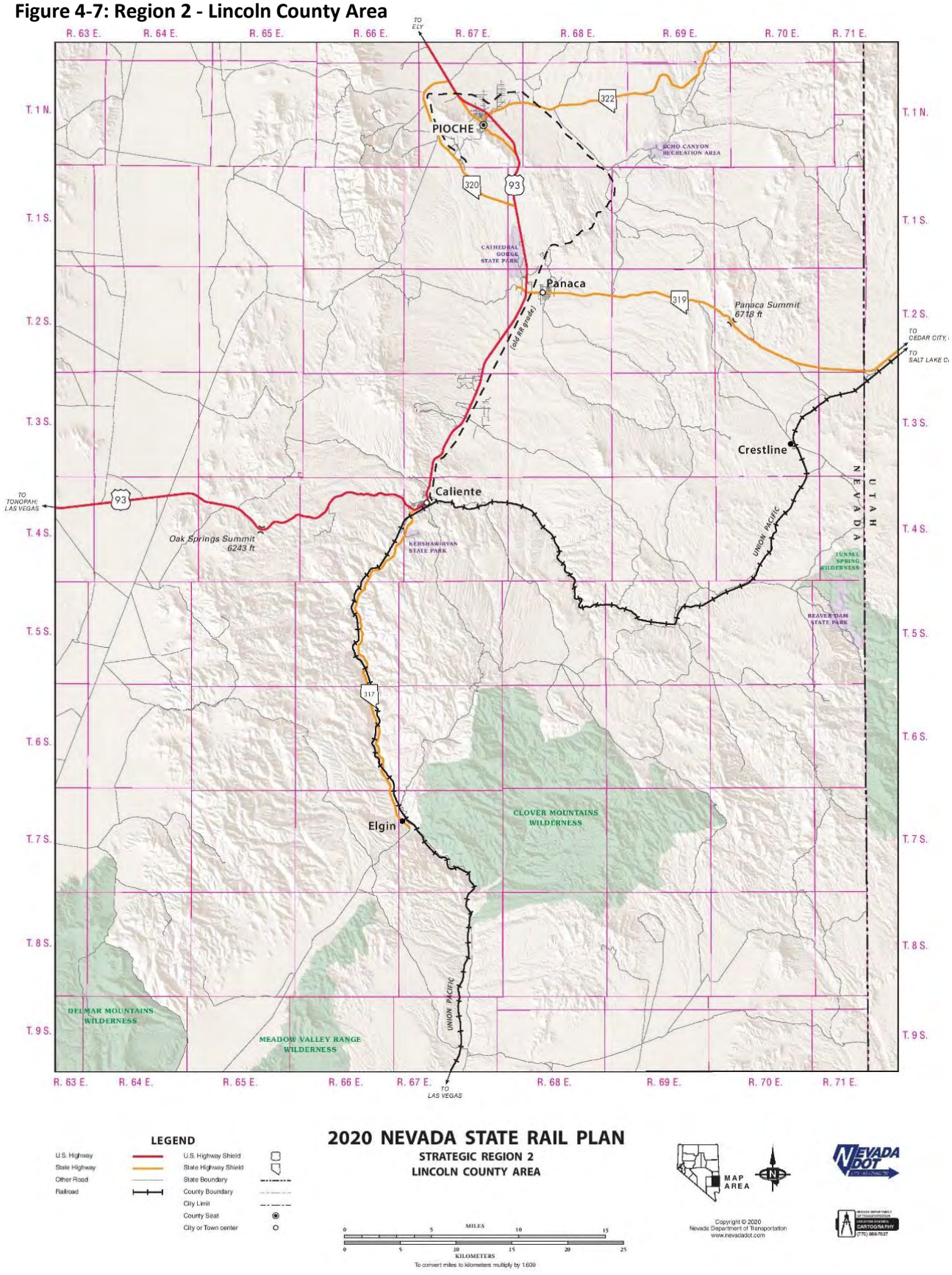


Figure 4-7: Region 2 - Lincoln County Area



LEGEND

U.S. Highway
State Highway
Other Road
Railroad
U.S. Highway Shield
State Highway Shield
State Boundary
County Boundary
City Limit
County Seat
City or Town center

2020 NEVADA STATE RAIL PLAN

STRATEGIC REGION 2
LINCOLN COUNTY AREA

MILES 0 5 10 15
KILOMETERS 0 5 10 15 20 25
To convert miles to kilometers multiply by 1.609

MAP AREA

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NEVADA DOT

CARTOGRAPHY (775) 888-7627

Figure 4-8: Region 3 - Nevada Northern Railway

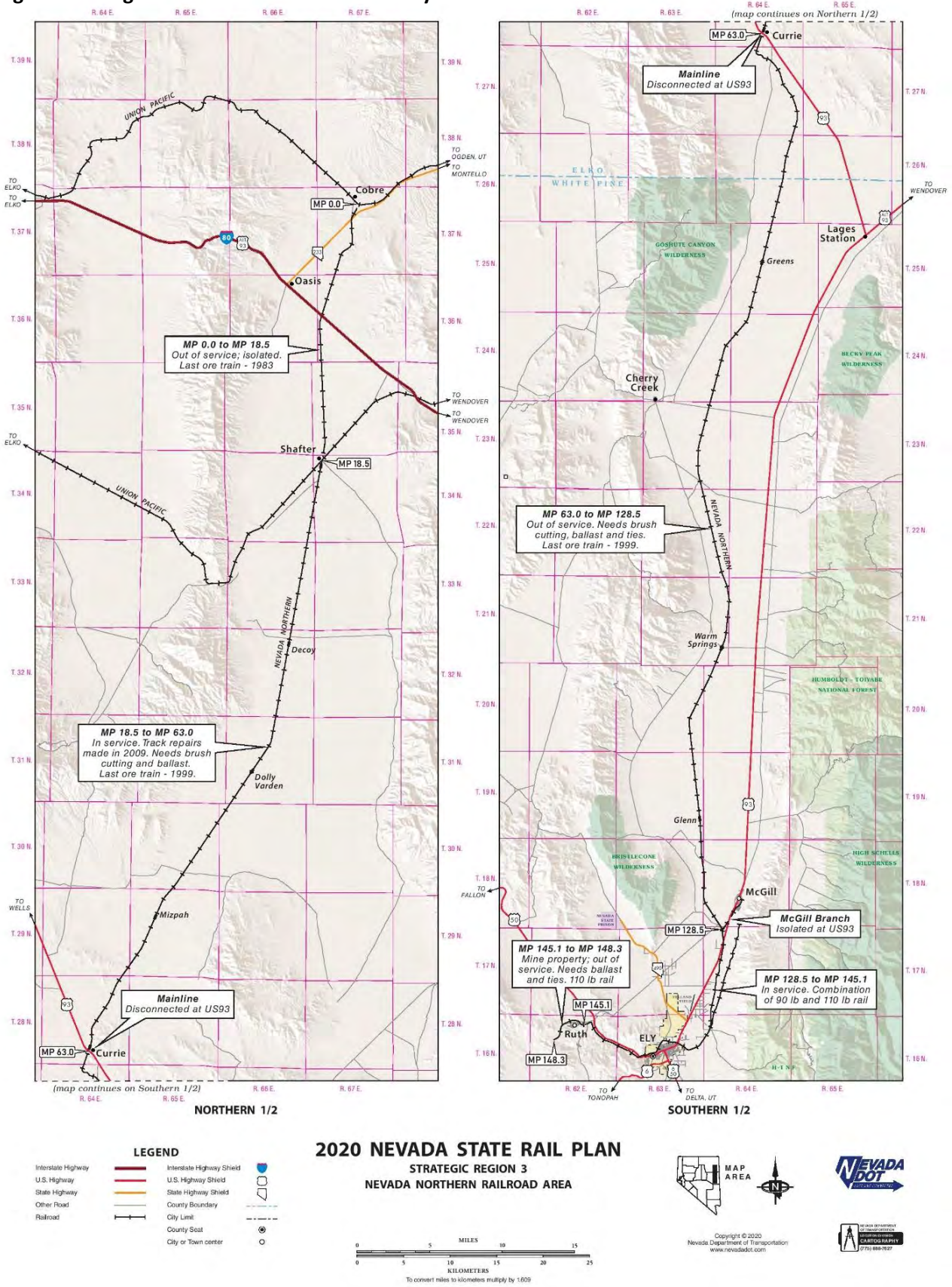


Figure 4-9: Region 4 - I-80 Corridor Area

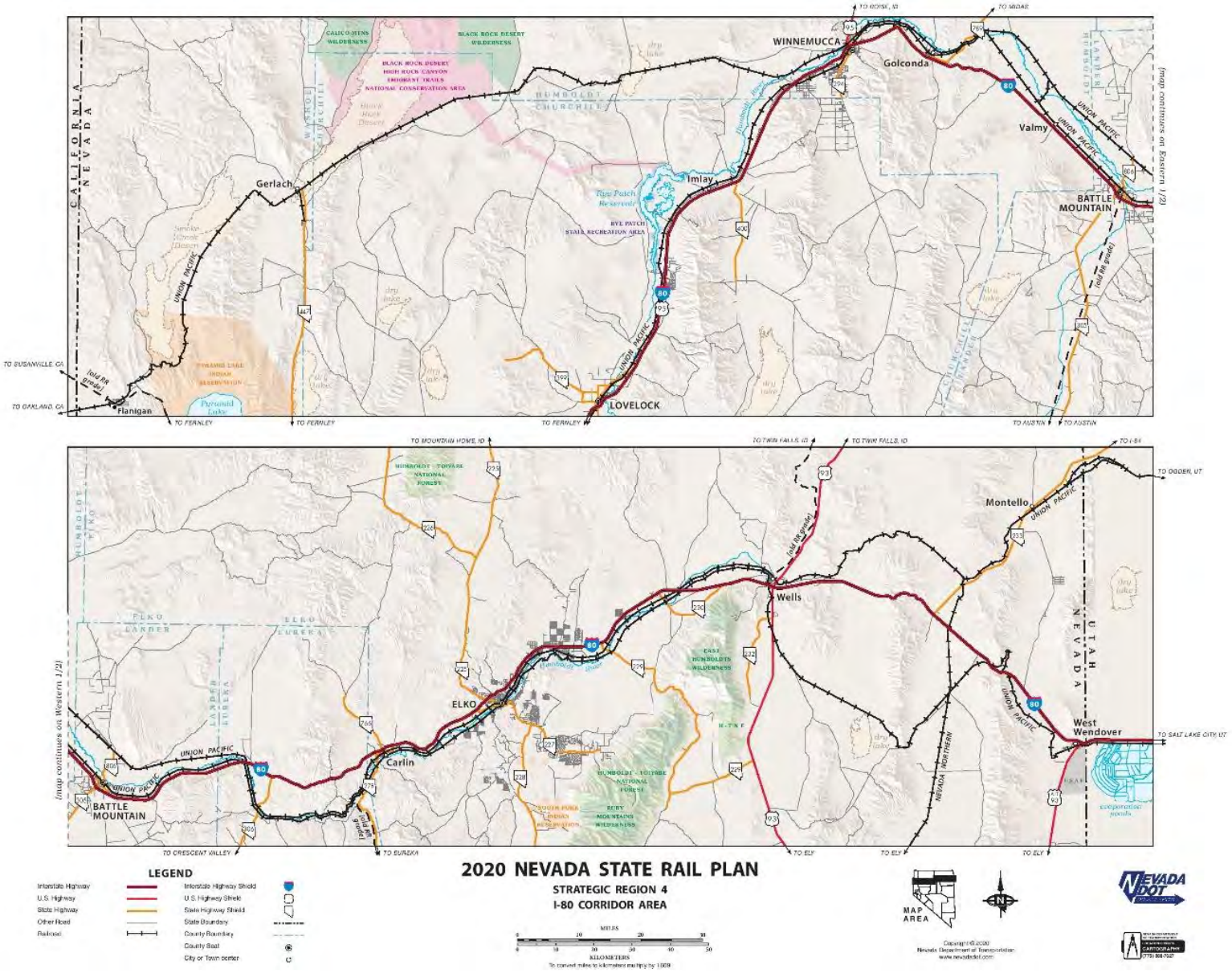


Figure 4-10: Region 5 – Fernley Fallon Area

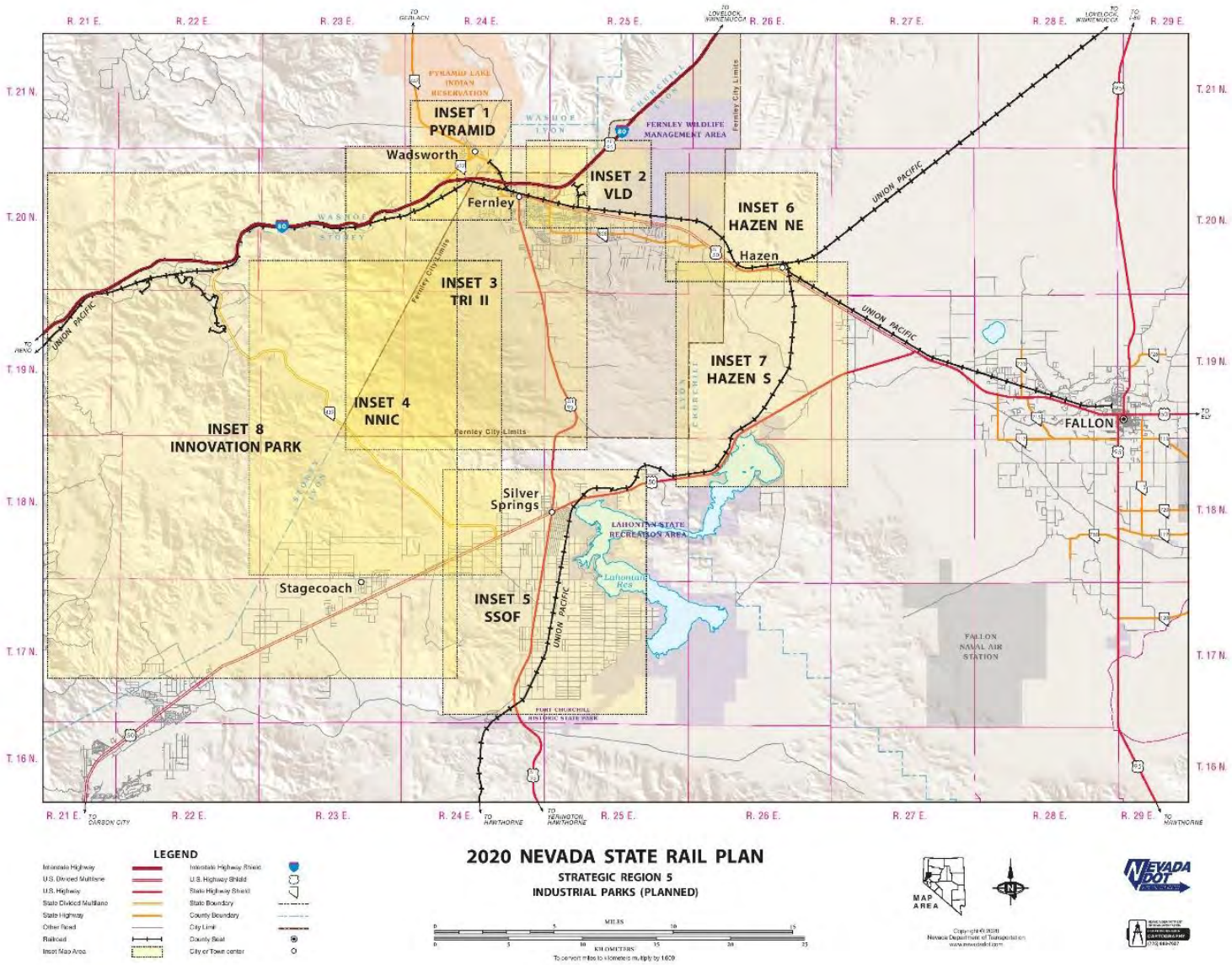


Figure 4-11: Region 5 – Pyramid Commercial Center

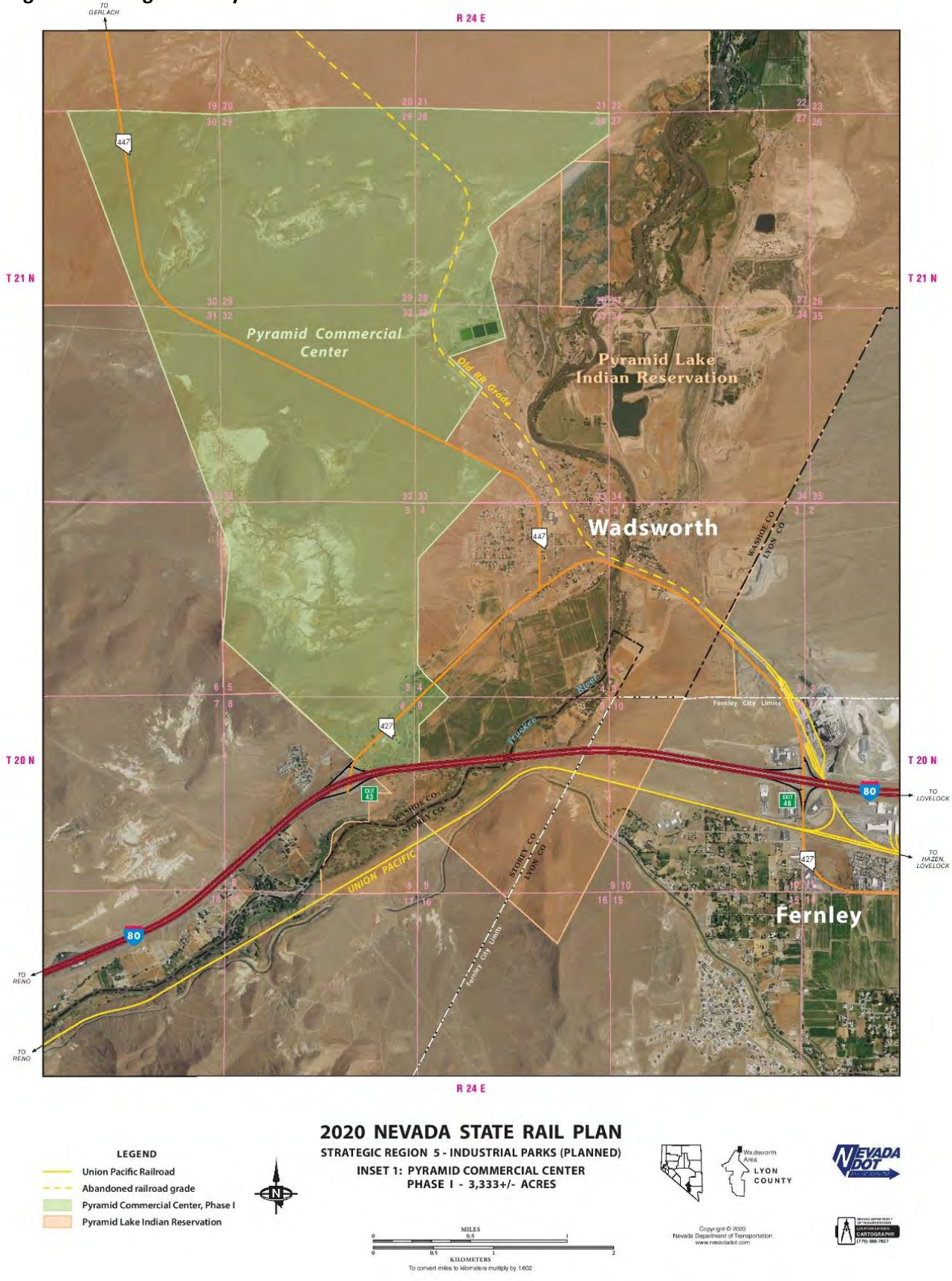


Figure 4-12: Region 5 – Victory Logistics District

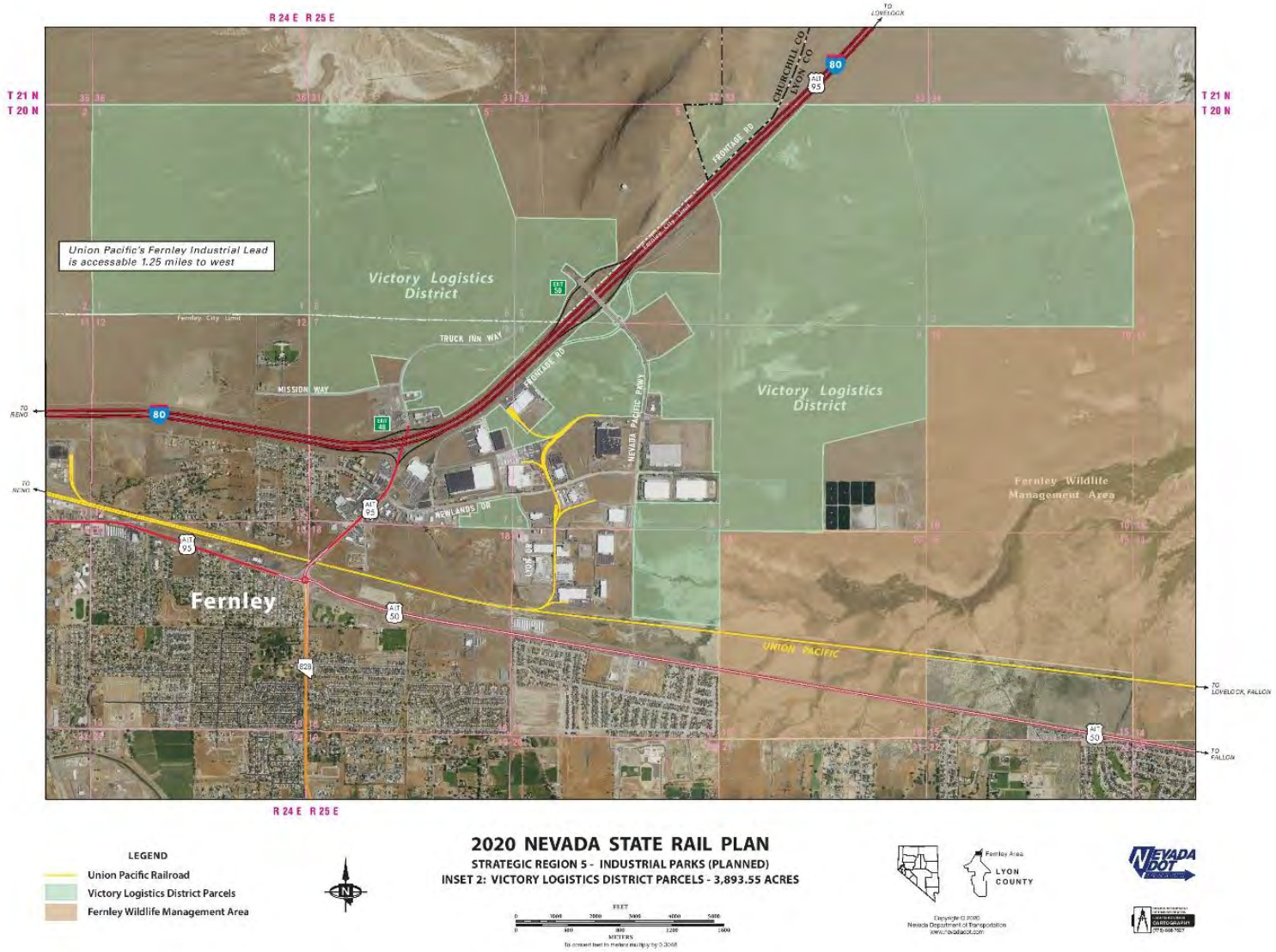


Figure 4-13: Region 5 – TRI II

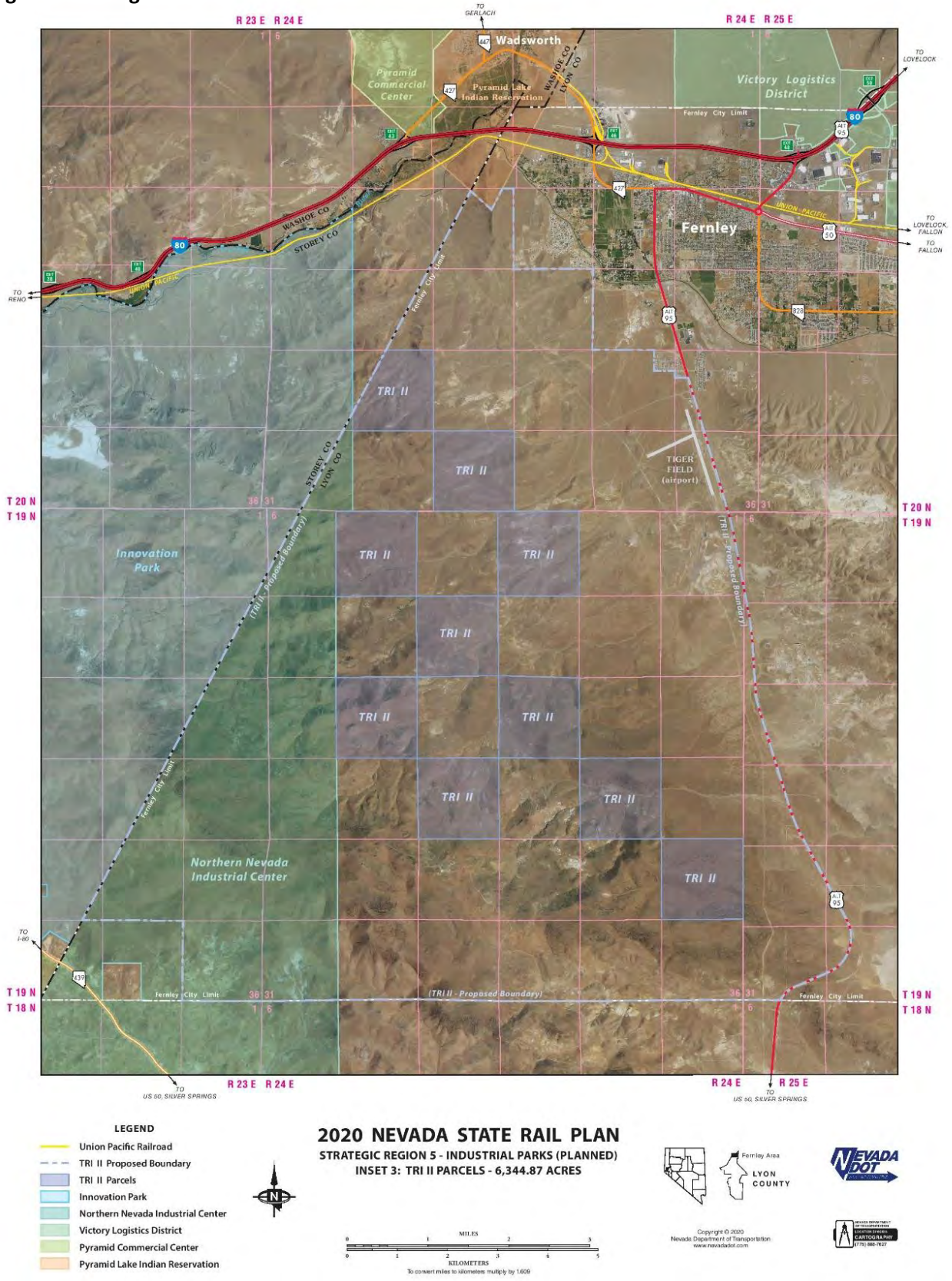


Figure 4-*14*: Northern Nevada Industrial Center (NNIC)

