



I-11 NORTHERN NEVADA
ALTERNATIVES ANALYSIS

NORTHERN NEVADA
ALTERNATIVES ANALYSIS

Connectivity North and Beyond Nevada's I-80 Corridor

May 2018

Prepared for



Nevada Department of Transportation



JACOBS

Contents

- 1. Introduction 1**
 - 1.1. I-11 Corridor Context 1
 - 1.2. Report Purpose 1
- 2. Background 1**
 - 2.1. I-11 Corridor Purpose and Need 2
 - 2.2. Legislative Support..... 2
 - 2.2.1 NAFTA 2
 - 2.2.2 FAST Act 2
- 3. Freight Corridor Planning..... 6**
 - 3.1. Nevada 6
 - 3.2. California 6
 - 3.3. Oregon 6
 - 3.4. Washington..... 6
 - 3.5. Idaho 6
- 4. Corridor Connectivity North of I-80..... 11**
 - 4.1. North of I-80 Corridor Options 11
 - 4.2.1 Western Nevada Route..... 11
 - 4.2.2 Central Nevada Route..... 11
 - 4.2. Coordination with Neighboring States 12

List of Figures

- Figure 1. Corridor History..... 1
- Figure 2. National Highway Freight Network..... 3
- Figure 3. Peak Period Congestion on the National Highway System (2012) 5
- Figure 4. Nevada’s Highway Freight Network..... 7
- Figure 5. Highway Freight Network Tiers..... 8
- Figure 6. Freight Strategic Corridors in Oregon 9
- Figure 7. Washington Freight Corridors..... 9
- Figure 8. Idaho’s Multimodal Freight Network..... 10
- Figure 9. Potential Connections North of I-80 12



Acronyms and Abbreviations

ATRI	American Transportation Research Institute
FAF	Freight Analysis Framework
FAST	Fixing America's Surface Transportation Act
FHWA	Federal Highway Administration
I	Interstate Highway Route
NAFTA	North American Free Trade Agreement
NDOT	Nevada Department of Transportation
NHFN	National Highway Freight Network
PEL	Planning and Environmental Linkages
SR	State Route
US	United States



1. Introduction

The Nevada Department of Transportation (NDOT) is developing the *One Nevada Transportation Plan*, an update to the State's federally required Long Range Transportation Plan (LRTP). A key project to be advanced within the 20-year *One Nevada Transportation Plan* horizon is Interstate 11 (I-11), a proposed high-capacity north-south transportation corridor envisioned to link Mexico and Canada through Arizona and Nevada. The LRTP will develop a list of prioritized improvements to the statewide transportation system, of which implementation of the I-11 Corridor is likely to be constructed incrementally, balanced with other statewide needs.

The I-11 Northern Nevada Alternatives Analysis effort will evaluate specific corridor alternatives linking Las Vegas and I-80, and document issues, opportunities, and constraints in a Planning and Environmental Linkages (PEL) document to lay the groundwork for future National Environmental Policy Act (NEPA) studies.

1.1. I-11 Corridor Context

The overarching goal of the I-11 Corridor is to serve the nation's north-south transportation needs by providing a transportation corridor between the Sonoran Desert and Pacific Northwest, ultimately linking Mexico and Canada. It is envisioned to:

- Connect communities, major trade hubs, existing and future domestic and international deepwater ports, and intersecting transcontinental roadways and railroad corridors.
- Enhance the economic vitality of communities connected and served by the corridor.
- Improve safety and travel time reliability for the movement of people and goods throughout the Intermountain West.
- Provide relief for congested north-south corridors in the Western United States, such as I-5 and I-15.
- Enhance commercial opportunities by linking trade between Canada, Mexico and the Intermountain West.
- Increase the global competitiveness of the region.

1.2. Report Purpose

As a supplement to the PEL analysis, this memorandum provides a summary of I-11 Corridor planning in the Intermountain West to set the foundation for beginning to envision the connection of I-11 to points north of I-80. While an analysis of routes north of I-80 will not be included in this study, understanding regional transportation planning and general receptivity of adjacent states may inform the decision of the logical connection point with I-80.

