

IDAHO TRANSPORTATION DEPARTMENT

RESEARCH REPORT

Idaho Truck Parking Research Project

RP 300

By

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Prepared for

Idaho Transportation Department

[ITD Research Program, Planning and Development Services](#)

Highways Division

November 2023



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16. Abstract Truck parking issues stem from the lack of available designated parking at convenient locations, and Federal Hours of Service (HOS) regulations of the Federal Motor Carrier Safety Administration (FMCSA) that require drivers to rest at specific intervals. Truck parking capacity has not kept up with the demand, leaving truck drivers with few options at the end of their shift or while waiting for pick-up and delivery windows. The Idaho Transportation Department (ITD) Truck Parking Research Project aims to inform the Statewide Freight Plan and provide solutions and recommendations to solve current and future truck parking demands to support freight movement and Idaho's overall economy. This report studies the truck parking challenges and requirements and reviews similar truck studies in other states and presents findings from interviews with the Freight Advisory Committee, the Trucking Advisory Committee, and other trucking stakeholders on specific truck parking hot spots and general systemic challenges throughout the state. Public and private truck parking locations and capacity are analyzed with the development of a comprehensive Idaho truck parking database which is used to assesses truck parking demand using truck probe GPS data from the American Transportation Research Institute (ATRI). Finally, the needs for truck parking facilities based on current utilization, current and future unmet demand, and operational and policy needs are presented along with truck parking investment recommendations.			
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- Project Sponsor: [Name]
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List of Abbreviations and Acronyms

AADT	Average Annual Daily Traffic
AADTT	Average Annual Daily Truck Traffic
ATA	American Trucking Association
ATCMTD	Advanced Transportation and Congestion Management Technologies Deployment
ATRI	American Transportation Research Institute
ATTIMD	Advanced Transportation Technologies and Innovative Mobility Deployment Grants
BIL	Bipartisan Infrastructure Law
BMPO	Bonneville Metropolitan Planning Organization
BTPO	Bannock Transportation Planning Organization
CAV	Connected and Automated Vehicles
CBP	Customs and Border Protection
CDOT	Colorado Department of Transportation
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CMV	Commercial Motor Vehicle
COMPASS	Community Planning Association of Southwest Idaho
CRFC	Critical Rural Freight Corridor
CRP	Carbon Reduction Program
CUFC	Critical Urban Freight Corridor
DOT	Department of Transportation
EB	Eastbound
ELD	Electronic Logging Device
EV	Electric Vehicle
FAF	Freight Analysis Framework
FAST	Fixing America's Surface Transportation Act
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
GIS	Geographic Information System
GPS	Global Positioning System
HOS	Hours of Service
HP-ITD	High Priority Innovative Technology Deployment Grants
HSIP	Highway Safety Improvement Program

I-15.....	Interstate 15
I-84.....	Interstate 84
I-86.....	Interstate 86
I-90.....	Interstate 90
IIJA.....	Infrastructure Investment and Jobs Act
INFRA.....	Infrastructure for Rebuilding America Grants
ITD.....	Idaho Transportation Department
ITS.....	Intelligent Transportation Systems
KMPO.....	Kootenai Metropolitan Planning Organization
LCVMPO.....	Lewis Clark Valley Metropolitan Planning Organization
LTL.....	Less than truckload
MAASTO.....	Mid America Association of State Transportation Officials
MAP-21.....	“Moving Ahead for Progress in the 21st Century” Act
MPO.....	Municipal Planning Organization
NB.....	Northbound
NDOT.....	Nevada Department of Transportation
NEVI.....	National Electric Vehicle Infrastructure Program
NHFN.....	National Highway Freight Network
NHFP.....	National Highway Freight Program
NHPP.....	National Highway Performance Program
NHS.....	National Highway System
ODOT.....	Ohio Department of Transportation
ODOT.....	Oregon Department of Transportation
OS/OW.....	Oversize/Overweight
PHFS.....	Primary Highways Freight System
POE.....	Port of Entry
PROTECT.....	Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation
RAISE.....	Rebuilding American Infrastructure with Sustainability and Equity Grants
RODS.....	Records of Duty Status
ROW.....	Right of Way
SB.....	Southbound
SCDOT.....	South Carolina Department of Transportation
SHIP IT.....	Safer Highways and Increased Performance for Interstate Trucking

SHSP.....Strategic Highway Safety Plan
STBG.....Surface Transportation Block Grant Program
TACTechnical Advisory Committee
TIGER.....Transportation Investment Generating Economic Recovery
TL.....Truckload
TPAS.....Truck Parking Availability System
TPIMS.....Truck Parking Information Management System
TVMT.....Truck Vehicle Mile(s) Traveled
TxDOT.....Texas Department of Transportation
USDOT.....United States Department of Transportation
VMT.....Vehicle Miles Traveled
WB.....Westbound

Executive Summary

The Idaho Transportation Department (ITD) Truck Parking Research Project informs the Statewide Freight Plan and provides solutions and recommendations to solve current and future truck parking demands to support freight movement and Idaho's overall economy. Truck parking issues stem from the lack of available designated parking at convenient locations, and Federal Hours of Service (HOS) regulations of the Federal Motor Carrier Safety Administration (FMCSA) that require drivers to rest at specific intervals during their day. Truck parking capacity has not kept up with the demand, leaving truck drivers with few options at the end of their shift or while waiting for pick-up and delivery windows.

Truck drivers unable to find parking have four options: 1) park at the first available spot well before the end of available drive time, 2) continue driving, 3) traverse through neighborhoods seeking parking, or 4) park in undesignated parking spots, including roadway shoulders, on/off ramps, or vacant lots. These challenges and requirements are presented in Chapter 2 along with an analysis of similar truck studies in other states.

Chapter 3 presents findings from interviews with the Freight Advisory Committee, the Trucking Advisory Committee, and other trucking stakeholders on specific truck parking hot spots as well as general systemic challenges throughout the state to inform the needs and recommendations. Chapter 4 identifies the location and capacity of public and private truck parking with the development of a comprehensive Idaho truck parking database and assesses truck parking demand using truck probe GPS data from the American Transportation Research Institute (ATRI).

The last two chapters (Chapter 5 and Chapter 6) focus on assessing the needs for truck parking facilities based on current utilization, current and future unmet demand, and based on operational and policy needs and present truck parking recommendations.

Truck Parking Locations

The existing condition of truck parking supply in Idaho was analyzed by using multiple data sources and a methodology to estimate the total number of public and private truck parking facilities in Idaho. The combined data were used to develop a comprehensive database of truck parking locations that was subsequently used to assess the state of the truck parking system in the state of Idaho. The data sources used in this study are shown in Figure 0.1.

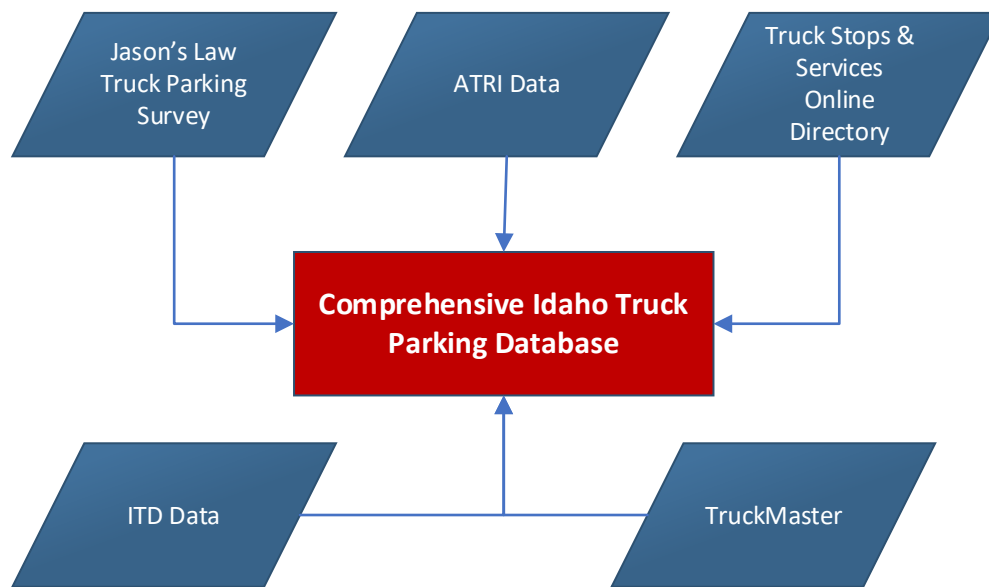


Figure 0.1: Truck Parking Database Data Sources

The final statewide truck parking database lists nearly 4,000 truck parking spaces across 118 locations, as illustrated in Figure 0.2. The majority of truck stops and rest areas are in the southern portion of the state, along Interstates 84, 15, and 86 (I-84, I-15, and I-86, respectively).

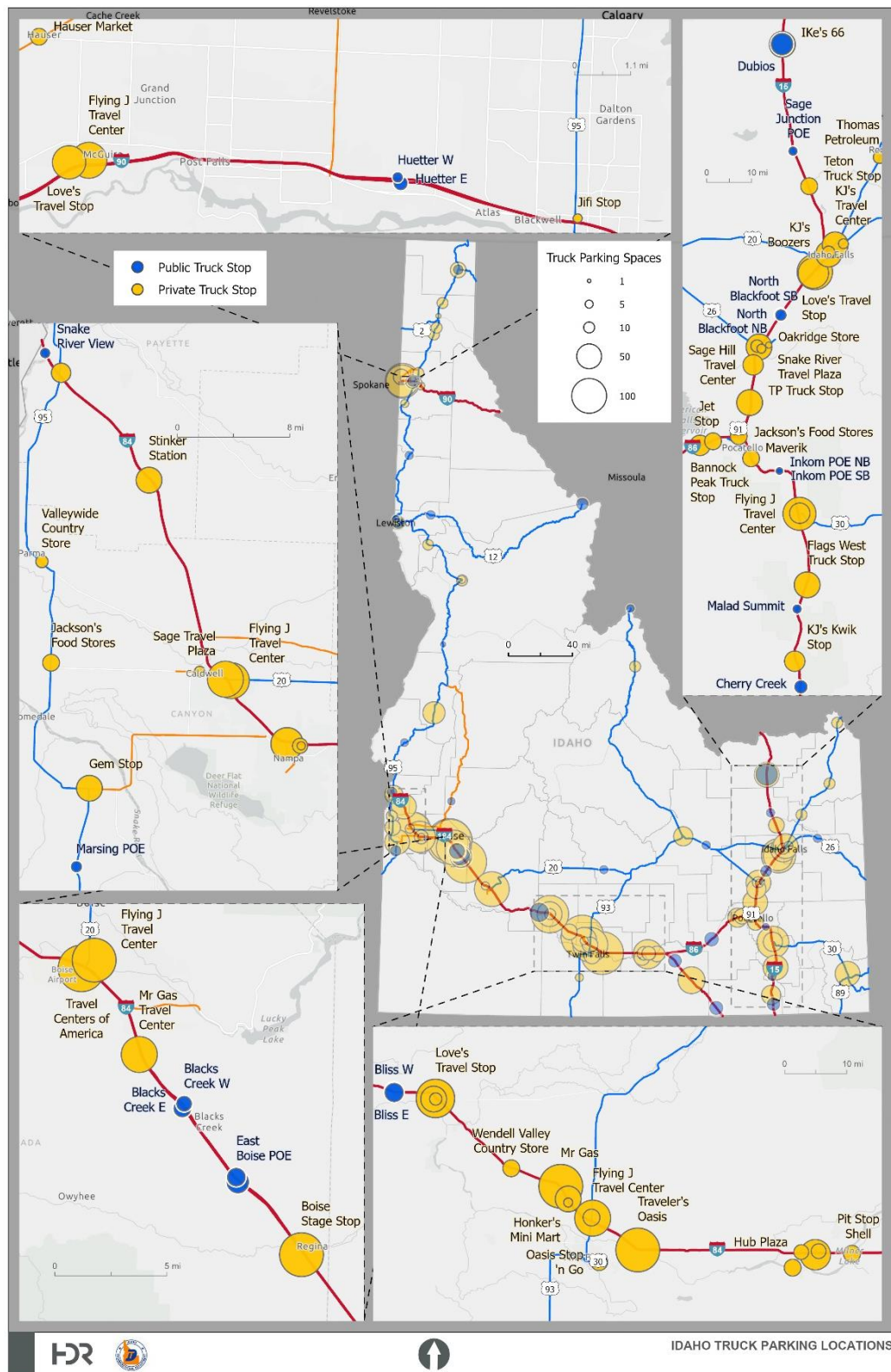


Figure 0.2: Idaho Truck Parking Locations

Truck Parking Analysis

The American Transportation Research Institute's (ATRI) truck GPS dataset was analyzed to assess the truck parking demand by hour, day, and season. This data was consequently compared to the known truck parking capacity to identify locations where parking demand is near or exceeds capacity. The month with the highest number of parked trucks in Idaho is September, followed by December, March, and June. However, the hourly trend in parking activity is consistent across all months. Truck parking activity is highest between 12 p.m. and 12 a.m. with demand reaching its peak between 6 and 7 p.m (Figure 0.3).

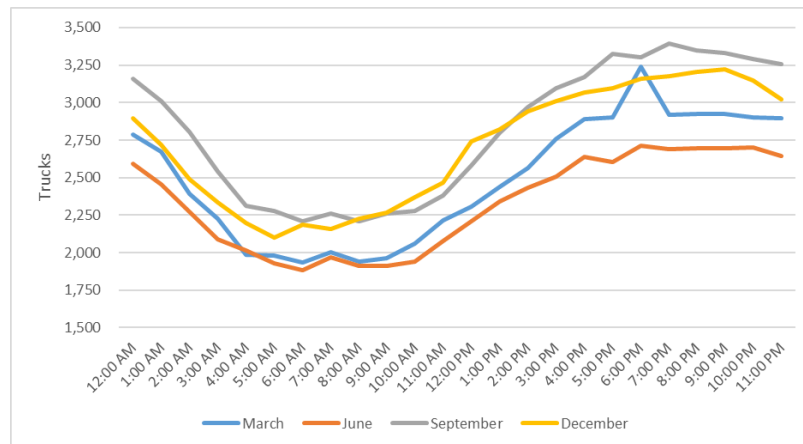


Figure 0.3: Hourly Truck Parking Demand

Source: HDR Analysis of ATRI Data

The highest numbers of truck parking are between Tuesday and Thursday with total daily truck parking occurrences ranging from 11,000 on Tuesday in June 2022 to more than 15,000 on Wednesday in September (Figure 0.4). Fewer trucks parked on Sundays when truck parking activity dropped to 70 percent of average weekday levels.

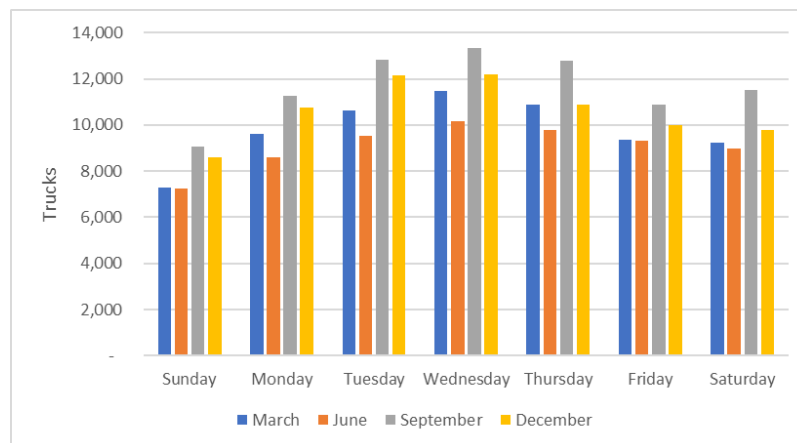


Figure 0.4: Daily Truck Parking Demand

Source: HDR Analysis of ATRI Data

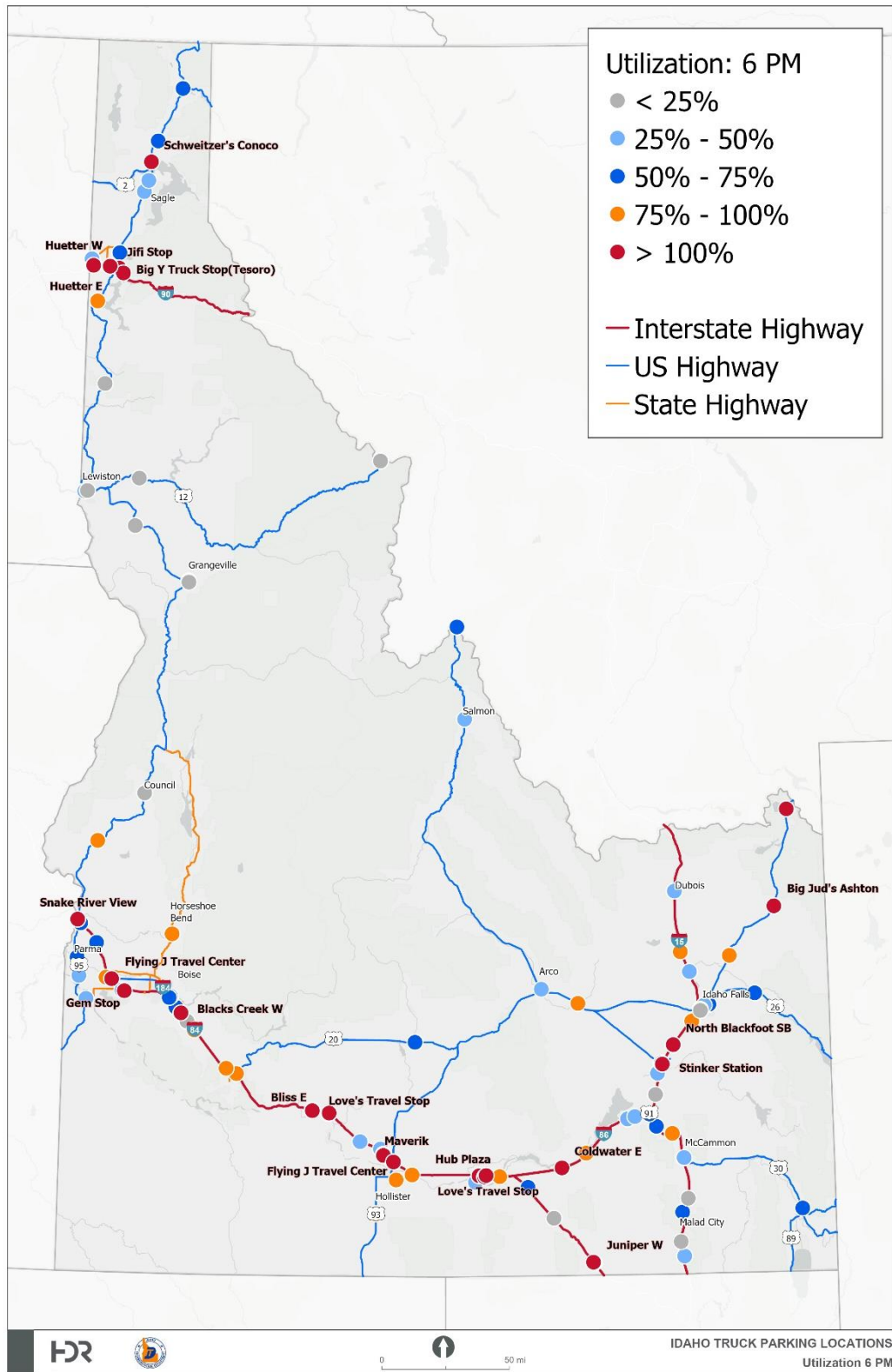


Figure 0.5: Truck Parking Utilization at 6 p.m.

Capacity Needs

The needs assessment identified a lack of capacity and/or opportunities for operational improvements of ITD rest areas and private truck stops that experience high truck parking demand. The corridors identified (Figure 0.6) are the primary routes which should be considered for improvements.

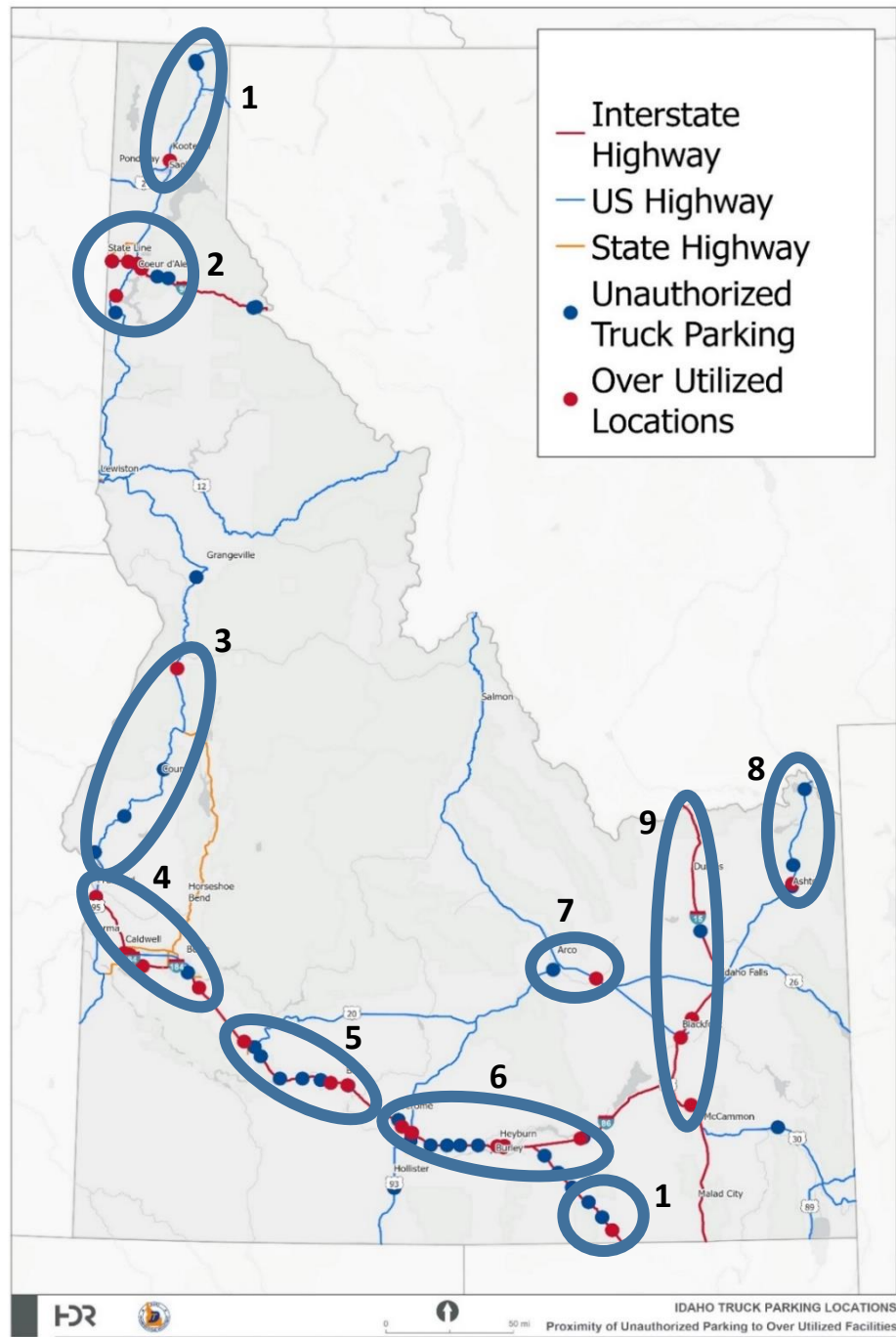


Figure 0.6: Truck Parking Corridors with Capacity Needs

Truck Parking Recommendations

The following recommendations are designed to assist ITD solve Idaho's truck parking challenges and can be summarized in three distinct categories:

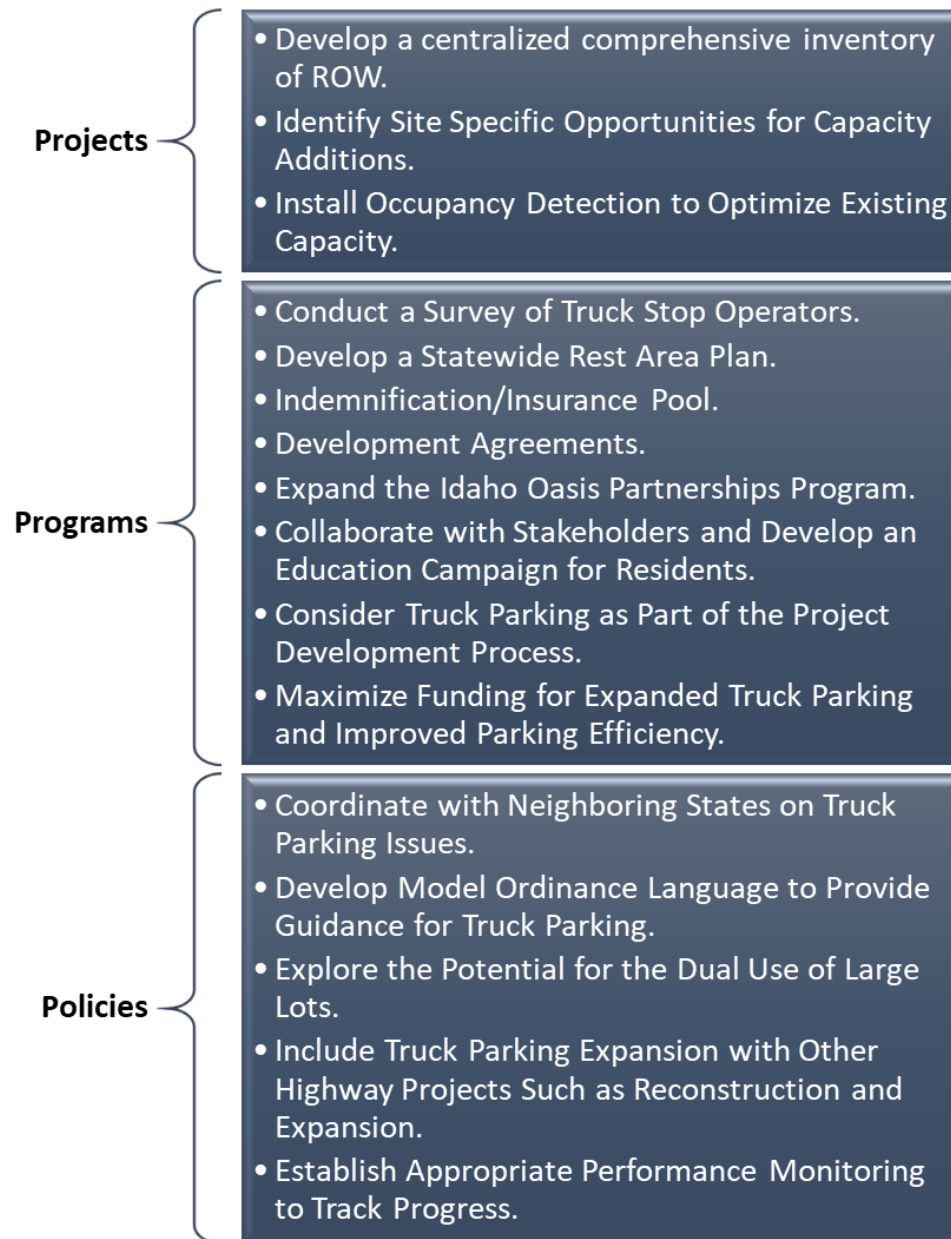


Figure 0.7 Diagram of recommendations to address Truck Parking Challenges in Idaho

1. Introduction

The Idaho Transportation Department (ITD) Truck Parking Research Project aims to inform the Statewide Freight Plan and provide solutions and recommendations to solve current and future truck parking demands to support freight movement and Idaho's overall economy. The research followed the steps shown in Figure 1.1 to develop a comprehensive analysis of the truck parking issues in Idaho, and recommended truck parking improvement options, strategies, and partnerships to address truck parking needs throughout the state.



Figure 1.1: ITD Truck Parking Research Project Steps

2. Truck Parking Challenges and Requirements

The ITD has undertaken this truck parking study to assist in meeting the needs of truck drivers to safely transport freight throughout the state. Federal Hours of Service (HOS) regulations of the Federal Motor Carrier Safety Administration (FMCSA) require drivers to rest at specific intervals during their day. Truck parking issues stem from the lack of available designated parking at locations that both meet the Federal HOS while also maintaining service delivery windows. Though there is debate over the roles and responsibilities of transportation departments to provide parking for private sector activities, it is a top priority of ITD to ensure the safe transport of freight of which adequate driver rest is an integral part.

Truck parking capacity has not kept up with the demand, leaving truck drivers with few options at the end of their shift or while waiting for pick-up and delivery windows. Truck drivers unable to find parking have four options:

- 1) park at the first available spot well before the end of available drive time,
- 2) continue driving,
- 3) traverse through industrial areas and residential neighborhoods seeking parking, or
- 4) park in undesignated parking spots (e.g. roadway shoulders, on/off ramps, vacant lots, etc.).

A [2018 American Transportation Research Institute \(ATRI\)](#) survey of truck drivers found that 96 percent had parked in undesignated areas in the past year, and 70 percent had driven beyond HOS to find

parking. The uncertainty of finding parking at the end of the day or near delivery destination was listed as the primary cause of job stress.

Existing plans and assessments from the Federal Highway Administration (FHWA), FMCSA, ITD, Metropolitan Planning Organizations (MPOs), other state departments of transportation were reviewed for requirements, safety issues, challenges, and regulatory framework. This review includes an assessment of these needs and challenges from drivers, trucking companies, and warehousing/distribution center operations.

Existing Plan Review

To begin to capture broad and focused perspectives on issues, challenges, opportunities, and solutions for truck parking, the following plans, guidance, and studies were reviewed for applicable regulations and key findings relevant to truck parking issues in Idaho.

Table 2.1: Plans, Studies, and Reports Reviewed

Level	Agency	Plan/Study/Report	Published Date
National	FHWA	Truck Parking Development Handbook	Sep-22
National	FHWA	FHWA Jason's Law Commercial Motor Vehicle Parking Survey and Comparative Assessment	1-Dec-20
National	FHWA	FHWA Eligibility of Title 23 and Title 49 Federal Funds for Commercial Motor Vehicle Memorandum	20-Sep-22
National	FMCSA	Federal Hours of Service Regulations	22-Nov-22
National	FHWA	National Highway Freight Network	10-Jun-22
State	ITD	ITD Statewide Freight Strategic Plan	8-Feb-17
State	ITD	2040 Long-Range Transportation Plan	Dec-19
State	Idaho Transportation Department (ITD)	ITD Trucker's Handbook	Jan-23
State	Texas DOT (TxDOT)	Texas Statewide Truck Parking Study	Apr-20
State	Ohio DOT (ODOT)	Ohio Truck Parking Study	Jan-22
State	Nevada DOT (NDOT)	Nevada Truck Parking Implementation Plan	22-Aug-19
State	Oregon DOT (ODOT)	Oregon Commercial Truck Parking Study	Jul-20
State	Colorado DOT (CDOT)	Colorado Truck Parking Assessment	Jan-19
State	South Carolina DOT(SCDOT)	South Carolina Statewide Truck Parking Assessment Study	19-Oct-22
Regional	Bannock Transportation Planning Organization (BTPO)	2040 Metropolitan Transportation Plan	7-Oct-19
Regional	Bonneville Metropolitan Planning Organization (BMPO)	2050 Long Range Transportation Plan	13-Apr-22

Level	Agency	Plan/Study/Report	Published Date
Regional	Community Planning Association of Southwest Idaho (COMPASS)	Communities in Motion 2050	Ongoing
Regional	Kootenai Metropolitan Planning Organization (KMPO)	2020-2040 Metropolitan Transportation Plan	14-May-20
Regional	Lewis Clark Valley Metropolitan Planning Organization (LCVMPO)	Long Range Transportation Plan Update	10-Dec-20

Safety

When considering safety and truck parking availability, it is widely acknowledged that drivers often drive fatigued until they can find a safe place to park (Land Line (2022)). Despite the widely accepted opinion that fatigued drivers are more likely to be involved in crashes, drivers unable to find safe parking spots may need to continue to drive, posing serious safety risks to truck drivers and other roadway users.

Trucks parked at locations that are not designed for truck parking are also at greater risk of being involved in crashes while parked and when entering or exiting the site, because of geometrical constraints. Trucks parked on shoulders may block sight distance for other roadway users, creating additional roadway hazards. Additionally, drivers and their trucks/cargo parked at undesignated locations are more exposed to theft, damage, and driver assault due to inadequate lighting and security measures.

Additional capacity at designated truck parking is likely to reduce fatigue-related truck crashes and those related to trucks parked on shoulders, off-ramps, in neighborhoods and ingress/egress at undesignated locations.

Environmental Impact

Trucks idling and additional mileage in search of parking consume excess fuel and generate air pollutants. Undesignated and many designated locations lack electrical plug-ins, forcing truck drivers to leave their engines or auxiliary power units running to power AC/heat and technology.

By siting truck parking where it is most needed, additional parking can reduce excess driving in the search for parking. Site design that includes evaluation of electrical charging facilities and the potential to use renewable energy for lighting and other electrical needs can reduce GHG emissions and pollution emissions.

Economic Competitiveness

Truck drivers incur additional economic costs such as fuel consumed and lost drive time as they search for truck parking – costs which are passed on to companies and ultimately consumers. The [2018 ATRI Survey](#) found that 48 percent of commercial drivers nationwide reported spending an hour or more per day trying to find truck parking, which translates to an annual cost of \$5,000 to \$6,000 per driver, resulting in a statewide annual cost of over \$217 million.

Truck drivers also face FMSCA penalties for HOS violations, and citations from state patrol and local law enforcement for parking illegally. Trucks searching for parking add congestion on local roadways, and drivers unable to park on-site at a shipper or receiver stage near freight facilities until their appointment window cause roadway hazards and additional congestion.

Adequate truck parking supports commercial truck driver needs to rest in safe at secure locations. Convenient, safe, and sufficient truck parking will remove trucks parked in undesignated locations thereby increasing driver safety and reducing the potential for the theft of goods. Adequate parking will result in more reliable arrivals and departures during driver delivery windows, increasing system efficiencies and economic competitiveness.

Quality of Life

The stress of inadequate parking and lack of amenities erodes truck drivers' quality of life, adding to the reasons that drivers leave the industry, contributes to delayed deliveries, and reduces economic competitiveness. The American Trucking Associations (ATA) estimates that in 2021 the truck driver shortage hit a historic high of over 80,000, and forecasts that figure to double to 160,000 by 2030. Other quality of life issues for Idaho communities include congestion, pollution and noise caused by trucks parking in designated and undesignated locations for neighborhoods near truck parking facilities, warehousing and industrial developments, or critical freight routes.

State of Good Repair

Truck parking in undesignated locations damages pavement not designed to support the heavy weight of large trucks. Damage to signs and guardrails while trying to enter or exit undesignated locations are common, and trucks are subjected to additional wear and tear resulting from excess driving and damage from being parked at sites not designed to accommodate trucks and trailers. Truck parking in designated, well-designed parking locations will result in less damage to infrastructure, and reduced wear and tear from excess driving and physical damage from inadequate design.

Innovation

Truck parking utilization analyses by other states (including OH, PA, and TX) indicate that truck drivers may park in undesignated locations even when there are designated spaces available nearby – indicating a lack of information on parking availability. Truck parking amenities are inconsistent from site to site,

and generally do not include technology and design features that would make truck driving safer, more efficient, and more profitable. The establishment of well-designed public truck parking co-located near private truck parking facilities, would provide publicly funded spaces with access to amenities to maintain driver satisfaction and truck stop profitability. Increasing parking capacity using this model could also reduce the negative impact on local roadways and communities, and reduce congestion and noise caused by truck drivers searching for designated truck parking.

Access to technology has helped truckers plan their routes and find available parking. Websites and mobile apps provide facility locations, identify the number of parking facilities, amenities, and allow drivers to rate them, and even reserve spaces. Other future innovations could include alternatively fueled vehicles, which could create challenges related to fueling infrastructure and fuel range.

Regulatory Requirements

Legislation and regulations directed at or impacting truck parking supports improvements to environmental quality and safety. The following section summarizes the regulatory requirements at all levels of government that have a direct or indirect relationship to truck parking.

Federal Laws and Regulations

Jason’s Law: Included in Moving Ahead for Progress in the 21st Century Act (MAP-21). The law was put in place to help address the shortage of long-term parking for commercial vehicles and to provide funding for the states, to support projects and programs to solve truck parking needs.

Clean Air Act: The act calls for tighter standards for engine emissions, including reducing idle time while parked.

Interstate Rest Areas – Commercial Use Restrictions: The ban restricts the sale of food (other than vending), fuel, lodging, and other services at safety rest areas, requiring trucks to leave the Interstate to purchase these items.

National Highway Freight Network (NHFN): Established to strategically direct Federal resources and policies toward improved performance of highway portions of the U.S. freight transportation system.

Parking of Trucks Transporting Hazardous Materials: Additional parking regulations are required for trucks carrying hazardous materials (49 CFR part 397). Trucks carrying hazardous materials may not be parked on or within five feet of the traveled area of the roadway, parked within three hundred feet of bridges, tunnels, residential dwellings, offices, or on private property without consent of the property owner.

