



Draft Final Report

Truck Travel Times and Need for Hours-of-Service Truck Parking Assessment

Prepared for:

North/West Passage

Prepared by:



December 17, 2024

Truck Travel Times and Need for Hours-of-Service (HOS) Truck Parking Assessment

The objective of this project was to analyze vehicle speed data to help identify key locations where truck drivers must park to satisfy their HOS requirements when serving key NWP regional freight hubs.

Acknowledgements

The CPCS Team acknowledges and is thankful for the input of those consulted in the planning of the peer exchange, as well as the guidance and the input of representatives from the North/West Passage.

Opinions and limitations

Unless otherwise indicated, the opinions herein are those of the authors and do not necessarily reflect the views of the North/West Passage.

CPCS makes efforts to validate data obtained from third parties, but CPCS cannot warrant the accuracy of these data.

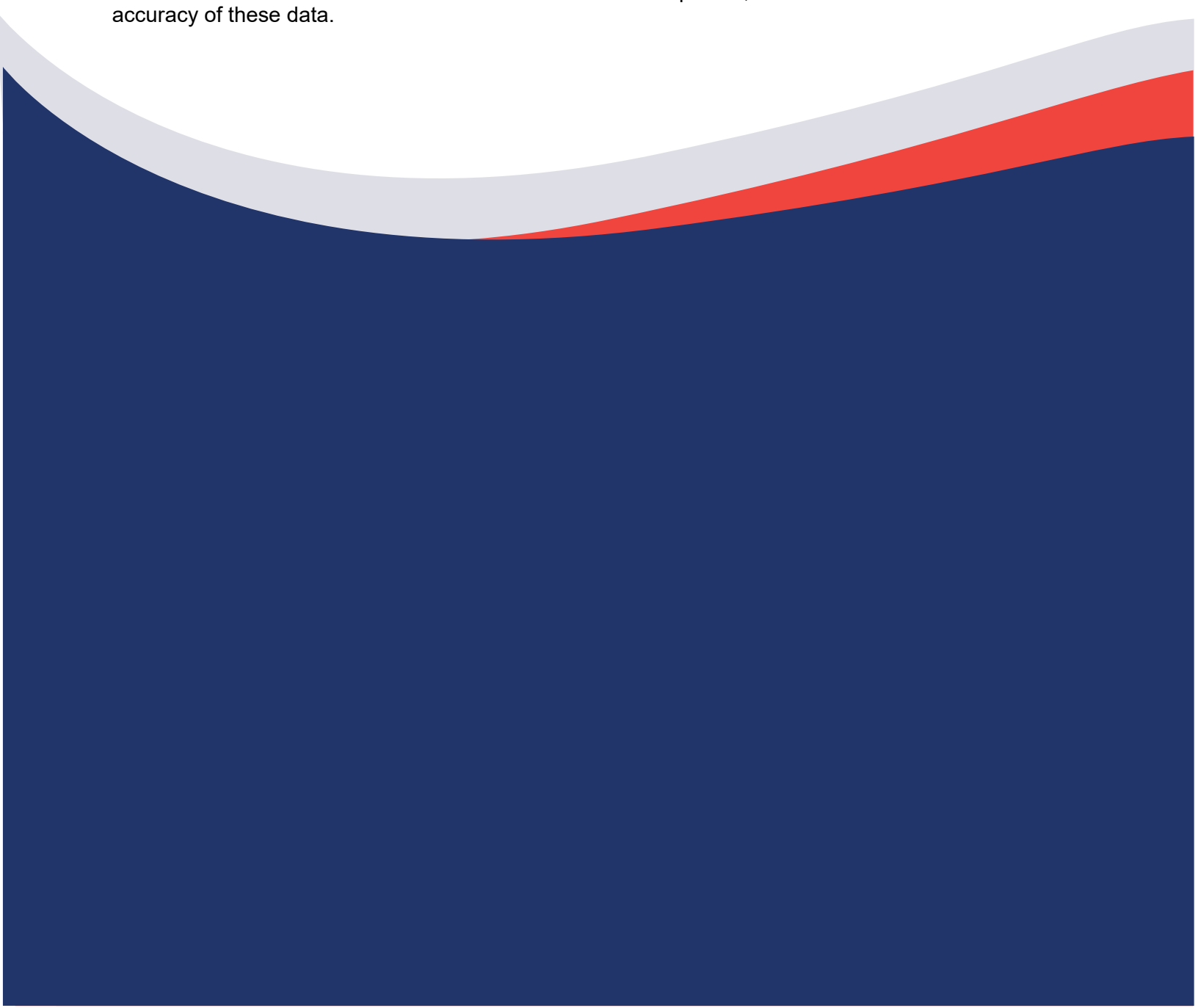


Table of Contents

Executive Summary	v
1 Introduction and Background	1
About the Project.....	1
Hours-of-Service Requirements	2
Limitations of this Assessment.....	3
2 Truck Use and Travel Times in the North/West Passage	5
About the Corridor.....	5
Freight Hub Analysis	9
Truck Travel Times from Key Freight Hubs	11
3 Stakeholder Engagement	25
Freight Task Force Roundtables	25
Consultations	25
4 Truck Parking Assessment	30
Truck Parking in the North/West Passage	30
State Truck Parking Studies.....	32
Truck Parking Location Evaluation.....	43
5 Key Findings and Next Steps	48
Key Findings	48
Next Steps.....	51
Appendix A Freight Task Force Roundtables.....	A-1
Roundtable 1	A-1
Roundtable 2.....	A-2
Roundtable 3.....	A-3
Appendix B Stakeholder Engagement	B-1
Consultations	B-1
Appendix C Truck Parking Inventory	C-1
Truck Parking Inventory	C-1

Table of Figures

Figure 1: Key Hours-of-Service Requirements	2
Figure 2: The North/West Passage.....	5
Figure 3: Total Truck Tonnage by FAF Region.....	7
Figure 4: Truck Tonnage by FAF Region, Beginning or Ending in NWP	8
Figure 5: O-D Pairs, Trucks	10
Figure 6: O-D Pairs, Tons	10
Figure 7: Truck Travel Time from Oakland, CA	12
Figure 8: Truck Travel Time from Seattle, WA.....	13
Figure 9: Truck Travel Time from Spokane, WA.....	14
Figure 10: Truck Travel Time from Boise, ID	15
Figure 11: Truck Travel Time from Missoula, MT	16
Figure 12: Truck Travel Time from Salt Lake City, UT	17
Figure 13: Truck Travel Time from Billings, MT	18
Figure 14: Truck Travel Time from Cheyenne, WY	19
Figure 15: Truck Travel Time from Fargo, ND	20
Figure 16: Truck Travel Time from Sioux Falls, SD	21
Figure 17: Truck Travel Time from Kansas City, MO.....	22
Figure 18: Truck Travel Time from Minneapolis, MN.....	23
Figure 19: Truck Travel Time from Chicago, IL	24
Figure 20: Example of a Truck Driver's "Typical Day"	27
Figure 21: Driver Detention Time per Stop, 2014-2023	28
Figure 22: HOS On-Duty Time Expiration at Customer Facilities Caused by Detention.....	29
Figure 23: Summary of NWP State Truck Parking	30
Figure 24: North/West Passage Truck Parking Locations*	31
Figure 25: Truck Parking Corridors with Capacity Needs	32
Figure 26: Estimated Daily Truck Parking Demand vs. Capacity	34
Figure 27: Ratio of Truck Parking Activity to Total Truck Parking Spaces by County.....	37

Figure 28: Locations of Frequent Undesignated Parking, Washington State	40
Figure 29: Undesignated Truck Parking Heat Map, Washington	42
Figure 30: Truck Parking Locations 1-day Truck Travel Time East from Seattle, WA	45
Figure 31: Truck Parking Locations 1-Day Truck Travel Time West from Billings, MT	45
Figure 32: Overlay of Truck Parking Locations and Boise, Sioux Falls, and Kansas City Kansas City 1 Day Drive Bands	46
Figure 33: Idaho Truck Parking Facilities	C-1
Figure 34: Count of Idaho truck Parking Facilities	C-1
Figure 35: Minnesota Truck Parking Facilities	C-2
Figure 36: Count of Minnesota Truck Parking Facilities	C-2
Figure 37: Montana Truck Parking Facilities	C-3
Figure 38: Count of Montana Truck Parking Facilities	C-3
Figure 39: North Dakota Truck Parking Facilities	C-4
Figure 40: Count of North Dakota Truck Parking Facilities	C-4
Figure 41: South Dakota Truck Parking Facilities	C-5
Figure 42: Count of South Dakota Truck Parking Facilities	C-5
Figure 43: Washington Truck Parking Locations	C-6
Figure 44: Count of Washington Truck Parking Facilities	C-6
Figure 45: Wyoming Truck Parking Locations	C-7
Figure 46: Count of Wyoming Truck Parking Locations	C-7

Executive Summary

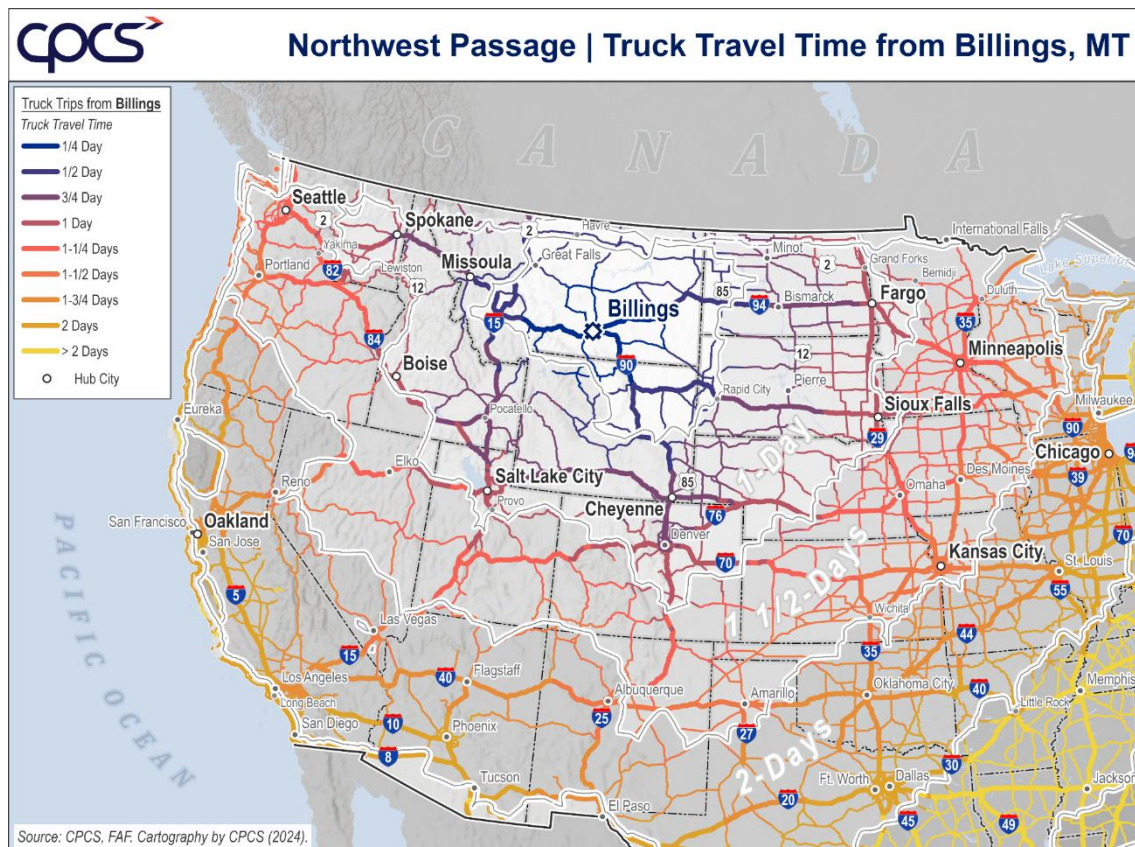
The North/West Passage (NWP) is a multistate operations-focused partnership and pooled fund study initiated in 2002 between the Departments of Transportation (DOTs) in Idaho, Minnesota, Montana, North Dakota, South Dakota, Washington, and Wyoming. With I-90 and 94 serving as their major passenger and commercial vehicle corridors, these states share similar operational challenges due in part to extreme weather conditions.

The goal of this Truck Travel Times and Need for Hours-of-Service Truck Parking Assessment project was to increase the Freight Task Force's understanding of the travel times of trucks moving in the NWP, and based on the origins, destinations, and durations of trips, assess where truck parking may be required along the region's key corridors to meet federal hours-of-service (HOS) requirements.

Truck Travel Times

To identify where truck drivers were likely to stop due to their HOS requirements, 13 freight hubs were identified both within and outside of the NWP, as far west as Oakland, CA and as far east as Chicago, IL, as the basis for the analysis. A series of maps were developed displaying ½ day, 1-day, 1½-day, 2-day, and 2½-day travel bands from each freight hub. The series depicts the typical distance a truck can travel, based on HOS regulations and using average daily traffic conditions. The following example map highlights the travel bands for one of the 13 freight hubs – Billings, MT.

Figure ES-1: Truck Travel Time from Billings, MT



North/West Passage Truck Parking Inventory

The NWP supplies a significant amount of legal, designated parking for truck traffic in the region. While NWP states may primarily focus on parking availability and issues in their own states, the corridor as a whole forms an integral network of truck parking that is vital for truck drivers moving goods to, from, and through the region. Altogether, the region provides 22,426 truck parking spaces at 869 truck parking facilities. The average distance traveled from the hub cities analyzed in the corridor is also shown. Generally, due to traffic, terrain, and other factors trucks can travel an average of nearly 630 miles per day within the NWP corridor. Wyoming provides the highest number of public facilities in the NWP, and Minnesota has the highest number of private facilities and spaces.

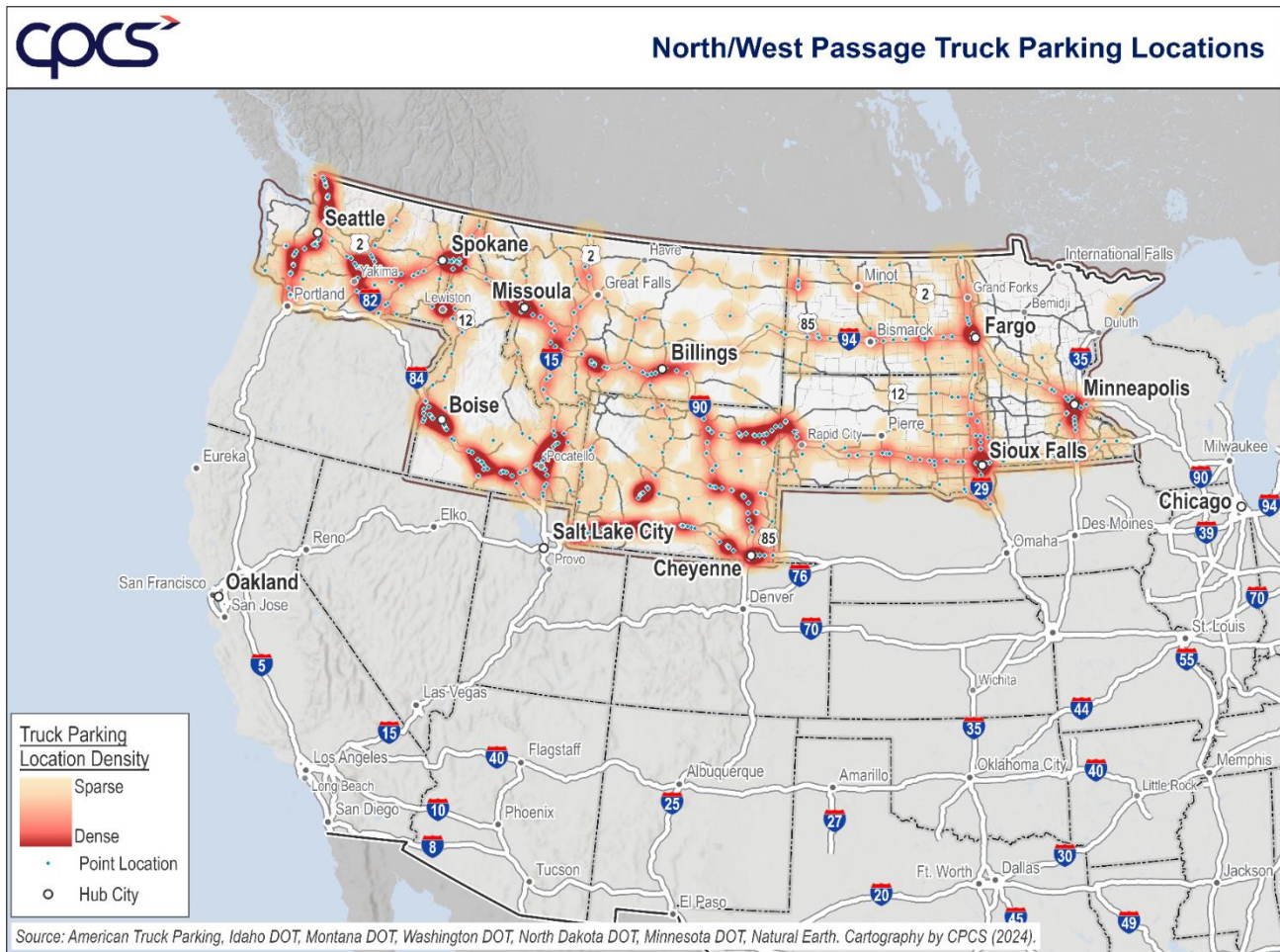
Figure ES-1: Summary of NWP State Truck Parking

Metric	Idaho		Minnesota		Montana		North Dakota	
	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total
Count of Public Facilities	37	31%	51	24%	73	56%	20	27%
Count of Private Facilities	81	69%	163	76%	57	44%	54	73%
Number of Public Spaces	650	16%	677	14%	653	25%	177	9%
Number of Private Spaces	3,305	84%	4,169	86%	1,946	75%	1,826	91%
Avg. distance of 1-day travel band from origin	Boise: 705.4		Minneapolis: 612.2		Billings: 555.8 Missoula: 575		Fargo: 670.3	

Metric	South Dakota		Washington		Wyoming		Total	
	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total
Count of Public Facilities	22	26%	32	35%	89	56%	324	37%
Count of Private Facilities	62	74%	59	65%	69	44%	545	63%
Number of Public Spaces	318	17%	730	20%	891	26%	4,096	18%
Number of Private Spaces	1,561	83%	2,974	80%	2,549	74%	18,330	82%
Avg. distance of 1-day travel band from origin	Sioux Falls: 661.1		Seattle: 587.5 Spokane: 582		Cheyenne: 716.9		629.58	

Sources: CPCS Analysis of data from Idaho Transportation Department, Minnesota Department of Transportation, Montana Department of Transportation, North Dakota Department of Transportation, Washington State Department of Transportation, and American Truck Parking

Figure ES-2: North/West Passage Truck Parking Locations*



*Map is being updated to reflect current Minnesota truck parking inventory.

Stakeholder Engagement

To complement data analysis, the project team engaged with members of the North/West Passage Freight Task Force and stakeholders of the trucking industry. Roundtable discussions were convened with representatives of the North/West Passage, during which insight into the progression of the project and analysis findings were shared. Consultations with representatives from the corridor's state trucking associations and subject matter experts were conducted to provide insight into truck parking needs and how HOS requirements affect drivers in the corridor.

Key Findings

The findings from state DOT plans and studies, stakeholder consultations, and the travel time analysis presented in this research, highlight insights into the current state of truck parking in the NWP and offer a foundation for further exploration, partnership, and targeted action.

Single Multi-state Truck Parking Inventory

This research project established a single truck parking inventory for the 7-state NWP region. Having a single, unified inventory of public and private truck parking facilities and spaces is of immense value for transportation planning, freight operations, and regional economic development activities. This comprehensive database enables more effective coordination among state agencies, private

stakeholders, and trucking companies by providing a centralized resource that supports informed decision-making.

Activity Hubs and Market Proximity

The vast geography of the NWP corridor underscores the importance of understanding travel distances and traffic flow patterns when planning for truck parking, including:

- **Long Distances and Multiday Trips:** The NWP region includes vast stretches of sparsely populated land, particularly in the Upper Great Plains, where major cities and key markets are separated by hundreds of miles. The location of freight distribution centers, inland ports, and deep-water ports proximate to the corridor and these markets require drivers to travel long distances, and properly situated parking at ½- and 1-day travel intervals is essential. In some cases, multiday trips are required from origin to destination, and parking solutions that cater to the needs of drivers on multiday trips are important.
- **Traffic Flow Patterns:** Truck drivers often traverse multiple states during a single trip. Parking needs vary based on corridors used, state-specific regulations, and seasonal demands. These patterns offer insights into high-demand areas, enabling better resource allocation. The distribution of truck parking facilities in the NWP is linked to the fact that I-80 generally carries higher truck volumes than I-90/94 in this region.

Correlation Between Identified Hot Spots and Travel Bands

While this research project included the best available, unified data across the NWP corridor, the assessment conducted was, in part, qualitative, and focused primarily on 1) identifying patterns and 2) noting if there were apparent correlations between those patterns observed and the detailed, data driven truck parking evaluations conducted by state DOTs.

- **A comparison of state-identified parking hotspots to the travel band reveals there are correlations between the results.** Notably, the correlations exist where states have identified truck parking needs/hot spots and ½- or 1-day travel bands overlap. A clear example of this is in the Greater Cheyenne area, that is at the confluence of 1-day travel distance from Boise, Sioux Falls, and Kansas City. The WYDOT has placed this section of I-80 on their list of future priority improvements.
- **Proximity to Major Markets and Ports:** The lack of intermediate parking options between remote areas and major freight destinations highlights the need for infrastructure investments in strategic locations. For instance, drivers hauling freight to inland ports in the Midwest or deep-water ports along coastal areas face unique challenges that require coordinated planning across states. By improving access to parking near these high-traffic hubs, the region can better support the seamless movement of goods across the corridor. This is evidenced by the large volume of truck parking facilities north and south of Seattle, surrounding the Ports of Seattle and Tacoma, but the high occurrences of undesignated parking in these areas in WSDOT truck parking analyses.

Truck Driver Perspectives and Decisionmaking

For state DOTs to effectively address the challenges of truck parking, it is essential to consider the nuanced decision-making processes of truck drivers so that improvements can be advanced that are practical, efficient, and aligned with the drivers' needs. Key considerations that states should incorporate into truck parking planning include:

- **Unfamiliar Geography.** Truck drivers often operate across regions far from their home base, encountering areas where they are unfamiliar with parking options or local regulations. Without

reliable information, drivers may waste valuable time and fuel searching for suitable parking or resort to unsafe practices.

- **Hours of Service (HOS) Compliance.** Compliance with HOS regulations, which dictate the maximum number of hours a driver can operate, is a critical concern for truck drivers and carriers. Lack of available parking may force drivers into unsafe or non-compliant behaviors, such as parking on highway shoulders or exceeding legal driving hours to reach a parking location. Addressing this issue requires a multi-pronged approach which could include strategic expansion of parking facilities in high-demand corridors, coordinated efforts across jurisdictions to ensure that parking solutions align with drivers' typical routes and schedules, and leveraging technology to notify drivers in advance of parking locations near their route as they approach HOS limits.
- **Amenities for Long-Haul Drivers.** Truck drivers, particularly those on long-haul routes, spend extended periods away from home and require safe, comfortable facilities to rest and recharge. Providing these amenities is not only a matter of safety but also a driver retention strategy in an industry facing significant labor shortages.

Findings Conclusion: Examine Truck Parking as a Corridor

The findings from this analysis highlight that truck parking issues cut across the NWP corridor and affirm there could be benefits to a corridor-wide approach to truck parking planning, implementation, and operations. The importance of addressing truck parking as a cohesive corridor rather than isolated state-level initiatives cannot be overstated; a corridor-wide approach can amplify the benefits of individual state efforts.

Suggested Next Steps

Based on the key findings, the following next steps/actions are recommended for the NWP to advance to broaden understanding of truck parking issues and opportunities in the corridor, and to begin to build a deeper coalition for action.

Share Results within North/West Passage States

A broad body of work was established during this research project including 1) this Report of research and findings, 2) a detailed inventory that synthesizes in a single place the 7-state NWP public and private truck parking facility inventory, and 3) a repository of publicly available truck parking-related studies developed by the NWP states. This information should be shared broadly among NWP states; not simply the members of the Truck Parking Roundtable, but all staff within each state that "touch" truck parking to establish a common understanding of the system and where truck parking issues exist.

Share Results with the Trucking Industry

For truck drivers and logistics companies, the inventory and information consolidated as part of this research offers insights that could result in how they use the system and how they engage with states when they identify truck parking issues. By knowing the location and capacity of truck parking facilities across multiple states, drivers can better plan their routes, manage rest breaks in compliance with Hours of Service (HOS) regulations, and avoid unsafe parking situations, such as parking on highway shoulders. This can reduce the risks of accidents and improve overall roadway safety. Additionally, having a detailed understanding of parking options enhances supply chain reliability by minimizing delays caused by drivers spending excessive time searching for parking.

Continue Collaboration on Truck Parking Topics in the North/West Passage

Freight movements regularly span multiple states, and this research should be used by the NWP as a shared resource, and a collaboration tool, to facilitate the alignment of planning, policies, resource allocation, and infrastructure development across the NWP states. While this research project was largely qualitative in nature, by bringing the corridors' truck parking inventory and an identification of

select top needs in each state together, fruitful discussions among NWP on shared interests and “what comes next” can begin. Actions that the NWP should explore to build on this research includes:

- Convening Quarterly discussions focused on the truck parking initiatives in each state, for broad awareness.
- Developing a unified strategy – holistic approach – to address truck parking challenges that transcend individual state boundaries.
- Examining hot spots/issues in border regions.
- Discussing detailed investment plans underway related to information, expansion and other capital initiatives to identify potential shared solutions (especially in border regions).
- Exploring the strategic deployment of truck parking technology and enhancements, like truck parking information management systems (TPIMS) or electric charging stations, as a corridor,
- Engaging the private sector to understand their capital investment plans across the corridor and where they have an interest in advancing public private partnerships.
- Advancing truck parking grant applications as a corridor (infrastructure and/or regional TPIMS).

Truck parking is an area that will benefit from holistic thinking across the corridor. A unified strategy can help make best use of existing public infrastructure, harness private capital, and leverage the 7-state membership to advocate for the region to federal and other stakeholders to make targeted truck parking investments. This holistic approach will also result in contributing to economic growth, enhanced safety, and environmental sustainability throughout the corridor.

1 Introduction and Background

The North/West Passage (NWP) is a multistate operations-focused partnership and pooled fund study initiated in 2002 between the Departments of Transportation (DOTs) in Idaho, Minnesota, Montana, North Dakota, South Dakota, Washington, and Wyoming. With I-90 and 94 serving as their major passenger and commercial vehicle corridors, these states share similar operational challenges due in part to extreme weather conditions.

About the Project

The goal of this Truck Travel Times and Need for Hours-of-Service Truck Parking Assessment project was to increase the Freight Task Force's understanding of the travel times of trucks moving in the NWP, and based on the origins, destinations, and durations of trips, assess where truck parking may be required along the region's key corridors to meet federal hours-of-service requirements.

Several inputs were needed to perform this analysis. This included both qualitative and quantitative data, which came from a variety of sources.

Hours-of-Service Background

Hours of Service (HOS) requirements are regulations set by the Federal Motor Carrier Safety Administration (FMCSA) to cap the number of hours a truck driver can work during any given day or week. The purpose of these regulations is to ensure that drivers are able to get enough rest, thus helping to prevent fatigue-related accidents. Currently, HOS regulations for property-carrying drivers include daily and weekly driving limits, rest periods, electronic logging devices (ELDs), and some exceptions. Further details about current HOS regulations are provided in the next section.

Freight Task Force Participants

The project team requested members of the Freight Task Force to participate in roundtable discussions throughout the lifecycle of the project. It was requested that at least one representative from each state join the project to ensure representation from the entire corridor.

Data Collection

The primary data source for this project was the Freight Analysis Framework (FAF). FAF data includes free-flowing and average speeds derived from the National Performance Management Research Data Set (NPMRDS). This was used to map the distances trucks are able to travel, on average, from selected freight hubs in the NWP corridor.

Data on the location of truck parking facilities and their amenities was collected from two sources. First, representatives from the roundtables were asked to work with their relevant DOT to provide shapefiles of the truck parking facilities in their state. Where possible, this data also included information on amenities at the facilities, such as restrooms. For states that do not maintain a record of truck parking locations, the project team downloaded truck parking locations from American Truck Parking.¹ This source was also used to complement the files provided by the DOTs and fill in any gaps, such as where the DOT only maintained a record of publicly owned facilities.

¹ American Truck Parking, [Welcome to americantruckparking.com | americantruckparking.com](https://www.americantruckparking.com)

Consultations

Consultations were conducted with representatives from the corridor's state trucking associations, as well as subject matter experts. The purpose of these consultations was to understand where drivers experience delays in each state and what a typical day looks like for a truck driver, among other topics.

Hours-of-Service Requirements

The federal HOS requirements are regulations established by the FMCSA to ensure that commercial truck and bus drivers have adequate rest and work limits, thereby promoting road safety. The following figure provides a breakdown of the HOS rules and their significance for property-carrying truck drivers.

Figure 1: Key Hours-of-Service Requirements

Requirement	Description
Daily Driving Limits	11-Hour Driving Limit: A driver cannot drive more than 11 hours after taking 10 consecutive hours off-duty.
	14-Hour Duty Limit: A driver's "on-duty" time cannot exceed 14 consecutive hours. This includes both driving time and non-driving work. The clock for this limit starts when a driver begins any work-related activity, including driving, loading, or inspecting their truck.
Rest Periods	30-Minute break: Drivers must take a 30-minute rest break after driving for 8 hours. This break can be taken off-duty or combined with a non-driving work activity, such as fueling.
Weekly Driving Limits	60/70-Hour Driving Limit: A driver cannot drive more than 60 hours in 7 consecutive days or 70 hours in 8 consecutive days. Once a driver reaches this limit, they must take 34 consecutive hours off-duty.
	34-Hour Restart Rule: Drivers can use this rule to reset their weekly driving hours, which allows them to accumulate another 60 or 70 hours of driving in the next week.
Electronic Logging Devices	ELDs are required to automatically track a driver's HOS. These devices are intended to ensure compliance with the HOS by recording driving time, breaks, and off-duty periods.
Exceptions and Special Conditions	Adverse Driving Conditions: In the event of extreme weather or adverse driving conditions, the 11-hour driving limit can be extended by up to 2 hours. This gives drivers some flexibility to reach a safe location.
	Short Haul Exemption: Drivers working within a 150-mile radius of their starting point, and whom do not drive more than 11 hours in one day, are exempt from some HOS regulations.
	Sleeper Berth Rule: Drivers can split their required off-duty time into two periods in the sleeper berth, as long as one period is at least 8 hours and the second period is at least 2 hours.

Source: Federal Motor Carrier Safety Administration

Importance of Hours-of-Service Requirements

The implementation of federal HOS requirements brought about change in the trucking industry. The regulations are primarily intended to promote driver and public safety, as fatigue is a leading factor in road accidents, particularly among commercial drivers. The rules are also designed to protect drivers

from overwork by ensuring they have time to achieve adequate rest, improving driver health, safety, and job satisfaction. These regulations, by promoting rest and preventing fatigue, ultimately enhance the safety and sustainability of the commercial transportation industry.

There are also economic reasons associated with the implementation of HOS requirements. The implementation of HOS regulations supports fair competition in the trucking industry. Standardized work and rest limits create a level playing field among companies. Without HOS regulations, some companies may pressure drivers to work excessively long hours to reduce costs, leading to unfair competition and higher accident risks. Additionally, the reduction of accidents as a result of HOS regulations have associated reductions in trucking expenses. Trucking accidents can be costly, with expenses related to vehicle damage, lost goods, insurance claims, and medical expenses. By minimizing accident risks, HOS regulations help lower these economic impacts.