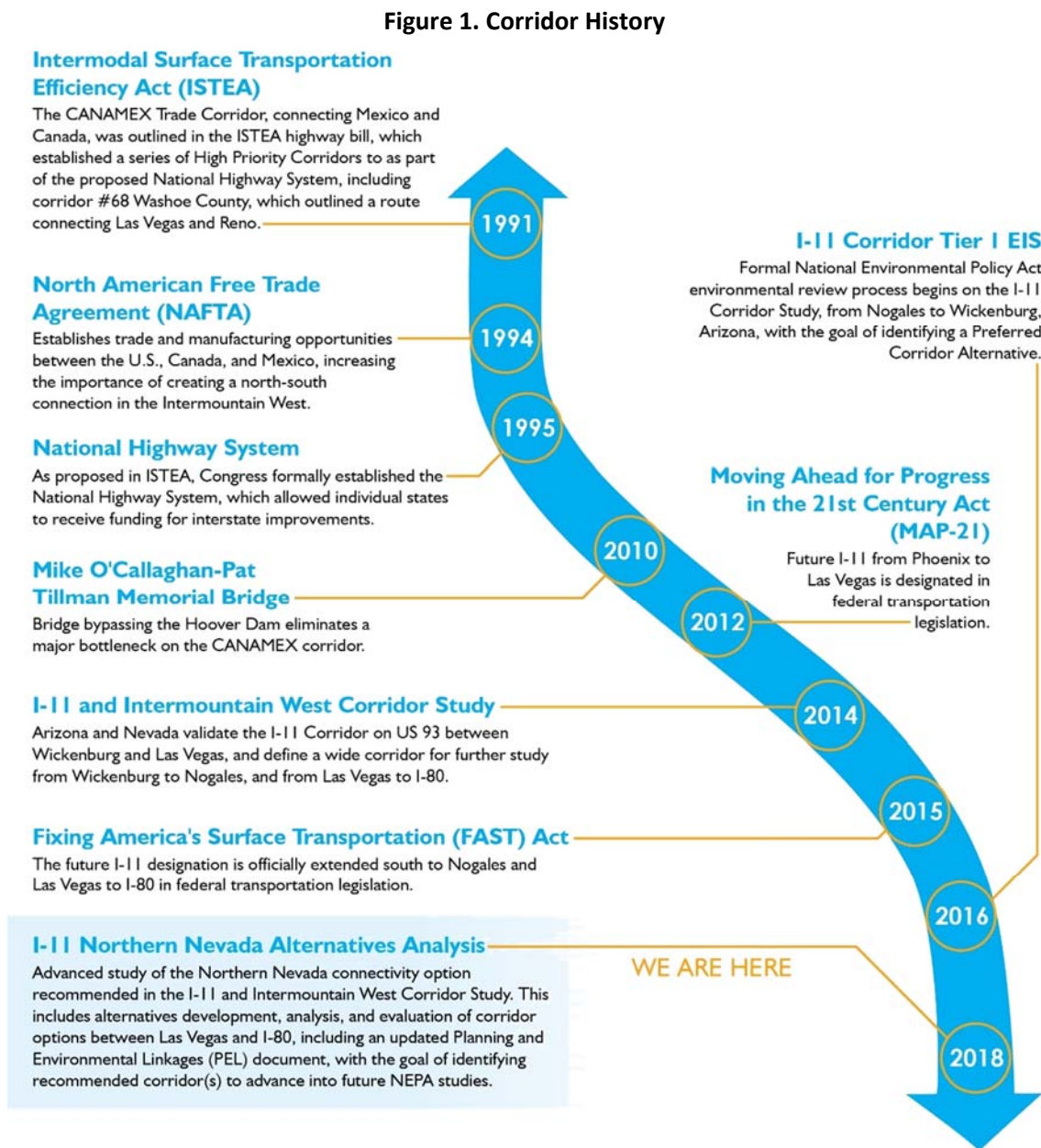
A joint study by NDOT and the Arizona Department of Transportation (ADOT) was conducted that identified the I-11 Corridor as a critical piece of multimodal infrastructure that would diversify, support, and connect the economies of Arizona and Nevada. One of the challenges of developing a viable route for I-11 through Nevada is coordinating it with critical freight corridors and transportation plans in Nevada, the neighboring states, and beyond. Some of these plans were written prior to the beginning of planning for a new north/south interstate highway, or when the I-11 Corridor planning was not advanced enough to consider including potential routes in their plans. This summary includes legislative actions that frame the I-11 Corridor, an overview of statewide transportation/freight plans, and conceptual connection points north.



2. Background

The concept of a high-capacity, north-south interstate freeway facility connecting Canada and Mexico through the western United States (US) has been considered for more than 20 years. It was initially identified as the CANAMEX trade corridor outlined in the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), established under the North American Free Trade Agreement (NAFTA) in 1993, and defined by Congress in the 1995 National Highway Systems Designation Act (Public Law 104-59). CANAMEX was designated as High Priority Corridor #26 in the National Highway System, recognizing the importance of the corridor to the nation’s economy, defense, and mobility.

Figure 1 provides a brief timeline of major actions that have facilitated advancement of corridor planning, culminating in this study.



Currently, independent segments of the I-11 Corridor are being advanced in Nevada and Arizona through various activities, including:

- Boulder City Bypass, under construction – a high capacity connection from the Hoover Dam Bypass around the southern perimeter of Boulder City to I-515 entering the Las Vegas Valley
- NDOT Southern Nevada Traffic Study – evaluation of the needs of all freeways in Las Vegas and a determination of which route is most feasible to accommodate I-11 Corridor traffic.
- US 93 improvements in Arizona – Conversion of the 200-mile stretch of US 93 from the Hoover Dam Bypass to Wickenburg into a 4-lane, limited access highway.
- ADOT Tier 1 EIS, Nogales to Wickenburg – Initiation of the NEPA process to determine a singular Selected Alternative in this 280-mile corridor. Tier 2 environmental studies will analyze specific alignments within the Selected Alternative.

As these studies continue, the I-11 Corridor continues to build momentum in the western US, with impetus to complete a continuous corridor from Mexico to Canada. The following discussion provides additional background for setting the foundation for envisioning a connection north of Nevada to Canada.

2.1. I-11 Corridor Purpose and Need

The I-11 Corridor has the potential to become one of the first north-south, high-capacity routes through the Intermountain West that could greatly improve commerce, tourism, and international trade opportunities across the West. This Northern Nevada segment of I-11 would connect Las Vegas and I-80 on the western side of the state, providing an efficient north-south interstate connection near Nevada's two largest economic centers. The need for I-11 is based on a combination of factors that include legislation, system linkage, domestic and international trade, modal interrelationships, capacity, economics, and public policy.