Federal Hours of Services (HOS): Drivers must adhere to Federal and State HOS regulations that place time-definitive limits on driving and rest intervals. Federal regulations at 49 CFR part 395 require that drivers hauling loads in interstate commerce adhere to HOS rules set by the FMCSA which largely dictate

when, where, and how long truck drivers must park for rest. Regulations are also in effect which require drivers to track their HOS with an electronic logging device (ELD). The ELD rule (mandated as a part of MAP-21) makes it easier and faster to accurately track, manage, and share records of duty status (RODS) data by electronically recording driving time, for easier, more accurate HOS reporting.

Table 2.2: Summary of HOS rules for property-carrying drivers

Rule	Description
11 - Hour Driving Limit	May drive a maximum of 11 hours after 10 consecutive hours off duty. (49 CFR 395.3(a)(3)(i)). May be extended by up to 2 hours when a truck driver encounters adverse driving conditions. (49 CFR 395.1(b)(1)).
14 - Hour limit	May not drive beyond the 14th consecutive hour after coming on duty, following 10 consecutive hours off duty. Off-duty time does not extend the 14-hour period. (49 CFR 395.3(a)(2)). May be extended by up to 2 hours when a truck driver encounters adverse driving conditions.
30 – Minute Driving Break	Drivers must take a 30-minute break when they have driven for a period of 8 cumulative hours without at least a 30-minute interruption. The break may be satisfied by any non-driving period of 30 consecutive minutes (e.g., on-duty not driving, off-duty, sleeper berth, or any combination of these taken consecutively). (49 CFR 395.3(a)(3)(ii)).
60/70 Hour Limit	May not drive after 60/70 hours on duty in 7/8 consecutive days. A driver may restart a 7/8 consecutive day period after taking 34 or more consecutive hours off duty. (49 CFR 395.3(b)-(c))
Sleeper Berth Provision	Drivers may split their required 10-hour off-duty period, if one off-duty period (whether in or out of the sleeper berth) is at least 2 hours long and the other involves at least 7 consecutive hours spent in the sleeper berth. All sleeper berth pairings must add up to at least 10 hours. When used together, neither time period counts against the maximum 14- hour driving window. (49 CFR 395.1(g)(1)(ii)).
Short-Haul Exception	A driver is exempt from the above requirements if: the driver operates within a 150 air-mile radius of the normal work reporting location, and the driver does not exceed a maximum duty period of 14 hours. Drivers using the short-haul exception must report and return to the normal work reporting location within 14 consecutive hours and stay within a 150 air-mile radius of the work reporting location. (49 CFR 395.1(e)(1)).

Source: Federal Motor Carrier Safety Administration, 2021

Planning Requirements

49 U.S.C. 70202: The Infrastructure Investment and Jobs Act (IIJA) requires states to update their State Freight Plans every four years (49 U.S.C. 70202(e)(1)). States also are encouraged to offer opportunities for input from commercial motor vehicle drivers and truck stop operators through their State Freight Advisory Committees (established under 49 U.S.C. 70201). State Freight Plans developed or updated after November 15, 2021, are required to include a commercial motor vehicle parking facilities

assessment (49 U.S.C. 70202(b)(10)). Section 70202(f) of Title 49, U.S.C., requires commercial motor vehicle parking facilities assessments conducted by the State to include:

- The capability of the State, together with the private sector in the State, to provide adequate parking facilities and rest facilities for commercial motor vehicles engaged in interstate transportation.
- The volume of commercial motor vehicle traffic in the State.
- Whether there exist any areas within the State with a shortage of adequate commercial motor vehicle parking facilities, including an analysis (economic or otherwise, as the State determines to be appropriate) of the underlying causes of such a shortage.

82 FR 5970: This final rule (*National Performance Management Measures; Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program*) is the third and last in a series of three related rulemakings that together establishes a set of performance measures for State DOTs and MPOs to use as required by the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation (FAST) Act. The measures in this final rule must be used by State DOTs and MPOs to assess the performance of the National Highway System (NHS) for the purpose of carrying out the National Highway Performance Program (NHPP); to assess freight movement on the Interstate System; and to assess traffic congestion and on-road mobile source emissions for the purpose of carrying out the Congestion Mitigation and Air Quality Improvement (CMAQ) Program.

National Electric Vehicle Program: This program established the minimum standards and requirements for funding made available under the NEVI Formula Program. Charging stations are statutorily required to either serve the general public or to serve commercial motor vehicles from more than one company.

State and Local Laws and Regulations

Safety rest areas and Oasis partnership: A program for the ITD to fund the building and maintenance of safe, secure, sanitary, and reliable safety rest area facilities spaced at appropriate intervals at strategic locations on the state highway system for the traveling public. Many of the rest areas indicate separate truck and passenger vehicle parking in addition to their amenities. Occupancy of the rest areas on interstate highways is limited to ten consecutive hours and on other routes of the State Highway System is limited to sixteen consecutive hours (IDAPA - ITD 2022).

Section 5.0 Policy Analysis of the Idaho Freight Plan: Identifies that the highway freight network is disconnected and has not been designed in a way to encourage truck routing to interstates. As of 2016, only businesses could request the addition of a route to the network to connect gaps in the system. The Idaho 2040 Long Range Transportation Plan defines the process for designating the 129,000-pound route network. The program requires stakeholders to identify sections of highway they desire for 129,000-pound trucking operations. After ITD's evaluation, the Chief Engineer presents each evaluation to the 129,000 Pound Route Subcommittee and eventually to the Idaho Transportation Board to make

the final determination. Although not directly related to parking, this program impacts a driver's route, and effects where they will look for parking as they traverse the state.

Planning Organizations: Several of the MPO's within Idaho have identified performance metrics, mainly the Interstate Truck Time Reliability Index, to regulate trucks within their jurisdiction, relying heavily on state guidance. The Bannock Transportation Planning Organization's (BTPO) 2040 Metropolitan Transportation Plan specifically identifies one of their key strategies to "Establish freight performance metrics to allow BTPO to monitor the effectiveness of freight-specific transportation investments."

Local: Many municipalities apply truck parking restrictions within their jurisdictions, through a variety of regulations, and develop truck routes which will typically require trucks to bypass cities if they are not the ultimate destination. Truck parking regulations can include restrictions on:

- All public right-of-way
- All residentially zoned areas
- Overnight parking
- Parking duration limits
- Vehicle capacity
- Vehicle gross weight
- Roadway speed limit
- Number of vehicle axles

Identified Challenges

The Jason's Law Report by FHWA identified Idaho as having sufficient truck parking resources. However, survey respondents indicated that the locations of truck parking in the state may not be optimally placed to serve truckers needs. In other words, there are enough truck parking spaces as a whole to meet the needs of Idaho's truck drivers, but those spaces may not be located in areas of high demand, creating localized shortages.

Public vs. Private

Publicly and privately run parking facilities are not intended to serve the same purposes. The trucking industry utilizes public rest facilities and supporting amenities provided by ITD along highway right-of-way, and those provided by privately-run retailers near highway interchanges. Drivers generally prefer private facilities for extended rest because of the amenities offered and the larger number of available parking spaces. These facilities generally do not charge for parking, generating revenue through retail sales of fuel, services and goods. Public rest areas are preferred for short stops because of convenience and direct access to the highway. ITD rest areas have time limits of ten consecutive hours at interstate rest areas and sixteen consecutive hours at rest areas on the State Highway System.

Striking a balance between the needs of the trucking industry at public rest areas and the interests of private retailers in maintaining viable for-profit businesses has long been a challenge to both public agencies and private industry groups. Under Title 23, Section 111 of the U.S. Code of Regulations, public rest areas are prohibited from offering commercial services such as food and fuel of those built on the interstate highway system after 1959. The retail industry has consistently resisted numerous attempts to allow commercialization of publicly-owned facilities.

Regulations and Restrictions

Identifying parking locations outside of designated truck parking facilities can be a major challenge for drivers. Limitations that hinder truck parking include municipal and private-sector restrictions that limit the ability for drivers to park in areas that are not designated as a truck parking facility such as big box retail lots, malls/retail centers, industrial development lots, etc. Private businesses (such as gas stations) can restrict truck parking at their facilities. Land use and zoning designations regulate the location of truck infrastructure. As truck parking is typically deemed a less than desirable land use, this negative perception can make it challenging to find appropriate locations to provide an adequate supply.

The network of truck routes, parking facilities, and other resources creates many challenges for drivers and businesses. Roadway congestion and delays at pick up/delivery locations all negatively impact driver on-duty hours available for transport, often requiring changes to planned rest stops. Restrictions on alternative routes impact their ability to reach their ultimate destinations, as well as affect the amount of time required to make their trip, impacting their decision-making in relation to parking.

Injunctions have been placed to restrict oversized cargo on highways within the state, consequently impacting the routes and services available to drivers. ITD provides overweight permits for trucks weighing up to 129,000 pounds to travel on the Interstate system in Idaho (increased from the previous ~~180-80~~ 80,000-pound limit in 2016), which was intended to assist in the shifting of long-haul trucks back to the Interstates from the state system. This network is somewhat disjointed however, due to the process of getting roads designated, which is initiated by businesses (IDAPA 39.03.06.200). The implication for truck parking is that drivers of 129,000 pound vehicles are required to travel on specific routes that may not have adequate truck parking capacity. A map of the 129k designated routes is shown in Figure 2.1 below.

Extra Length/Excess Weight up to 129,000 Pounds Idaho State Highway System

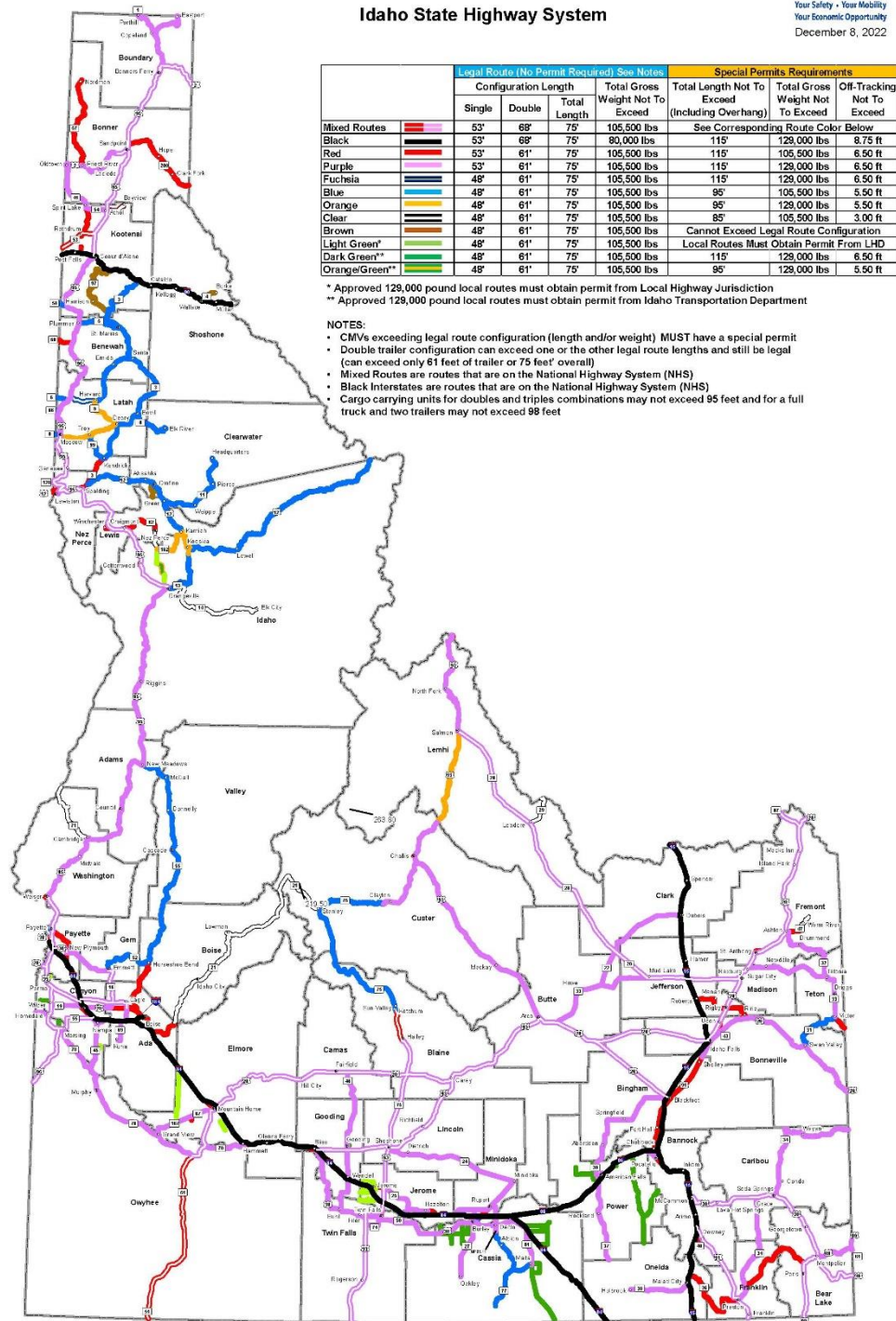


Figure 2.1: Designated 129,000 Pound Routes

Similarly, the lack of a thorough roadway network impacts truck routes and travel time. The Kootenai MPO 2020-2040 Metropolitan Transportation Plan (page 3-39 and 3-40) stated that a number of companies indicated the need for better highway facilities running north-south through the region.

The NHFN, which directs Federal resources and policies toward improved performance of the U.S. freight transportation system, also provides designations for Primary Highway Freight System (PHFS), and Critical Rural (CRFC) and Urban Freight Corridors (CUFC). Restrictions are placed on the number of miles a state can include in this network (Bipartisan Infrastructure Law section 11114). Idaho has a total of approximately 957 miles designated on the NHFN, with 613 identified as PHFS.

Table 2.3: Idaho CRFC and CUFC Designation Totals

Designation	Designated as of March 24, 2023 (miles)	Max Limit (miles)
CRFC	263.99	600
CUFC	84.07	150

Peer Agency Identified Challenges and Needs

The nature of interstate commerce makes truck parking a national issue. Other states that have developed truck parking studies have conducted an inventory of the challenges faced by both drivers and the organizations involved with the issue. Below is a summary of the challenges applicable to Idaho that were identified in Ohio, Nevada, Oregon, Colorado, South Carolina, and Texas.

Ohio Truck Parking Study

Ohio Department of Transportation (ODOT) identified the following Needs and Challenges as part of their Truck Parking Study (ODOT 2022):

- Need for truck parking for HOS breaks and staging.
- Need for truck parking infrastructure that accommodates existing truck sizes.
- Need for improved access to amenities.
- Need for accessible, accurate, reliable and up-to-date parking information for truck drivers.
- Need for truck parking information at the regional and local levels.
- Negative perception of truck parking and land-use conflicts by local officials and the general public.
- Insufficient funding to maintain and expand public rest areas.
- Lack of clear ownership of and leadership for truck parking issues.
- Federal laws restricting the provision of services on interstates.

Nevada Truck Parking Implementation Plan

The Nevada Department of Transportation (NDOT) Plan identified the challenges that typically come with truck parking as (NDOT 2019):

- Long-Haul: Drivers want to maximize their HOS; however, the private and public sectors are unable to build parking at every location that is most convenient for drivers.
- Staging: Truck parking need is in or near urban areas which have constraints such as higher land prices, municipal land use and zoning restrictions, and community opposition.
- Emergency: State is unable to meet the surge in parking demand if emergencies dictate.
- Time Off: Independent drivers don't have a "base" to park at. Municipal restrictions can make parking near home difficult and private long-term parking can be expensive.

Oregon Commercial Truck Parking Study

The Oregon Department of Transportation (ODOT) surveyed stakeholders to identify truck parking challenges within the state. The ranking order of main problems and issues selected in this survey include (ODOT 2020):

1. A general lack of available parking.
2. Current hours of service rules and regulations.
3. Delays associated with congestion and traffic.
4. Parking limitation at rest areas.
5. Difficulty knowing if and where spaces are available.
6. Negative public perception of truck parking.
7. Delays associated with loading/unloading.
8. Distance between parking areas.
9. Crowding due to weather or weather-delays.
10. Lack of oversize truck parking spots.
11. Out-of-direction travel required to access parking locations.

Colorado Truck Parking Assessment

The survey issued as part of the Colorado Truck Parking Assessment identified the following comment responses (CDOT 2019):

- Finding parking can be a hindrance to managing fatigue and meeting HOS requirements.
- Nearly 80 percent of respondents disagreed with the statement that it is relatively easy to find truck parking in Colorado.
- Private truck stops are the most common place to take breaks, followed by shipper/receiver locations and public rest areas.
- More than 40 percent of respondents spent 1-plus hour searching for long term parking.

- The interstate corridors included were consistently noted as the most difficult locations to find safe and legal parking, with I-70 west and I-25 north atop the list.

South Carolina Statewide Truck Parking Assessment

The South Carolina Department of Transportation (SCDOT) conducted an assessment of the state's truck parking resources and the issues associated with them that hinder the movement of trucks throughout the state. The challenges identified with the assessment include (SCDOT 2022):

- Local parking regulations that limit the use of non-designated spaces for truck parking.
- Lack of truck parking in urban areas and near major freight generators such as the Port of Charleston.
- Parked trucks in undesignated locations create a safety concern specifically with trucks parked on shoulders and ramps within highway right-of-way.
- Public opposition to new, expanded, and existing truck parking locations.
- Lack of dedicated space and insufficient geometric lot designs for OS/OW vehicles.

Texas Statewide Truck Parking Study

As part of its truck parking study, Texas conducted a survey of users that resulted in 1,600 responses. The truck parking challenges revealed from the survey include the following (TXDOT 2020):

- Trucks parking on shoulders cause the pavement deterioration, resulting in hundreds of thousands of dollars in unexpected shoulder repairs and reinforcement.
- The general public and many decision makers see truck parking as part of private industry cost of doing business and therefore resist spending public funds to provide truck parking.
- There is often public resistance due to the negative perceptions of the trucking industry and truck drivers.
- Because truck parking generates little to no revenue for the private sector yet requires lots of land, the return on investment often does not support expanding or building new parking.
- Funding for transportation falls far short of the transportation needs and the truck parking must compete with other priorities for funding. Because the benefits of truck parking are harder to quantify and less understood, it is difficult for investments in public truck parking facilities to compete for limited transportation funding.

Commercial Vehicle Crash Assessment

One of the major challenges related to truck parking is safety. Truck crashes are a result of driver error (truck driver or automobile driver) while in motion, parked truck struck by another vehicle, fatigue, driver impairment, etc. Driver fatigue and trucks struck while parked are directly related to the

availability of truck parking. The safety aspects of truck parking makes it an issue for the public sector to understand and address.

Data for crashes involving tractor-trailer combinations were collected from the ITD Office of Highway Safety for a five-year period from 2018-2022. At the time of this report, the 2022 data was still being compiled and reviewed. The data set used in the following analysis is complete up to November 21, 2022. During this period, 5,664 truck-involved crashes occurred in Idaho, resulting in 133 fatalities and 2,181 injuries. Commercial vehicle crashes have continued to rise from 2018 with an increase of 25 percent between 2018 and 2021 which includes the height of the pandemic (2020-2021).

A breakdown of the type of collisions during this time is displayed in Table 2.4. The most common collision was a sideswipe, followed by rear-ends.

Table 2.4: Crash Types

Event Name	Total	Event Name	Total
Angle	313	Non-Contact Unit	122
Angle Turning	398	Other	11
Animal - Domestic	72	Other Fixed Object	42
Animal - Wild	150	Other Non-Collision	5
Backed Into	107	Other Object Not Fixed	46
Bridge Rail	15	Other Post, Pole or Support	48
Bridge/Parapet End	1	Overpass	12
Bridge/Pier/Abutment	4	Overturn	555
Building/Wall	11	Parked Car	159
Cargo Loss/Shift	82	Parked Car - on Private P	3
Concrete Traffic Barrier	86	Pedalcycle	4
Cross Median	2	Pedestrian	7
Culvert	7	Railroad Train	21
Curb	2	Rear-End	801
Delineator Post	6	Rear-End Turning	49
Ditch	31	Same Direction Turning	300
Embankment	88	Separation of Units	18
Fell/Pushed/Jumped	1	Side Swipe Opposite	236
Fence	36	Side Swipe Same	997
Fire/Explosion	46	Struck by Falling/Shifting	23
Guardrail End	30	Thrown or Falling Object	3
Guardrail Face	69	Traffic Sign Support	21
Head-On	94	Traffic Signal Support	43
Head-On Turning	53	Tree	30
Immersion	2	Utility/Light Support	141
Jackknifed	166	Vehicle Equipment Failure	93
Mailbox	2		

The contributing circumstance of a crash provides a deeper insight into the situation that led to the crash. This data is dependent on responses of those involved in the crash and the officers recording it, and is identified for all vehicles involved in a crash, therefore the sum of the identified contributing circumstances is larger than the total number of commercial vehicle crashes being evaluated. Table 2.5 summarizes the different circumstances that led to these crashes. Excluding “none”, the most common factor identified was a failure to maintain lanes, followed by inattention and speed too fast for the conditions of the road. Situations where someone was tired or ill account for approximately three percent, and improperly parked vehicles equated to less than one percent. These two factors are directly related to truck parking. Other factors may be linked indirectly to driver fatigue such as those involving driver error such as inattention and failing to maintain lane.

Table 2.5: Crash Contributing Circumstances

Contributing Circumstance	Total	Contributing Circumstance	Total
Alcohol Impaired	118	Improper Use of Turn Lane	31
Animal(s) in Roadway	233	Improperly Parked	40
Asleep, Drowsy, Fatigued	171	Inattention	872
Brakes	56	Light Defect	17
Distracted IN or ON Vehicle	139	Other	409
Drove Left of Center	158	Other Vehicle Defect	117
Drug Impaired	48	Overcorrected	109
Emotional, Depressed	27	Physical Impairment	18
Exceeded Posted Speed	32	Previous Accident	73
Failed to Maintain Lane	1,010	Sick	25
Failed to Obey Signal	73	Speed Too Fast for Condit	796
Failed to Obey Stop Sign	110	Steering	21
Failed to Signal	14	Tire Defect	78
Failed to Yield	551	Too Slow for Traffic	52
Following Too Close	535	Truck Coupling, Trailer H	34
Foot Slipped Off or Caught	14	Vision Obstruction	147
Improper Backing	115	Wheel Defect	31
Improper Lane Change	536	Wipers	2
Improper Overtaking	186	Wrong Side or Wrong Way	31
Improper Turn	428	None	23,823

Analysis of truck crash hot spots (Figure 2.2) shows a concentration of these crashes occurred along the southern portion of the state, namely along the interstates I-15, I-84, and I-86 between 2018 and 2022.

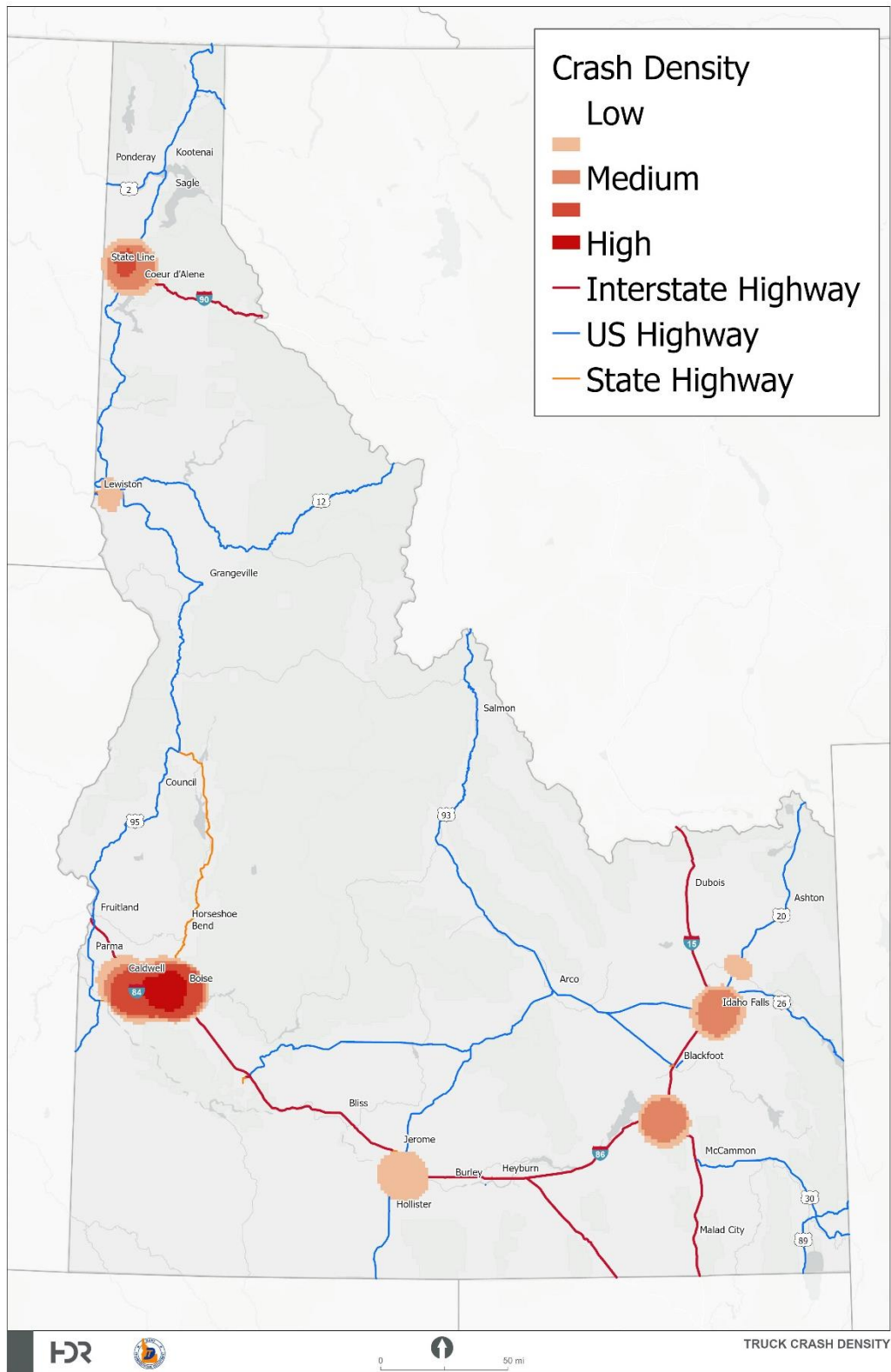


Figure 2.2: Truck Involved Crash Hot Spots

Commercial vehicle crashes have been rising over the past five years from 920 in 2018 to 1,330 as of November 2022. As crashes have increased, so too has the number of vehicle miles traveled by trucks (Figure 2.3). This relationship shows that the crash rate (truck crashes vs. truck VMT) has increased slightly during the five-year period.

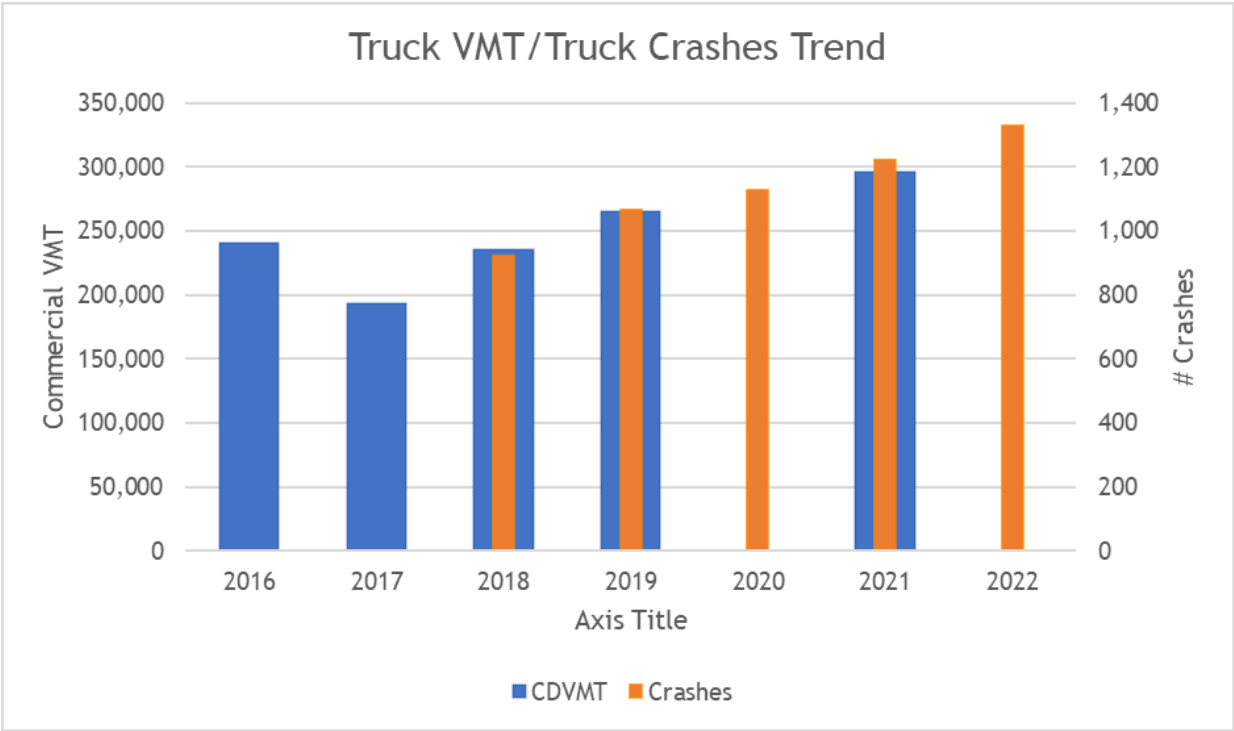


Figure 2.3: Commercial Vehicle Miles Traveled (VMT) and Truck Involved Crashes
Source: ITD

Figure 2.4 displays the location of fatal crashes in Idaho involving commercial vehicles from January 2018 to November 2022. Of the 5,664 commercial vehicle crashes reported during this time, there were 133 fatalities and 2,181 injuries. A concentration of the crashes resulting in fatalities occurred along the southern portion of the state, namely in urbanized areas along the interstates I-15, I-84, and I-86. Other concentrations include I-90 near Coeur d’Alene, I-90 at the Montana border and US 12 near Lewiston.

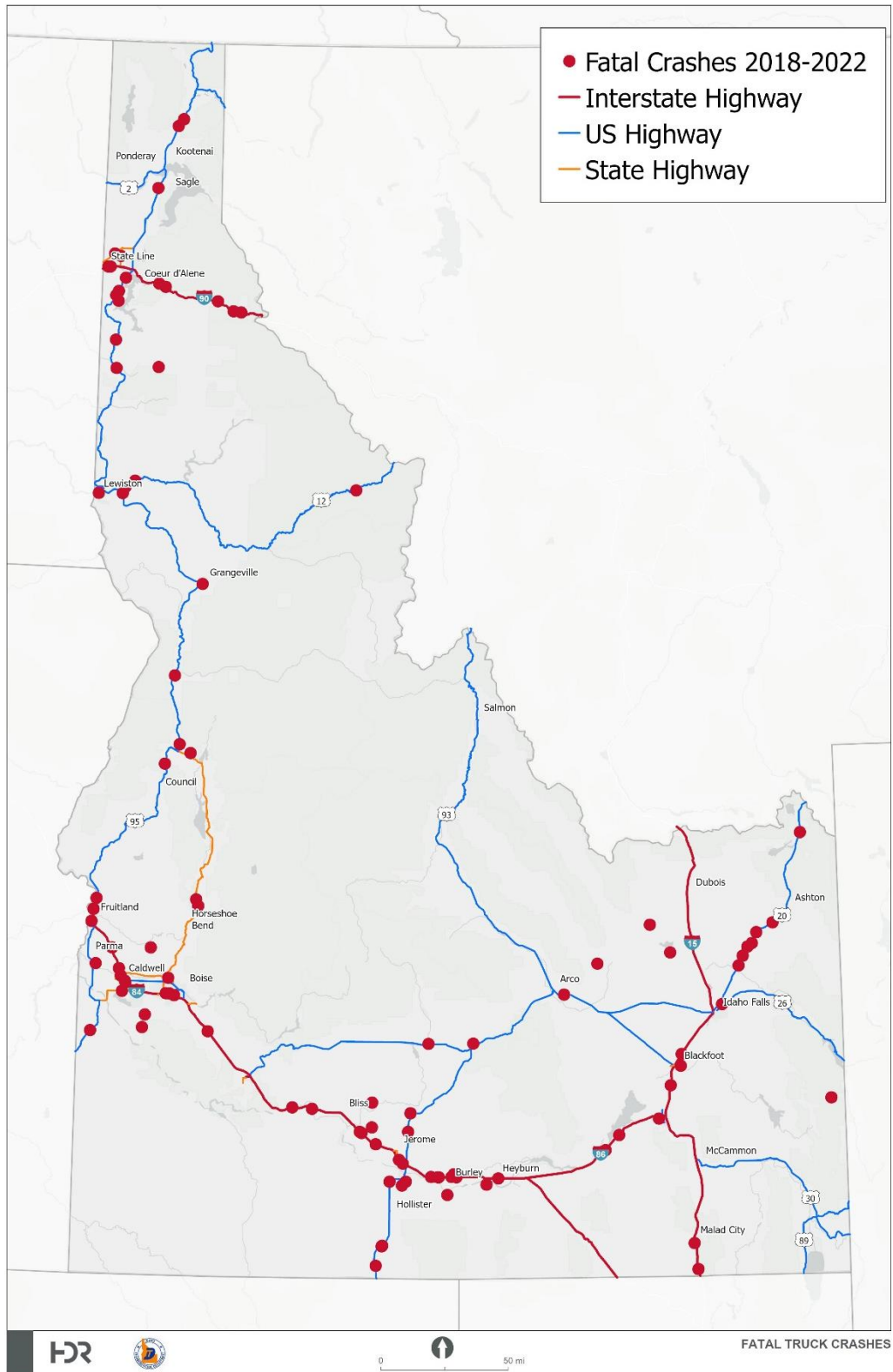


Figure 2.4: Truck Involved Fatal Crashes

Commercial vehicle crashes occur consistently on weekdays with 85 percent of crashes occurring between Monday and Friday. As shown in Figure 2.5, Wednesdays had the highest percentage of crashes at 18 percent.

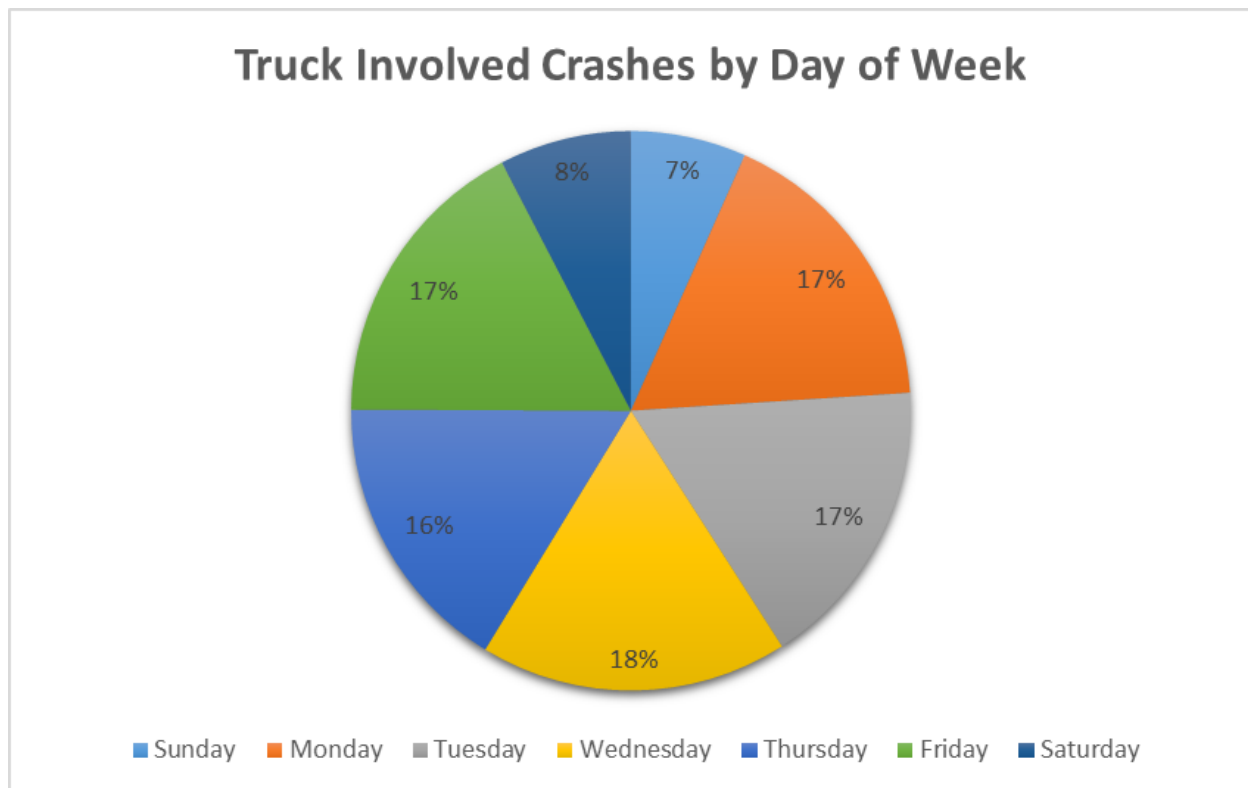


Figure 2.5: Truck Involved Crashes by Day of the Week

Source: ITD

Although commercial vehicle crashes occur at all times of the day and night, 27 percent of those crashes occurred between 8:00 AM and 5:00 PM when visibility is often best but traffic volumes are greatest. Figure 2.6 shows the commercial vehicle involved crashes by time of day.