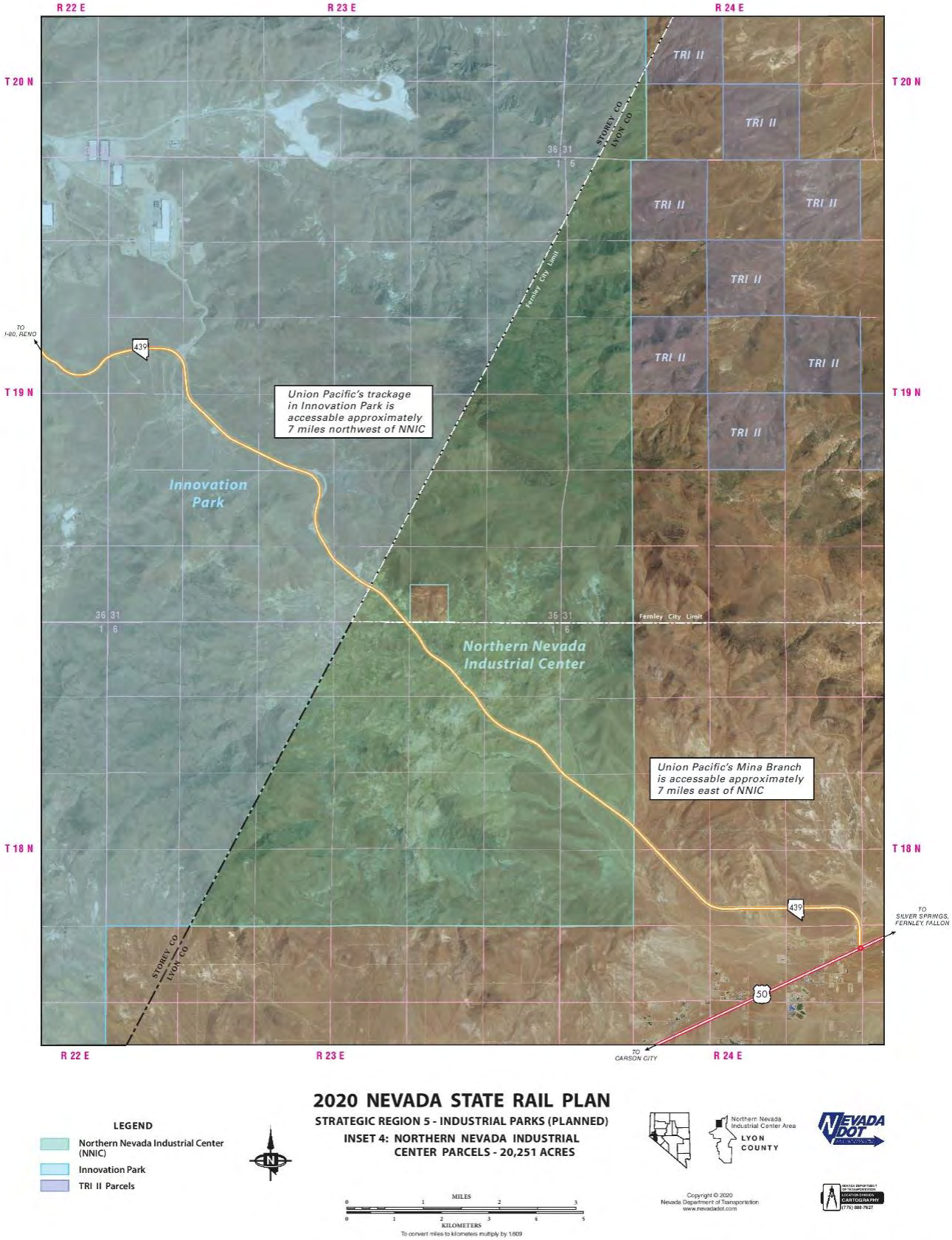


Figure 4-*15*: Silver Springs Opportunity Fund (SSOF)

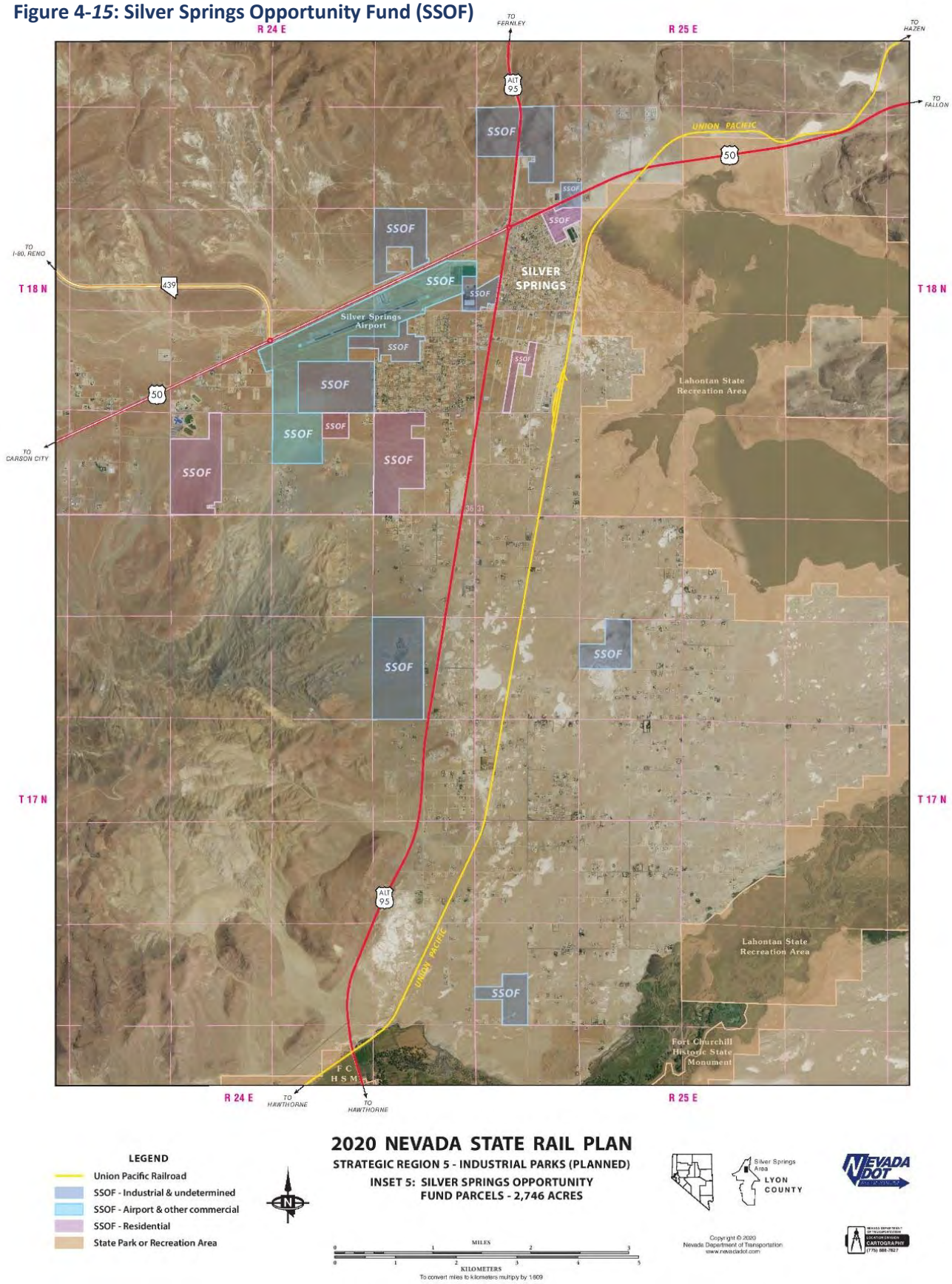


Figure 4-16: Hazen NW Area

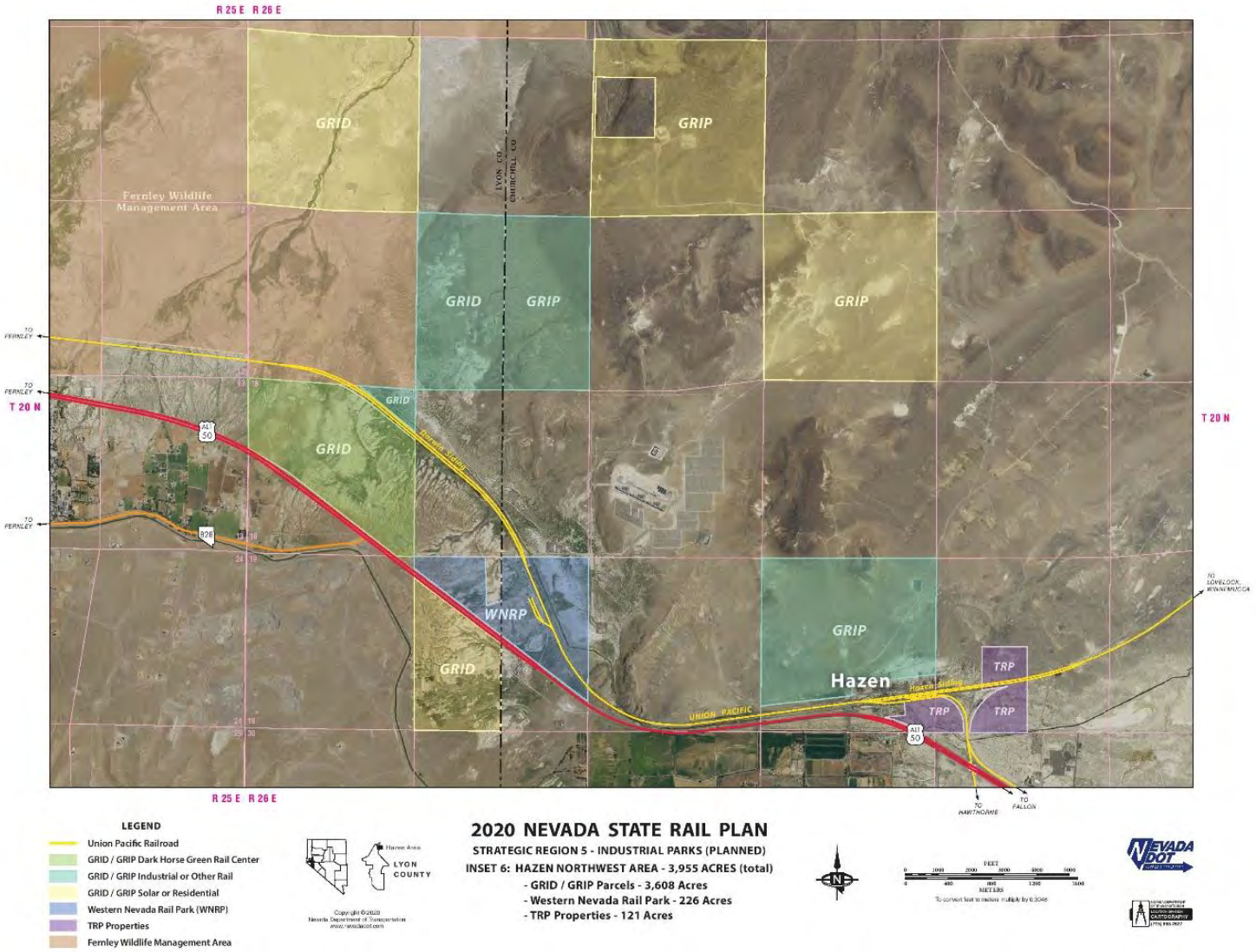


Figure 4-*17*: Hazen South Area

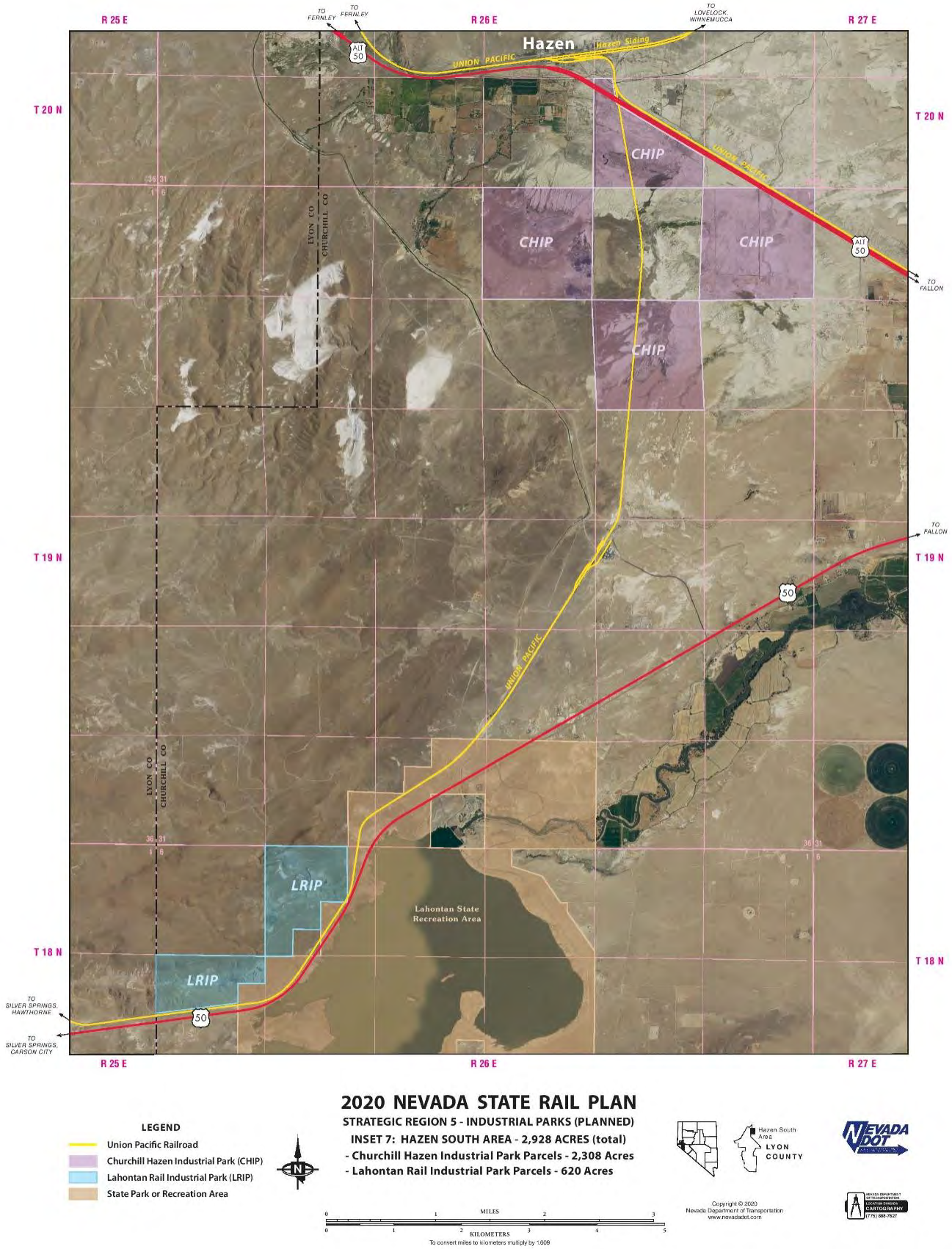
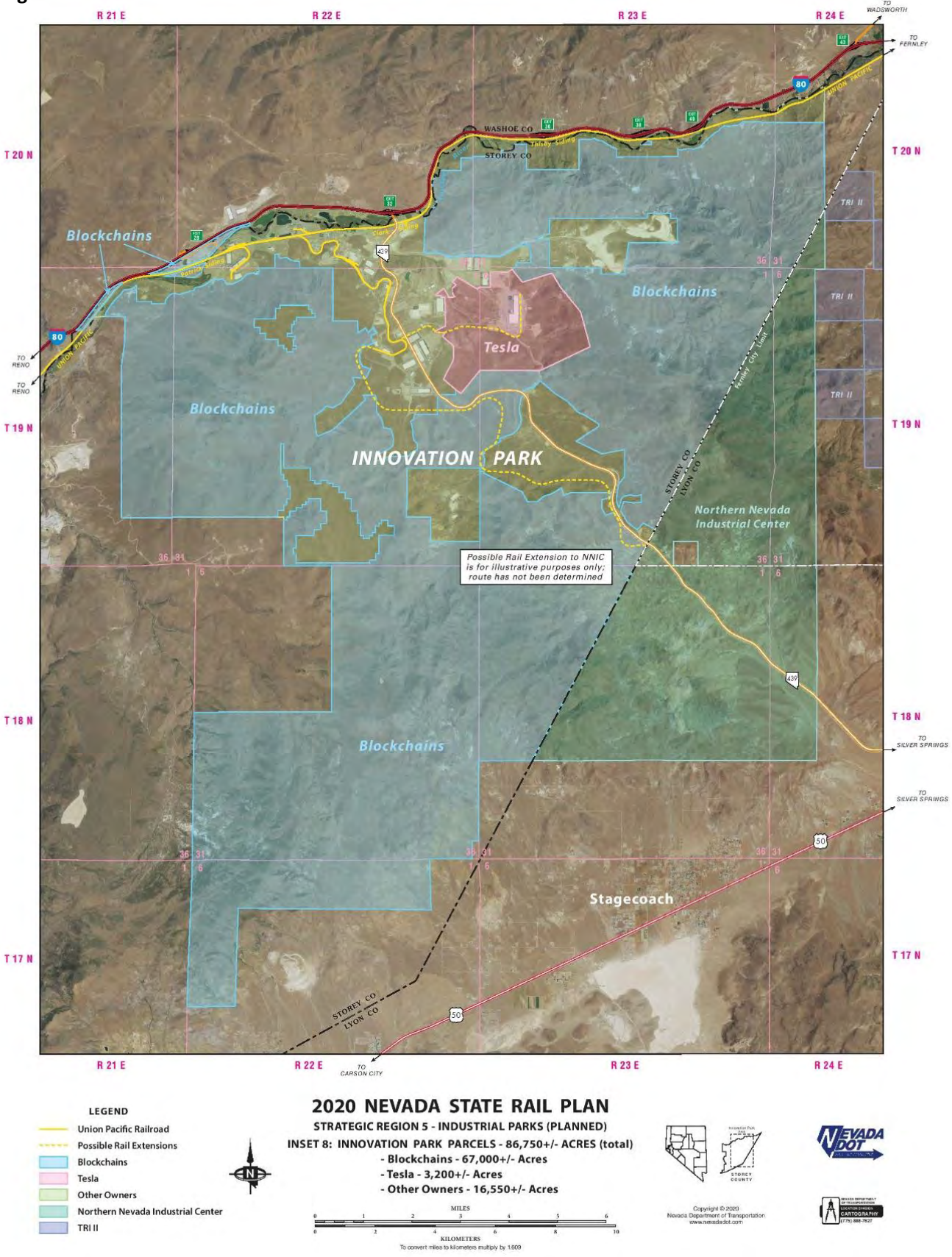


Figure 4-18: Innovation Park



LEGEND

- Union Pacific Railroad
- Possible Rail Extensions
- Blockchains
- Tesla
- Other Owners
- Northern Nevada Industrial Center
- TRI II

2020 NEVADA STATE RAIL PLAN

STRATEGIC REGION 5 - INDUSTRIAL PARKS (PLANNED)

INSET 8: INNOVATION PARK PARCELS - 86,750+/- ACRES (total)

- **Blockchains - 67,000+/- Acres**
- **Tesla - 3,200+/- Acres**
- **Other Owners - 16,550+/- Acres**

MILES 0 1 2 3 4 5 6

KILOMETERS 0 2 4 6 8 10

To convert miles to kilometers multiply by 1.609

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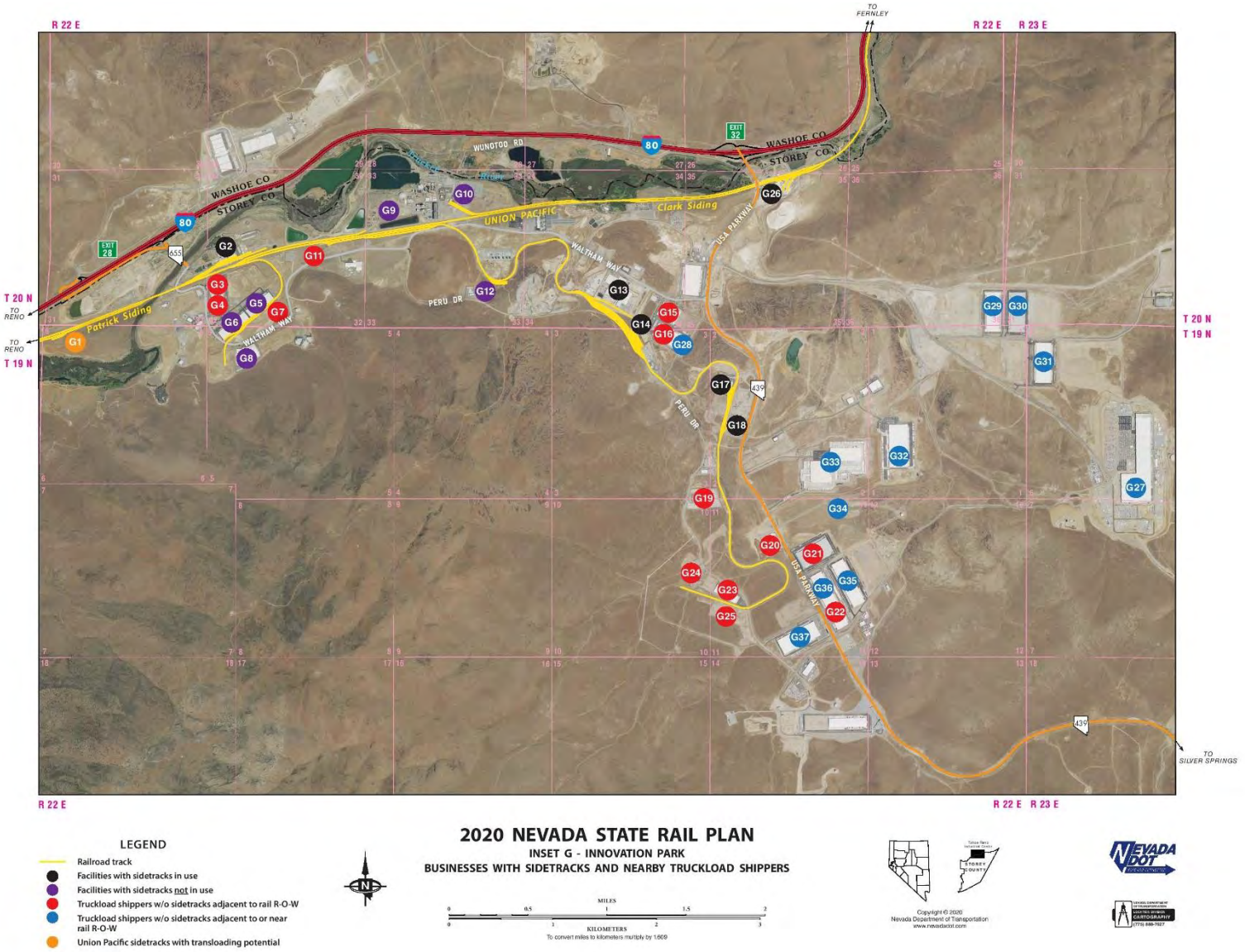
Figure 4-19: Innovation Park (Inset)



LEGEND

- Railroad track
- Facilities with sidetracks in use
- Facilities with sidetracks not in use
- Truckload shippers w/o sidetracks adjacent to rail R-O-W
- Truckload shippers w/o sidetracks adjacent to or near rail R-O-W
- Union Pacific sidetracks with transloading potential