A major tenant of the purpose of I-11 is to assist in improving economic and trade opportunities, which typically relies heavily on interconnected and efficient transportation systems to transport goods and facilitate business attraction/retention. Ensuring the I-11 Corridor forms connection with major east-west freight routes and interfaces with economic centers is critical to success.

2.2. Legislative Support

2.2.1 NAFTA

I-11 is intended to support NAFTA by facilitating the efficient transport of freight through the western US and to Canada and Mexico. North from Nevada, the major cities I-11 is likely to provide access to include Vancouver, British Columbia and Calgary and Edmonton, in Alberta. Vancouver provides a large intermodal port, capable of handling large container ships, with rail and highway connections north, south, and east. Calgary and Edmonton are major inland and intermodal terminals, with rail and highway connections north, south, west, and east.

2.2.2 FAST Act

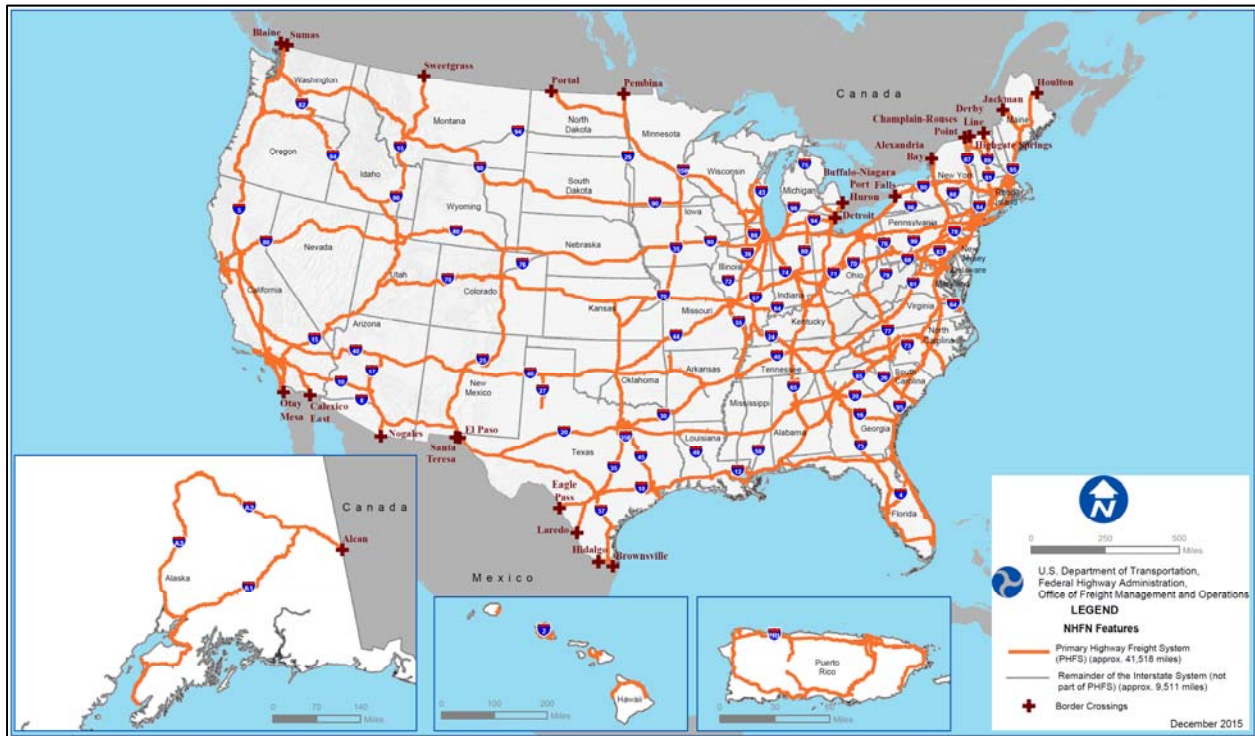
The Fixing America's Surface Transportation Act (FAST Act) requires the Federal Highway Administration (FHWA) to establish a National Highway Freight Network (NHFN) to strategically direct federal resources and policies toward improved performance of highway portions of the US freight transportation system. The NHFN consists of four elements:



- Primary Highway Freight System
- Critical Rural Freight Corridors
- Critical Urban Freight Corridors
- Other Interstate Highways not on the NHFN

The FHWA selected the highways in the Primary Highway Freight System and Other Interstates categories (**Figure 2**). States were responsible for designating public roads for the Critical Rural Freight Corridors and Critical Urban Freight Corridors, in accordance with the FAST Act. For Nevada, this was conducted as part of the 2017 Nevada State Freight Plan.

Figure 2. National Highway Freight Network



Source: FHWA Freight Management and Operations, 2015

Nevada has only two NHFN routes that connect it to other states, I-80 and I-15, and no NHFN routes connecting northern and southern Nevada. Because the mileage cap mandated in the FAST Act for identifying corridors on the NHFN is disproportionately low within large states like Nevada, strategic corridor segments were identified to advance the goals of the State Freight Plan.

A primary investment strategy of the State Freight Plan is to advance corridor planning for I-11. As the FAST Act formally designates I-11 between Las Vegas and I-80 in western Nevada, US 95 from Las Vegas to SR 266 was designated as a Critical Rural Freight Corridor. US 95 further north, as well as segments of US 95A, US 50, and US 395 were labeled as Critical Multistate Freight Corridors. Although not a FAST Act designation, this helps NDOT prioritize state funds accordingly.