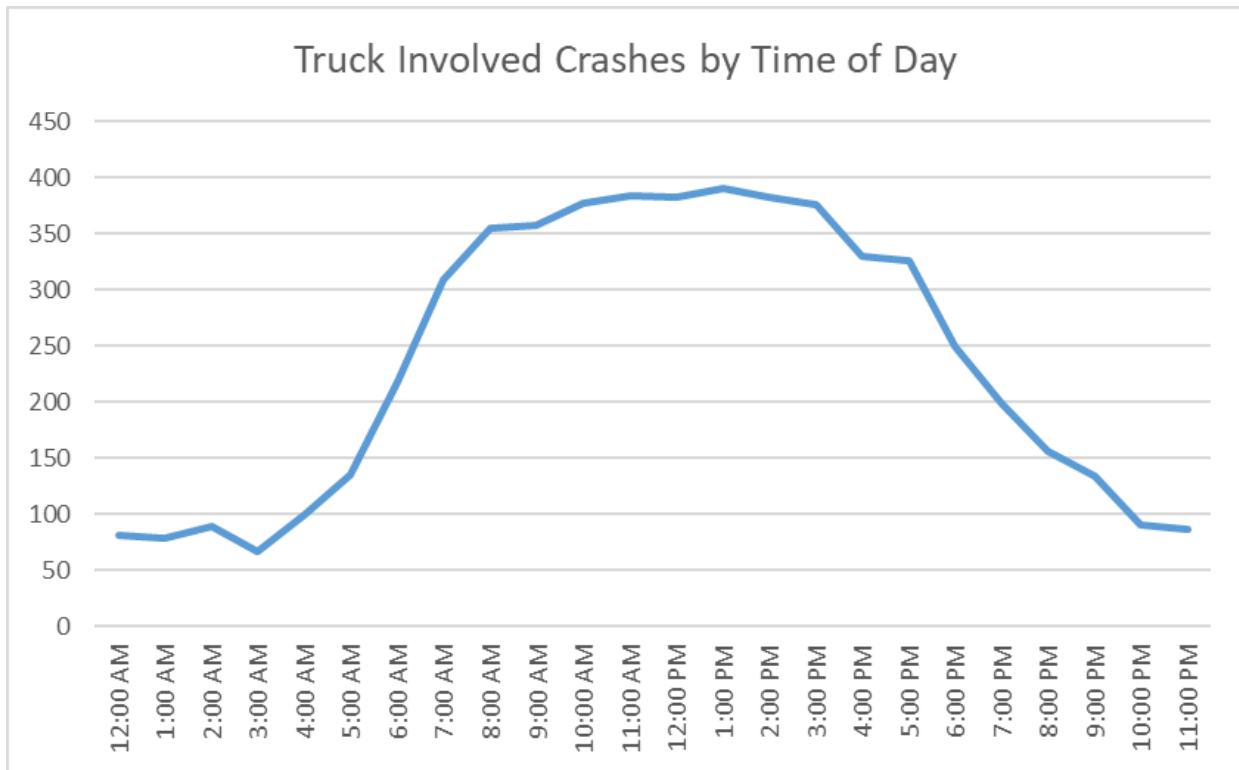


Figure 2.6: Truck Involved Crashes by Time of Day

Source: ITD

Opportunities and Solutions

Proven solutions to resolving truck parking issues, as well as emerging trends and creative solutions for finding alternative ways to combat parking shortages and other challenges vary by State and are influenced by the type of industries most prominent in the area. Some solutions, including policy and funding opportunities, are similar across the nation. Public and private sector coordination is critical to addressing long-term truck parking needs and in the development of viable solutions. The opportunities and solutions identified in this section are a result of a review of various plans and studies.

Policy and Goals

The Idaho Freight Plan has identified several goals related to truck parking using public, private, or a partnership between the two to impact parking demand and/or supply. These include:

- **Public-private partnerships** could be created to encourage intermodal or transload facility development or address the need for additional truck parking. Another option is for the state or local/regional governments to incentivize or help finance the development of truck parking facilities on private land.

- **Construction** of additional rest stops or increase the number of truck parking spaces at existing rest stops along heavily traveled truck corridors to reduce the number of drowsy or tired truck drivers.
- **Federal emphasis** on truck parking could be combined with an ITS component such as real-time space availability to address multiple Federal priorities and increase the chance of receiving funds. Increased information, such as adding real time parking data to Idaho's truck-specific 511 page may help.

State and federal policies and programs also play a large role in opening opportunities and providing truck parking solutions. The federal Interstate Oasis Program was designed to enhance safety and convenience for interstate highway users. It allows Idaho to designate and provide signage to eligible facilities off the freeway that provide products and services to the public, 24-hour access to public restrooms, and rest area-type parking for automobiles and heavy trucks. To qualify for a designation and signing as an Interstate Oasis, a facility must meet specific criteria (FHWA 2006):

- A facility is no more than three miles from an interstate highway interchange except for in rural areas where eligible facilities may not be available. A lesser distance may also be required when a state's laws impose restrictions on truck travel.
- Access routes can safely and conveniently accommodate vehicles of the type, size and weight that would be regularly using this type of facility.
- Provide a physical layout that includes safe entry and exit points to the site, on-site traffic circulation and parking areas for all vehicles, including heavy trucks.
- Maintain modern, sanitary restrooms with free drinking water that are available to the public at all times.
- Provide a sufficient number of well lighted parking spaces for automobiles and heavy trucks that are available at no charge or obligation for parking durations of up to 10 hours or longer.
- Offer products and services that include a public telephone and food, as well as motor vehicle fuel, oil and water.
- Staffed by at least one person at all times.

Policies at the local level, while restrictive in many cases, can also provide opportunities for existing businesses to capitalize on. For example, in areas where zoning and land use permit industrial uses, those businesses with high volume truck movements could increase the off-street supply of parking by allowing parking on their sites. Also, pooled truck parking at larger industrial developments would reduce the truck parking requirements at each tenant's site and increase parking/staging at a central location for all tenants to direct drivers for short term staging or long-term rest.

Existing Parking Information Resources for Drivers

As access to easy-to-use technology has increased, websites and mobile apps have been developed to help truckers plan their routes and find available parking. Websites provide facility locations, identify the number of parking facilities, amenities, and allow drivers to rate them. Other websites and mobile apps

also provide locations for truck parking and where there may be availability and may provide the opportunity to reserve a space. Specifically in Boise, King Pin Parking offers truck parking reservations at a secure facility accessible through their website. Other services such as Terminal Exchange Services offers secure trailer-only parking/staging including two in Idaho—Boise and Idaho Falls.

Real time parking information has been deployed in several states. The Truck Parking Information Management System (TPIMS) provides drivers, fleet managers and owner-operators with up-to-date parking availability along major freight corridors. Eight states (Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Ohio and Wisconsin) have partnered with the FHWA to implement the system to reduce transport cost, improve quality of life for drivers, reduce fatigue-related crashes, and improve driver HOS compliance. Figure 2.7 shows how the TPIMS system works.

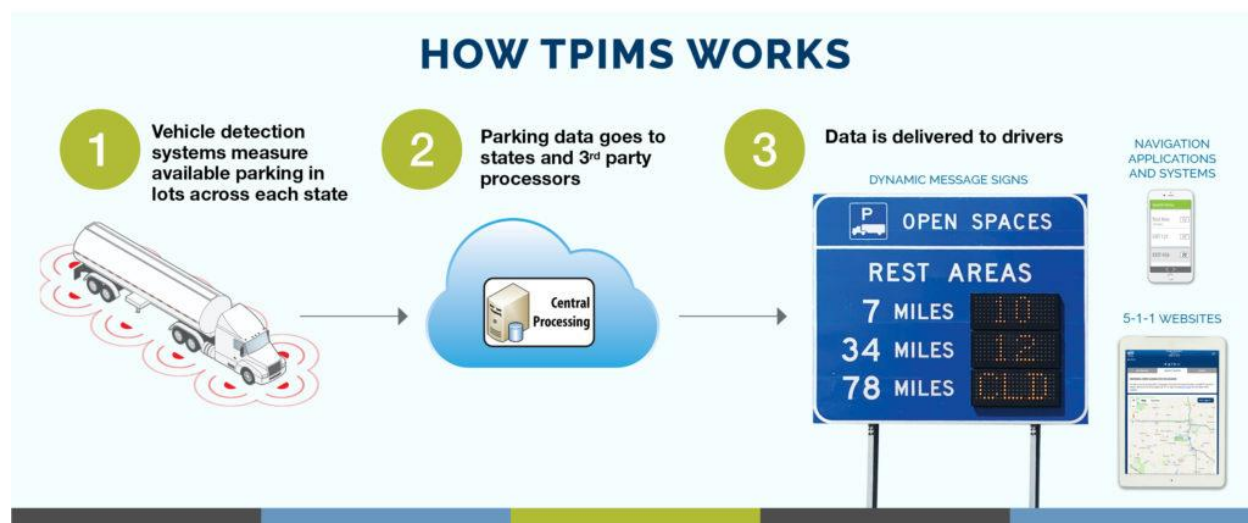


Figure 2.7: TPIMS Operational Summary

Source: <https://trucksparkhere.com/>

Funding Opportunities

Funding to build new or maintain existing parking resources is critical to ensuring supply of parking is available to meet the demand. The construction or expansion of truck parking, especially at the Federal level, are typically eligible for funding programs. Funding is also available for technologies that support safe truck parking operations, such as reducing emissions through truck stop electrification and providing truck drivers with information on real-time parking availability. Along these lines, FMCSA has approved funding for truck parking Intelligent Transportation Systems (ITS) through its innovative Technology Deployment Strategic Plan (USDOT - FMCSA 2019) as part of its Accelerating SmartPark Deployment project. Table 2.6 identified Federal Funding sources eligible for truck parking improvements, which are available to the state, MPOs, municipalities, or tribal governments.

Table 2.6: Potential Federal Funding Sources for Truck Parking

Funding Source	Requirements
Surface Transportation Block Grants (STBG)	Provides specific eligibility for the construction of truck parking facilities on Federal aid highways under 23 U.S.C. 133(b)(1)(E).
National Highway Freight Program (NHFP)	The NHFP provides formula funds to States to improve the condition and performance of the National Highway Freight Network under 23 U.S.C. 167(h)(5)(C). Eligible activities include truck parking facilities and real-time traffic, roadway condition, and multimodal transportation information systems. The NHFP funds are eligible for use on the Primary Highway Freight System or National Highway Freight Network, as appropriate.
Highway Safety Improvement Program (HSIP)	Truck parking facilities may be funded through this program, provided the need for truck parking is consistent with the State Strategic Highway Safety Plan (SHSP) developed under 23 U.S.C. 148 and corrects or improves a roadway feature that constitutes a hazard to road users or addresses a highway safety problem.
National Highway Performance Program (NHPP)	NHPP funds may be obligated for a project on an eligible facility that supports progress toward the achievement of national performance goals for improving infrastructure condition, safety, congestion reduction, system reliability, or freight movement on the NHS. Eligible projects include highway safety improvements on the NHS, which may include truck parking per 23 U.S.C. 148.
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	While CMAQ funding is not eligible for construction of truck parking, truck stop electrification systems that reduce the need for trucks to idle may be eligible under 23 U.S.C. 149. Eligibility must be determined in consultation with the U.S. Environmental Protection Agency based upon the likelihood that the associated emissions reduction would benefit a nonattainment or maintenance area.
Motor Carrier Safety Assistance Program (MCSAP)	BIL increases total funding by \$919 Million and supports initiatives that contribute to reduce the number and severity of crashes and hazardous material incidents involving commercial motor vehicles, and improve safety through enforcement, education, outreach, and technology investments.
High Priority (HP) Grants	Discretionary grant program which funds initiatives to implement innovative technological solutions, other related efforts; support research efforts impacting commercial motor vehicle safety; and detect and immobilize unsafe large trucks operating on nation's roadways.

Source: https://ops.fhwa.dot.gov/freight/infrastructure/truck_parking/title23fundscmv/title23_49_funds_cmv.pdf

There is discussion at the Federal level to specifically fund truck parking projects. The FHWA has placed an administrative priority on truck parking infrastructure to support progress toward the achievement of

national performance goals for improving infrastructure condition, safety, congestion reduction, system reliability, or freight movement on the NHS. Further, there are multiple bills under consideration that could provide additional funding for truck parking. The Truck Parking Safety Improvement Act is currently being debated and would approve funding to assist agencies with expanding parking capacity and fund improvements to existing parking areas for commercial vehicles. Overall, it would authorize \$755 million in competitive grants through fiscal year 2026. This is a companion bill to the Safer Highways and Increased Performance for Interstate Trucking (SHIP IT) Act introduced in January 2023 which would approve nearly \$800 million through federal fiscal year 2026 for truck parking projects.

Other states have considered branching into truck parking incentives to help create needed supply. Incentive programs are typically created by the public sector to encourage private sector investment in new or higher quality truck parking. In these situations, the public entity could provide land, an accelerated permitting or review process, direct financial incentives, and/or opportunities for increased revenue to encourage the desired development.

Peer Agency Identified Solutions

States have identified potential solutions to assist with truck parking issues. These solutions could assist ITD in developing its response to the issue by tailoring these and others identified in subsequent tasks. Below is a summary of the solutions identified in Ohio, Nevada, Oregon, Colorado, South Carolina, and Texas.

Ohio Truck Parking Study

Ohio presented three types of solutions to address truck parking issues related to capacity, information, and technology, as well as policies and programs. ODOT created a solutions toolbox which includes the potential solutions and the lead agency responsible. Figure 2.8 below shows these.

Capacity Solutions		Information and Technology Solutions		Policies		
Enhance existing parking facilities	Develop new parking capacity	Information	Technology	Multi-State	State	Local
Expand and upgrade existing parking at DOT-maintained truck parking facilities	Add parking at existing and/or underutilized state facilities	Guides & maps with truck parking info	Monitor CAV & EV adoption Integrate new technologies at truck parking locations	Coordinate with neighboring states and region	Integrate truck parking into other state planning efforts	Provide support to local jurisdictions to facilitate
	Formalize roadside facilities on corridors	Static wayfinding signs with truck parking info	Provide idle reduction infrastructure at truck parking locations		Leverage truck parking data to inform performance and decision-making	Develop truck parking education campaign and conduct outreach
	P3 to provide additional parking	Expand Ohio's truck parking information system			Pursue funding for truck parking	Develop truck parking program
					Establish truck parking champion(s)	
					Work with truck parking stakeholders to provide outreach and exchange info	

■ DOT-led
■ Public-private partnership
■ Partnership with other Ohio agencies
■ Multi-state partnership

Figure 2.8: Ohio Truck Parking Solutions Toolbox

Source: ODOT, Transport Ohio. Ohio Truck Parking Study (2022), Page 32 Figure 12: Truck Parking Solutions Toolbox.

Nevada Truck Parking Implementation Plan

Through this study's focus on parking to satisfy HOS requirements, recommendations are centered around four categories (NDOT 2019):

- Infrastructure: Focus on the creation of new truck parking, expansion of existing truck parking capacity, conversion of other uses into truck parking, and addition of amenities.
- Policy, coordination, and outreach: Policy changes, education and outreach opportunities, and coordination efforts that can help close the truck parking gap in Nevada. Stakeholders within the truck stop industry commented that one of the best ways public agencies can support development of new or expanded facilities is not with financial support (which often comes with unwanted requirements) but help with local permitting requirements and fostering public support.
- Urban truck parking solutions: Urban parking solutions must respond to Short-term staging parking, Long-term parking for independent owner-operators, and long-haul parking.

- Technology and data: Technology and data solutions do not increase capacity but can make finding parking easier and can reduce the impacts of idling (noise and air pollution) that are often the impetus behind community opposition to truck parking facilities.

General recommendations discussed building public and private partnerships, approaching policy changes including those related to zoning, enhancing coordination among entities and enforcement. The list of recommended projects included new construction and expansion of specific parking locations throughout the state.

Oregon Commercial Truck Parking Study

The Oregon Commercial Truck Parking Study's recommendations evaluated each tool/solution for its cost, resource utilization and ease of implementation. Nine tools/solutions are identified including (ODOT 2020):

- Real-time parking availability communication utilizing web or smartphone app - ODOT to push availability data to private apps such as Park My Truck.
- Camera sensors to determine parking space usage.
- Explore warehouse parking partnerships and/or requirements with private vendors for end-of trip parking and staging.
- Develop revised design standards for rest areas.
- Identify alternate truck parking locations such as closed weigh stations, chain-up areas, excess shoulders and safety pullouts.
- Improved/expanded truck parking areas using excess ROW, rest areas and other locations on interstates, improved geometrics, and capacity expansion.
- Investigate expanding parking via public private partnerships - utilizing excess ROW owned by state near private facilities and entering cost-sharing agreements for construction and maintenance of parking areas.
- Surveillance cameras, improved lighting and/or night-time surveillance patrol by Oregon State Police to enhance security onsite.
- Coordinate with MPOs and local planning organizations to develop guidelines and mitigations strategies aimed at easing public opposition to private sector parking facilities.

Colorado Truck Parking Assessment

The actions identified by this study centered on seven categories: monitoring the truck parking network; partnerships; communication; CDOT multi-use infrastructure; regulatory challenges; multi-use infrastructure owned by others; and adding parking spaces. Recommendations range from further study and identification of challenges to updating truck parking brochures with the most up to date information. Specifically, some of the recommended actions include:

- Monitoring the Truck Parking Network on an annual basis to look at demand changes and address capacity or amenities of existing facilities as required.
- Partner with state and local departments/agencies to prioritize truck parking initiatives and investments and communicate the importance of truck parking and resources to expand parking.
- Develop online tool to disseminate truck parking information.
- Identify existing state-owned infrastructure that may be used as truck parking in addition to its primary purpose such as chain stations, rest areas, maintenance facilities, park-and-rides, and others. Address policies or procedures which prevent expanded use of such facilities.
- Identify state and local regulations which hinder development of truck parking.
- Construct new and expand State operated facilities.
- Play appropriate role(s) in development of new truck stop facilities by private entities.
- Identify opportunities for expansion of existing private parking facilities through partnerships.

South Carolina Statewide Truck Parking Assessment Study

Strategies considered in this study are grouped into three broad categories. Each strategy includes the lead and supporting agencies, ease of implementation, cost, and potential funding sources (SCDOT 2022):

- Strategies to increase truck parking capacity—Strategies to build new or expand existing facilities.
- Strategies to better utilize existing infrastructure for truck parking—Operational strategies to improve utilization of existing and non-traditional capacity.
- Policy and program strategies—Strategies to address regulatory, communication, and knowledge gap hurdles to enhancing capacity. These include strategies to leverage private-sector resources for providing truck parking.

Texas Statewide Truck Parking Study

The Texas State Truck Parking Study developed six TxDOT led strategies and six strategies where TxDOT has an opportunity to support. They include the following:

TxDOT Led Strategies

- The State should develop guidelines for integrating truck parking into the TxDOT project development process.
- The State should consider truck parking needs prior to purchase or sale of TxDOT right of way.
- The State should reassess public facility closures in high demand areas.
- The State should allow truck parking in auto-designated areas at existing TxDOT facilities during off-hours where feasible.
- The State should prepare corridor truck parking plans.

- The State should integrate truck parking into the Strategic Highway Safety Plan (SHSP).

TxDOT Supported Strategies

- The State should collaborate with planning partners to examine feasibility of truck parking at non-TxDOT public facilities.
- The State should coordinate with private property owners to allow truck parking at large parking facilities when not in use.
- The State should create guidance to help local agencies include truck parking demand as part of traffic impact analyses for new developments.
- The State should develop guidelines for integrating truck parking into local and regional transportation and land use plans.
- The State should encourage commercial and industrial property owners to provide truck parking on unused portions of property.
- The State should create guidance for next generation logistics parks that includes integrated and full-service truck parking facilities.

3. Stakeholder Engagement

The study team engaged the Freight Advisory Committee, the Trucking Advisory Committee, and other trucking stakeholders to gather information regarding the challenges with truck parking in Idaho. This effort aimed to gather user information on specific truck parking hot spots as well as general systemic challenges throughout the state to inform the needs and ultimate recommendations. Interviews were conducted in the early stage of the study to help identify truck parking issues throughout the state with the following organizations:

- Community Planning Association of Southwest Idaho (COMPASS)
- Customs and Border Protection (CBP)
- Idaho State Police
- Idaho Trucking Association
- Lewis Clark Valley Metropolitan Planning Organization (MPO)
- Multiple trucking firms

The discussions yielded the following notable issues related to truck parking. These issues are important perspectives from interviewees but may differ from data analysis or observations from other stakeholders.

- Idaho has a lot of public truck parking and private truck stops and is a “friendly” truck parking state.
- A substantial number of truck trips are between Twin Falls and west coast ports. Drivers traveling southwest use US Hwy 93 to I-80, which is a two-lane highway with limited rest stops.

Similarly, commercial trucks traveling on US Hwy 95, on the west side of Idaho, is primarily a two-lane highway with limited truck parking between Boise and Coeur D'Alene.

- Some oversized and overweight (OS/OW) loads, such as windmill components, are not permitted on US 95. Depending on the destination and time of day, trucks transporting certain OS/OW loads may be restricted from movement and thus need truck parking to accommodate very large or heavy truck configurations. Truck parking spaces to accommodate very long truck-trailer combinations are limited in number.
- There can be truck parking issues at the Oregon/Idaho border where there have been observations of trucks parked underneath I-84 overpasses.
- Private rest stops have limited (if any) accommodations for oversized and overweight loads to find parking.
- In the Twin Falls area there is a lack of truck parking. The rest stop near Twin Falls (I-84 eastbound between mm 172 and mm 173, four miles southeast of exit 168) closed a few years ago. The closure was due to housing that has encroached up to the line and would cost a lot of money to reopen. There are plans to construct and open new facilities both east/westbound on I-84.
- Some trucks will park near the Perrine Bridge in Twin Falls.
- Some private businesses will offer truck parking that can range from \$25 a day to \$100 a month.
- In Jerome County at the Valley Truck Stop and Love's, available spaces fill up quickly. Some trucks park at a Walmart and others park in a gravel area on the way to Jackpot.
- Trucks routinely park on the Wendell and Jerome off-ramps on I-84.
- The Bliss rest stops are full at around 5:00-5:30pm, there are no other available parking options in that area. The next closest parking is Mountain Home or Boise.
- There is some truck parking on off-ramps, because it isn't heavily enforced, and some undesignated parking areas such as these are more utilized than others.
- In Coeur D'Alene, the issue is very short parking areas and parking spots. The area can't keep up with regular parking, let alone truck parking.
- The Port of Entry (POE) outside Boise is generally underutilized for overnight truck parking.
- Truck stops in the Twin Falls and Boise areas are always busy.
- Oversize loads find it difficult to find parking because they do not fit in most traditional truck stops.
- At the Canadian border, there can be issues when ISP does "saturation" three times a year. Cell service is limited and trucks stopped for enforcement concerns have limited parking availability.
- Some MPOs need more information and knowledge on truck parking issues. Some notice shortages only during special circumstances, such as storm events, where truck parking is filled quickly. During these times information needs to be shared early on variable message signs before trucks get stuck without parking options.
- Some regional policies are being adopted around freight access and mobility that may potentially inhibit freight's ability to reach its final destination. Truck parking policy solutions that lead to design solutions are needed.

- Truck parking issues occur in Lewiston during harvest (September/October) specifically at the Port of Lewiston area. Trucks will use street parking which is limited and prohibited but not enforced.

4. Truck Parking Utilization Assessment

In order to address truck parking needs in Idaho, it is important to understand the type (public and private) of truck parking available, the number of spots available to drivers, the level of utilization of authorized truck parking facilities, and the amount and location of parking at unauthorized (e.g. highway shoulders and ramps). This section of the report summarizes the data to quantify truck parking capacity, availability, and gaps for drivers in Idaho.

Data Sources

The existing condition of truck parking supply in Idaho was analyzed by using multiple data sources and a methodology to estimate the total number of public and private truck parking facilities in Idaho. The data sources used in this study include the following:

- Jason's Law Truck Parking Survey
- Idaho Transportation Department (ITD) public rest areas data
- Truck Stops & Services online directory
- TruckMaster
- American Transportation Research Institute (ATRI) truck probe data

Data from these sources (Figure 4.1) were combined to locate truck parking facilities in Idaho and approximate the capacity and utilization of both public and private sites. The combined data were used to develop a comprehensive database of truck parking locations that was subsequently used to assess the state of the truck parking system in the state of Idaho. The analysis will help identify needs of truck parking in Idaho and areas where truck parking capacity is insufficient and will be used as a base point for local stakeholder outreach and engagement on existing conditions and future needs assessment.

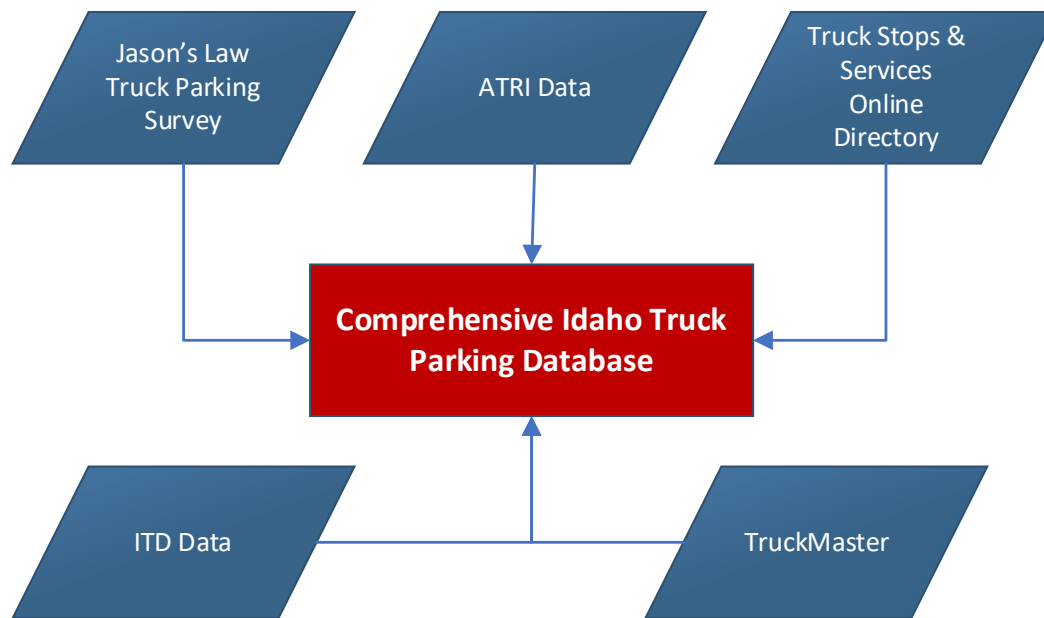


Figure 4.1: Truck Parking Database Data Sources

Truck parking location and capacity information is assembled from different sources to provide the full picture of truck parking infrastructure throughout the state. In some states like Idaho, public truck parking location information is public but location and capacity information on all available facilities requires multiple data sets. Five data sources were employed in this study to develop a comprehensive list of facilities and their capacity and utilization across the state. The goal of this analysis is to combine existing sources to overcome the limitations of each data source.

Jason's Law Truck Parking Survey

In 2015, the first Jason's Law Truck Parking Survey was published by the United States Department of Transportation (USDOT) to determine if adequate parking was available for truck drivers nationwide. The survey was a statutory requirement from the "Moving Ahead for Progress in the 21st Century" Act (MAP-21) that characterized the survey as a "national priority on addressing the shortage of long-term parking for commercial motor vehicles on the National Highway System (NHS) to improve the safety of motorized and non-motorized users and for commercial motor vehicle operators." USDOT conducted the survey and comparative assessment in consultation with motor carrier representatives to:

1. Evaluate the capability of each state to provide adequate parking and rest facilities for commercial motor vehicles engaged in interstate transportation.
2. Assess the volume of commercial motor-vehicle traffic.
3. Develop a system to measure the adequacy of commercial motor-vehicle parking facilities.

An updated version of the Jason's Law Truck Parking Survey became available in 2020 from the survey conducted in 2019. Across the nation 313,000 public and private truck parking spaces were identified,

an increase of 6 percent and 11 percent from 2014 to 2019, respectively. Findings of the survey indicate that (FHWA 2020):

- The average number of truck parking spaces per facility is 143 spaces.
- Some facilities operate over 100 percent capacity during the overnight hours on weekdays, primarily during the months of May through October.
- Unauthorized truck parking occurs on ramps, shoulders, private parking lots, and local roads most often between 7 p.m. and 9 a.m.

The data from the 2019 survey served as a baseline for this study to provide the most up-to-date Idaho truck parking space counts for the state. Idaho is one of the 12 states with the highest number of truck parking spaces per 100,000 truck vehicle miles traveled (TVMT) daily (Figure 4.2). The Jason's Law Truck Parking Survey included 12 public truck rest areas with a total number of 275 parking spaces for an average number of 23 parking spaces per location (Figure 4.3), which is above the national average of 21 parking spaces.

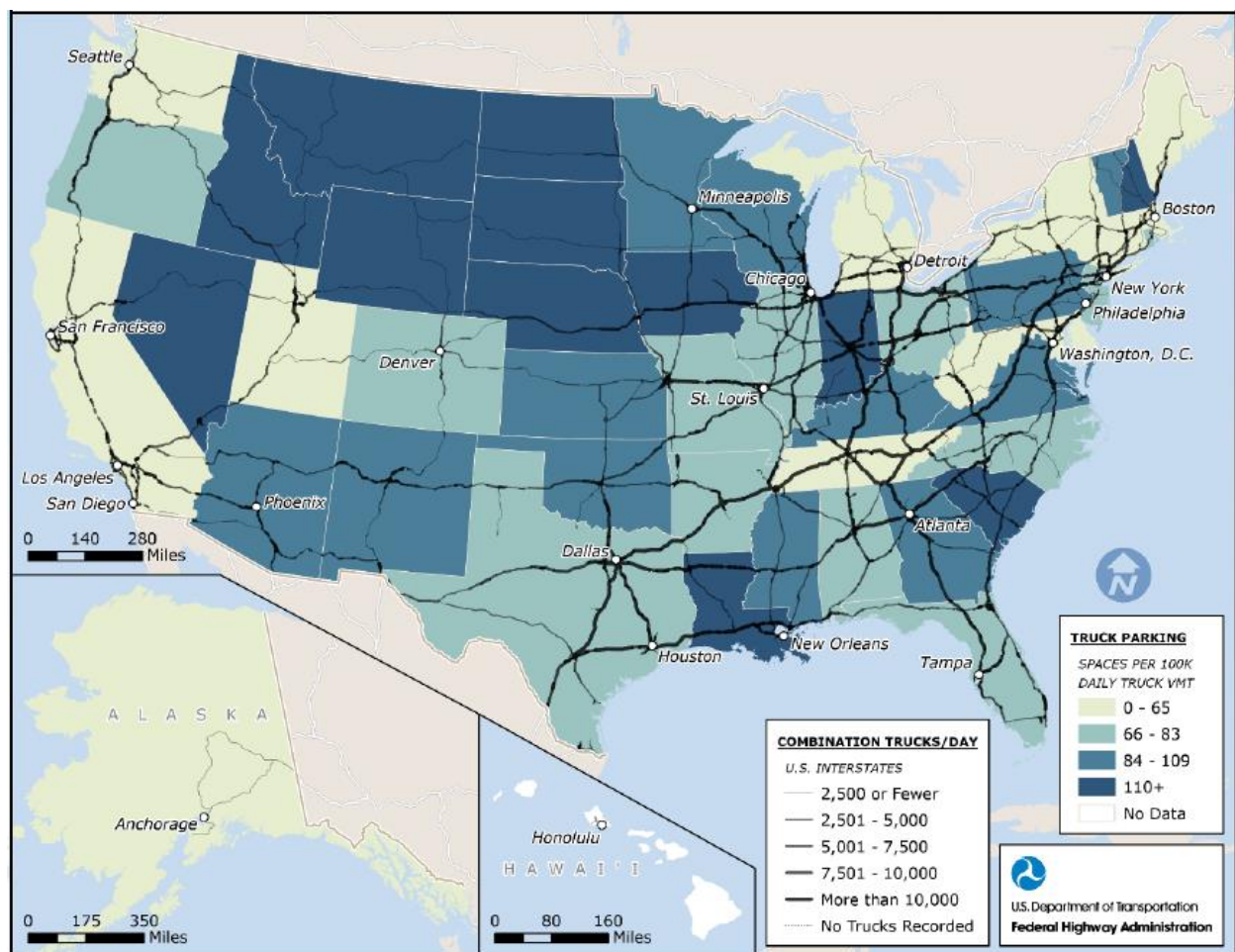


Figure 4.2: Total Number of Truck Parking Spaces per 100,000 TVMT Daily, 2019

Source: FHWA 2020.

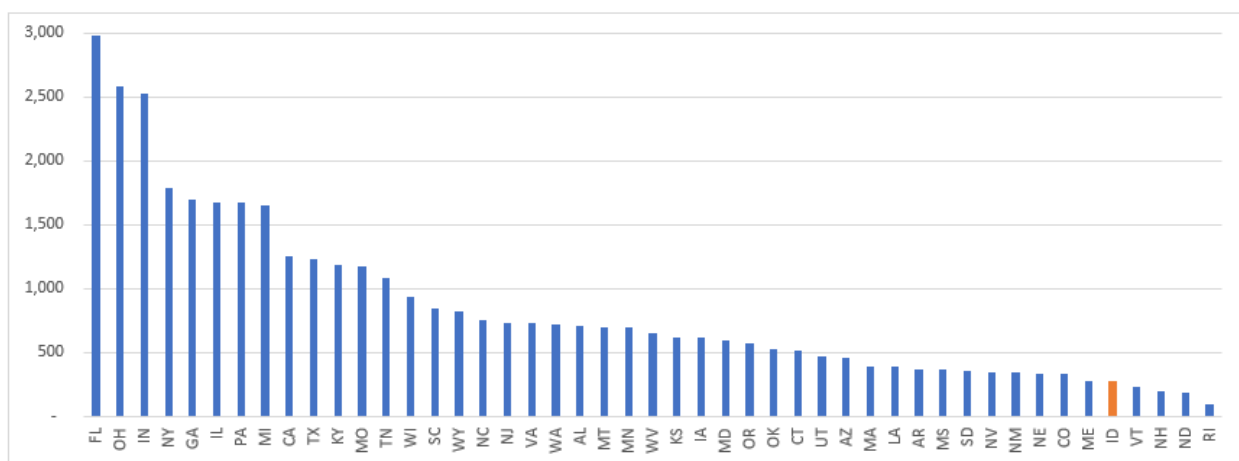


Figure 4.3: Public Truck Parking Spaces by State (Lower 48)

Source: Jason's Law Truck Parking Survey 2019.

ITD Public Rest Areas Data

Public rest areas in Idaho are summarized in a spatial file created by ITD, which includes authorized public passenger and truck parking locations, weigh stations, ports of entry (POEs), and Oasis truck stops (part of the federal Interstate Oasis program) and amenity information. Separate spreadsheets summarize the estimated space counts at rest areas, POEs, and Oasis truck stops. Figure 4.4 shows the locations of these rest areas.

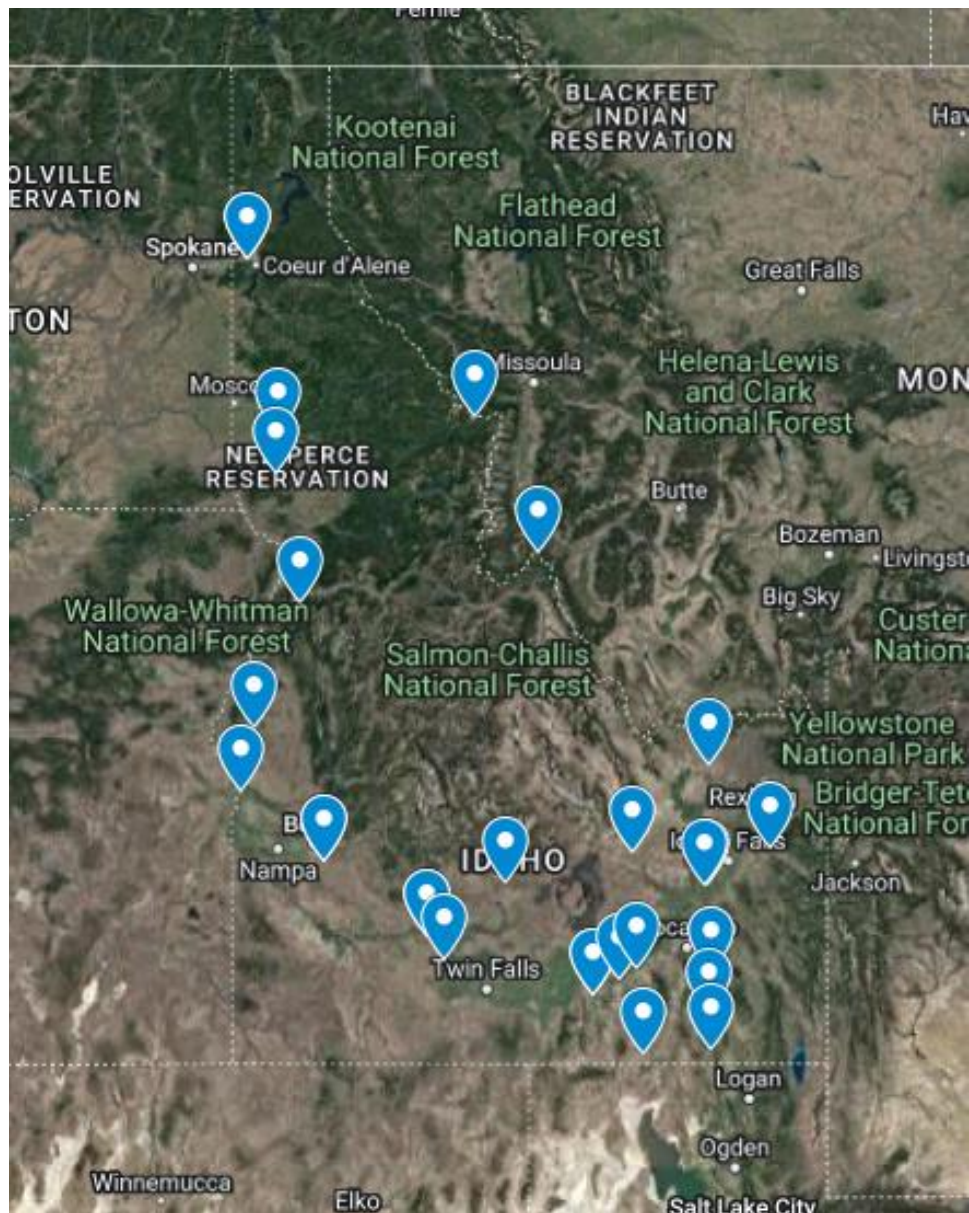


Figure 4.4: ITD Rest Area Map

Source: ITD Rest Area Map, <https://itd.idaho.gov/restareamap/>.