A key part of HOS regulations is the requirement that truck drivers stop and rest regularly. Therefore, in order to comply with these important requirements, truck drivers require a safe place to park their truck when their HOS are up. Truck parking is critically important for several reasons related to safety, compliance, efficiency, and driver well-being. Specifically related to HOS compliance, adequate truck parking is necessary to help with:

- **Avoiding Penalties:** Drivers must comply with HOS regulations, which require them to rest after a certain number of hours on duty. Reliable parking helps drivers comply with these rules, reducing the risk of penalties or fines for non-compliance.
- **Flexibility:** With more available parking, drivers can more easily find a safe place to stop as they approach their HOS limit, instead of being forced to drive longer to locate a spot.
- **Reduced Wasted Time and Fuel:** When drivers spend less time searching for parking, it cuts down on unnecessary fuel use and idle time. This improves the efficiency of deliveries and reduces overall operational costs.
- **Rest and Recuperation:** Quality parking facilities with amenities (such as restrooms, showers, and dining options) provide drivers with a place to rest and recharge, which is essential for long-term health and well-being.
- **Mental Health and Job Satisfaction:** Adequate parking reduces the stress of searching for a spot, which can affect drivers' mental health and job satisfaction. With safe parking, drivers feel more secure and are less likely to feel overburdened by the demands of the job.

HOS requirements are the law, and thus it is critical that there are safe places to stop when and where drivers need to.

Limitations of this Assessment

This assessment was supported by members of the North/West Passage Freight Task Force, each of whom worked with the project team to secure data sources from the states along the corridor. Because this assessment covers eight different states, it was vital that the data used was of the same granularity for each state. As a result, the project team elected to use FAF data as the basis for the analysis. It was noted that some states have disaggregated FAF data, but because disaggregated FAF data could not be sourced for all states in the corridor, it was not used.

For the identification of origin-destination (O-D) pairs, which were used to provide theoretical start and end points of a truck driver's trip, cities were ranked based on total truck tonnage. Participants noted that there are other ways to analyze O-D pairs beyond truck tonnage, such as truck volume and truck counts on the roadway network. The project team determined that, as all of the data was driven from FAF – which provides tonnage information, truck count information, and the routed truck information

contained within that – has been validated as part of the FAF development process, there was not a need to go through that extra validation process.

Additionally, many states along the corridor border Canada. Due to the nature of FAF data, which only includes US data, the project team did not incorporate O-D pairs on the Canadian side of the border. This would be an area for further research, as Freight Task Force members noted that many trucking companies are based in Winnipeg and there is significant grain, and other agricultural commodities, flows over the North/West Passage-Canada border.

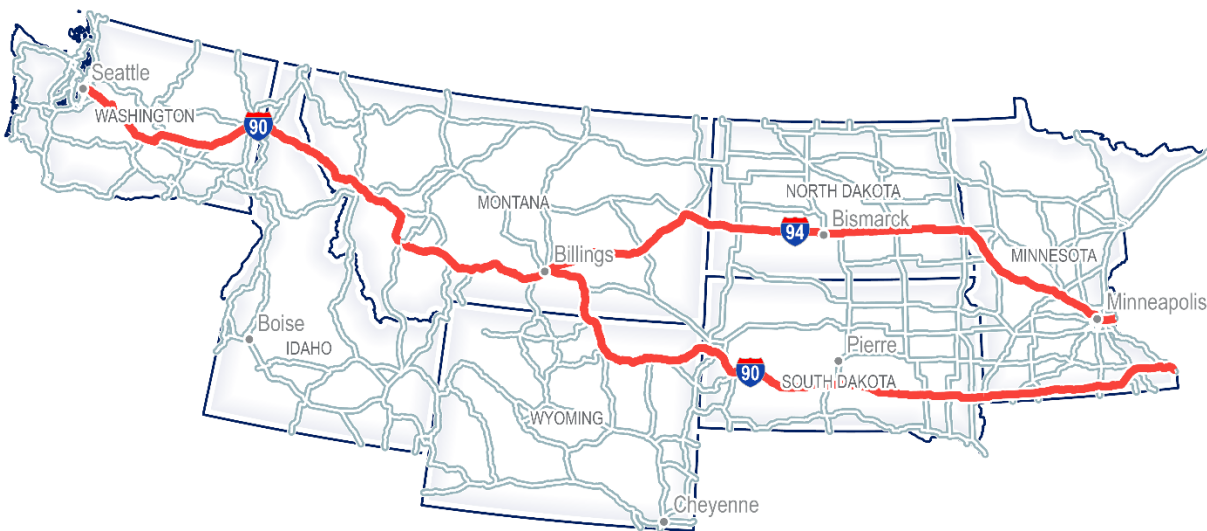
This assessment is intended to build awareness of truck parking and HOS issues in the North/West Passage corridor and highlight a new way of thinking about, and assessing, truck parking from a regional perspective. This report can be used as a starting point from which to continue to expand stakeholder engagement on this critical topic.

2 Truck Use and Travel Times in the North/West Passage

About the Corridor

The North/West Passage includes seven states: Washington, Idaho, Montana, Wyoming, North Dakota, South Dakota, and Minnesota. Connected by the prominent I-90 and I-94 corridors, these states also have extensive networks on the National Highway System, which facilitates the connection of the Heartland region to deep water markets on the West Coast (Figure 2).

Figure 2: The North/West Passage



Major population centers within the corridor are primarily aligned with urban areas or those cities with strong economic and transportation hubs. On the west side of the corridor, Seattle is Washington's largest city and is a major economic hub. Tacoma, which is part of the Seattle metropolitan area, is a major port city and is the origin and destination for a significant amount of freight coming to, or leaving from, the US. More centrally located in the corridor, both Billings, Montana and Cheyenne, Wyoming are the largest cities in their states, and each serve as an economic and cultural hub, with significant agricultural and transportation economies. Fargo, North Dakota and Sioux Falls, South Dakota are each the largest cities in their state and both are major economic centers in their regions. On the eastern side of the corridor, the Twin Cities of Minneapolis and St. Paul are not only the largest metropolitan area in Minnesota but are a major economic hub for the entire Midwest. Freight flows in Minnesota also stem from Duluth, a port city on Lake Superior.

Distribution centers beyond the borders of the North/West Passage also contribute to the movement of goods within the North/West Passage. Major distribution centers serving the North/West Passage include those in Southern California, Kansas, and Illinois. These distribution hubs are critical to the movement of goods both domestically internationally, due to their strategic locations and access to transportation networks, including highways and interstates, air cargo, and rail. Many tons of goods from these distribution centers will be moved along North/West Passage roadways to reach their destination markets.

As seen in the following maps, a significant amount of freight tonnage is generated within the Western US. The total truck tonnage in the Western US is led by FAF regions that account for over 200,000 kilotons in total truck tonnage. FAF zones within the North/West Passage that have over 200,000 kilotons of total truck tonnage include:

- Seattle,
- Minneapolis, and
- Rest of Minnesota.

Outside of the North/West Passage, other FAF zones in the West that account for over 200,000 kilotons of total truck tonnage include Chicago, Iowa, rest of Nebraska, Wisconsin, Kansas, and Illinois. (Figure 3).

FAF regions that account for truck tonnage between 100,000 and 200,000 kilotons within the North/West Passage include those in:

- Oregon,
- Idaho,
- North Dakota,
- South Dakota, and
- The rest of Washington.

Outside of the North/West Passage, Salt Lake City, Denver, Phoenix, Milwaukee, and the rest of Oklahoma and Kansas also account for truck tonnage between 100,000 and 200,000 kilotons (Figure 3). Their proximity to the North/West Passage contributes to the movement of trucks on the corridor's highways and to the demand for truck parking in the corridor when drivers are required to rest due to HOS regulations.

Within the North/West passage, Washington State and Minnesota lead the corridor for freight coming to or departing from the region. Each accounts for over 50,000 kilotons of truck tonnage (Figure 4).

The remaining FAF regions of Idaho, Montana, Wyoming, North Dakota, and South Dakota each produce or receive between 10,000 and 50,000 kilotons of freight.

The high activity rate within FAF regions that bookend the corridor indicates that a significant amount of freight may traverse across the corridor, placing demand on the corridor's truck parking supply as drivers find places to fulfill their HOS rest breaks. Also shown in this map is the high activity rate between the North/West Passage states and regions directly bordering the corridor, as well as California.

Figure 3: Total Truck Tonnage by FAF Region

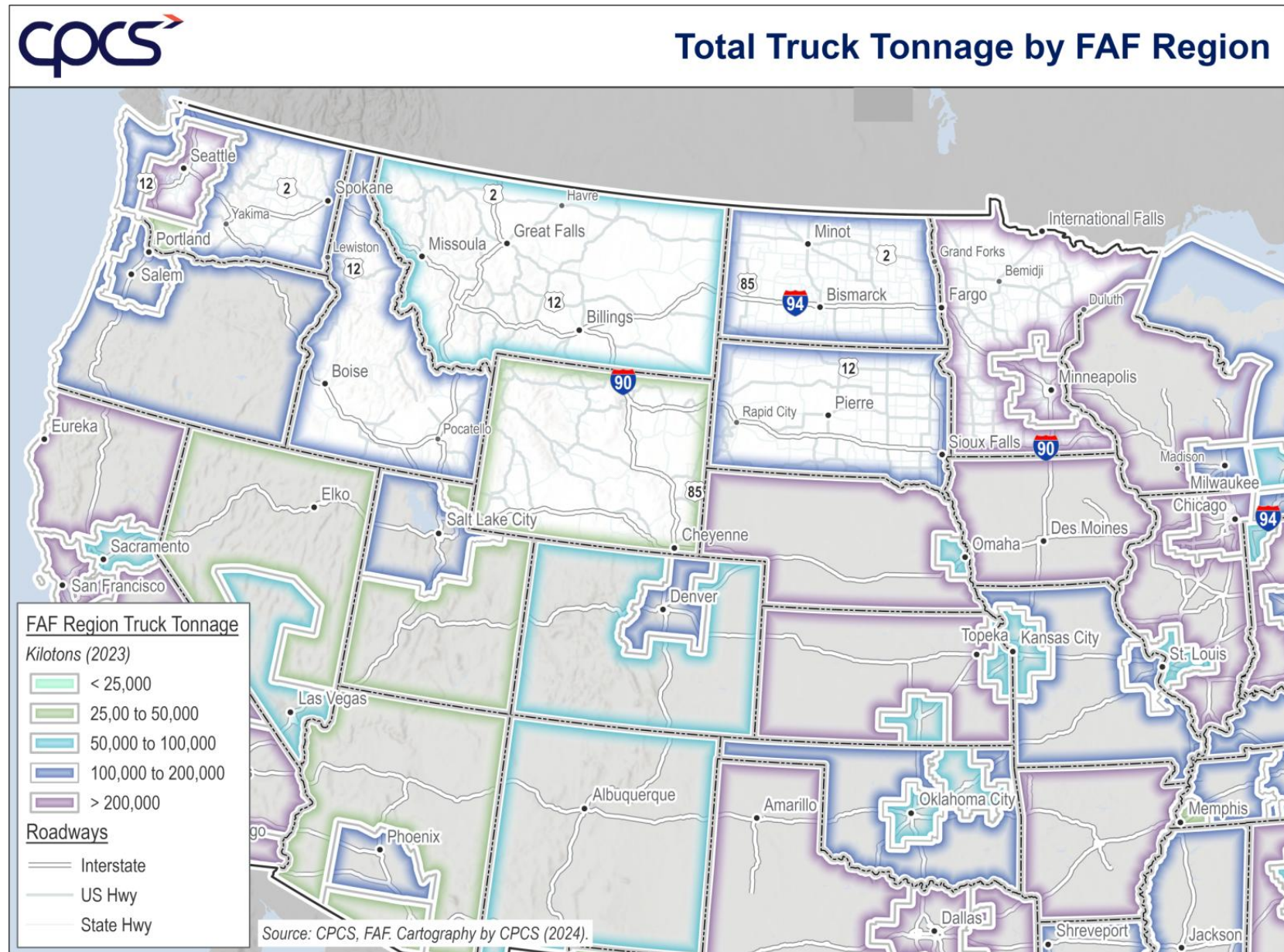
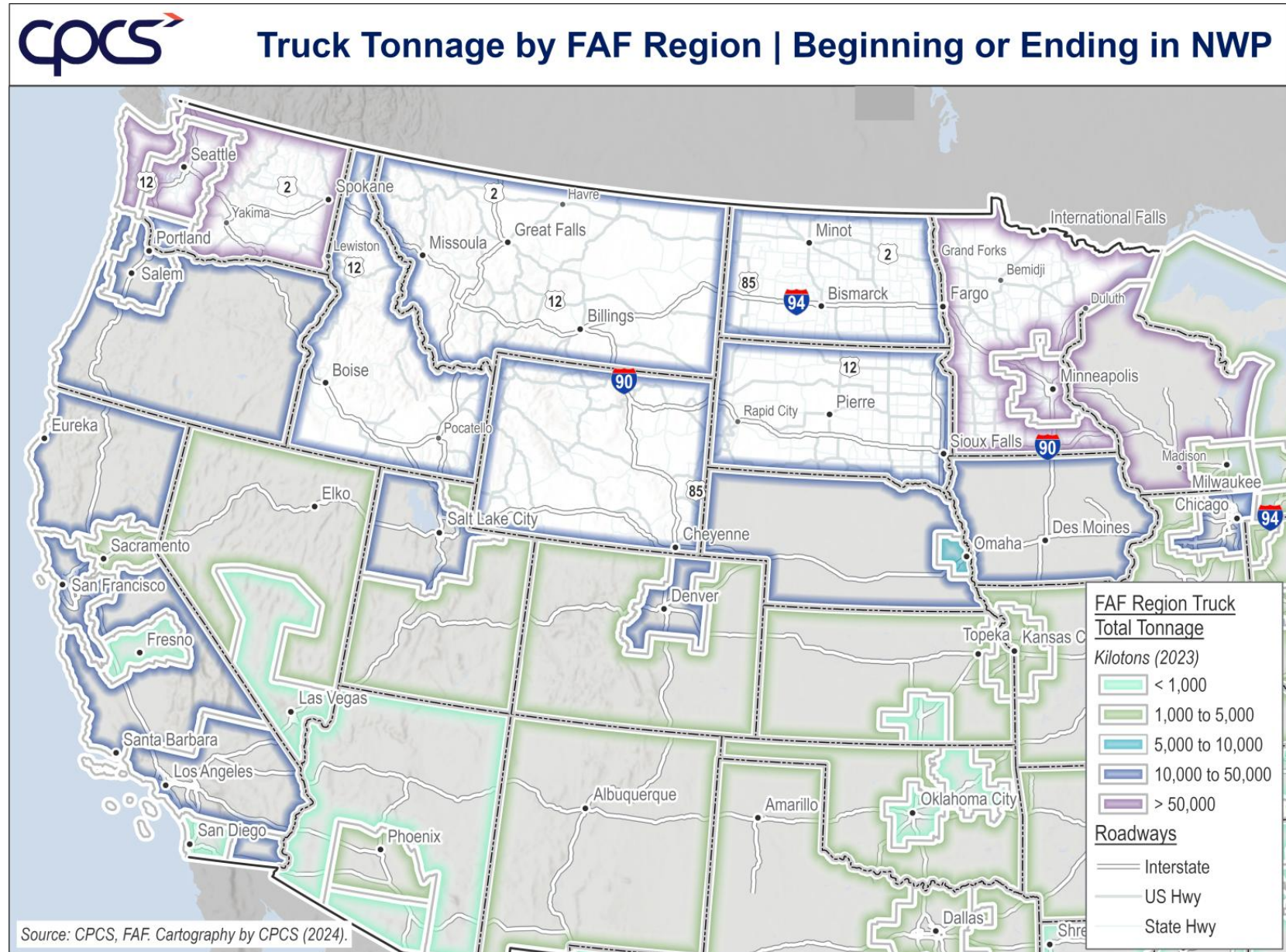


Figure 4: Truck Tonnage by FAF Region, Beginning or Ending in NWP



Freight Hub Analysis

To conduct analysis identifying where truck drivers were likely to stop due to their HOS requirements, the project team began by identifying freight hubs both within and outside of the North/West Passage. As this analysis focused only on truck trip-generating locations, the identified freight hubs act as origin-destination (O-D) points for trucks. After the identification of freight hubs, these locations were used as a jumping off point for the rest of our analysis to determine where there may be a concentration of truck trips travelling to the NWP.

The freight hubs selected for analysis were:

- Oakland, CA
- Seattle/Tacoma, WA
- Spokane, WA
- Boise, ID
- Missoula, MT
- Salt Lake City, UT
- Billings, MT
- Cheyenne, WY
- Fargo, ND
- Sioux Falls, SD
- Kansas City, MO
- Minneapolis, MN
- Chicago, IL

To determine the drive time between these freight hubs, FAF data was used. The FAF is a comprehensive data set maintained by the Federal Highway Administration (FHWA) to understand the movement of freight in the US. This data also provides insight into the volume, value, and flow of freight across all modes. For the purposes of this analysis, we only analyzed the movement of goods via truck.

FAF provides an estimate of truck traffic volumes on a variety of corridors. This includes estimates of the tonnage and value of freight moved by trucks on specific corridors. The project team provided roundtable participants with the top 100 O-D pairs that originate from, are destined to, or pass through the North/West Passage according to the FAF data. These lists were provided to roundtable participants in the form of chord maps, for both the number of trucks (Figure 5) and tonnage (Figure 6). Roundtable participants were asked to select their preferred freight hubs for analysis from these lists.

Figure 5: O-D Pairs, Trucks

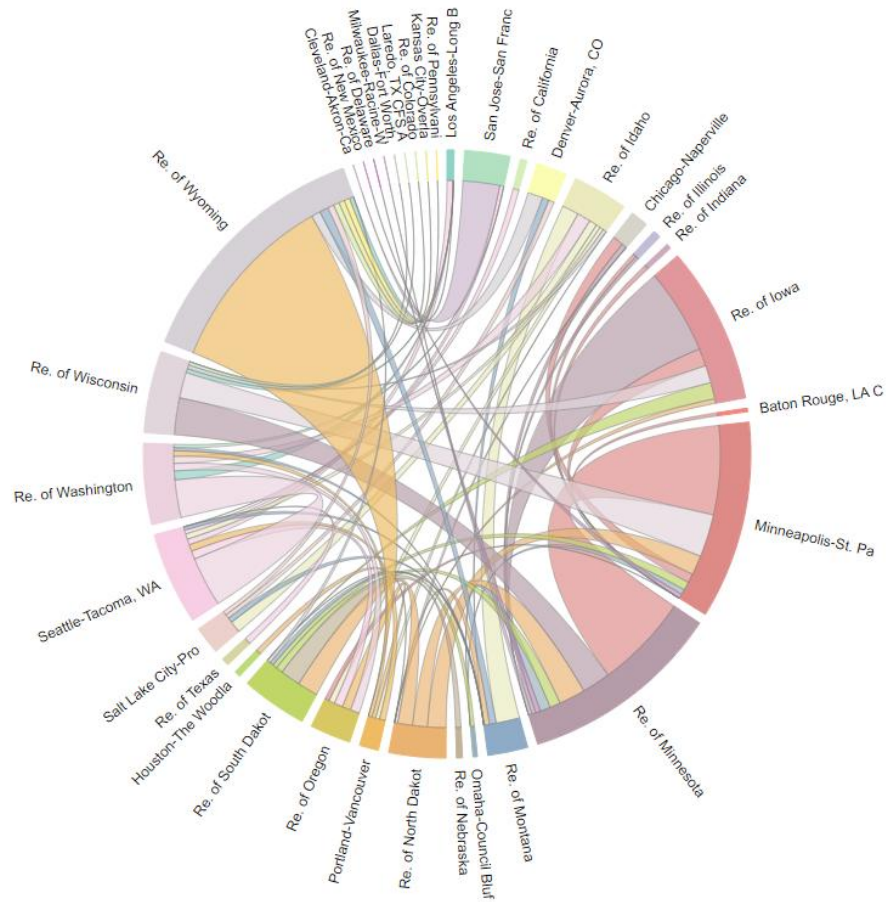
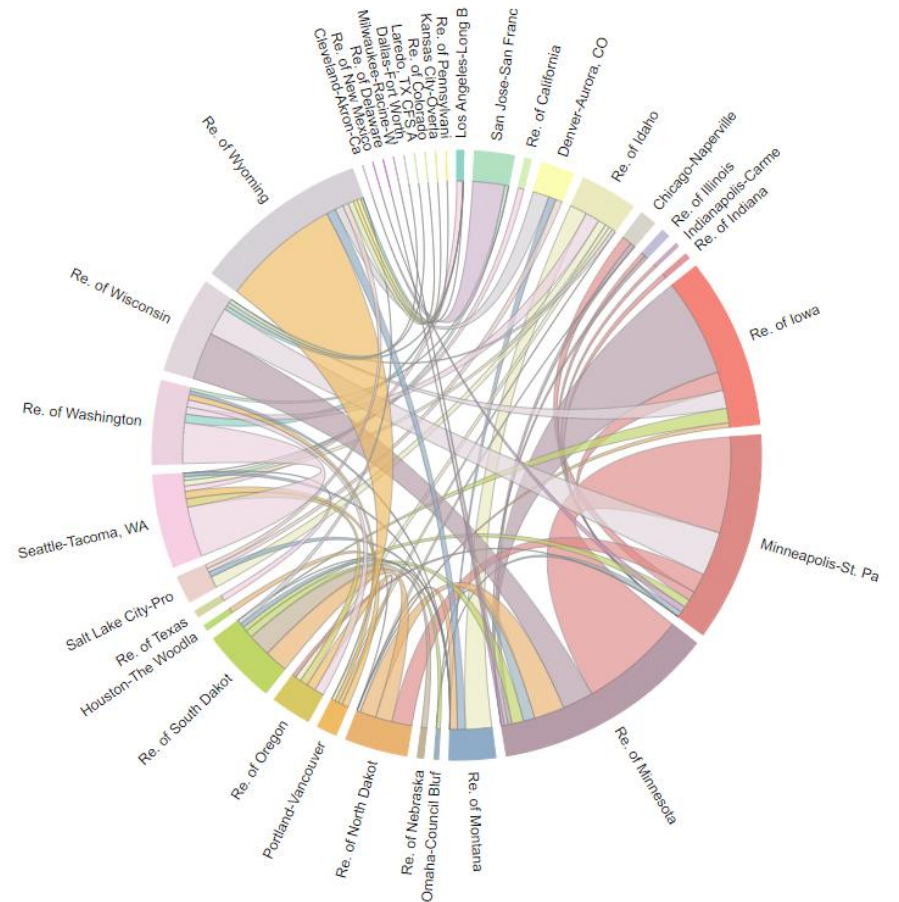


Figure 6: O-D Pairs, Tons



Truck Travel Times from Key Freight Hubs

Following the identification of key freight hubs, the project team developed a series of maps to understand how travel times and distances differ between the freight hubs. The freight hubs were determined with input from roundtable participants. After participants had submitted their preferences, the project team filled out the list with additional hubs to ensure each state in the corridor was represented and to include any major freight distribution hub near the corridor.

The maps on the following pages display ½ day, 1-day, 1½-day, 2-day, and 2½-day travel bands from each freight hub in west-to-east order. The series depicts the typical distance a truck can travel, based on HOS regulations and using average daily traffic conditions. These maps provided several high-level takeaways for truck travel times given HOS regulations in the North/West Passage that also align with what we heard in consultations. For example:

- Figure 7 reveals that Oakland, while a significant deep water west coast port, is likely not a primary distribution hub for the NWP via truck, as the vast majority of the corridor is outside a one-day travel time. While two-day trips are possible, more likely goods are railed from this hub and distributed via truck to the NWP from points that could include Salt Lake City, Denver, or Kansas City.
- Missoula is the easternmost mid-sized city that is within a 1-day truck drive to/from west coast deep water ports in Washington State (Figure 8, Figure 11).
- The travel bands indicate that Salt Lake City is a significant hub for the western North/West Passage (Figure 12).
- The bands show that both Billings and Cheyenne act as key trade points for goods moving north-south, in addition to east-west (Figure 13 and Figure 14),
- Fargo, Sioux Falls, and Kansas City also each have strong north-south and east-west connectivity within their 1-day travel bands (Figure 15, Figure 16, and Figure 17).
- On the eastern side of the corridor, both Minneapolis and Chicago have good north-south and east-west connectivity (Figure 18 and Figure 19). These are also both large consumption markets where many trucks originate or are destined.

Following this visual analysis, the next step is to overlay these travel bands with existing truck parking inventories, to understand if there is sufficient truck parking where drivers are likely to need it as their HOS expires for the day.