2020 NEVADA STATE RAIL PLAN

INSET G - INNOVATION PARK

BUSINESSES WITH SIDETRACKS AND NEARBY TRUCKLOAD SHIPPERS

MILES 0 0.5 1 1.5 2

KILOMETERS 0 1 2 3

To convert miles to kilometers multiply by 1.609

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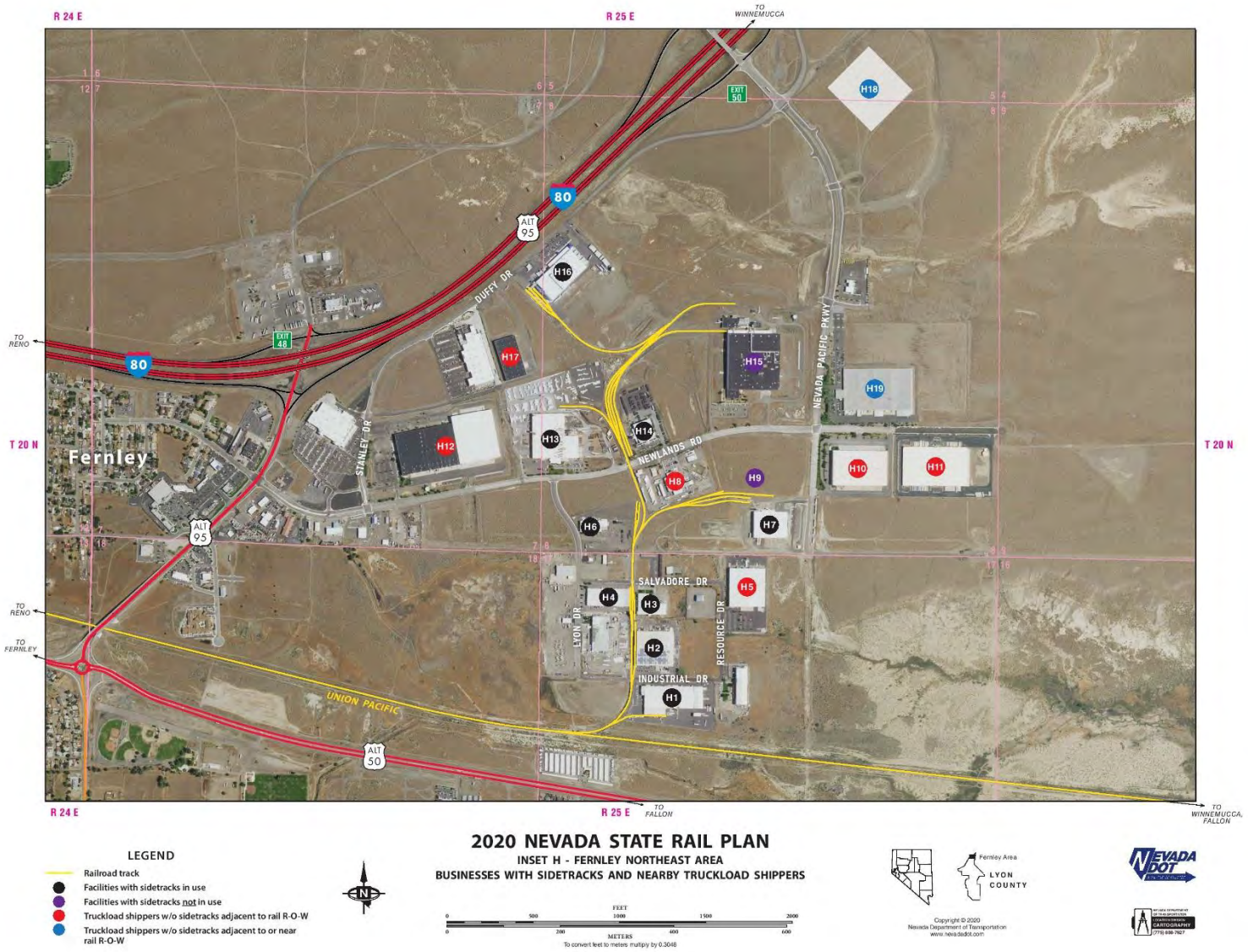
Figure 4-20: Fernley NE



LEGEND

- Railroad track
- Facilities with sidetracks in use
- Facilities with sidetracks not in use
- Truckload shippers w/o sidetracks adjacent to rail R-O-W
- Truckload shippers w/o sidetracks adjacent to or near rail R-O-W

2020 NEVADA STATE RAIL PLAN

INSET H - FERNLEY NORTHEAST AREA

BUSINESSES WITH SIDETRACKS AND NEARBY TRUCKLOAD SHIPPERS

FEET 0 500 1000 1500 2000

METERS 0 200 400 600

To convert feet to meters multiply by 0.3048

Fernley Area

LYON COUNTY

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Figure 4-21: Region 6 Reno Sparks Area

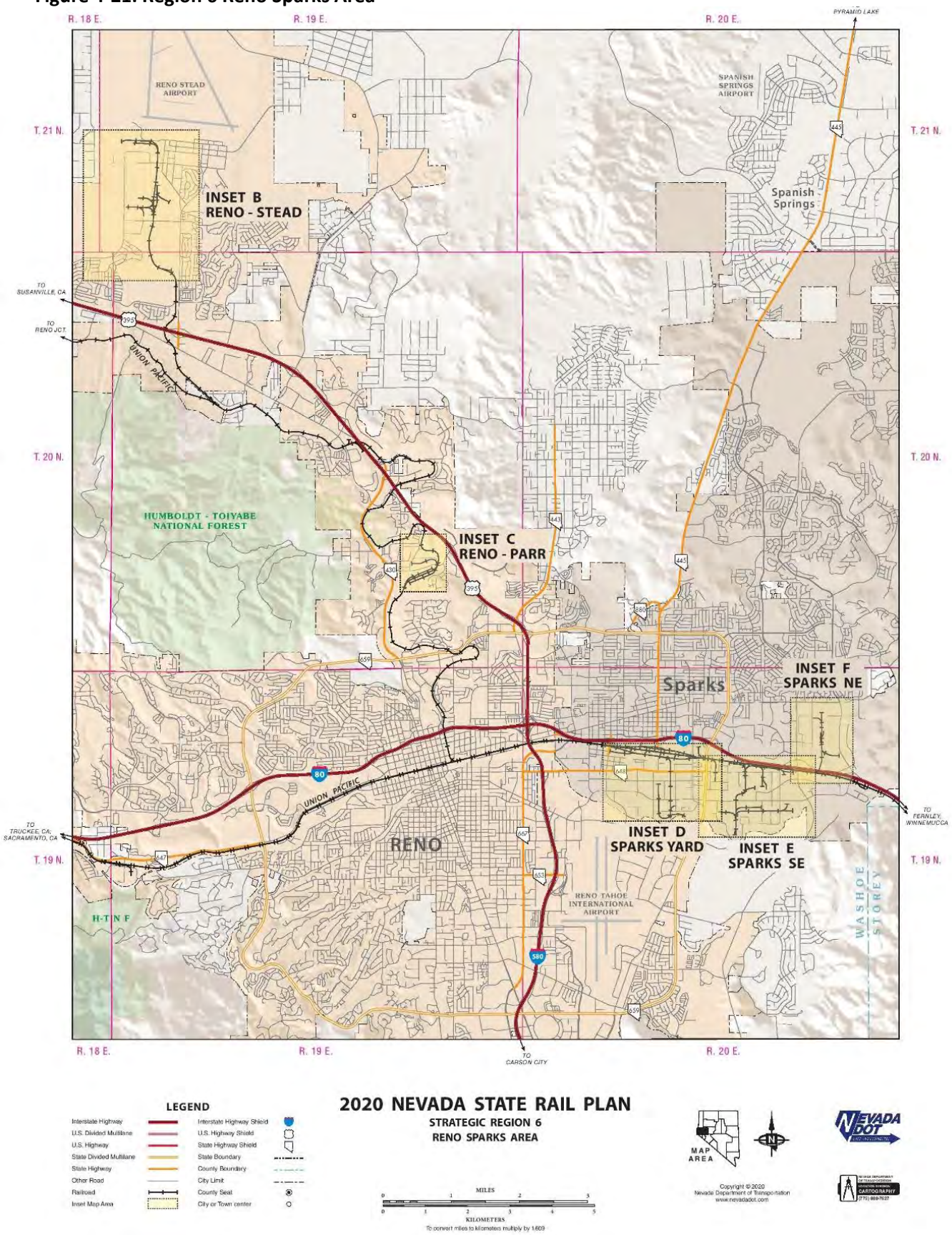


Figure 4-2221: Reno Stead Area

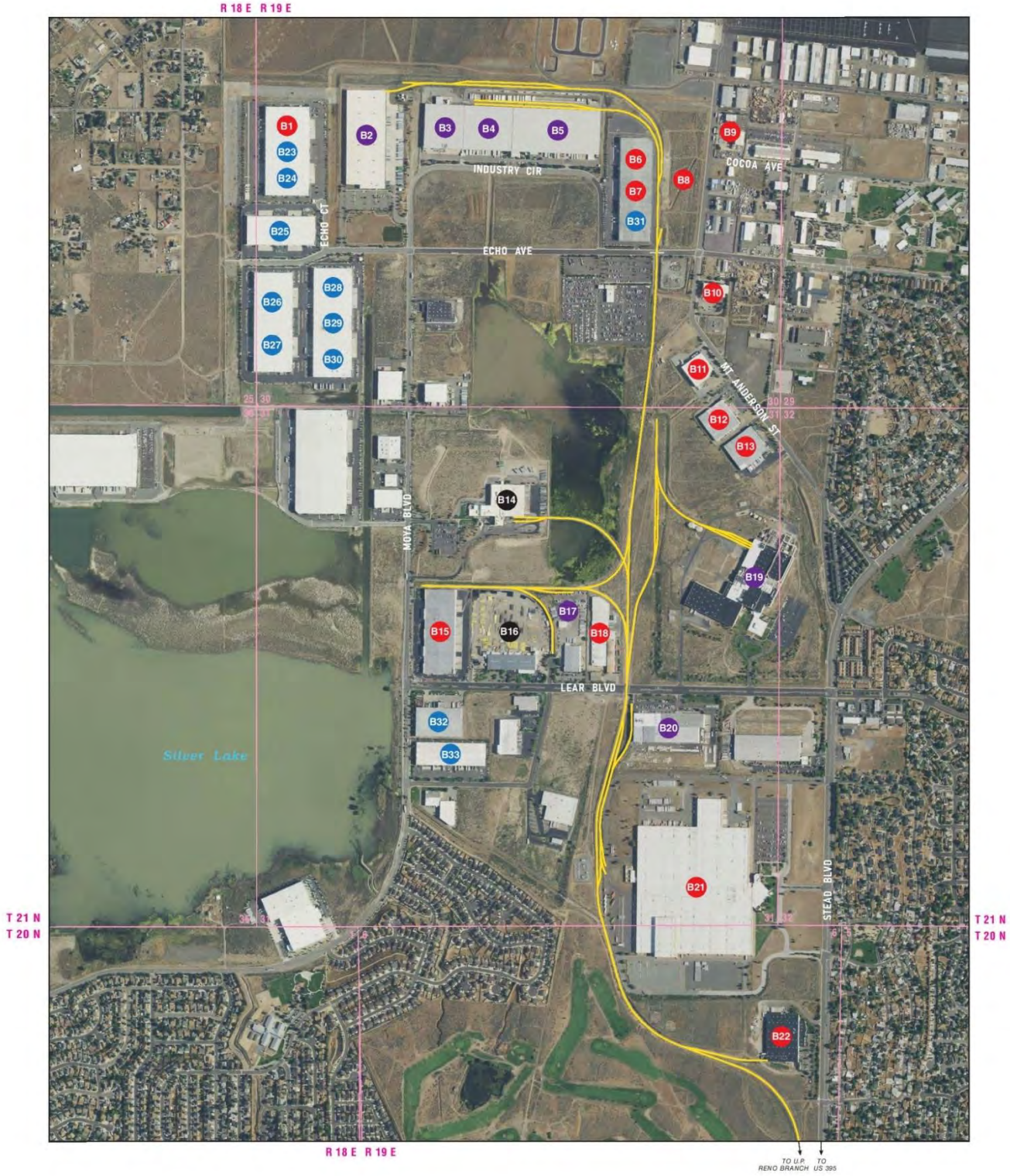
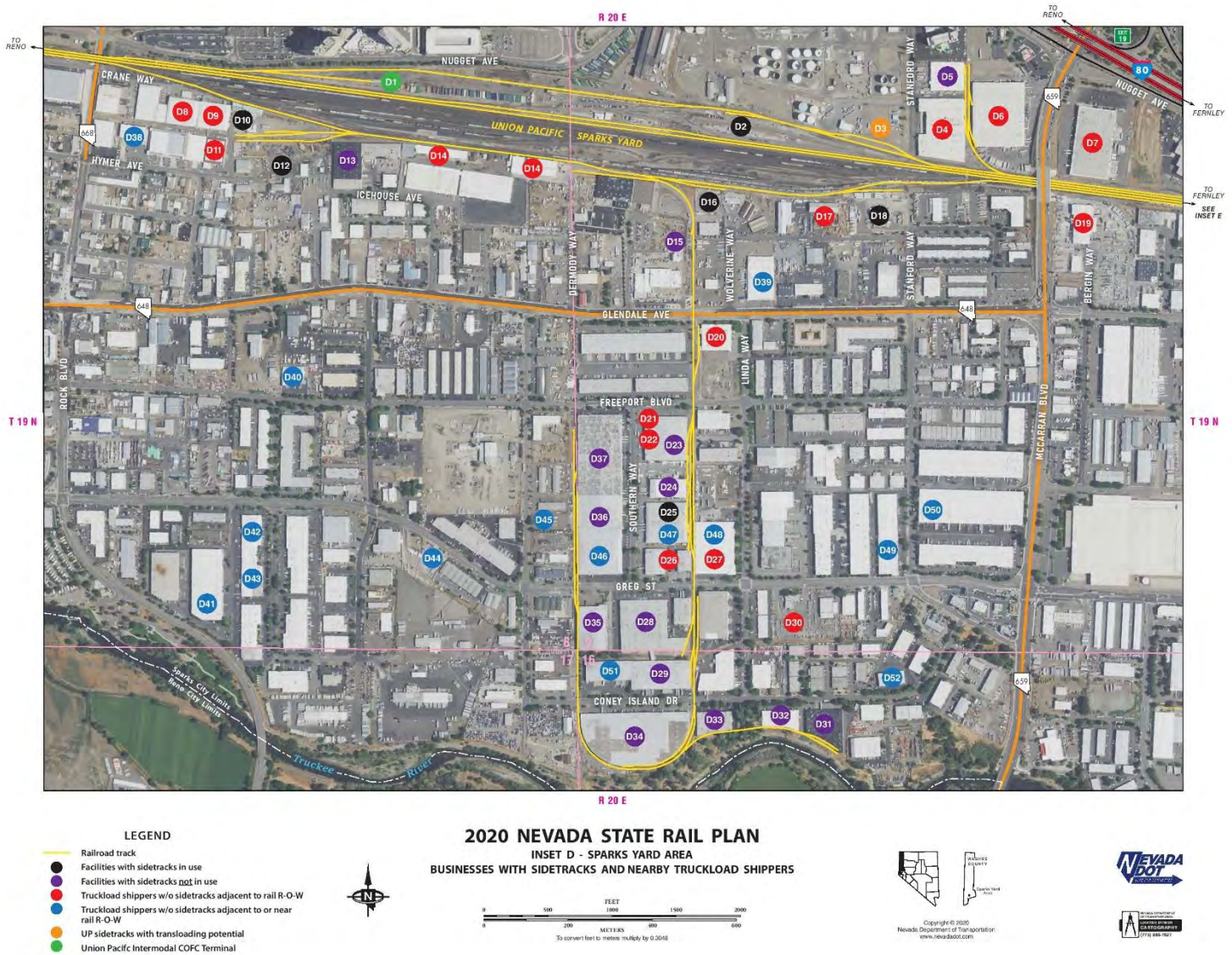


Figure 4-23: Reno Parr Area

Figure 4-22: Sparks Yard Area



LEGEND

- Railroad track
- Facilities with sidetracks in use
- Facilities with sidetracks not in use
- Truckload shippers w/o sidetracks adjacent to rail R-O-W
- Truckload shippers w/o sidetracks adjacent to or near rail R-O-W
- UP sidetracks with transloading potential
- Union Pacifc Intermodal COFC Terminal

2020 NEVADA STATE RAIL PLAN

INSET D - SPARKS YARD AREA

BUSINESSES WITH SIDETRACKS AND NEARBY TRUCKLOAD SHIPPERS

FEET 0 500 1000 1500 2000

METERS 0 200 400 600

To convert feet to meters multiply by 0.3048

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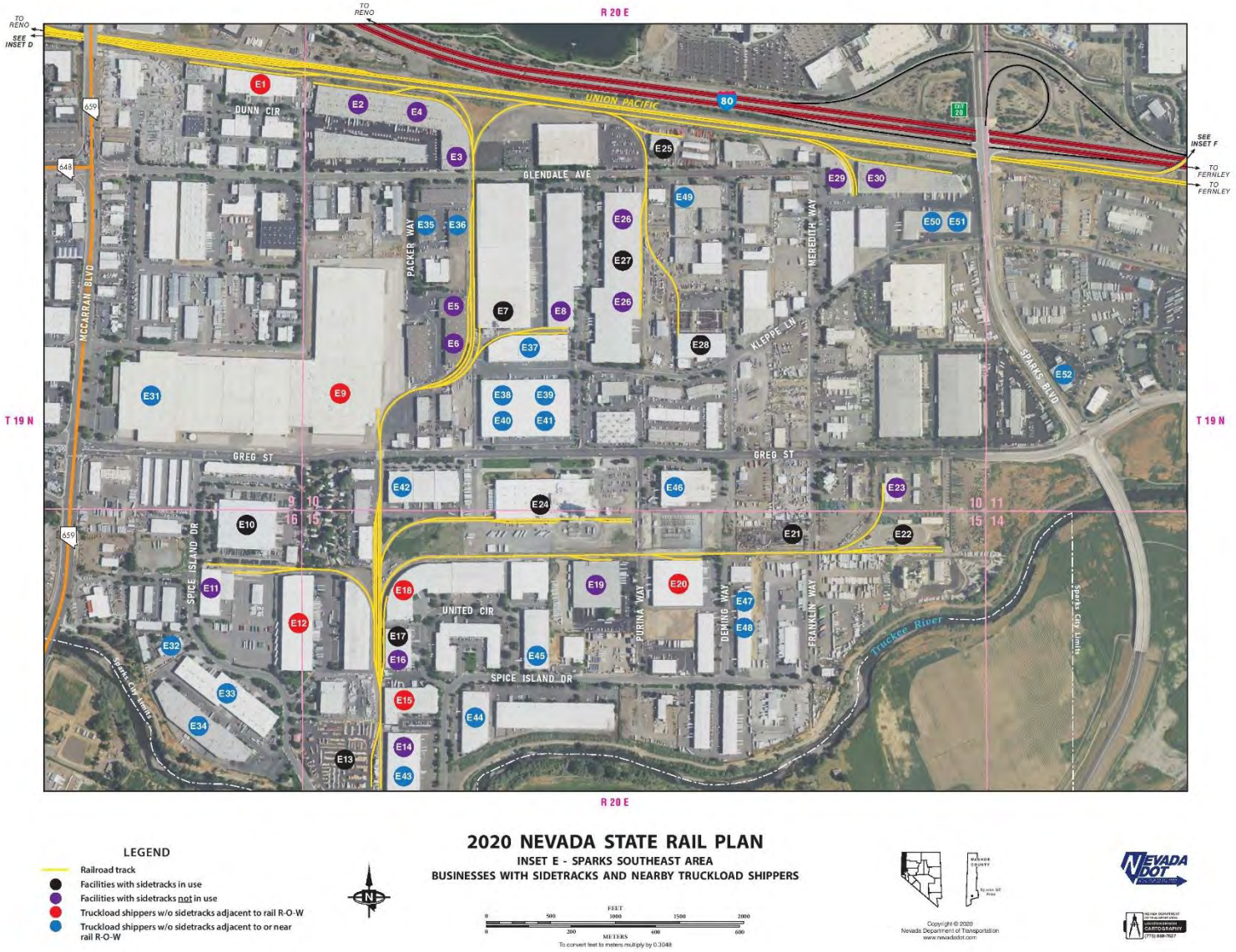
Figure 4-25: Sparks SE Area



2020 NEVADA STATE RAIL PLAN

INSET E - SPARKS SOUTHEAST AREA

BUSINESSES WITH SIDETRACKS AND NEARBY TRUCKLOAD SHIPPERS

LEGEND

- Railroad track
- Facilities with sidetracks in use
- Facilities with sidetracks not in use
- Truckload shippers w/o sidetracks adjacent to rail R-O-W
- Truckload shippers w/o sidetracks adjacent to or near rail R-O-W