Truck Stops & Services Online Directory

Truck Stops & Services is a website and mobile app that provides an online directory of private truck stops (Figure 4.5). Information provided includes number of parking spots, number of reserved or paid parking spots, fuel lanes, and amenities at each location. Truck stops are summarized by state, highway, or city.


Truckers Directory - Truck Stops in Idaho					
NAME	HIGHWAY	EXIT	CITY	STATE	
3 MILE CORNER TRUCK STOP	US 95	US 2	BONNERS FERRY	ID	
BANNOCK PEAK TRUCK STOP	I-86	52	ARBON VALLEY	ID	
BOISE STAGE STOP	I-84	71	BOISE	ID	
CAROUSEL GAS & TIRE	I-90	45	PINEHURST	ID	
DAD'S N YELLOWSTONE TRAVEL STOP	US 26		IDAHO FALLS	ID	
DEANO'S EXXON	US 12	3 MILES W OF BRIDGE	OROFINO	ID	
DYCK'S OIL & AUTO	US 2		BONNERS FERRY	ID	
FLAGS WEST TRUCK STOP	I-15	31	DOWNEY	ID	
 FLYING J TRAVEL CENTER #1043	I-15	113	IDAHO FALLS	ID	

Figure 4.5: Idaho Truck Stop Location Snapshot on Truck Stops & Services Online Directory

Source: Truck Stops & Services, <https://www.truckstopsandservices.com>

TruckMaster

The TruckMaster Fuel Finder Truck Stop Locator is an online tool (Figure 4.6) that lists diesel fuel prices at truck stops between any two points in the United States, or every truck stop within a 100-mile radius of the user's specified city. Information includes amenities, map, and details about the selected truck stop. In this study TruckMaster was used to verify locations.

Name	Address	City, ST	CPG	PkSp	Rating
Jack's Travel Plaza	US20	Arco, ID			Rate It!
Big Lost River Rest Area	US20/US26 MM 265	Arco, ID			Rate It!
Timmerman pass rest area	US20 MM 178 (Hwy75)	Bellevue, ID			Rate It!
Stinker	I-15 Ex 93	Blackfoot, ID		4	Rate It!
Sage Hill Travel Center	I-15 Ex 89 (Hwy91)	Blackfoot, ID			Rate It!
Gas & Scrub	US26	Blackfoot, ID			Rate It!
North Blackfoot Rest Areas	I-15 N/I-15 S MM 101/101	Blackfoot, ID			Rate It!
Stinker Station #74	I-84E Ex 137 Or I-84W Ex 141	Bliss, ID			Rate It!

Figure 4.6: TruckMaster Truck Stop Location Snapshot

Source: TruckMaster, <http://www.findfuelstops.com/>

ATRI Truck Probe Data

ATRI is the research arm of the American Trucking Associations (ATA) and provides data that include geospatial (longitude and latitude) and temporal (time and date stamp) information of more than one million freight trucks in North America (Murray 2020). Additional information such as speed and direction is also provided, while other details of individual trucks such as truckload (TL)/less than truckload (LTL), commodity type carried, number of axles etc. are proprietary and not included. Since ATRI began collecting truck Global Positioning System (GPS) data in 2002 it has been used in multiple freight studies by state departments of transportation and the Federal Highway Administration (FHWA) for freight performance measures development, truck bottleneck identification, and truck parking studies, among other uses.

ITD purchased ATRI truck data as part of this study to help identify all locations, authorized and unauthorized, where trucks park. The data provided covers a 2-week periods throughout a given 12-month period to capture for seasonality. For this study, the periods were as follows:

- September 11–22, 2021
- December 4–15, 2021
- March 12–23, 2022
- June 18–28, 2022

To focus the analysis on those areas with ongoing truck parking activity, parking locations were identified using cluster analysis where there were at least eight stop events exceeding four hours in each cluster. The analysis identified locations where trucks are parked, whether authorized or unauthorized,

including 11 truck stops not identified through other data sets and undesignated truck parking locations such as ramp locations, highway shoulder locations, empty lots, big-box stores, and hotel parking lots. Figure 4.7 shows a truck stop location identified using the ATRI data cluster analysis, where the points indicate stopped trucks.

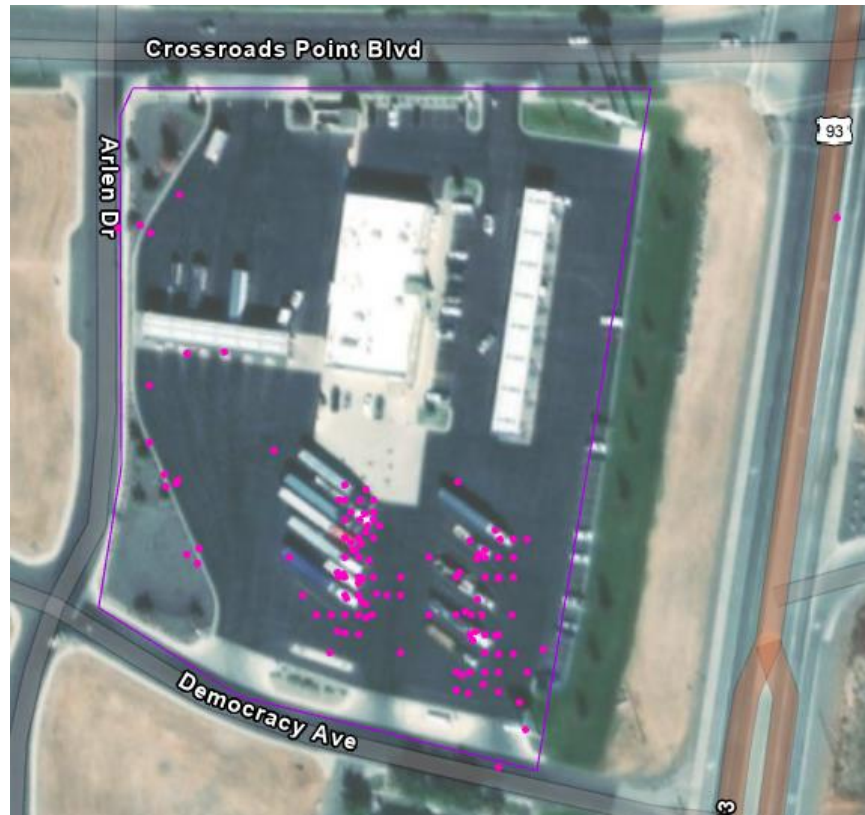


Figure 4.7: Truck Stop Identified from Cluster Analysis

Idaho Truck Parking Database

Information gathered from the five data sources was compiled into a comprehensive truck parking database to provide a comprehensive picture of current truck parking locations, and supply and demand in the state.

Total truck parking space counts were compared among the different data sources to identify locations where the count values were inconsistent and required verification. The study team conducted a visual inspection of capacity at these locations using Google Earth aerial imagery and further validated the data as part of a field survey of selected sites.

The final statewide truck parking database consists of 3,955 truck parking spaces across 118 locations, as illustrated in Figure 4.8. The majority of truck stops and rest areas are in the southern portion of the state, along Interstates 84, 15, and 86 (I-84, I-15, and I-86, respectively).

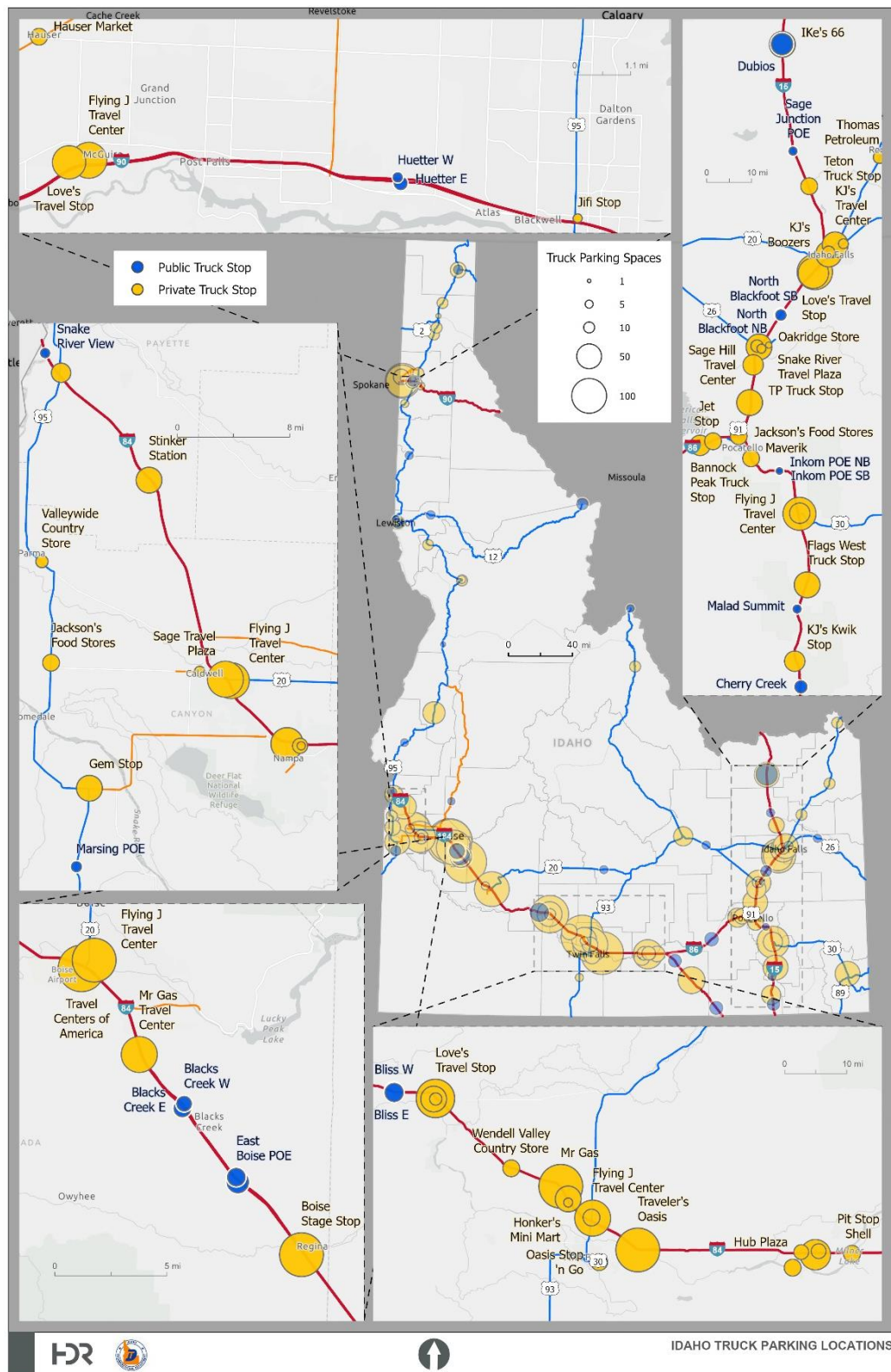


Figure 4.8: Idaho Truck Parking Locations

Truck Parking Demand Analysis

The ATRI truck GPS data were used to identify and analyze peak hours of truck parking demand, fluctuations throughout the day, seasonality, locations of unmet demand, and areas of concern where demand exceeds capacity.

Because ATRI data represents a sample of the truck activity on the roadway network, the actual number of trucks was estimated using expansion factors. To estimate these expansion factors the ATRI truck counts were compared with daily truck counts from Replica data (a nationwide travel simulation data set) at adjacent roadway segments. For example, if the Replica data showed 1,575 trucks on a roadway segment and ATRI data showed an average of 409 heavy commercial vehicles per day for the same segment, to inflate this value to the actual daily truck numbers in the segment, an expansion factor of 3.84 should be used. The final expansion factors at each truck parking location were estimated as a weighted average of the expansion factors within 10 miles from the location using the Replica truck counts as weights.

The distribution of expansion factors used in this study is shown in Figure 4.9. The expansion factors ranged between a minimum of 1.00 at a few locations in the northern part of the state to a maximum of 8.08 in the Arco city area west of Idaho Falls. The median expansion factor in the analysis was 4.04, representing a data saturation rate of 25 percent, meaning that on average 25 percent of trucks parking at each facility were represented in ATRI's data set.

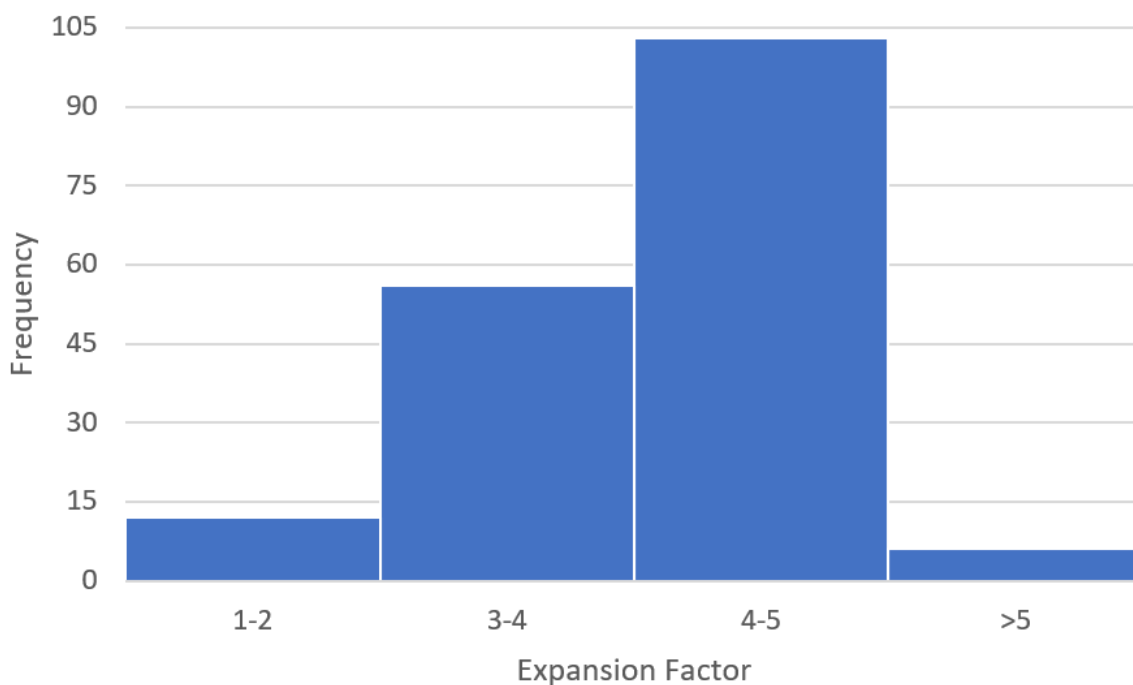


Figure 4.9: Expansion Factors at Idaho Roadway Network

Location Analysis

Parking demand was analyzed for all designated and undesignated truck parking locations. These include public rest areas, private truck stops, weigh stations/POEs, Oasis truck stops, on-/off-ramps, highway pull-offs, big-box stores, empty lots, and hotel parking lots (not included in the database because it is assumed that drivers are hotel patrons).

Public Rest Areas

There are 27 public rest areas (Figure 4.11) in Idaho offering 490 parking spaces, representing 12.3 percent of total truck parking capacity in the state. These locations are scattered across the state with a higher concentration in the southern part of Idaho where higher truck volumes are observed. Figure 4.10 shows an example of a truck rest area in Idaho, the Bliss eastbound (EB). The public rest areas in Idaho are as follows:

- Big Lost River Rest Area
- Blacks Creek Rest Area Eastbound (EB)
- Blacks Creek Rest Area Westbound (WB)
- Bliss Rest Area EB
- Bliss Rest Area WB
- Cherry Creek Rest Area Southbound (SB)
- Clark Hill Rest Area
- Coldwater Rest Area EB
- Cotterell Rest Area EB
- Cotterell Rest Area WB
- Dubois Rest Area
- Huetter Rest Area EB
- Huetter Rest Area WB
- Juniper Rest Area EB
- Juniper Rest Area WB
- Lenore Rest Area
- Lolo Pass Rest Area
- Lost Trail Pass Rest Area
- Malad Summit Rest Area SB
- Massacre Rocks Rest Area WB
- Midvale Hill Rest Area
- Mineral Mountain Rest Area
- North Blackfoot Rest Area Northbound (NB)
- North Blackfoot Rest Area SB
- Sheep Creek Rest Area
- Snake River View Rest Area
- Timmerman Rest Area Junction



Figure 4.10: Rest Area Example: Bliss Rest Area EB
Source: Google 2023

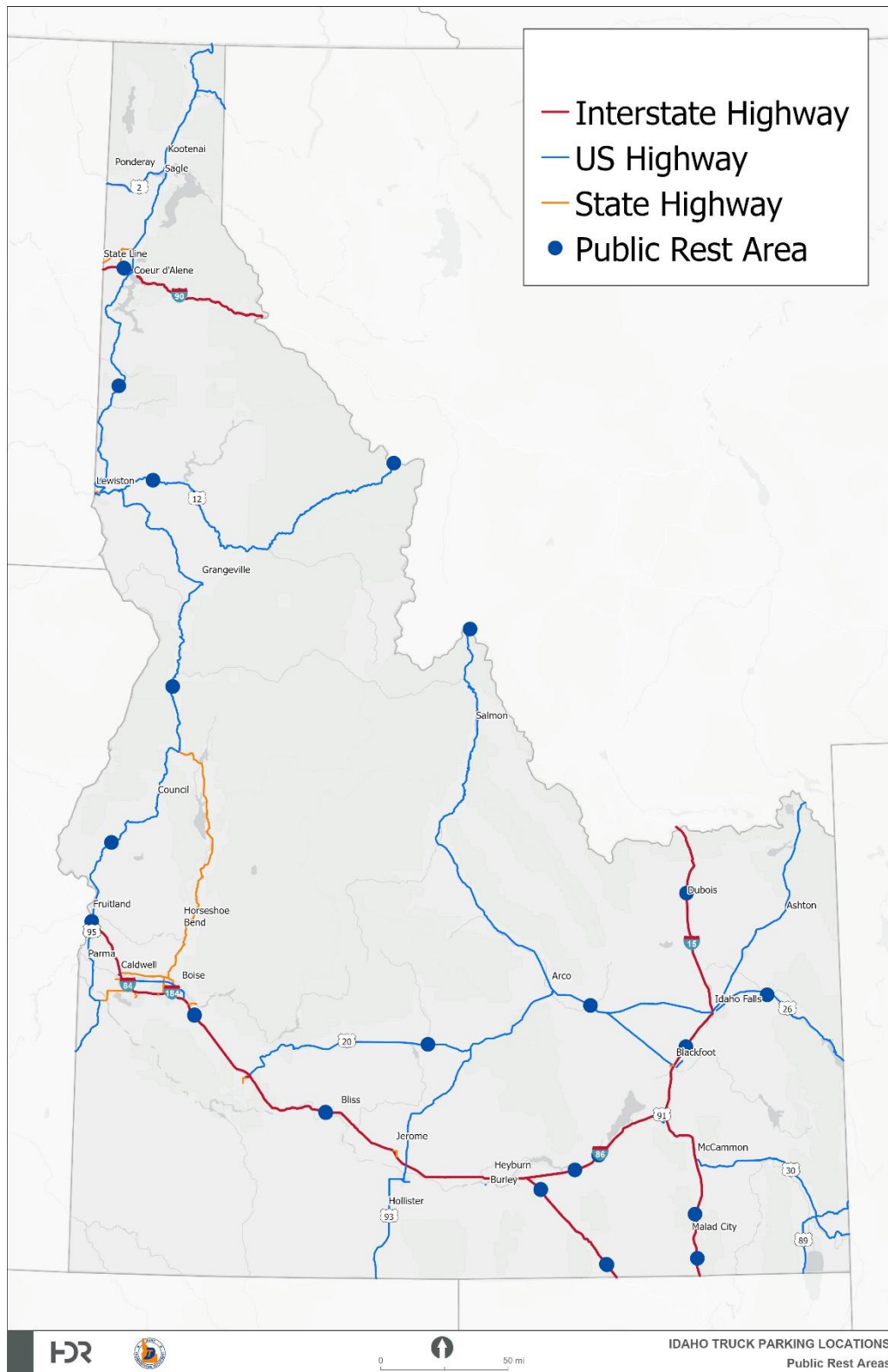


Figure 4.11: Idaho Public Rest Areas

Weigh Stations/Ports of Entry

Weigh stations and POEs have available truck parking; however, anecdotal accounts from interviews with drivers suggest that many truck drivers are reluctant to park there out of concern that they will be subjected to additional inspections. In Idaho there are 10 such locations, one of them shown in Figure 4.12, offering a total of 160 spaces representing 4.0 percent of total truck parking capacity in Idaho. All weigh stations and POE locations are shown in Figure 4.13 and include:

- Bonners Ferry POE
- Declo POE
- East Boise POE EB
- East Boise POE WB
- Hollister POE
- Horseshoe Bend POE
- Inkom POE NB
- Inkom POE SB
- Lewiston Hill POE
- Lewiston POE
- Marsing POE
- Sage Junction POE



Figure 4.12: Example POE: Inkom
Source: Google 2023

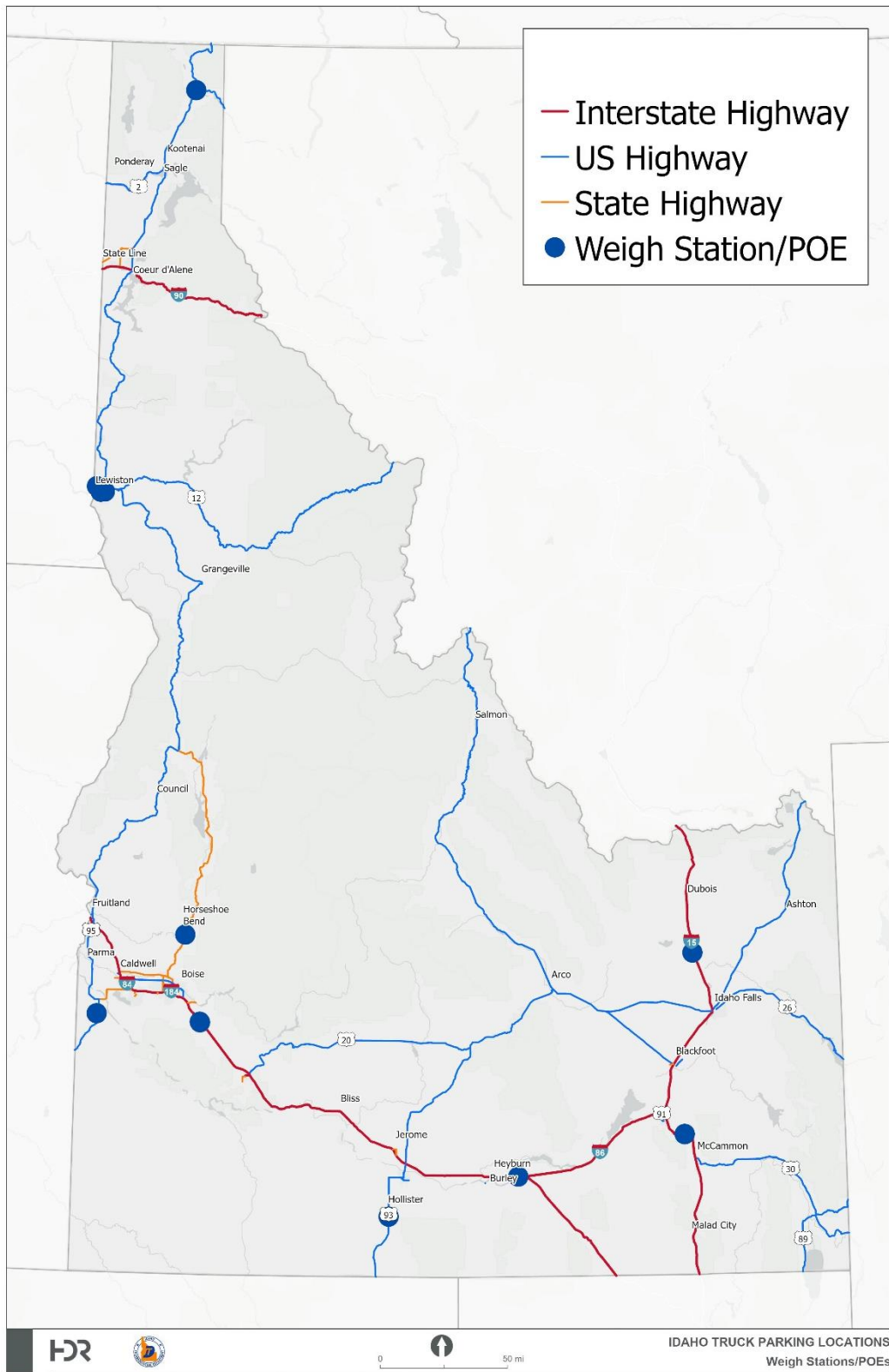


Figure 4.13: Idaho Weigh Stations/POEs

Private Truck Stops

Figure 4.14 shows one of the 77 private truck stops in Idaho with 3,062 parking spaces, 77.4 percent of Idaho's truck parking capacity (Figure 4.15). This inventory is separate from the Oasis truck stops described in the next section so as not to double-count them. Private truck stops offer different (and often expanded) amenities such as a reservation system, showers, Wi-Fi, diverse food options, etc. to attract more drivers. Private stop locations in Idaho range from very small, offering up to five spaces, to large truck stops with various amenities and exceeding 150 spaces available.



Figure 4.14: Example Private Truck Stop: I-84 Love's in Heyburn, Idaho

Source: Google 2023

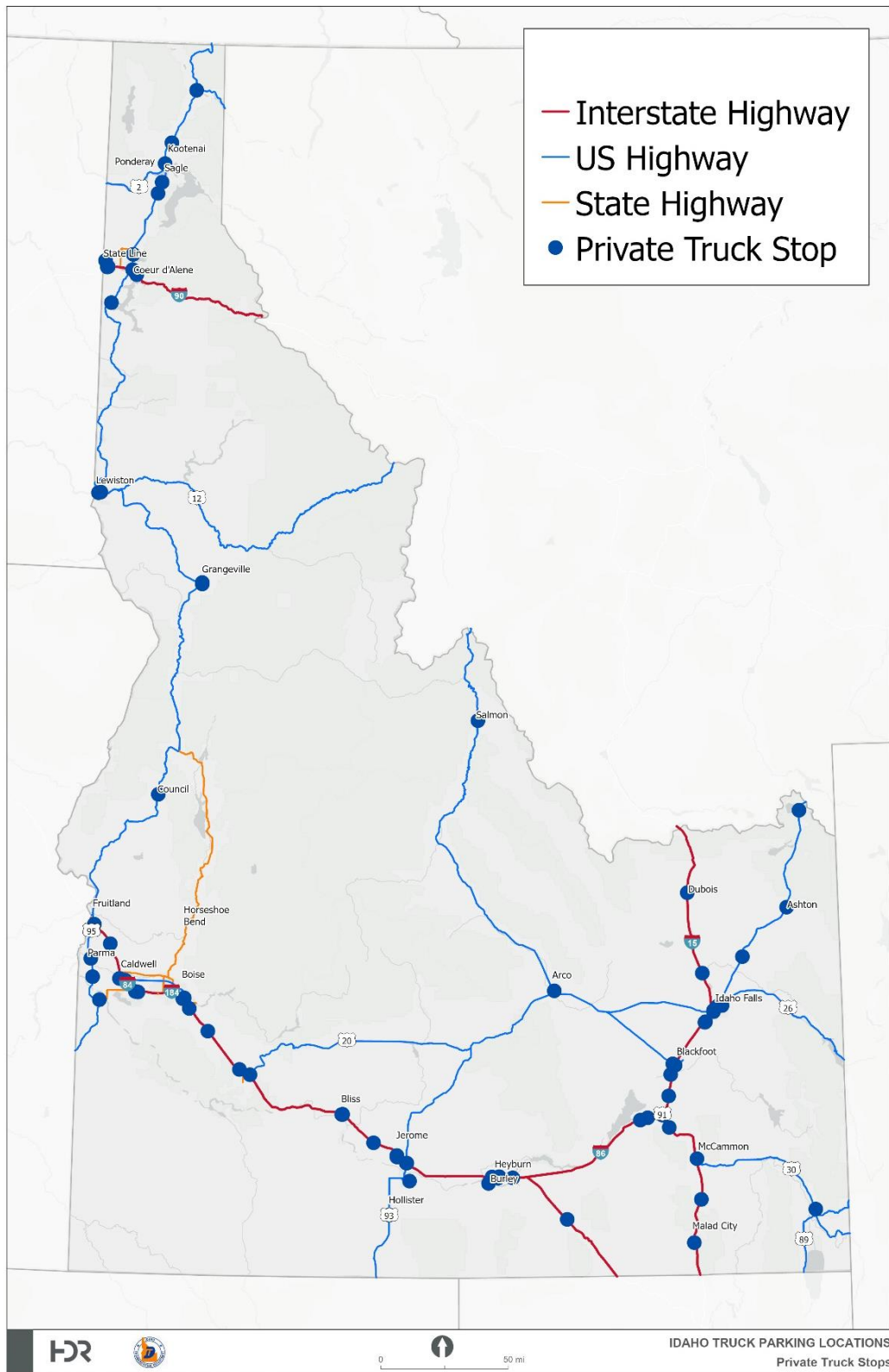


Figure 4.15: Idaho Private Truck Stops

Oasis Truck Stops

Oasis truck stops are private truck stops that receive public funding to maintain services in some parts of the state. Currently, four locations offer 243 parking spots, 6.1 percent of the total state capacity: the Winchester Partnership Oasis on U.S. Highway 95, the Flying J Travel Center along I-15 in McCammon, the Mr. Gas Travel Center along I-84 in Jerome, and the Traveler's Oasis on I-84 in Hansen (Figure 4.16 and Figure 4.17). The federal Interstate Oasis program, as discussed in chapter 2, was developed to improve driver safety related to increased driver fatigue and reduce the financial burden of maintaining public rest areas.

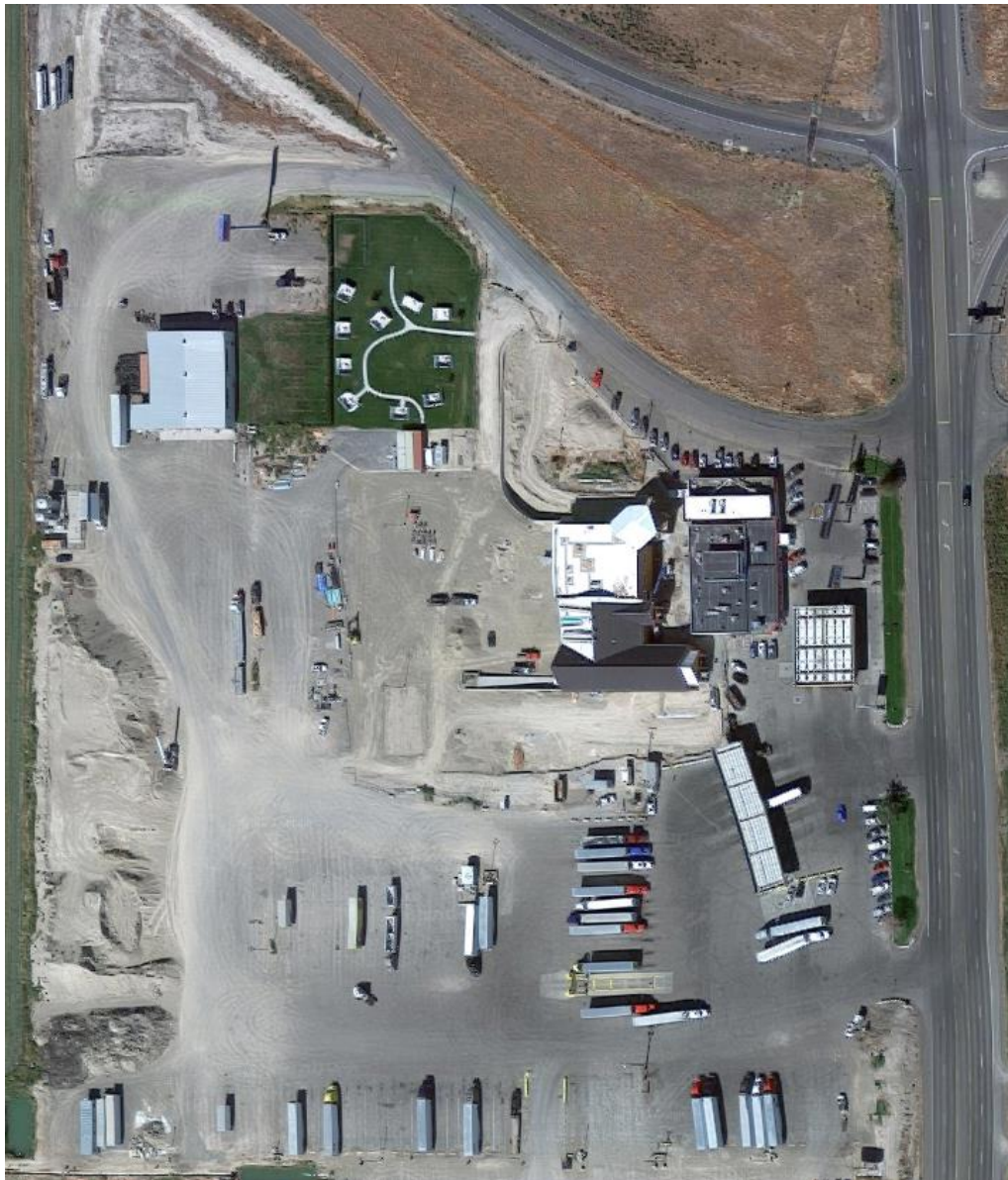


Figure 4.16: Truck Parking Oasis Example: Traveler's Oasis Truck Plaza on I-84 in Eden, Idaho
Source: Google 2023

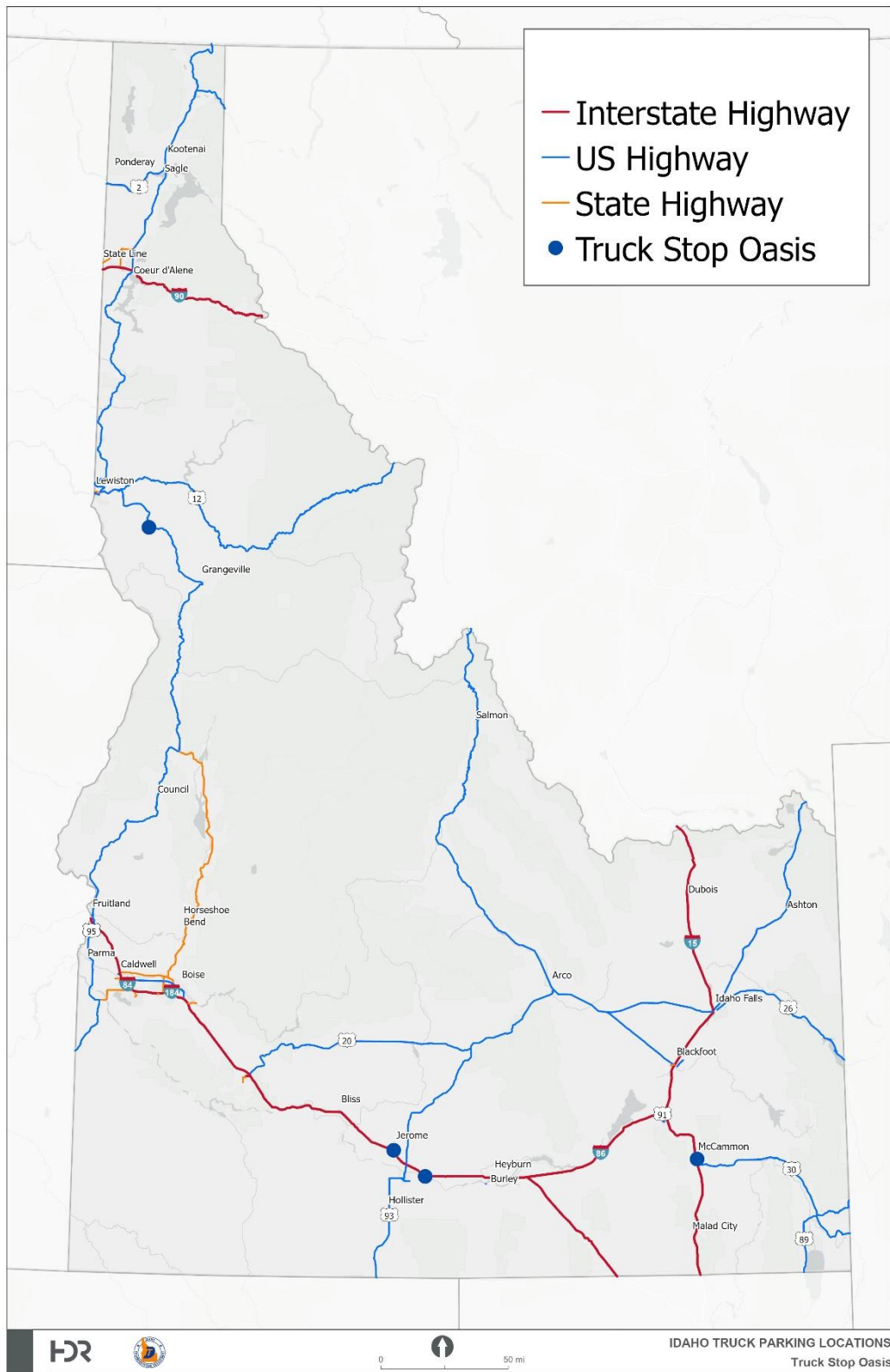


Figure 4.17: Idaho Oasis Truck Stops

On/Off-Ramps

This analysis includes locations where unauthorized parking occurs to identify unmet demand and areas of concern. These locations were identified using the ATRI truck probe data and include 25 highway on and off-ramps in Idaho (Figure 4.18). Parking at these locations is not permitted; however, drivers use these locations when authorized parking is unavailable within a driver's allotted driver hours and driving to the closest available parking would violate the hours-of-service regulations, if drivers need rest, etc. Most ramp parking was observed at interstate interchanges.