Figure 7: Truck Travel Time from Oakland, CA

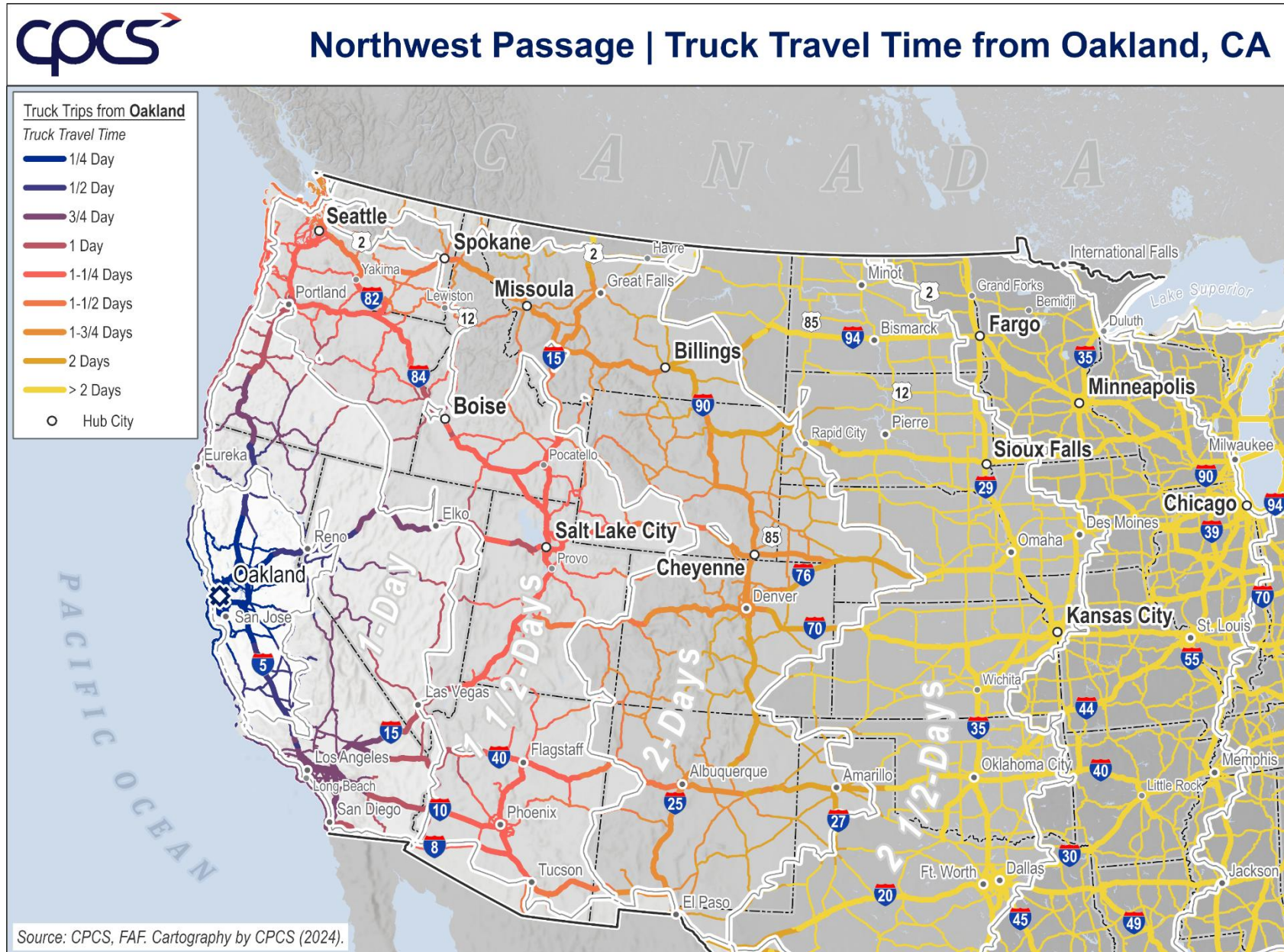


Figure 8: Truck Travel Time from Seattle, WA

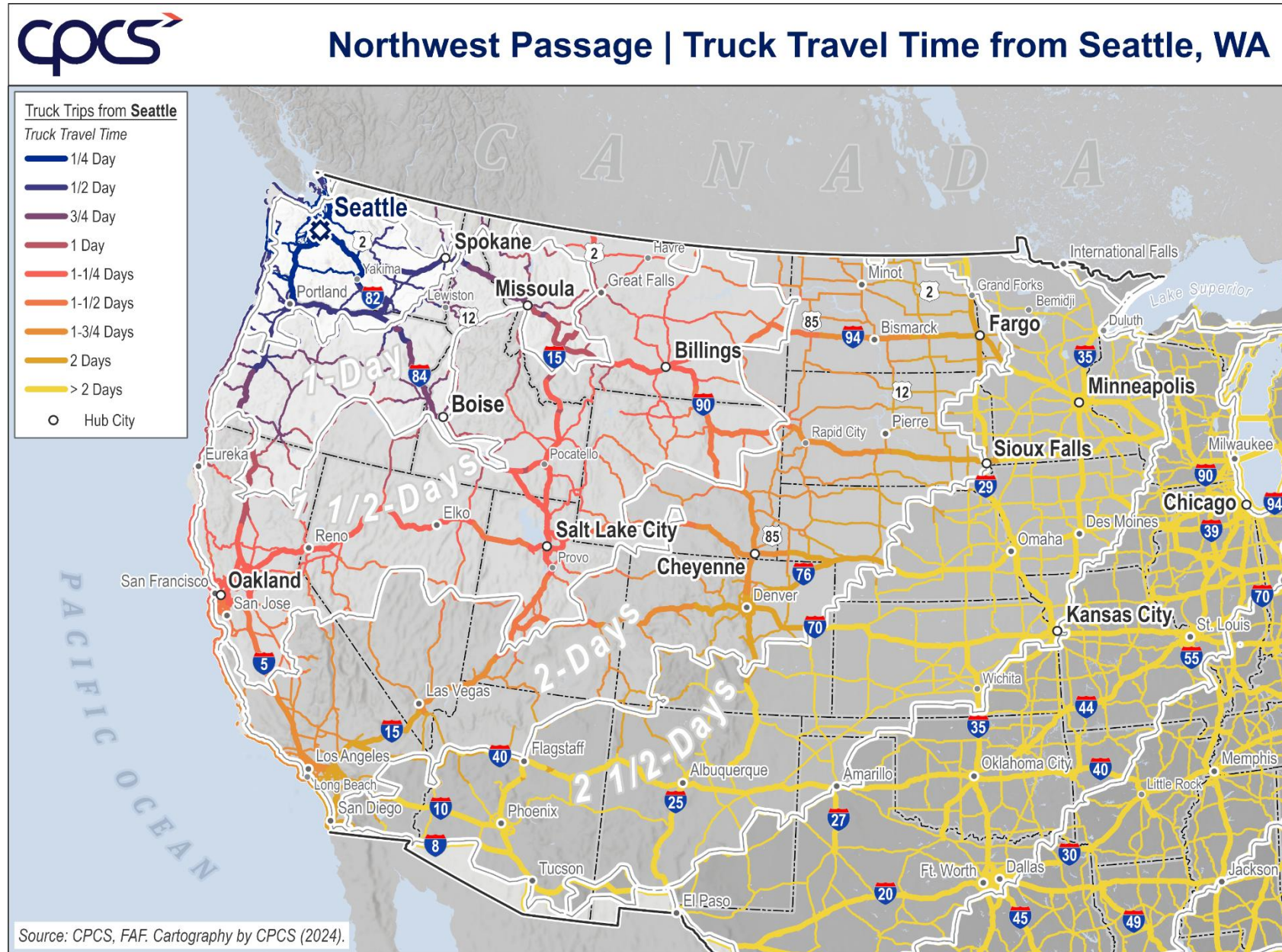


Figure 9: Truck Travel Time from Spokane, WA

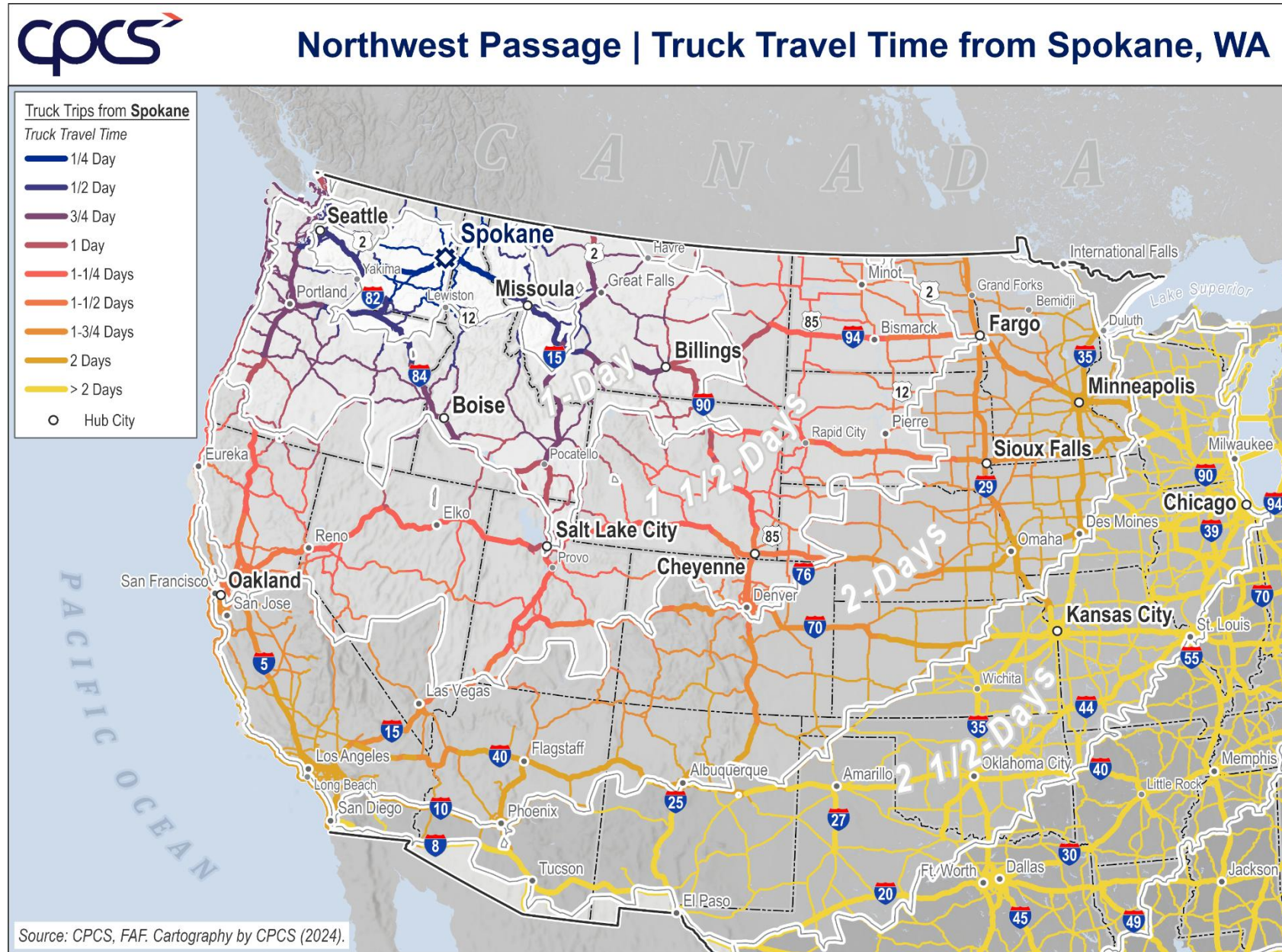


Figure 10: Truck Travel Time from Boise, ID

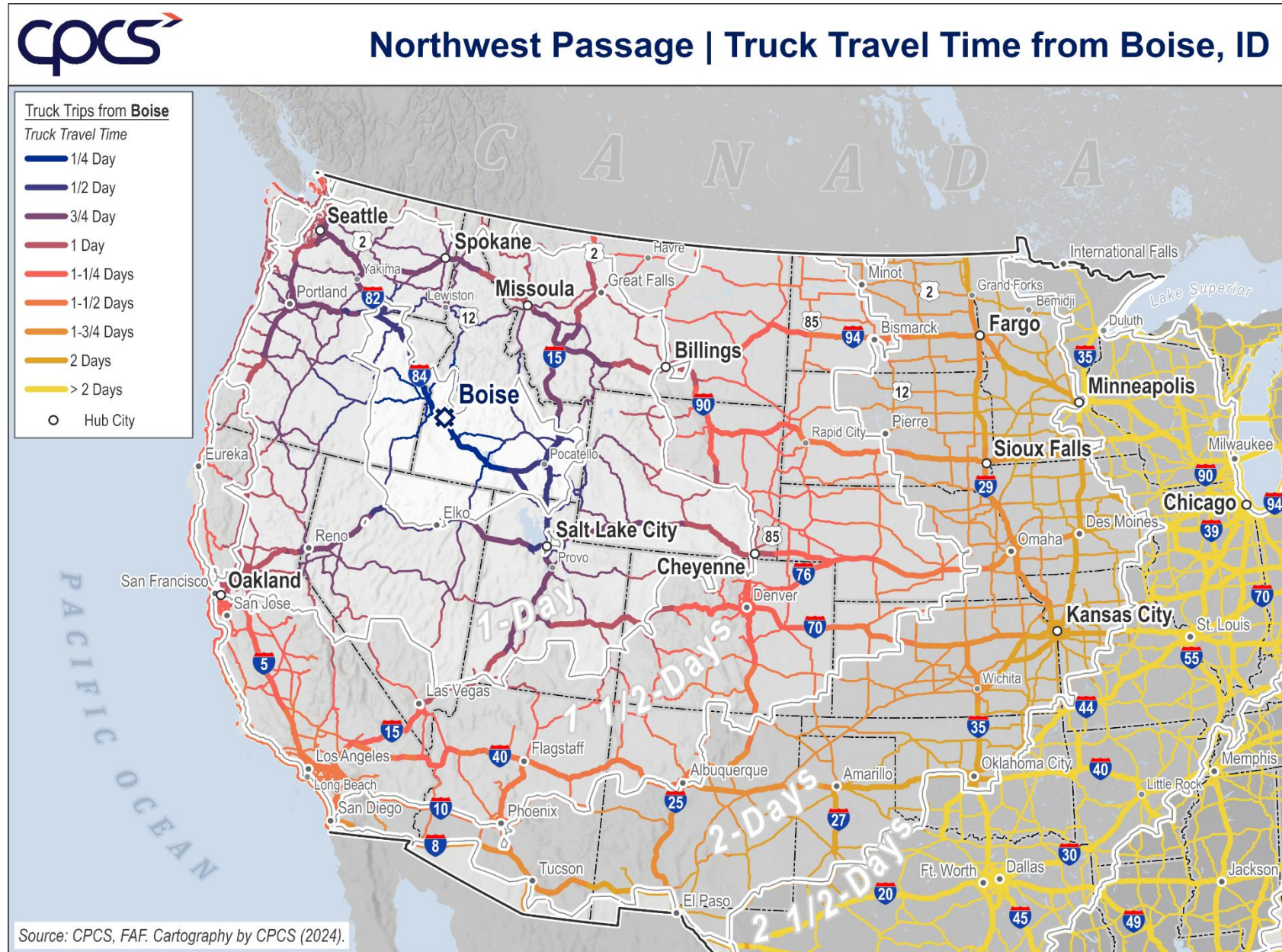


Figure 11: Truck Travel Time from Missoula, MT



Figure 12: Truck Travel Time from Salt Lake City, UT



Figure 13: Truck Travel Time from Billings, MT

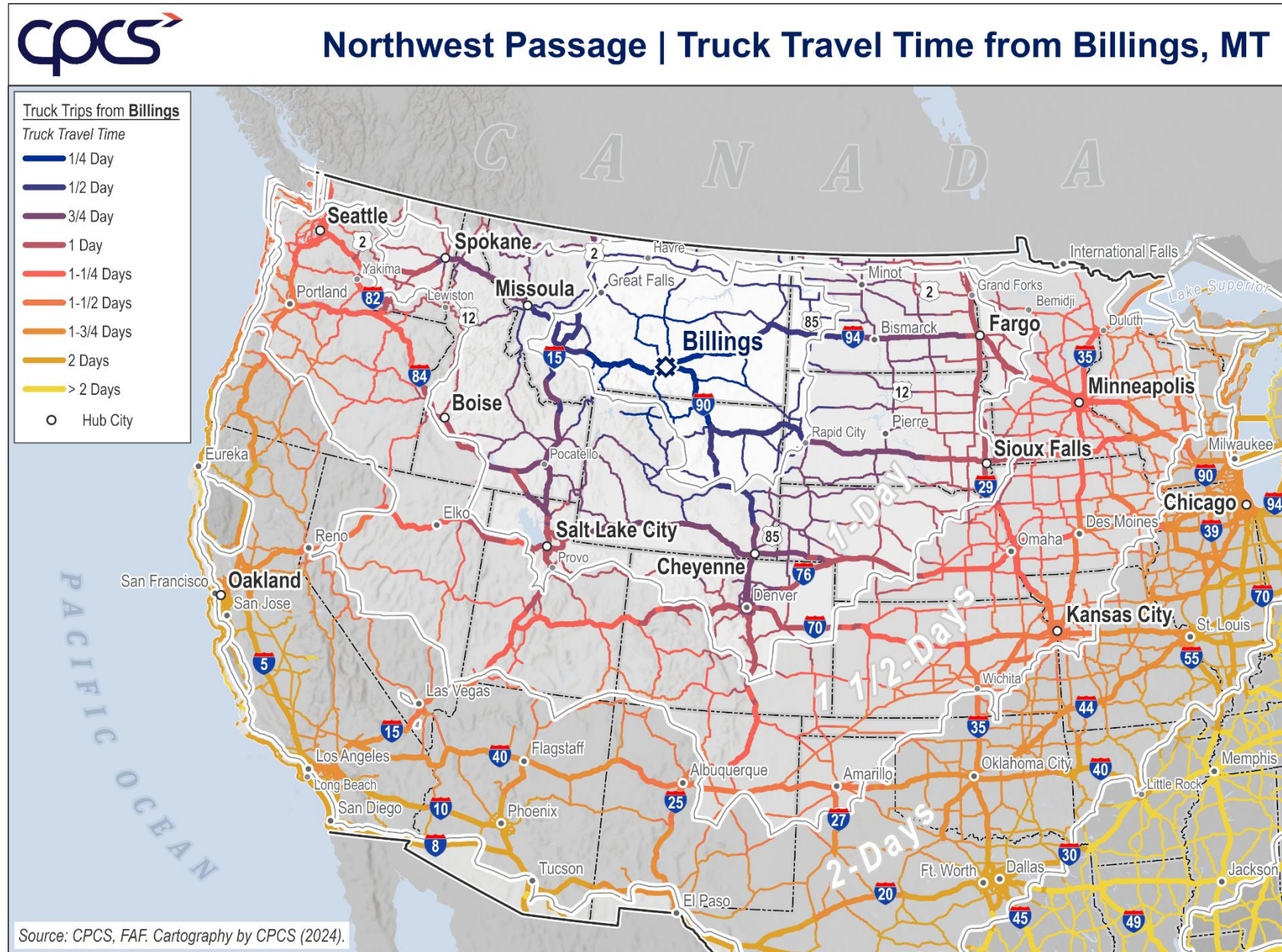


Figure 14: Truck Travel Time from Cheyenne, WY

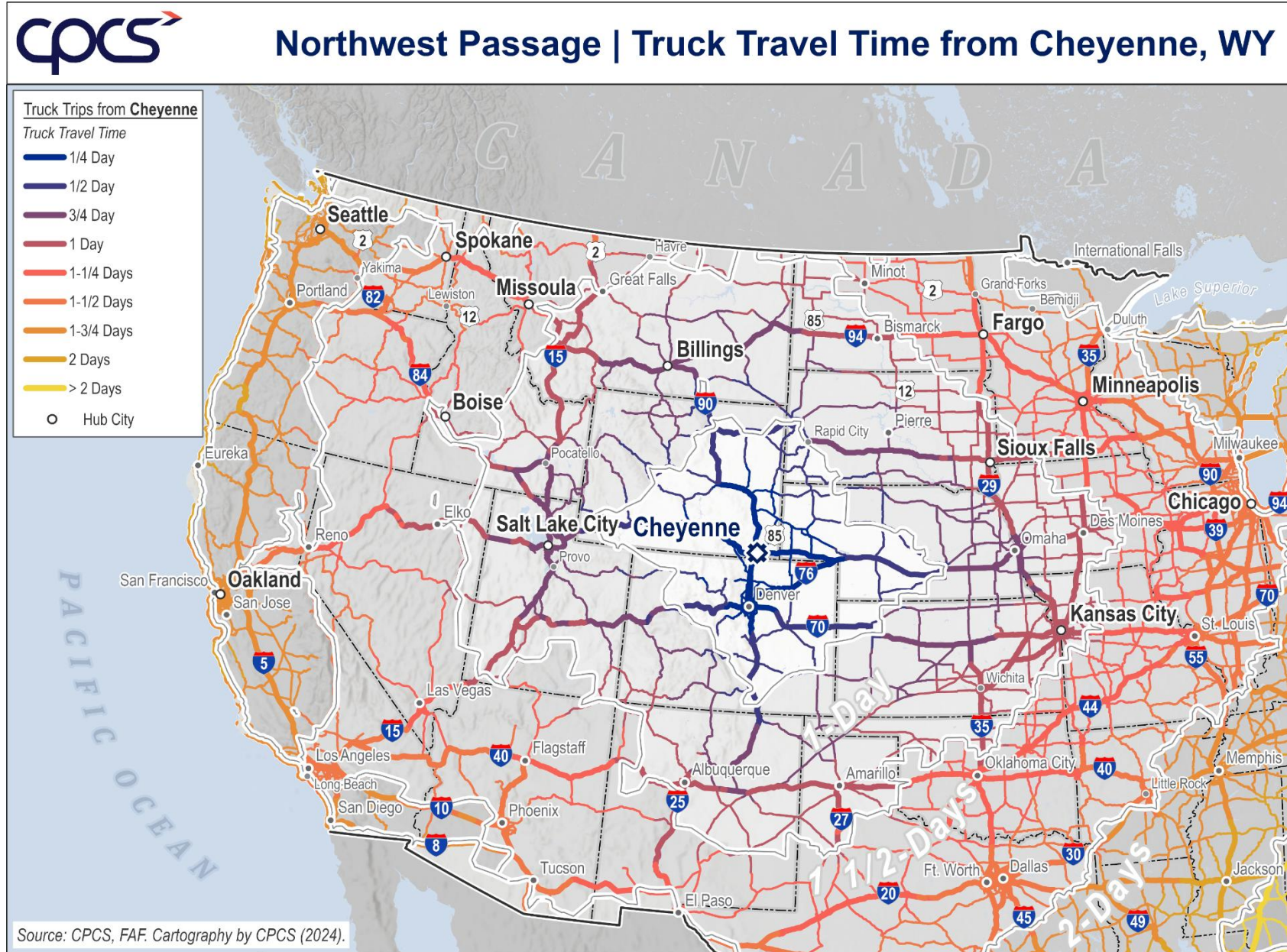


Figure 15: Truck Travel Time from Fargo, ND

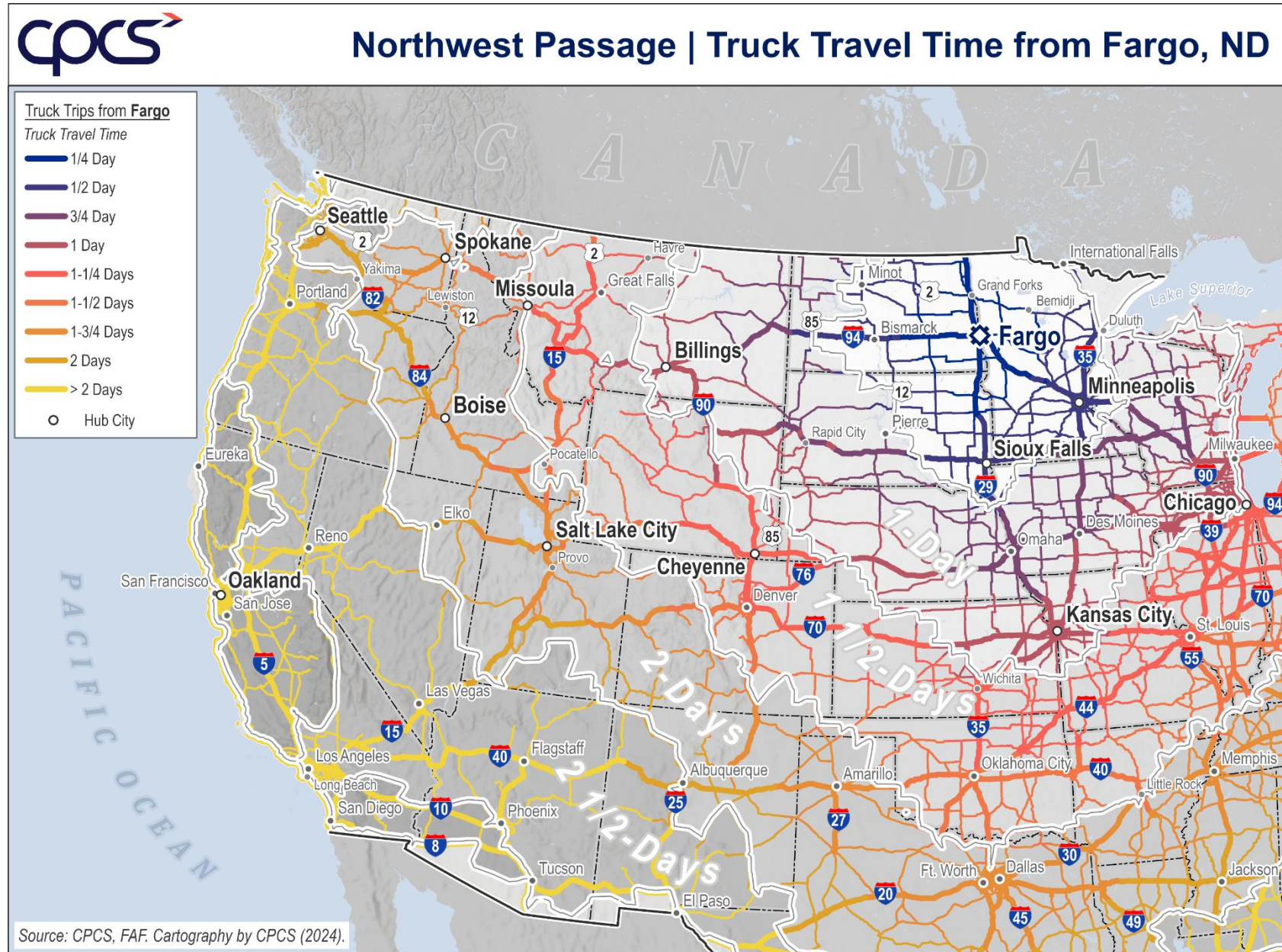


Figure 16: Truck Travel Time from Sioux Falls, SD

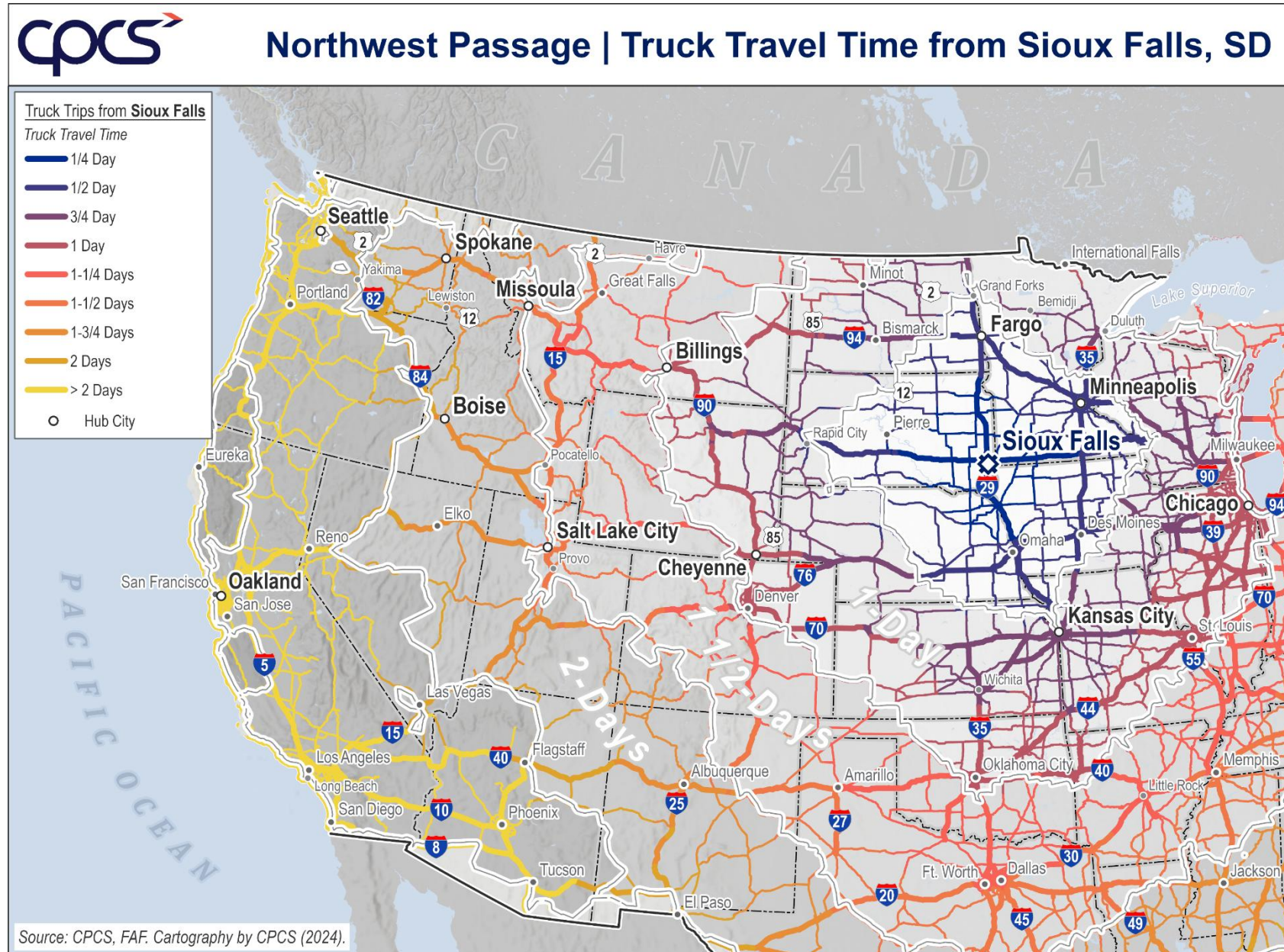


Figure 17: Truck Travel Time from Kansas City, MO

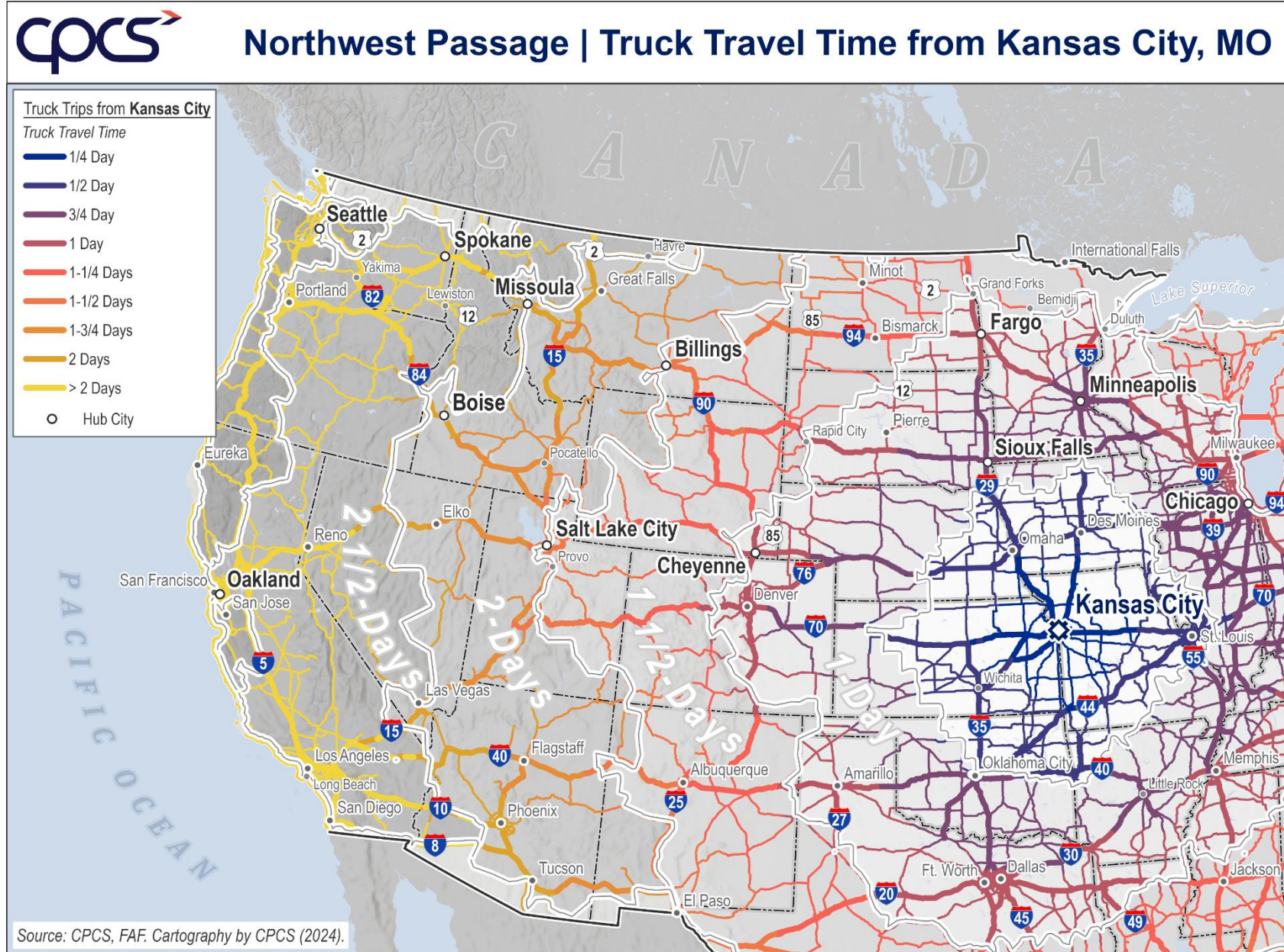


Figure 18: Truck Travel Time from Minneapolis, MN

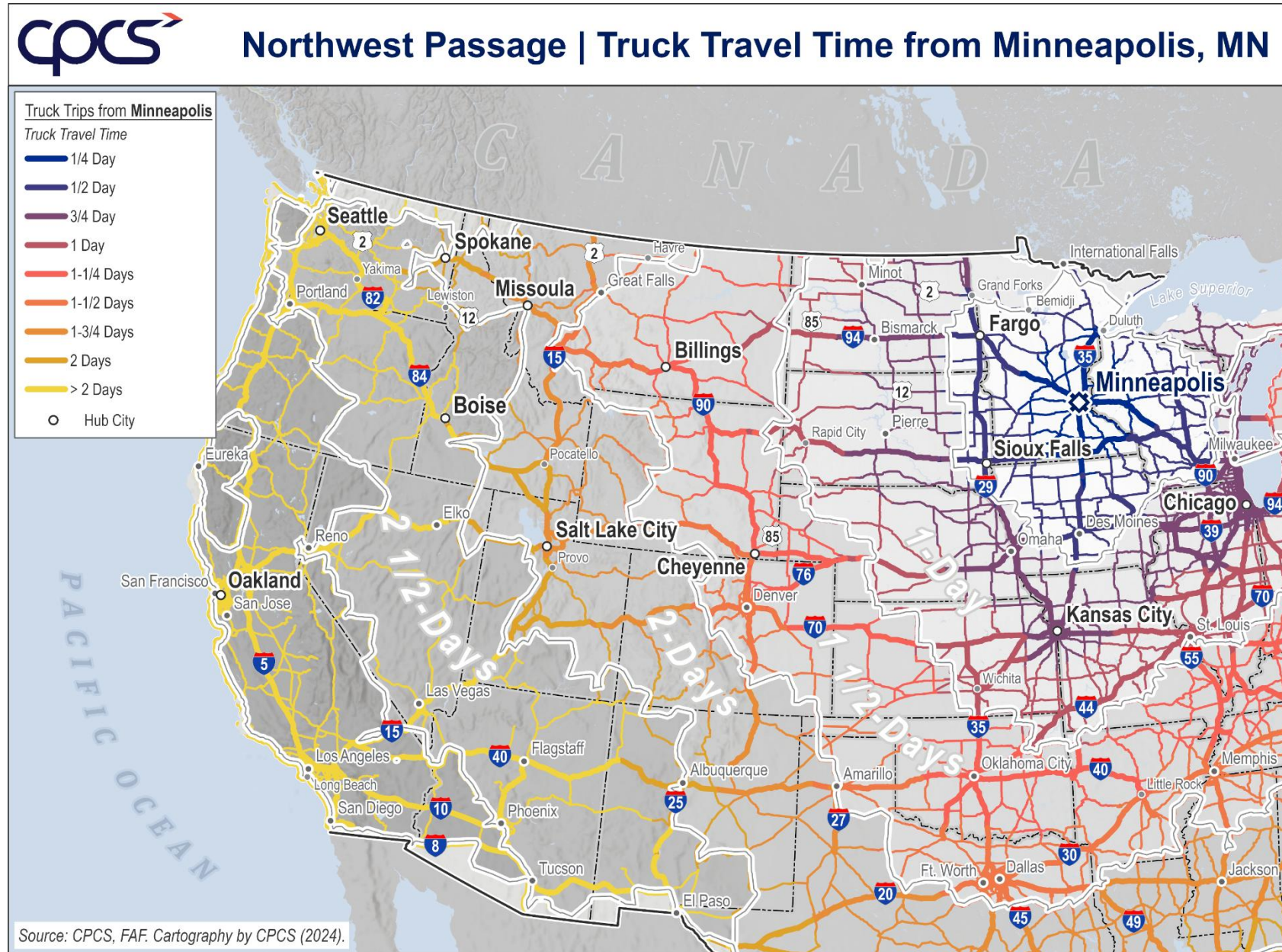
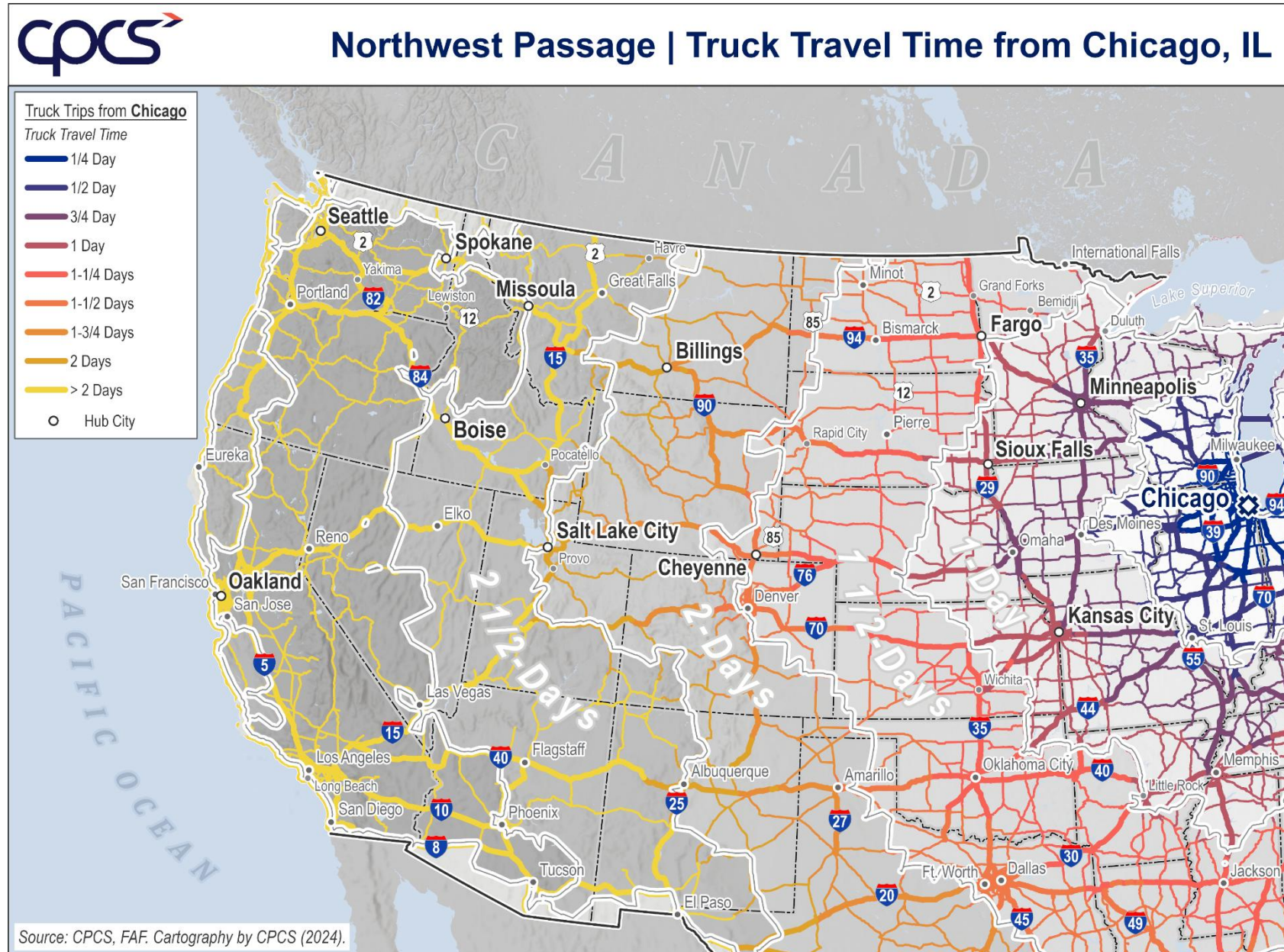


Figure 19: Truck Travel Time from Chicago, IL



3 Stakeholder Engagement

The project team engaged with members of the North/West Passage Freight Task Force and stakeholders of the trucking industry throughout this project. Roundtable discussions were convened with representatives of the North/West Passage, during which insight into the progression of the project and analysis findings were shared. Consultations with representatives from the corridor's state trucking associations and subject matter experts were conducted to provide insight into truck parking needs and how HOS requirements affect drivers in the corridor.