FEET 0 500 1000 1500 2000

METERS 0 200 400 600

To convert feet to meters multiply by 0.3048

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Figure 4-26: Sparks NE Area

Figure 4-2723: Region 7 Mina Branch Area

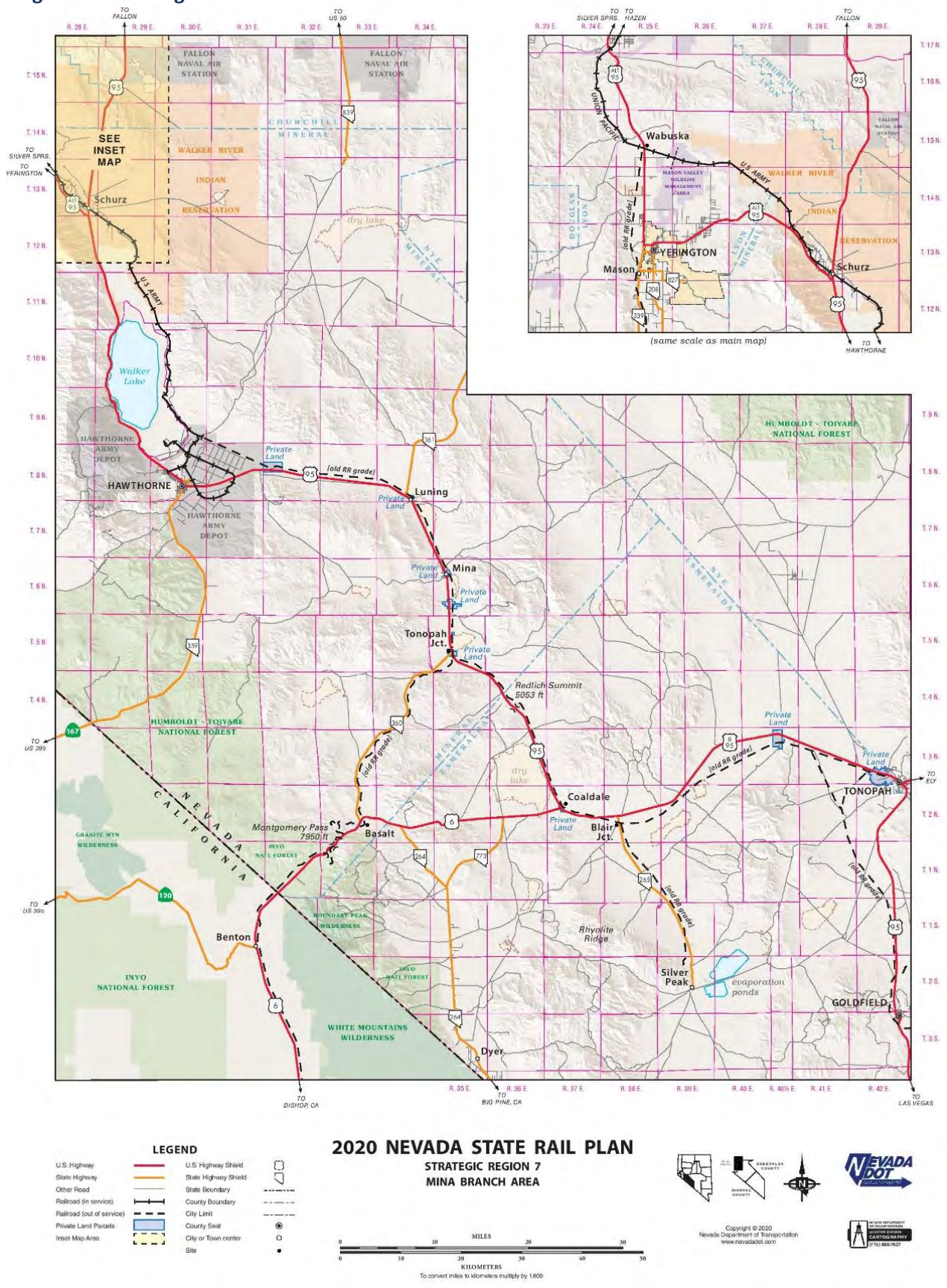


Figure 4-28: Region 8 Beatty/Pahrump Area

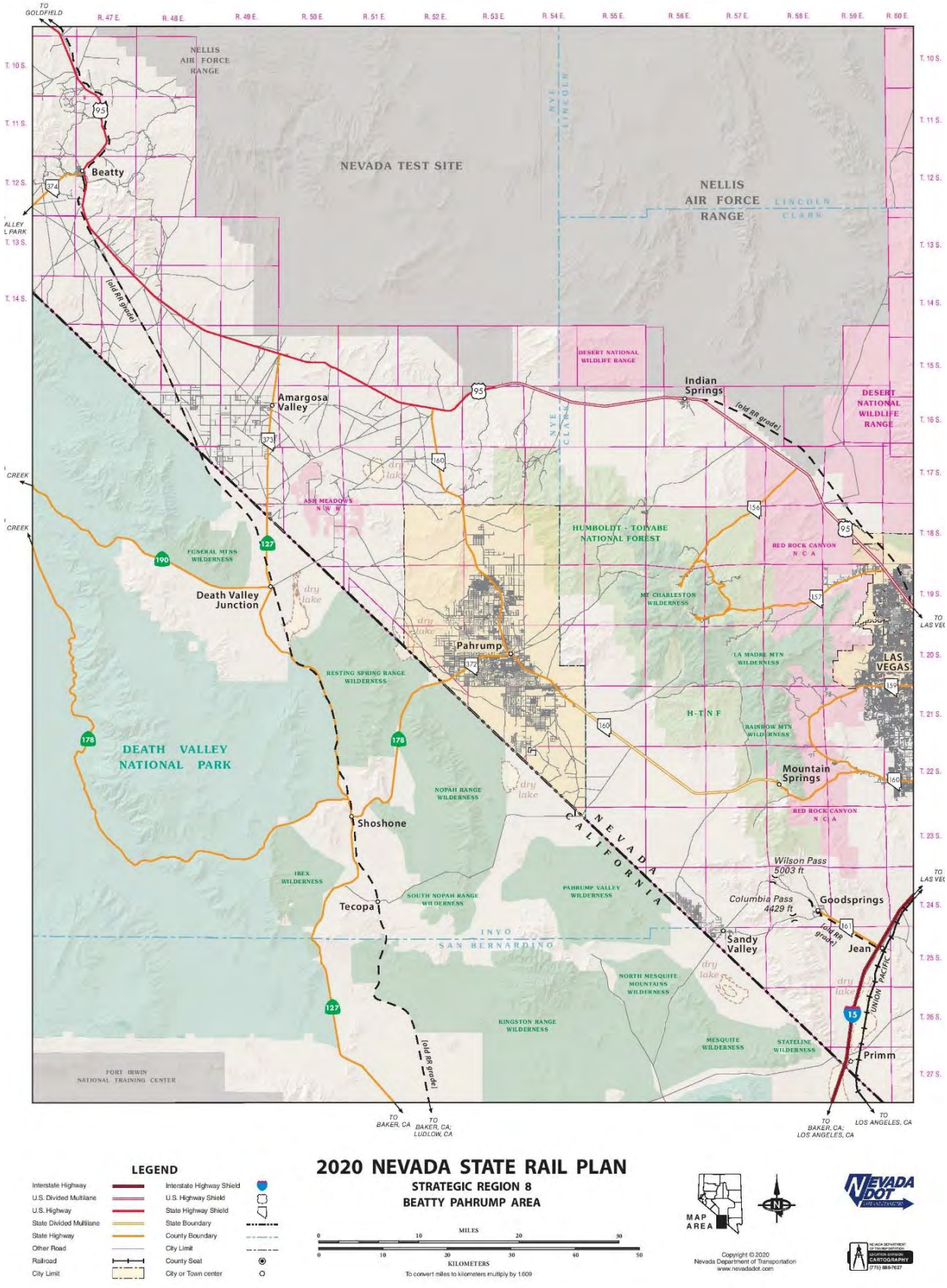


Figure 6-1: STRACNET and Defense Connector Lines

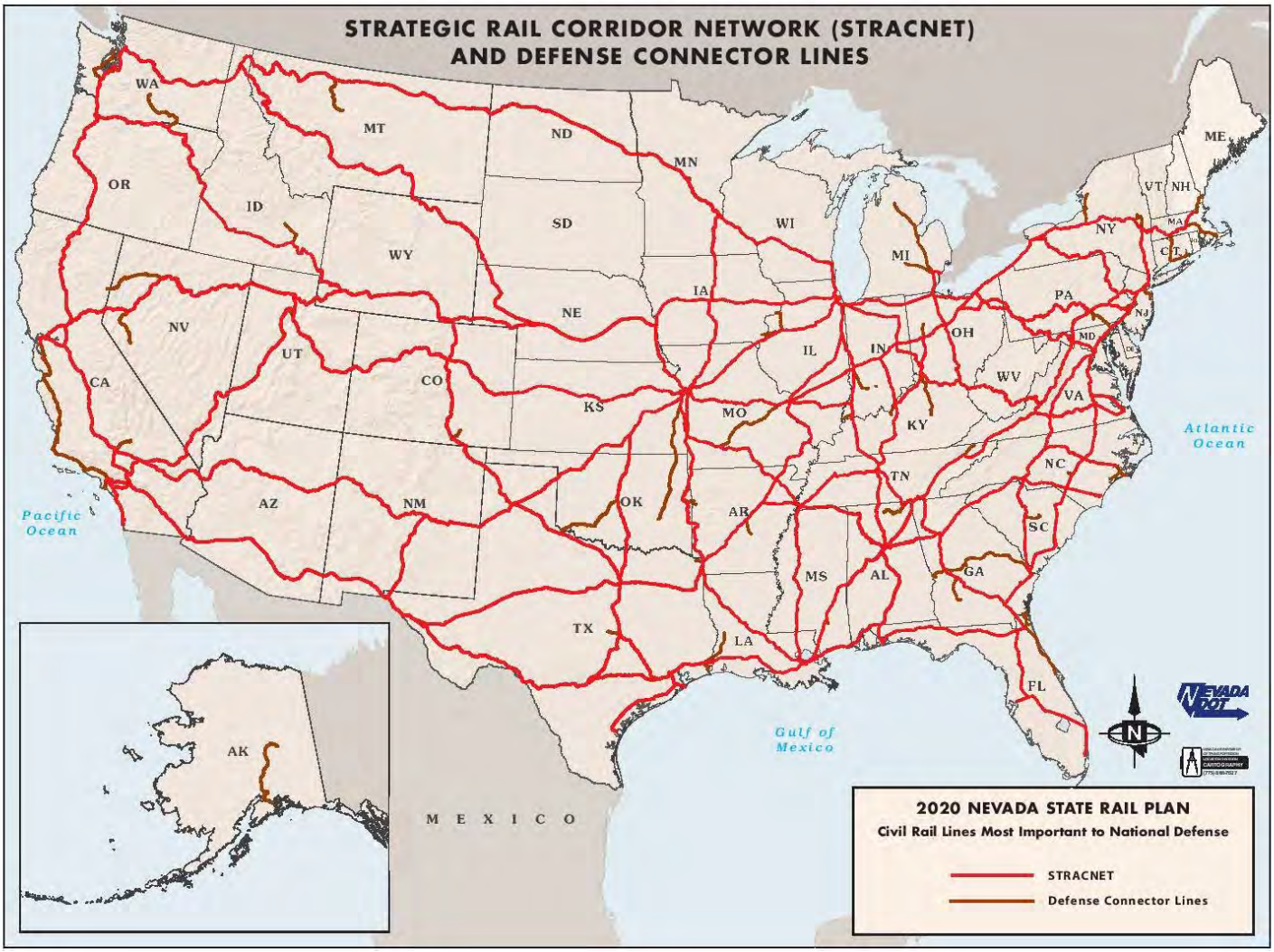
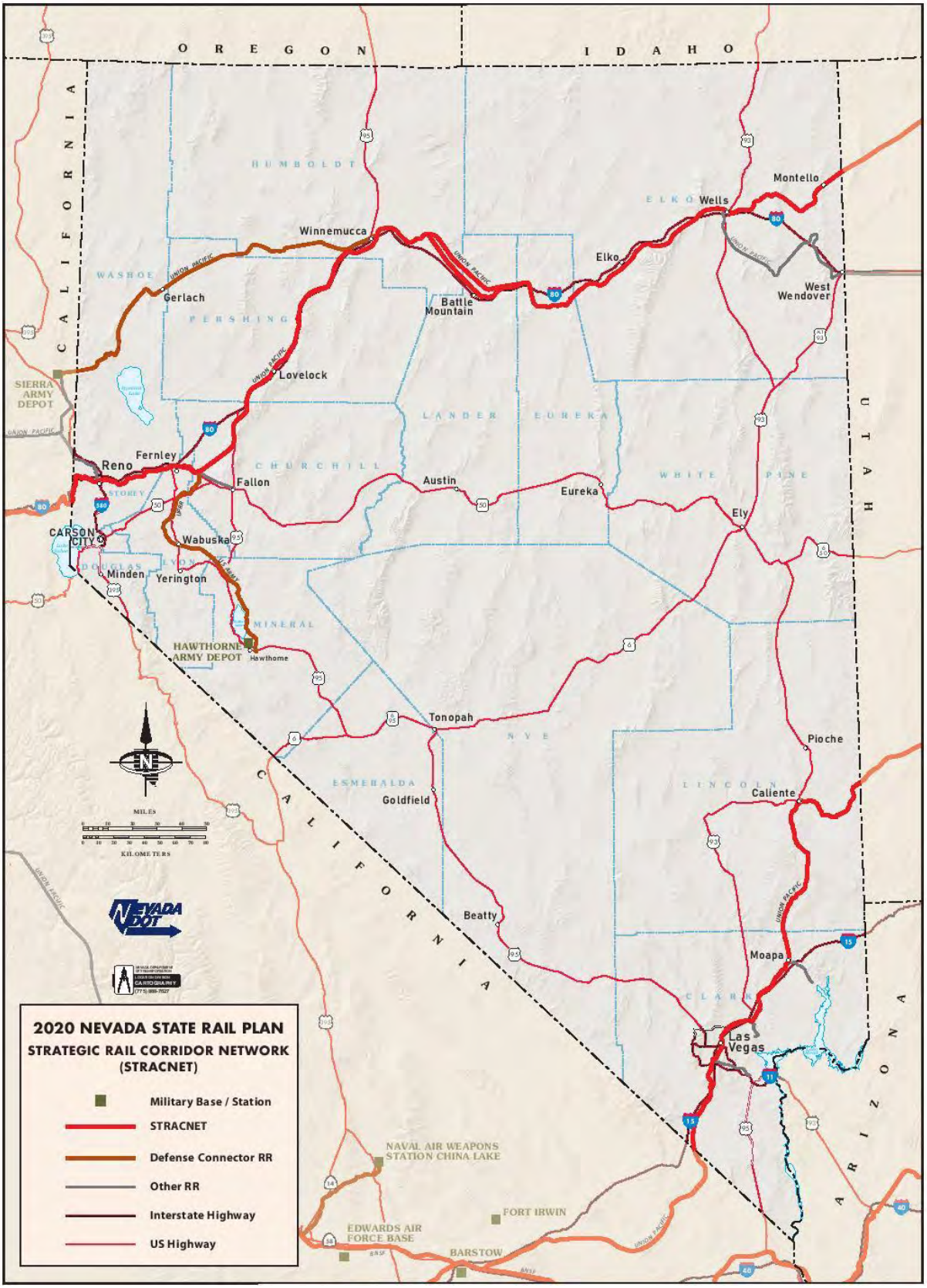


Figure 6-2: STRACNET in Nevada



Funding Resources and Strategies

Funding Resources and Strategies Table of Contents

1. Funding Rail Development in Nevada F-2
2. Nevada Freight Rail Development Fund F-4
3. TRIPS Infrastructure and Defense Program F-7
4. Establishment of a Sovereign Wealth Fund F-10

1. Funding Rail Development in Nevada

The freight railroad industry is, at the most fundamental level, a support industry – an industry that enables efficient operations of other industries, such as mining, energy, automotive, and agriculture. Diverse Nevada industries need better connections to Class I railroads via new and revitalized short lines, industry tracks and yards, transload facilities, and intermodal terminals. Other sections of this strategic plan list many of these needs and opportunities, of varied sizes, regions, and stages of development. Today, in North America, *freight rail finance is essentially industrial development finance* on the project and local levels. While big railroads themselves do not need funding support, many of these customer projects do. Several will likely falter otherwise.

One might think the Class I railroads would directly support and even fund these industries' efforts to access their networks as a form of business development and customer service. That type of financial support in the scope and scale required is not forthcoming, due primarily to the following business realities:

1. *Class I railroads' focus is national and international, not local*. The big railroads achieve their financial objectives by increasingly moving long-haul freight for large customers at ever-higher operating efficiency. They could handle more Nevada rail traffic and earn solid profits doing so. However, divergent organizational priorities, and greater financial returns available elsewhere, consume large railroads' attention.
2. *Hurdle rates for Class Is prevent investment in local-level projects*. Railroads report return on invested capital (ROIC) at 15 percent or higher. Returns on new invested capital (RONIC) must be much higher to compensate for their massive investment in low-return capital maintenance activities. In new capacity projects by Class Is, RONIC typically exceed 28 or 30 percent compared to zero-risk capital deployment in stock repurchases. Very few small-scale industrial rail projects offer this type of high returns at so low a risk. Smaller-scale industrial rail projects can represent "bankable" transactions, yet they remain unattractive for Class I direct investment.
3. *The "80-20 rule" applies to rail customers*. If a single industrial prospect does not generate more than 5 or 6 carloads per day (2000+ carloads per year), the Class Is cannot afford to allocate business development resources over several years to advance that project. In reality, a business generating five cars (400 tons of freight) per day would mean a lot to the local community in jobs and tax base. It appears to fly beneath the radar of a Class I handling new daily carloads of 1.5 million tons (or more) per day. Class I railroads focus their business development attention on how the least number of customers and prospects might generate the bulk of their revenue.
4. *Precision Scheduled Railroading (PSR) strategies succeed by decreasing overhead expense* and increasing asset utilization. Overhead reductions inevitably impact staffing of marketing support and industrial development. The Class Is presently meet profit goals by reducing operating and capital expenses rather than through top-line revenue growth from new customers. Operating efficiency does create stronger and more reliable railroads to which customers with discretionary rail freight can connect.

Railroads do want new customers. Now more than ever, railroads will require new customer infrastructure projects to be presented fully funded and with well-conceived business plans that include realistic requirements of physical and operational interface.

This section, *Funding Rail Development in Nevada*, addresses these project funding requirements. The next section, *Stewarding Plans to Action*, addresses rail business development services that will directly support the funding of rail projects along with preparing Nevada businesses to successfully interface with the railroads.

Stated earlier: "State government should not have to fund freight rail development, as railroads and shippers are engaged in private-sector, income-producing activity that can attract private-sector funding." This statement is true for large rail projects and smaller projects. This is not the same as saying that those projects do not need public support, a distinction explained in this section.

> Large rail projects typically serve very large and well-capitalized enterprises. A new mining project might cost hundreds of millions of dollars and will include an associated rail yard and spur track that is viewed like any other piece of machinery or infrastructure required to support the core project. Finance of all supporting infrastructure assets (e.g., related rail facilities) will align with, and become secondary to, the broader project underwriting and finance. In this way, if the new mine gets financing then the supporting rail project gets financed, too.
>
> For the largest industrial projects, private-sector rail investors/operators will also turn-key, deliver, or purchase-leaseback rail assets embedded in industrial sites. For example, Dow Chemical and US Steel each recently announced intentions to sell their associated industrial rail assets to private investment funds and operators. These transactions are likely to exceed $300 million each. Direct administration of railroad financings on this scale typically resides outside the purview of state-level initiatives.
>
> Smaller rail projects have different needs. A distribution center, for example, may be weighing the relative advantages of receiving deliveries in five boxcars per day versus twenty trucks. How *does* it make sense for a non-railroader to weigh this opportunity without railroad expertise or to even have awareness of rail service as a transportation option? Once the business has decided on the commercial advantages of a rail solution, how can that business fund construction of switches, sidings, and rail dock doors? While this cannot be successful as a paint by numbers approach, it can be informed by a knowledge of rail operations and logistics and well-thought-out protocols.
>
> Smaller rail projects present difficulties for most banks and credit unions due to unique operational and commercial risk concentrations, nuanced regulations, unfamiliar contractual language, and misunderstood collateral value. Financing rail infrastructure, rolling stock, locomotives, and specialized rail equipment needs experience and knowledgeable support. Rail-project risks and collateral, financial opportunities, and other related considerations must be clarified to help a traditional lender get to "yes."

In each scenario, private capital can fund the rail projects while ancillary public support in proportion to public benefit can reduce private investment risk thereby incentivizing development of rail projects across Nevada. In almost every case, private commercial benefit and commercially justified private investment drive railroad project finance.

As in many situations of industrial development finance, unique projects require a special-purpose lender, described in the following section.

2. Nevada Freight Rail Development Fund

To combine rail business development expertise with rail-oriented financing of small projects, the NVSRP proposes establishment of a Nevada Freight Rail Development Fund (the "Fund"). The Fund is conceived as a partnership of NDOT, the Governor's Office of Economic Development, regional development authorities and others with missions compatible with creating jobs, attracting investment to Nevada, increasing tax revenues, and reducing pollution and other impacts of freight movement. This is accomplished, of course, in tandem with promoting rail-served development.

The proposed Fund would serve several purposes:

1. Raise and deploy capital as debt in small and mid-sized rail projects
2. Service loans from origination to maturity
3. Fund technical services through transaction fees and other arrangements

Ideally, the Fund would associate with—or even be sponsored by—an existing industrial development loan fund, an existing bank or credit union, or a non-profit economic development lender (e.g., a Community Development Financial Institution or a Small Business Investment Company) with a strong presence in Nevada. There are many benefits of such an affiliation, such as pre-existing expertise in debt underwriting, loan origination, and loan servicing. The sponsoring partner would ideally provide founding equity in the Fund and benefit from Fund success.

Fund capitalization would derive from a blend of private and public sources. Many economic development loan funds have done this, effectively leveraging fund equity with existing federal programs (such as the U.S. Department of Agriculture and Economic Development Administration), and private banks seeking to satisfy Community Reinvestment Act (CRA) requirements and/or secure applicable tax advantages.[1] Many industrial rail projects generate tax advantages that include tax credits (e.g., New Markets) or tax-exempt income (e.g., industrial revenue bonds).

The Fund should not be considered a source of grants or other handouts. Commercially viable rail projects can and do support reasonable returns on capital. *If a project cannot reasonably support debt, the Fund should not support the project.* Building the Nevada Freight Rail Development Fund from low-cost, long-term capital sources will help avoid challenges faced by the railroads as they address return expectations and the attractiveness of stock buybacks. The Fund will finance viable rail projects that benefit all stakeholders.

This Plan makes the following recommendations for Fund transaction characteristics:

1. Qualified Borrowers would include:
    a. Private businesses engaged in manufacturing, warehousing, agriculture, mining, or other businesses utilizing freight rail
    b. Rail service providers engaged in transloading, railcar storage, railcar and locomotive servicing, and similar railroad support activities
    c. Class II and Class III common carrier railroads owning or operating rail assets in Nevada

[1] Council of Development Finance Agencies, "Revolving Loan Funds & Development Finance" page, source link, accessed September 8, 2020.

d. Municipalities, Authorities, and Development Agencies engaged in development (or redevelopment) of rail-served industrial sites and business parks

2. Uses of funds are for capital expenditures and could reasonably fund up to 80 percent of total project costs defined as capital expenditures for land, design, permitting, construction, rolling stock, and on-site equipment. More specifically:
    a. Railroad right-of-way, railroad easements, and terminal land acquisition
    b. Railroad track construction, capital maintenance, or replacement of mainlines, sidings, spurs, and yards
    c. Railroad bridges, culverts, and drainage systems
    d. Rail freight loading and unloading equipment (e.g., rotary dumpers, pits, conveyors, fixed or mobile cranes or lifts)
    e. Rail freight storage facilities for the products being shipped primarily by rail (e.g., sheds, silos, domes, warehouses)
    f. Freight rail terminal site improvements (e.g., paving, grading, lighting, security, fencing, scales, gate facilities, administrative support offices)
    g. Locomotives, railcar movers, and railcars

3. Proposed loan structure should include:
    a. Loan terms of up to twenty-two years, allowing two years of interest only for construction and commissioning, then fully amortizing over a maximum of twenty years. This fits well with rail asset depreciation schedules averaging between 40 and 45 years.
    b. Fixed interest rates initially, then varying with an approved index (e.g., Wall Street Journal prime rate or the 10-year Treasury).
    c. Collateralization can include the financed assets and other real property or railroad assets. Subordinated collateralization relative to a primary project or corporate lender (i.e., mezzanine finance) would be acceptable in most circumstances.

4. Borrower equity should represent at least 20 percent of project costs with at least half of that equity being new cash investment (as compared to previous expenditures, owned land, etc.) not including grants, tax credits, and other public support.

5. Loans are intended for both construction and permanent financing and may be used to refinance lines of credit or other temporary debt facilities.

6. Transaction size could average a $1.0 million or more, higher than most dedicated state rail funds given the type of development in Nevada.
    a. Minimum transaction size should be approximately $300,000 and allow for smaller projects when phased project stages total $400,000 or $500,000.
    b. Maximum transaction size should be determined by the fund size to avoid over concentration of risk.

State rail loan programs have proven successful across the United States. Table 4-4 (below) provides a list of twelve state or federal agency rail programs that have made 686 loans totaling approximately $412 million. The average loan size was approximately $601,000. And at the time of this survey, the default rate on these loans was remarkably low at less than 0.44 percent.

Table 4-1: State Rail Loan Program Repayment History[2]

State or Agency	Number of Loans	Dollars Lent	Defaults
Wisconsin, 2013	105	$117,000,000	0
Illinois, 2016	7	$7,531,035	0
Michigan, 2012	37	$15,300,000	1
Idaho, 2013	3	$3,770,475	0
Iowa, 2015	108	$69,761,000	0
Minnesota, 2013	225	$95,700,000	0
Kansas, 2013	46	$16,903,380	0
North Dakota, 2016	42	$39,110,064	0
Mississippi, 2007	35	$12,000,000	0
Ohio, 2013	40	$33,464,731	1
Montana, 2013	4	$2,078,004	0
SBA, 2013	34	$14,400,000	1
Totals (as of year)	**686**	**$412,618,689**	**3**

While the Fund proposed for Nevada would not necessarily be directly operated by a state agency, it needs to align with Nevada's economic development priorities and this Strategic Plan.

Success of the Fund will depend upon well-planned projects, effective coordination with the connecting railroad, well-prepared loan applications, and careful underwriting. CRN would perform the following services to boost Fund success:

1. Identify prospective projects, help analyze the business case for using rail, and support applicants in planning and predevelopment efforts.
2. Successfully interface development projects with private railroads by advancing well-conceived, substantial projects that meet common interests of the railroads, businesses, and communities.
3. Provide technical assistance to Fund applicants (both as part of financing and as a fee for service) to mitigate rail-related risks, evaluate proposed collateral, and accurately present the commercial opportunity.
4. Provide post-closing support for project implementation to minimize Fund risk.

3. TRIPS Infrastructure and Defense Program

Implementation of the passenger rail initiatives described in this chapter will require a new dedicated source of public financing. The NVSRP team has developed an infrastructure funding initiative we call

[2] *Data gathered by Strategic Rail Finance/OnTrackNorthAmerica*

the Transportation Rebuilding and Improvement Plans for Success (TRIPS) Infrastructure and Defense Program (akin to the National Interstate and Defense Highways Act).

The goals of the TRIPS Infrastructure and Defense Program are to

- Generate over $500B annually nationwide by 2035 in new, dedicated transportation funding for all modes including the Interstate Highway System and STRACNET rail routes designated essential by the Department of Defense.
- Create at least $5B annually in federal and state funds for NDOT by 2035, approximately four times more than current annual revenues for NDOT.
- Fund rail, road, runway, and river segments of transportation infrastructure and defense network projects.
- Develop a designated federal/state/local TRIPS plan and establish an eligible network for each mode: air, highway, railroad, transit, and waterways.
- Disburse TRIPS infrastructure funding on an 80% federal/20% local match basis for each mode on the following formulas:
    - Air trips - 10%
    - Highway trips - 30%
    - Railroad trips - 30%
    - Transit trips - 20%
    - Waterway trips - 10%

TRIPS Infrastructure Program Funding Mechanisms

These are the potential funding sources for the TRIPS program:

Passenger TRIPS User Fees: Phase-in increases of ticket prices 5% every three years over 12 years to create a local match source that is 20% of ticket prices; convert airline Passenger Facility Charges (PFCs) to TRIPS User Fees. Nevada Passenger TRIPS User Fees on buses and monorail trips to generate local match.

Freight TRIPS User Fees: Phase-in increases of freight rate assessments of 5% every three years over 12 years to create a source equaling 20% of freight revenues. Nevada Freight TRIPS User Fees on local and in-state freight deliveries to generate local match.

TRIPS Indexed Assessment on Gas Prices: Index federal gas tax as a percentage of gas prices based on the last gas tax increase in 1993: 18.4 cents per gallon, average 1993 gas price of $1.11/gallon = 16.6%. Today $2.39/gallon = 39.7 cents/gallon. Phase-in gas tax indexing over three years. Convert Nevada State Gas Tax to an indexed assessment as a percentage of gas prices from the last increase (23 cents/gallon) allows market forces to determine gas tax revenues. No charge for zero-emission electric vehicles; high mileage vehicles pay less.

TRIPS Interstate Highway Miles Assessment: Vehicle Miles Traveled (VMT) using license plate scanners on trucks and cars.

TRIPS Real Estate Value Capture Assessments (VCAs): Phase-in 2% every two years for 10 years to total of 8% for Federal/2% for State sales of real estate at current sale price. VCA paid by seller based on value of location made possible by proximity to transportation services. Nevada Real Estate VCA of 2% helps fund local match.

TRIPS Billboard Assessments: Assessment on annual billboard revenues, phase-in increases of billboard revenue assessments 5% every three years over 12 years to create a new revenue source from 20% of annual billboard revenues. Nevada DOT receives 100% of TRIPS Billboard Assessments to help fund local match.

NDOT could consider the incentive of using Railroad Property Tax Credits for TRIPS projects for private railroads to allow the use of their lines for rail passenger service. The cost of the tax credits would be far less than the cost to purchase land to build separate lines for passenger service.