Supporting the Primary Highway Freight System

I-11 will offer an alternative route for north-south freight movements in the western US, helping to relieve congestion on I-5 and I-15 – the only two NHFN routes in the western US that connect with western Canada.

Recurring congestion can dramatically increase the time it takes to deliver goods, as well as the cost of goods delivery.

The American Transportation Research Institute (ATRI) has collected and processed truck global positioning system data

in support of the FHWA's Freight Performance Measures initiative since 2002 and releases an annual Top 100 Truck Bottleneck List.

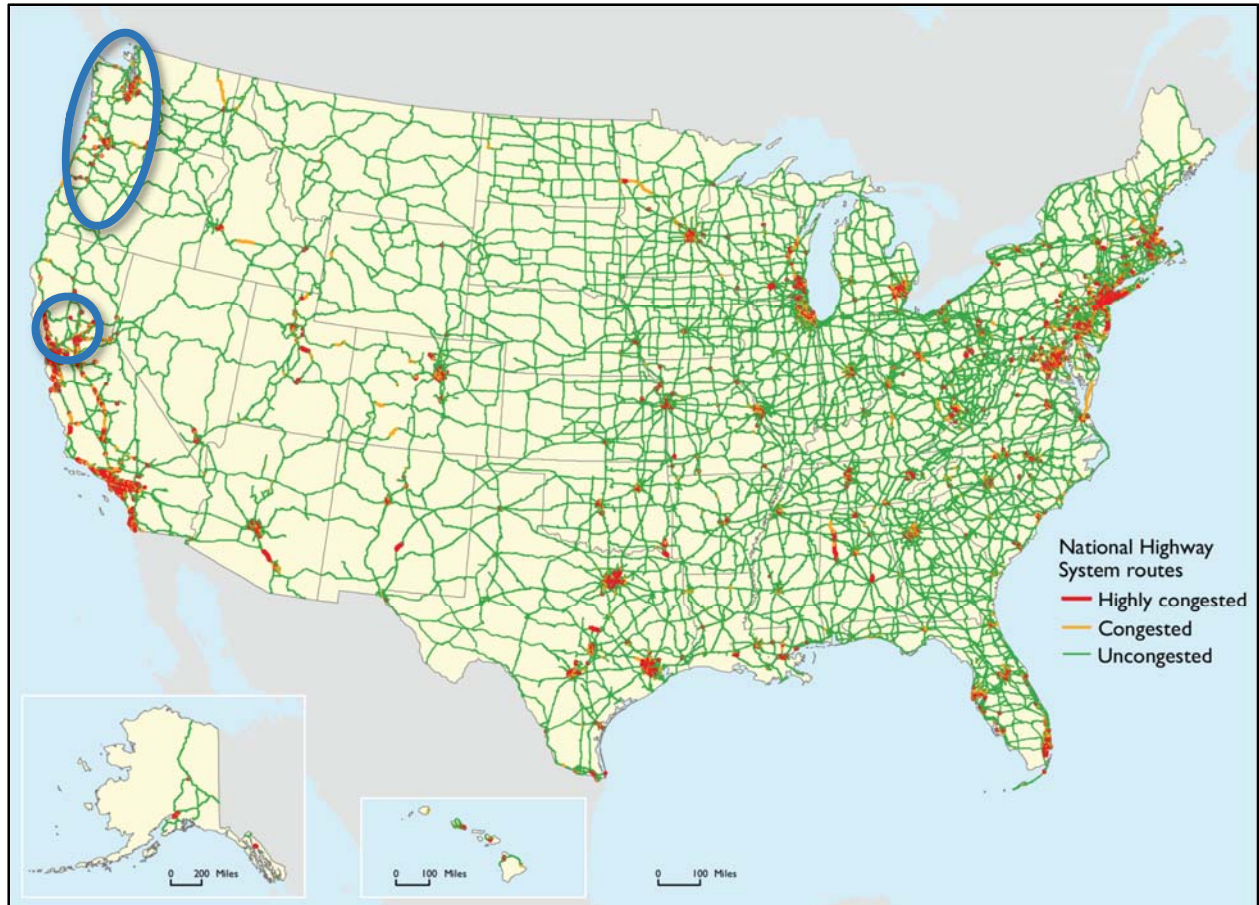


Of the potential connection routes north of I-80, top ranking bottlenecks include:

- #49: I-5 at the Columbia River Bridge
- #53: I-5 at I-90 in Seattle
- #62: I-5 at I-84 in Portland
- #87: I-5 at I-705/SR 16 in Tacoma

I-80 also makes the list at I-580/I-880 in Oakland, ranking number 65. This is consistent with data from FHWA's Freight Analysis Framework (FAF), as shown in **Figure 3**:

Figure 3. Peak Period Congestion on the National Highway System (2012)



Source: FHWA Freight Analysis Framework – Freight Facts and Figures 2017

3. Freight Corridor Planning

Interstate highways provide the backbone for connections between seaports and inland terminals, which are essential for the efficient movement of freight. The Northern Nevada Alternatives Analysis will provide Nevada and surrounding states with basic information necessary for future planning of the I-11 Corridor. Some states have already given consideration this north-south trade route in their State Freight Plans. Others last updated their plans prior to consideration of a northern I-11 connection, however these plans are still important to understand the connectivity options of I-11, in best determining the connection points north.