Freight Task Force Roundtables

Three roundtable discussions were convened with representatives of each North/West Passage state over the course of the project. Each meeting sought to gather input from participants about the progress of the project. Roundtable presentations are found in **Appendix A**.

Roundtable 1: Project Introduction

The purpose of the first roundtable was to review, refine and approve the proposed scope of work, identify appropriate trucking industry contacts for one-on-one consultations, and begin to designate key regional freight hubs to support the analysis. The first roundtable raised important questions about the direction of the project. Questions raised were considered by the project team and were addressed in the second roundtable. Based on questions received in the first roundtable, the project team expanded the initial list from which the key freight hubs would be selected and confirmed that the use of FAF data was appropriate for the level of detail to which analysis would be conducted in this project. Additionally, the project team confirmed that Canada would be excluded from this analysis, due to not having a data source with an equivalent level of detail to the FAF data. Finally, the project team confirmed that the analysis would not include disaggregated FAF data, because it could not be provided for every state throughout the corridor.

Roundtable 2: Consultations and Data Analysis

The purpose of the second roundtable was to share our initial findings from consultations and data analysis, share an initial analysis of the key regional freight hubs, and prepare for an analysis of truck parking in connection with one-day travel times from the identified key freight hubs. During the roundtable, participants were shown mapping and analysis that had been completed since the first roundtable. This included truck travel times from the key freight hubs and initial mapping of truck parking locations near the one-day travel time borders.

Roundtable 3: Findings

The purpose of the third roundtable was to review the final project findings and to discuss how findings should be shared with the larger Freight Task Force and other stakeholders.

Consultations

Consultations were conducted with both subject matter experts and representatives of state trucking associations in the corridor. Subject matter experts were consulted to increase the project team's understanding of research that has already been conducted on this topic, particularly on how a truck driver structures their day and how HOS requirements impact that. Consultations were completed with the American Transportation Research Institute (ATRI) and the Owner-Operator Independent Drivers Association (OOIDA) for subject-matter expertise. Consultations with representatives from the corridor's state trucking associations were conducted to better understand truck parking needs for HOS. Representatives from the trucking associations were contacted to gain an understanding of how

drivers in their state are affected by HOS requirements as it relates to finding truck parking in the NWP. A list of individuals with whom consultations were completed can be found in **Appendix B**. Through these conversations, several themes were identified including:

- How do Truck Drivers Decide Where and When to Stop?
- Driver Detention due to Loading and Unloading
- Inclement Weather in the North/West Passage
- Next Day Delivery Expectations

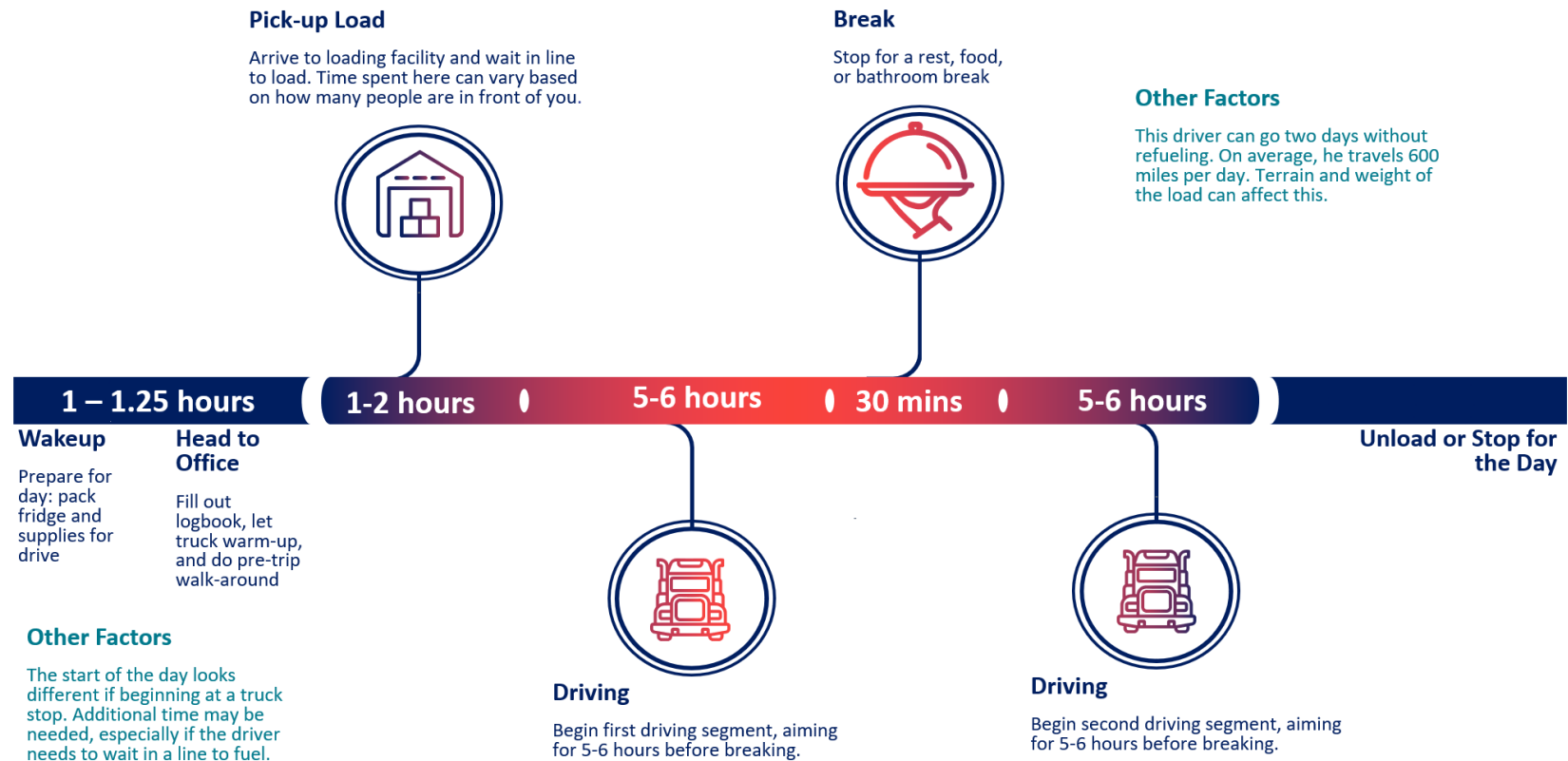
These topics are further described in the following subsections.

How do Truck Drivers Decide Where and When to Stop?

Consultations with representatives of state trucking associations and subject matter experts sought to understand where and when a driver may typically decide to stop driving for the day. Drivers seek to balance the demands of tight schedules with the limitations of Federal Hours of Service requirements. A theme identified through consultations was that many truck drivers will prioritize distance travelled over all else when carrying a load. Therefore, some drivers will choose to continue past open truck parking to get as far along their route as possible within their allowed HOS. This may occur even when there is not adequate truck parking ahead at which to park their truck.

A driver from OOIDA outlined his typical daily driving schedule (Figure 20). This driver prioritizes parking at designated truck parking facilities. Therefore, they are often in need of truck parking within a half-day or a one-day drive from their origin. However, this schedule can differ based on the driver's personal preferences, available HOS, or delays incurred throughout the day.

Figure 20: Example of a Truck Driver's "Typical Day"

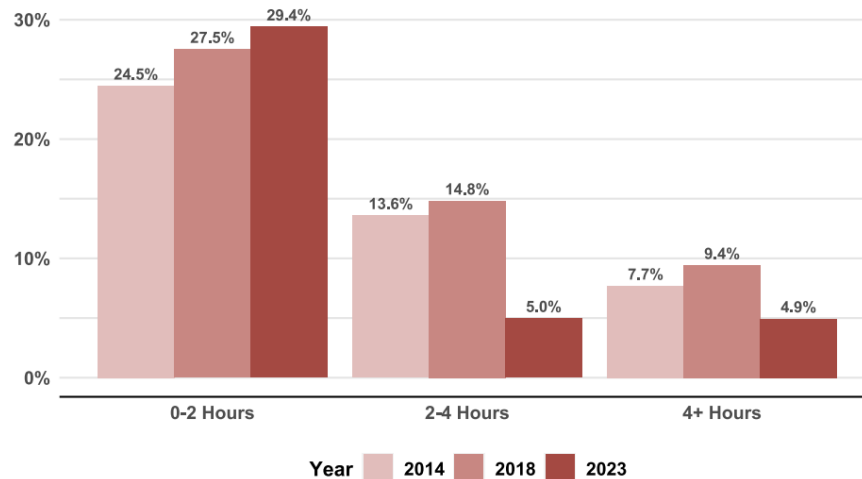


Source: CPCS consultation with OOIDA truck driver

Driver Detention due to Loading and Unloading

Consultations identified challenges presented by driver detention at customer facilities and how that may impact a driver's HOS and, therefore, their decision on where to park. Driver detention is the additional time that a driver spends at a facility to load or unload their truck, beyond their scheduled appointment time.² Over the past decade, driver detention rates and the average length of driver detention have improved. From 2014 to 2023, the frequency of driver detention dropped by 6.5 percent across all trucking sectors.³ Despite this improvement, in 2023, truckers reported that they were still detained at 39.3 percent of all stops. Detention times of up to two hours increased by 4.9 percent over the past decade. However, the rates of "significant detention," which is classified as detention of two hours or more, decreased by 11.4 percent from 2014-2023 (Figure 21).⁴ Therefore, despite improvements, truckers are still experiencing frequent detention at customer facilities, while the length of detention has improved over the past ten years.

Figure 21: Driver Detention Time per Stop, 2014-2023



Source: American Transportation Research Institute, Costs and Consequences of Truck Driver Detention: A Comprehensive Analysis, 2024

As waiting to load and unload counts towards a driver's HOS, delays at this stage can greatly impact a driver's calculation of where they will stop for the day. According to OOIDA, oftentimes, driver detention is due to a lack of awareness or concern on the part of the facility. Many customer facilities have limited the number of staff on site to decrease expenses. This, in turn, can create a backlog of drivers waiting to either load or unload. When facilities are not required to pay detention time, the driver's time is viewed as "free," and detention times can balloon.

Driver detention at a previous customer facility can impact a driver's ability to get to their next destination on time. This can lead to a driver being late to, or cancelling, their next pick-up due to the delays they experienced at the previous facility.⁵ Additionally, these detentions can cause a driver's on-duty HOS to expire at the customer facility, further impacting their ability to make deliveries in a timely manner. As seen below, 52 percent of drivers have run out of hours while waiting to pick up or

² American Transportation Research Board, Costs and Consequences of Truck Driver Detention: A Comprehensive Analysis, page 5. [ATRI-Costs-and-Consequences-of-Truck-Driver-Detention-09-2024.pdf](#)

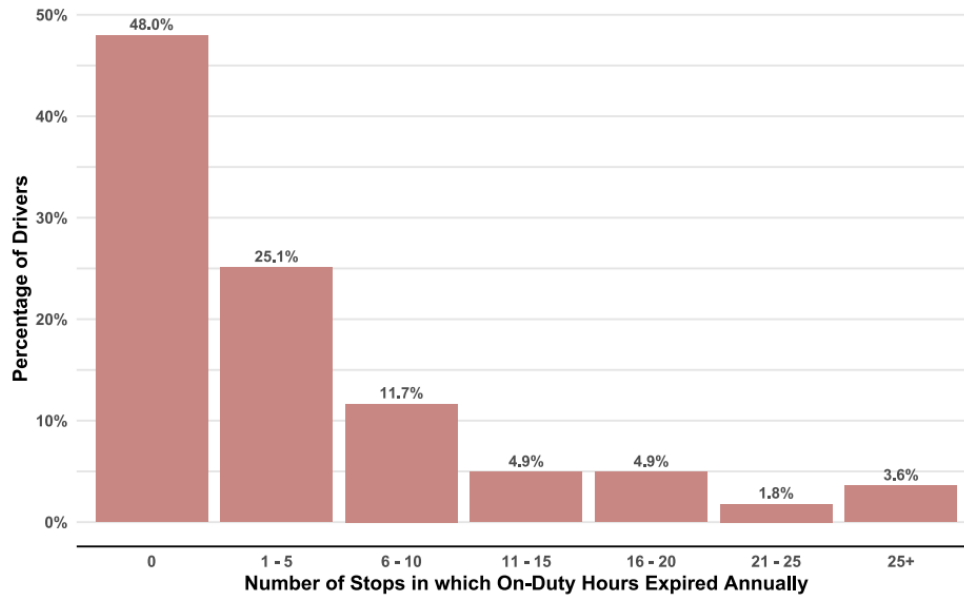
³ American Transportation Research Board, Costs and Consequences of Truck Driver Detention: A Comprehensive Analysis, page 9. [ATRI-Costs-and-Consequences-of-Truck-Driver-Detention-09-2024.pdf](#)

⁴ American Transportation Research Board, Costs and Consequences of Truck Driver Detention: A Comprehensive Analysis, page 9. [ATRI-Costs-and-Consequences-of-Truck-Driver-Detention-09-2024.pdf](#)

⁵ American Transportation Research Board, Costs and Consequences of Truck Driver Detention: A Comprehensive Analysis, page 14. [ATRI-Costs-and-Consequences-of-Truck-Driver-Detention-09-2024.pdf](#)

drop-off a load at a customer facility.⁶ When their HOS expires, drivers can face detention at the next facility following a late arrival, be forced to park in undesignated locations as truck parking facilities have already filled or be forced to make up mileage the next day.⁷

Figure 22: HOS On-Duty Time Expiration at Customer Facilities Caused by Detention



Source: American Transportation Research Institute, Costs and Consequences of Truck Driver Detention: A Comprehensive Analysis, 2024

Inclement Weather in the North/West Passage

Consultees also noted the impactful role of inclement weather in the North/West Passage on drivers' HOS. The North/West Passage is particularly affected by severe weather events during the winter months. Strong winds can close roads to trucks while large snowstorms can close entire highways until safe to operate vehicles on again. When these closures occur, drivers can be stuck in traffic, using significant amounts of their HOS while only able to travel minimal distances. When roads are closed to trucks due to events like high wind, nearby truck parking can rapidly fill up. This forces drivers to continue looking for safe parking elsewhere, sometimes in violation of their HOS, or park in an undesignated location.

Next Day Delivery Expectations

Next day delivery expectations have only increased as ecommerce sales continue to grow. These expectations are encouraged by shippers and merchants, who often promise next-day services to their customers, even if these delivery times are not realistic. As a result, drivers run up against their HOS restrictions and are unable to deliver the load in time, sometimes losing a customer as a result.

⁶ American Transportation Research Board, Costs and Consequences of Truck Driver Detention: A Comprehensive Analysis, page 15. [ATRI-Costs-and-Consequences-of-Truck-Driver-Detention-09-2024.pdf](#)

⁷ American Transportation Research Board, Costs and Consequences of Truck Driver Detention: A Comprehensive Analysis, page 15. [ATRI-Costs-and-Consequences-of-Truck-Driver-Detention-09-2024.pdf](#)

4 Truck Parking Assessment

Truck Parking in the North/West Passage

The North/West Passage corridor supplies a significant amount of legal, designated parking for truck traffic in the region. While NWP states may primarily focus on parking availability and issues in their own states, the corridor as a whole forms an integral network of truck parking that is vital for truck drivers moving goods to, from, and through the region. Altogether, the region provides 22,426 truck parking spaces at 869 truck parking facilities. The average distance traveled from the hub city analysis in Chapter 2 is also shown. Generally, due to traffic, terrain, and other factors trucks can travel an average of nearly 630 miles per day within the NWP corridor. Wyoming provides the highest number of public facilities in the NWP, and Minnesota has the highest number of private facilities and spaces.

Figure 23: Summary of NWP State Truck Parking

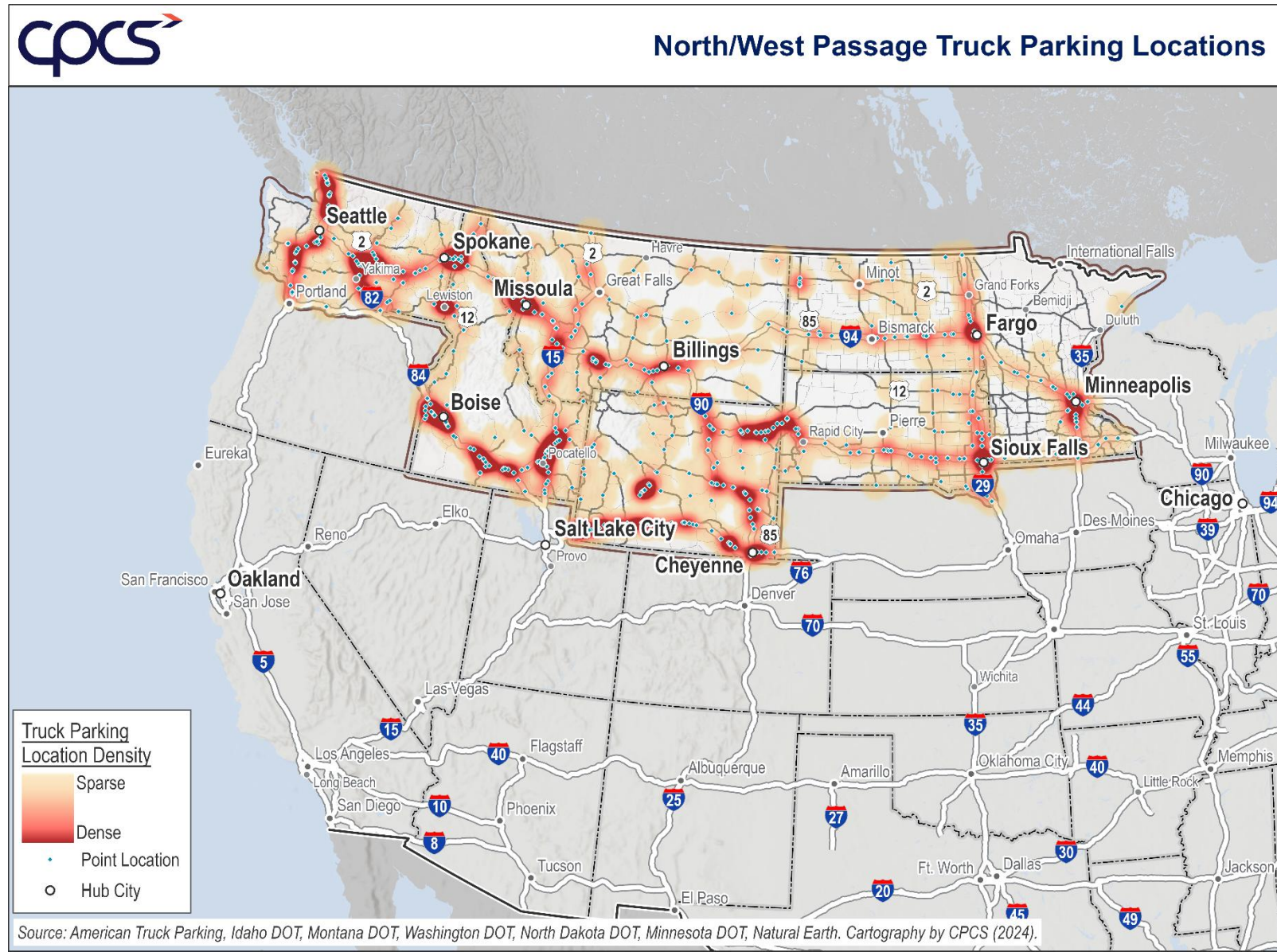
Metric	Idaho		Minnesota		Montana		North Dakota	
	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total
Count of Public Facilities	37	31%	51	24%	73	56%	20	27%
Count of Private Facilities	81	69%	163	76%	57	44%	54	73%
Number of Public Spaces	650	16%	677	14%	653	25%	177	9%
Number of Private Spaces	3,305	84%	4,196	86%	1,946	75%	1,826	91%
Avg. distance of 1-day travel band from origin	Boise: 705.4		Minneapolis: 612.2		Billings: 555.8 Missoula: 575		Fargo: 670.3	

Metric	South Dakota		Washington		Wyoming		Total	
	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total
Count of Public Facilities	22	26%	32	35%	89	56%	324	37%
Count of Private Facilities	62	74%	59	65%	69	44%	545	63%
Number of Public Spaces	318	17%	730	20%	891	26%	4,096	18%
Number of Private Spaces	1,561	83%	2,974	80%	2,549	74%	18,330	82%
Avg. distance of 1-day travel band from origin	Sioux Falls: 661.1		Seattle: 587.5 Spokane: 582		Cheyenne: 716.9		629.58	

Sources: CPCS Analysis of data from Idaho Transportation Department, Minnesota Department of Transportation, Montana Department of Transportation, North Dakota Department of Transportation, Washington State Department of Transportation, and American Truck Parking

More detailed information on each NWP State Truck Parking Inventory is available in **Appendix C**.

Figure 24: North/West Passage Truck Parking Locations*



*Map is being updated to reflect current Minnesota truck parking inventory.

State Truck Parking Studies

The following subsections briefly describe the various truck parking-related initiatives the NWP states have conducted in recent years.

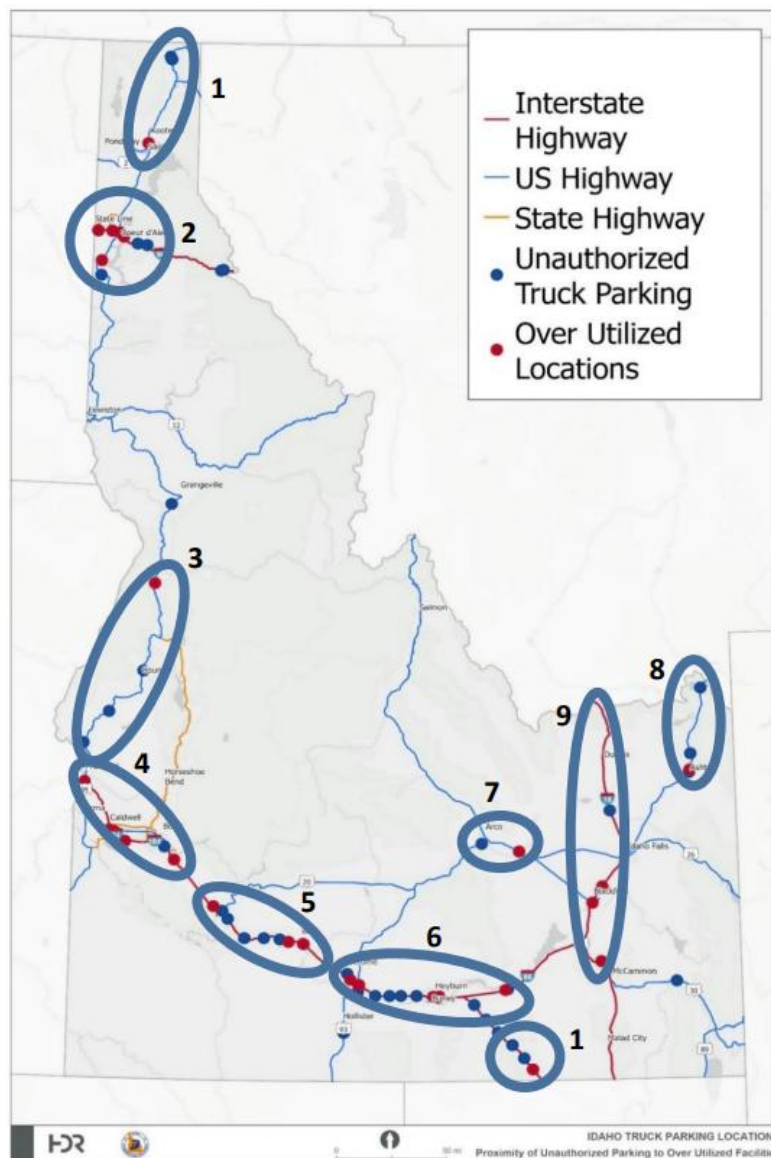
Idaho

The Idaho Transportation Department (ITD) has recently completed several truck parking research initiatives to understand their state's truck parking supply.

Idaho Truck Parking Research Project (2023)

The ITD conducted a comprehensive Truck Parking Research Project to assess and address truck parking challenges across the state. The study, completed in November 2023, aimed to inform the Statewide Freight Plan and provide solutions to meet current and future truck parking demands, thereby supporting freight movement and Idaho's economy.

Figure 25: Truck Parking Corridors with Capacity Needs



Source: Idaho Transportation Department, Idaho Truck Parking Research Project, page 18

Idaho Strategic Freight Plan (2023)

The Idaho Strategic Freight Plan assessed truck parking in the state. The Strategic Freight Plan identifies that most of Idaho's truck parking locations are along the Interstate system. Authorized truck parking in Idaho is offered by a combination of State Safe Rest Areas, private Oasis partners, and Ports of Entry (POE).

Key Findings:

- **Truck Parking Locations:** The Truck Parking Research Project identified nearly 4,000 truck parking spaces across 118 locations in Idaho. The majority of these facilities are situated in the southern part of the state, along Interstates 84, 15, and 86.
- **Truck Parking Demand:** Analysis of truck GPS data revealed that truck parking activity peaks between 6 p.m. and 7 p.m., with the highest demand observed in September. Weekday parking activity is notably higher, with fewer trucks parked on Sundays.
- **Capacity Needs:** The assessment identified corridors with insufficient truck parking capacity, particularly along major interstate routes. These areas were highlighted as priorities for improvements to meet current and anticipated future demands (Figure 25).

Minnesota

The Minnesota Department of Transportation (MnDOT) has conducted several studies to assess and address truck parking needs across the state, recognizing the critical role of adequate parking in ensuring road safety, regulatory compliance, and efficient freight movement.

Minnesota Interstate Truck Parking Study (2007)

In 2007, MnDOT completed the "Minnesota Interstate Truck Parking Study," which examined the supply and demand of public and private commercial vehicle parking along Minnesota's primary interstate corridors: I-35, I-90, and I-94. The study aimed to support decisions regarding future approaches to truck parking issues in Minnesota.

MnDOT Truck Parking Study: Phase 2 (2010)

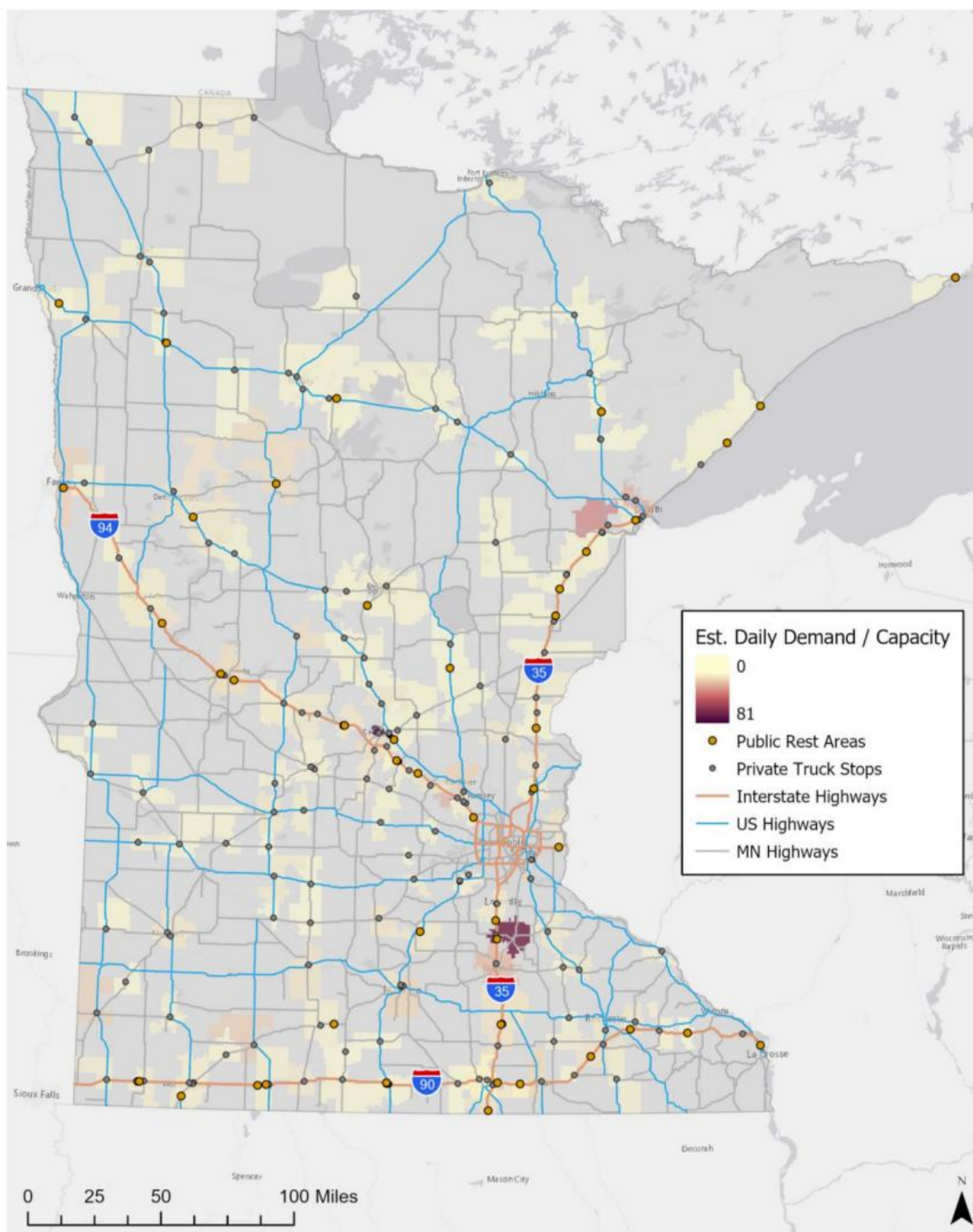
Building on the 2007 study, MnDOT initiated Phase 2 to identify opportunities for expanding truck parking where needed across Minnesota. This phase focused on both the Twin Cities metropolitan area and greater Minnesota, addressing critical parking capacity issues at many of the state's rest area facilities.

Statewide Truck Parking Study (2019)

In 2019, MnDOT completed a comprehensive statewide truck parking study in collaboration with the trucking industry. The study aimed to identify existing parking trends, key capacity gaps, and potential future solutions. It gathered data from rest areas and truck stops across the state to respond to key information needed for the federal Jason's Law Survey. The study also utilized a novel combination of specialized Streetlight Insight data and GPS Probe data to identify locations with the largest truck parking needs in the state.