TRIPS Infrastructure Procurement and Project Delivery Plan

RFIs, RFQs, and RFPs would be issued for teams to design, engineer, finance, build, own, operate, and fund the maintenance of transportation infrastructure projects jointly financed with private funds and TRIPS Infrastructure funding.

Consortiums bidding will offer competitive proposals to maximize the use of private financing and minimize the use of public financing from the TRIPS Infrastructure fund for each transportation project.

Benefits for Nevada and State Rail Plan Goals/Objectives

The TRIPS Infrastructure Program helps fulfill the State Rail Plan vision for economically and environmentally sustainable travel within the state. The TRIPS Program creates additional sources of new multi-modal state and matching federal revenue for Nevada. This would allow Nevada to consider changing the law to provide state funding of rail, specifically passenger rail projects. Additional multi-billion-dollar annual federal/state funding generated for investment in transportation infrastructure would create jobs and transportation-related economic activity critical to the rebuilding and recovery of Nevada's economy from the COVID-19 economic crisis in 2020. TRIPS Infrastructure funding would also provide an important solution for COVID-19-related Nevada state budget deficits.

Finally, as discussed in Chapter 1, enabling legislation for the Nevada State Infrastructure Bank ("Nevada SIB") was signed into law June 2017 (NV AB-399).[3] However, the Bank has not been capitalized as required to "carry out the business of the Nevada State Infrastructure Bank". Funding generated by TRIPS from state and federal matches could be used to capitalize Nevada SIB. Additional consideration would need to be given to changing current law to allow state funding of rail projects.

Recommended Next Steps

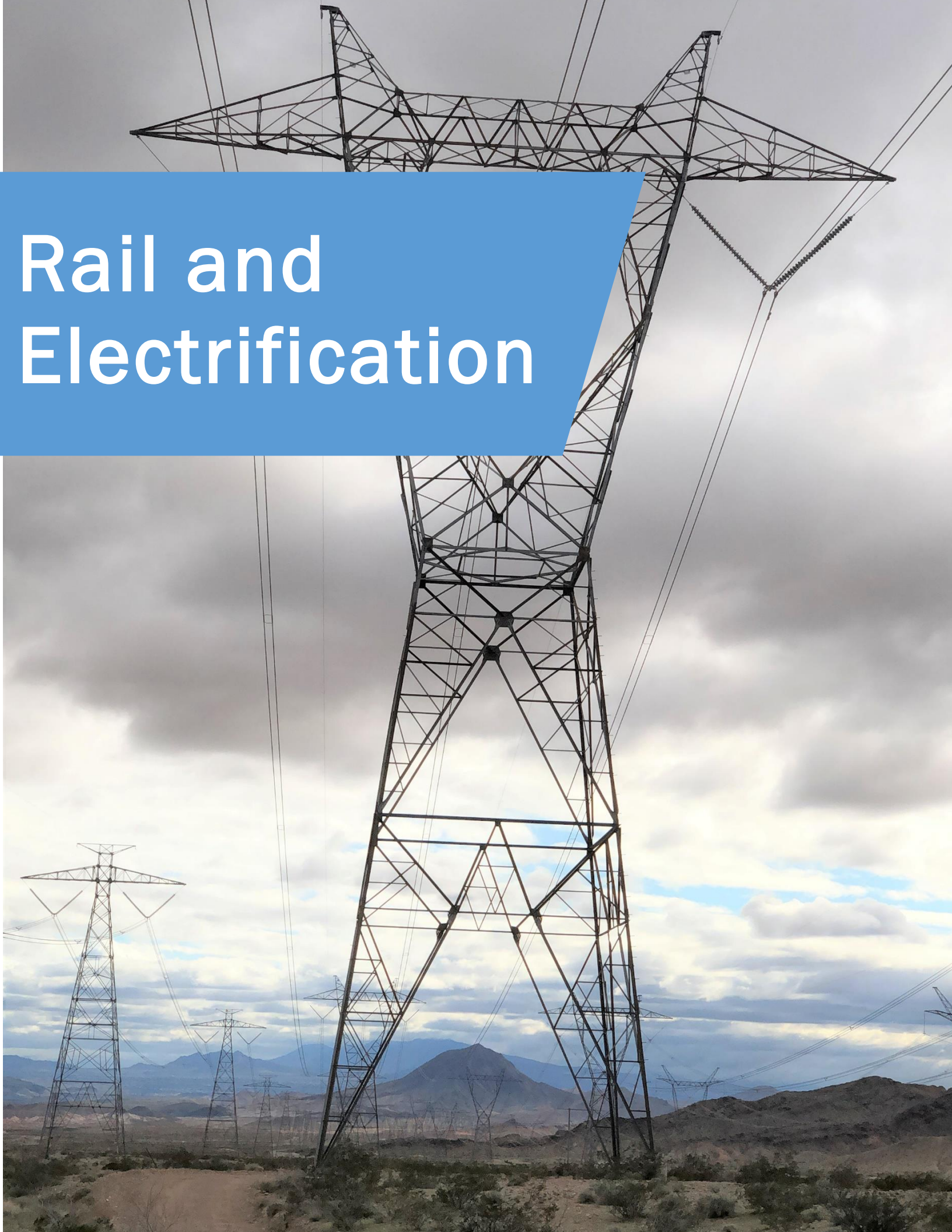
Develop a strategy to evaluate and implement the TRIPS Infrastructure Program in Nevada and pursue opportunities to support legislation at the federal level. Consider TRIPS Infrastructure bills for the next Nevada legislative session to begin generating new revenues as soon as possible along with other Nevada COVID-19 recovery initiatives.

[3]Nevada Assembly Bill 399, source link, effective June 2017.

4. Establish a Sovereign Wealth Fund

Sovereign Wealth Funds (SWF) are often used to smooth out public-sector revenues by calling on savings obtained from taxing natural resources (mitigating the necessity of funding substantial rainy-day funds out of general fund revenues). There are many examples of SWFs in the United States and around the world (see the list of U.S. states with sovereign wealth funds in Appendix C). Some states obtain modest revenues, although they can be vital in a crisis. New Mexico was able to shore up many small businesses early in the present crisis by calling on its SWF. Other states can use them in transformational ways: The University of Texas benefits from a Permanent University Fund that now exceeds $20 billion.

Nevada has several possible sources of revenue from which to draw in order to fill the fund. More important at this stage is to set in place an institution that was truly independent and transparent (many models exist). Voters may have reservations about revenue that disappears into the general fund. A sovereign wealth fund tasked by statute with supporting applied research for business and workforce development would increase the confidence of the voters that the revenues were being invested in the state's future (a model could be the Golden Leaf Foundation in North Carolina).



Rail and Electrification

Rail Electrification Council Statement on the Benefits of Rail Electrification for Nevada

I. Nevada and Rail Electrification

The Rail Electrification Council ("REC") advocates that all state rail plans should begin an exploration of the prospects for, and barriers to, electrification of rail operations. Such an analysis would ensure that plans and state transportation departments anticipate and prepare for challenges on the horizon. Forward-looking planning can also avoid investments in outdated technologies and operations.

REC believes that Nevada's rail plan should inaugurate an examination of the economic, operational, and environmental benefits of an electrified rail system.

Rail electrification can contribute to:

(1) enhancing the efficiency of in-state and interstate supply chains.

(2) helping foster job creation, new freight transload facilities, warehousing, and industrial development, particularly at mineral extraction sites. Bringing electric power to rail lines could also provide power to mining operations.

(3) improving the health and environment of Nevadans by reducing diesel emissions and promoting investment in renewable energy resources.

(4) supporting the production and transmission of electricity, particularly of Nevada's renewable energy resources, over high-voltage direct current (HVDC) lines located in railroad rights of way.

Freight rail companies are investing in infrastructure modernization. While investment in rail electrification would come on the heels of the costly deployment of Positive Train Control, diesel locomotive retrofit to reduce emissions, and current experimentation in battery electric locomotion, REC considers changing the motive power of locomotives and the transformation of the rail system to be in the realm of the strategic and attainable.

The challenges to electrification include potential costs,[1] prioritization of passenger rail electrification over freight, the ability of electric utilities to meet capacity demands of electrified rail operations, and the ability of utilities and other industry players to finance and build the necessary delivery infrastructure. Meanwhile, utilization of railroad real estate assets (especially trackside rights-of-way) as sites for longitudinal electric transmission or renewable energy facilities will potentially generate fresh revenues for the railroads that could offset the expense of electrification.

In sum, privately-owned rail transportation companies should be supported in pursuing electrification as feasible, strategically smart, and in their long-term economic self-interest. The public's interest will be

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[1] *Estimates of the cost of installing catenary facilities (overhead lines) for freight railways vary widely, at $300,000 to $5.5million per mile. At $2 million/mile, a build out of the U.S. military's strategic rail corridor network ("STRACNET"), which is comprised of 36,000 miles of rail serving 170 installations, would require an investment of $70 billion, not necessarily counting scale economies. The U.S. rail network today consists of about 150,000 miles of existing and retired or disused railroads. At $2 million each, replacing the Class 1 diesel fleet (25,000 units) would require investment of another $50 billion, not including the electric power delivery infrastructure. Of course, once fully developed, durable battery technology installed in locomotives as a substitute or a hybrid collaborator with overhead lines and possibly charged by renewable energy, could affect those costs significantly.*

served by a more modern, competitive, flexible freight rail system, a reduction in its environmental impact, and a contribution to the delivery of clean energy in the West.

II. Trends That Support Rail Electrification

Rail electrification appears with important questions of timing. The Federal Railroad Administration (FRA) believes that "rail will play a pivotal role in the Nation's transportation future." The 2021 Nevada State Rail Plan is being formulated in a transportation and energy environment that is increasingly transformational. Disruptive new technologies, changing demographics, and innovative public policies will make proper planning and strategic investment essential to maintaining economic competitiveness and quality of life.

The Council identifies three specific factors that call for a coordinated planning process among transportation providers, land and energy developers, and utility companies.

First, although FRA requires state-by-state rail plans, freight rail traffic is inherently **interstate**. Nowhere is that truer that in the Southwest. Nevada is becoming an industrial, commercial, and trans-shipment hub for commerce serving surrounding states. Just as Nevada's electric power industry must adapt to new technological, planning, and commercial developments, rail modernization in a potentially congested "megaregion" like the Southwest will require planning on a regional-wide as well as on a state-wide basis. The volume of truck movements between Nevada and California (over 70% of trucking in Nevada goes to or comes from California), regional air quality issues, the regional nature of electric transmission planning and development (e.g., TransWest Express Transmission Project would deliver 3000 MW of Wyoming wind to the Southwest)[2] all render the changes in the production and delivery of power as well as electrification inherently regional planning issues.

Second, Nevada will affect and be affected by **national** developments in technology and public policy.[3] Under the Passenger Rail Investment and Improvement Act of 2008, the FRA is developing a National Rail Plan. Just as the FRA intends to draw on state rail plans in that process, departments of transportation should consider important national trends such as the rising public policy focus on climate change, public health, air quality, electric grid integration, and the foreseeable electrification of highway transportation. The electric power industry and environmental interests are emphasizing the need for a national strategy to build-out the electric grid to permit delivery of location-constrained renewable resources to major power markets.[4] However, state facilities siting laws and land use restrictions often delay or reject major interstate electric transmission projects.[5] Although investment in high voltage transmission projects has

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[2] *TransWest Express LLC, Critical grid infrastructure to connect the West, source link. For a broad perspective on the importance of national grid integration for renewable energy, see "Macro Grid Initiative Launches to Expand and Upgrade America's Transmission Network", Press Release, American Council on Renewable Energy (ACORE) and Americans for a Clean Energy Grid, June 17, 2020, available at: source link*

[3] The Brattle Group, The Coming Electrification of the North American Economy, at ii (Mar. 2019) source link.
The Brattle Group found that increased electrification of the economy will require an investment of $3 – 7 Billion per year through 2030 (and far more annually through 2050 under some scenarios) to meet demand growth from electrification and integrate renewable energy resources.

[4] *For example, Southwest Power Pool, The Benefits of a Transmission Superhighway, source link.*

[5] *Clean Line Energy's Grain Belt Express project and its Plains & Eastern projects would have crossed multiple jurisdictions in delivering remote renewable resources to load; they ultimately failed to get regulatory or legislative approvals in the affected states.* Tomich, J., "*Battle reignites over $2.5B Midwest transmission line",* EnergyWire (Dec. 2019), source link; Postelwait, J., "*Grain Belt Express Transmission Line Moves Forward with Missouri Court*

increased in the past decade, driven by aging facilities and the desire to connect more low-cost renewable resources, major HVDC project proposals that would cross state, regional, or market boundaries have been denied approval due to state or landowner opposition during the permitting processes, disputes over the allocation of costs to state ratepayers, or lack of commitment by policy makers to the reliability and economic benefits of grid integration. Private transportation rights-of-way offer a significant potential pathway toward addressing this problem. Use of railroad networks can thereby help address the challenge of accessing renewable resources far from load as well as related issues like climate change. In other words, railroad rights-of-way should be part of the current effort to find attractive solutions to the intractable siting dilemma that inhibits or stops grid development.[6]

A third important variable is the advent of **new technologies** that will revolutionize the energy industry. Among those innovations are industrial-scale batteries (i.e., energy storage), distributed electric generation, high-voltage electric transmission facilities, fuel cells, and other improvements that will drive electrification in many industrial and transportation sectors.

III. Key Issues Analysis

Government Guidance and Support for Rail Electrification. Railroads' pursuit of emerging technologies that increase fuel efficiency and reduce emissions must be supported by a comprehensive policy and planning approach with State and Federal support. Railroads are investing in technological advances in response to the Passenger Rail Investment and Improvement Act of 2008. Conversion of rail operations to electric power or the siting of transmission on rail rights-of-way have not been well-explored in North America. The REC commends Nevada Department of Transportation for raising this issue as a strategic consideration for the state's economy.

A recent report[7] to Congress by federal regulatory staffs discussing the need for investment in new high voltage transmission addresses the potential for siting those longitudinal facilities within transportation corridors. Although mentioning issues that commonly arise when co-locating energy facilities near highways or railroads, the report failed to fully explore the potential role that the railroad system could play in facilitating delivery of remotely located renewable energy resources to major load centers. Unfortunately, these two network industries are planned and built in separate silos, without coordination or collaboration. This may be due in part to the absence of either a sound national rail plan or a national policy of facilitating a stronger interstate grid and electrification of systems – both of which are historically

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Decision", T&D World (Mar. 2020), source link. *Similarly, Eversource's Northern Pass project, designed to import Canadian hydroelectric power to the Eastern U.S., was essentially vetoed by one state siting regulator. See also*, e.g. POWERGRID International, July 19, 2019 "Eversource gives up on Northern Pass hydropower project". source link; *also*, e.g., American Society of Civil Engineers, Failure To Act: Electric Infrastructure Investment Gaps in a Rapidly Changing Environment (September 1, 2020), at p. 15. Also, Interviews with Jim Hoecker and Michael Skelly, "How Do We Accelerate Transmission Development," *Public Utilities Fortnightly* (December 2019), at 44, source link.

[6] *See generally Trans. Sec. Admin., Surface Transportation, source link (discussing the four general modes of land-based transportation as well as maritime transportation); Dept. of Homeland Sec., Transportation Systems, at 135-137 (May 2007), source link (providing a list of transportation assets broken down by sub-sector). See generally U.S. Government Accountability Office (GAO), Issues Associated with High-Voltage Direct-Current Transmission Lines Along Transportation Rights of Way, at 11 (February 2008), source link (refers to active transportation rights of way as railroads, highways, and pipelines).*

[7] *Staff report, Federal Energy Regulatory Commission, Report on Barriers and Opportunities for High Voltage Transmission: A Report to The Committees on Appropriations of Both Houses of Congress (June 2020).*

dependent on fossil fuels. Nevada has both important renewable resources and rail and highway corridors that could be used to make transmission development more efficient and responsive to state and national policies governing future energy, freight transport, and climate mitigation needs.

Supply Chain Disruption. Replacement of the locomotive power system must occur with the least amount of disruption to existing supply chains. Planning for continuity and efficiency requires an extended multi-year horizon, akin to the mid-20th century transition from steam to diesel locomotion. What may be less clear is the effect on the diesel supply chain of a potential conversion of highway trucking to electricity or the electrification of passenger vehicles that could stimulate the deployment of electric charging technology more quickly than expected. It is likely that a new, agile electric supply chain will emerge as rail operations become more integrated into the grid. For example, grid-connected locomotives can provide ancillary power generation services and storage to adjacent producers and consumers of electric power.

Interoperability. Rail operators achieve significant efficiencies by sharing locomotives and track capacity. This inter-operation typically requires that all railroads adopt the same systems – catenary, advanced battery power, third rail, and/or other electric drive systems – at the same time. Such shared operations may render battery-electric or hydrogen fuel cell technologies the best current candidates to replace diesel-electric drives, given their portability. The search for such solutions will only accelerate when regional or national public policy solutions catch up to the possibility and benefits of electrification.

Cost. Estimates of the total cost of electrification vary tremendously, in part because the technologies that will support electrification are yet to be determined. Clearly, the cost could rise to the hundreds of billions. The conversion could also have a cost impact on states and localities as grade crossings and other facilities require modification. To our knowledge, neither the rail industry nor power suppliers have yet contemplated how these costs will be incurred, allocated, and recovered and over what time period. It is never too early to confront those issues. Regulated utilities, which may be the primary electric service providers, are used to recovering costs in regulated rates over long periods. Railroads that provide the use of their real estate for transmission will need to negotiate new ratemaking structures that similarly recover revenues from their assets over time. There is a significant opportunity in these complex arrangements for public-private partnerships to facilitate the necessary capital investment, provided that the state and the railroad and energy companies calculate and consider the long-term benefits to consumers, the economy, the environment, and their companies of advancing these fundamental changes in operations.

Concluding Statement

The REC looks forward to supporting Nevada as it seeks to improve the Nevada's rail transportation, the State's commitment to the production of clean energy, and the state's economic development overall. The REC is a diverse coalition of manufacturers, electricity providers, and transportation firms that believes in a clean energy economy, a constructive approach to climate change mitigation, and economic development and job creation across North American economies. In seeking to anticipate, understand, and mold the likely economic and technological changes and new public policies that will affect the North American transportation and energy industries in the next two decades, the members of REC invite participation in a free exchange of information, data, and opinion about the future of our basic infrastructure.

Co-locating utilities harmoniously along rail lines reduces the land impact of development sprawl and the environmental impacts of utility corridors crisscrossing Nevada's pristine landscapes. It also gives Nevada another path to its climate goals by providing more cost-efficient access to carbon neutral power from wind and solar farms and geothermal sources whose rural locations are often uneconomic distances from electric grids.

Various utilities such as water, natural gas, and telecommunication lines can also be co-located with railroads in Nevada, facilitating lower-cost, lower impact development. The NVSRP team presented the benefits of utility and transportation corridor co-location to the leadership of the Nevada State Land Use Planning Advisory Council (SLUPAC). In response, discussions have ensued within SLUPAC on the rail development possibilities of NV Energy's Greenlink West[8] and Greenlink North[9] transmission projects. Shepherding this conversation between the literally parallel rail and electric power industries is one of the NVSRP recommendations.

[8] State of Nevada Clearinghouse website, "Docket No. 20-07025: Notice of Application for Federal Approval to Construct a Utility Facility", source link, accessed September 8, 2020.

[9] State of Nevada Clearinghouse website, "Docket No. 20-07024: Notice of Application for Federal Approval to Construct a Utility Facility", source link, accessed September 8, 2020.

Rail Plan Public Comments Record

Public Comment

Comments Received Through Online Form and by Email PC-01

Letters PC-20

Rail Summit Attendee List PC-48

Kenny Shepard kennyshepard@icloud.com

Hello to who this may concern,

If it's not too late to put a suggestion in for the type of trains. In addition, is it possible we can purchase the N700 Shinkansen and to operate on pylon tracks like with the Texas Central Rail project or purchase Euro Star/ICE European type trains? Basically, do citizens have the option to pick which manufactures to build the trains in referencing back to the first sentence? Thus, for the midwest high speed rail can that corridor operate at speeds of 125 mph instead of 110 mph? At 110 mph seems too slow. To illustrate, in regards to the true high speed rail corridors will the Brightline, CHSR, West Xpress or Xpress West, northeast and northwest corridors have complete free right away by not having interaction with grade crossings/rail crossings. Just flyovers, embankments and tunnels. To also have no single segment tracks and no sharing tracks with commuter rails, it'll just create major delays. Last but not least, will the stations and terminals have completely covered platforms with safety fence/gates along the platforms and electrified open and close doors like over in Japan, European and China? I just don't want American to build these projects the right way like countries in the eastern hemisphere PLEASE! Please keep my informed, I can be reach at 720-229-5249. Thank you for your time and consideration. I'm soo excited for America, it's ways overdue for true high speed bullet trains. Stay safe and God Elohim bless!

Sincerely,

Kenny Shepard

David Foster <dfoster342@aol.com>

1) The Draft NVSRP is well written and well organized, a credit to Michael Sussman, Charlie Banks, and anyone else who had a hand in creating it. In fact, it ranks as the best State Rail Plan I have seen, mostly because of its thoroughness and how comprehensive it is. The writing is cogent and grammatical. Furthermore, it is created to fit Nevada and its specific regions, not mindlessly spewed from a consultant's computer following a prepared template. The tables and maps are great, too. It actually has the capability to be an ongoing, interactive guide for rail policy and development in Nevada, not just a tome to sit on a shelf satisfying a federal mandate.

2) I am very disappointed that you have chosen to overlook the potential for open intermodal in the I-80 Corridor. RAIL Solution spent a lot of time and money evaluating and promoting this concept. During the public comment period last summer, at Lee Bonner's request, we prepared a one-page summary on this topic to facilitate its consideration and inclusion in the Plan. It is again attached. Trucks on trains are *congruent with several themes and goals of the Draft Plan.*

• In the Draft you perceptively included truck traffic. This is unusual in a State Rail Plan, but very important, as you have noted, as it is heavy truck traffic that represents opportunity for new rail business.

• In the Draft you also wisely considered adjacent states, including Utah and especially California. This accepts the need to analyze I-80 traffic flows holistically and not confined to Nevada alone.

• And in the Draft you also comment on the considerable incidence of truck crashes and congestion on I-80 in Nevada. Moving through trucks into, out of, and across Nevada by train clearly would enhance highway safety, as well as reducing wear and tear on roads. Reduced pollution is a corollary benefit and dovetails with the growing popular movement nationwide to "decarbonize" transportation.

Transporting trucks through the state of Nevada in the I-80 Corridor by rail rings all three of these bells.

3) Unfortunately the Plan's definition of Intermodal is too narrow to cover anything beyond traditional railroad double-stack trains. These are, of course, Intermodal, but you need to enlarge the definition to recognize that Intermodal freight is anything which in its journey travels on more than one mode. There are many other kinds of Intermodal shipments possible beyond double-stack containers and trailers in well cars. In fact in the Draft you recognize that this traditional concept serves Nevada poorly. It says there are only two conventional rail intermodal terminals in the state and they are underutilized. This should prompt you to ask why. By design rail double-stack trains require large volumes and long distances to make economic sense. Their vast terminals invite cost and delay, which then needs to be amortized over as many linehaul miles as possible. To truly serve the Intermodal needs of Nevada, a much more nimble service concept and design is needed, one that provides fast, frequent service to Nevada, not one designed to optimize 1,500-mile hauls.

4) The Draft's careful cataloguing of every sidetrack in Nevada is interesting, but the focus in the action tables for each region on reusing and reactivating these tracks in quite unrealistic. I can see Michael Sussman's handiwork here, and his strong focus on promoting rail service to each small shipper. Often however, there is a reason a siding is unused -- either it became uneconomic for the shipper or the railroad. That is unlikely to change to nearly the degree projected in the project tables. Shippers today lack the patience to deal with intransigent rail service, even if it may be a bit cheaper, and railroads today certainly lack the marketing and operating discipline to deal with small shippers.

5) This is a comparatively minor point, but throughout the chapter on passenger rail, Amtrak's *California Zephyr* is referred to as daily. Last year Amtrak downgraded its daily long distance trains to tri-weekly, and this included the *CZ.* While this was touted as a measure to adjust capacity to reduced demand levels during the pandemic, Amtrak has a long history of never restoring daily operation of trains relegated to tri-weekly status. The nearby *Sunset Limited* in the I-10 Corridor is a handy example. So it seems appropriate for the Draft NVSRP to state affirmatively as a goal that the *CZ* be resumed on a daily basis as soon as the pandemic is behind us.

6) And I close with a very minor point. In the write-up of the Nevada Northern Railway, you have included a nice color photo of the Nevada Southern. That would be much more appropriately moved several pages later under the description of the Nevada Southern.

GARY NEWMAN <airborndaddy@hotmail.com>

Hello,
My name is Gary Newman and I live in Reno,NV. I am a volunteer with the Rail Auxiliary Team, under the Washoe County Sheriffs Office. Although the plain does appear to be comprehensive, it does NOT appear to have any provisions or guidance for direct involvement with the public around and/or in the vicinity of rail operations. Our highly trained and highly competent group of an all volunteer team could more than fulfill that very necessary and imperative role. Than you, Gary Newman 775-379-5297.

Colin Ono-Moore colinonomoore@gmail.com

NV rail public comment,

Pardon such a long thought about things that I'm sure you all think extensively about, with better information and insight than I have.

What i was thinking and writing previously is not well thought out or researched. Only thinking about slow life, and a different economics for our state.

Researching such a project would take much more time than one day.

I see you have a meeting this Tuesday on the rail plan.

I did not read it.