3.1. Nevada

The NDOT completed its Nevada State Freight Plan in 2017, designating various highways as essential to Nevada for freight movement, in addition to the NHFN, as shown in **Figure 4**, US 95, I-80, and US 395 are three critical multi-state freight corridors identified.

3.2. California

California completed its latest Freight Mobility Plan in December 2014. Routes designated for freight in the northeast corner of the state (relevant for I-11 connectivity) are US 395 to Susanville and the Oregon border, the US 395/SR 44 junction in Susanville to its junction with SR 44, and SR 44 to I-5, at Redding (**Figure 5**)

This plan does not identify consideration of I-11 through California, however the designation of US 395 as a freight route is complementary with current corridor planning in Nevada.

3.3. Oregon

Oregon's Freight Plan was completed in June 2011. The routes that were designated as freight routes that are of interest to I-11 connectivity are I-5, I-84, US 20, and US 97 (**Figure 6**).

3.4. Washington

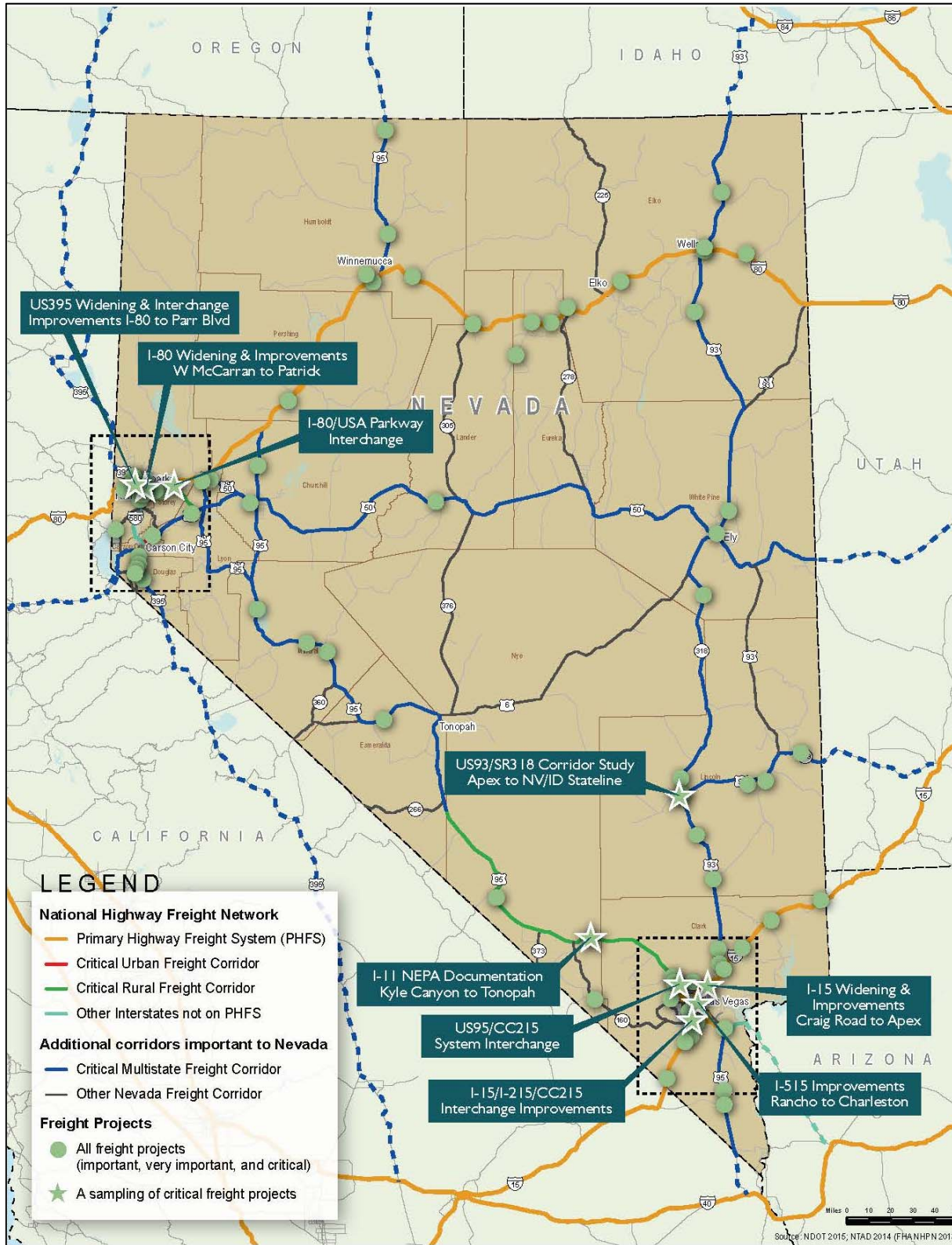
The Washington State Freight and Goods Transportation System was updated in 2017. The routes that are of interest for I-11 connectivity include I-5, I-82, and I-90 (**Figure 7**).

3.5. Idaho

The Idaho Transportation Department Statewide Freight Strategic Plan was completed in 2017. The routes in Idaho that are of interest for I-11 connectivity are US 95, I-84, I-15, and I-90 (**Figure 8**).