The Statewide Truck Parking Study also analyzed the state's truck parking location's capacity and corresponding demand. This revealed that several areas in the state have demand that greatly exceeds the available capacity (Figure 26). These areas would benefit from capacity improvements.

Figure 26: Estimated Daily Truck Parking Demand vs. Capacity



Source: Minnesota Department of Transportation, Minnesota Statewide Truck Parking Study, page ix

Minnesota State Freight Plan (2024)

Truck parking inventory in the State Freight Plan was drawn from the 2019 Statewide Truck Parking Study. Minnesota has 214 truck parking facilities, which amounts to 4,846 total parking spaces. 677 of these spaces are public while 4,169 are located at private truck parking sites. The plan notes that truck parking facilities are frequently at or above their truck parking capacity, which can result in unsafe

conditions where drivers park in undesignated locations or are forced to continue driving after their HOS has expired.

Key Findings

The studies revealed several critical findings:

- **Capacity Issues:** Many rest areas were operating at or exceeding capacity, particularly during nighttime hours. The MN legislature approved funding for truck parking including \$7,750,000 in fiscal year 2025 for land acquisition, predesign, design and construction of expanded truck parking at Big Spunk in Avon and Enfield Rest Areas, in addition to other truck parking projects.
- **Unauthorized Parking:** Due to capacity constraints, unauthorized parking on adjacent entrance/exit ramps was observed, posing safety risks.
- **Regional Disparities:** The Twin Cities metropolitan area faced significant truck parking challenges compared to greater Minnesota.

Ongoing Efforts

Minnesota has continued to invest resources into understanding the truck parking problem and into developing more truck parking capacity. MnDOT added 16 new truck parking spots at two eastbound rest areas along I-94 earlier in 2024.

Montana

The Montana Department of Transportation (MDT) has undertaken several initiatives to assess and improve truck parking facilities across the state, recognizing the critical role of adequate parking in ensuring road safety and supporting the trucking industry.

Rest Area Usage Study (2011)

In 2011, MDT conducted a comprehensive study titled "Montana Rest Area Usage: Data Acquisition and Usage Estimation." This research aimed to refine the figures employed in estimating Montana rest area use, including water flow, effluent flow, patron traffic, vehicle traffic volume and classification, and vehicle dwell times for commercial and passenger vehicles. The study's findings provided MDT with up-to-date figures to assist in planning, designing, and rehabilitating rest area facilities.

US 2 Rest Area Siting Study (2019)

MDT also conducted the US 2 Rest Area Siting Study, which evaluated the need for year-round safe stopping areas along the US 2 corridor. The study used 70-mile intervals, representing the posted speed limit on US 2, to determine the need for rest areas, parking areas, and cities and towns with 24-hour services. The study corridor included the length of US 2 extending from a western endpoint at the Troy.

Montana Freight Plan (2022)

According to the Montana Freight Plan, in 2014 Montana had the highest number of truck parking spaces per 100,000 miles of daily combination VMT in the nation. In 2019, Montana continued to rank in the top 5 states with the most spaces.⁸ The freight plan identified Three Forks and Butte as two specific locations needing additional truck parking capacity.

⁸ Montana Freight Plan, Rest Area and Truck Parking, page 88. <https://www.mdt.mt.gov/freightplan/docs/2022-Montana-Freight-Plan.pdf?v=2>

Federal Support and Technological Advancements

In recent years, Montana has received federal support to enhance truck parking through technological solutions. The Federal Motor Carrier Safety Administration (FMCSA) awarded \$1.4 million in grant funding to Montana and Kentucky to improve truck parking through its High Priority Innovative Technology Deployment grants. These funds are intended to develop Truck Parking Information Management Systems (TPIMS) that provide real-time information to drivers about available parking spaces, thereby improving safety and efficiency.

Key Findings

- Additional capacity is required in Three Forks and Butte, as well as along non-Interstate NHS routes where unauthorized parking is occurring.⁹

Ongoing Efforts

MDT continues to prioritize truck parking improvements, recognizing the importance of providing safe and accessible rest areas for commercial drivers. Ongoing efforts include expanding parking capacity, enhancing amenities, and implementing advanced information systems to assist drivers in finding available parking. These initiatives aim to support the trucking industry, ensure compliance with hours-of-service regulations, and promote overall road safety in Montana.

North Dakota

The North Dakota Department of Transportation (NDDOT) has recognized the critical need for adequate truck parking facilities to ensure driver safety, regulatory compliance, and efficient freight movement. In response, NDDOT has undertaken several initiatives to assess and improve truck parking across the state.

North Dakota Truck Harmonization Study (2016)

In 2016, NDDOT collaborated with the Upper Great Plains Transportation Institute (UGPTI) at North Dakota State University to conduct a comprehensive study on truck size and weight harmonization. While the primary focus was on harmonizing truck regulations, the study also addressed infrastructure needs, including truck parking facilities. The findings highlighted the need for expanded parking options to accommodate larger truck configurations and increased freight traffic.

State Freight and Rail Plan (2022)

In 2022, NDDOT released the State Freight and Rail Plan, which identified truck parking as a significant concern. The plan noted that inadequate parking facilities lead to safety issues, non-compliance with HOS regulations, and operational inefficiencies. To address these challenges, the plan proposed several strategies:

- **Expansion of Parking Facilities:** Developing new truck parking areas and expanding existing ones, particularly along major freight corridors.
- **Technological Solutions:** Implementing real-time parking information systems to assist drivers in locating available spaces.
- **Public-Private Partnerships:** Collaborating with private sector stakeholders to fund and manage truck parking facilities.

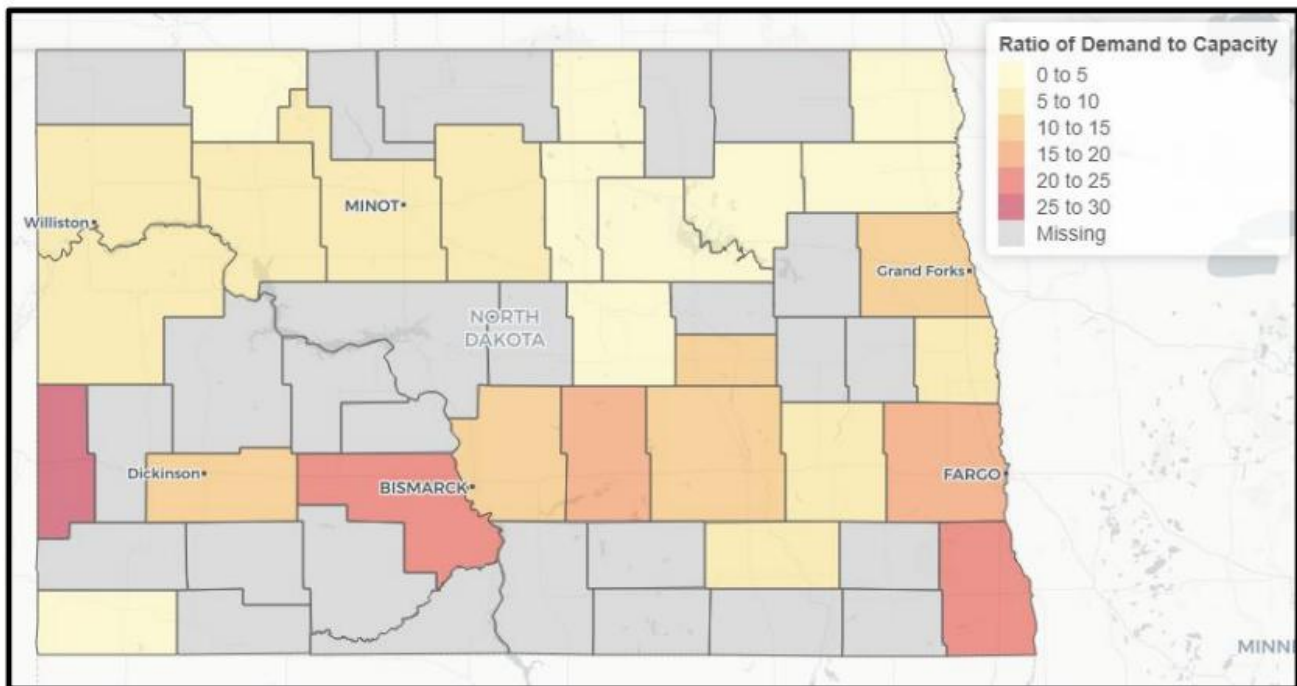
These initiatives aim to enhance safety, support economic growth, and improve the quality of life for North Dakota residents.

⁹ Montana Freight Plan, Rest Area and Truck Parking, page 88. <https://www.mdt.mt.gov/freightplan/docs/2022-Montana-Freight-Plan.pdf?v=2>

Key Findings

- Several areas of the state experience heightened truck parking activity, including Cass County which encompasses the Fargo area. However, Cass County has a relatively low truck parking demand to capacity ratio, indicating that the existing truck parking facilities are adequate for the current levels of demand.
- Golden Valley County west of Dickinson has the highest ratio of truck parking demand to capacity. Other counties that exhibit high ratios include Morton County west of Bismarck, and Richland County south of Fargo.

Figure 27: Ratio of Truck Parking Activity to Total Truck Parking Spaces by County



Source: North Dakota Department of Transportation, North Dakota Freight and Rail Plan, page 4-36

Ongoing Efforts

NDDOT continues to prioritize truck parking improvements through:

- **Data Collection and Analysis:** Monitoring truck parking use patterns to inform future infrastructure investments.
- **Stakeholder Engagement:** Working with trucking associations, local governments, and community members to develop effective solutions.
- **Funding Pursuits:** Seeking federal grants and other funding opportunities to support truck parking projects.

South Dakota

The South Dakota Department of Transportation (SDDOT) conducted a comprehensive truck parking study to assess current and future needs along major freight corridors, particularly Interstates 29 and 90. The study aimed to enhance safety, compliance with federal regulations, and the overall efficiency

of freight movement within the state. South Dakota's 2023 State Freight Plan included a discussion on truck parking, building upon the 2018 truck parking study.¹⁰

SDDOT Rest Area & Truck Pullout Truck Parking Analysis (2018)

The Rest Area & Truck Pullout Truck Parking Analysis was conducted to evaluate existing truck parking facilities, including rest areas, truck pull-out areas, and scenic pullouts, to determine their capacity and utilization rates. The study also forecasted future needs utilizing data from the Freight Analysis Framework to project future truck parking requirements based on anticipated freight traffic growth. Finally, it proposed strategies to expand truck parking capacity, focusing on utilizing existing right-of-way areas where demand is expected to exceed the current capacity.

Over a 24-hour period, the 26 – Salem (I-90 Westbound), 17 – Presho (I-90 Westbound), and 28 – Ward (I-29 Northbound/Southbound) had the greatest total number of observed parked trucks in designated truck parking spaces for rest areas. Of truck pullouts, which do not have designated truck parking spaces, the 5 – Box Elder Pullout (I-90 Westbound), the 4 – Box Elder Pullout (I-90 Eastbound), and the 24 – Mitchell Truck Pullout (I-90 Westbound) had the total number of parked vehicles. The 5 – Box Elder Pullout (I-90 Westbound) is also a popular staging area for caravans of trucks moving wind turbine blades.

South Dakota DOT 2020 Decennial Interstate Corridor Study (ICS) (2020)

The Decennial Interstate Corridor Study included a truck parking evaluation that examined a year of truck parking data along the study corridors of I-29, I-90, and I-229. This study assessed truck parking spaces along the Interstate System, identified areas of unauthorized parking, and provided a list of truck parking facility recommendations to accommodate future normal conditions.¹¹ Among other findings, the study identified unauthorized parking occurring at Exit 143 – Philip and Exit 251 – Gregory/Winner, indicating a need for additional parking in the areas.

South Dakota State Freight Plan (2023)

The South Dakota State Freight Plan primarily referenced the truck parking assessment completed during the Decennial Interstate Corridor Study (ICS). The state freight plan identified the major underlying cause of truck parking shortages, as expressed by stakeholders, to be interstate closures associated with winter storm events.¹²

Key Findings:

- **Overcapacity Issues:** Several rest areas, such as those in Wasta, Chamberlain, and Ward, frequently exceeded their designated truck parking capacities, especially during nighttime hours. For instance, the Wasta Eastbound rest area, with seven spaces, often experienced occupancy rates exceeding 100% during peak hours.
- **Underutilized Facilities:** Some locations had available capacity, indicating potential for better distribution of parking demand through improved information systems or facility enhancements.

Recent Developments:

Building on the ICS study's findings, in September 2023, USDOT Secretary Buttigieg announced a federal investment to expand truck parking capacity along I-90 in Salem, South Dakota. This initiative,

¹⁰ South Dakota Department of Transportation, State Freight Plan – Truck Parking, page 4-8.

<https://dot.sd.gov/media/State%20Freight%20Plan%202023%20approved1.pdf>

¹¹ South Dakota Department of Transportation, Decennial Interstate Corridor Study, page 2-47.

https://dot.sd.gov/media/SDDOT%20ICS_Phase%201%20Report_Final_body%20text%20only.pdf

¹² South Dakota Department of Transportation, State Freight Plan – Truck Parking, page 4-8.

<https://dot.sd.gov/media/State%20Freight%20Plan%202023%20approved1.pdf>

funded by the Bipartisan Infrastructure Law, aims to address the critical shortage of truck parking spaces, enhancing safety and efficiency in freight transportation.

Washington

The Washington State Department of Transportation (WSDOT) has conducted comprehensive studies to address the critical shortage of truck parking within the state, recognizing its impact on safety, driver well-being, and freight efficiency.

2016 Washington State Truck Parking Study (2016)

In December 2016, WSDOT published the "Washington State Truck Parking Study," which evaluated the adequacy of truck parking along major freight corridors, including Interstates 5, 90, and 82. The study identified several key issues:

- **Safety Concerns:** A significant number of truck drivers reported driving while fatigued due to inadequate parking options, posing risks to both drivers and the public.
- **Capacity Shortages:** Many rest areas and truck stops were operating at or beyond capacity, especially during nighttime hours, leading to unauthorized parking on highway shoulders and ramps. The Study found that the top three corridors with unmet truck parking demand were I-5, I-405, and I-90.
- **Infrastructure Constraints:** Limited space and funding challenges hindered the expansion of existing facilities or the development of new ones.

The study recommended strategies such as expanding parking capacity, utilizing technology for real-time parking information, and fostering public-private partnerships to develop new facilities.

Washington State Enforcement Survey (2019)

The Washington State Enforcement Survey gathered input from state enforcement officers on the locations of frequent undesignated truck parking. The survey found that frequent undesignated truck parking was more prevalent on key freight corridors, including mountain passes and near borders.

Figure 28: Locations of Frequent Undesignated Parking, Washington State



Source: 2022 Washington State Freight System Plan Update, Appendix H: Washington Truck Parking Assessment, page 15

Truck Parking Action Plan (2021)

Building on the 2016 study, the Washington State Legislature's Joint Transportation Committee (JTC) developed the "Truck Parking Action Plan" in 2021. This plan outlined various options and strategies to address the ongoing shortage of truck parking:

- **Establishing a Truck Parking Implementation Workgroup:** To maintain focus and ensure accountability for implementing the action plan.
- **Identifying Feasible Sites for Truck Parking Facilities:** Conducting inventory analyses to pinpoint areas with the greatest need for truck parking.
- **Exploring Innovative Partnerships:** Collaborating with local governments, ports, and private entities to develop additional truck parking solutions.

The plan emphasized the need for coordinated efforts among state agencies, local governments, and the private sector to effectively address truck parking challenges.

WSDOT and FHWA Truck Parking Workshop (2021)

WSDOT and the Federal Highway Administration coordinated to host four virtual work sessions in June 2022. These sessions focused on the statewide truck parking shortage and were targeted towards regional and local transportation planning organizations and other relevant partner organizations.

The workshops revealed several characteristics of truck parking in Washington State and challenges to implementing truck parking solutions, including:

- Truck parking capacity is most constrained but in highest demand in urban areas, mountain passes, border crossings, and near ports and industrial areas.
- It is difficult to expand capacity at safety rest areas due to resource limitations, design requirements, lack of data, and a lack of a shovel-ready project list.
- High real estate cost is cited as the top challenge to expanding truck parking capacity.
- Pushback from local jurisdictions act as another barrier to increasing truck parking capacity.

Washington State Freight System Plan (2022)

The Washington State Freight System Plan examines freight movement in the state and discusses truck parking capacity and demand. Washington has 3,395 truck parking spaces in 112 locations across the state. Despite this capacity, drivers still have difficulty finding truck parking, particularly for staging or overnight parking. A lack of capacity in key areas often leads to undesignated truck parking, the location of which can be used to identify where additional capacity should be added. As seen in Figure 29, the Seattle, Tacoma, and Spokane areas have a need for additional truck parking.

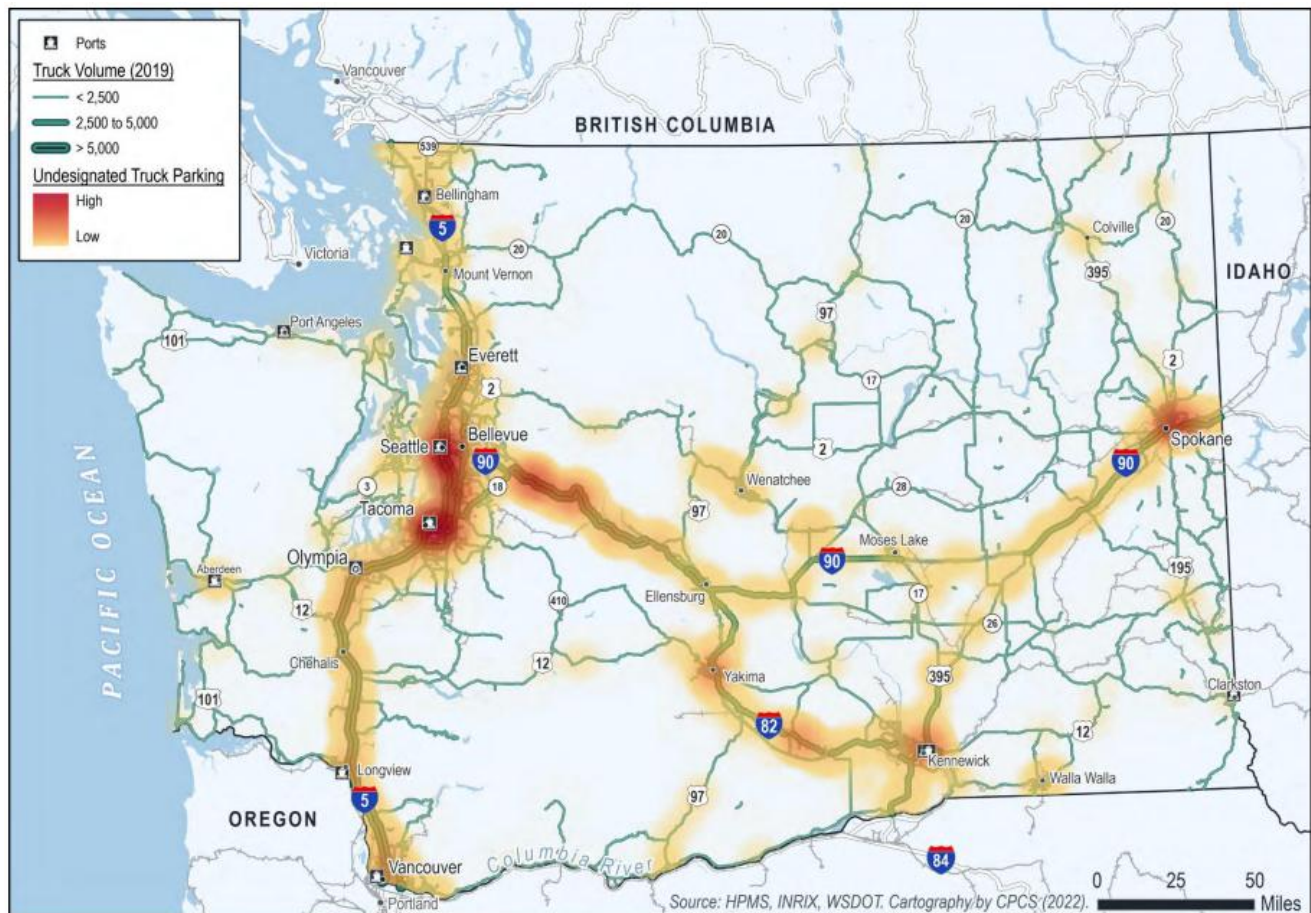
Ongoing Initiatives

WSDOT continues to prioritize truck parking improvements through several initiatives:

- **Truck Parking Implementation Plan:** In 2023, the Washington State Legislature directed WSDOT and the Washington State Freight Mobility Strategic Investment Board (FMSIB) to develop both near-term and long-term strategies to address truck parking needs at WSDOT-owned rest areas on the I-90 and I-5 corridors. The identified recommendations included a combination of preservation and expansion projects, collaboration pilot program, and institution leadership initiative. These actionable improvements are planned to be carried out in phases over the next three biennium and beyond.
- **I-5 Truck Parking Information Management System (TPIMS):** WSDOT is partnering with the Oregon Department of Transportation and Caltrans to provide truck drivers with real-time parking availability information along the entire I-5 corridor. This project aims to install technology at 54 public truck parking facilities, with completion anticipated by 2027.

These efforts reflect WSDOT's commitment to enhancing safety, supporting the trucking industry, and ensuring efficient freight movement throughout Washington State.

Figure 29: Undesignated Truck Parking Heat Map, Washington



Source: Washington State Freight System Plan, page 31

Wyoming

The Wyoming Department of Transportation (WYDOT) has undertaken several initiatives to address truck parking challenges along Interstate 80 (I-80), a critical freight corridor that frequently experiences severe weather conditions, leading to road closures and increased demand for truck parking.

I-80 Winter Freight Improvement Project (2020)

In 2020, WYDOT initiated the I-80 Winter Freight Improvement Project to enhance safety and efficiency along I-80. This project included the construction of approximately 5.5 miles of passing lanes and two truck parking areas, each accommodating 100 trucks, between Laramie and Rawlins. These facilities aim to provide safe parking options during winter storms and reduce congestion caused by stranded trucks.

Wyoming Statewide Freight Assessment (2022)

The Wyoming Statewide Freight Assessment provides an overview of the truck parking spaces in the state. It lists 4,588 official truck parking spaces in the state, 4,296 of which are located along Interstates 25, 80, and 90. The plan also provides an assessment of specific areas in need of truck parking under normal conditions.

Federal Funding for Truck Parking Expansion (2023)

In December 2023, WYDOT was awarded a \$26.6 million grant through the federal Rural Surface Transportation Grant program to construct about 365 new truck parking spaces along I-80 near Evanston. This initiative seeks to alleviate congestion and provide safe parking during frequent winter closures of I-80, which often force truckers to park in undesignated areas, impacting local communities.

Connected Vehicle Pilot Program

WYDOT has also explored technological solutions to improve truck parking through the Connected Vehicle (CV) Pilot Program. This program aims to enhance freight drivers' ability to find safe truck parking locations along I-80 by providing real-time information on parking availability, thereby improving safety and operational efficiency.

Key Findings

- **Adequate Parking Capacity:** There are currently adequate truck parking conditions throughout Wyoming during normal conditions.
- **Future Capacity:** There is a need to expand truck parking to accommodate future demand, particularly on I-80 between mileposts 66 and 173 and between 234 and 317.
- **Inclement Weather:** Substantial capacity is needed to address shortages during weather closures. This is particularly needed on I-80 between mileposts 234 and 317, and between mileposts 317 and 365.

Ongoing Efforts

WYDOT continues to prioritize truck parking improvements by:

- **Expanding Parking Capacity:** Developing new facilities and expanding existing ones to meet current and future demand.
- **Implementing Intelligent Transportation Systems (ITS):** Utilizing technology to provide real-time information on parking availability and road conditions.
- **Collaborating with Stakeholders:** Engaging with local communities, trucking associations, and federal agencies to develop comprehensive solutions.

These efforts reflect WYDOT's commitment to enhancing safety, supporting the trucking industry, and ensuring efficient freight movement along Wyoming's vital transportation corridors.

Truck Parking Location Evaluation

While truck parking is available throughout the North/West Passage corridor, each North/West Passage member-state has identified areas where truck parking demand and capacity are not evenly balanced. The evaluation of these state-identified truck parking issues overlaid with the Chapter 2 hub analysis travel bands may provide additional insights on:

- Why truck parking issues may persist in areas where significant truck parking already exists, and
- Truck parking availability and issues along their borders.

Select findings from this overlay evaluation are provided in the following subsections along the corridor from west to east.

Washington

When comparing the findings from various truck parking studies and initiatives conducted by Washington State with the truck parking location and truck travel time analyses in this project, two key observations emerge:

- Undesignated truck parking occurs even in areas with a dense supply of designated truck parking, and
- A persistent undesignated truck parking hotspot exists east of Seattle along I-90.

The locations marked as dense on the truck parking location map (Figure 24) overlap with identified undesignated truck parking clusters (Figure 28 and Figure 29). This may suggest that the existing truck parking supply is located in areas of high demand, even though it is still insufficient. It could also indicate that truck drivers tend to seek out designated parking locations but are forced to park in undesignated areas when no spaces are available.

As highlighted in the truck travel time map, trucks traveling from locations such as Boise can reach Seattle within a day's drive. However, many drivers choose to park outside Seattle to avoid traffic or wait for their scheduled pick-up/drop-off windows. When considering solutions for truck parking in these hotspot areas, it is essential to understand the specific types of truck parking needs in those regions.

Idaho

For Idaho, Figure 30 demonstrates that where I-84 enters western Idaho has a high density of truck parking facilities. Despite having a significant number of truck parking facilities, the Idaho Transportation Department has highlighted this corridor as one with truck parking capacity needs (Figure 25). This is understandable, as a significant number of trucks are likely to park in this region as they approach the end of their 1-day HOS regulations. As seen in Figure 30, trucks departing from Seattle and heading east at the beginning of their HOS would likely need to stop and park along I-84 in Idaho.

Similarly, truck drivers who begin their HOS in Billings, MT and then drive west may also face expiring HOS in this area and need to find available parking along I-84 in Idaho (Figure 31). This convergence illustrates the high truck parking demand that is seen along this corridor and explains why, despite there being significant parking resources already available, ITD still finds there to be a need for greater truck parking capacity in the area.

Figure 30: Truck Parking Locations 1-day Truck Travel Time East from Seattle, WA

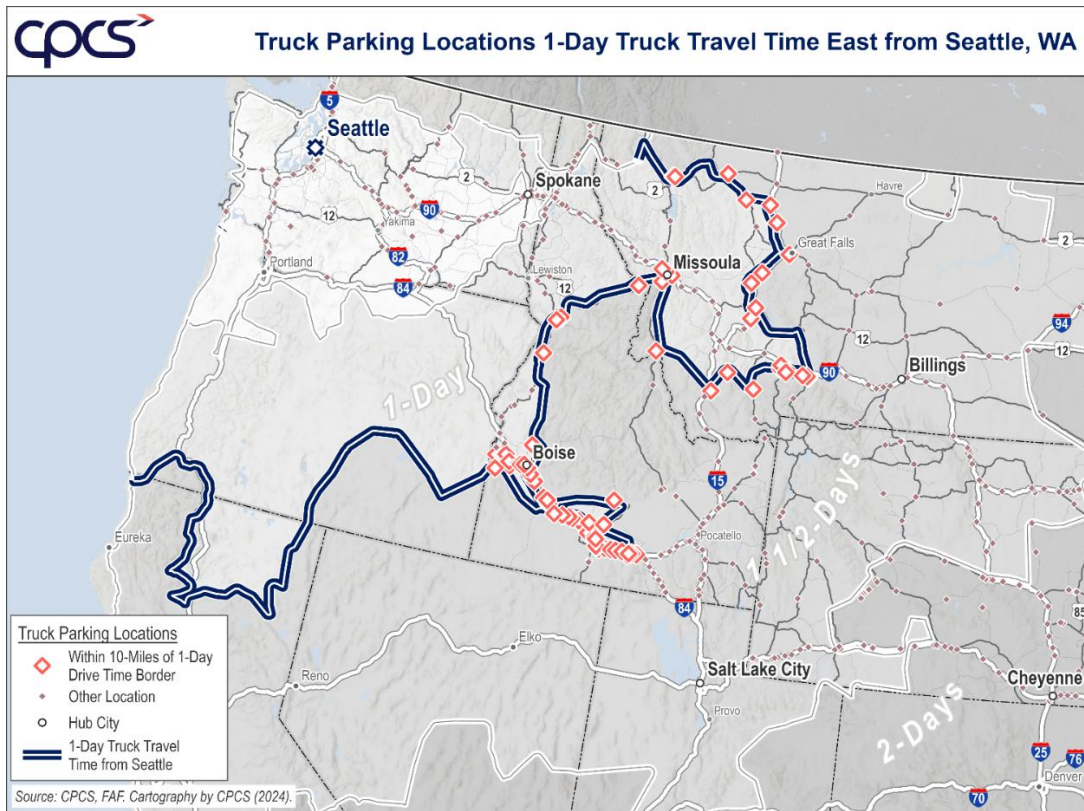
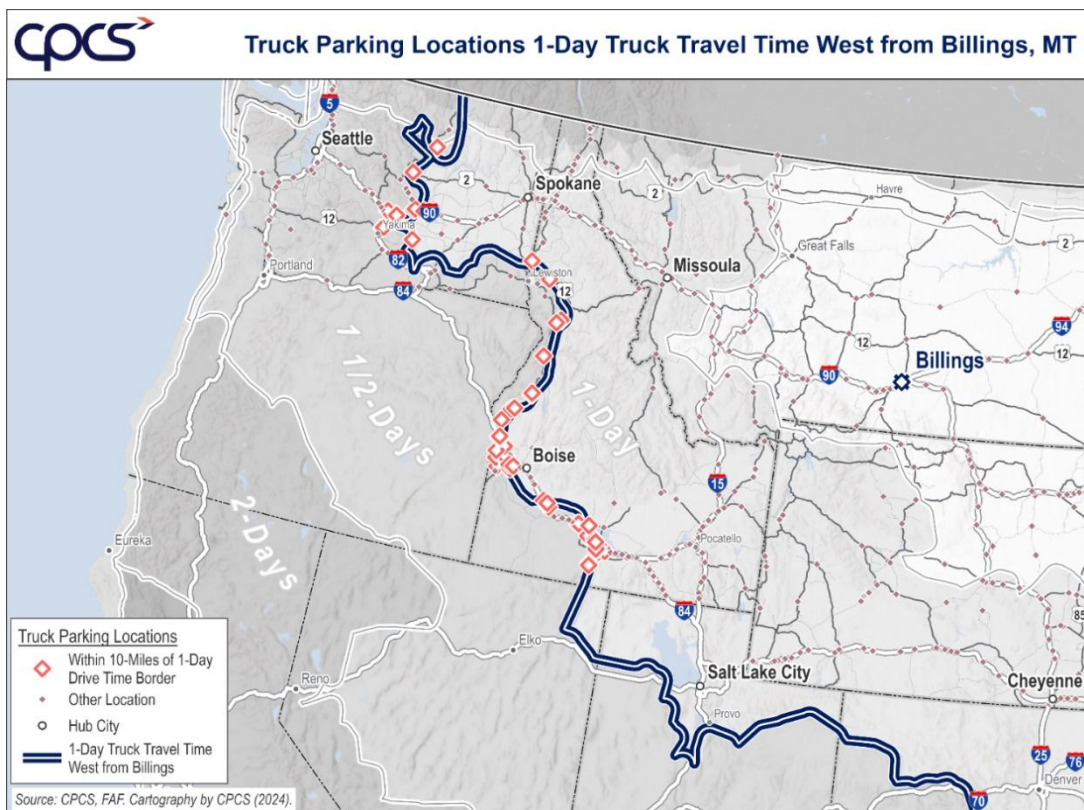


Figure 31: Truck Parking Locations 1-Day Truck Travel Time West from Billings, MT



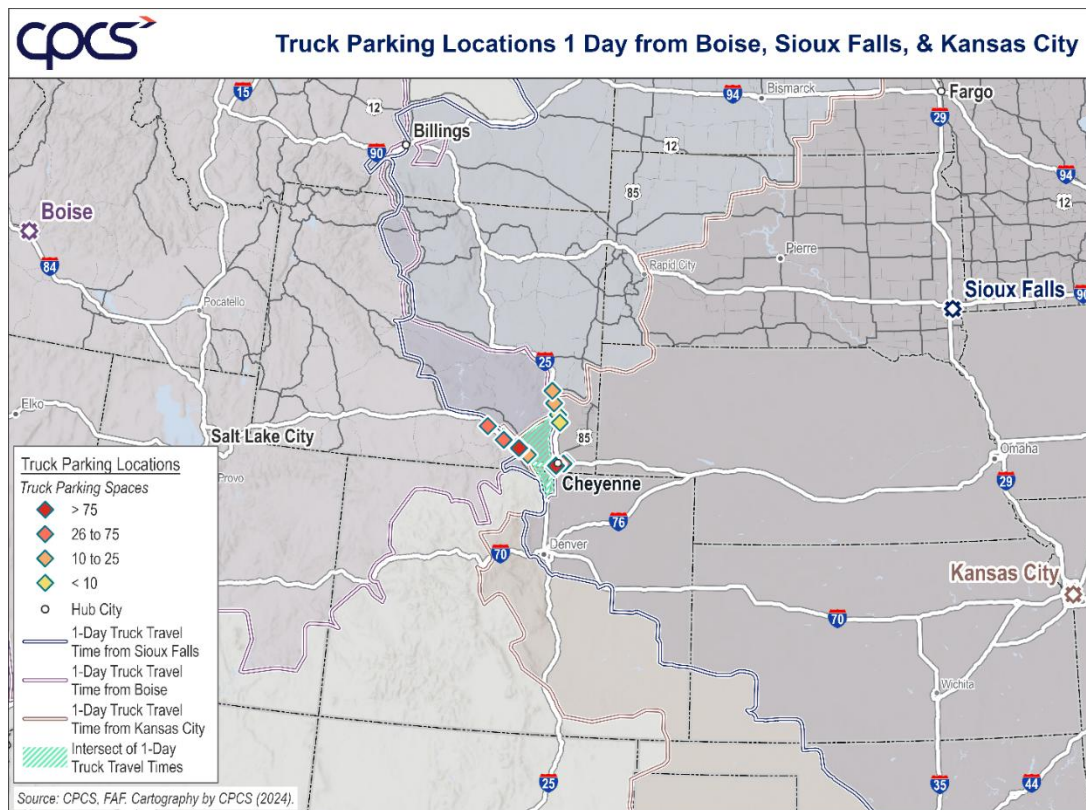
Montana

Western Montana also sees increased truck parking demand from drivers departing Seattle at the beginning of their HOS. In recent truck parking studies, Montana reported that the areas of Three Forks and Butte have a need for increased truck parking capacity. Trucks departing from Seattle (Figure 8) and Cheyenne (Figure 14) are also likely to need parking in this area, based on their 1-day drive bands.