The idea i presented is larger than anything that I can reasonably accomplish, and the state rail plan seems like a reasonable place to send such ideas for consideration, even if cursory.

This morning, i was happy to see that we have a rail plan. It seems like a good place for me to start looking into what Nevada is doing and has done.

Sincerely,

Colin

On Fri, Feb 5, 2021, 1:40 PM Colin Ono-Moore <colinonomoore@gmail.com> wrote:
NV Rail Public Comment,

This is sort of an organized ramble. I was born and raised in Nevada.

Two questions to push considerations:

How can trains be used?

How can any individual or a Nevada community participate with train use?

The people of Nevada could invest in a broad slow rail infrastructure connecting our main cities (Carson, Reno, Elko, Ely, Las Vegas) with branches to other cities/towns and areas, joined by private enterprises for commercial use and tourism. This is being thought of as a public transit type system along the lines of Nevada's (and the worlds) historical pattern of train use in the 1800's and early 1900s -- slow, enduring cultural patterns. It would be another way to integrate Nevada's open spaces in a regional-local manner.

Nevada has historic rail lines and historic trains that could be used for these commerce and tourism purposes already. The system would best be designed as an open system that allows for easy modifications and changes in the future, and designed with at least two parallel tracks, most places for flexibility and ease of use. This can be done with both public funds and private entrepreneurship. And the state and county and city levels could invest jointly, but differently based on sharing and system global vs local needs. The feds could invest too, i mean we're like 70% BLM land or something and then area 51 and various military instalments (what would the military use trains for?).

High grade rails for high freight loading possibilities is better than not. Make the lines robust and long term.

Maintaining a rough theme of the "old west" would reinforce the idea of slow tourism and allow a variety of tourism based events or themed rides to be created. Newer types of train systems (or other public transit methods) could of course be used for special sections, such as going to lake tahoe/ski resorts from Carson and Reno, or Vegas to Lee Canyon, or Las Vegas to Las Angeles.

I'm not advocating for frequent stops, like a passenger rail line in a city, but rather for old-west style slow travel to existing larger locations.. (local car or motorcycle or bicycle rental could then be a business, if it became popular enough, and trains carry automobiles (groups or families travel with a hotel sleeping car, without sacrificing the independence of an automobile.)

It is important to re-emphasize that this would be valuable as both a public transportation system and a commercial (tourism and freight) system. Nevada residents could use the system also for use of airports, and the airports could be used for tourism with things like the Burning Man Festival.

The slow train system would allow for new ways of looking at and dealing with sustainable *interactive* wild-land management use patterns in Nevada's land scapes (would have to manage with BLM etc), including cattle and sheep ranching and pasturage and wild land visiting. Thinking about it as "interactive" for tourism and for resident livelihoods. And working toward a "free safe passage" usufruct-law across even private property opens this possibility up enormously (gotta talk with ranchers and others about what would be tenable).

I am not advocating the removal of any roads paved or otherwise.. though more could be left as gravel/dirt perhaps over time.

It would generate employment for instalment, running, and maintenance over generations. (im' thinking long term, trains can be kept going, as Ely shows.)

The Shoshone and Paiute can be approached and asked if they would like to participate and find out how they think the trains can facilitate their current lives, or reclaiming some older cultural patterns if they see the possibility especially with usufruct-type laws (with adjusting tribal boundaries or something, possibly messy, but good).

The "old west" like theme also would integrate into other pre-existing cultural events and tourism, such as the Burning Man Festival noted previously, National Cowboy Poetry Gathering (that would be going on right about now in any other year), National Finals Rodeo in Las Vegas, National Basque Culture Festival, to name a few.

Alternative means of tourism can also be created or accessed more easily. Some thoughts that have passed through my mind are these:
-Hotel bundles with sleeping cars and casino cars and party cars (is this in that scary train series that's on now?)
-connection to outdoor and historic areas like the following:
--Great Basin National Park
--Red Rock Canyon National Conservation area
--designation of "Dark Sky Parks" such as Massacre Rim Wilderness Study Area (with development of tourism facilities based around dark sky viewing, telescopes, hotels, new green tech stuff, whatever)
--Burning Man (there are already tracks out there I hear)
--Rhyolite and other ghost towns, the pre-existing stretch to Virginia City
--ski resort access
--various historical sites or geological oddities via particular bundles (Come see Nevada and the Old West!!) (possibly via separate limited lines or something, mining rail gauge stuff or nearly so)
--shooting ranges? (we have open carry, and why not on the train too, I've grown up with people carrying guns); can elk and deer hunting be integrated somehow with cold storage?
--wildlife and animal sanctuary viewing or wild horse stuff: i.e. wild horse roping contests for cowboys to manage horse populations every few years or something, "rope it to keep it" (animal people would flip their shit! haha (I like animals a lot)) (again sustainable *interactive* wild land management practices)
--lake access for fishing and boating and camping, cold storage again.
-USPS mail delivery, or other parcel carriage for rural areas
-horse-back or horse and carriage or buggy taxi services could be made by local people with the knowledge or interest especially for the festivals
-we have the sports stadiums in Vegas that could be integrated
-ranching and range land management practices can be included or changed
-keep Amtrak separate but attempt to have some station connection locations (like the Reno one and then jointly extend into Utah and Salt Lake City.
-advocate for Utah to extend into southern Utah in a like manner (perhaps all the mountain west, even)
-advocate for extensions into LA, Phoenix, Boise, if those states are agreeable.
-advocate for a branch extending from Carson City to Bridgeport, CA, Lee Vining/Yosemite, Mammoth, Bishop, Death Valley to either Barstow stop or to Vegas (slow trains for tourism and outdoor recreation).

-advocate for Amtrak to have an auto-transport option and cold storage for hunters from the mid-west
-change development patterns and get more people in the state, but in a disbursed fashion with train access points, like the old west?, allow for nomadic type pastoral use of lands?
-managed forest lumber use for local city or county stuff, plus imports of course
-freights for hobby or tourism or local ranchers (slow, old-west style), such as motorcycles, bicycles (road/mountain), riding horses (horse back tours and camping), cattle or sheep for pasturage change, Trucks, dune buggies (the dunes), trucks with Hunting parties?, so many possibilities with trains.
-farm stuff hauling?

The train services don't have to be super precise (slow, old-west, two tracks, modern location tech), and can be seasonal.

It can and probably would need to be a multi-joint venture.

We can advocate for other states to look at their own state economies to support their own people in their own local/regional and historic ways, rather than via the federal government. Do the states rights things and take back power from the DC area.

Background:
This thought just came to me this morning. I was thinking about considerations of speed and quality, and how speed does not always lead to an improvement in quality; a slow train or slow boats might actually be better in ways. I was also watching the film The Economics Of Happiness, and reading about slow culture.

Thank you for your time,

Colin Ono-Moore

P.S. I will also suggest this to other rail enthusiasts and other people generally, as it is not a simple community venture without it becoming communist/socialist and is better completed in a democratic way with buy in from many individuals and many sectors of society, and even being completed in meaningful segments over many decades.

Also, you may share this with any individuals or groups for conveying the scope and breadth of the idea.

Ray Bacon, Exec Director, NV Manufacturers Assn, info@nvmanufacturers.org, Carson City, NV

Rail service to the manufacturing sites in Nevada has been terrible for decades and nothing in this plan indicates any commitment by the UP or BNSF to improve their delivery performance. If that is not or cannot be fixed then expanding route, building new track beds, expanding rail capacity will be a giant waste of money. As this plan spells out most of the investment is private money within some cases railroad investment too. The railroads have a terrible performance track record - one failure and this plan is smoke. The Sparks Rail yard needs to be replaced with something much better with more capacity at TRIC or perhaps Fernley. Once that happens, then

perhaps the RR can build creditability to proceed further. Most of the longer lines proposed in this are likely pure pipedream until there is some demonstrated performance for the railroads.

Nanette Redmond, Rail Auxiliary Team Volunteer, Washoe County Sheriff's CCP, nanetteredmond@hotmail.com, Eugene, OR

The plan is good but not as comprehensive as it could be. The Rail Auxiliary Team, part of the Washoe County Sheriff CCP program goes out to many places in Nevada and looks to ensure the safety of the public and the railroads themselves. We look for trespassers, possible suicides, people camping on railroad right of ways, unauthorized vehicles parked near railroad tracks and crossings as well as suspicious activity. We have been trained to perform these tasks and attend monthly educational classes. If we see this we call the Risk Management number in Omaha, Nebraska. Before calling we complete the required 9 line document. We work with the suicide prevention group in Nevada as well as Special Agent Scott to further increase our knowledge. None of our activities are mentioned in your document. Thus, this document is not as comprehensive as it could be. Nor, are our efforts acknowledged. Thank you, Nanette Redmond

Theron Gough, Retired, none, thorlxviiii@hotmail.com, Fallon, NV

I saw no mention of the Rail Auxiliary Team in this document. I believe they would be very instrumental in education about Rail Safety and they do currently provide observation of the railways in Northern Nevada. They have help to prevent 8 possible suicides by train and 38 other events to include accidental death due to trespassing on the railroad tracks and bridges. I very much hope you will consider including the Rail Auxiliary Team and the Department of Public Safety as part of the State's Rail Plan.

Lynn Sandell, Retired, Washoe County CERT & Railroad Auxiliary Team, lynn@sandell.us, Sparks, NV

After having read the 2021 Nevada State Rail Plan, I am encouraged by the desire to increase rail traffic and to rely less on truck transportation. A major concern that I did not see addressed is rail safety when it comes to trespassers. As a member of the Railroad Auxiliary Team, we are on the lookout for trespassers and are about trying to keep the public safe. Our being eyes and ears as we are out and about has already saved many lives. I think there needs to be more emphasis and dollars spent on the safety of people around the tracks. Thank you for taking this into consideration.

Carol Hill, Volunteer with Rail Auxiliary Team (RAT) in Reno, NV, Washoe County CERT (Community Emergency Response Team), chill968@aol.com, Washoe Valley, NV

I would like the State Rail Plan to include the work done by our Rail Auxiliary Team (RAT). We are the only rail safety team in the U.S. Our duties include patrolling the railways for safety and security. We alert Union Pacific when people trespass onto railroad property. This is to protect our citizens as well as the train crew. The team has suicide training which we hope will save lives. We also monitor for any potential terrorist activity along the rails. Because HazMat materials are shipped on freight trains throughout Nevada, we watch for potential leaks or

hazards. We work closely with local law enforcement and with the Union Pacific police officer assigned to our area. I would like to emphasize the importance of the work done by our Rail Auxiliary Team and hope that we can coordinate with the state to make Nevada a safe place for all residents.

Marcia Hurd, President, Lincoln County Authority of Tourism, marcia@starvalleynv.com, Caliente, NV

Thank you for allowing us to comment on NV State Rail Plan.

Lincoln County represents almost 10% of the landmass in the State of Nevada with over 10,000 square miles. Unfortunately, 98% of that land is currently controlled by Federal Agencies. Our county's economy struggles to support itself with our population and businesses occupying only a minute 213 square miles.

Two factors addressed in the Rail Plan are of great interest to Lincoln County. First, In order to make the most of our limited infrastructure, Lincoln County greatly relies on tourism. We believe we would significantly benefit if Passenger Rail service can be negotiated to come through Lincoln County with a stop in Caliente. Our historical train Depot building is being renovated and would make an excellent stop-over. Second, there is an industrial park very closely located to the Union Pacific lines running through Lincoln County and would help bring in future new businesses and provide a boost to economic development.

We strongly support any strategies that will bring more rail service through Lincoln County.

Garrett TerBerg, Principal Planner, Clark County NV Comprehensive Planning, gtb@clarkcountynv.gov, Las Vegas, NV

Good day!

I attended the 2021 Nevada State Railroad Virtual Summit on 16 February 2021 and was most encouraged by the speakers and the Plan for the Rail for the State of Nevada. We absolutely need this guidance to get "on track" to allow our State to have an active economic presence in the region and ultimately on the global stage. I am recommending that prominent references be made in our new County Comprehensive Master Plan through 2050 that is currently under development (see transformclarkcounty.com). During the Summit, I also indicated my desire to work with many of the speakers and others, so please keep me in the loop for future networking opportunities.

Thank you,

Garrett TerBerg III AICP | Principal Planner
APA NV Southern Section Director
Comprehensive Planning Department
Clark County, Nevada
500 S. Grand Central Parkway, Las Vegas, NV 89155
Office: 702.455.5617

Cell: 702.499.5264

Richard Vail, N/A, N/A, rvail@netzero.com, Surprise, AZ

Sir: There should be some kind of mapped route proposal for a Phoenix to Las Vegas standard speed passenger train. The least expensive route appears to partially re-use the existing former ATSF route between downtown Phoenix & Parker, AZ. Build some 40 miles of new tracks connecting Parker to Lake Havasu to Topock, AZ. Continue on ~12 miles of existing BNSF tracks (currently used by Amtrak's SW Chief), crossing the Colorado River to Needles, CA. Then construct some 80 more miles of new tracks from Needles to Laughlin to Boulder City, NV. Continue from Boulder City to Las Vegas on existing tracks. Of course, make the route also available for a new freight traffic route connecting Phoenix & Las Vegas.

Carol Hill, Volunteer with Rail Auxiliary Team (RAT) in Reno, NV, Washoe County CERT (Community Emergency Response Team), chill968@aol.com, Washoe Valley, NV

I would like the State Rail Plan to include the work done by our Rail Auxiliary Team (RAT). We are the only rail safety team in the U.S. Our duties include patrolling the railways for safety and security. We alert Union Pacific when people trespass onto railroad property. This is to protect our citizens as well as the train crew. The team has suicide training which we hope will save lives. We also monitor for any potential terrorist activity along the rails. Because HazMat materials are shipped on freight trains throughout Nevada, we watch for potential leaks or hazards. We work closely with local law enforcement and with the Union Pacific police officer assigned to our area. I would like to emphasize the importance of the work done by our Rail Auxiliary Team and hope that we can coordinate with the state to make Nevada a safe place for all residents.

Gary McNamara, President, NViaggio, Inc., gm.nviaggio@yahoo.com, Reno, NV

This is a response to the Nevada State Rail Plan as a result of reviewing both the study itself and attending the Nevada State Rail Summit held February 16th 2021. I represent a Nevada based company that has organized a group of international and industry best companies and individuals in anticipation of adding critical rail infrastructure in the Western United States.

Nevada needs to take takes a Nevada First approach, as we understand that the proper infrastructure to maximize the potential of our state will also create positive results for our neighbors as well. The 2021 Nevada Rail Plan presents a very unique freight and passenger rail plan for the State of Nevada. A tremendous amount of research and data gathered was undertaken through this process. NOW is the time to take all of that information and begin to conduct some very serious planning and implementation work to improve the quality of life for Nevada residents.

Freight Rail

The freight portion of the Rail Plan includes rail and truck commodity flow data that highlights the fact that the majority of freight tonnage (77%) moves by truck versus the 65% national

average. Seventy percent of those trucks are moving from California. Given that freight moved by rail is the most environmentally friendly method of transport, Nevada needs to develop a more efficient system of moving freight by rail.

In order to accomplish this transformation, it will be important to assemble government entities, shippers and carriers to work together to obtain:

- A better understanding of the transportation systems' strengths and weaknesses
- Engage in system-wide transportation and land use planning issues
- Obtain better understanding of what a more efficient transportation system in Nevada entails
- Prepare new project proposals that meet the overall transportation goals of both California and Nevada
- Work together to obtain access to both private and public funding for these projects

A more coordinated effort by shippers and carriers would reduce the amount of empty backhauls of aggregates and container movements between California and Nevada. Also, by coordinating freight movements, more opportunities would become available to ship commodities by rail instead of on the highway.

The Integrated Multimodal Cargo Transfer Facility (IMCTF) is a more efficient model to integrate the movement of freight between Northern Nevada and Northern California. However, in order for this transportation method to work, it would require a substantial investment in constructing this new facility. It would also require the BNSF and/or the Union Pacific Railroads' willingness to provide competitive freight rates and the ability to operate the rail service on a timely schedule in order to meet shipper needs. More research would also be required to determine if there would be sufficient demand to divert truck freight from Interstate 15 heading west to the Ports of Los Angeles and Long Beach (LA/LB). Provided the cost and travel times would be competitive, these trucks could be diverted to the IMCTF and loaded into ocean containers for the trip to the Port of Oakland. Shipping by rail to the Port of Oakland also has the advantage of accessing the port 24/7 rather than only during the 8AM to 5PM truck gate hours at the port. A significant amount of freight would be necessary in order for the IMCTF model to be viable in Northern Nevada.

Nevada's Mining Industry is a major industry generating $8 billion in gross value of produced minerals in 2018. The mining industry is a powerful economic generator for the State of Nevada, but could become more efficient in its efforts to reduce transportation costs. A Nevada Mining Industry Alliance should be established to coordinate its planning and shipping efforts. By working together, this alliance could generate tremendous transportation savings by utilizing Nevada's rail system. As new mines continue to open, more and more, rail will be become a very attractive transportation option to move products to market.

Northern Nevada is seeing tremendous business growth along the I-80 Corridor between Reno and Fernley. This growth is creating highway congestion both in Nevada and California. Despite the fact that rail is the most economical and environmentally friendly means to transport freight, much of this freight is moving by truck because there is no coordinated effort underway to take advantage of high volume shipping savings utilizing rail transportation. In Nevada, there is also a tremendous amount of rail infrastructure that is not being used. These underutilized

assets could assist in reducing transportation costs, reducing highway congestion and reducing emissions.

Passenger Rail

The first item that needs to be addressed is that Nevada needs a state of the art rail system that connects the two largest metro cities of our state. Nevada can no longer be dependent on its transportation systems originating out of state and must address its "Missing Middle"section that includes six rural counties.

The passenger rail section of the plan calls for both California Zephyr and Capitol Corridor as potential solutions for Nevada. Two key elements were not addressed, travel time and ridership both of which are critical to operating a successful passenger train service. The California Zephyr end points are Oakland California and Chicago. Currently, ridership is extremely limited between Reno and Salt Lake City so the addition of an Oakland to Chicago train is not in Amtrack's short term plans. For some 20 years, the Capitol Corridor has been studying extending to Reno but there has been no interest by the host railroad to allow passenger trains to operate over Donner Pass. More work will be required by the State of Nevada and California to make the case for a Northern California to Reno train.

The "C" route option of the proposal offers many challenges and limited solutions for Nevada passengers. A Reno to Las Vegas trip including multiple changes between bus and train, adding up to 14 plus hours of travel, is not an efficient option. Below, High Speed Rail in Nevada will be addressed for multiple reasons. To compare, during the time it would take a California Zephyr to travel from Reno to Sacramento, a High Speed Rail train would be able to travel from Reno to Las Vegas and back to Reno. Also, car travel time is approximately two hours from Reno to Sacramento so the thought of just one leg of the proposed trip taking this much time leads us to believe ridership for a 14- hour Reno to Las Vegas trip would be close to zero. Equipment technology used in multiple countries would need to be evaluated in an effort to cut time so a Sacramento to Reno trip would compete with vehicle travel.

Re-establishing a Los Angeles to Las Vegas passenger train would provide high amounts of ridership between two major destinations in the US. This service would reduce congestion on I-15 and make traveling a much more pleasant experience. Unfortunately, Brightline has experienced delays and is looking for Nevada to help bring this project to completion. Once again, with travel time and ridership in mind, Los Angeles to Las Vegas would need to be accomplished completely not just a Las Vegas to Victorville, CA service.

High Speed Rail

The biggest omission in the 2021 Nevada State Rail Plan is the failure to discuss a potential High Speed Rail system to connect Las Vegas and Reno. The State of Nevada needs an efficient transportation system to connect its two largest cities for both passenger and freight users. Preliminary findings, experts and current international operators understand that Nevada's topography is ideal for speeds of 220+ mph which enables travel time between Las Vegas and Reno in the two hour range which is more efficient than both airplane and automobile travel. Most importantly, High Speed Rail is a Zero emission system. The Northern Nevada Development Authority's "Nevada Technology Corridor" (NTC) would provide Nevada with the most efficient transportation system available today. The NTC would provide Nevada a first-class High Speed Rail system and high value/high priority freight service linking the two proposed

inland ports. In addition, the NTC would link six rural counties, five critical care hospitals and four opportunity zones. High Speed Rail paves the way for the NTC as the right-of-way for this project would provide access for the transportation of electricity, broadband technology, water and natural gas to portions of the state that do not have these amenities. Just as critical, the High Speed Rail NTC will provide multiple business development and workforce housing opportunities throughout the state. High Speed Rail will also provide the backbone for current and future commuter rail needs.

In conclusion, towards the end of the Nevada Rail Summit, a slide referencing "Dreams" was shown. The NTC is a solution that can be accomplished NOW. High Speed Rail, freight rail and connecting the two largest cities of the state along with the two proposed inland ports is a solution that helps Nevada thrive for generations to come. Proper investigation, research, and investors will enable current reputable operators to not only assist but invest in this effort. The proposed transportation corridor is very achievable.

Ron Kaminkow, Locomotive Engineer, Railroad Workers United; Rail Passengers Association, railroadworkersunited@gmail.com, Reno, NV

Capital Improvements Needed to Existing Rail Infrastructure

To facilitate freight and passenger movement between Nevada, California and beyond, it would be highly desirable to remove bottlenecks and obstacles where they currently exist. A number of infrastructure projects would greatly aid in the realization of the Nevada DOT State Rail Plan. In order to facilitate a more fluid and higher capacity mainline across Northern Nevada, it is obvious that additional infrastructure in California is also essential. So, while some of what follows necessarily pertains directly to the state of California, we see this as crucial for success here in Nevada.

1 – Construction of a second main track between Vista (MP 249) and Weso (MP 421) in places would expedite train movements. A second main did exist between Granite Point (MP 337) and Weso, but was removed by Southern Pacific in the 1980s. The roadbed remains intact today and would greatly facilitate an effort to restore the second main by joining the sidings (4 of them) between East Granite Point (CP 338) and Weso. From Fernley (MP 276) to Granite Point, there is generally ample room for a second track to be laid with limited need for additional cuts and fills. Vista to Fernley (25 miles) would be more challenging due to restricted clearance in the lower Truckee canyon and numerous bridges across the Truckee River.

2 - A third main track bypassing the Sparks yard (MP 244) to the north would facilitate Amtrak and regional passenger train movements and otherwise ease congestion at the terminal. A third main both between CP 249 Vista and CP 239 West Reno (or beyond) would greatly streamline operations at Reno - Sparks. Note: This third main would bypass the trench to the north between CP 239 and CP 242 where a vacant corridor currently exists. This main track would be used for regional passenger trains that would stop at the "Downtown Transit Center," to be located directly adjacent to (and between) the Amtrak station and regional RTC bus terminal. Here, connections would be made to both northbound (UNR - North Valleys- Bordertown)) and southbound (airport – Carson) regional trains, Amtrak trains, Amtrak thruway buses, local bus

service and Greyhound. Note: The easterly ¼ mile of this track currently serves as the UP Reno Branch.

3 – Rehabilitation of the Reno Branch from Reno to Bordertown and on to Reno Junction (35 miles) would facilitate expedited movement of freight from/to North Reno and Stead warehouses and industries. Installation of CTC/PTC would enable commuter rail operations to comingle with this lightly used secondary track (currently only used at night a few times a week). Local and through freight (both UP and BNSF) could be routed north as well as south (currently the only option is south) as necessary, and the route could act as a bypass and safety valve if/when the UP finds it desirable to route trains from the former SP east-west mainline to its former WP east-west mainline in either direction. The east leg of the Wye at Reno Junction could be replaced to facilitate universal movements.

4 - The second mainline from Emigrant Gap, CA (MP 171) to Shed 10 (MP 178) was removed by Southern Pacific (SP) in 1993, as was the second main track over Donner Pass, a combined total of just under 15 miles. Rumor had it that new owner Union Pacific – upon purchasing the SP in 1995 – had every intention of returning both segments to two main tracks in order to facilitate movement over the Sierra Nevada. Unfortunately, this project never happened, resulting in continued restriction of train movement over the mountain, especially in winter months and at times when the parallel route (former Western Pacific) is closed/limited due to rockslides, wildfires, trackwork, etc. This double tracking project needs to be a priority.

5 – A significant amount of trackage across the Sierra has never been modernized. Centralized Traffic Control (CTC) needs to be installed between East Truckee (MP 208) and West Reno (MP 239), and at other locations on the western slope. Currently, Newcastle (MP 120), Bowman (MP 129) and Colfax (MP 140) are equipped with single dual-controlled crossovers, while Floriston (MP 220) currently has a set of universal hand-throw crossovers and a 10-minute wait for all crossover movements. In combination with the double tracking referenced in #4 above, the installation of dual-controlled universal crossovers at all four of these locations would greatly serve to facilitate and expedite train movements over the mountain.

GLEE WILLIS, Retired, Member of the Rail Passengers Association, gleewillis@yahoo.com, Reno, NV

The need for additional Bay Area to Reno Service

Problem:

All passengers traveling by train for California points to Reno currently ride on Amtrak trains #5 and #6. Often the eastbound Amtrak train empties out at Reno, and fills up westbound. Unfortunately, these short-hauls often result in a “sold out” train for travelers wishing to make a longer haul to destinations east of Nevada. This can result in passengers being denied the opportunity to board and/or disembark from Amtrak trains in many California locations. Additionally, the train times are not the best for those who do ride the train. Many local/regional travelers to/from Reno are not happy with an 8:36 AM departure from Reno back to California.

When these Amtrak trains are often completely sold out from California to Reno, would be train travelers must either drive the challenging, semi-congested highway over Donner Pass, or completely opt out. In either case, valuable revenue is lost.

In winter conditions, when driving over the mountain passes is treacherous and slow (if they are not completely shut down), demand for train service greatly exceeds the current capacity.