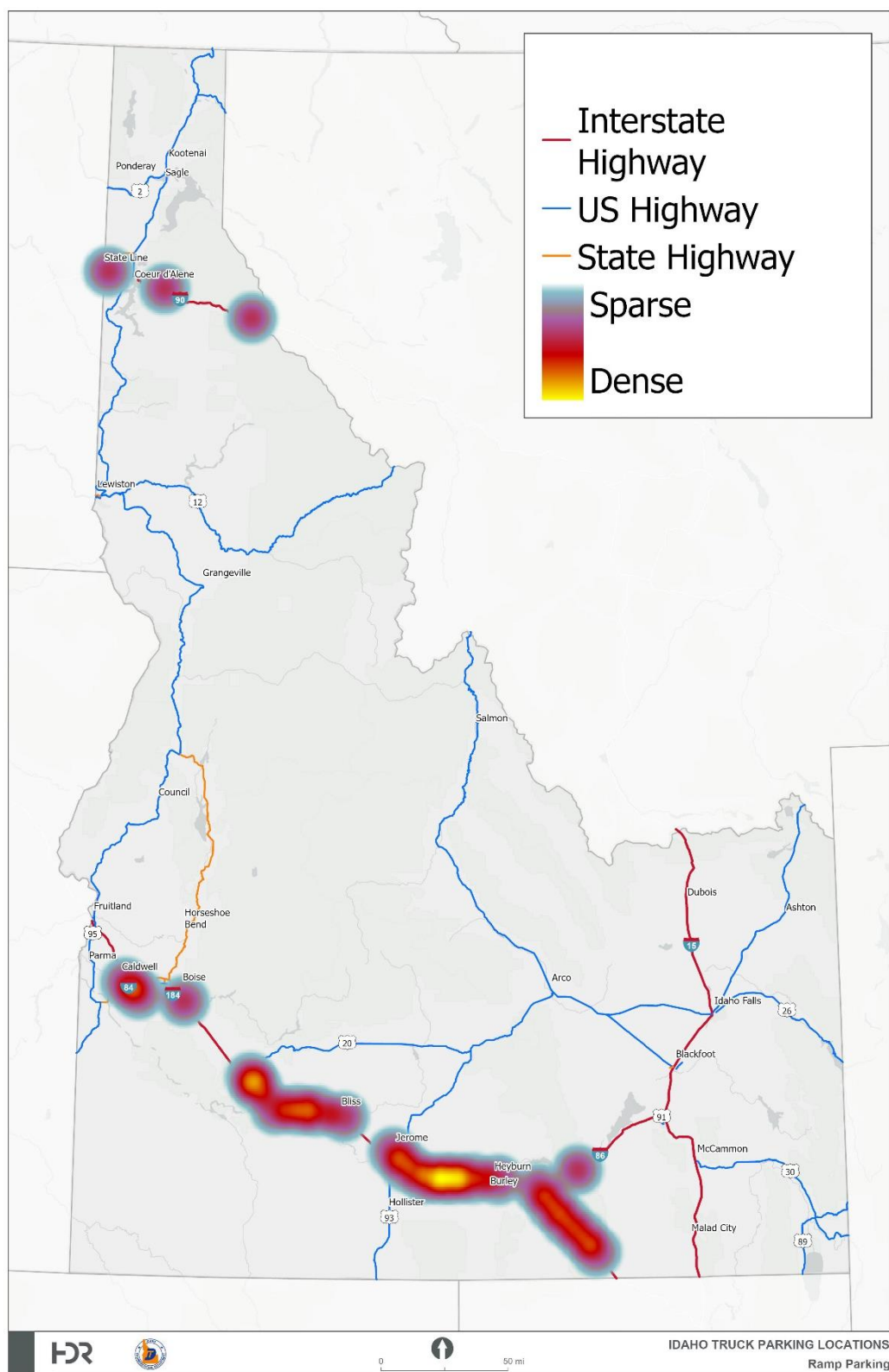


Figure 4.18: Ramp Parking

Highway Pull-offs

These locations include sites designed for short rest, turnaround, breakdown, or chain-up among other purposes and are not for long-term truck parking. A total of 19 locations were identified from ATRI data analysis (Figure 4.20). An example of such a location is shown in Figure 4.19 along U.S. Highway 93, north of Twin Falls.



Figure 4.19: Highway Pull-off Example: along U.S. Highway 93

Source: Google 2023

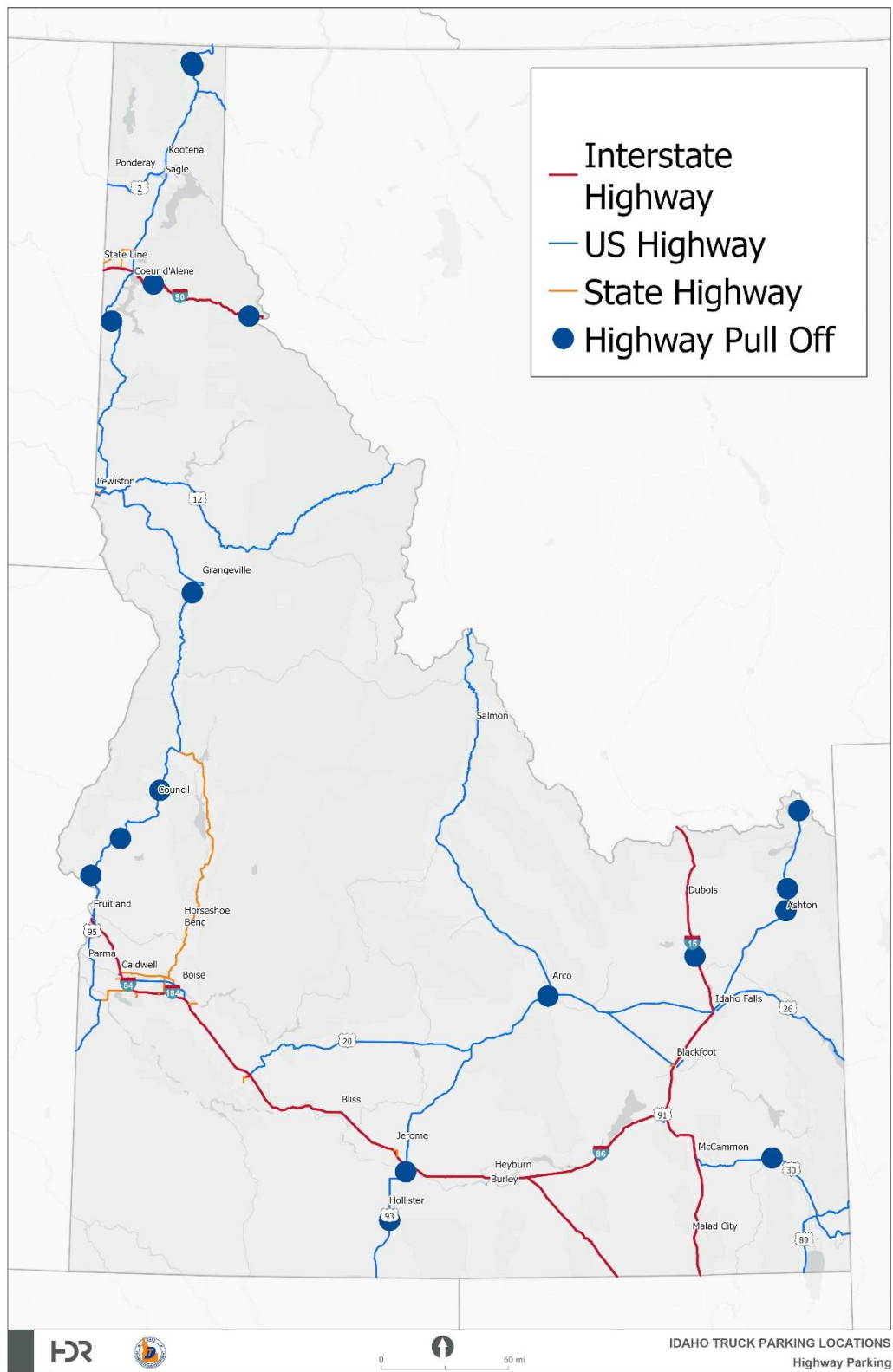


Figure 4.20: Highway Pull-off Locations

Big-Box Stores

Authorized truck parking at big-box stores depends typically on the store's management. Recently, there has been a trend for stores to prohibit truck parking because of liability concerns. These locations serve as a "release valve" for designated truck parking capacity, and limitations put a strain on nearby designated locations. One of these locations, at Walmart off Interstate 90 (I-90) in Smelterville, Idaho, is shown in Figure 4.21. ATRI data analysis in Idaho identified 16 locations where trucks park regularly with half of them in the northern part of the state (Figure 4.22).



Figure 4.21: Big-Box Example: Walmart along I-90 in Smelterville, Idaho

Source: Google 2023

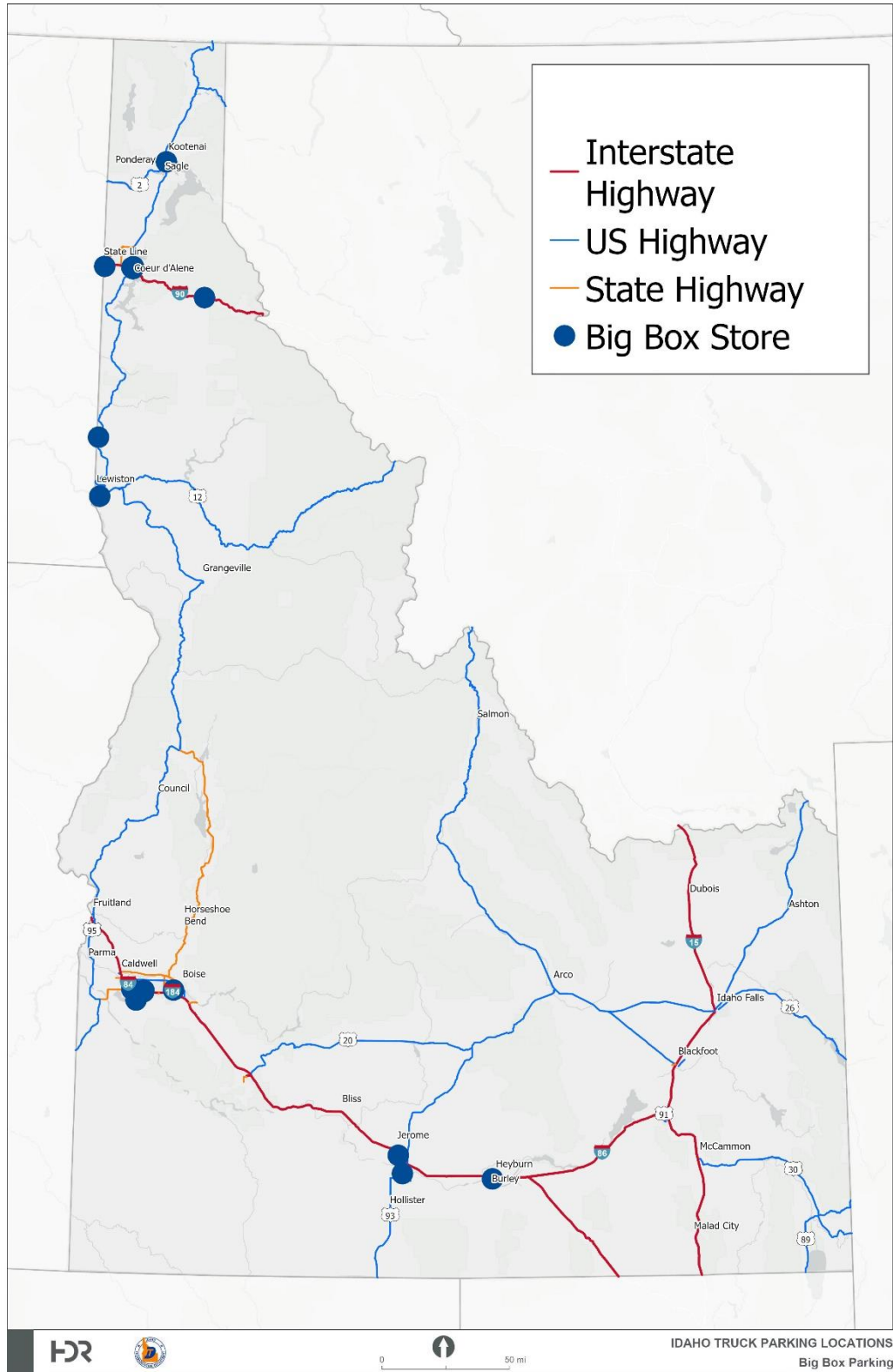


Figure 4.22: Observed Big-Box Store Truck Parking

Empty Lots

The last category of truck parking sites identified through ATRI data cluster analysis includes lot areas where ownership is not known similar to the empty lot shown in Figure 4.23, where the dots indicate stopped trucks. A total of nine locations were identified, scattered across the state (Figure 4.24).



Figure 4.23: Example Empty Lot: Adjacent to a Private Truck Stop along I-15 near McCammon, ID

Source: Google 2023

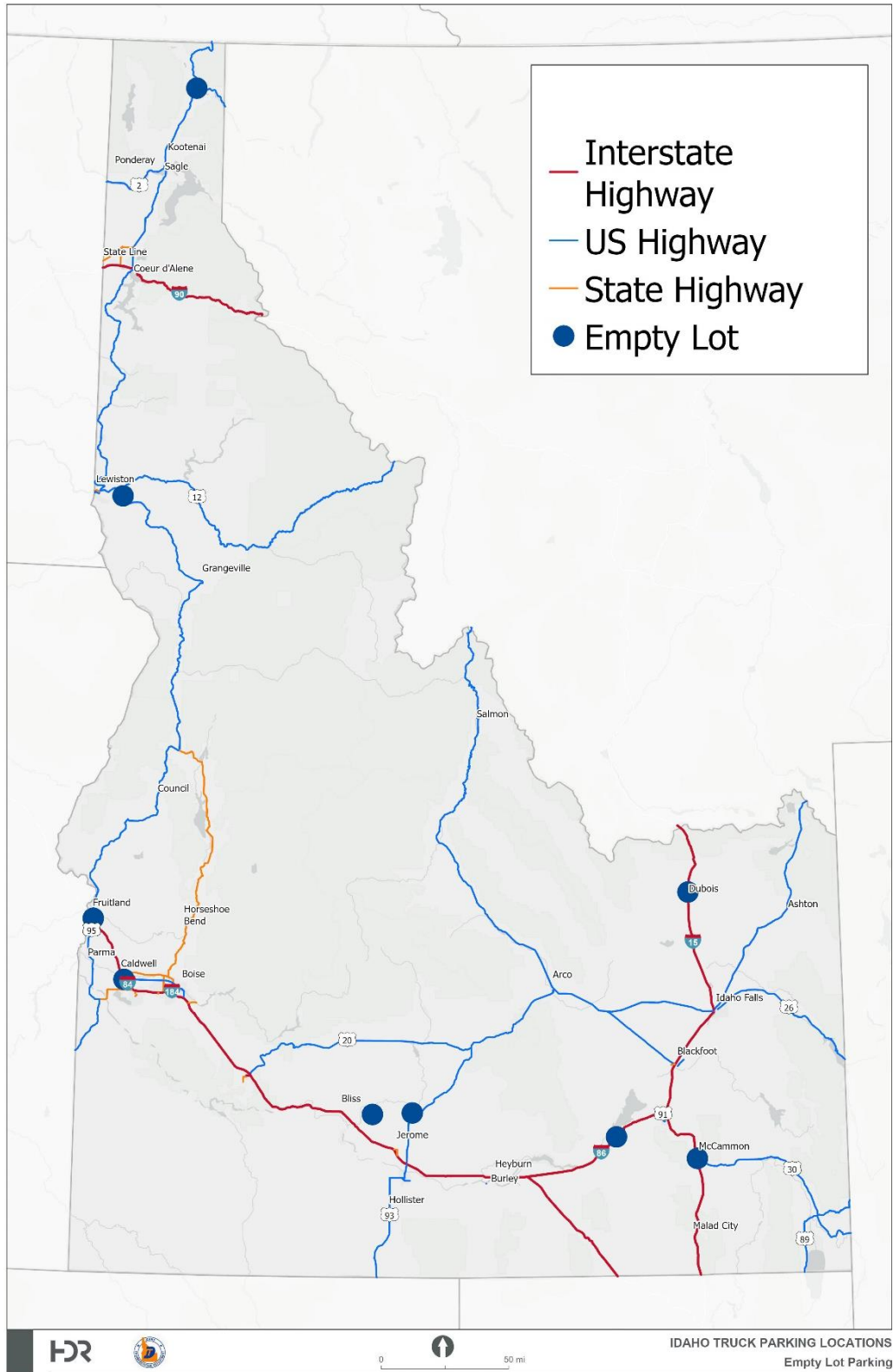


Figure 4.24: Empty Lot Parking Locations

Analysis Results

Analysis of the hourly truck parking demand throughout a typical day in Idaho ranges from a low of 1,900 during midday periods to nearly 3,500 during overnight hours, a statewide utilization rate of 48 percent and 86 percent, respectively. Figure 4.25 illustrates the distribution of truck parking demand by hour of day and its seasonality. The month with the highest number of parked trucks in Idaho is September, followed by December, March, and June. However, the hourly trend in parking activity is consistent across all months. Truck parking activity is highest between 12 p.m. and 12 a.m. with demand reaching its peak between 6 and 7 p.m. Overall, the highest truck parking demand is at 7 p.m. in September and the lowest is at 6 a.m. in June.

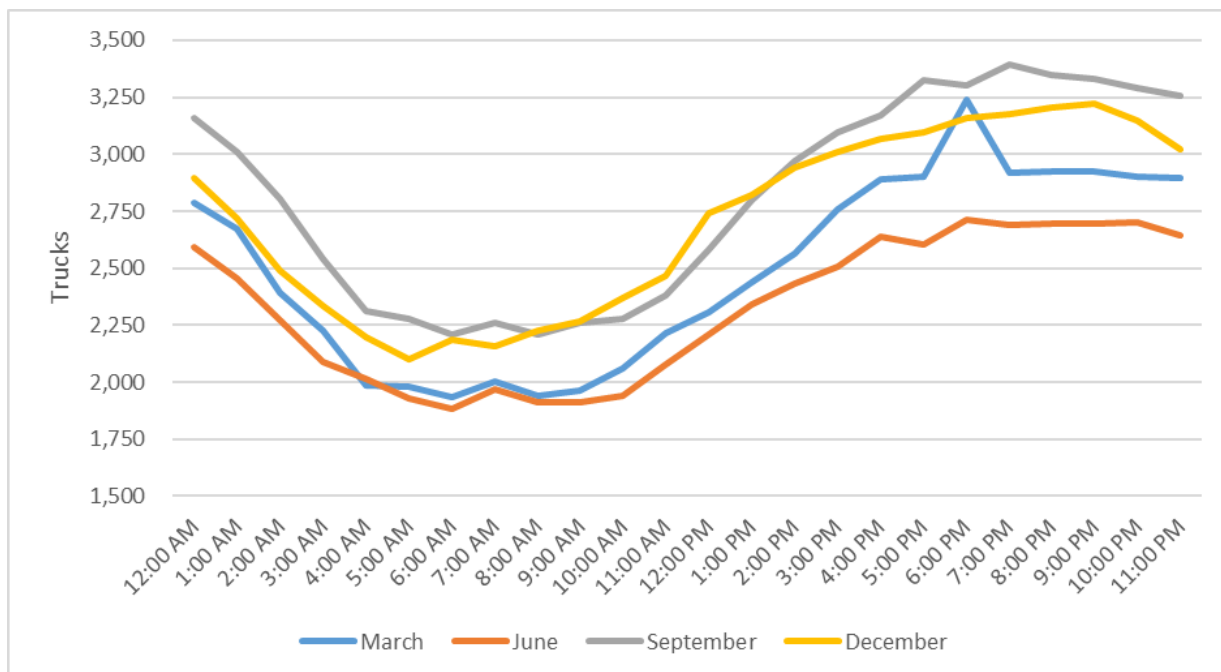


Figure 4.25: Hourly Truck Parking Demand

Source: HDR Analysis of ATRI Data

The distribution of daily truck parking demand is shown in Figure 4.26. The highest numbers of truck parking are between Tuesday and Thursday with total daily truck parking occurrences ranging from 11,000 on Tuesday in June 2022 to more than 15,000 on Wednesday in September. Fewer trucks parked on Sundays when truck parking activity dropped to 70 percent of average weekday levels. It is also worth noting that Saturday levels remain relatively high.

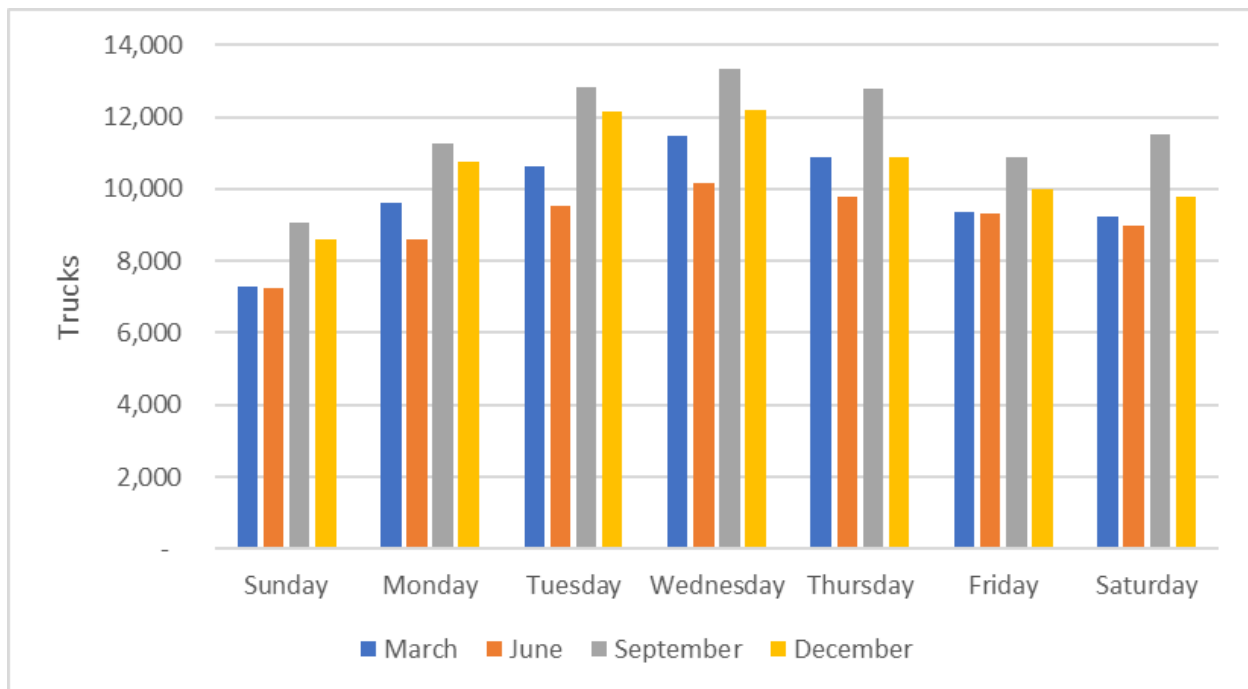


Figure 4.26: Daily Truck Parking Demand

Source: HDR Analysis of ATRI Data

Demand by Facility Ownership

As shown in Figure 4.27, truck parking demand at public and private locations follows a similar pattern. Public facilities include public rest areas and weigh stations/POEs while private facilities include private truck stops including those that participate in the Interstate Oasis Program. Average daily demand at rest areas range from 450 to 690 trucks and at truck stops between 1,500 and 2,500 trucks.

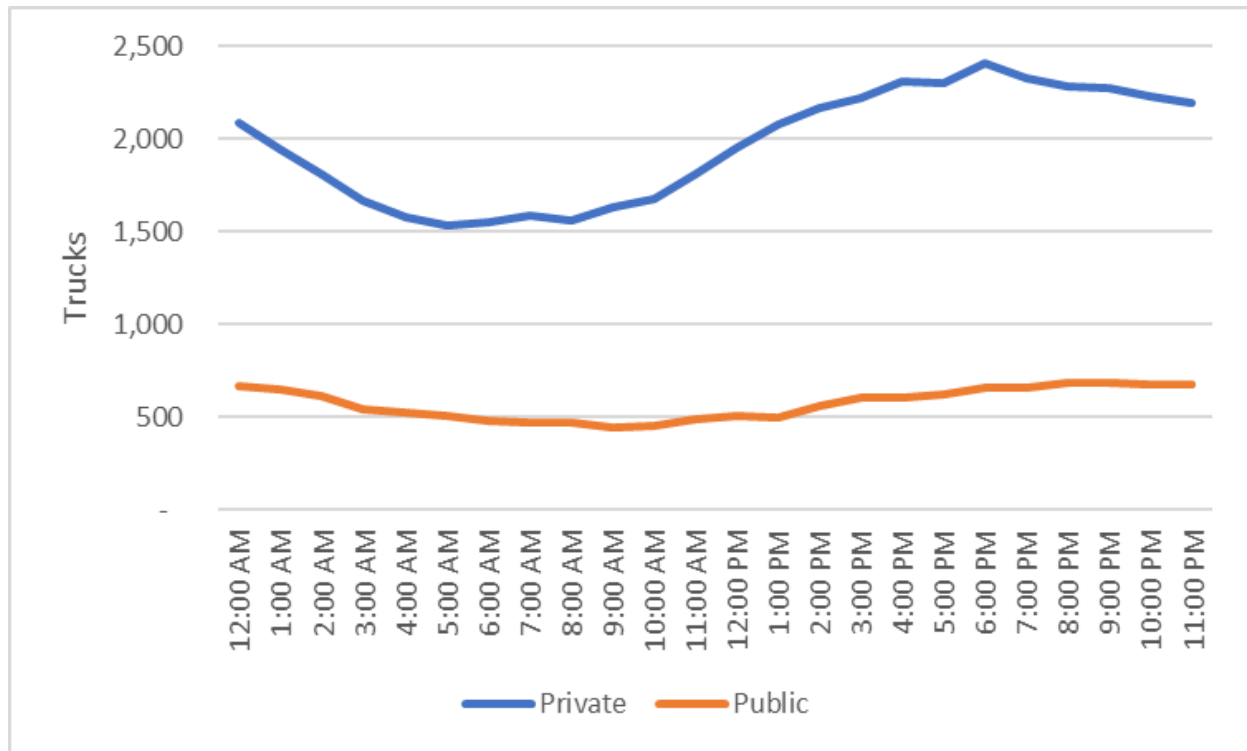


Figure 4.27: Private and Public Truck Parking Demand

Source: HDR Analysis of ATRI Data

Facility Utilization

Utilization at each facility was estimated by comparing the hourly truck parking demand derived from ATRI data and the capacity of each designated parking location. A utilization rate over 100 percent indicates that trucks parked at this location exceed its designed capacity and park at unauthorized locations in proximity to the facility, such as unmarked spaces. Another reason for a location to be over capacity is the impact of short-term parking. In general, short-term truck parking (less than an hour) occurs during daytime hours and may impact a location's utilization. Figure 4.28 shows the difference in utilization rate (the gap between all stops and long term) when short-term parking is included in the analysis, resulting in locations exceeding capacity. There are 32 locations where utilization exceeds capacity if short-term parking is considered. These locations are primarily smaller facilities with fewer than 15 spaces. All other facilities either do not operate over capacity or demand exceeds capacity regardless of short-term parking. Data suggest that utilization rates are impacted by short-term parking, particularly during the morning hours.

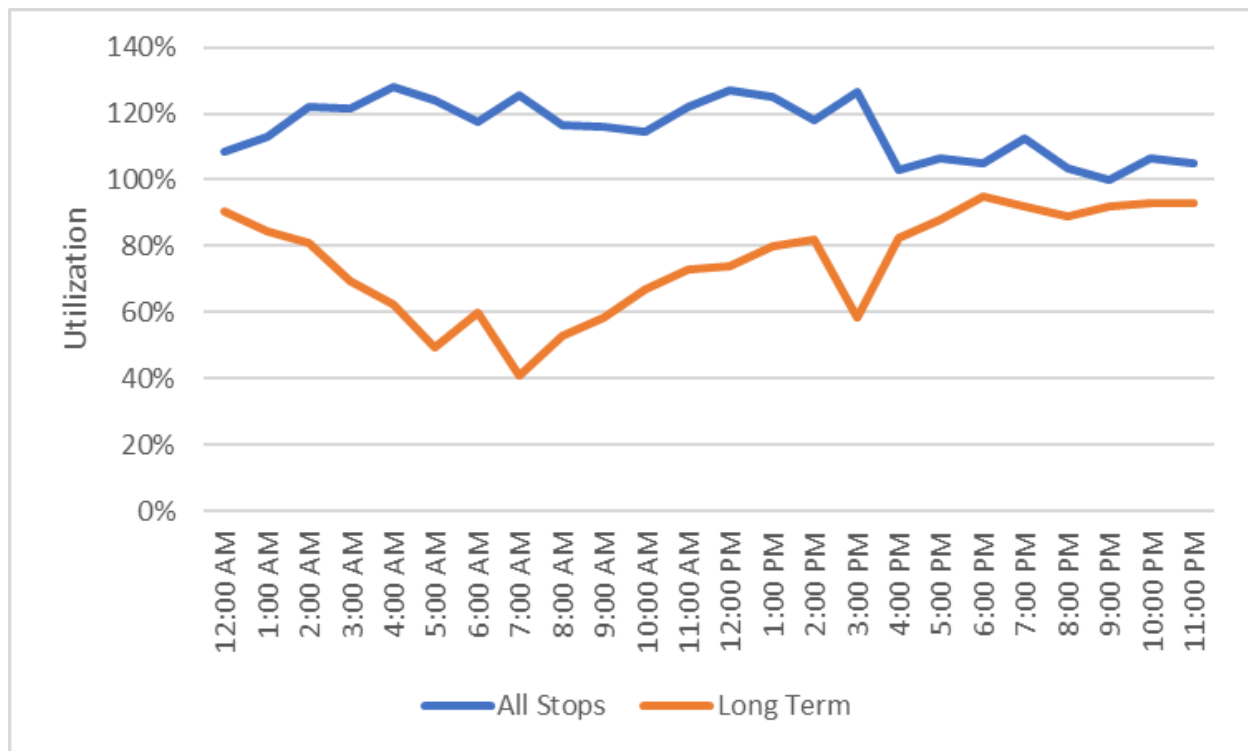


Figure 4.28: Utilization Rate by Stop Duration

Source: HDR Analysis of ATRI Data

Short- and long-term parking data show that 43 locations (36.4 percent) exceed capacity for at least one hour in a day. The parking activity at Huetter WB, Sheep Creek, and Snake River View rest areas exceeds capacity all day. However, these are smaller rest areas with fewer than 10 spaces available. Four of the state's largest truck stops are over capacity more than 10 hours a day. These are:

- Love's Travel Stop in Bliss at the U.S. Highway 30 exit off of I-84 (115 spaces)
- Love's Travel Stop in Heyburn at Exit 211 of I-84 (70 spaces)
- Love's Travel Stop in Post Falls at Exit 2 of I-90 (85 spaces)
- Flying J Travel Center in Jerome at Exit 173 of I-84 (100 spaces)

The following analysis and figures describe the capacity utilization at public rest areas and private truck stops in Idaho during low-demand (6 a.m.), peak-demand (6 p.m.), and two medium-demand (12 a.m. and 12 p.m.) periods.

6 a.m. Period

Truck parking utilization at 6 a.m. is illustrated in Figure 4.29. In general, demand does not exceed capacity and utilization rates at most locations do not exceed 75 percent. The locations that are over capacity during this period are smaller truck stops and rest areas with an average of 12 spaces and account for 2 percent of the total Idaho available truck parking spaces. Over-capacity facilities are labeled in the figure.

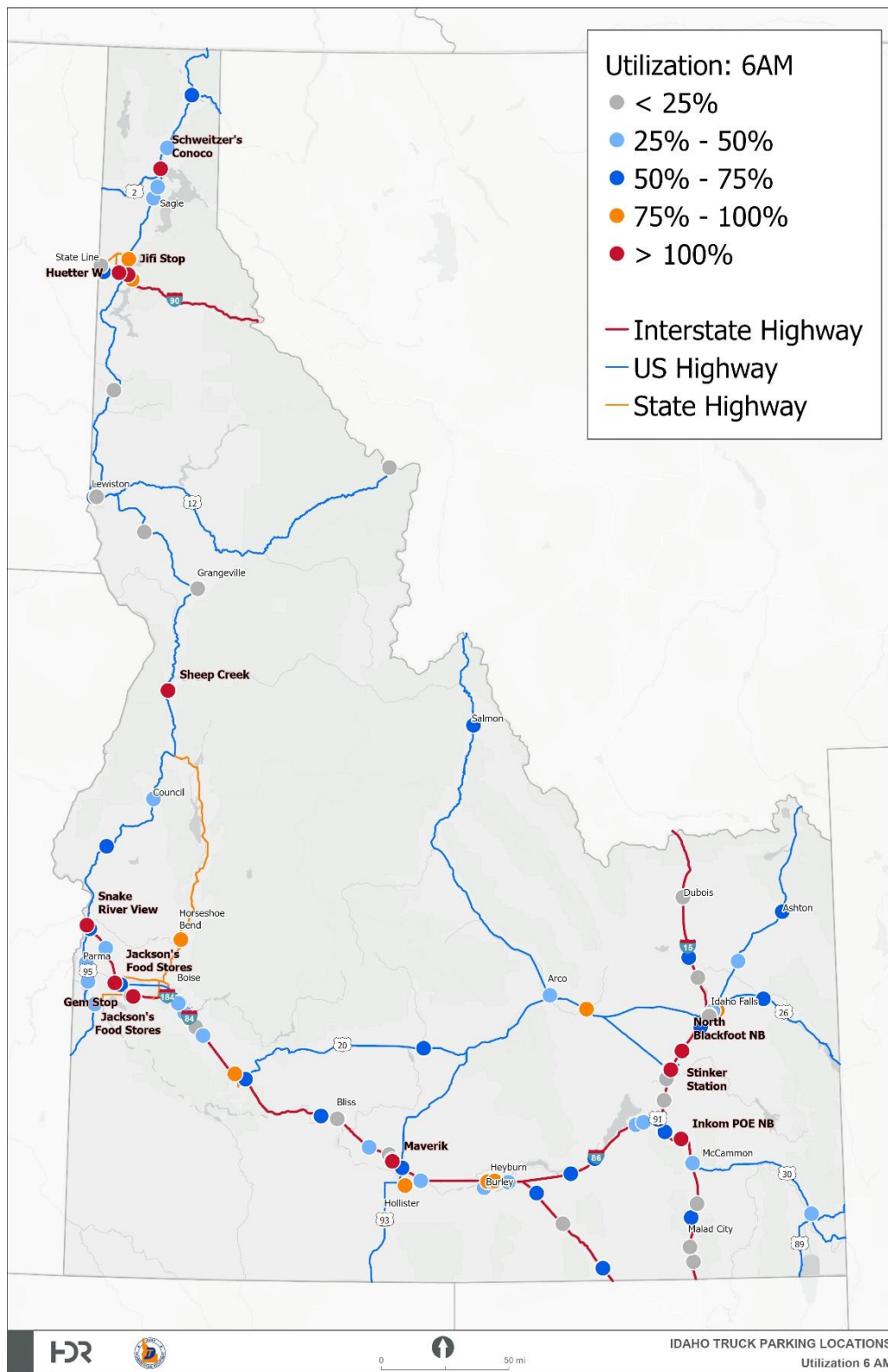


Figure 4.29: Truck Parking Utilization at 6 a.m.