Wyoming

In Wyoming, studies have identified a need for additional truck parking capacity in several areas of the state. This includes the area near Cheyenne between mileposts 317 and 365, which was ranked as the second highest improvement priority. This section of I-80 aligns with the end of a 1-day travel band for drivers departing from Boise, Sioux Falls, and Kansas City (Figure 32). As seen, where these drive bands converge there are corresponding truck parking facilities along the major highways and interstates to accommodate truck parking demand. The convergence of these bands in this location illustrates why increased capacity may be required, particularly during adverse weather conditions when highways are closed to trucks.

Figure 32: Overlay of Truck Parking Locations and Boise, Sioux Falls, and Kansas City Kansas City 1 Day Drive Bands



North Dakota

Further east in the corridor, North Dakota has found that Cass County and the Fargo area experience heightened truck parking activity. In the travel band maps, drivers heading west from Chicago are likely to reach the end of their 1-day HOS near Fargo in Cass County (Figure 19), and drivers from Minneapolis reach it at the ½ day point (Figure 18). This may explain the heightened truck parking activity that is noted in the region. However, Cass County has a relatively low truck parking demand to

capacity ratio (Figure 27), indicating that the existing truck parking facilities are adequate for the current levels of demand.¹³

South Dakota

In South Dakota, research has indicated that certain rest areas experience excessive demand, particularly overnight.¹⁴ The Wasta eastbound rest area is one such site, and it sits at the edge of the 1-day drive band for drivers travelling from Missoula and Kansas City. Similarly, the Chamberlain rest area on I-90 sits at the edge of the 1-day drive band for drivers heading west from Chicago. This rest area also reportedly experiences overnight crowding.

Minnesota

In the eastern-most portion of the North/West Passage corridor, Minnesota has identified truck parking hot spots in prior research. Truck parking facilities south of Minneapolis have been identified as being over capacity. The Minnesota legislature approved funding for truck parking projects in fiscal year 2025. Funding is included for land acquisition, predesign, design and construction of expanded truck parking at Big Spunk in Avon. This location aligns with the 1-day drive band for drivers heading east from Billings.

¹³ North Dakota Freight and Rail Plan, 4-36. https://www.dot.nd.gov/sites/www/files/documents/construction-projects/NDDOT_FinalFRP_Jan2023.pdf

¹⁴ South Dakota Department of Transportation, SDDOT Rest Area and Truck Pullout Truck Parking Analysis

5 Key Findings and Next Steps

Key Findings

Findings

As demonstrated in this report, significant efforts are underway in the North/West Passage to identify and understand truck parking issues. States are also making progress within their borders to implement solutions. The findings from state DOT plans and studies, stakeholder consultations, and the travel time analysis presented in this research, highlight insights into the current state of truck parking in the NWP and offer a foundation for further exploration, partnership, and targeted action. The findings follow around key themes of:

- Single, multi-state truck parking inventory
- Activity hubs and market proximity
- Correlation between hot spots and travel bands

Single Multi-state Truck Parking Inventory

This research project established a single truck parking inventory for the 7-state NWP region. Having a single, unified inventory of public and private truck parking facilities and spaces is of immense value for transportation planning, freight operations, and regional economic development activities. This comprehensive database enables more effective coordination among state agencies, private stakeholders, and trucking companies by providing a centralized resource that supports informed decision-making.

The inventory, as presented in Chapter 3, also enables the comparison and contrast of number of truck parking facilities and spaces and facility ownership. Unsurprisingly, there are fewer facilities and spaces in the most rural areas of the corridor. But what may be new knowledge is the potential origins and markets that truck parking in states like Idaho and Wyoming are designed to serve. Wyoming's inventory also has a much higher percentage of truck parking facilities provided by the public sector than other states, likely in response to the state taking a proactive approach to the seasonal weather issues that persist along the I-80 corridor. The highest number of private facilities and spaces is in Minnesota, followed by Idaho; two states at the crossroads of deep-water and inland port activities and the Great Plains 1-day HOS travel bands.

Activity Hubs and Market Proximity

The vast geography of the NWP corridor underscores the importance of understanding travel distances and traffic flow patterns when planning for truck parking, including:

- **Long Distances and Multiday Trips:** The NWP region includes vast stretches of sparsely populated land, particularly in the Upper Great Plains, where major cities and key markets are separated by hundreds of miles. The location of freight distribution centers, inland ports, and deep-water ports proximate to the corridor and these markets require drivers to travel long distances, and properly situated parking at ½- and 1-day travel intervals is essential. In some cases, multiday trips are required from origin to destination, and parking solutions that cater to the needs of drivers on multiday trips are important. Aligning truck parking facilities along high-use corridor segments can mitigate the challenges posed by such distances. This is evidenced by the large volume of truck parking located in the Boise and Cheyenne regions, and west of Rapid City.

- **Traffic Flow Patterns:** Truck drivers often traverse multiple states during a single trip. Parking needs vary based on corridors used, state-specific regulations, and seasonal demands. These patterns offer insights into high-demand areas, enabling better resource allocation. The distribution of truck parking facilities in the NWP is linked to the fact that I-80 generally carries higher truck volumes than I-90/94 in this region. More truck parking facilities are located along I-80, followed by I-90, and then I-94, the northernmost east-west corridor in the US.

Correlation Between Identified Hot Spots and Travel Bands

While this research project included the best available, unified data across the NWP corridor, the assessment conducted was, in part, qualitative, and focused primarily on 1) identifying patterns and 2) noting if there were apparent correlations between those patterns observed in Chapter 4 and the detailed, data-driven truck parking evaluations conducted by state DOTs.

- **A comparison of state-identified parking hotspots to the travel band reveals there are correlations between the results.** Notably, the correlations exist where states have identified truck parking needs/hot spots and ½- or 1-day travel bands overlap. A clear example of this is in the Greater Cheyenne area, that is at the confluence of 1-day travel distance from Boise, Sioux Falls, and Kansas City. The WYDOT has placed this section of I-80 on their list of future priority improvements. I-80 in Idaho also exhibits significant areas of undesignated parking and is at the confluence of 1-day travel bands from Seattle and Cheyenne. The overlap in these regions – in particular, those that are immediately adjacent to neighbor states – underscores the need for a coordinated approach to ensure resources are directed toward high-priority locations, maximizing the impact of investments.
- **Proximity to Major Markets and Ports:** The lack of intermediate parking options between remote areas and major freight destinations highlights the need for infrastructure investments in strategic locations. For instance, drivers hauling freight to inland ports in the Midwest or deep-water ports along coastal areas face unique challenges that require coordinated planning across states. By improving access to parking near these high-traffic hubs, the region can better support the seamless movement of goods across the corridor. This is evidenced by the large volume of truck parking facilities north and south of Seattle, surrounding the Ports of Seattle and Tacoma, but the high occurrences of undesignated parking in these areas in WSDOT truck parking analyses. This is reflective of broad industry trends that truck parking capacity is most constrained but in highest demand in urban areas, mountain passes, border crossings, and near ports and industrial areas. Some of these areas are particularly difficult to improve due to high real estate costs and pushback from local jurisdictions on increasing truck parking capacity.

Truck Driver Perspectives and Decision-making

For state DOTs to effectively address the challenges of truck parking, it is essential to consider the nuanced decision-making processes of truck drivers. As this research consulted with the trucking industry to understand how drivers manage meeting their HOS requirements while accomplishing their daily workload, a few key findings related to driver perspectives are included here. These insights help ensure that solutions are practical, efficient, and aligned with the drivers' needs, ultimately enhancing safety, compliance, and overall satisfaction. Key considerations that states should incorporate into truck parking planning include:

- **Unfamiliar Geography.** Truck drivers often operate across regions far from their home base, encountering areas where they are unfamiliar with parking options or local regulations. Without reliable information, drivers may waste valuable time and fuel searching for suitable parking or resort to unsafe practices.
- **Hours of Service (HOS) Compliance.** Compliance with HOS regulations, which dictate the maximum number of hours a driver can operate, is a critical concern for truck drivers and carriers.

Lack of available parking may force drivers into unsafe or non-compliant behaviors, such as parking on highway shoulders or exceeding legal driving hours to reach a parking location. Addressing this issue requires a multi-pronged approach which could include strategic expansion of parking facilities in high-demand corridors, coordinated efforts across jurisdictions to ensure that parking solutions align with drivers' typical routes and schedules, and leveraging technology to notify drivers in advance of parking locations near their route as they approach HOS limits.

- **Amenities for Long-Haul Drivers.** Truck drivers, particularly those on long-haul routes, spend extended periods away from home and require safe, comfortable facilities to rest and recharge. Providing these amenities is not only a matter of safety but also a driver retention strategy in an industry facing significant labor shortages.

Findings Conclusion: Examine Truck Parking as a Corridor

The findings from this analysis highlight that truck parking issues cut across the NWP corridor and affirm there could be benefits to a corridor-wide approach to truck parking planning, implementation, and operations. The importance of addressing truck parking as a cohesive corridor rather than isolated state-level initiatives cannot be overstated; a corridor-wide approach can amplify the benefits of individual state efforts.

Coordinated Planning

Coordinated planning, and development of a unified strategy among the NWP states, can:

- **Build awareness:** While this research assessed patterns, it did not quantify needs and issues across the corridor in a holistic manner. Coordinated planning and a unified investment and operations strategy can further highlight truck parking hot spots in the corridor and build awareness (and consensus) on what and where key investments may be needed.
- **Reduce Parking Shortages:** Addressing shortages collaboratively enables truck drivers to comply with HOS regulations, improving overall corridor safety, and efficiency.
- **Enhance Driver Safety:** By minimizing the need for unsafe parking practices, such as parking on highway shoulders, a consistent approach can protect both drivers and the traveling public.

Targeted Infrastructure Investments

A multi-state strategy can identify critical areas for new truck parking facilities or information solutions, ensuring infrastructure investments are both strategic and impactful. Investment recommendations included in state DOT truck parking studies are remarkably consistent across NWP states. A corridor-wide strategy provides the added benefit of reinforcing the types of targeted investments that should be made individually and also identifying investments that could be made collectively.

Top investment recommendations from state DOT truck parking studies, that could also be considered by the corridor as a whole, include:

- **Optimize and Enhance Existing Facilities:** Improve amenities and expand capacity at current truck stops and rest areas to better serve drivers' needs.
- **Develop New Truck Parking Locations:** Identify and construct new truck parking facilities in high-demand areas to alleviate congestion and provide safe resting places for drivers.
- **Implement Real-Time Parking Information Systems:** Deploy technology to provide drivers with up-to-date information on parking availability, helping them plan rest periods more effectively.
- **Foster Public-Private Partnerships:** Collaborate with private sector stakeholders to develop and manage truck parking facilities, leveraging shared resources and expertise.

An added investment-related benefit of a corridor-wide truck parking strategy is that the region can lobby for federal grants to support and improve truck parking in the region as a collective.

Integrated Operations

Freight activity knows no jurisdictional boundaries and coordinated efforts among the NWP states to establish uniform policies and solutions that improve operations and provide clarity for truck drivers in the corridor include:

- **Standardized Parking Signage:** Clear and consistent signage across state lines can enhance driver awareness and usability.
- **Shared Information Systems:** Multi-state information-sharing platforms, including mobile applications, can assist truck drivers in locating parking spots regardless of their state of travel.
- **Region-Wide Apps:** Technology-driven tools can provide real-time availability and booking options, enabling seamless navigation across the corridor, no matter what state a driver is in.

Next Steps

Based on the key findings, the following next steps/actions are recommended for the NWP to advance to broaden understanding of truck parking issues and opportunities in the corridor, and to begin to build a deeper coalition for action.

Share Results within North/West Passage States

A broad body of work was established during this research project including 1) this Report of research and findings, 2) a detailed inventory that synthesizes in a single place the 7-state NWP public and private truck parking facility inventory, and 3) a repository of publicly available truck parking-related studies developed by the NWP states. This information should be shared broadly among NWP states; not simply the members of the Truck Parking Roundtable, but all staff within each state that “touch” truck parking to establish a common understanding of the system and where truck parking issues exist.

Share Results with the Trucking Industry

For truck drivers and logistics companies, the inventory and information consolidated as part of this research offers insights that could result in how they use the system and how they engage with states when they identify truck parking issues. By knowing the location and capacity of truck parking facilities across multiple states, drivers can better plan their routes, manage rest breaks in compliance with Hours of Service (HOS) regulations, and avoid unsafe parking situations, such as parking on highway shoulders. This can reduce the risks of accidents and improve overall roadway safety. Additionally, having a detailed understanding of parking options enhances supply chain reliability by minimizing delays caused by drivers spending excessive time searching for parking.

Continue Collaboration on Truck Parking Topics in the North/West Passage

Freight movements regularly span multiple states, and this research should be used by the NWP as a shared resource, and a collaboration tool, to facilitate the alignment of planning, policies, resource allocation, and infrastructure development across the NWP states. While this research project was largely qualitative in nature, by bringing the corridors’ truck parking inventory and an identification of select top needs in each state together, fruitful discussions among NWP on shared interests and “what comes next” can begin. Actions that the NWP should explore to build on this research includes:

- Convening Quarterly discussions focused on the truck parking initiatives in each state, for broad awareness.

- Developing a unified strategy – holistic approach – to address truck parking challenges that transcend individual state boundaries.
- Examining hot spots/issues in border regions.
- Discussing detailed investment plans underway related to information, expansion and other capital initiatives to identify potential shared solutions (especially in border regions).
- Exploring the strategic deployment of truck parking technology and enhancements, like truck parking information management systems (TPIMS) or electric charging stations, as a corridor,
- Engaging the private sector to understand their capital investment plans across the corridor and where they have an interest in advancing public private partnerships.
- Advancing truck parking grant applications as a corridor (infrastructure and/or regional TPIMS).

Truck parking is an area that will benefit from holistic thinking across the corridor. A unified strategy can help make the best use of existing public infrastructure, harness private capital, and leverage the 7-state membership to advocate for the region to federal and other stakeholders to make targeted truck parking investments. This holistic approach will also result in contributing to economic growth, enhanced safety, and environmental sustainability throughout the corridor.

Appendix A Freight Task Force Roundtables

Roundtable 1



Truck Travel Times and Need for Hours-of-Service Truck Parking Assessment

Roundtable 1

May 13, 2024



Introductions

- Name
- Organization
- Your role as it pertains to truck parking

Idaho
Minnesota

Montana
North Dakota
South Dakota

Washington
Wyoming



Agenda

Background of Project

Review, Refine, and Approve Proposed Scope of Work

Identify Key Regional Freight Hubs

Identify Appropriate Trucking Industry Contacts

Next Steps



Project Background

Project Purpose: *Articulate real-world truck travel times in the NWP and, based on the origins, destinations, and durations of trips, assess the need for truck parking along the region's key corridors to meet federal hours-of-service requirements.*

Project Components:

- Data Collection
- Data Analysis
- Stakeholder Engagement



Agenda

Background of Project

Review, Refine, and Approve Proposed Scope of Work

Identify Key Regional Freight Hubs

Identify Appropriate Trucking Industry Contacts

Next Steps



Proposed Scope of Work

Data Collection

- Download Freight Analysis Framework (FAF) – routing and travel times
- Collect truck parking data or shapefiles from NWP member-states

Data Analysis

- Define a network and identify key regional freight hubs
- Utilize FAF data to assess truck travel times
- Produce summary maps
- Collect information on parking assets in hotspots
- Identify key locations where additional parking is needed

Stakeholder Engagement

- Convene roundtable meetings with select Freight Task Force Members
- Develop a Consultation Guide
- Conduct consultations with trucking stakeholders

Project Milestones

Task	Name	Month					
		April	May	June	July	Aug	Sept
1	Project Management and Data Collection						
2	Stakeholder Engagement						
3	Data Analysis						
4	Reporting Back						
Key Deliverables by Task							
1	Identify Freight-Task Force Participants	●					
	Data Collection	●	●				
2	Roundtable Meeting 1		●				
	Roundtable Meeting 2				●		
	Roundtable Meeting 3						●
	Develop a Consultation Guide		●				
	Conduct Consultations with Trucking Stakeholders		●	●			
3	Define a Network		●				
	Identification of Key Regional Freight Hubs			●			
	Utilize FAF5 Data to Assess Truck Travel Times				●		
	Produce Summary Maps	●	●	●	●	●	
4	Produce Draft Summary Report					●	
	Produce Final Summary Report						●



Agenda

Background of Project

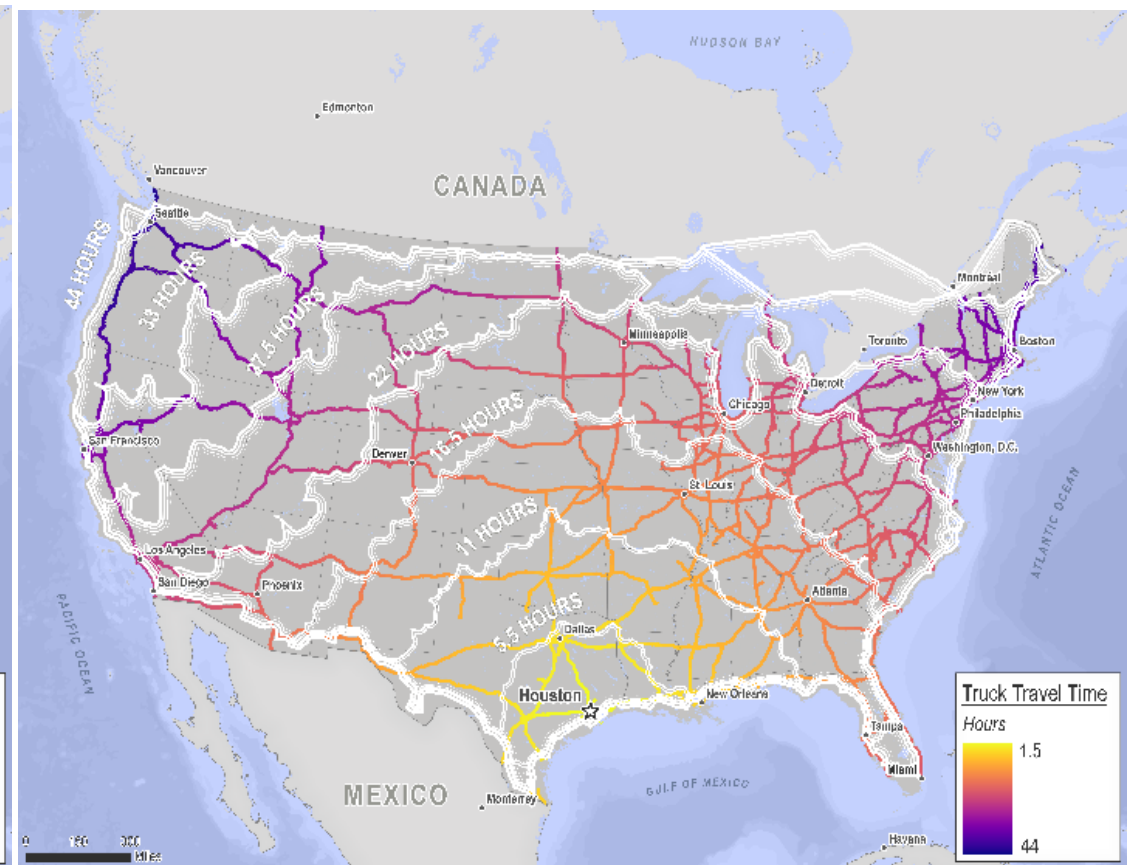
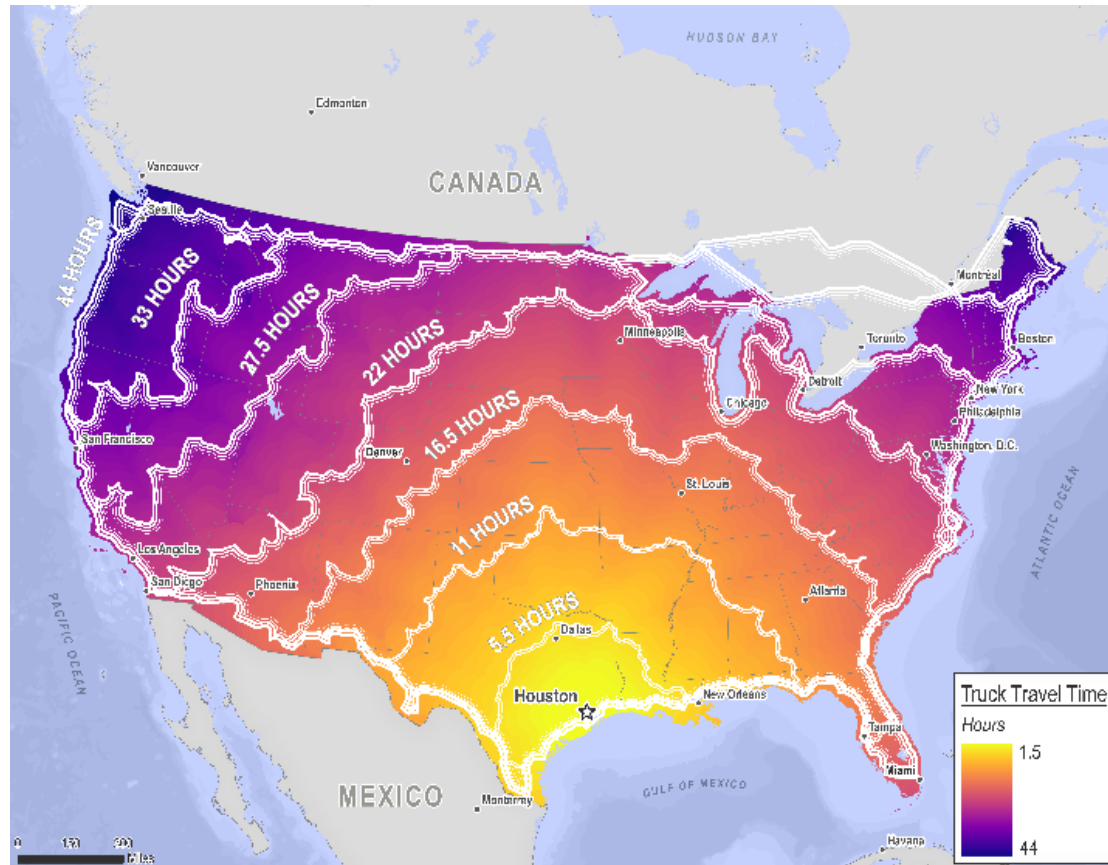
Review, Refine, and Approve Proposed Scope of Work

Identify Key Regional Freight Hubs

Identify Appropriate Trucking Industry Contacts

Next Steps

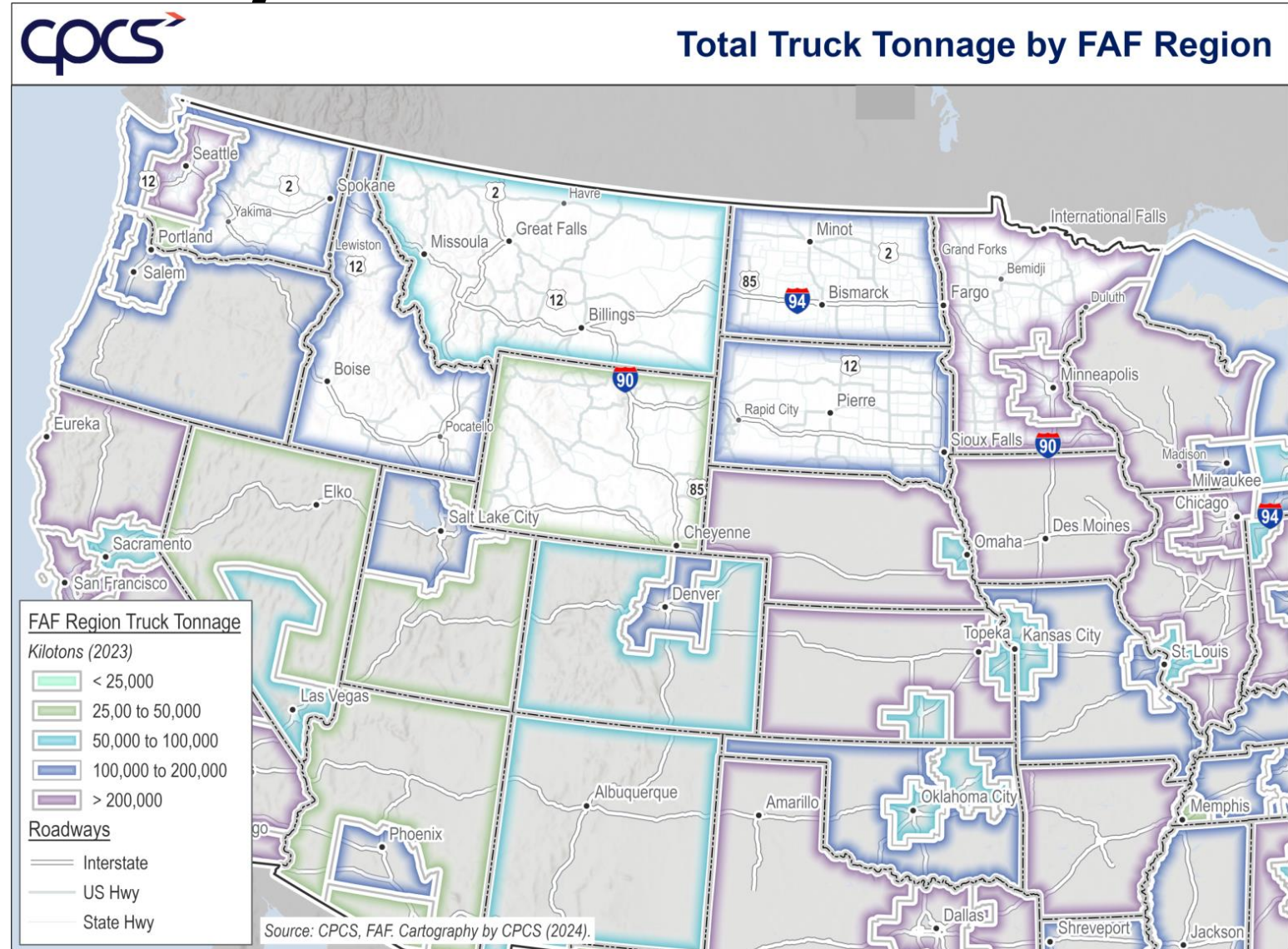
Example: Isochrone Maps of Truck Drive Time



Preliminary Data Analysis

- Total FAF truck tonnage

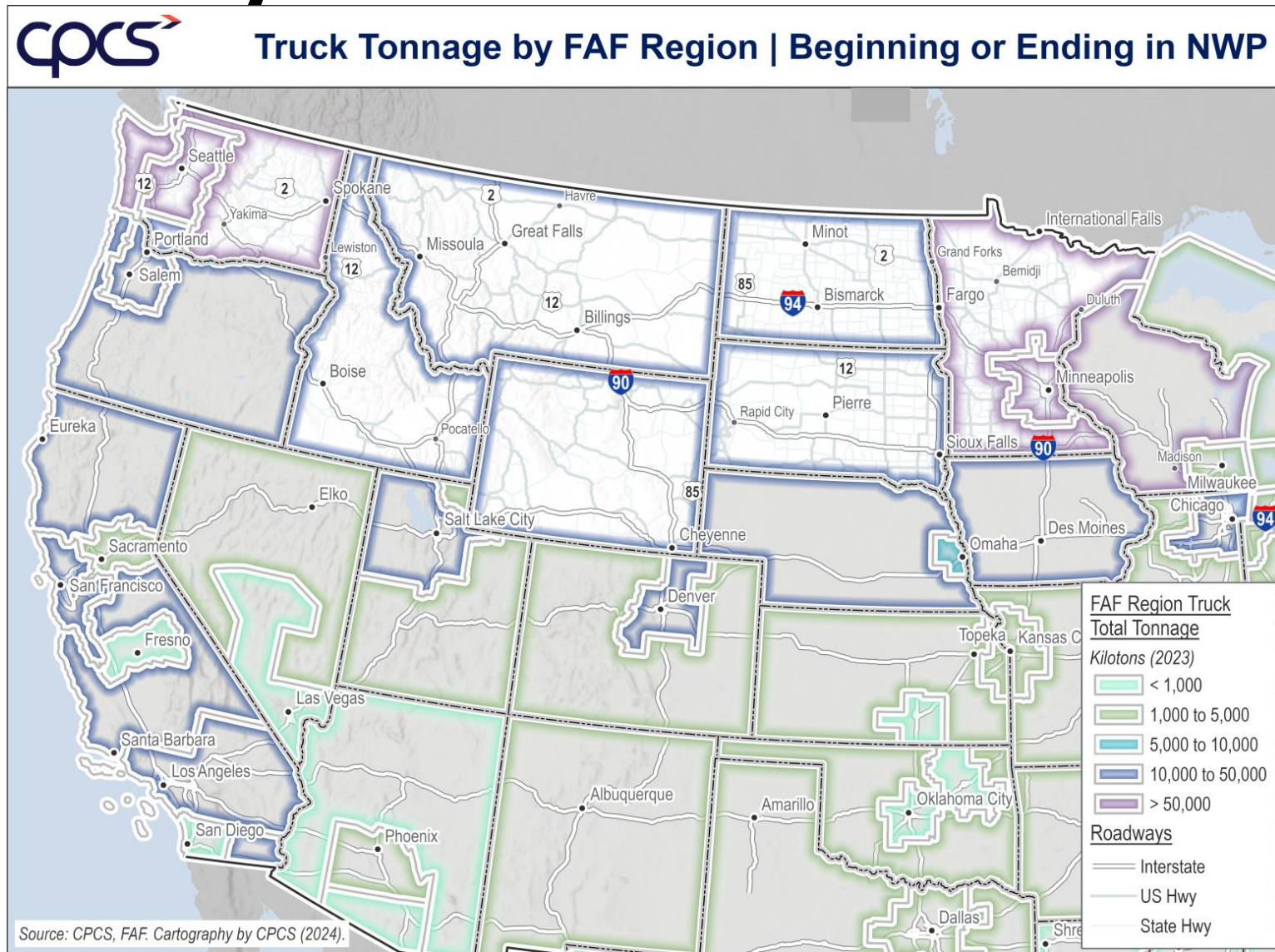
Color coding indicates lower/higher truck tonnage.