Solution:

Additional daily frequency between the Bay Area and Reno, and the development of this as a new “corridor service". This additional service would solve a number of problems and greatly facilitate rail travel between California and Nevada.

1 - The additional train would ideally depart the Bay Area mid-day (vs Amtrak train #6 departure of 9:10 AM). This would not only give riders the choice of departure times, but it would allow for an early evening arrival (roughly 7 PM) in time for dinner, drinks, shows, and entertainment. Likewise, a mid-day departure would allow visitors time to sleep in, check out, enjoy breakfast, and leisurely depart Reno and be back in Sacramento (5 PM) and the Bay Area (7 PM) at a reasonable hour in time for the next day’s activities. Overall ridership would be dramatically increased.

2 – In addition to allowing customers more flexibility in travel times, Amtrak trains #5 and #6 would have additional space available for long distance travelers (i.e., increased ridership of these long-distance passengers).

3 – The additional trains would stop at all stations currently served by Amtrak trains #5 and #6. In addition, the new service should stop at Auburn, augmenting the now once daily service from that city to Sacramento and the Bay Area.

4 – With the infrastructure improvements suggested by Rail Passengers Association (RPA) Nevada state Rep Ron Kaminkow (see his Comment to the NDOT Plan), Union Pacific would have vastly increased flexibility to route not only its own trains across the Sierra Nevada, but easily be able to accommodate this additional service, whether it be single or multiple daily departures from both Reno and the Bay Area.

5 – In terms of equipment, these additional trains – given the nature of those travelling this route – would be wise to include first class service (private rooms) as well as a lounge/snack car, both of which would be well patronized. Note: In the recent past the “Reno Fun Train” provided a highly successful service as a “party train” of sorts. Amtrak could easily capitalize on the previous success with daily and year-round service.

Jason Doering, Nevada State Legislative Director, The International Association of Sheet Metal, Air, Rail and Transportation Workers (SMART), jason.doering@nvsmart-union.org, Las Vegas, NV

Rail labor supports the expansion of freight and passenger service, provided it is executed in a safe manner.

Nevada must maintain that a certified engineer and a certified conductor are working on every freight train. These two safety professionals work together to minimize the effects of fatigue, deal with emergency situations including hazardous materials accidents and incidents, operate advanced technologies and comply with a myriad of federal rail safety requirements. They also provide critical backup to one another as decisions are made that often save lives. A single crew-member cannot perform these tasks and still maintain the highest safety standards, which is what the carriers are striving to accomplish.

In addition, Nevada needs to be aware of the growing length of trains operating within the state, given the extreme territories for which they traverse. A 2-mile-plus-long train can interrupt crew radio communications, compromise in-train forces, block grade crossings for long periods, which hinder emergency vehicles and increase the probability of a mechanical failure; all while disrupting service, which in result jeopardizes the customer.

Moreover, we believe the state recognizes the importance of investing in infrastructure to support economic recovery and keeping Nevada's railroad system reliable and safe. We look forward to working with industry stakeholders to improve and expand passenger rail service throughout Nevada; including high-speed rail projects, and the restoration of Amtrak between Southern California and Las Vegas.

Kathy Canfield, Senior Planner, Storey County Planning Department

Storey County offers the following comments:

There is a Development Agreement (since 2000) in place that requires the “Tahoe-Reno Industrial Center” to be the name of the area within the agreement boundaries. Blockchains may call their land inside this boundary what they wish, however, that name may not apply to the remainder of the land within the Development Agreement area that they do not own. The Development Agreement and underlying zoning supports technology, data research and development, and other such “tech” uses proposed by companies in and out of the industrial center, and Storey County stands by its commitment to support these and other listed uses.

Art O'Connor, OC Engineering, Reno, NV, art@oceng.com

…As stated in the Plan, there is no Nevada money to implement the Plan. Instead, the Plan relies on private funding to construct the infrastructure. The point of my comment was you need to encourage the private entities to fund it. Rather than encouraging, the current tax structure is a disincentive. If we do not fix that, the money being spent on this Plan is a waste. The Plan needs to present some financial incentive to spur the private investment, other than the hope of increased traffic. It should be a major section of the Plan, but I find nothing significant in the Plan. Chapter 5 only says "The freight rail projects listed below have a total estimated cost of $578MM. This is a sum that private-sector infrastructure investors are well positioned to invest." Note the (sic) "MM" typo. Obviously, if the proposed projects were economically feasible (i.e., they would be profitable for the private businesses), they would have already been built. Ameliorating the taxes would help flip the dynamic. My suggestion is the taxes should be based on the traffic, not the base real estate value. This method of assessment will require a change in NRS. In order to get the Legislature to implement it, there needs to be a section in the Plan that plainly presents it and gives the representatives the facts they need to change the law.

Matthew Greene, Manufacturing, Reno, NV

After reading the executive summary, I support the recommendations made within. Increased use of rail lines will help ease congestion on our highways and help to make them safer. Furthermore, the benefits in regard to rail polluting less than trucks should not be minimized. Finally, it would be nice to explore the possibility of battery powered electric locomotives. If it can be done for semi-trucks, planes, cars, and ferries, why not locomotives? Thank you for allowing me to comment.

Alan Humphreys, Humphreys, Carson City, NV

Although it has been some 20 years since the 2000 Federal Highway Cost Allocation Study, the situation has changed but little. 80,000# single trucks were found to pay 80% of the damage that they do to the roads in taxes; Doubles pay 60%, and triples pay 70%. In most years, every single accident during inclement weather is caused by a truck, to the point that I-80 is closed to their use. Between safety, and economy, long haul trucking makes no sense whatsoever, so where rail lines are available, trucking should be at least discouraged by equitable taxing, if it can't be outlawed entirely.

Naomi Lewis, Planner I, City of Las Vegas, Henderson, NV

Excited to see NDOT meet these goals and work with the state of California!

Kristopher Schreier, Transportation, Union Pacific, Henderson, NV

I feel delivering goods by rail is the safest and most efficient way to transport goods. It makes our roads much safer by not having all the truck traffic. Delivering by rail means less contact with the general public. Our roads will need less maintenance where we can focus on more important areas.

John Gilbertson, Retired teacher, Las Vegas, NV

I fully support this plan. We must have daily rail service and need out long distance trains.

Daniel Robinson, Associate, Amazon.com, Concord, NC

There needs to be a passenger rail service to Reno from Las Vegas.

Gabriel Willaman, Track man, Gabe Willaman Railroad Construction, Reno, NV

Nevada should require all industrial tracks that transport hazardous material to have monthly inspections on their tracks.

Nevada Division of
STATE LANDS

STATE OF NEVADA
Department of Conservation & Natural Resources
Steve Sisolak, Governor
Bradley Crowell, *Director*
Charles C. Donohue, *Administrator*

January 21, 2021

To: Lee Bonner, Nevada Department of Transportation

From: Scott Carey, AICP State Lands Planner

RE: State Land Use Planning Agency Comments on Draft Nevada State Rail Plan

Lee,

On behalf of the State Land Use Planning Agency, I would like to Thank You for the opportunity to review and provide comments on the draft Nevada State Rail Plan. The purpose of this letter is to outline to the Nevada Department of Transportation (NDOT) the Agency's initial comments on the draft Nevada State Rail Plan.

1) Recommendation 14: Enact effective freight transportation land-use strategies page 35-36. The Agency support this recommendation and finds that this is an important goal for the State to pursue to achieve the main goals and objectives of the Nevada State Rail Plan. Achieving effective freight transportation development in Nevada is only going to be successful if future development complies and is compatible with regional and local government land use plans & policies. Local government coordination will be critical in implementing this recommendation. New freight transportation development should be encouraged in areas where adequate infrastructure exists or is accessible. Under the "What sensible approaches should Nevada consider?" section on page 4-36, the agency would suggest that the following bullet point be added to this section.

- Ensure that future freight transportation development is compatible with regional and local government land use plans & policies"

2) SLUPAC and Recommendation 14 page 4-36: The language on page 4-36 referencing the State Land Use Planning Advisory Council (SLUPAC) looks good, thank you for incorporating our earlier comments into this draft. As discussed with the project team at the August 13, 2020 SLUPAC meeting, the Council could be a good resource and avenue to help implement Recommendation 14. As the only Governor appointed Board with representatives from each of Nevada's 17 counties, SLUPAC can support the implementation of this recommendation by providing technical land use planning expertise and outreach to local governments throughout the state.

3) Regional Inset Maps Showing Businesses with Sidetracks and Nearby Truckload Shippers. As a general comment, the various inset maps for each region of the plan showing the location of rail lines and rail served businesses are a helpful resource. These maps provide a useful statewide inventory of the existing and future rail service for local governments to use in land use planning efforts. The information provided in these maps can be used by these entities to revise land use plans and update zoning codes to spur new freight transportation development and concentrate efforts to protect existing freight transportation developments. For instance, a local government may be considering a land use change and not be aware that the particular property has service availability. The local government can use the information in these to maps to consider a different land use on that property that supports freight transportation development instead. Once the Nevada State Rail Plan is adopted these maps should be shared with and be made readily accessible with regional planning agencies and local governments throughout the state for use in land use planning activities.

4) SLUPAC and Co-Location of utility and rail corridors page 4-23. The Agency appreciates the inclusion of the discussion from the August 13, 2020 SLUPAC meeting about co-locating utility and rail corridors. From a land use planning and environmental perspective, it makes a lot of sense to co locate future utility corridors along rail lines and vice versa. At its meeting the Council referenced the proposed NV Energy Greenlink transmission projects as examples of potential future rail corridors if these projects were approved by the appropriate Federal, State, and Local agencies.

5) Region 1 Project List addition page 4-46. The Agency recommends that the project team consider amending the Region 1 Project List to add a rail crossing and rail connection near the Nevada National Guard's Floyd Edsall Training Complex (FETC) in North Las Vegas. The FETC is currently bisected by the Union Pacific rail line and lacks access to the rail line itself. The existing rail line provides challenges to the National Guard's mission capabilities by limiting access to portions of the FETC for training and other uses. Access across the railroad is needed on the FETC site to allow the National Guard to fully utilize this property for heavy vehicle training. Without a rail crossing near the FETC, the National Guard's and other heavy vehicles in the area are unable cross the railroad tracks due to weight restrictions imposed by Union Pacific.

Additionally, the FETC site and other industrial developments in the area do not have access to the rail line. A new rail connection to the Union Pacific rail line near the FETC would benefit the National Guard's readiness to carry out its missions and response. Currently, the National Guard has equipment used to support readiness and response efforts stored off site FETC due of the lack of rail access. A rail connection near FETC would allow the National Guard to store its equipment onsite and transport this equipment more efficiency from the complex. Additionally, a new connection in this area would support the City of North Las Vegas' economic development efforts in this area by providing existing and planned industrial developments with new rail access. Before the plan is adopted, the Agency would like to set up a meeting with NDOT and the National Guard to explore these potential Region 1 rail projects in further detail.

The State Land Use Planning Agency appreciates the opportunity to review the draft plan and provide these comments. The agency looks forward to continuing to work with you and NDOT on implementing this plan in the future. If you have any questions or would like additional information concerning the Agency's comments for the Nevada State Rail Plan, please feel free to contact me at 775-684-2723 or scarey@lands.nv.gov.

Thank You,

Scott Carey, AICP
State Lands Planner
Nevada State Land Use Planning Agency

BRADLEY CROWELL
Director
Department of Conservation
and Natural Resources

CHARLES DONOHUE
Administrator

STEVE SISOLAK
Governor

State Land Use Planning Advisory Council
State Land Use Planning Agency

Address Reply to

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STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

State Land Use Planning Advisory Council

March 1, 2021

Lee Bonner, State Railroad Coordinator
Nevada Department of Transportation
1263 S. Stewart Street
Carson City, Nevada 89712

RE: SLUPAC State Rail Plan Comments

Dear Lee:

I am writing this letter on behalf of the Nevada State Land Use Planning Advisory Council (SLUPAC) to provide our comments on the draft State Rail Plan and provide our overall support for the plan.

At their August 13, 2020 meeting, SLUPAC heard a presentation from NDOT on the status of the update to the State Rail Plan. Following the presentation, SLUPAC had a good discussion about increasing local rail service and its impact on local government land use plans. The Council also expressed a desire to help make local government planning departments around the state aware of the plan and encourage them to consider the State Rail Plan when updating their master plans.

SLUPAC is pleased to see the inclusion of Recommendation 14: "Enact effective freight transportation land-use strategies" in the draft plan. SLUPAC supports this recommendation and finds this is an important goal for the State to pursue to achieve the main goals and objectives of the Nevada State Rail Plan. Achieving effective freight transportation development in Nevada is only going to be successful if future development complies with and is compatible with regional and local government land use plans and policies. Local government coordination will be critical in implementing this recommendation. New freight transportation development should only be encouraged in areas where adequate infrastructure exists or is planned.

Working with local governments on the implementation of the State Rail Plan will be critical for the plan to be successful. SLUPAC encourages NDOT to continue to look to SLUPAC as a good resource and avenue to help implement Recommendation 14. As the only Governor-appointed Council with representatives from each of Nevada's 17

counties, SLUPAC can support the Nevada State Rail Plan by providing technical land use planning expertise and outreach to local governments throughout the state.

SLUPAC also appreciates the inclusion of its members' suggestion from the August 13, 2020 meeting to co-locate future utility and rail corridors within the State Rail Plan. From a land use planning and environmental perspective, it makes a lot of sense to co-locate future utility corridors along rail lines and vice versa. SLUPAC believes that co-location of future utility and rail corridors would reduce the impacts to natural lands, cultural resources, recreation, and other land uses. At its August 13th meeting, SLUPAC referenced the proposed NV Energy Greenlink transmission projects as examples of potential future rail corridors should these projects be approved by the appropriate federal, state, and local agencies.

The draft State Rail Plan's various inset maps for each region of the plan and the online mapping strategy showing the location of rail lines and rail-served businesses are helpful resources. These maps provide a useful statewide inventory of the existing and future rail service for local governments to use in their land use planning efforts. The information provided in these maps can be used by these entities to revise land use plans and update zoning codes to support new freight transportation development and concentrate efforts to protect existing freight transportation developments. Once the Nevada State Rail Plan is adopted these maps should be shared with and be made accessible to regional planning agencies and local governments throughout the state for use in land use planning activities.

SLUPAC appreciates the opportunity to review the draft plan and provide these comments and its overall support for the State Rail Plan. SLUPAC looks forward to continuing to work with you and NDOT in the future. If you have any questions or would like additional information concerning SLUPAC, please feel free to contact Scott Carey, State Lands Planner at 775-684-2723 or scarey@lands.nv.gov.

Sincerely,

Jake Tibbitts
Chair
State Land Use Planning Advisory Council

Battle Mountain
GENERAL HOSPITAL

535 South Humboldt Street Battle Mountain, Nevada 89820
Phone: 775-635-2550

Mr Will Maus.

Strategic Rail Finance

Philadelphia, Pennsylvania

February 19, 2021

Re: Amtrak and rural customers in Nevada

Dear Sir,

I want to thank you for giving me time today to discuss my thoughts on Amtrak making Battle Mountain a stop-over. For the last 18 months or so, I have been trying to generate support in the community in having Amtrak provide services to Battle Mountain.

As background, I want to explain that I am the Clinic Medical Director of the Battle Mountain General Hospital and so my interest in this topic is based on seeing how difficult it is for many patients to travel to the major centers for consultations and treatment.

I am rather passionate about this because residents in the Battle Mountain area community are severely affected by the lack of any public transport, whether it is for personal reasons they need transport or, as in the situation that I mostly deal with, in patients having adequate access to medical care that is provided only in the major cities. The latter often severely impacts patients' health outcomes when they are unable to access necessary services in a timely fashion. Many of the socially economically deprived have to rely on friends to transport them, often two to three hundred miles or more, and with lack of funds for fuel and old vehicles breaking down, these patients miss their appointments and in this era of COVID, that leads to significant delays in getting new appointments.

Once upon a time, Amtrak stopped in Battle Mountain and also in neighboring Lovelock. In the era of decreasing services to the rural communities, Amtrak stopped offering services in these two towns. With the cessation of Greyhound Bus services to Battle Mountain, a significant affordable travel resource was lost and adversely affected the ability of vulnerable people to travel conveniently.

It is part of the charter for federally funded entities to take care of certain individuals and this includes ADA and Veterans, both of whom require (easy) access to medical care. Without *any* public transport,

Battle Mountain
GENERAL HOSPITAL
535 South Humboldt Street Battle Mountain, Nevada 89820
Phone: 775-635-2550

their lives are adversely affected. Yet, one public transport entity DOES exist- Amtrak- but it doesn't stop here, it simply passes through!

I have had numerous discussions with the local county board and they are very enthusiastic about supporting a drive to have Amtrak stop in Battle Mountain. The county has said that it is willing to participate monetarily with the building of two platforms, one each on the East-West and West-East lines of the Amtrak system that passes through, and by, Battle Mountain. These MUST conform to ADA standards.

I hope this provides you with sufficient information to take this further. I promise I will be unrelenting in my drive to ensure that the citizens of Battle Mountain and the Lander County area have access to a very important part of the National public transport system.

Please do not hesitate to contact me if you have any questions or even suggestions that may help move this forward. Again, I thank you for giving me the time to discuss this issue with you.

Sincerely,

RJW

Robin J Willcourt M.D.

BUILDING AMERICA®

March 4, 2021

VIA EMAIL: nvrailpubliccomment@strategicrail.com

Nevada Department of Transportation
1263 South Stewart Street
Carson City, NV 89712

Re: Union Pacific Railroad's response to the DRAFT 2021 Nevada State Rail Plan

To Whom It May Concern:

Union Pacific Railroad (UPRR) thanks Nevada Department of Transportation (NDOT) and other involved state agencies for leading this valuable effort to promote the needs of rail within the state. We welcome the opportunity to directly engage in the development of the State Rail Plan, and appreciate that our comments are taken into consideration.

When reviewing state rail plans, UPRR's primary focus is on rail safety, protecting and growing the freight rail network, identifying and developing economic development opportunities for rail served sites, and advocating for state investment into the freight rail network. We appreciate that the drafted State Rail Plan touches directly and indirectly upon these important themes.

With those priorities in mind, we offer the following feedback to the plan:

Chapter 3

- Page 3-6: **ADA Improvements at Elko** UPRR has worked extensively with Amtrak to address ADA compliance issues at Elko and recommends that NDOT review these statements and descriptions with Amtrak for accuracy.
- Page 3-11: **Extension of Amtrak's Capitol Corridor to Reno-Sparks** Given the regular suspension of passenger rail service over Donner Pass during snow events, UPRR does not support the implied greater availability of the rail route versus I-80 during winter storms.
- Page 3-20: **Thruway Expansion & C Route: Reno to Las Vegas by Way of Central California** The proposed "C" route connecting Reno to Las Vegas appears to be routed in part over UPRR lines. Without understanding the full route, capacity, capabilities, and proposed passenger equipment, UPRR does not support including a statement estimating the potential running time between those two points as 12-14 hours.
- Page 3-23: **Las Vegas to Caliente Excursion**
    - UPRR has not been approached by, or engaged with, any entity regarding use of its lines for the proposed excursion service and requests that any reference to track speed, average speed, and potential run time between Las Vegas and Caliente be removed from the NVSRP.

UNION PACIFIC RAILROAD
1400 Douglas Street, Stop 1120
Omaha, Nebraska 68179

Peggy Harris
General Director
Network Development

P 402-544-5448
C 402-968-6589
E peharris@up.com

- UPRR has not been approached by, or engaged with, any entity regarding the operation of a demonstration service showcasing Stadler ZEMU equipment and requests that all reference to such a demonstration service be removed from the NVSRP.

- UPRR is only considering the use of conventional equipment on our right of way at this time. As safety, engineering and technological advances are made, UPRR may consider alternative equipment. Pursuant to that consideration, subject proposals will need to incorporate any necessary additional infrastructure and/or technology measures to ensure the safe, reliable and efficient operation of both freight and passenger trains.

- Pages 3-26 and 3-27: **Nevada Southern Railway – "The Hoover Dam Limited"**

  - UPRR has not been approached by, or engaged with, any entity regarding use of its lines for the proposed excursion service and requests that proposed transit schedules under the headings "HDL Group 1" and "HDL Group 2" implying use of those lines be removed from the document.

  - UPRR has not been approached by, or engaged with, any entity regarding use of its equipment for the proposed excursion service and requests that:

    - References to the use of "the Union Pacific steam-powered passenger train fleet" and the associated capacity of 300 passengers be removed from the NVSRP.
    - The figure on Page 3-27 depicting a locomotive with UPRR markings at a Boulder City platform be removed from the NVSRP.

  - The NVSRP should focus on what the state can do to facilitate external sponsorship of proposed services without naming particular parties. Any references to UPRR as a partner, sponsor, or beneficiary of the excursion proposal should be removed.

- Page 3-30: **Commuter Rail Improvements-Reno, Nevada, and Innovation Park (formerly Tahoe-Reno Industrial Center – "TRIC")** UPRR requests that the speculative statement "Operating slots may be available since Union Pacific seems to operate fewer than 20 trains a day through Reno" be removed from the NVSRP. UPRR reserves the right to determine the capacity and capability of its rail lines.

<u>Chapter 4</u>

- Pages 4-18 thru 4-23: **Rail Electrification Addresses Nevada Governor's Executive Order on Climate Change** UPRR finds the inclusion of the "Rail Electrification Council Statement on the Benefits of Rail Electrification for Nevada" as part of the NVSRP to be inappropriate. Beyond the fact that the state does not control rail infrastructure, UPRR would have considerable engineering, safety and operating issues/concerns with electrifying our main line corridors, including –

  - Employee safety
  - Clearances

- Potential electrical interference with UPRR systems
- Limited ability to utilize the full width and height of right of way due to the required infrastructure associated with rail electrification and/or electric transmission

UPRR is not evaluating any proposals on electrification of its routes in Nevada. Given the listed concerns, it is unlikely that UPRR would be able to accommodate either electrification for freight or passenger rail service or infrastructure for high voltage transmission within our right of way.

Chapter 5

- As part of the state's proposed Rail Service and Investment Program, UPRR offers the following projects for consideration to improve the fluidity and flexibility of freight movement in and between major terminals:
  - Elko, NV - run-through tracks to support fluid operation of thru trains, including existing passenger trains, around trains performing yard operations.
  - Las Vegas, NV – 3.3 miles second main track between Arden and Maul Ave to reduce congestion in a major metropolitan area.
  - South Central Route – Siding upgrades to support improved opportunities for trains to meet/pass on single track route.
- The Rail Service and Investment Program does not appear to address the need for blocked crossing mitigation via grade separation. UPRR proposes the inclusion of a review of locations where grade separations could increase overall multi-modal efficiency.

We recognize the significant amount of work the NDOT team undertook to complete the State Rail Plan and we support much of the content included within. However, considering the substantially increased passenger footprint implied by the projects highlighted in the NVSRP on the UPRR network in the state of Nevada, it is imperative that the NVSRP emphasize the entirely prospective nature of its passenger proposals. Necessary UPRR concurrence has neither been requested for the majority, nor granted for any, of the new or expanded services. UPRR looks forward to continue working with NDOT on the development of proposals which enhance the safety, efficiency, and competitiveness of UPRR's freight rail franchise.

Thank you for considering our comments.

Sincerely,

Peggy Harris

Peggy Harris
General Director Network Development

cc: Adrian Guerrero, Union Pacific
Lupe Valdez, Union Pacific
Francisco Castillo, Union Pacific
Maureen Haney, Union Pacific
Paul Marcinko, Union Pacific
Paul Rathgeber, Union Pacific

Railroad Workers United

Solidarity ● Unity ● Democracy

The Rank & File in Action!

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KEOLIS, Kingston, MA

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NS, Atlanta, GA

Phil Stevenson, SMART #378
CSX, Russell, KY

Tabitha Tripp, BMWED #17
CN, Anna, IL (family member)

James Wallace, UTU #305
BNSF, Lincoln, NE

Andrew Weir, TCRC-LE #240
CN, Sarnia, ON

Comment on the 2021 Nevada State Rail Plan: Capital Improvements Needed to Existing Rail Infrastructure

(3/2/2021)

To facilitate freight and passenger movement between Nevada, California and beyond, it would be highly desirable to remove bottlenecks and obstacles where they currently exist. A number of infrastructure projects would greatly aid in the realization of the Nevada DOT State Rail Plan. In order to facilitate a more fluid and higher capacity mainline across Northern Nevada, it is obvious that additional infrastructure in California is also essential. So, while some of what follows necessarily pertains directly to the state of California, we see this as crucial for success here in Nevada.

1 – Construction of a second main track between Vista (MP 249) and Weso (MP 421) in places would expedite train movements. A second main did exist between Granite Point (MP 337) and Weso, but was removed by Southern Pacific in the 1980s. The roadbed remains intact today and would greatly facilitate an effort to restore the second main by joining the sidings (4 of them) between East Granite Point (CP 338) and Weso. From Fernley (MP 276) to Granite Point, there is generally ample room for a second track to be laid with limited need for additional cuts and fills. Vista to Fernley (25 miles) would be more challenging due to restricted clearance in the lower Truckee canyon and numerous bridges across the Truckee River.

2 - A third main track bypassing the Sparks yard (MP 244) to the north would facilitate Amtrak and regional passenger train movements and otherwise ease congestion at the terminal. A third main both between CP 249 Vista and CP 239 West Reno (or beyond) would greatly streamline operations at Reno - Sparks. Note: This third main would bypass the trench to the north between CP 239 and CP 242 where a vacant corridor currently exists. This main track would be used for regional passenger trains that would stop at the "Downtown Transit Center," to be located directly adjacent to (and between) the Amtrak station and regional RTC bus terminal. Here, connections would be made to both northbound (UNR - North Valleys- Bordertown)) and southbound (airport – Carson) regional trains, Amtrak trains, Amtrak thruway buses, local bus service and Greyhound. Note: The easterly ¼ mile of this track currently serves as the UP Reno Branch.