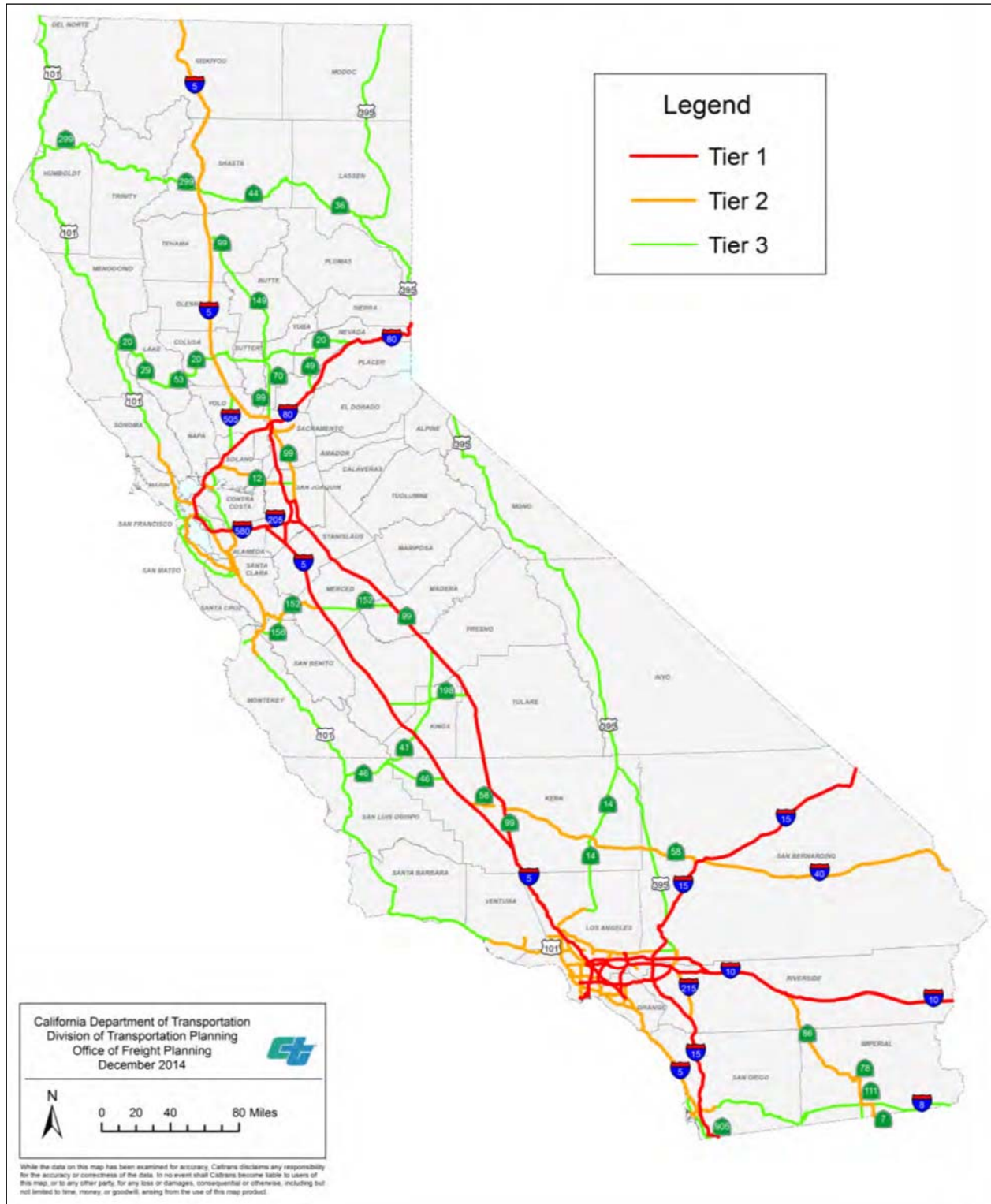
Figure 4. Nevada's Highway Freight Network