12 p.m. Period

Truck parking demand is significantly higher at 12 p.m. (Figure 4.30) when truck drivers have their lunch break as illustrated in Figure 4.30. Out of 118 truck parking locations, 40 (33.9 percent) exceed 75 percent utilization while 14 (11.9 percent) exceed capacity. These locations account for 7 percent of all parking capacity in the state. A few of the larger truck stops, such as the Love's Travel Stop in Bliss and the Love's Travel Stop in Heyburn, are at capacity. Over-capacity facilities are labeled in the figure.

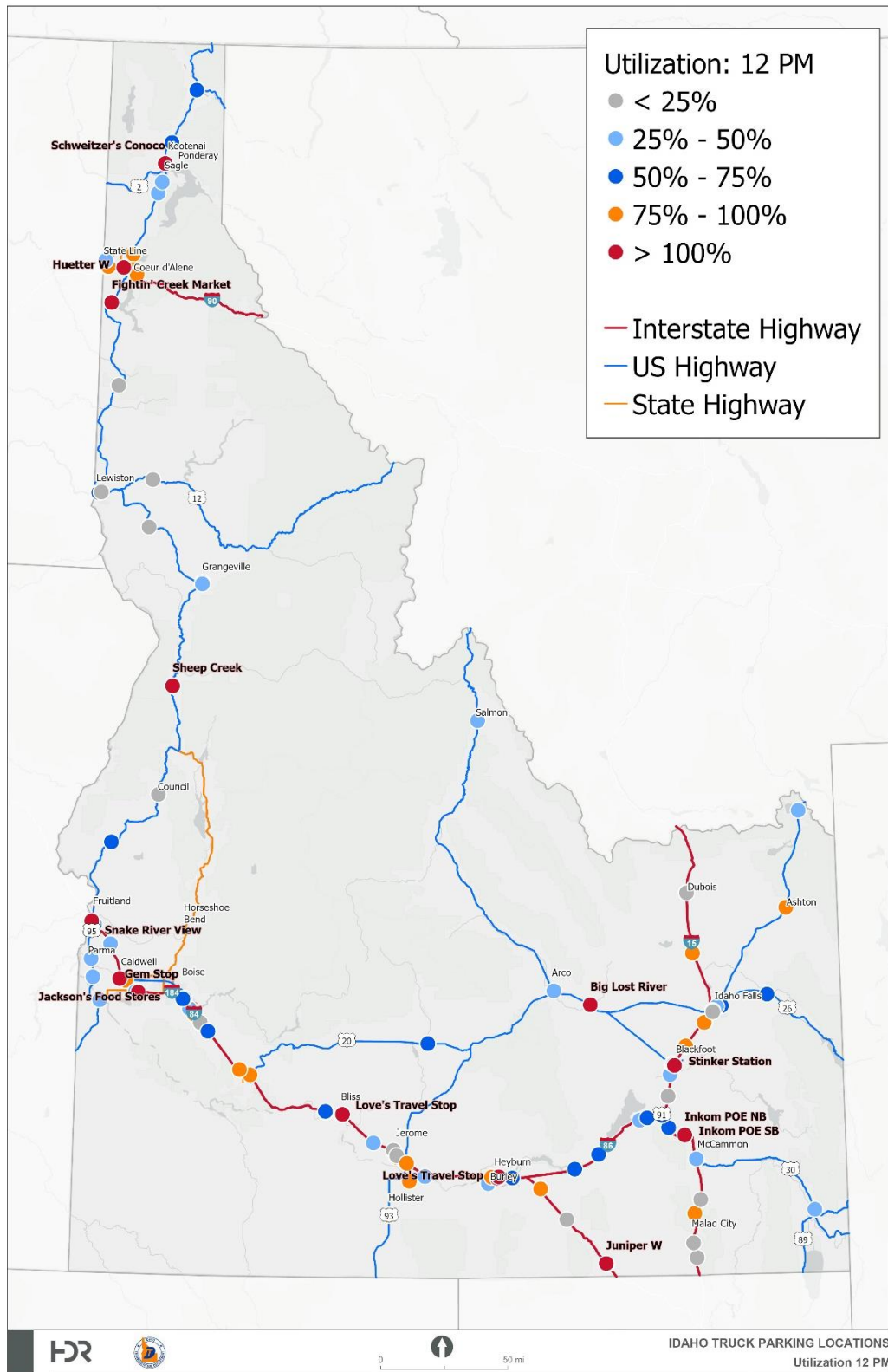


Figure 4.30: Truck Parking Utilization at 12 p.m.

6 p.m. Period

The highest levels of truck parking utilization are observed during the 6 p.m. period (Figure 4.31) with 45 percent of the locations operating above 75 percent utilization. In total, 24 locations (20.3 percent) exceed capacity. Locations that exceed capacity at this time include larger truck stops with capacity over 100 spaces. In total these 24 locations offer 708 spaces and account for 17.9 percent of the total truck parking spaces in Idaho. Over-capacity facilities are labeled in the figure.

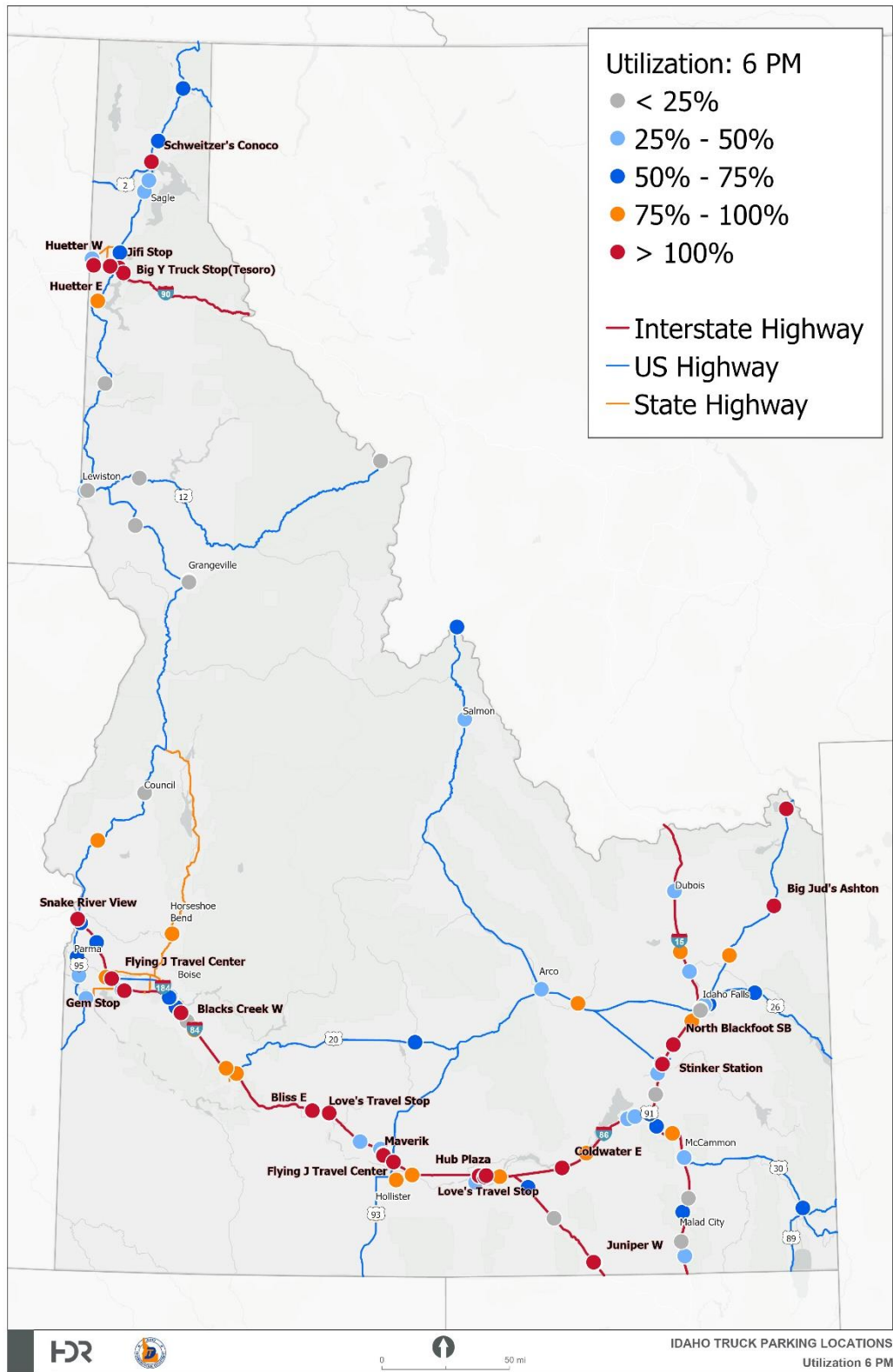


Figure 4.31: Truck Parking Utilization at 6 p.m.

12 a.m. Period

Truck parking utilization at midnight (Figure 4.32) is similar to that during the 6 p.m. period with 45 percent of the locations operating above 75 percent utilization. In total, 22 locations (18.6 percent) exceed capacity. Over-capacity facilities are labeled in the figure.

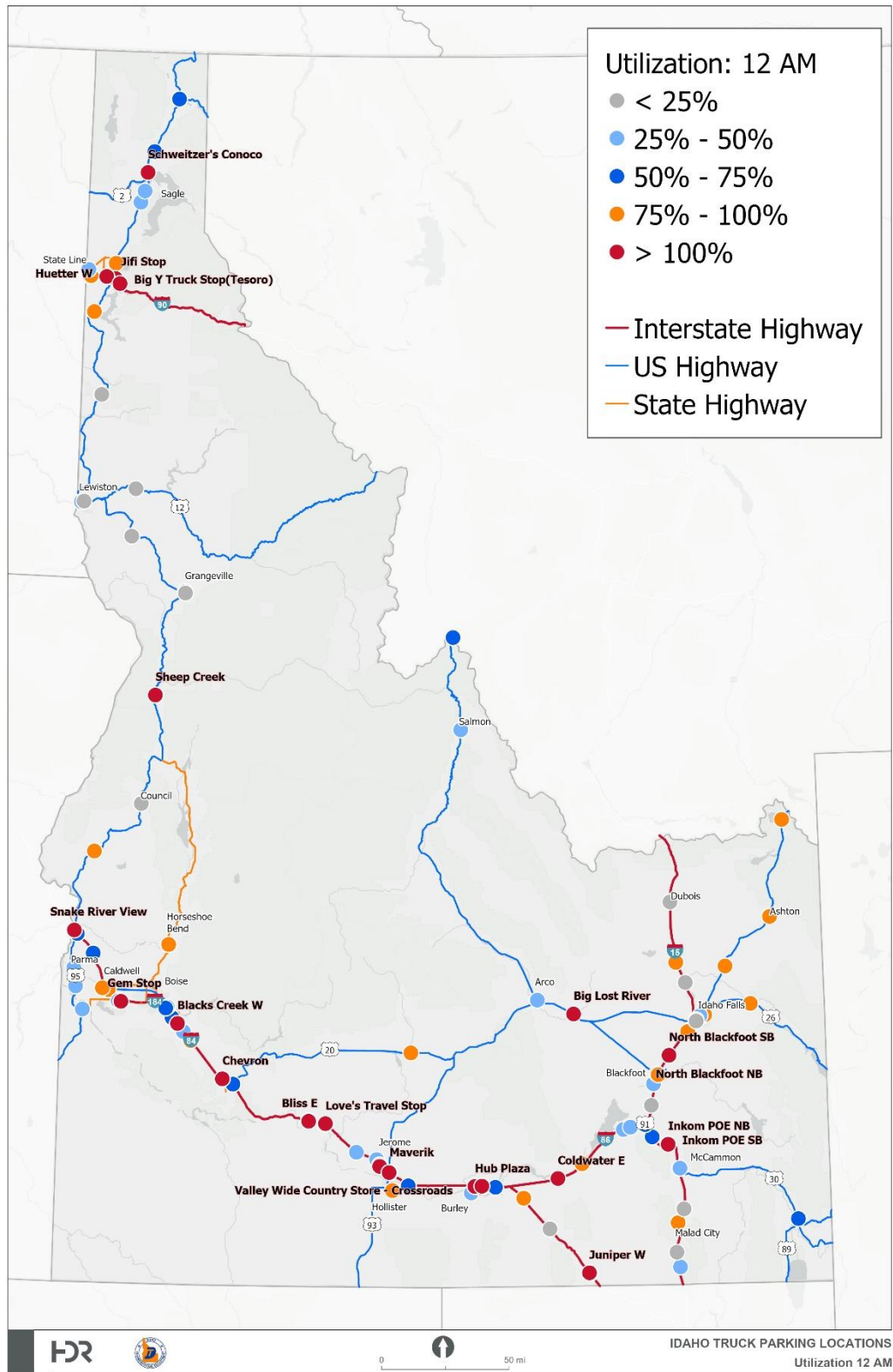


Figure 4.32: Truck Parking Utilization at 12 a.m.

Facility Utilization along Major Corridors

The majority of truck stops and rest areas are in the southern portion of the state, along I-84 and I-15. As shown in Figure 4.33, cumulative demand on both directions of I-84 accounts for nearly half of the state's truck parking activity throughout the day. More specifically, locations in the eastbound direction compose between 29 and 33 percent of truck parking activity in Idaho with the lowest shares observed in the morning hours between 4 and 11 a.m. The proportion of truck parking demand on locations along I-84 westbound is relatively flat at 20 percent all day. The proportion of parking activity on I-15 is significantly lower than that on I-84 with 16 percent share in both directions. In total, truck parking activity along these two interstates averages 68 percent of statewide parking on a typical day.

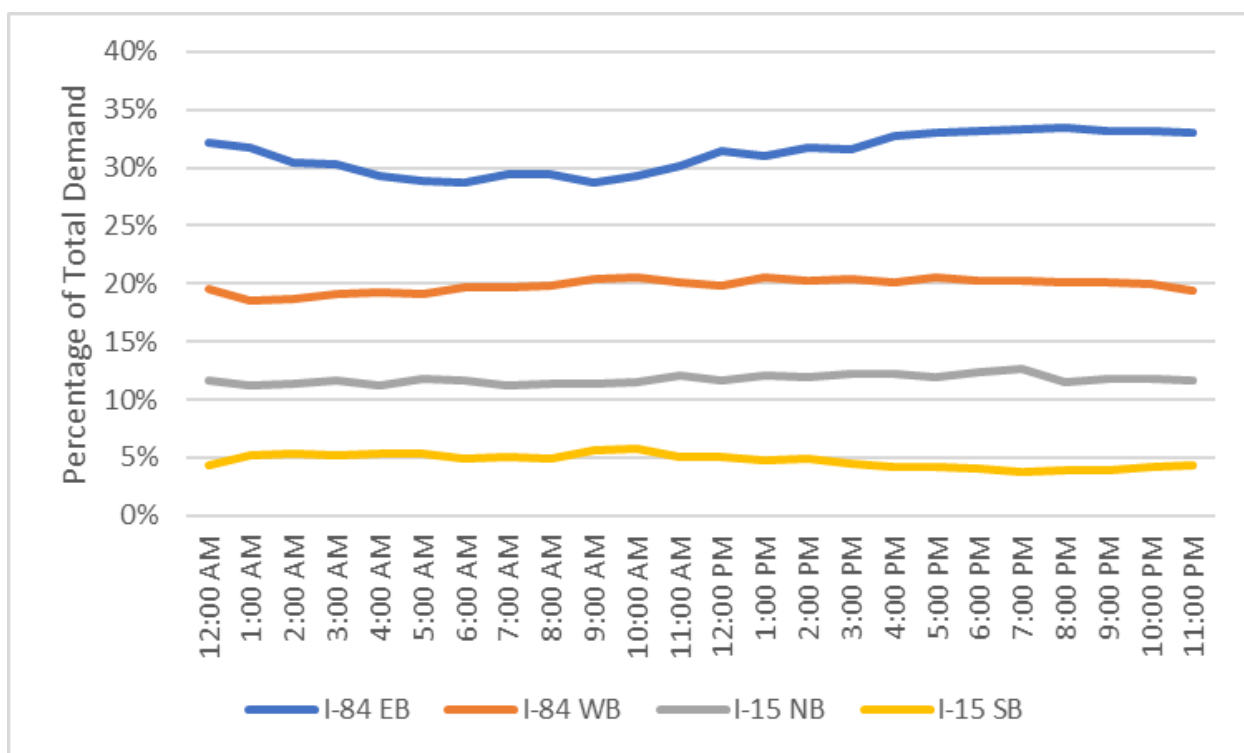


Figure 4.33: Directional Share of Truck Parking Demand on I-84 and I-15

Source: HDR Analysis of ATRI Data

Truck Parking at Unauthorized Locations

Unauthorized truck parking on interchange ramps and highway pull-offs tends to be near rest areas and truck stops that exceed capacity multiple times per day. As illustrated in Figure 4.34, most facilities that exceed capacity are in the southern part of the state along I-84 and I-15. This corridor also shows the bulk of observed unauthorized truck parking. In northern Idaho, unauthorized truck parking activity was observed along I-90 where there are no designated truck parking facilities east of Coeur d'Alene along I-90.

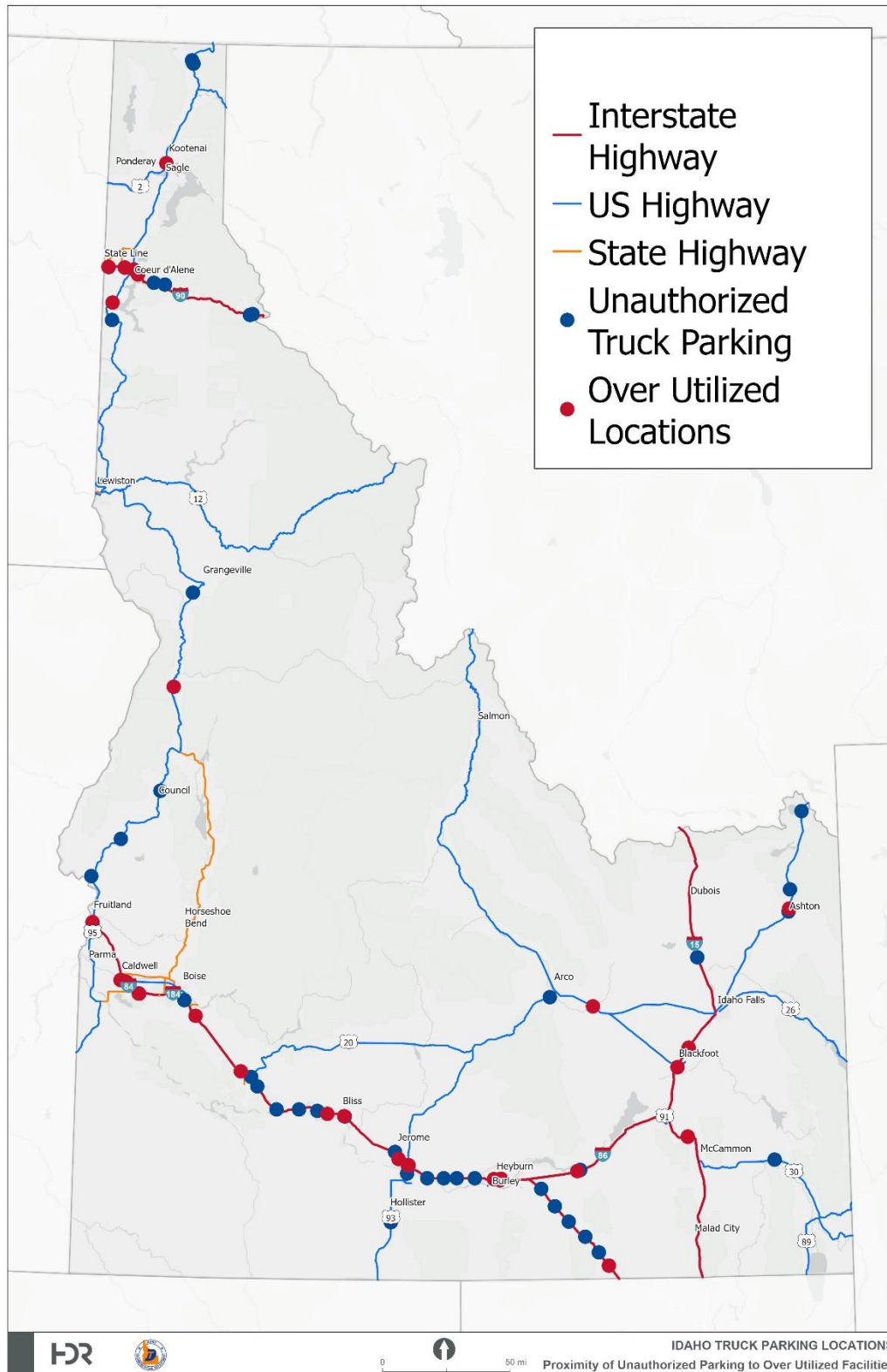


Figure 4.34: Proximity of Unauthorized Truck Parking to Overutilized Facilities

Big-Box Stores and Empty Lot Parking

Parking at big-box stores and empty lots is not necessarily illegal but is not ideal because it lacks the basic amenities (e.g., bathrooms) necessary for drivers. Identifying the number of trucks parked at these locations gives a good picture of additional designated parking needs and impact if these locations were to close or limit truck parking. On average there are six trucks parked per hour in 25 locations throughout the state. The total number of trucks during a typical day ranges from 115 to 165, as shown in Figure 4.35.

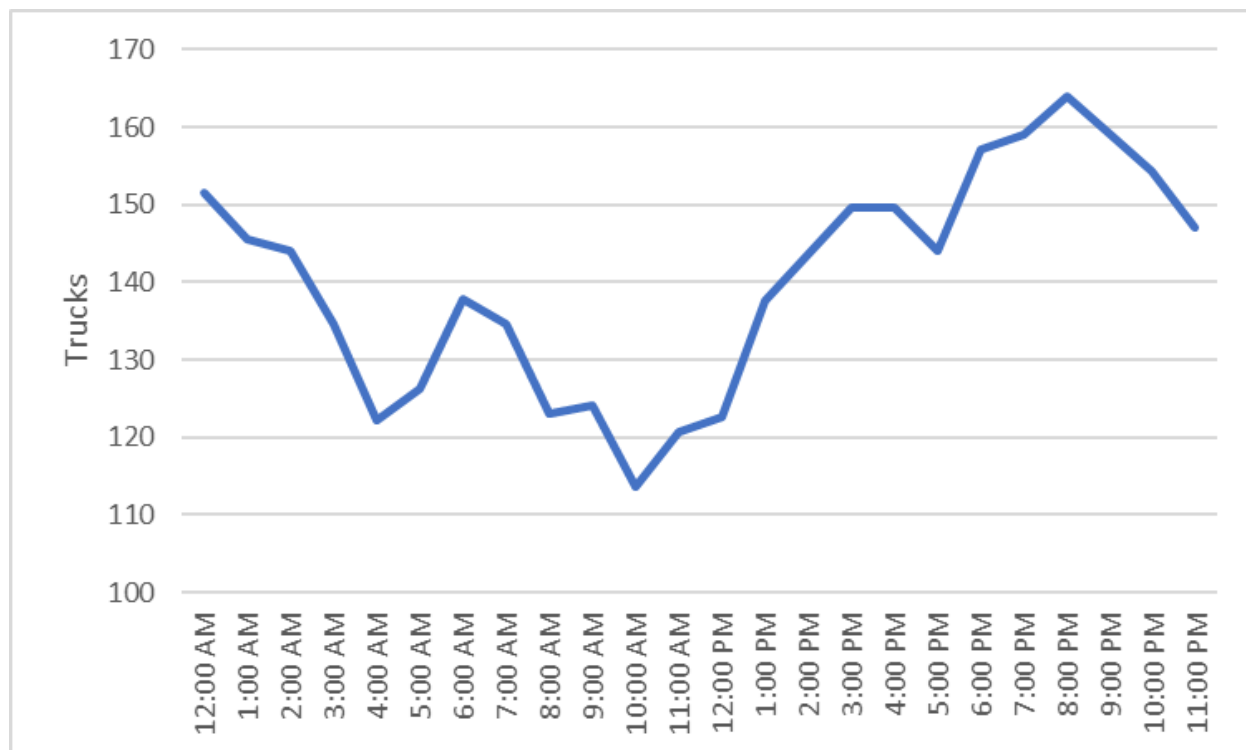


Figure 4.35: Truck Parking at Big-Box Stores and Empty Lots

Source: HDR Analysis of ATRI Data

5. Truck Parking Needs Assessment

To formulate truck parking recommendations, it's crucial to assess the needs for truck parking facilities. This chapter summarizes the truck parking needs based on current utilization and unmet demand. This needs assessment stems from the analysis and research carried out, and classifies needs into three distinct categories:

- **Capacity Needs:** These needs pertain to those necessary to physically provide suitable and sufficient spaces where trucks can safely and conveniently park and rest.
- **Operational Needs:** These needs pertain to improvements in operations that can lead to more efficient truck parking.

- **Policy and Regulation Needs:** These needs for truck parking encompass the necessary guidelines, rules, and standards that governments, transportation agencies, and relevant authorities need to establish to manage and optimize truck parking.

Capacity Needs

The identification of capacity needs is achieved by assessing the convergence of available truck parking supply with the current and future demand. An inadequate supply of truck parking spaces, or truck parking spaces in desired locations, can result in a variety of issues that have negative impacts on drivers, the movement of goods, and the economy. Commercial motor vehicle parking shortages or a lack of adequate information about parking availability at existing facilities have the unintended effect of increasing the probability of collisions with trucks parked in unsafe locations, and changes in routing as a result of the increased time it takes to find adequate parking for required rest periods. There are 81 private and 37 public truck parking locations in Idaho with a total of 3,955 parking spaces. The demand analysis identifies specific areas with capacity challenges.

Commercial vehicles parking usage and demand can vary depending on a variety of factors including purpose of the trip, trip length, pick-up/delivery windows, and time of day. Truck parking can be categorized by the following:

Table 5.1: Parking Types and their Uses

Parking Type	Uses
Long-term or Overnight	Long-haul operators to rest as mandated by federal law
Short-term breaks	For rest periods as required for interstate drivers at prescribed intervals
Temporary local parking	Local delivery vehicles stopping frequently throughout the day, especially in urban areas
Emergency	Needed for vehicle malfunctions, weather, traffic, or other incidents
Staging	For carriers waiting near pickup or delivery locations
Long-term storage	Needed for vehicles whose driver is taking longer breaks such as the mandatory weekly reset period, or when vehicles are not in use between hauls
Oversize-Overweight parking	Needed for trucks with larger dimensions and/or heavier weight and require different space, size, and geometry

Finding available parking with the desired safety features can be a challenge for drivers looking for amenities including: sufficient lengths of ingress/egress to the site, sufficient lighting, fencing or other

barriers surrounding the lot, security cameras or lot attendants, food, and showers and bathrooms. The effective and efficient movement of freight can then be delayed by many hours/miles to find available resources.

Unforeseen changes to the movement of goods can impact the volume of trucks on designated facilities and vying for limited parking resources. For example, the Lewis Clark Valley MPO noted in the Long Range Transportation Plan Update (2020) that management/labor disputes at the Port of Portland resulted in the loss of container steamship services and now the vast majority of this local cargo is trucked to the Northwest Seaport Alliance (Seattle and Tacoma) for export.

Idaho topography creates its own set of challenges for drivers. The mountain ranges and forests within the state constrain the transportation network, particularly in the north.

Truck Parking Supply

The authorized truck parking supply in Idaho includes following:

- 27 public rest areas (equating to 490 spaces)
- Ten weigh stations/Ports of Entry (totaling 160 spaces)
- 77 privately-owned truck stops (accounting for 3,062 spaces)
- Four Oasis truck stops (offering 243 spaces)

The analysis conducted in Chapter 4 revealed several more frequently used truck parking spots which include 16 big box stores and nine empty lots. Most of these sites are situated in the southern region of the state along I-84, I-86, and I-15. As per the [2023 Idaho Strategic Freight plan](#), ITD has one truck parking expansion project being funded using Freight Formula Funds, which will add 18 truck parking spaces, nine in each direction to the Bliss Safety Rest Area on I-84.

Truck Traffic and Congestion

An increase in truck traffic and congestion can have significant impacts on truck parking availability and efficiency. Highway and urban congestion can lead to delays for truck drivers, which in turn reduces the distance they are able to travel within their allotted drive hours affecting their stop location. High truck volumes affect the availability of parking spaces as more trucks contend for a limited number of spots. If truck traffic continues to increase without a corresponding increase in truck parking capacity, parking shortages are inevitable. This forces truck drivers to spend more time searching for parking, leading to more driving hours searching for parking, increased stress, and potential violations of hours-of-service regulations.

Delays linked to congestion can amplify the period trucks spend stationed (“dwell time”) at rest areas or truck stops as they wait for uncongested windows to maximize drive distance. Prolonged dwell times have the potential to disrupt schedules, curtail overall efficiency, and impact logistics operations and supply chains. In cases where truck drivers cannot locate designated available parking, they may resort

to parking in unsafe locations, such as highway shoulders, ramps, or other undesignated locations. Such actions can give rise to safety hazards for both drivers and other users of the road.

Truck Traffic

The [2023 Idaho Strategic Freight Plan](#) utilized truck traffic data from 2022 to identify the main truck traffic routes within the state. As per the Plan, the primary highway sections experiencing high truck traffic in the state are I-84, portions of I-15, and segments of I-90. I-84, from the junction of I-84 and I-86 to the Idaho-Oregon border, consistently witnesses a daily traffic volume of 5,000 to 10,000 Commercial Motor Vehicles (CMVs). The busiest part of I-84 is in the region between Boise and Caldwell, where an average of 7,600 CMVs were recorded daily. On I-15 between Pocatello to Idaho Falls, there is an average daily traffic of 4,300 CMVs. Lastly, the portion of I-90 extending from the Idaho-Washington border to Coeur d'Alene experiences an average daily traffic of 4,100 CMVs.

Another important north/south corridor is US 95 which spans over 450 miles between Boise and the Canadian border. The majority of the highway is two-lanes and connects I-84 northwest of Boise to I-90 near Coeur d'Alene and then on to the Canadian border at Eastport. The route accommodates 10 to 20 percent commercial vehicles with the highest number of truck volumes between Coeur d'Alene and the Canadian border.

The greatest volume of non-interstate truck traffic is observed along US 20 to the north of Idaho Falls. Various sections of this roadway see daily averages of 2,000 to 2,500 CMVs. There are an additional five route segments in Idaho where the commercial average daily traffic surpasses 1,500 vehicles: US 20 in proximity to Boise, SH 44 near Boise, US 93 south of Twin Falls, US 30 near McCammon, and SH 128 close to Lewiston. It's noteworthy that the current truck parking sites are strategically positioned in areas with the highest concentration of truck traffic. For additional information, the traffic data (Figure 5.1) on [Idaho GIS app](#) can be leveraged.

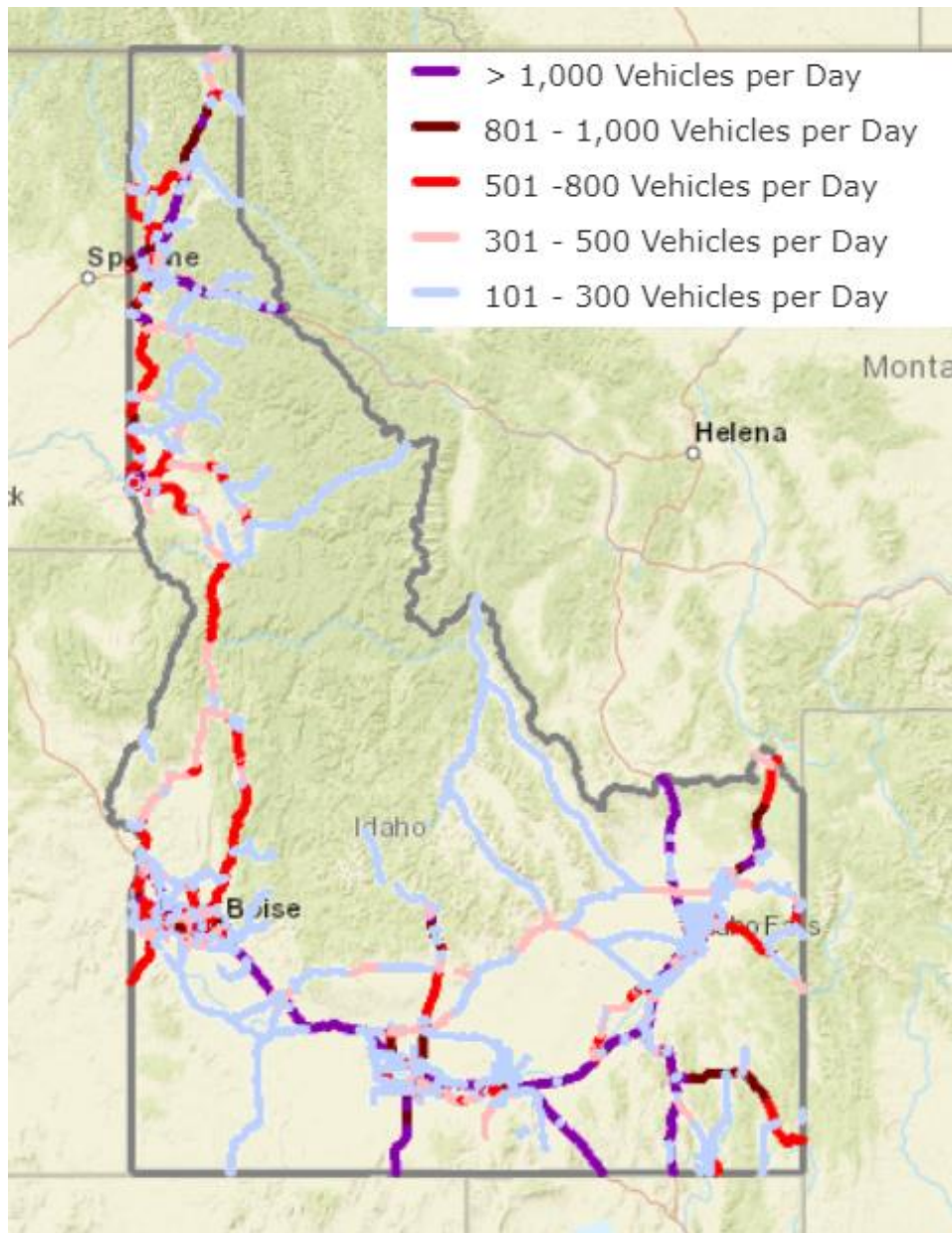


Figure 5.1: 2019 Idaho Commercial Truck Annual Average Daily Traffic (AADT)

Source: [Idaho GIS app](#)

Truck Congestion

A truck bottleneck analysis was conducted as part of the state freight plan. Through this analysis, ITD identified the following interstate and state highway freight bottleneck locations:

- I-15 (Inkom and McCammon (Southeast Idaho))
- I-15 (Sage Junction to Hammer (Eastern Idaho))
- I-84 (Boise to Caldwell (Southwest Idaho))

- I-90 (Idaho/Montana Boarder)
- US 20 (At I-84)
- US 20/26 (North Boise)
- US 95 (North Coeur d'Alene)
- US 20 (Rexburg)
- US 12/95 (Lewiston and east bound US 95 & US 12)

Unmet Demand

An analysis of ATRI data revealed the locations where demand for truck parking is not being met. In cases where authorized truck parking is unavailable, highway on and off ramps offer an immediate alternative for drivers. Most of the unauthorized truck parking observations are along I-84 and I-90 (Figure 5.2).