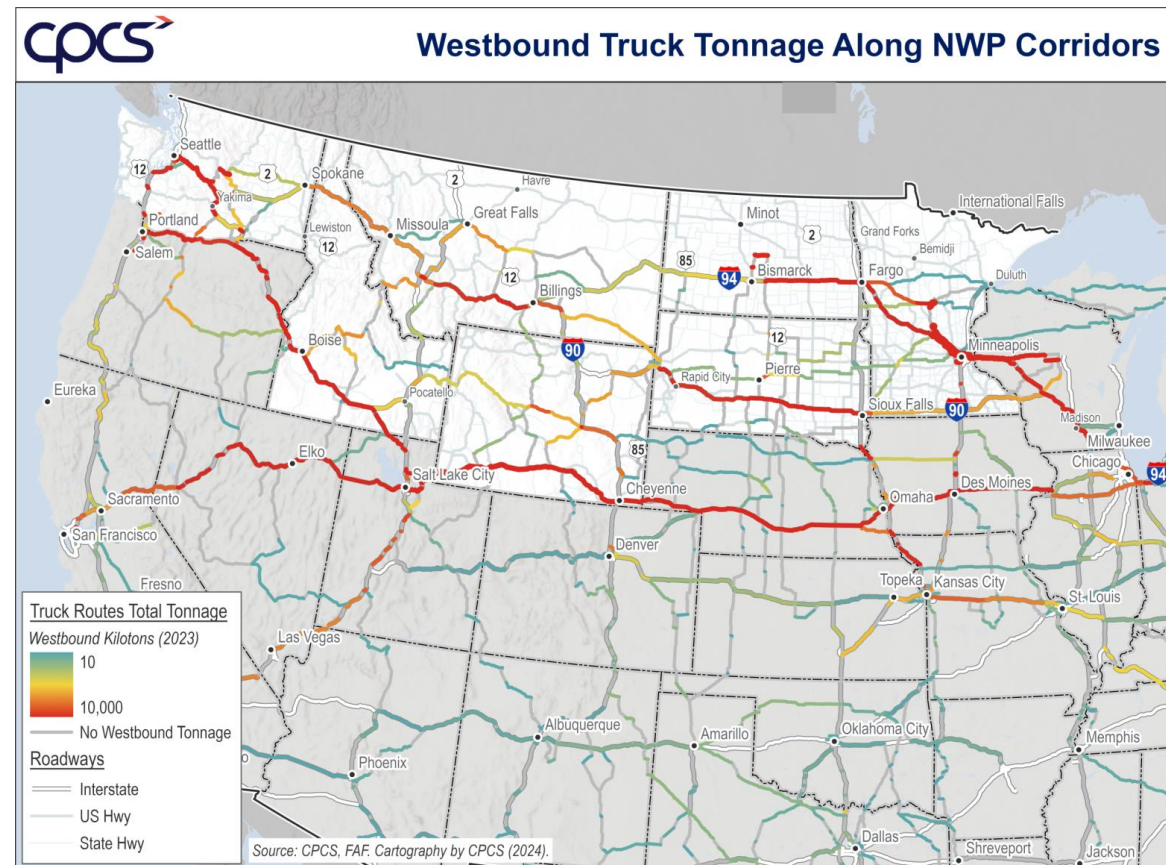
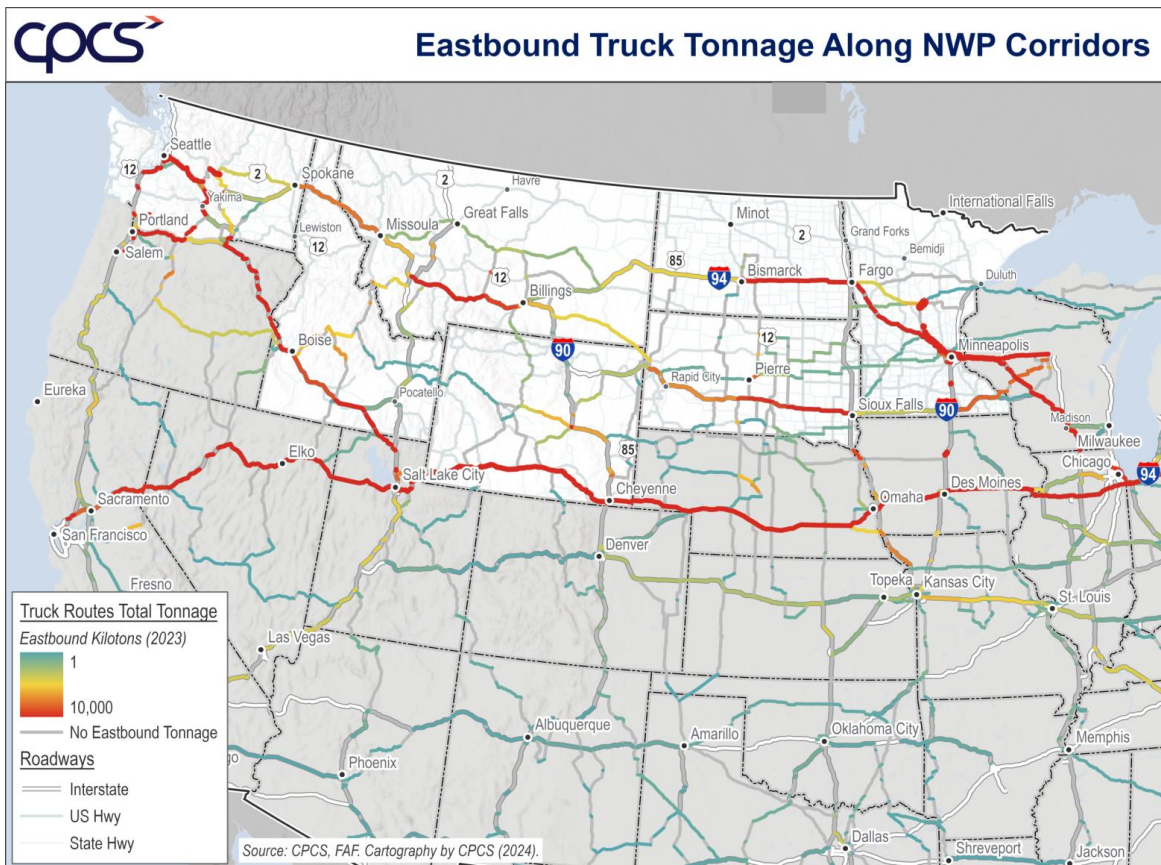
Preliminary Data Analysis

- FAF truck tonnage that **touches the NWP**

Color coding indicates lower/higher truck tonnage.



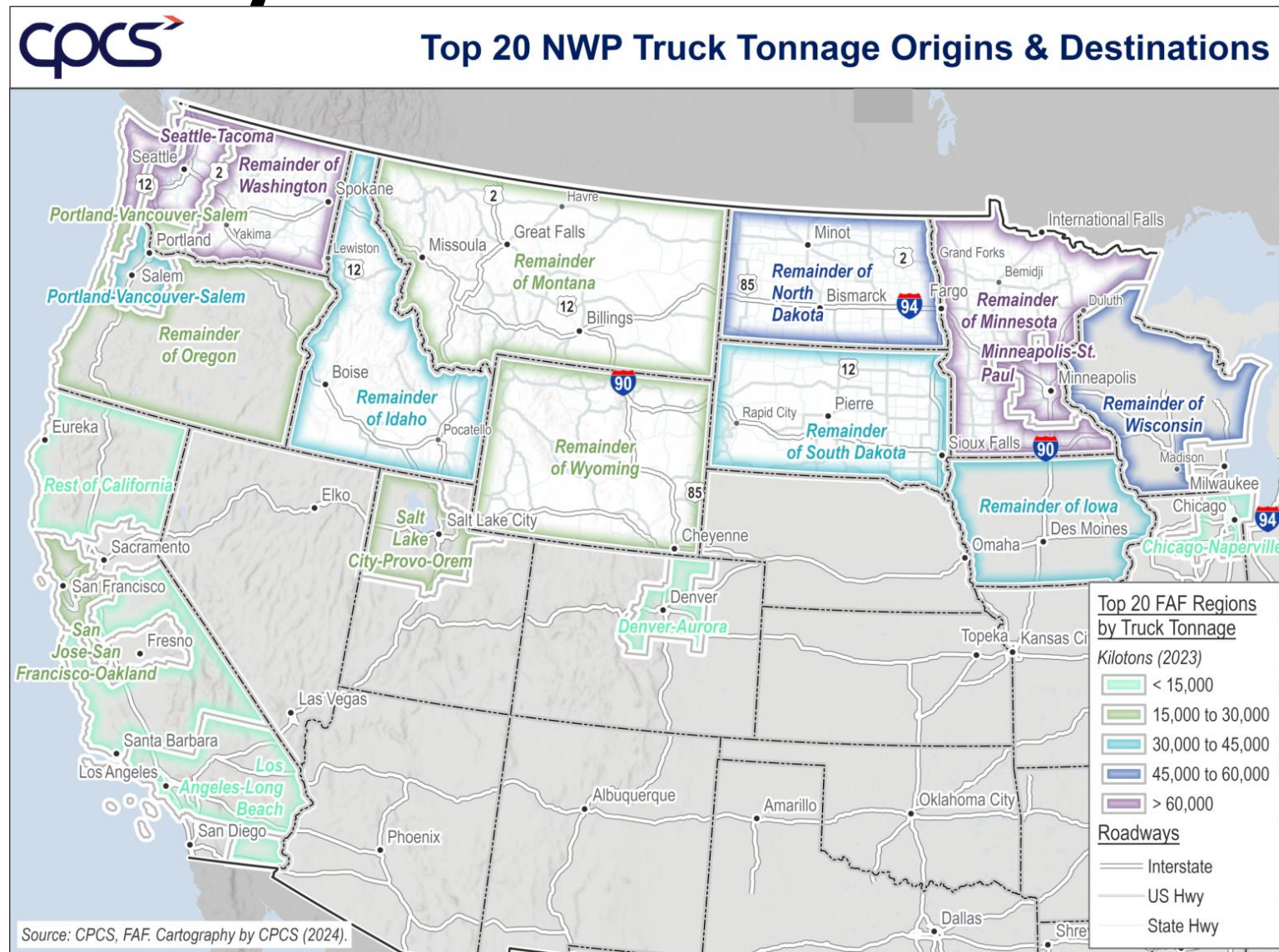
Preliminary Data Analysis



Preliminary Data Analysis

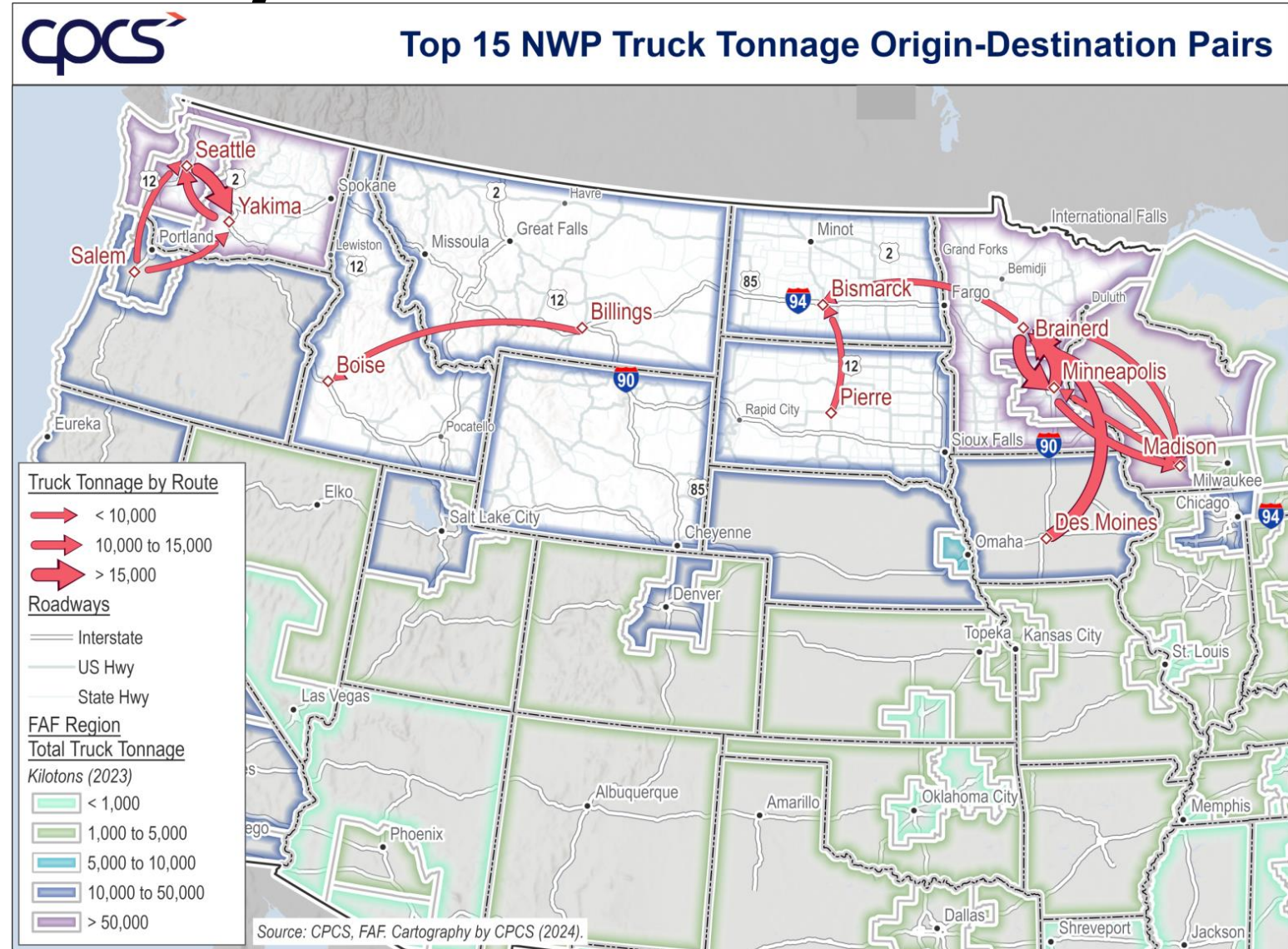
- FAF truck tonnage that touches the NWP
- Identification of regional hubs

Color coding indicates lower/higher truck tonnage.



Preliminary Data Analysis

- FAF truck tonnage that touches the NWP
- Identification of key trade lanes in the NWP



Color coding indicates lower/higher truck tonnage.



Agenda

Background of Project

Review, Refine, and Approve Proposed Scope of Work

Identify Key Regional Freight Hubs

Identify Appropriate Trucking Industry Contacts

Next Steps



Potential Consultation Targets

- Industry Stakeholders
- State Trucking Associations
- Other suggestions?



Agenda

Background of Project

Review, Refine, and Approve Proposed Scope of Work

Identify Appropriate Trucking Industry Contacts

Identify Key Regional Freight Hubs

Next Steps



Next Steps



States provide truck parking data

Minimum: Location of facilities
– shp file, preferred
Spaces, amenities, and other
information, optional



Conduct One-on-One Consultations

Conduct consultations with
appropriate trucking industry
contacts



Schedule Second Roundtable

To review initial findings of one-
on-one consultations and data
analysis



Contact Information

Dave Huft

Chair, NWP Steering Committee
South Dakota DOT
dave.huft@state.sd.us

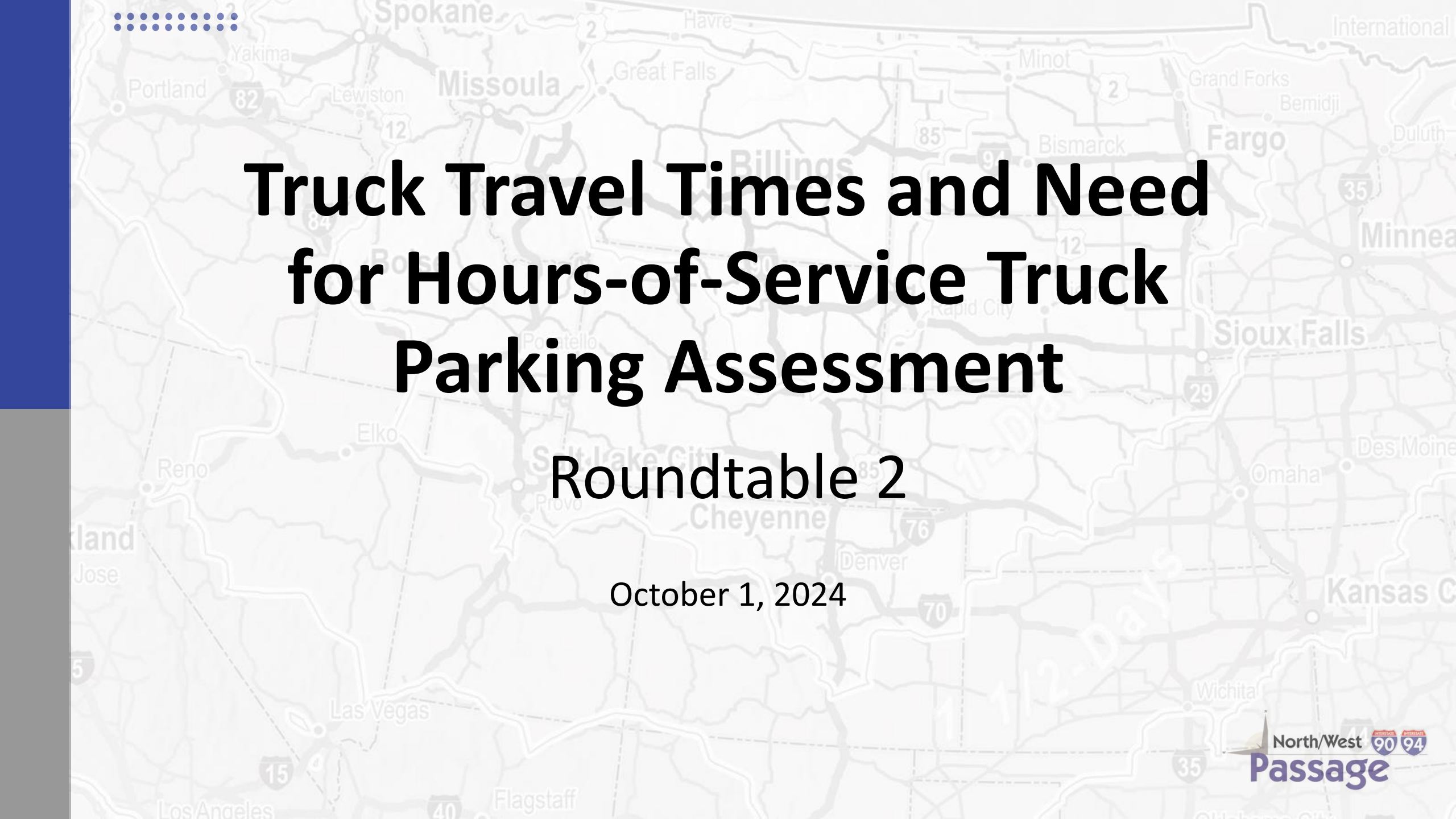
Erika Witzke

Consultant Project Manager
NWP Freight Task Force
ewitzke@cpcstrans.com

Sarah Morgan

Consultant Project Coordinator
NWP Freight Task Force
smorgan@cpcstrans.com

Roundtable 2



Truck Travel Times and Need for Hours-of-Service Truck Parking Assessment

Roundtable 2

October 1, 2024



Introductions

- Name
- Organization
- Your role as it pertains to truck parking

Idaho
Minnesota

Montana
North Dakota
South Dakota

Washington
Wyoming



Agenda

Project Background

Addressing Comments from Roundtable 1

Stakeholder Consultations and Findings

Regional Freight Hub Analysis

Next Steps



Project Background

Project Purpose: *Articulate real-world truck travel times in the NWP and, based on the origins, destinations, and durations of trips, assess the need for truck parking along the region's key corridors to meet federal hours-of-service (HOS) requirements.*

Project Components:

- Data Collection
- Data Analysis
- Stakeholder Engagement



Agenda

Project Background

Addressing Comments from Roundtable 1

Stakeholder Consultations and Findings

Regional Freight Hub Analysis

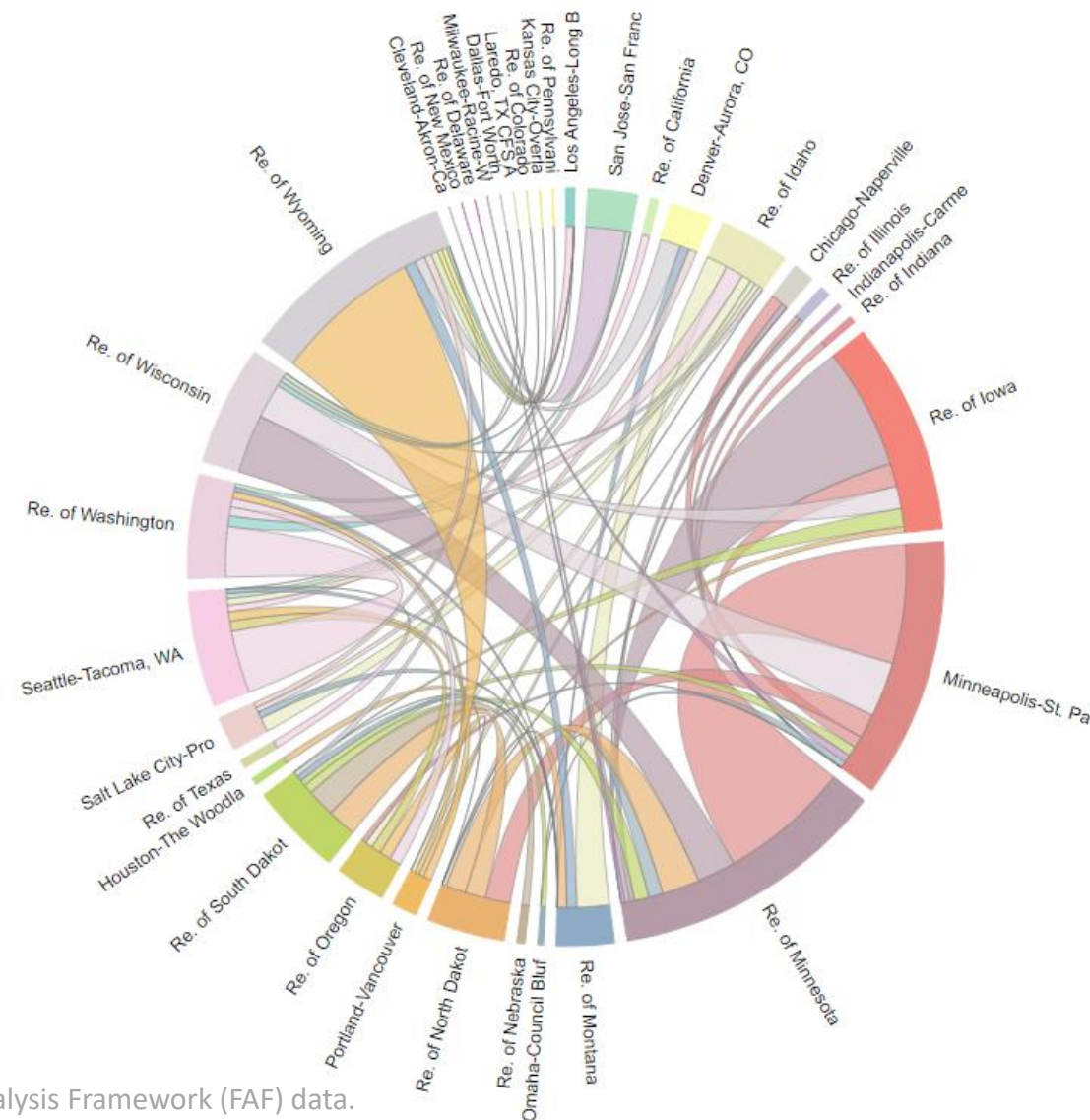
Next Steps

Comments from Roundtable 1

1. Identification of Hubs for Analysis

- The attendees were interested in understanding a longer list of potential city pairs.
- We expanded the analysis to include the top 100 O-D pairs that originate, are destined to, or pass through the NWP and changed the visualization from a traditional map with arrows to an interactive chord map.

O-D Pairs, Tons



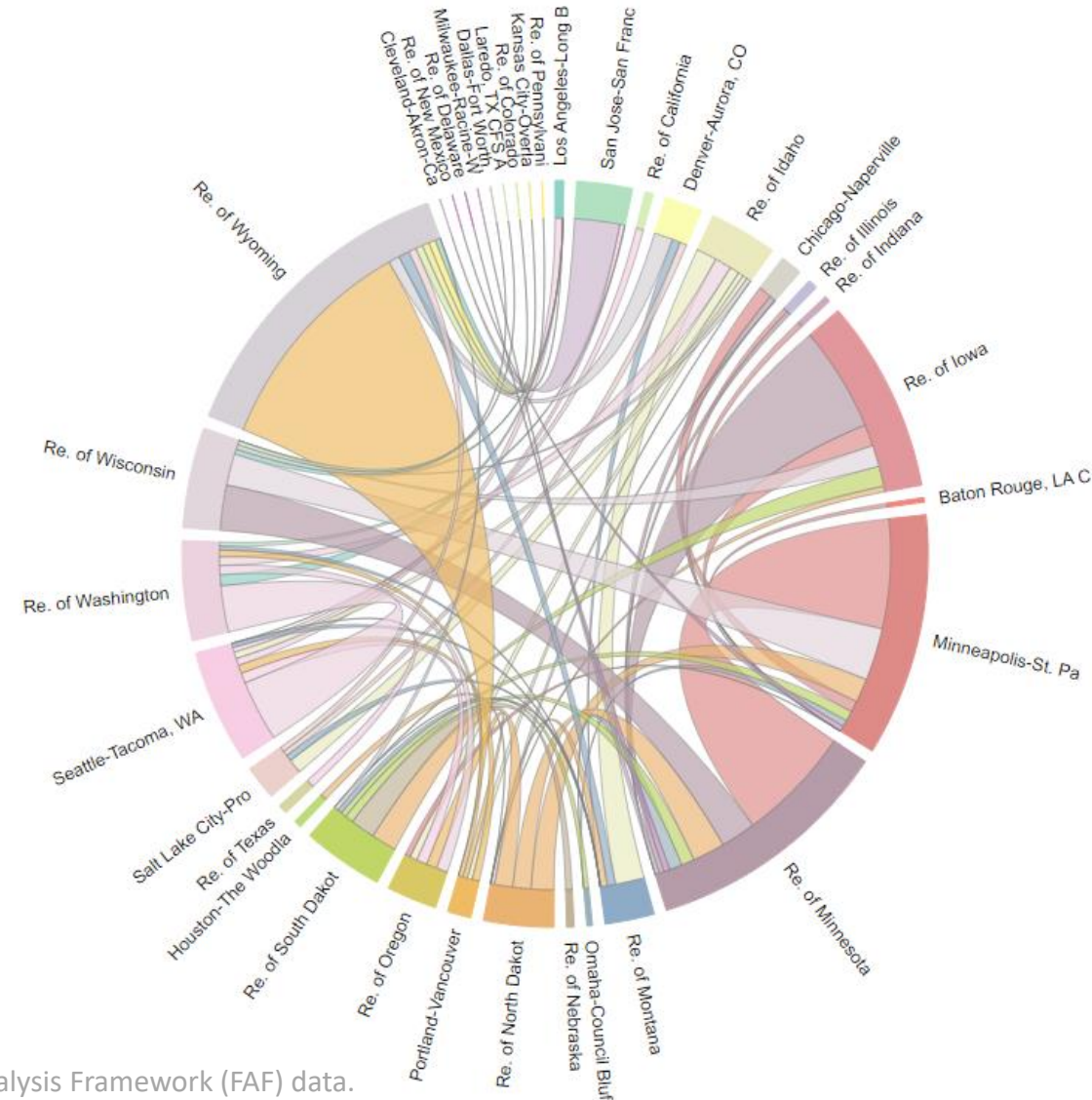
Source: CPCS analysis of FHWA Freight Analysis Framework (FAF) data.

Comments from Roundtable 1

O-D Pairs, Trucks

2. The O-D pairs are focused on tonnage and there are other ways to analyze the pairs, such as truck volume and truck count.

- All of our data is driven from FAF, which provides tonnage and truck count information.
- The routed truck count information contained within FAF has been validated as part of their development process.
- The project team discussed this internally and will trust the validation process performed by FHWA without the need for additional validation.



Source: CPCS analysis of FHWA Freight Analysis Framework (FAF) data.

Comments from Roundtable 1

3. Expanding O-D pairs to include Canada.

- The attendees noted there is a lot of traffic between certain Canadian cities and the NWP states.
- We discussed this and, because the data source is driven by FAF, we do not have the level of geographic detail required to incorporate Canadian cities into the analysis.





Comments from Roundtable 1

4. Truck GPS Data

- It was suggested that the project use truck GPS data to get a clearer picture of actual truck movements and their precise stops/starts.
- This level of detail and data acquisition is not feasible for the entire corridor given the project budget.



Comments from Roundtable 1

5. Incorporating disaggregated Freight Analysis Framework data

- We appreciate the states that have offered their disaggregated FAF data for use on this project.
- Unfortunately, because we do not have that level of data for all NWP states, we will do not plan to use it.
- It is important that we apply the same level of detail across the entire corridor.



Potential Applications/Expected Insights

- **Regional awareness** of how the NWP Corridor is used.
- **Identification of distribution hubs** unique to NWP geographic locations.
- **How truck drivers plan** their daily activities to meet HOS requirements.
- The locations of **truck parking facilities across the NWP Corridor.**
- A **corridor wide view** of potential truck parking needs.
- **Coordination points** for improving truck parking across the NWP.