Source: Nevada State Freight Plan, January 2017

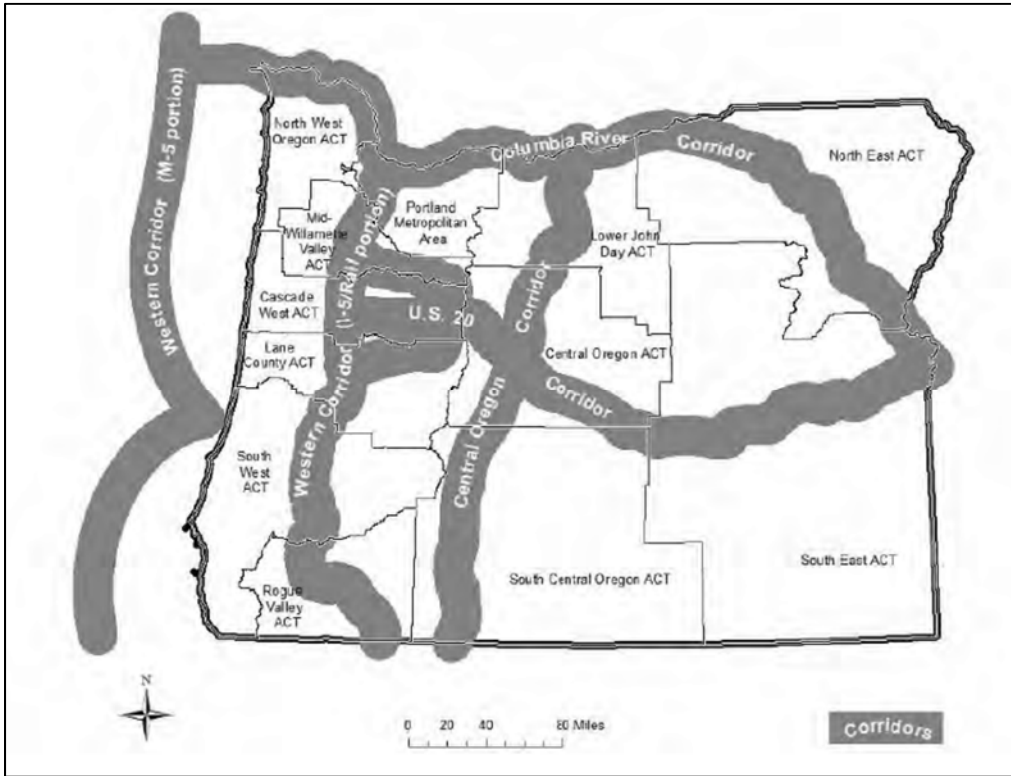


Figure 5. Highway Freight Network Tiers



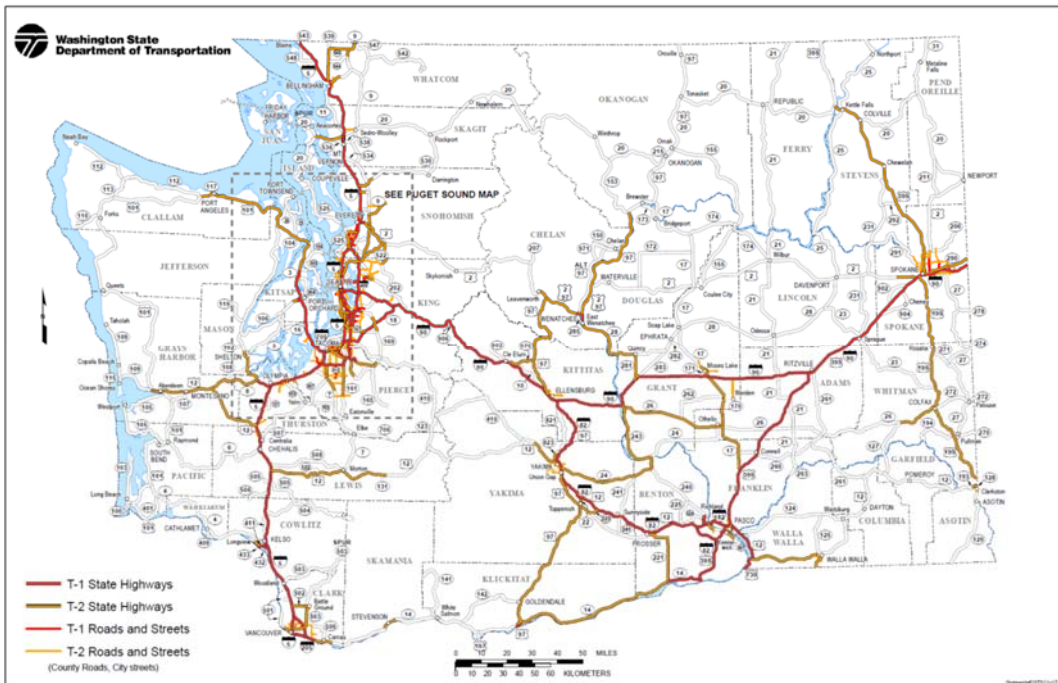
Source: California Freight Mobility Plan, December 2014