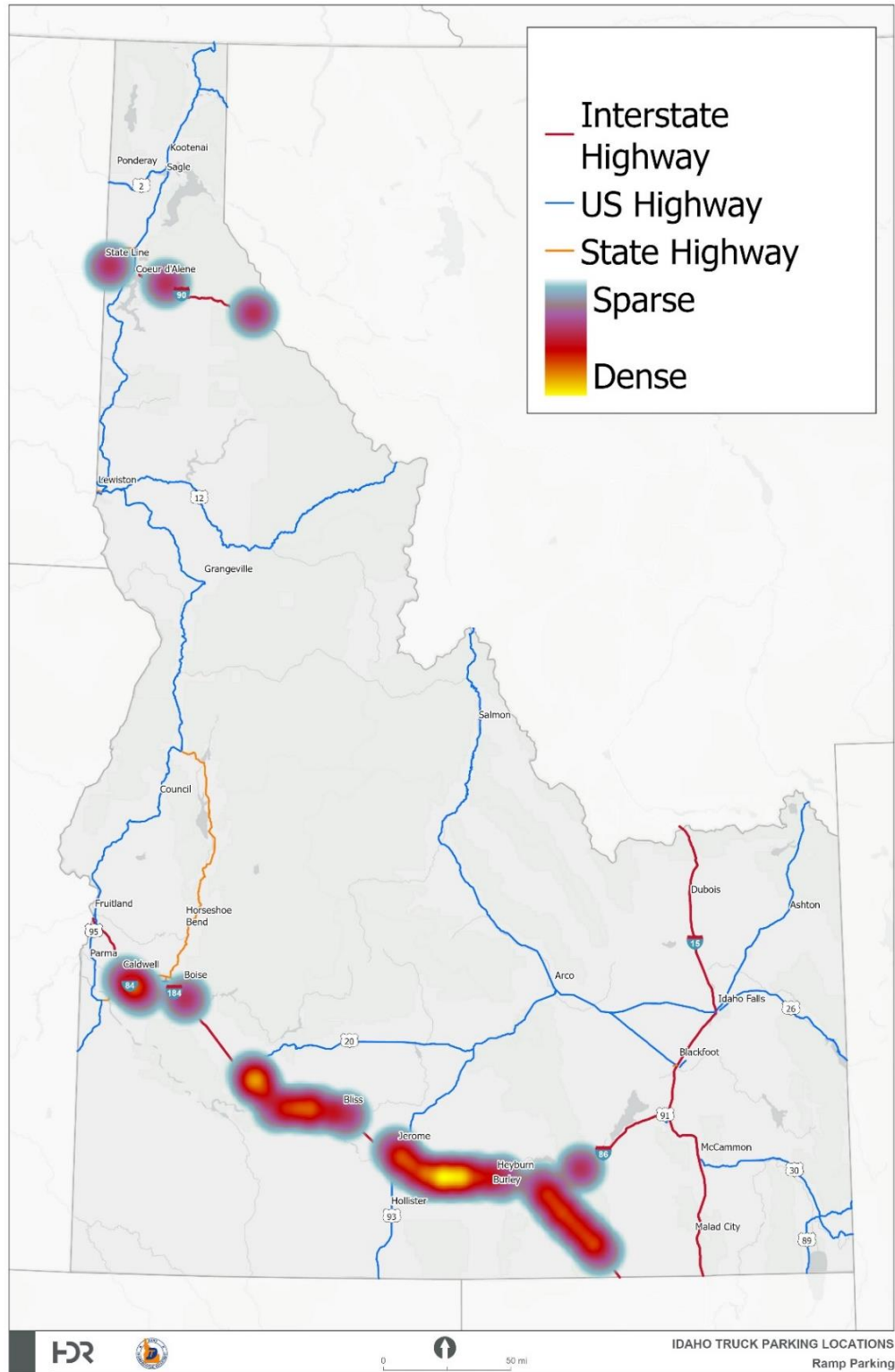


Figure 5.2: Ramp Parking

Short-(less than an hour) and long-term parking data (Table 5.2) show that 43 locations (36.4 percent) exceed capacity for at least one hour in a day. Table 1 provides a list of truck parking sites experiencing unmet demand (all truck demand and long-term truck demand) during their peak hours. The table also provides details about the hours of unmet demand at each parking location. Specifically, it reveals that 15 rest areas, 24 private truck stops, and four Points of Entry (POEs) were pinpointed as having unmet demand. Among these, the 15 rest areas exhibited a shortage of 73 parking spaces, the 24 private truck stops faced a deficiency of 148 parking spaces, and the four POEs encountered a shortage of 15 parking spaces. Collectively, this amounts to a total of 236 unmet parking spaces. If this analysis is focused on long term truck parking space unmet demand, these 15 rest areas exhibited a shortage of 42 parking spaces, the 24 private truck stops faced a deficiency of 88 parking spaces, and the four POEs encountered a shortage of four parking spaces. Collectively, this amounts to a total of 134 unmet parking spaces.

This total unmet truck parking space demand and long-term demand is shown below:

- **I-15:** 16 (Long term: 4)
- **I-84:** 153 (Long term: 95)
- **I-86:** 3 (Long term: 1)
- **I-90:** 23 (Long term: 13)
- **Near I-84:** 14 (Long term: 6)
- **SR 26:** 9 (Long term: 4)
- **US 20:** 4 (Long term: 1)
- **US 90:** 1 (Long term: 1)
- **US 95:** 13 (Long term: 9)

Table 5.2: List of Truck Parking Locations with Unmet Demand

Facility Type	Corridor Name	Location Name	Unmet peak hour demand	Unmet long term peak hour parking demand	Existing Truck Parking Capacity (Spaces)	Number of hours with unmet demand
Rest Area	US 95	Sheep Creek	6	6	3	23
Rest Area	US 95	Midvale Hills	3	1	7	5
Rest Area	I-84	Snake River View	10	5	10	24
Rest Area	SR 26	Big Lost River	7	4	8	3
Rest Area	I-84	Bliss E	4	1	40	7
Rest Area	I-90	Huetter E	2	1	20	6
Rest Area	I-84	Blacks Creek E	1	0	34	1
Rest Area	I-84	Blacks Creek W	10	6	26	13
Rest Area	I-84	Juniper W	11	9	20	15
Rest Area	I-86	Coldwater E	3	1	18	7
Rest Area	I-15	Malad Summit	1	0	8	1
Rest Area	SR 26	Clark Hill	1	0	8	1
Rest Area	I-15	North Blackfoot NB	4	1	13	10
Rest Area	I-15	North Blackfoot SB	2	0	15	10
Rest Area	I-90	Huetter W	8	7	10	24
Truck Stop	US 95	Fightin' Creek Market	1	0	5	5
Truck Stop	I-90	Big Y Truck Stop (Tesoro)	2	1	5	13
Truck Stop	US 95	Lancaster Market	1	0	10	4
Truck Stop	I-90	Love's Travel Stop	11	4	85	11
Truck Stop	I-84	Flying J Travel Center	18	8	100	10
Truck Stop	I-84	Love's Travel Stop	43	31	115	14
Truck Stop	I-84	Flying J Travel Center	1	6	100	4
Truck Stop	I-84	Gem Stop	3	1	4	21
Truck Stop	I-84	Jackson's Food Stores	3	0	16	9



Facility Type	Corridor Name	Location Name	Unmet peak hour demand	Unmet long term peak hour parking demand	Existing Truck Parking Capacity (Spaces)	Number of hours with unmet demand
Truck Stop	I-84	Jackson's Food Stores	3	2	7	7
Truck Stop	US 95	Schweitzer's Conoco	2	2	2	24
Truck Stop	Near I-84	Oasis Stop 'n Go	6	3	5	7
Truck Stop	I-84	Chevron	2	0	5	4
Truck Stop	I-84	Maverik	4	2	5	23
Truck Stop	I-84	Valley Wide Country Store - Crossroads	1	0	20	2
Truck Stop	I-84	Hub Plaza	4	2	15	12
Truck Stop	I-84	Love's Travel Stop	26	11	70	14
Truck Stop	I-84	NA	7	6	15	19
Truck Stop	I-84	Pit Stop Shell	1	4	20	1
Truck Stop	I-84	NA	1	1	10	5
Truck Stop	US 20	Big Jud's Ashton	4	1	10	3
Truck Stop	SR 26	Dad's N Yellowstone Travel Stop	1	0	6	4
Truck Stop	I-15	Stinker Station	2	2	5	20
Truck Stop	US 90	Jifi Stop	1	1	5	16
Weigh Station/POE	Near I-84	Horseshoe Bend POE	8	3	6	2
Weigh Station/POE	I-15	Inkom POE NB	3	0	5	15
Weigh Station/POE	I-15	Inkom POE SB	2	0	5	10
Weigh Station/POE	I-15	Sage Junction POE	2	1	8	5
TOTAL			236	134	904	434

As illustrated in Figure 5.3, I-84 accounts for nearly half of the state's truck parking activity throughout the day, with I-15 also having a high truck parking demand. Truck parking on interchange ramps and highway pull-offs tends to be near rest areas and truck stops that exceed capacity multiple times per day. Most facilities that exceed capacity are in the southern part of the state along I-84 and I-15.



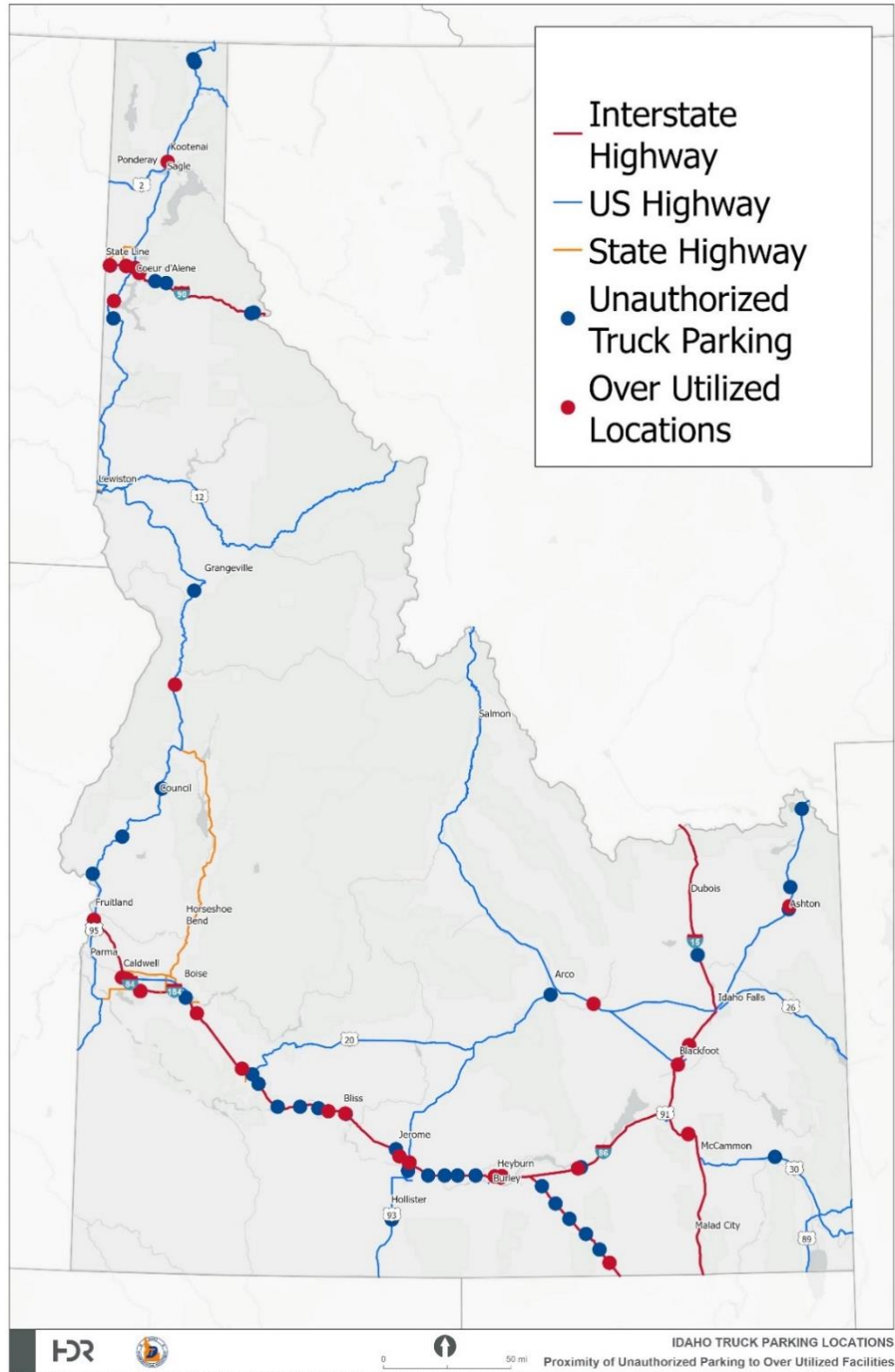


Figure 5.3: Proximity of Unauthorized Truck Parking to Overutilized Facilities



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Future Demand

Analysis of existing truck parking activity and yields where truck parking constraints are today. This clearly identifies the capacity needs based on past and current activity and provides a sound basis for the development of improvement recommendations. However, investments should look to be maximized by adding truck parking capacity that will not be overutilized once the ribbon is cut. Future demand should be considered to address the ongoing growth of truck driver parking needs and mitigate the problems that will result in the future without adequate capacity.

According to the [Freight Analysis Framework](#) (FAF 5), in 2022 trucks transported 180.3 million tons of freight in Idaho which accounts for 64 percent of all freight volume moved. This represents a growth of 44 percent between 2022 and 2050 in truck tonnage movements. Anticipated growth rates indicate a projected increase of 38 percent for short haul (intrastate) movements and 57 percent for long haul (interstate) movements. Figure 5.4 and Figure 5.5 depict the truck volumes (in tonnage) for the years 2022 and 2050, respectively. It's worth highlighting that the high-traffic corridors identified through FAF data analysis align with the high-traffic corridors identified using truck traffic data, as previously illustrated in Figure 5.3. Figure 5.6 visualizes the percentage shift in truck volumes (in tonnage) between 2022 and 2050. A significant portion of the high-traffic corridors are projected to experience growth ranging from 50 percent to 75 percent. The dataset doesn't provide the specific split in the long haul and short haul movements. Certain urbanized regions might even anticipate more substantial increases in traffic.

As per the commodity flow analysis highlighted in the 2023 State Freight Plan, the freight flows are characterized by rural and urban micro-economies along with pass through truck flows. Rural areas support agricultural and resource-based activities with relatively short distance truck trips to processing facilities that experience seasonal fluctuations while urban areas support high-tech and industrial manufacturing. Idaho pass through trucking consists of truck movement from U.S. interior states to the Pacific Northwest port, specifically Portland and Seattle.

The projected statewide unmet demand in Idaho for 2050 can be calculated as follows: Starting with an existing unmet demand of 236 spaces and considering a 57 percent growth rate in long haul/interstate movements, the forecasted unmet demand is estimated to be 371 spaces.

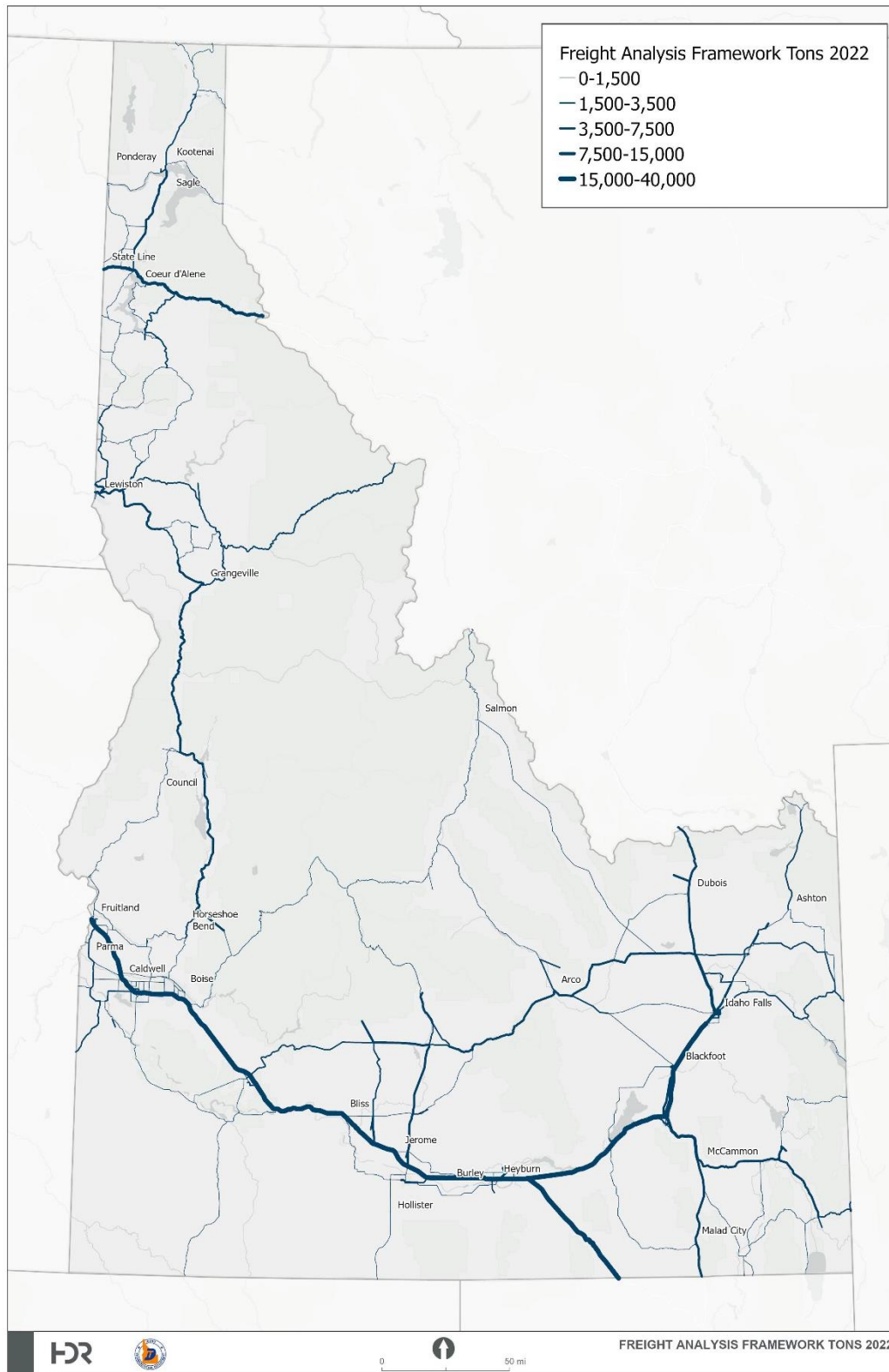


Figure 5.4: 2022 Idaho Truck Freight Volume (kilotons)

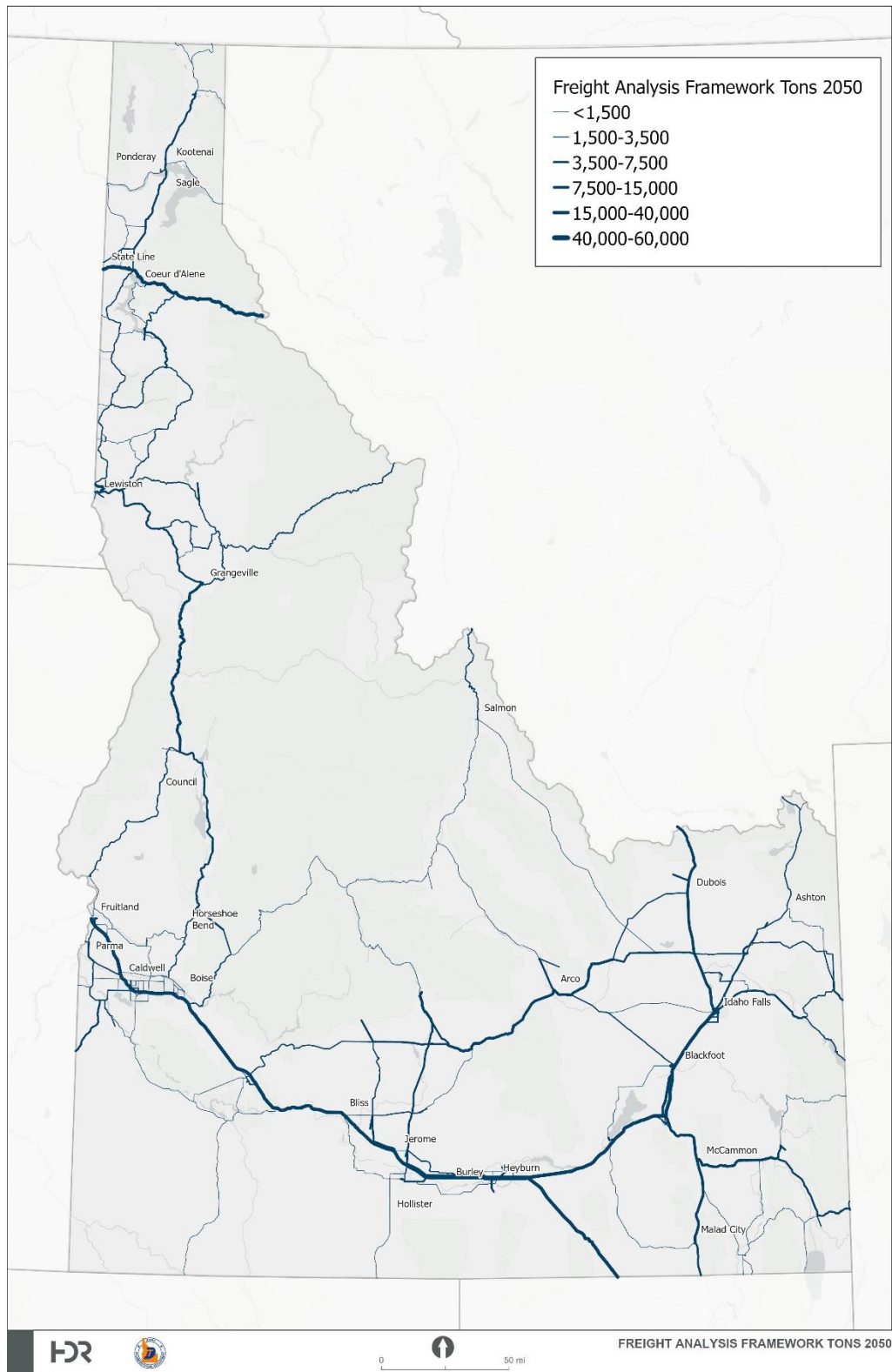


Figure 5.5: 2050 Idaho Truck Freight Volume (kilotons)

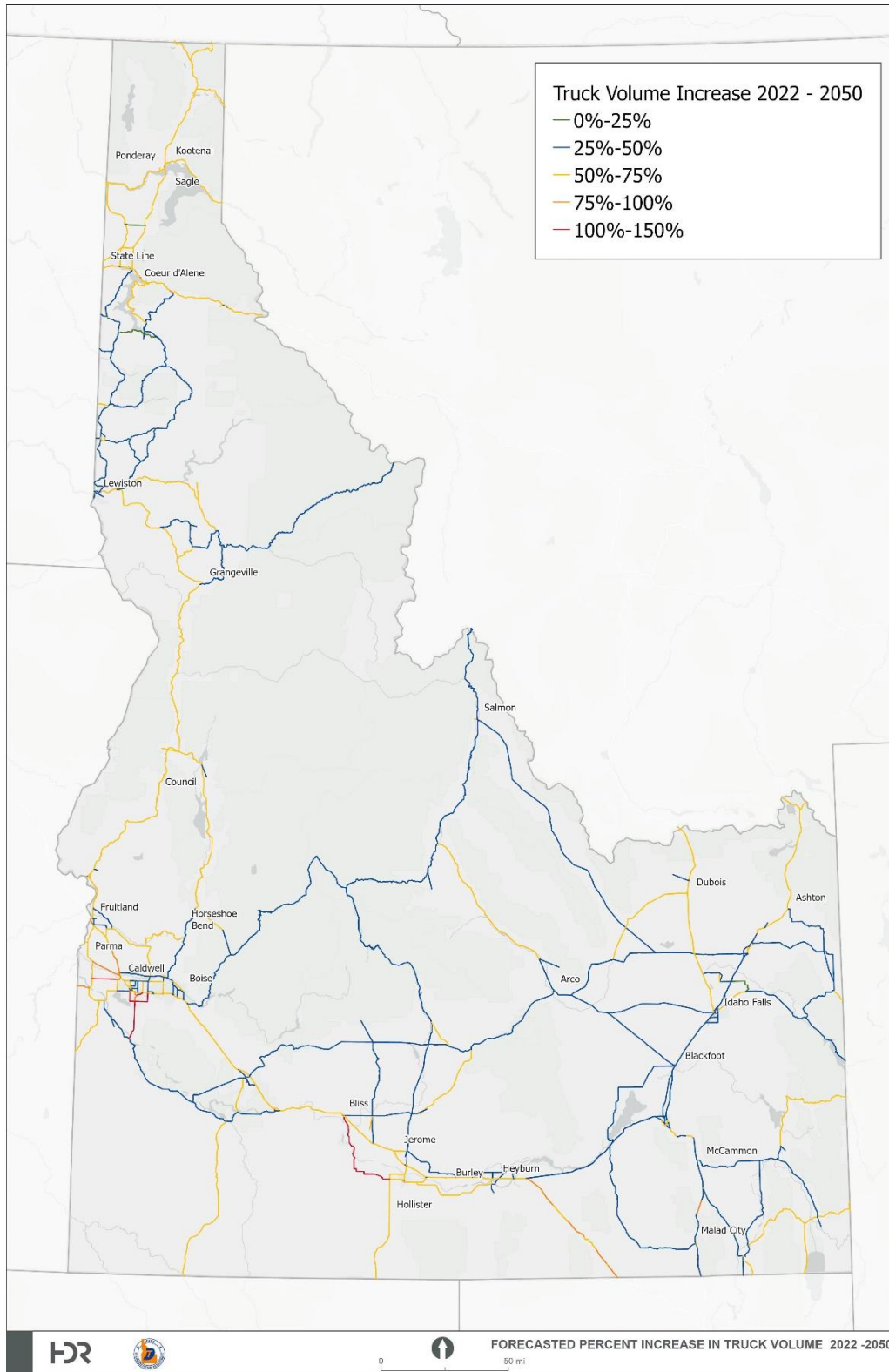


Figure 5.6: Forecasted Percent Increase in Truck Volume (kilotons) from 2022 to 2050

Capacity Needs

The capacity needs can be further divided into two primary sub-categories: *‘Increase existing truck parking supply’* and *‘Maximize the efficient use of current truck parking resources’*.

Increase truck parking supply:

- Apart from the current supply of truck parking, there's a need to increase the capacity of smaller rest areas that experience high demand, especially along I-84, I-15, and I-90.
- The corridors identified are the primary routes which should be considered for additional truck parking sites.
- There is a need for additional funding to support ITD truck parking projects. Various federal, state, and local funding sources can be leveraged to fund these projects.
- Idaho is utilizing the Interstate Oasis Program to supplement its truck parking capacity by providing signing to eligible facilities within three miles of the interstate that provide products and services to the public, 24-hour access to public restrooms, and rest area-type parking for automobiles and heavy trucks. Expanding its implementation is crucial to increase truck parking options awareness for drivers.
- Stakeholders have expressed the need for better highway facilities on primary north-south freight corridors. More truck parking capacity is one of the needs to improve highway facilities on primary north-south freight corridors.

Maximize the efficient use of current truck parking resources:

- Parking areas at weigh stations and POEs are commonly underutilized. Truck drivers are generally concerned they will be subject to increased scrutiny and inspections if they park at these locations. To alleviate overcapacity and unauthorized parking in areas near weigh stations and POEs, it is essential to enhance the appeal of less-frequented weigh stations and POEs located along the primary routes.
- Pull-out areas are not the optimal choices for truck parking, due to the limited capacity and lack of sanitary facilities. It is needed to incorporate adequate safety measures (for example, design considerations, adequate signage, and others) to make them good locations to alleviate parking concerns for shorter durations.
- As per the 2023 state plan, Idaho has a total of 2,581 miles of designated 129,000 pound (129K) network on the State's Highway System. 129K routes provide west/east and north/south redundant heavy truck load capability. Stakeholder engagement for this truck parking study highlighted a concern regarding the scarcity of designated space and inadequately designed parking lots with suitable geometry for oversize/overweight (OS/OW) vehicles. This issue is particularly prevalent in privately operated truck parking zones. The drivers of OS/OW vehicles need more expansive spaces and geometric layouts capable of accommodating their larger truck dimensions.

Operational Needs

Advances in technology solutions can help address some of the truck parking challenges. Real-time parking availability apps and digital platforms can guide truck drivers to available parking spots, reducing the time spent searching. Three emerging technology trends are affecting truck parking:

Digitized logistics: An example of digitized logistics is the utilization of smartphones or devices to locate and secure truck parking spaces. According to the [2021 ATRI study's](#) survey findings, 57.3 percent of drivers (1,103 participants) reported having used a truck parking application in the previous year. A larger percentage of long-haul and younger drivers demonstrated a higher propensity to make use of truck parking apps.

Connected and automated vehicles: Connected and Automated Vehicle (CAV) technologies are advancing rapidly, yet uncertainties remain regarding market acceptance, regulations, and their influence on the supply chain.

Battery-powered electric truck motors: Amid the substantial drive towards embracing battery-powered vehicles, it becomes essential to contemplate the future integration of battery-powered electric trucks. This could potentially enhance how truck stops are viewed and how they evolve. With the confluence of the necessity for charging infrastructure at truck parking sites and the prospect of enhancing the image of truck parking, this technological trajectory stands to affect forthcoming requirements and approaches in the realm of truck parking.

Operational Needs Assessment

The operational needs include two primary categories: *'Raise awareness about the availability of truck parking'* and *'Incorporate emerging technologies to emphasize safety and efficiency'*.

Raise awareness about the availability of truck parking

- According to a [2021 ATRI study](#), various states and multi-state have either implemented or are in the process of implementing truck parking information systems. Table 5.3 provides a summary of significant public sector truck parking information projects undertaken throughout the U.S.

Table 5.3: List of State and Multi-State Projects

Project	Funding Agency	Location
I-10 Connects Truck Parking Availability System (TPAS)	USDOT Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) grant, with coalition states	37 public rest areas in California, Arizona, New Mexico, and Texas.
Colorado Truck Parking Information Management System (TPIMS)	Federal Funding and Colorado DOT	Six locations during the first phase, with a final goal of

Project	Funding Agency	Location
		deploying across the state on I-25, I-70, and I-76.
Florida DOT Truck Parking Availability System (TPAS)	FHWA and FDOT	70+ locations are active.
Truck Parking Information Management System (TPIMS)	USDOT through Transportation Investment Generating Economic Recovery (TIGER) grants	Eight Mid America Association of State Transportation Officials (MAASTO) states: Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Ohio, and Wisconsin

- It is crucial for the state to prioritize the exploration of integrating informative truck parking systems that enhance truck drivers' real-time awareness of parking space availability and demand. This might entail integrating smartphone applications into 511 systems and utilizing variable message signs to provide parking availability information. Assessing the viability of this endeavor for truck drivers traveling on Idaho's roads will be of the highest significance.

Incorporate emerging technologies to emphasize safety and efficiency.

- The nation is witnessing a swift expansion of CAV technologies. Therefore, it's crucial for the state to stay vigilant about these industry developments and adapt flexibly in their planning and operations for these technological advancements.
- Under the National Electric Vehicle Infrastructure Program (NEVI), State DOTs are obligated to designate electric vehicle (EV) charging corridors on a national level to facilitate the movement of freight and goods. Figure 5.7 illustrates the 2023 Idaho Alternative Fuel station locations and their designation status as reported in the [2023 State of Idaho National Electric Vehicle Infrastructure Plan](#). As per NEVI formula program factsheet, there is a provision for designation of EV corridors for freight: *“Requires DOT to designate national EV charging corridors that identify the near- and long-term need for, and the location of, EV charging infrastructure to support freight and goods movement at strategic locations which are along major national highways and the National Highway Freight Network; and at goods movement locations, including ports, intermodal centers, and warehousing locations.”*
- Idaho should have ongoing information regarding technological advancements within the industry and to incorporate adaptability into truck parking planning and operations. This necessitates the need for ITD to further evaluate technology impacts and benefits related to truck parking operations and requirements.

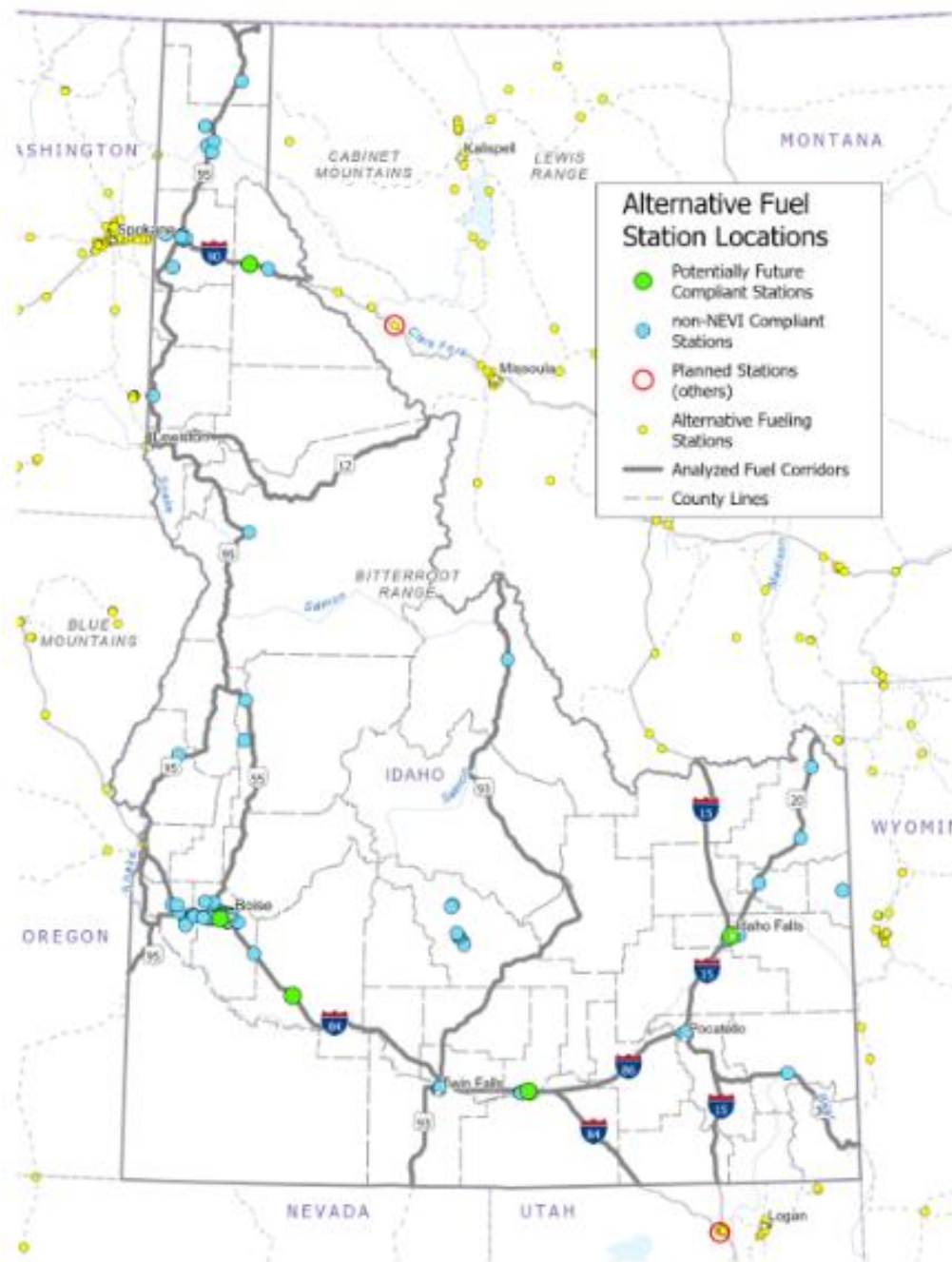


Figure 5.7: Alternative Fuel Station Locations

Source: 2023 State of Idaho, National Electric Vehicle Infrastructure Baseline Plan Update, ITD, 2023

Policy and Regulatory Needs

Government agencies and transportation authorities may need to revise regulations and policies to address the challenges posed by increased parking shortages. This could involve strategic planning for new parking facilities and coordination between various stakeholders.

Policy and Regulation Needs Assessment

The policy and regulation needs are outlined below:

- Commercial amenities like food and fuel at rest areas constructed along the highway system are not permitted currently under federal law, but other states are trying to develop a resolution.
- There is a variety of federal funding sources that can be used for truck parking, however Idaho has only designated NHFP for truck parking.
- Enhanced security and safety through surveillance cameras, improved lighting, and potentially night-time surveillance patrols are lacking at various public truck parking sites.
- ITD issues overweight permits for trucks weighing up to 129,000 pounds, allowing them to travel on the Idaho Interstate system. The purpose of this is to shift the movement of long-haul trucks from the state system back onto the Interstates. This network is somewhat fragmented due to the requirement for businesses to initiate the process of road designation. This program influences a driver's route and affects where they will seek parking while crossing the state. Therefore, it is essential to guarantee that the designated 129,000-pound route network is seamlessly navigable without any physical or operational discontinuities.
- With multiple municipalities enforcing a range of land use and noise regulations to limit truck parking within their boundaries, it becomes crucial to establish partnerships and review some of these restrictions. Collaboration with municipal planning organizations (MPOs), Economic Development Districts (EDD), and city/county advocacy organizations is necessary to formulate guidelines and strategies aimed at addressing the public's concerns to truck parking facilities.
- Conflicts arising from land use, such as truck parking in the proximity of residential and commercial development, pose challenges for expanding parking capacity, particularly in more urbanized areas. These conflicts require inventive solutions coupled with policy reforms to incorporate truck parking within areas with high demand.
- Partnerships between the public and private sectors are needed to address truck parking shortfalls.
- Within the context of the interstate commerce and associated truck movements, coordination with neighboring states and regions to advance truck parking initiatives is critical.
- There is a need to explore additional initiatives to advance truck parking projects. Some initiatives which other states have started are formulating a truck parking program, fostering the involvement of truck parking stakeholders within the freight advisory group, and designating a truck parking champion.
- In addition to the statewide freight plan, there is a need to emphasize the integration of truck parking in all other relevant state, regional, and local plans to address truck parking challenges.

6. Truck Parking Recommendations

The recommendations within this report are derived from the analysis and research carried out in previous chapters and summarizes the recommendations into three distinct categories:

- **Projects:** Physical improvements that provide or support suitable and sufficient spaces where truck drivers can safely and conveniently park and rest.
- **Programs:** Improvements in operations that can lead to more efficient truck parking.
- **Policies:** Necessary guidelines, rules, and standards that governments, transportation agencies, and relevant authorities can establish to manage and optimize truck parking.