3 – Rehabilitation of the Reno Branch from Reno to Bordertown and on to Reno Junction (35 miles) would facilitate expedited movement of freight from/to North Reno and Stead warehouses and industries. Installation of CTC/PTC would enable commuter rail operations to comingle with this lightly used secondary track (currently only used at night a few times a week). Local and through freight (both UP and BNSF) could be routed north as well as south (currently the only option is south) as necessary, and the route could act as a bypass and safety valve if/when the UP finds it desirable to route trains from the former SP east-west mainline to its former WP east-west mainline in either direction. The east leg of the Wye at Reno Junction could be replaced to facilitate universal movements.

4 - The second mainline from Emigrant Gap, CA (MP 171) to Shed 10 (MP 178) was removed by Southern Pacific (SP) in 1993, as was the second main track over Donner Pass, a combined total of just under 15 miles. Rumor had it that new owner Union Pacific – upon purchasing the SP in 1995 – had every intention of returning both segments to two main tracks in order to facilitate movement over the Sierra Nevada. Unfortunately, this project never happened, resulting in continued restriction of train movement over the mountain, especially in winter months and at times when the parallel route (former Western Pacific) is closed/limited due to rockslides, wildfires, trackwork, etc. This double tracking project needs to be a priority.

5 – A significant amount of trackage across the Sierra has never been modernized. Centralized Traffic Control (CTC) needs to be installed between East Truckee (MP 208) and West Reno (MP 239), and at other locations on the western slope. Currently, Newcastle (MP 120), Bowman (MP 129) and Colfax (MP 140) are equipped with *single* dual-controlled crossovers, while Floriston (MP 220) currently has a set of universal *hand-throw* crossovers and a 10-minute wait for all crossover movements. In combination with the double tracking referenced in #4 above, the installation of dual-controlled universal crossovers at all four of these locations would greatly serve to facilitate and expedite train movements over the mountain

LithiumNevada

February 16, 2021

Mr. Lee Bonner
State Rail Coordinator
State of Nevada Department of Transportation
1263 S Stewart St.
Carson City, NV 89712

RE: Lithium Nevada Corp.
Nevada State Rail Plan Support Letter

Dear Mr. Bonner,

I am writing to express Lithium Nevada Corp's (LNC) support for the 2021 Nevada State Rail Plan. We commend the Nevada Department of Transportation for conduction a thorough analysis of the movement of goods throughout Nevada and determining how rail could be improved to create better logistical efficiencies, improve safety, reduce impacts on the environment, and lower shipping costs.

Lithium Nevada proposes to construct and operate a lithium mine and processing facility in northern Humboldt County. The Project, called Thacker Pass, is located approximately 60 miles north of Winnemucca near the town of Orovada. Production from the operation is anticipated to meet most or all of U.S. lithium demand, thereby significantly reducing exposure to foreign supplies. The Project will provide employment to approximately 1,000 workers during construction and 300 workers throughout operation.

Processing lithium at Thacker Pass will require the use of various materials and reagents, which will be imported to the site via a combination of rail and truck. LNC plans to utilize rail access and a transloading facility in or near Winnemucca to facilitate the safe and efficient transfer of products from rail to truck.

The 2021 Nevada State Rail plan envisions ways to best utilize existing rail spurs and the construction of new rail to assist with operations like Thacker Pass. We support adoption of this important report and look forward to the implementation of the recommendations within it.

Sincerely,

Alexi Zawadzki
CEO Lithium Nevada Corp.

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lithiumamericas.com

RailPAC
Rail Passenger Association
of California and Nevada

P.O. Box 22344
San Francisco CA 94122

www.railpac.org

3rd March 2021

Comments to Nevada State Rail Plan - 2021

The Rail Passenger Association of California and Nevada is a 501c3 all volunteer non-profit advocacy group. Since 1979 we have campaigned for enhanced mobility using passenger rail and connecting services as an environmentally friendly and effective transportation medium.

We applaud the approach of the studies leading to this Plan. This is the first such plan that we have seen that looks at the competition facing rail and the reasons why rail's market share is relatively low, both for passengers and freight.

Geography and economic development dictate that Nevada must work with adjacent states and nationally to enhance the rail offering for intercity passengers and freight. There is a recognition nationally that a network of intercity passenger trains has a significant role to play linking urban and rural America. We hope that Nevada's federal elected representatives will take note of the plan's contents and work in concert, especially with the western states, to preserve the national network.

Likewise, it is widely believed that the railroads should have a greater role in the distribution of goods, not just as a carrier of bulk commodities. RailPAC has always maintained that passenger rail should not be expanded to the detriment of freight service. On the contrary, improved passenger schedules can work pari passu with expedited merchandise freight trains running on enhanced infrastructure.

Amtrak Service: Amtrak is desperately short of rolling stock and the existing fleet is old and in need of major overhaul and upgrade. Nevada federal representatives should join their colleagues in the western states to call for a national program to build the next generation of trains. Multiple skills are required in the construction of passenger rail vehicles, with many components and sub systems. This offers many career opportunities in a number of fields, and we should not be relying on imports or imported major components.

California Zephyr ("CZ") service: The CZ performs multiple mobility functions along its route between Chicago and the California Bay Area. Its utility to Nevadans can be enhanced with two additional stops that we believe can be achieved without detriment to the schedule. These are West Wendover and Lovelock, both of which have had passenger rail service in the past. These stops would serve large rural catchment areas and help those traveling to Reno, e.g. for medical appointments, as well as offering interstate service to point east and west.

Desert Wind reinstatement: Amtrak's former service between Chicago and Los Angeles

via Las Vegas ran as part of the CZ between Chicago and Salt Lake City. Reinstatement of this train provides an option for southern Nevadans to Salt Lake City, Denver, Omaha and Chicago with connections beyond. This is in addition to a daily service to the Los Angeles region. Additional rolling stock would be required (see above) but we note that the populations of all the cities along the route have grown considerably since the service was withdrawn in 1997, and we are confident that this train would be popular once again.

Rail Infrastructure enhancements over Donner Pass can bring growth to passengers and freight, but the key is a joint program with California. We concur with the comments presented by Rail Passenger Association, Ron Kaminkow.

Public transit and regional rail: RailPAC supports the implementation of regional rail systems in both the Reno region and in and around Las Vegas. However, regional rail must be seen from the outset as part of the bus and transit rail system with fully integrated fare and information systems, not a separate entity.

Brightline Service to Southern California: RailPAC supports Brightline as an important first stage of a project to link Las Vegas and southern California. We are concerned that Brightline needs to move forward quickly with extensions into the Los Angeles basin and Los Angeles Union Station, as well as closer to the Las Vegas strip and downtown Las Vegas.

Expanded passenger rail is the logical choice to serve multiple communities; those without air service, with a fear of flying, those unable to drive long distances, tourists wishing to see America, and locally, those tired of congestion and the frustrations of their daily commute. We appreciate the good work done putting this plan together and will be happy to assist with its implementation.

For RailPAC
Paul Dyson, President Emeritus.

[statement from David Foster, Executive Director of ***RAIL Solution***]

Where extremely heavy truck freight volume exists in a highway corridor, congestion often results. Transportation planners, seeking solutions, must consider all options for adding new capacity. Especially when a railroad mainline parallels the highway, a life-cycle cost and benefit analysis needs to compare the economic and environmental costs of adding new freight capacity on the highway or on the railroad, ensuring that taxpayers' dollars are well spent.

In 2015 Nevada DOT, in conjunction with the Transportation Center at UNLV, pursued a feasibility study of moving trucks through Nevada on trains as an alternative to new construction on Interstate 80. While the study was not detailed or rigorous enough to inform future transportation investments, their concept represents creative, out-of-the-box thinking and should not be discarded hastily.

In spite of the growth and development of railroad double-stack intermodal service in recent decades, overwhelmingly freight continues to move by truck on Interstate highways. Limitations to the double-stack business model preclude the railroads' capturing more of this traffic. A more efficient, nimble, and responsive "open intermodal" concept is needed to lure trucks in markets under 1,000 miles and to accommodate all kinds of trucks. Only containers and specially designed dry van trailers can move in rail intermodal trains today, so open intermodal can bring freight efficiency and reliability to new traffic and new markets.

In an open intermodal operation, entire trucks drive on, and drive off, trains. Terminals are compact and loading and unloading is rapid. Truckers benefit by having their trucks continue to move while they get mandatory rest, a big productivity benefit. This also reduces asset and inventory holding cost, and leverages local and regional economic development with competitive, lower cost access, (e.g., to/from the Tahoe Reno Industrial Center). Railroads get new freight traffic. The public sees fewer trucks on the highway, reducing congestion and improving safety. The environment benefits from less fuel consumption and lowered pollution, congruent with the decarbonization of transportation that climate advocates seek.

Nearly all Nevada's trucks on I-80 are moving to or from California. This concentrated freight flow makes it a suitable candidate for a successful drive-on, drive-off open intermodal operation. Because the private sector railroads would be involved, a public/ private partnership, along the lines of a Joint Powers Authority, would be needed to offer highway-competitive speed, reliability, and cost for these trains. Connect Rail Nevada could facilitate such a partnership to assess rigorously the financial, engineering, and market feasibility of this concept. Hupac, RAlpin, and Ökombi are examples of private companies in Europe offering a wide range of "rolling highway" service, as it is known there. They handle loading and unloading of trains, which are turned over to railroads for transportation.

Because railroads in the United States are privately owned, virtually all public investment in surface transportation has gone to highways, shortchanging the public and depriving them of many energy, economic, and environmental benefits that increased use of rail could provide. In a State Rail Plan it is appropriate to ask what can be done to broaden the use of rail and thereby enhance public benefit. A prototype open intermodal operation

is a singular investment strategy with potential to actually remove trucks from the road, and it merits retention for analysis of its applicability to Nevada's transportation future.

[Statement from Richard Gent of Rail Auxiliary]

PUBLIC COMMENT ON 2021 NEVADA STATE RAIL PLAN (NVSRP):

The Nevada 2021 State Rail Plan is an outstanding document outlining how to increase the use of rail within the State. The NVSRP also emphasizes the safety aspect of rail transportation. An important aspect to keep trains safe is to address the issue of rail public safety. The Nevada Rail Auxiliary can be a partner to ensure that trains traveling through and within the State can be safe, secure and travel at velocity.

Railroad trespassing has been a significant problem in Nevada. According to the Federal Railroad Administration (FRA) there was a 433% increase in trespass incidents from 2017 through 2019. From 2019 through 2020 the number significantly dropped with a 12.5% increase; however, data is still coming in from 2020. Of note, of these incidents 20 were fatalities.

Suicide on the railroad is an issue that has recently come to the attention of safety advocates. In Nevada from 2017 through 2020 there were 5 incidents according to the FRA.

Crime and terrorism are an area where statistics are few. However, according to the Federal Bureau of Investigation as well as reports from law enforcement theft, sabotage (example: shunting in Washington State) and other crimes are occurring on the railroad. Graffiti on train cars, bridges and structures is a crime also, which can place the graffiti artist in harm's way

Ensuring safe rail equipment has been a priority for the railroad. Numerous track detectors are in place to provide warning of a possible equipment malfunction. However, these sensors are spaced apart which could delay reporting. The Rail Auxiliary is trained to identify rail car issues and has reported problems such as stuck brakes.

Finally, the NVSRP does discuss railroad grade crossing safety. Much emphasis is placed upon engineering solutions. However, not all crossings can be engineered to eliminate human actions. Proven programs such as the Rail Auxiliary active awareness effort improved positive driver reaction at the grade crossings by 14%.

Ensuring safe passage of trains through the State will guarantee economic success. Addressing trespass, suicide and crime needs to be part of a successful safety program. Currently, three State agencies deal with rail safety, Nevada Department of Transportation (NDOT) (which has two subunits), Nevada Department of Public Safety (NVDPS) and the Nevada Public Utility Commission (NVPUC). The NVPUC focuses on four disciplines outside of rail public safety.

A review of mission statements of the two primary rail public safety agencies (NDOT/NVDPS) appears very similar when it comes to safety. NVDPS: "provides services in support of protecting our citizens and visitors by promoting safer communities through prevention, preparedness, response, recovery, education and enforcement." NDOT: "Provide, operate, and preserve a transportation system that enhances safety."

Both agencies appear to primarily focus on highway rail grade crossing safety. NDOT is the primary agency through the State Action Plan which deals, based upon documentation, solely with highway-rail grade crossing. Trespassing, suicide and security should also be addressed in a viable State Rail Plan, but which agency should take the lead?

State programs such as Nevada Operation Lifesaver address the trespass issue through education alone. However, recently funding from the National organization has been eliminated which reduces the ability

of this organizations ability to reach the public. Currently, the Nevada Office of Traffic Safety has provided grant funding for this organization.

The Rail Auxiliary, which is currently sponsored by local law enforcement, addresses rail suicide, rail trespass and rail crimes. This organization has been recognized by a Nevada State Senator and the Nevada Office of Suicide Prevention (whose program is part of the Rail Auxiliary) has been recognized in the FRA publication: Review of Suicide Intervention Training Programs. The Rail Auxiliary program deals with all critical rail public safety areas (grade crossing, trespass, suicide and crime). The program has documented successes as evidenced in the attached yearly reports.

Therefore, we recommend:

1). the following paragraph be included Chapter 2 Existing Nevada Rail System D.6 Community Impacts Page 2-87 Safety: "The NVSRP recognizes the need to address other rail safety issues such as railroad trespass, rail suicide and rail security. Partnering with the Nevada Department of Public Safety, which supports rail public safety programs, as well as embracing rail programs developed by local law enforcement such as the Rail Auxiliary can ensure trains travel safety, securely and at velocity within the State."

2). A State lead be identified to address rail trespass, rail suicide and rail crime. Based upon mission statements, the most likely choice would be the Nevada Department of Public Safety.

RAIL AUXILIARY TEAMS 2020

Results not excuses in a challenging environment.

A one-page report.

JANUARY 19, 2021

Rail Auxiliary Team Leader
Richard Gent
Washoe, Storey, Humboldt and Eureka
Counties, Nevada

Rail Auxiliary Teams adapt and overcome

2020 has been a year of challenges and Nevada's Rail Auxiliary Teams adapted to ensure trains moved safely and securely though Nevada's communities.

- Over *37 reportable situations* to the Nevada Class One railroad critical call center = 37 potential rail incidents averted. We continue to increase the reporting every year.
- 10 one-hour online training sessions. 6 face to face classroom settings with COVID practices. Total of 266 volunteer hours (excluding travel for face-to-face training).
- 8 field exercises totaling 92 volunteer hours (excluding travel time) at documented rail trespass "hotspots".
- One 7-hour Rail Auxiliary Academy with 6 graduates.
- 40 non-Rail Auxiliary students reached during one-hour rail safety lectures.
- 3 reports of grade crossing issues.

Supporting Other Rail Areas

- Developed an "active awareness" program at two rail crossings identified as "bad crossings." The program *improved driver behavior by an average of 15%* using UPCARES™ slogans.
- Supported wild mustang/livestock removal from railroad property
- Coordinating the Rail Auxiliary Rail Suicide Prevention program with Action Alliance.
- Acted on information regarding rail security.

Media Outreach

- Published article in regional newspaper on importance of keeping trains moving in a COVID environment.
- Published advertisement in NV Mining Quarterly using UPCARES™ slogan.
- One television report on the Rail Auxiliary Team training and field exercises.
- Rail Auxiliary successes documented on Twitter and Facebook.

"148 fully trained eyes and ears on the tracks in Nevada to efficiently, effectively and accurately report situations on the tracks to the right action organization for the right response"

RAIL AUXILIARY TEAMS 2019

a one-page report on our success

FEBRUARY 15, 2020

Rail Auxiliary Team Leader
Richard Gent
Washoe and Storey Counties, Nevada

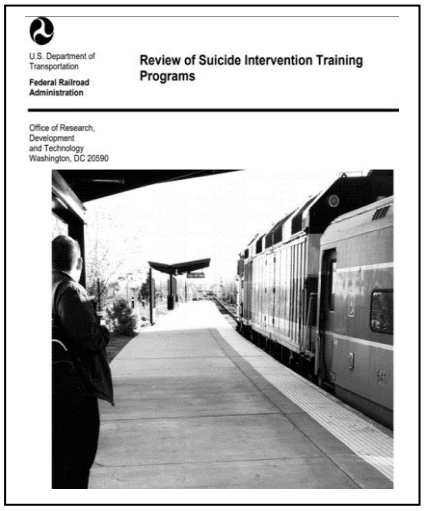
The “Team’s” 2019 success story

- 40 new graduates from the 7-hour Rail Auxiliary Academy for a total of 142 trained eyes and ears on the rail infrastructure.

- Over 20 reportable situations to the Nevada Class One railroad critical call center; 20 potential rail incidents averted.
- 3 reports to other railroad Class One and short line railroad’s critical call centers outside of Nevada.
- 11 one-hour classroom training sessions for a total of 330 volunteer hours (excluding travel).
- 11 field exercises totaling 110 volunteer hours (excluding travel time) at predicable rail trespass and at-grade “hotspots”.
- 130 non-Rail Auxiliary students reached during one-hour rail safety lectures.

Supporting Other Rail Areas

- Provided public safety control at two events for a Nevada Class One railroad.
- Supported 16 AMTRAK RailSafe requests at the Reno Nevada AMTRAK station and at 3 rail at-grade crossings to influence driver behavior.



Media and recognition

- Acknowledged in the Federal Railroad Administration publication on rail suicide intervention training.
- The program acknowledged in Trains Magazine.
- Two television reports on the Rail Auxiliary Team training and field exercises.
- Rail Auxiliary successes on Twitter and Facebook.

“142 fully trained eyes and ears on the tracks in two Nevada counties to efficiently, effectively and accurately report situations on the tracks to the right action organization for the right response”

RAIL AUXILIARY TEAMS 2020

Results not excuses in a challenging environment.

A one-page report.

JANUARY 19, 2021

Rail Auxiliary Team Leader
Richard Gent
Washoe, Storey, Humboldt and Eureka
Counties, Nevada

Rail Auxiliary Teams adapt and overcome

2020 has been a year of challenges and Nevada's Rail Auxiliary Teams adapted to ensure trains moved safely and securely though Nevada's communities.

- Over *37 reportable situations* to the Nevada Class One railroad critical call center = 37 potential rail incidents averted. We continue to increase the reporting every year.
- 10 one-hour online training sessions. 6 face to face classroom settings with COVID practices. Total of 266 volunteer hours (excluding travel for face-to-face training).
- 8 field exercises totaling 92 volunteer hours (excluding travel time) at documented rail trespass "hotspots".
- One 7-hour Rail Auxiliary Academy with 6 graduates.
- 40 non-Rail Auxiliary students reached during one-hour rail safety lectures.
- 3 reports of grade crossing issues.

Supporting Other Rail Areas

- Developed an "active awareness" program at two rail crossings identified as "bad crossings." The program *improved driver behavior by an average of 15%* using UPCARES™ slogans.
- Supported wild mustang/livestock removal from railroad property
- Coordinating the Rail Auxiliary Rail Suicide Prevention program with Action Alliance.
- Acted on information regarding rail security.

Media Outreach

- Published article in regional newspaper on importance of keeping trains moving in a COVID environment.
- Published advertisement in NV Mining Quarterly using UPCARES™ slogan.
- One television report on the Rail Auxiliary Team training and field exercises.
- Rail Auxiliary successes documented on Twitter and Facebook.

"148 fully trained eyes and ears on the tracks in Nevada to efficiently, effectively and accurately report situations on the tracks to the right action organization for the right response"

RAIL AUXILIARY TEAMS 2019

a one-page report on our success

FEBRUARY 15, 2020

Rail Auxiliary Team Leader
Richard Gent
Washoe and Storey Counties, Nevada

The “Team’s” 2019 success story

- 40 new graduates from the 7-hour Rail Auxiliary Academy for a total of 142 trained eyes and ears on the rail infrastructure.

- Over 20 reportable situations to the Nevada Class One railroad critical call center; 20 potential rail incidents averted.
- 3 reports to other railroad Class One and short line railroad’s critical call centers outside of Nevada.
- 11 one-hour classroom training sessions for a total of 330 volunteer hours (excluding travel).
- 11 field exercises totaling 110 volunteer hours (excluding travel time) at predicable rail trespass and at-grade “hotspots”.
- 130 non-Rail Auxiliary students reached during one-hour rail safety lectures.

Supporting Other Rail Areas

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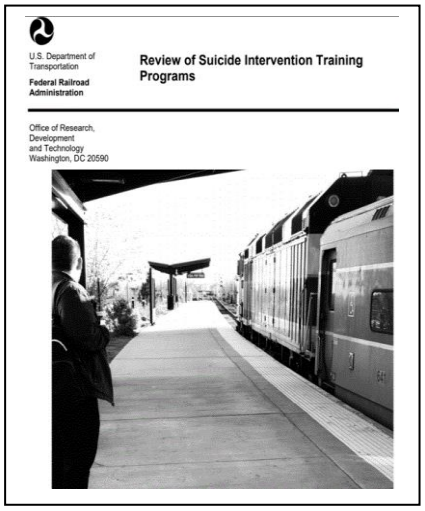
- Supported 16 AMTRAK RailSafe requests at the Reno Nevada AMTRAK station and at 3 rail at-grade crossings to influence driver behavior.



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“142 fully trained eyes and ears on the tracks in two Nevada counties to efficiently, effectively and accurately report situations on the tracks to the right action organization for the right response”

SIERRA CLUB
TOIYABE CHAPTER

PO Box 8096
Reno, NV 89507

February 25, 2021

Rail Planning Team
Nevada Department of Transportation

RE: Toiyabe Chapter Sierra Club Comments on Draft Nevada State Rail Plan 2021

Dear NDOT Rail Planning Team:

Thank you for the opportunity to review this draft plan. First, we agree strongly with the stated purpose of the Rail Plan, to support "Nevada's commitment to creating a balanced transportation system that moves goods and people sustainably." Next, we appreciate the detailed description of and proposals for ways to meet this goal, including addressing legal and ownership challenges and the need to identify funding both private and public. We also recognize the extensive outreach to user groups, businesses, communities, and other organizations throughout the state. We think this unprecedented (in our experience) outreach makes it a better plan, and identifies a constituency that may help implement the ambitious goals.

We note that much of the plan covers freight services. We support the detailed analysis of and proposals for a private sector, business-driven-and-funded freight rail system. We understand that rebuilding or building anew a robust freight rail system in and through Nevada will go far to help meet the Sierra Club's goals to move freight nationally in a way that is less fossil-fuel intensive, less polluting, and that uses less land than the current system with its overemphasis on truck transport on interstate highways. We appreciate the comprehensive approach taken in this plan to rebuilding a freight rail system, and we especially **support the better-integrated land use, economic, and rail/transportation planning called for in this plan.**

Most of our following comments, however, are about the passenger rail proposals described in Chapter 3, the Nevada Passenger Rail Strategic Plan, and in the lists of projects in Chapter 5, The State's Rail Service Investment Program.

We support all the passenger and commuter rail services outlined in Chapter 3, specifically including:
Amtrak improvements including station ADA upgrades, new stations, equipment upgrades, and more frequent service.

- The plan correctly points out that Amtrak service is critical to rural Nevada, especially for those who cannot drive. In the towns it passes through, it is the only public transportation

option. Therefore, **we strongly support the Amtrak improvements in the plan, and we urge that they all be completed in the 0-4-year timeframe,** including the addition of more daily trains.

Commuter rail service between Reno and Innovation Park, and other northern Nevada transit improvements.

- We see the development of an industrial park with businesses employing thousands, without any public transportation to the workplaces, as a spectacular example of poor transportation planning. It should not have happened, and we are pleased that this plan starts to remedy that by proposing a commuter rail service between Reno and Innovation Park. **We strongly support this proposal,** and we suggest that the commuter service between Reno and Innovation Park is the first step in a commuter rail system for northern Nevada, as outlined in the Sierra Club's **Proposal for Rail Passenger Service in Northern Nevada.** (Chapter 3, PP 3-31 and 32.)

Capitol Corridor Extension to Reno

- We strongly support extension of the existing Bay Area-Sacramento Capitol Corridor service to Reno, and we urge that NDOT cooperate with Caltrans to establish this service. **We think that since this will be a popular service on existing tracks with existing equipment, it should be moved to completion in the 0-4 year time frame** rather than in the 5-20 year time frame that is currently in the plan.

Southern California to Las Vegas high speed rail coordinated with new commuter rail connections in Las Vegas.

- We are encouraged at news reports that say that the Brightline West Express project between Rancho Cucamunga and Las Vegas will break ground this year. We **support the plan's proposed development of commuter rail options** to bring riders from the Brightline station to the Las Vegas core.

TRIPS funding proposal

- **We see this as a critical component of this plan.** The Sierra Club - both nationally and in Nevada - understands that, with the exception of modern commuter rail systems in some cities, we lag behind most other developed countries in rail transportation. One of the reasons for this lag is lack of funding. **We will support any new state law needed to create TRIPS Infrastructure Funding**, and we will rally our members in support when it is introduced in the Nevada Legislature.

Thank you again for creating this robust rail plan for the state of Nevada. We look forward to continuing to support the implementation of this plan and working towards our collective goals for passenger rail.

Sincerely,

Anne Macquarie
Sierra Club Toiyabe Chapter Transportation Team

2021 Nevada Rail Summmit Attendance

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