Figure 6. Freight Strategic Corridors in Oregon



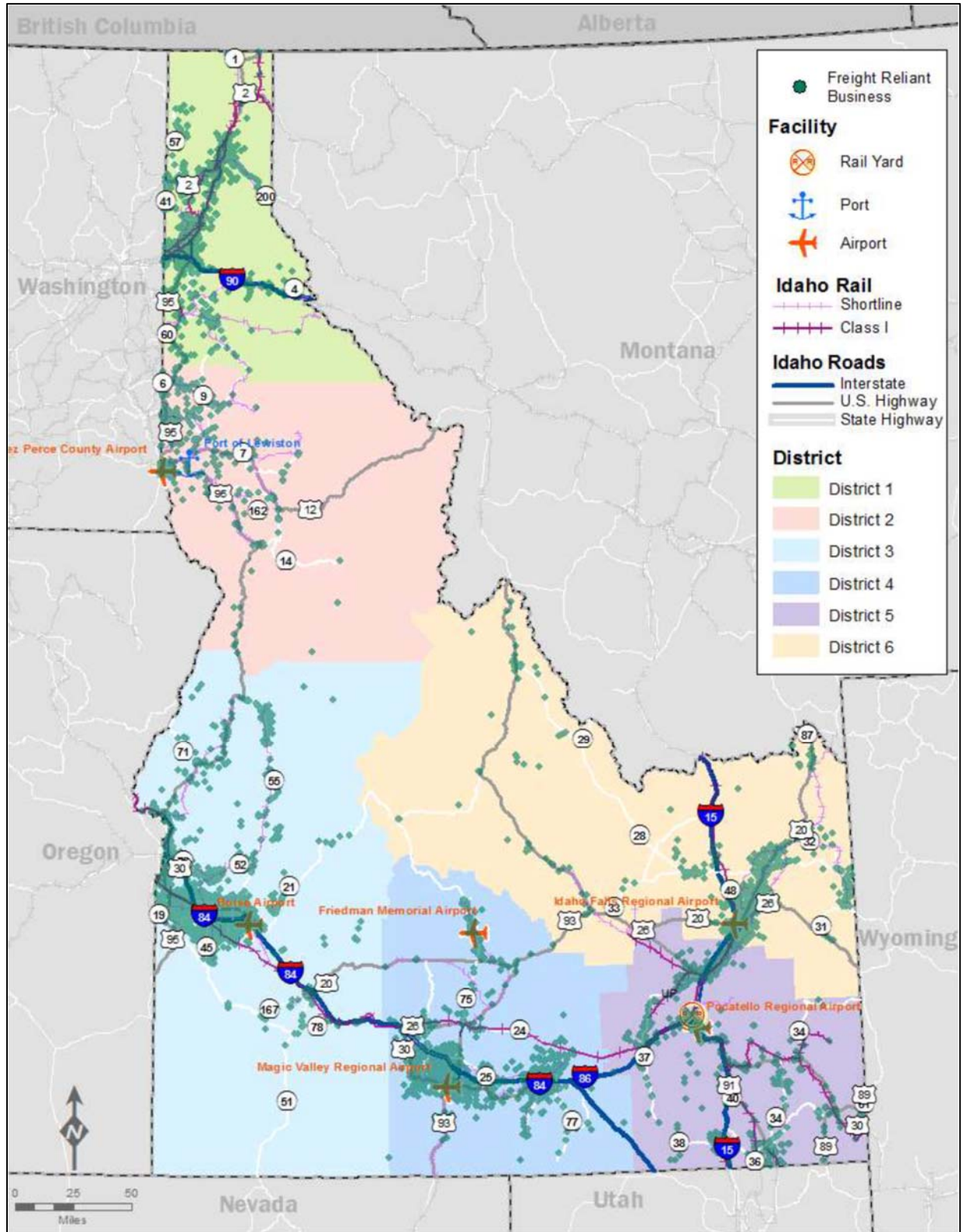
Source: Oregon Freight Plan, June 2011

Figure 7. Washington Freight Corridors



Source: Washington State Freight and Goods Transportation System, 2017

Figure 8. Idaho's Multimodal Freight Network



Source: Idaho Transportation Department Statewide Freight Strategic Plan, 2017

4. Corridor Connectivity North of I-80

I-80 is a major east/west transcontinental freight transportation corridor and was designated as the logical northern terminus of I-11 in the FAST Act. This important corridor provides a connection to the Port of Oakland, the seventh busiest container port in the nation and to the east coast, terminating at I-95 in New Jersey, just west of New York City. It also provides a connection to I-5, at Sacramento, and to I-15, at Salt Lake City. Sacramento serves as both a major inland port and inland terminal. Salt Lake City serves as a major inland terminal. I-5 also provides connections north to the Port of Portland, Ports of Seattle and Tacoma, and Port of Vancouver, British Columbia, with Canadian highways providing access further north to the Port of Prince Rupert. I-15 provides connections north to the Canadian Province of Alberta and the cities of Calgary and Edmonton, both major inland terminals. Interfacing with I-80 serves as a major crossroads for the I-11 Corridor, allowing it to become a key trade junction.

Where I-11 heads north is still undefined. And while not part of this study, recognition of previous coordination and preliminary planning is summarized below to establish the framework for the continuation of the I-11 Corridor. Future planning studies, like this Alternatives Analysis, will be required to make more informed decisions on the connectivity of I-11 north to Canada, including general corridor routing, traffic demand, and potential environmental constraints. The concepts provided here are illustrative only.

4.1. North of I-80 Corridor Options

Based on a western corridor in Nevada, there are two potential route choices north of I-80 (**Figure 9**). One continues in the western region of the state, and the other would be co-located with I-80 for a short portion and then turn north in the central region. Further studies will be necessary by Nevada and the adjacent states to determine the actual routes north of I-80, but the following provides a high-level starting point to begin those discussions.

4.2.1 Western Nevada Route

Routes SR 36 and SR 44 in California and SR 20 in Oregon pass through Forest Service Lands for large portions of the sections that would be of interest to this study. Due to the associated environmental concerns a more practical route from Reno to Vancouver, British Columbia may be to follow US 395 north from Reno to Susanville, and north from Susanville through northeast California and through Oregon to SR 20, even though the section of US 395 in Oregon is not in the Oregon Freight Plan. The route could then follow SR 20 to US 97 and US 97 to I-84 and on to Portland and then I-5 to the US border with Canada, at Blaine, Washington. Forming a connection through Vancouver allows the I-11 Corridor to connect with prominent west coast ports in Canada, including the Port of Vancouver and Port of Prince Rupert.

4.2.2 Central Nevada Route

The route from I-80 would follow US 95 from Winnemucca to near Ontario, Oregon where it would join I-84 in Idaho. From this point, there are two options to connect to Canada: (1) connection to Calgary and Edmonton, Alberta, via I-84 to I-15 at Pocatello, continuing to the US border at Sweetgrass, Montana; and (2) connection to Vancouver, British Columbia via I-84, I-82, I-90, and I-5 in Seattle to the US border with Canada.



4.2. Coordination with Neighboring States

I-80 was determined to be a logical terminus – or end point – based on the congressional designation in the 2015 FAST Act which designated I-11 as an interstate highway between Las Vegas and I-80. Those limits are the focus of this study, however, the findings of this alternatives analysis can help inform corridor planning in northern states.

Figure 9. Potential Connections North of I-80