A summary of the recommendations and responsibilities is shown in Table 6.1.

Table 6.1: Recommendations Summary

Recommendation	Category	Description	Primary Responsibility	Secondary Responsibility
Develop a centralized comprehensive inventory of ROW.	Project	A centralized GIS database of ITD-owned ROW will give the Department the information necessary to understand the available land area for truck parking expansion at ITD owned parking facilities.	ITD ROW ITD Districts	ITD GIS Services
Identify Site Specific Opportunities for Capacity Additions	Project	Identify the land available and truck parking expansion options within the top five (5) corridors with the greatest truck parking need which include I-90 at Coeur d'Alene, I-84 Boise, I-84 Mountain Home, I-84 Twin Falls, and I-15 Blackfoot.	ITD Planning	ITD Transportation Asset Management Team
Install Occupancy Detection to Optimize Existing Capacity	Project	Maximize existing truck parking capacity through occupancy detection to provide real-time estimates of the number of free truck parking spaces and dynamic message signage or driver apps to provide that information to drivers, similar to the Truck Parking Information Management System (TPIMS). Occupancy detection is recommended for ITD owned and operated facilities with priorities for those corridors with high demand, with the ultimate goal of providing this capability to all ITD facilities.	ITD Highways Construction and Operations	ITD Planning
Conduct a Survey of Truck Stop Operators	Program	A survey of regional truck stop operators would identify needs and options for expanding parking capacity at existing facilities throughout Idaho, as well as exploring options for new truck parking locations.	ITD Planning	
Develop a Statewide Rest Area Plan	Program	ITD should develop a statewide rest area plan, for five, ten and twenty year time horizons to identify and improve Idaho rest area facilities to accommodate additional truck parking, as well as improving to adhere to ADA requirements.	ITD Planning	ITD Transportation Asset Management Team



Recommendation	Category	Description	Primary Responsibility	Secondary Responsibility
Indemnification/Insurance Pool	Program	Explore options to limit parking lot owners' exposure to liability issues through the creation of an insurance pool to spread the risk. Coordination with local municipal officials will be required to ensure that truck parking activity adheres to local zoning and ordinance regulations, or if amendments are needed. These pools would be negotiated between groups of participating businesses with insurance providers to share the potential risks associated with truck parking activities.	ITD Districts	ITD Planning Municipalities
Development Agreements	Program	ITD should consider public-private partnerships with development agreements for private developers to operate pooled truck parking areas with required amenities. This could include leasing state owned land to developers to build and operate a pooled truck parking area. Coordination with local municipal officials may be required to adhere to, or amend, local zoning and ordinance regulations.	ITD Planning	Municipalities
Expand the Idaho Oasis Partnerships Program	Program	ITD should look for additional opportunities to expand the program within those areas with high truck parking demand with limited supply.	ITD Planning	
Collaborate with Stakeholders and Develop an Education Campaign for Residents	Program	Since ninety percent of the state's truck parking capacity is owned and operated by the private sector, ITD must coordinate and collaborate with public and private sector users and owners of the transportation system to advance policy, program, and project recommendations. Particularly, ITD should discuss truck parking issues with the municipalities where private stops are over capacity to identify feasible solutions to meet the unmet demand at these locations. In addition, ITD should actively engage and collaborate with privately-owned truck stops to look for opportunities to expand or develop new truck parking.	TAC, FAC	ITD Districts Municipalities

Recommendation	Category	Description	Primary Responsibility	Secondary Responsibility
Consider Truck Parking as Part of the Project Development Process	Program	Truck parking needs are dynamic and will need to be accounted for during the project development process to ensure a balanced, comprehensive approach is achieved, by considering truck parking needs within roadway projects. There may be opportunities to provide truck parking as part of roadway expansion projects through the use of right-of-way, industrial property development/municipal zoning requirements, or support for funding for the expansion of existing public and private facilities	ITD Planning	ITD Highways Construction and Operations
Maximize Funding for Expanded Truck Parking and Improved Parking Efficiency	Program	There is a need for additional and/or prioritized funding to support ITD truck parking projects. Various federal, state, and local funding sources can be leveraged to fund these projects. Several federal programs can be used to assist in supplementing traditional funding to support truck parking improvements.	ITD Planning	
Coordinate with Neighboring States on Truck Parking Issues	Policy	Goods movement is inherently an interregional and multi-state activity. ITD should collaborate with neighboring states to advance solutions that go beyond Idaho's borders such as those interstate corridors of high demand such as I-84, I-90 and I-15. This approach would make the best use of limited resources by coordinating activities and logically matching the geographic scope of the truck parking issues with the appropriate solutions that benefit drivers and businesses, while increasing multi-state safety.	ITD Planning	Adjacent States
Develop Model Ordinance Language to Provide Guidance for Truck Parking	Policy	ITD should work with representative MPOs, EDDs local city/county advocacy groups to develop model ordinance language and/or guidelines to assist municipal development review by providing information specific to the provision of truck parking. Such an ordinance could be specific to a truck stop or a freight-reliant development, such as an industrial office park, plan for short and long-term truck parking by providing centralized parking and rest facilities within the entire development for all tenants.	ITD Planning	Municipalities

Recommendation	Category	Description	Primary Responsibility	Secondary Responsibility
Explore the Potential for the Dual Use of Large Lots	Policy	ITD should work with municipal partners explore opportunities for expanding truck parking capacity through dual-use facilities, brownfield re-use, and provision of parking at truck-oriented developments.	Municipalities	ITD Planning
Include Truck Parking Expansion with Other Highway Projects Such as Reconstruction and Expansion	Policy	To formally incorporate the issue of truck parking within the existing project development processes as a consideration would ensure some thought would be given and would establish a uniform and cost-efficient approach to partnering and problem solving statewide while developing solutions that make sense for a specific region or corridor.	ITD Highways Construction and Operations	ITD Planning
Establish Appropriate Performance Monitoring to Track Progress	Policy	As part of goal setting and purposeful planning, basic measures should be established as a means to monitor progress and the degree of how truck parking issues change over time. These measures should be developed with the trucking industry and include quantitative information that relates supply and demand, such as a sample of truck probe data as was used for this assessment.	ITD Planning	ITD Transportation Asset Management Team

Project Recommendations

The needs assessment identified a need to increase the capacity and/or improve the operations of ITD rest areas and private truck stops that experience high truck parking demand. The corridors identified are the primary routes which should be considered for improvements.

The Task 4 Needs Assessment describes the truck parking sites experiencing unmet demand during their peak hours. The result of the statewide assessment was the identification of 15 rest areas, 24 private truck stops, and four Ports of Entry (POEs) as having unmet demand, with 15 rest areas showing a shortage of 73 parking spaces, the 24 private truck stops having a deficiency of 148 parking spaces, and the four POEs estimated to have a shortage of 15 parking spaces. Collectively, this totals a shortage of 236 truck parking spaces statewide.

Increase Capacity at Strategic Locations

Project recommendations are centered on addressing the truck parking capacity needs throughout Idaho. Project recommendations represent improvements intended to enhance the efficiency, safety, accessibility, and/or sustainability of the truck parking network. This involves the construction, expansion, or renovation of truck parking sites to facilitate increased physical truck parking capacity. Potential ITD operated sites should meet the following criteria. Sites meeting these criteria are expected to be good candidates for near-term implementation, allowing ITD to avoid time consuming right-of-way acquisition and complicated environmental permitting.

- Site is located within existing ITD right-of-way (ROW) (or on other state property).
- Site is available and the land is appropriate for parking lot construction including sufficient land area, suitable topography, and adequate highway access.
- Site has few if any environmental red flags.

Searches for candidate sites should be prioritized as follows:

- Land adjacent to rest areas or weigh stations/POEs for existing facility expansion.
- Land within existing interchange ROW (see example Figure 6.1).
- Land adjacent to the Interstate or highway mainline.
- Land adjacent to interchange cross-streets.





Figure 6.1: Truck Parking within Interchange of I-80 and US 138 in Nebraska
Source: Google 2023

Drivers make every attempt to find parking (demand) along their routes and park where there is truck parking availability (supply) at specific locations. Because truck parking demand is area-based (along a driver's route), and supply is point-based (at fixed locations), the study team identified ten areas/corridors (Figure 6.2) where demand is high and potential project solutions to provide the necessary truck parking supply.

This corridor approach is consistent with the needs and wants of drivers, where they seek parking as close as possible to their route to adhere with federal HOS regulations. As such, analysis of the parking needs along the corridors uses the driver's perspective of truck parking capacity when looking at options to satisfy the unmet demand. Capacity additions should be sought within these corridors to satisfy the demand, with the estimated number of spaces required by corridor shown in Table 6.2**Error! Reference source not found..** Ideally, expanded truck parking would be provided at existing facilities.

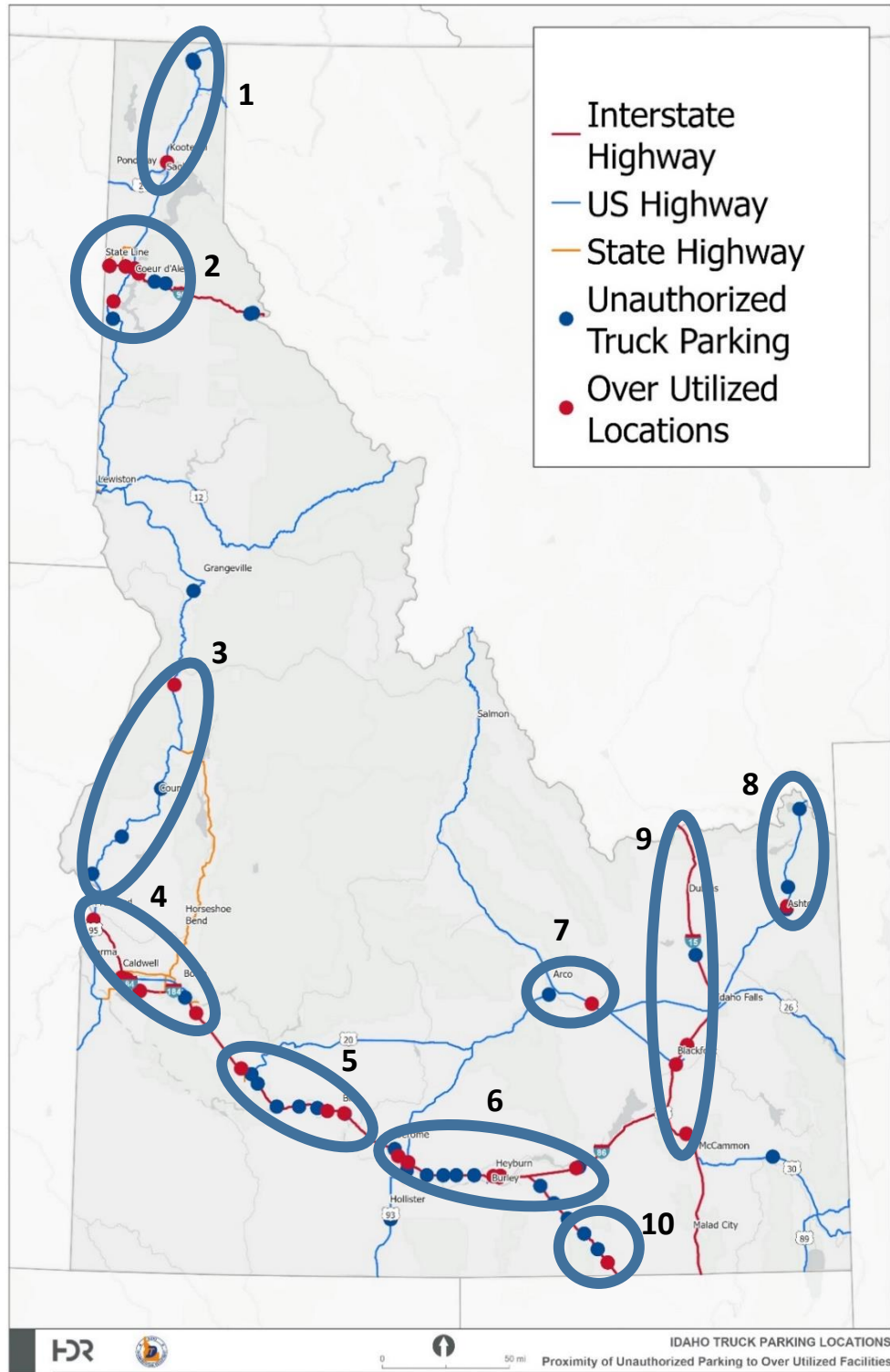


Figure 6.2: Truck Parking Corridors with Capacity Needs

Table 6.2: Corridor-Level Truck Parking Space Needs

Corridor #	Name	Spaces Needed
1	US 95 Northern Border	2
2	I-90 Coeur d’Alene	26
3	US 95 Central	9
4	I-84 Boise	57
5	I-84 Mountain Home	49
6	I-84 Twin Falls	51
7	US 26 Butte City	7
8	US 20 Caribou Targhee NF	6
9	I-15 Blackfoot	18
10	I-84 UT Line	11

Of the 10 corridors, the top five with the greatest truck parking need include I-90 at Coeur d’Alene, I-84 Boise, I-84 Mountain Home, I-84 Twin Falls, and I-15 Blackfoot. Summaries of the estimated unmet peak hour demand by facility which accounts for the truck parking shortfall within each of the top five corridors are shown in Table 6.3 through Table 6.7. In general, there is a need and opportunity to increase the capacity of smaller ITD owned rest areas that experience high demand along I-84, I-15, and I-90.

It is important to note that ITD does not have a readily available and transferable inventory of available right of way (ROW) in the areas of greatest truck parking needs. This limits the ability to understand the building ‘envelope’ available for truck parking expansion at ITD owned rest areas or changes to optimize truck circulation within existing locations. Because of this limitation, specific projects that include details related to the number of spaces that can be added to public rest areas or weigh stations/POE within existing ROW is not possible as part of this study. If in the future, ITD seeks to identify more targeted truck parking expansion project opportunities, it is recommended that ITD develop a centralized comprehensive inventory of its ROW along state-owned roadways.

I-90 near Coeur d’Alene (Table 6.3) is estimated to require truck parking expansion of both public and private facilities. The total unmet truck parking demand within the corridor is 26 spaces.

Table 6.3: Corridor #2- I-90 Coeur d’Alene Estimated Truck Parking Shortfall

Facility Type	Name	Location	Unmet peak hour demand
Rest Area	Huetter EB	I-90 E, Post Falls, Idaho, 83854	2
Rest Area	Huetter WB	I-90 W, Post Falls, Idaho, 83854	8
Truck Stop	Fightin' Creek Market	(US 95) 12727 W Elder Rd, Worley, ID, 83876	1

Facility Type	Name	Location	Unmet peak hour demand
Truck Stop	Big Y Truck Stop (Tesoro)	2301 E Sherman Ave, Coeur D Alene, ID, 83814	2
Truck Stop	Lancaster Market	266 W Lancaster Rd, Hayden, ID, 83835	1
Truck Stop	Love's Travel Stop	4336-4594 W Expo Pkwy, Post Falls, ID, 83854	11
Truck Stop	Jifi Stop	350 West Appleway Ave., Coeur d'Alene, ID 83814	1

The rest areas on I-84 near Boise (Table 6.4) are in need of expansion as is the Flying J near I-84 and US 26 in Caldwell. The total unmet truck parking demand within the corridor is 57 spaces.

Table 6.4: Corridor #4- I-84 Boise Estimated Truck Parking Deficit

Facility Type	Location Name	Location	Unmet peak hour demand
Rest Area	Snake River View	I-84 E, Fruitland, Idaho, 83619	10
Rest Area	Blacks Creek EB	I-84, Boise, ID 83716	1
Rest Area	Blacks Creek WB	I-84, Boise, ID 83716	10
Truck Stop	Flying J Travel Center	3549-3625 S Findley Ave, Boise, ID, 83705	18
Truck Stop	Flying J Travel Center	1226-1270 Aviation Way, Caldwell, ID, 83605	1
Truck Stop	Gem Stop	1400 N Franklin Blvd, Nampa, ID, 83687	3
Truck Stop	Jackson's Food Stores	208 W Simplot Blvd, Caldwell, ID, 83605	3
Truck Stop	Jackson's Food Stores	1400 N Franklin Blvd, Nampa, ID, 83687	3
Weigh Station/POE	Horseshoe Bend POE	(SH 55) Horseshoe Bend, ID, 83629	8

Along the I-84 Mountain Home corridor (Table 6.5), there is a large need for private truck parking capacity as is shown by the estimated need for nearly 50 additional truck parking spaces at the Love's Travel Stop in Bliss. This is a relatively new site that is popular with drivers. The total unmet truck parking demand within the corridor is 49 spaces.

Table 6.5: Corridor #5- I-84 Mountain Home Estimated Truck Parking Deficit

Facility Type	Location Name	Location	Unmet peak hour demand
Rest Area	Bliss EB	Interstate 84 mile marker 133 Eastbound, Bliss, ID 83314	4
Truck Stop	Love's Travel Stop	745 US 30, Bliss, ID, 83314	43
Truck Stop	Chevron	3872 Ditto Creek Rd, Mountain Home, ID, 83647	2

Similar to the Mountain Home corridor, the I-84 Twin Falls corridor (Table 6.6) private truck parking expansion is needed as demonstrated by estimated unmet peak hour truck parking demand of nearly 30 trucks at the Love's located at the interchange of I-84 and US 30 in Heyburn. The total unmet truck parking demand within the corridor is 51 spaces.

Table 6.6: Corridor #6- I-84 Twin Falls Estimated Truck Parking Deficit

Facility Type	Location Name	Location	Unmet peak hour demand
Rest Area	Coldwater EB	Cold Water Rd, American Falls, ID, 83211	3
Truck Stop	Oasis Stop 'n Go	2707 Highway 93, Twin Falls, ID, 83301	6
Truck Stop	Maverik	3135 S Lincoln Ave, Jerome, ID, 83338	4
Truck Stop	Valley Wide Country Store – Crossroads	Valley Wide Country Store, 393 Crossroads Point Blvd, Jerome, ID	1
Truck Stop	Hub Plaza	334 Hwy 27, Heyburn, ID 83336	4
Truck Stop	Love's Travel Stop	260 Centennial Dr, Heyburn, ID, 83336	26
Truck Stop	NA	3210 ID-24, Heyburn, ID 83336	7

The I-15 Blackfoot corridor (Table 6.7) has the least amount of demand with the total unmet truck parking demand within the corridor at 18 spaces. Though there is a lower estimated unmet demand, this corridor has the greatest potential for ITD to increase capacity due to the fact that the state operates six of the nine truck parking locations.

Table 6.7: Corridor #9- I-15 Blackfoot Estimated Truck Parking Deficit

Facility Type	Location Name	Location	Unmet peak hour demand
Rest Area	Malad Summit	I-15 S, Downey, ID, 83234	1
Rest Area	North Blackfoot NB	Blackfoot, ID 83221	4
Rest Area	North Blackfoot SB	Blackfoot, ID 83221	2
Truck Stop	Pit Stop Shell	232 N Highway 77, Declo, ID, 83323	1
Truck Stop	Dad's N Yellowstone Travel Stop	3607 N Yellowstone Hwy, Idaho Falls, ID, 83401	1
Truck Stop	Stinker Station	1228 Parkway Dr, Blackfoot, ID 83221	2
Weigh Station/POE	Inkom POE NB	59 Interstate 15 Business, Inkom, ID 83245	3
Weigh Station/POE	Inkom POE SB	59 Interstate 15 Business, Inkom, ID 83245	2
Weigh Station/POE	Sage Junction POE	2445-2473 E 1500 N, Terreton, Idaho, 83450	2

When developing or expanding public truck parking facilities, it is important to provide for the basic needs of drivers such as trash receptacles with scheduled pickup, toilet facilities, and security patrols. Such needs should be planned as part of parking improvements.

Install Occupancy Detection to Optimize Existing Capacity

Operational improvements such as occupancy detection are those that make existing truck parking capacity more accessible and efficient. These improvements are designed to optimize existing truck parking capacity and be adaptable to changing truck parking demand and supply.



Figure 6.3: Example TPIMS Parking Availability Sign

Source: <https://trucksparkhere.com/>

Maximizing existing truck parking capacity through occupancy detection includes providing real-time estimates of the number of free truck parking spaces and dynamic message signage or driver apps to provide that information to drivers. A system similar to the Mid America Association of State Transportation Officials' (MAASTO) Truck Parking Information Management System (TPIMS) (Figure 6.3) would use existing intelligent transportation systems (ITS) infrastructure and capabilities, along with vehicle detection and data collection technologies, to monitor the availability of truck parking at truck parking locations. The real-time truck parking information is shared directly with truck drivers through multiple platforms, including dynamic message signs, on-line navigation tools, private apps, and 511 systems.

Occupancy detection is recommended for ITD owned and operated facilities since private truck stop operations are not within their authority. The priorities for occupancy detection systems include those corridors with high demand, with the ultimate goal of providing this capability to all ITD facilities.

- **Priority #1:** Install occupancy detection along I-84/86 between the Oregon border and I-15.
- **Priority #2:** Install occupancy detection along I-90 in the Coeur d'Alene area.
- **Priority #3:** Install occupancy detection along I-15 in the Pocatello to Idaho Falls area.

For system reliability and accuracy, it is recommended that ITD consider installing a system that measures the occupancy of each parking space individually. These systems provide greater count reliability and greater flexibility in displaying parking information to drivers. These individual space sensors can include infrared, laser, radar, or magnetic sensors. The Minnesota DOT utilizes magnetic sensors for its space-by-space system due to its ability to function at times when lots are covered with ice and snow. Depending on the corridor and number of locations with the technology installed, dynamic message signs should be placed five to ten miles ahead of the nearest parking location with the next two facilities' parking availability information also displayed.

Occupancy data sharing with private companies including web-based applications assists in optimizing truck parking supply. Many drivers utilize popular smart phone applications such as Trucker Path to determine real time parking availability. The parking availability in the apps is based upon driver reports for many sites, including ITD owned facilities. As occupancy detection is installed, the real time parking availability numbers should be shared with apps like Trucker Path and Park My Truck. This would allow drivers to better plan their stops within an industry specific app, without having to drive past a parking availability sign.

Program Recommendations

The program recommendations center on improving the efficiency of truck parking. The objective of programs is to maximize the public benefit of truck parking investments while minimizing risks of monetary loss and time inefficiency for drivers.

Conduct a Survey of Truck Stop Operators

The private sector is focused on sales of fuel and goods and except in rare cases, does not receive revenue directly from truck parking. Engaging the private sector to expand truck parking benefits the public by providing a safe location for drivers to park and meet federal HOS, and an opportunity for the private sector for increased sales. Early partnership with service stations and truck stops can help establish consensus around future truck parking planning and funding activities. A survey of regional truck stop operators would identify needs and options for expanding parking capacity at existing facilities throughout Idaho, as well as exploring options for new truck parking locations.

Develop a Statewide Rest Area Improvement Plan

ITD typically provides rest areas every 60-70 miles (about an hour drive between facilities) along the interstate system, which has been a program adopted by AASHTO & FHWA and is used by numerous State DOTs. Providing new or additional rest areas that are less than 60 miles to another facility does not fall within these guidelines and would require additional funding, new policies and procedures, and adoption of new statewide plan.

ITD should develop a statewide rest area improvement plan to identify and improve Idaho rest area facilities to accommodate additional truck parking, as well as improving to adhere to ADA requirements.

Indemnification/Insurance Pool

Big box stores and shopping centers have large parking lots which are often underutilized or empty at night. These lots are often identified as a potential opportunity to provide truck parking within an urban or suburban area. Similarly, large parking lots at many truck-reliant retail or industrial facilities have been identified as potential truck parking opportunities.

While these ideas have significant potential, there are clear issues to their implementation. The leading issue is the liability created for property owners by allowing truck parking at their business. To overcome this issue, options should be explored to limit parking lot owners from exposure by allowing trucks to park in their lots. Options could include the creation of an insurance pool to spread the risk. In addition, coordination with local municipal officials will be required to ensure that truck parking activity adheres to local zoning and ordinance regulations, or if amendments are needed. These pools would be negotiated between groups of participating businesses with insurance providers to share the potential risks associated with truck parking activities.

Development Agreements

Truck drivers, especially long-haul drivers, desire extensive amenities at the parking locations during overnight stops. These amenities include food, showers, laundry, wi-fi, and other amenities that ITD is unable to provide at publicly owned parking facilities. Many of these higher amenity parking facilities are

provided by private industry through truck stops. However, along some corridors, truck stops have not been developed in number and/or size to meet the current parking need.

To assist with development of parking in these areas, ITD should consider public-private partnerships with development agreements. This could include paying private developers to purchase land to build and operate pooled truck parking areas with required amenities within or adjacent to industrial development. This type of shared parking would remove the need for on-site truck parking/staging at each tenant location, reducing the pavement footprint. If public land is available, this option could also include leasing state owned land to developers to build and operate a pooled truck parking area. Coordination with local municipal officials may be required to adhere to, or amend, local zoning and ordinance regulations.

Expand the Idaho Oasis Partnerships Program

While technological solutions can mitigate truck parking challenges, current demand levels (as shown in Section 0) require new and expanded parking capacity. Overcoming this challenge will require increased and sustained investment by the public and private sectors. Idaho is successfully utilizing the Interstate Oasis Program to supplement its truck parking capacity. Expanding its implementation is crucial to increase truck parking options for drivers. Focusing program expansion on those private facilities identified within high demand corridors will yield the greatest need for drivers statewide.

ITD currently has successful partnerships with private truck stops such as Flying J Corp. to provide a free public rest area built and maintained to ITD standards to enhance safety and convenience for interstate highway users. It allows Idaho to designate and provide signing to eligible facilities off the freeway that provide products and services to the public, 24-hour access to public restrooms, and rest area-type parking for automobiles and heavy trucks.

To qualify for designation and signing as an Interstate Oasis, a facility must meet specific criteria:

- A facility shall be no more than three miles from an interstate highway interchange except for sparsely developed rural areas where eligible facilities may not be available. A lesser distance may also be required when a state's laws impose restrictions on truck travel.
- Access routes can safely and conveniently accommodate vehicles of the types, sizes and weights that would be regularly using this type of facility.
- Provide a physical layout that includes safe entry and exit points to the site, on-site traffic circulation and parking areas for all vehicles, including heavy trucks.
- Maintain modern, sanitary restrooms with free drinking water that are available to the public at all times.
- Provide a sufficient number of well lighted parking spaces for automobiles and heavy trucks that are available at no charge or obligation for parking durations of up to 10 hours or longer.
- Offer products and services that include a public telephone and food, as well as motor vehicle fuel, oil and water.
- Staffed by at least one person at all times.

In cases where no single business near an interchange meets all the eligibility requirements, Idaho may allow the criteria to be satisfied by a combination of two or more businesses located adjacent to each other and easily accessible on foot from each other's parking lots.

Collaborate with Stakeholders and Develop an Education Campaign for Residents

Since ninety percent of the state's truck parking capacity is owned and operated by the private sector, ITD must coordinate and collaborate with public and private sector users and owners of the transportation system to advance policy, program, and project recommendations. Particularly, ITD should discuss truck parking issues with the municipalities where private stops are over capacity to identify feasible solutions to meet the unmet demand at these locations. In addition, ITD should actively engage and collaborate with privately-owned truck stops to look for opportunities to expand or develop new truck parking.

Residents in the proximity of truck parking facilities see them as a nuisance, rather than an important part of truck logistics and public safety. Enhanced community outreach to inform the public on the importance of truck parking in areas that may have specific sensitivities, could provide the necessary support for truck parking solutions and an opportunity to add to the local economy.

Consider Truck Parking as Part of the Project Development Process

Truck parking needs are dynamic and will need to be accounted for during the project development process to ensure a balanced, comprehensive approach is achieved, by considering truck parking needs within roadway projects. There may be opportunities to provide truck parking as part of roadway expansion projects through the use of right-of-way, industrial property development/municipal zoning requirements, or support for funding for the expansion of existing public and private facilities.

Maximize Funding for Expanded Truck Parking and Improved Parking Efficiency

ITD truck parking projects will require funding. Various federal, state, and local funding sources can be leveraged to fund these projects. Several federal programs can be used to assist in supplementing discretionary funding programs to support truck parking improvements.

Jason's Law

Section 1401 of MAP-21, "Jason's Law," established eligibility for a range of projects to provide commercial motor vehicle parking that serves the National Highway System (NHS) to improve the safety for commercial motor vehicle operators. This includes:

- Constructing safety rest areas (as defined in 23 U.S.C. 120(c)(1)) with commercial motor vehicle parking.
- Constructing commercial motor vehicle parking facilities adjacent to truck stops and travel plazas.
- Opening existing facilities such as inspection and weigh stations and park-and ride facilities to accommodate commercial motor vehicle parking.

- Promoting the availability of publicly or privately provided commercial motor vehicle parking on the NHS using intelligent transportation systems (ITS) or other means.
- Constructing turnouts¹ along the NHS for commercial motor vehicles.
- Making capital improvements to seasonal public commercial motor vehicle parking facilities (if any) to allow the facilities to remain open year-round.
- Improving the geometric design of interchanges on the NHS to improve access to commercial motor vehicle parking facilities.

States can use the following Federal-aid highway funding programs for these truck parking projects as defined under Jason’s Law:

- **Surface Transportation Block Grant Program (STBG)** – The STBG program provides specific eligibility for the construction of truck parking on Federal-aid highways under 23 U.S.C. 133(b)(1)(E).
- **National Highway Freight Program (NHFP)** – The NHFP provides formula funds to States to improve the condition and performance of the National Highway Freight Network under 23 U.S.C. 167(h)(5)(C). Eligible activities include truck parking facilities under 23 U.S.C. 167(h)(5)(C)(xi) and real-time traffic, truck parking, roadway condition, and multimodal transportation information systems under 23 U.S.C. 167(h)(5)(C)(xii).
- **Highway Safety Improvement Program (HSIP)** – Truck parking facilities may be funded through this program under 23 U.S.C. 148(a)(4)(B)(xxiii), provided the need for commercial motor vehicle parking is consistent with the State Strategic Highway Safety Plan (SHSP) developed under 23 U.S.C. 148 and corrects or improves a roadway feature that constitutes a hazard to road users or addresses a highway safety problem.
- **National Highway Performance Program (NHPP)** - NHPP funds may be obligated for a project on an eligible facility that supports progress toward the achievement of national performance goals for improving infrastructure condition, safety, congestion reduction, system reliability, or freight movement on the NHS, as provided in 23 U.S.C. 119(d)(1)(A).
- **Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT)** – PROTECT apportioned funds could be used to make resilience improvements at existing truck parking facilities if the facility is eligible under 23 U.S.C. 176(c)(3).
- **Carbon Reduction Program (CRP)** – Advanced truck stop electrification systems are eligible for CRP funds under 23 U.S.C. 175(c)(1)(A) and projects that reduce transportation emissions at port facilities are eligible under 23 U.S.C. 175(c)(1)(M).
- **Congestion Mitigation and Air Quality Improvement Program (CMAQ)** - While CMAQ funding is not eligible for construction of commercial motor vehicle parking, advanced truck stop electrification systems may be eligible under 23 U.S.C. 149(b)(4) or as a strategy to control extended idling of vehicles under 23 U.S.C. 149(b)(1)(A). Truck stop electrification is defined in 23 U.S.C. 101(a)(34) as “a system that delivers heat, air conditioning, electricity, or communications to a heavy-duty vehicle.”
- **Federal Share and Opportunities for Increasing the Federal Share to 100%** – The Federal-aid share of eligible project costs varies by program. a) Certain safety projects, including safety rest areas where the U.S. Department of Transportation has determined there to be a shortage of

¹ Construction of turnouts and other facilities must meet applicable access and design standards incorporated by reference at 23 CFR part 625.

public and private rest areas, may have a Federal share of 100 percent, as provided in 23 U.S.C. 120(c)(1). The increased Federal share for safety projects under this provision is limited to 10 percent of the total funds apportioned to a State under 23 U.S.C. 104.

Discretionary Grants

States and other eligible public entities can also apply for discretionary grants to fund commercial motor vehicle parking projects such as the following:

- **Infrastructure for Rebuilding America (INFRA) Grants** – This discretionary grant program authorized under 23 U.S.C. 117 is designed to fund critical freight and highway projects. Eligible projects include highway freight projects on the National Highway Freight Network, highway projects on the NHS, and other specified intermodal freight projects. The INFRA grant may not exceed 60 percent of the total project cost, subject to 23 U.S.C. 117(j). An additional 20 percent of project costs may be funded with other Federal assistance, bringing total Federal participation in the project to a maximum of 80 percent.
- **Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants** - This discretionary grant program authorized under 49 U.S.C. 6702 was established to fund eligible projects that will have a significant local or regional impact and improve transportation infrastructure. Highway projects under Title 23 are eligible, which includes truck parking.
- **Rural Surface Transportation Grants** - This discretionary grant program authorized under 23 U.S.C. 173 and provides funding to improve and expand the surface transportation infrastructure in rural areas that are outside an urbanized area with a population of over 200,000. Highway freight projects are eligible under 23 U.S.C. 173(e)(1)(D), which includes truck parking.
- **National Infrastructure Project Assistance (Mega) Grants** – This discretionary grant program authorized under 49 U.S.C. 6701 provides funding for projects likely to generate national or regional economic, mobility, or safety benefits. Highway projects under Title 23 are eligible, which includes truck parking.
- **Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT)** – In addition to the PROTECT apportioned funding noted above, PROTECT competitive awards could be used to make resilience improvements at existing truck parking facilities if the facility is eligible under 23 U.S.C. 176(d)(5)(C).
- **Advanced Transportation Technologies and Innovative Mobility Deployment (ATTIMD) Grants** This discretionary grant program authorized under 23 U.S.C. 503(c)(4) provides funding for advanced transportation and congestion management technologies, which may include truck parking information and management systems. The ATTIMD grant can cover up to 80 percent of the total project cost, but is not eligible for constructing additional truck parking capacity.
- **Reduction of Truck Emissions at Port Facilities Grants** – This discretionary grant program authorized under section 11402 of the BIL provides funding for projects that reduce port-related emissions from idling trucks, including through the advancement of port electrification and improvements in efficiency. This includes truck stop electrification systems for parking at port facilities. This program is not eligible for constructing additional truck parking capacity.
- **High Priority Innovative Technology Deployment (HP-ITD) Grants** – The HP-ITD program authorized under 49 U.S.C. 31102(l)(3) encourages projects related to better matching truck parking supply with truck parking demand by developing and deploying truck parking availability information systems. Such systems can then provide availability information to

truckers via a variety of communication channels so that truck drivers seeking parking spots can make better decisions about where and when to utilize specific parking facilities. The BIL provided increased funding levels and allows FMCSA to offer 100 percent Federal share for HP-ITD awards.

Policy Recommendations

Coordinate with Neighboring States on Truck Parking Issues

Goods movement is inherently an interregional and multi-state activity. ITD should collaborate with neighboring states to advance solutions that go beyond Idaho's borders such as those interstate corridors of high demand such as I-84, I-90, and I-15. This approach would make the best use of limited resources by coordinating activities and logically matching the geographic scope of the truck parking issues with the appropriate solutions that benefit drivers and businesses, while increasing multi-state safety.

Develop Model Ordinance Language to Provide Guidance for Truck Parking

Many municipalities within Idaho are unfamiliar with the trucking needs of businesses or needs and rest requirements of drivers. ITD should work with representative MPOs, EDDs, local city/county advocacy organizations to develop model ordinance language and/or guidelines to assist municipal development review by providing information specific to the provision of truck parking. Such an ordinance could be specific to a truck stop or a freight-reliant development, such as an industrial office park, plan for short and long-term truck parking by providing centralized parking and rest facilities within the entire development for all tenants.

Explore the Potential for the Dual Use of Large Lots

ITD should work with municipal partners explore opportunities for expanding truck parking capacity through dual-use facilities, brownfield re-use, and provision of parking at truck-oriented developments. Large "big box" retailer parking lots, park-and-ride lots, sports facilities, county fair sites, or others that are used primarily during the day by autos could also be used at night by trucks. This can be accommodated through the use of dual striping, heavier-duty pavement, basic driver facilities, and time limits for trucks. Engagement of property owners, municipal zoning officials, and law enforcement would be critical to this arrangement.

Include Truck Parking Expansion with Other Highway Projects Such as Reconstruction and Expansion

ITD has a well-developed process for determining transportation needs and establishing investment priorities through long-range plans and near-term Transportation Improvement Programs. Truck parking is an issue that could be included as a consideration in highway projects within those areas of high

trucking activity and parking needs as described within this study. To formally incorporate the issue of truck parking within the existing project development processes as a consideration would ensure some thought would be given and would establish a uniform and cost-efficient approach to partnering and problem solving statewide while developing solutions that make sense for a specific region or corridor. Figure 6.4 shows an example of a project in Wyoming that could be developed in Idaho as part of other highway projects where truck parking is provided within existing ROW.



Figure 6.4: Example Truck “Turnout” within the ROW Along I-80 in Wyoming

Establish Appropriate Performance Monitoring to Track Progress

The need for truck parking continues to grow, while capacity remains relatively static. As part of goal setting and purposeful planning, basic measures should be established as a means to monitor progress and the degree of how truck parking issues change over time. These measures should be developed with the trucking industry and include quantitative information that relates supply and demand, such as a sample of truck probe data as was used for this assessment. Other indicators can be developed in terms of the number and types of facilities, private and public investment, drivers’ perceptions of convenience and safety, and potential safety benefits that have been realized. The result provides a means to determine if efforts to address truck parking are having the intended impact.

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