Agenda

Project Background

Addressing Comments from Roundtable 1

Stakeholder Consultations and Findings

Regional Freight Hub Analysis

Next Steps



Completed Consultations

- **Kevin Hawley**, Wyoming Trucking Association
- **Allen Hodges**, Idaho Truckers Association
- **Kacey Heidrich**, North Dakota Motor Carriers Association
- **Dan Murray**, American Transportation Research Institute
- **Duane Williams**, Motor Carriers of Montana
- **Tilden Curl**, OOIDA Board Member + truck driver
- **Tom Weakley**, OOIDA (written submission)
- **Michelle Wells**, South Dakota Trucking Association (written submission)

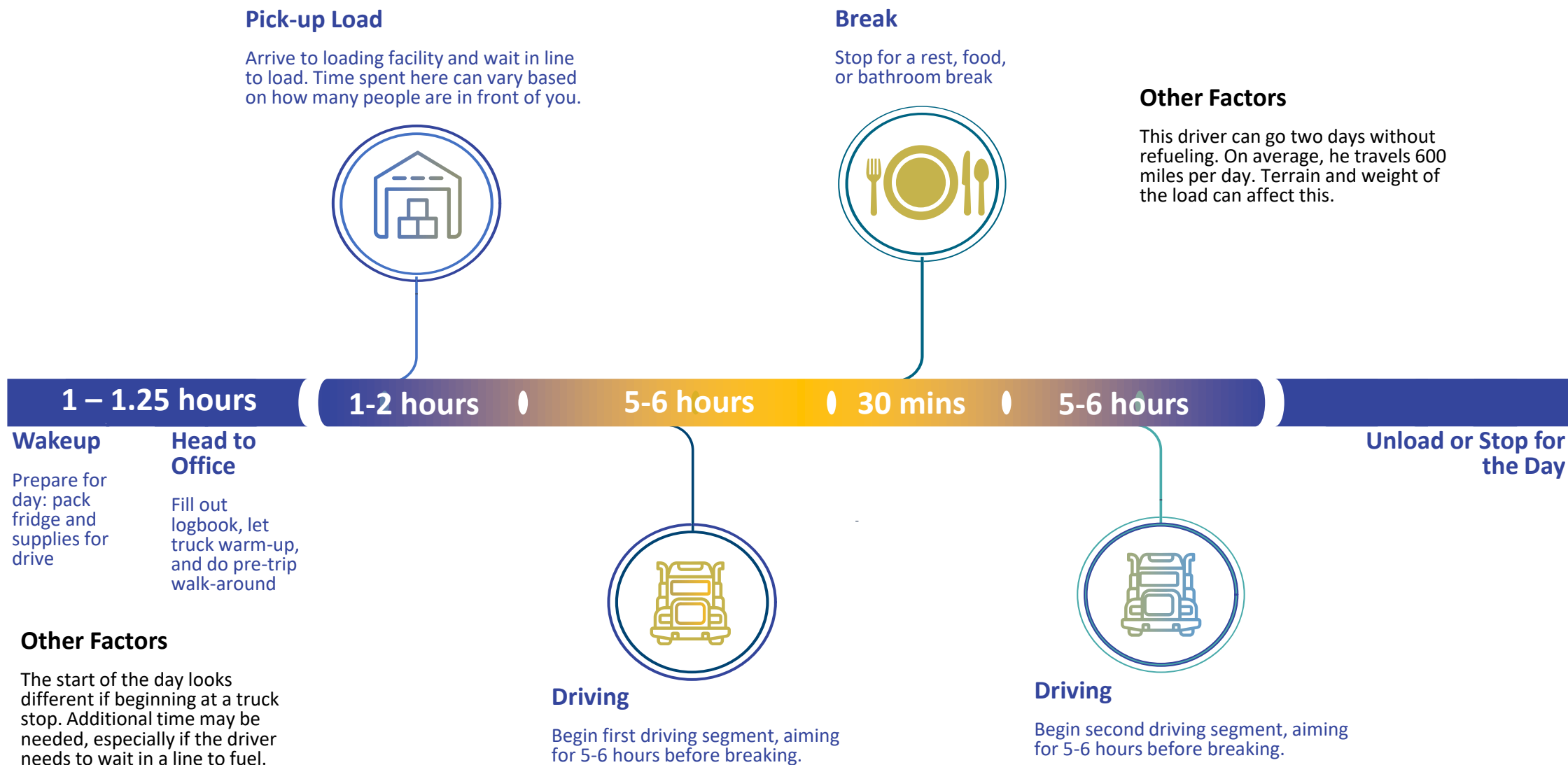


Consultation Findings

Typical Truck Driver Day

- A “typical day” for a driver can vary greatly depending on the type of load and the shipper
 - Some types of loads require additional assistance for loading, while others can be quickly secured and checked
- A regular part of planning for the day is assessing slowdowns on the road or at pick-up and drop-off locations
- Drivers will typically schedule their 30-minute break to coincide with a fueling or meal stop.

Consultation Findings: One Driver's Typical Day





Consultation Findings

Delays and Schedule Adjustments

- Unexpected delays are generally introduced from:
 - Dense urban areas – primarily affects drivers at the start and end of a trip
 - Inclement weather – can affect drivers throughout the trip, especially in the NWP region
 - Pick-up or Drop-off

Traffic Delays

Depending on when a driver leaves their origin, they will hit urban areas with traffic at different times. These differences can affect required HOS availability dramatically.

Pick-up and Drop-off Delays

OOIDA's survey results have found that most delays occur at pick-up and drop-off locations due to issues with the shipper, such as not enough staff or carelessness regarding driver's time.

Women's Experiences Differ

Generally, women are detained at a higher rate and for longer durations than male drivers.



Consultation Findings

Hours of Service and Identification of Parking

- Drivers generally know where and when to find parking when driving a route regularly.
- When routes will be affected by known delays, such as consistent urban traffic, it is less important to determine where they will park down the road, and more important to determine how best to get out of the city they are in.
 - Employee Operators are not allowed to have many “out of route” miles
 - Generally, ~10% out of route miles are allowed.



Consultation Findings

Hours of Service and Identification of Parking

Risk Tolerance	Compliance with HOS	Conservative Operation	Aggressive Operation
Different carriers and independent drivers have different levels of risk tolerance for how they operate and when or where they will park.	Everyone wants to comply with the HOS restrictions but differ on how to do so.	More conservative drivers will drive as far as they can during their HOS, but prioritize stopping and finding designated truck parking before running out of HOS. This often means they give up distance travelled to do so.	Some drivers prioritize distance travelled during their HOS. These drivers will go as far as possible during their HOS, and then park wherever they can – even in an unsafe location.



Agenda

Project Background

Addressing Comments from Roundtable 1

Stakeholder Consultations and Findings

Regional Freight Hub Analysis

Next Steps



Regional Freight Hub Analysis

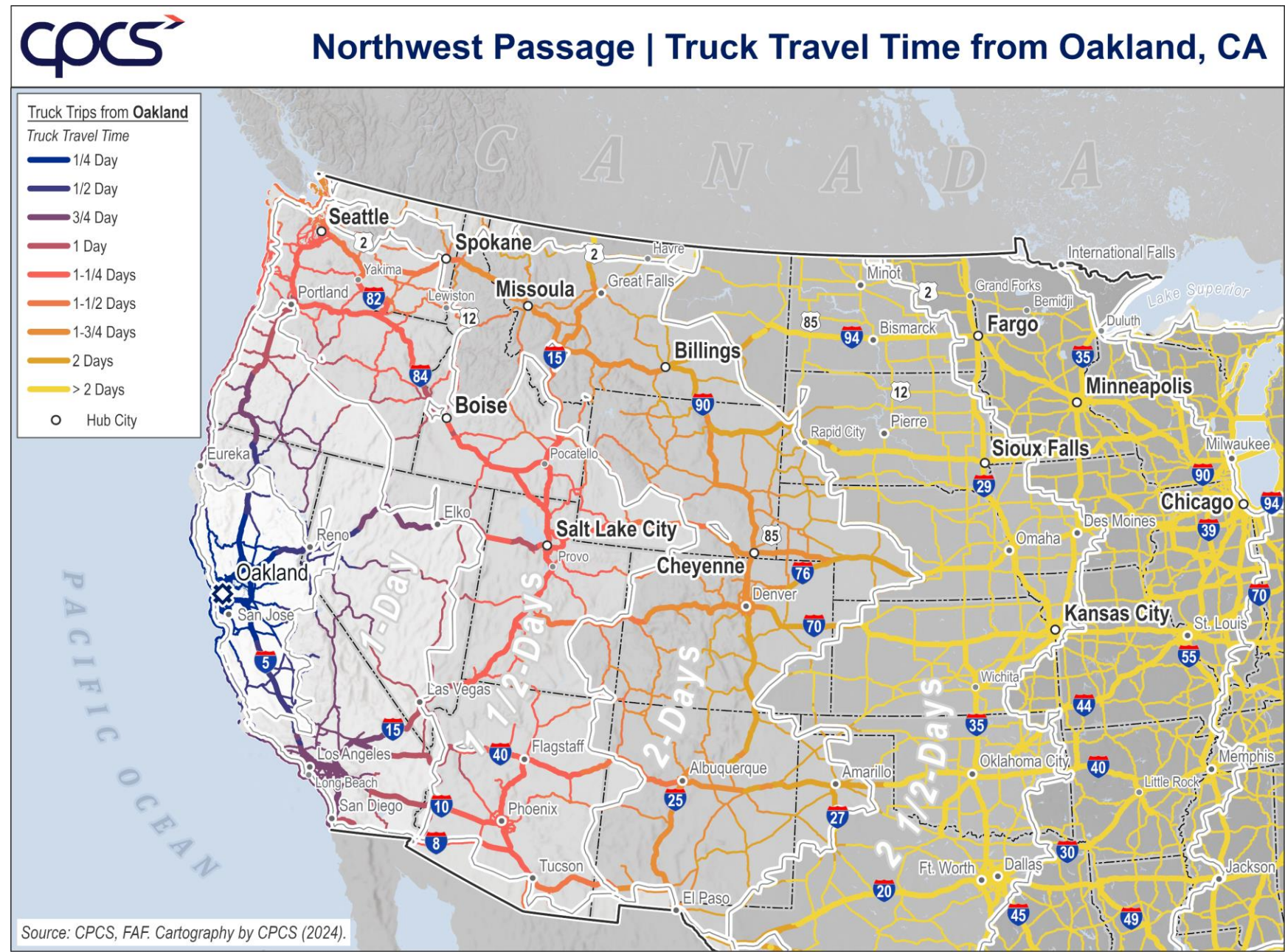
The regional freight hubs identified for analysis are:

- Oakland, CA
- Seattle/Tacoma, WA
- Spokane, WA
- Boise, ID
- Missoula, MT
- Salt Lake City, UT
- Billings, MT
- Cheyenne, WY
- Fargo, ND
- Sioux Falls, SD
- Kansas City, MO
- Minneapolis, MN
- Chicago, IL

Regional Freight Hub Analysis

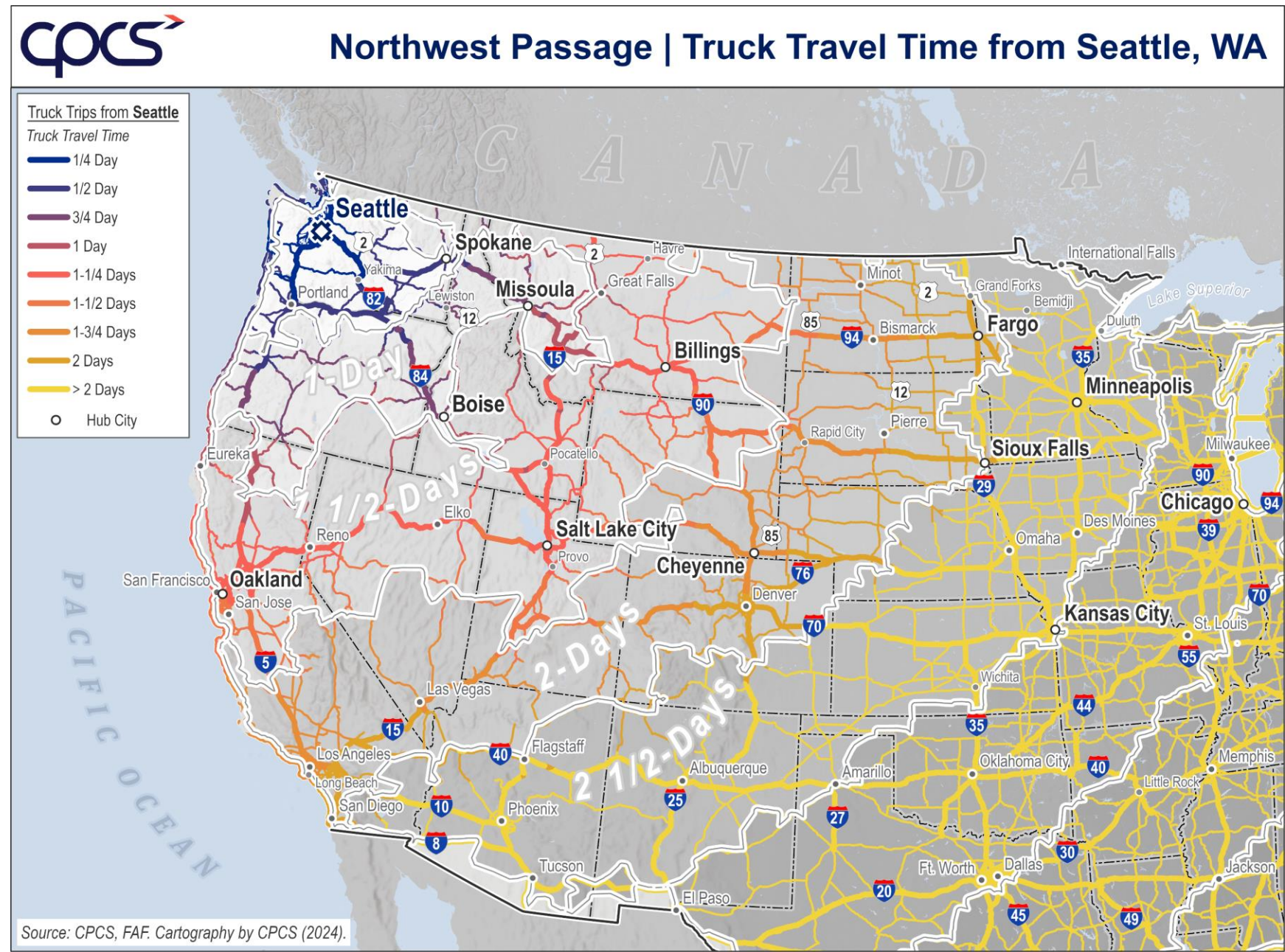
- West to East Hub Results
- Series depicts truck travel distance in typical bands
- Based on average daily conditions

Insight: Oakland is likely not a distribution hub for the NWP



Regional Freight Hub Analysis

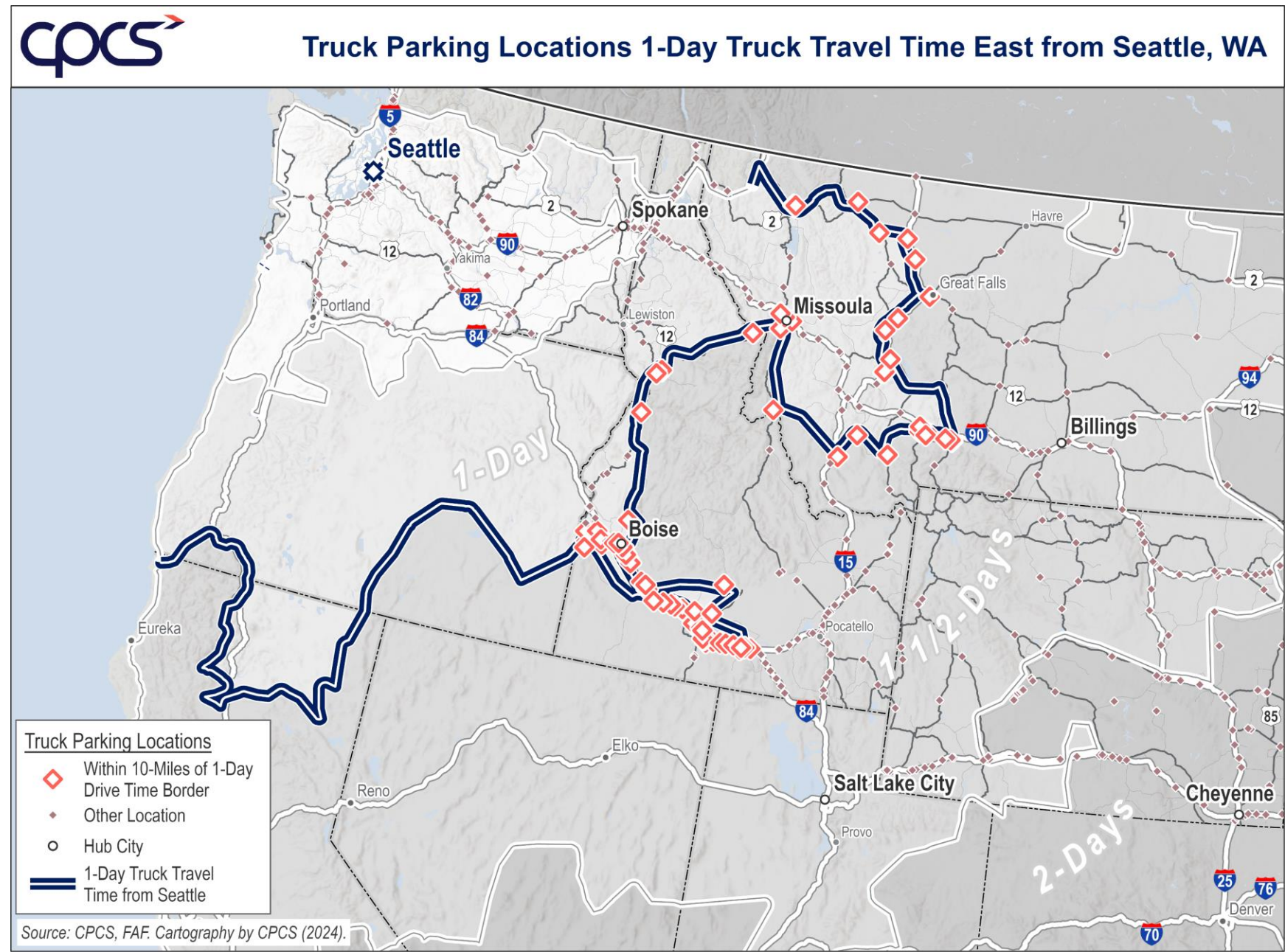
- How far can a typical truck travel in 1 day?
- Is there sufficient truck parking?



Regional Freight Hub Analysis

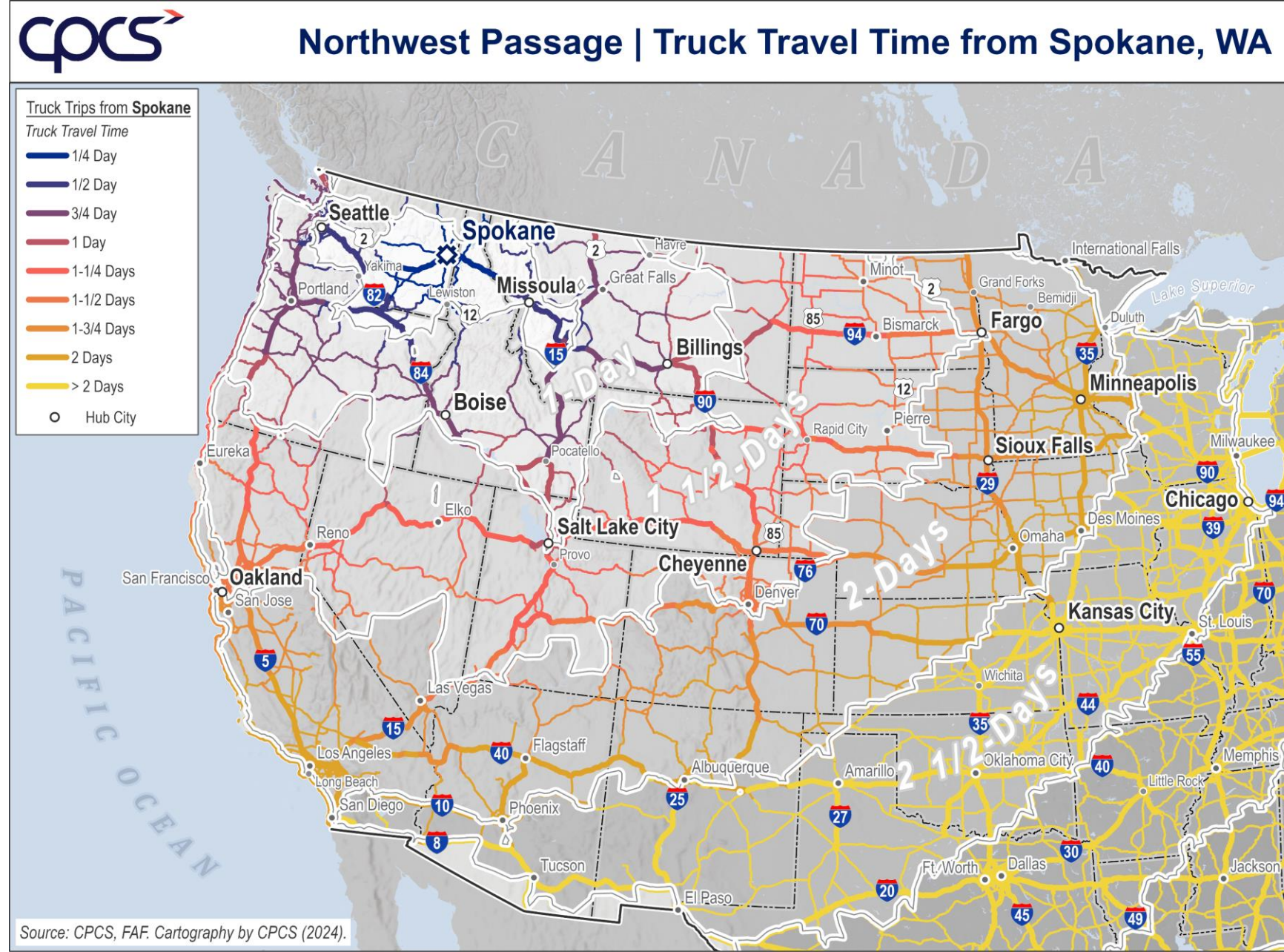
- 1-day truck travel distance band from Seattle
- Truck parking locations within 10 miles of band

Insight: Mountainous terrain is a significant inhibitor of distance truck traveled



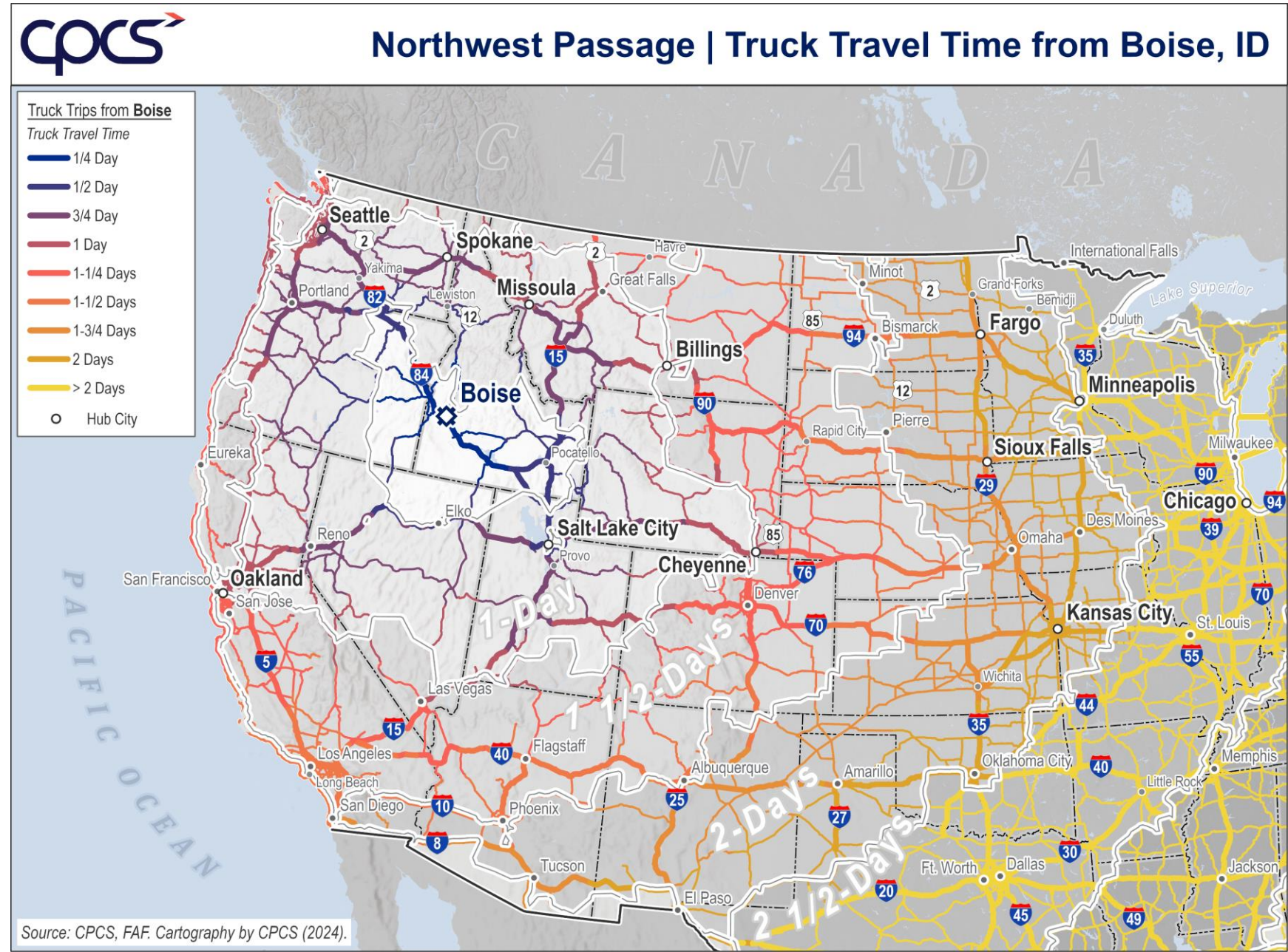
Regional Freight Hub Analysis

Insight: Rail connectivity is critical for goods originating/destined for the west coast



Regional Freight Hub Analysis

- Importance of key Interstates and US Routes evident
- Within 1 day of Boise:
 - Oakland
 - Seattle
 - Salt Lake City

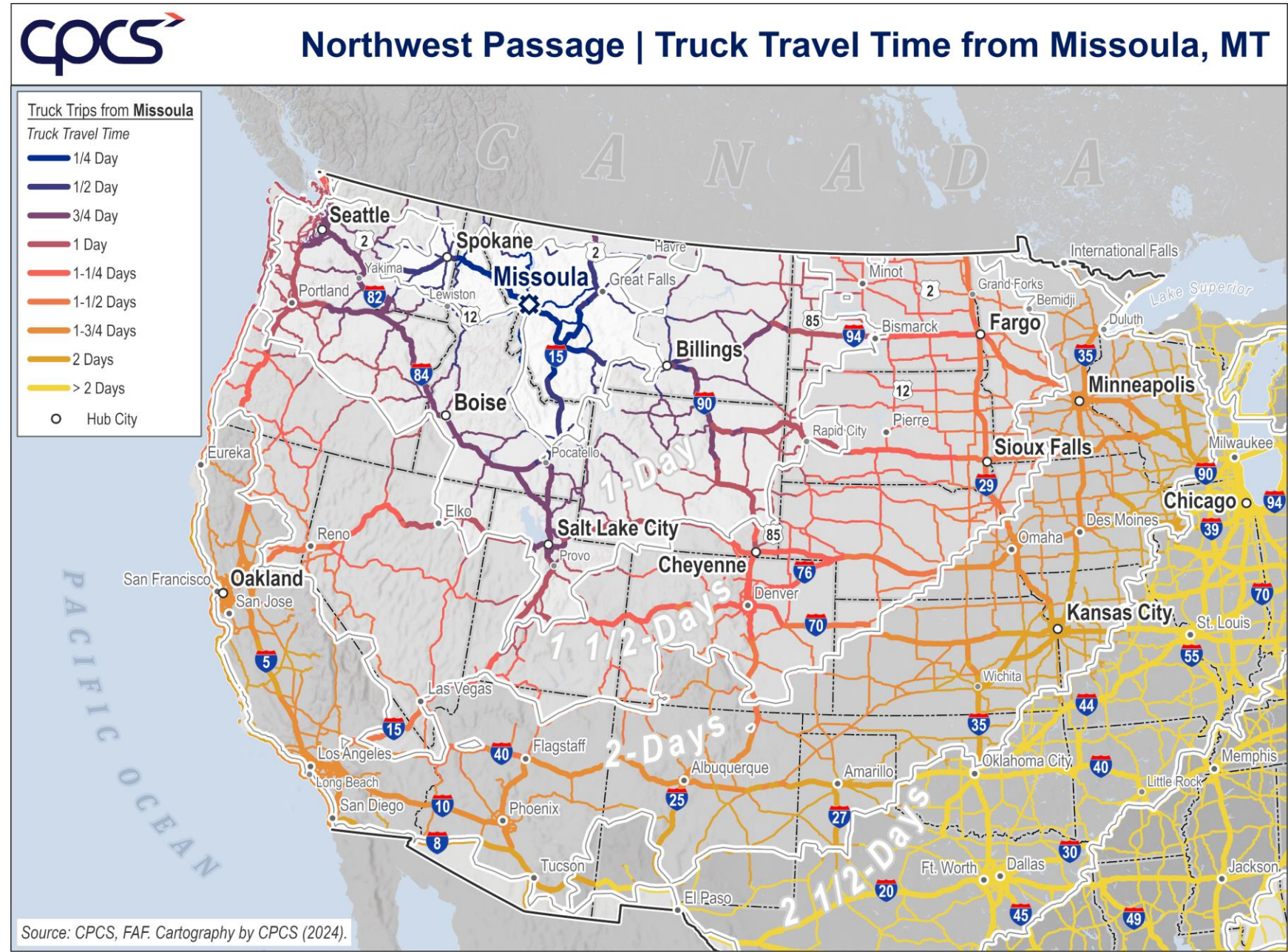


Regional Freight Hub Analysis

Missoula:

- Eastern-most point with 1-day truck access to west coast deep water ports

Insight: Weather will have significant impact on truck travel times/distances



Regional Freight Hub Analysis

Salt Lake City:

- Significant hub for:
 - Western US
 - Much of Western NWP

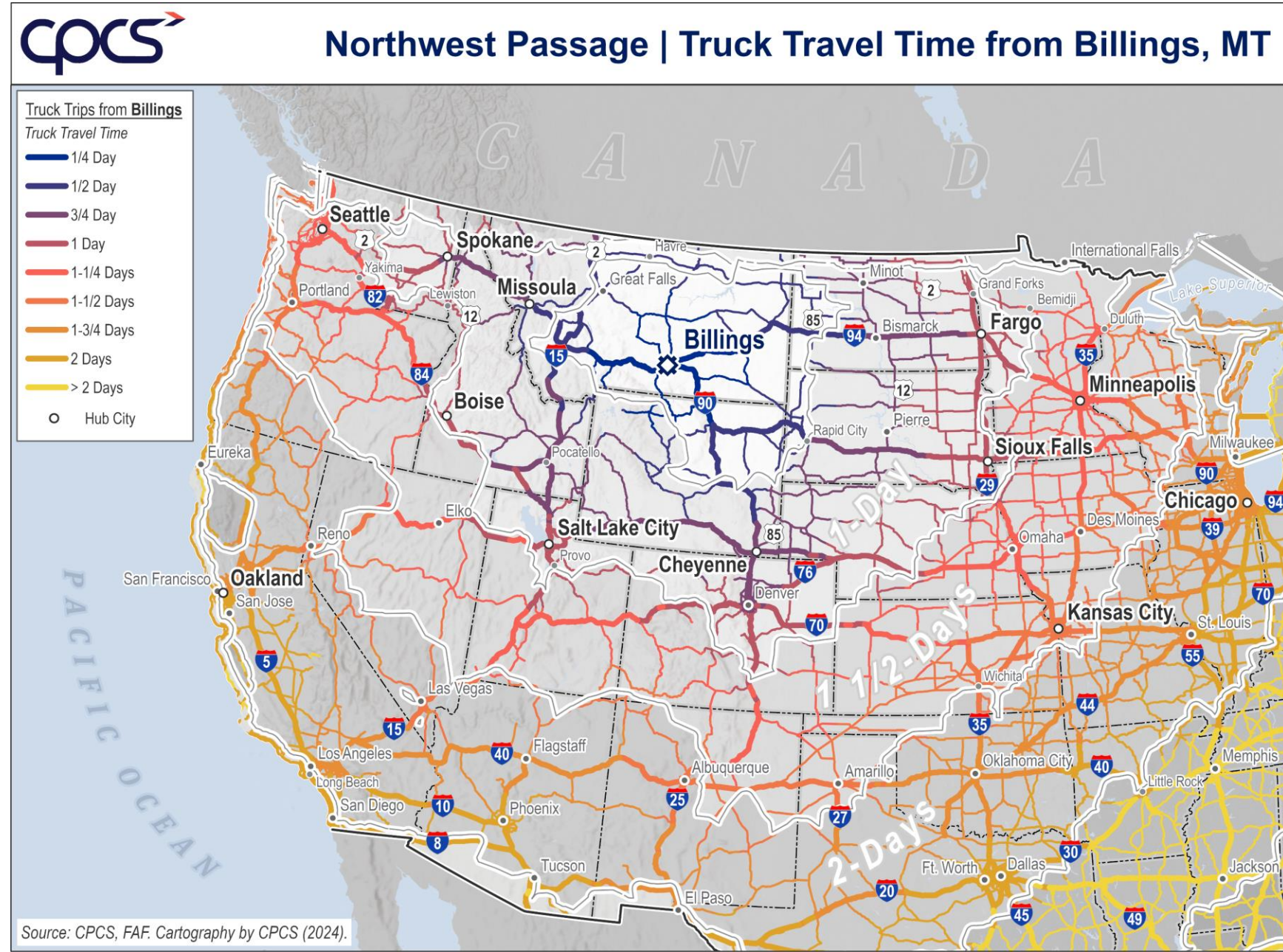


Regional Freight Hub Analysis

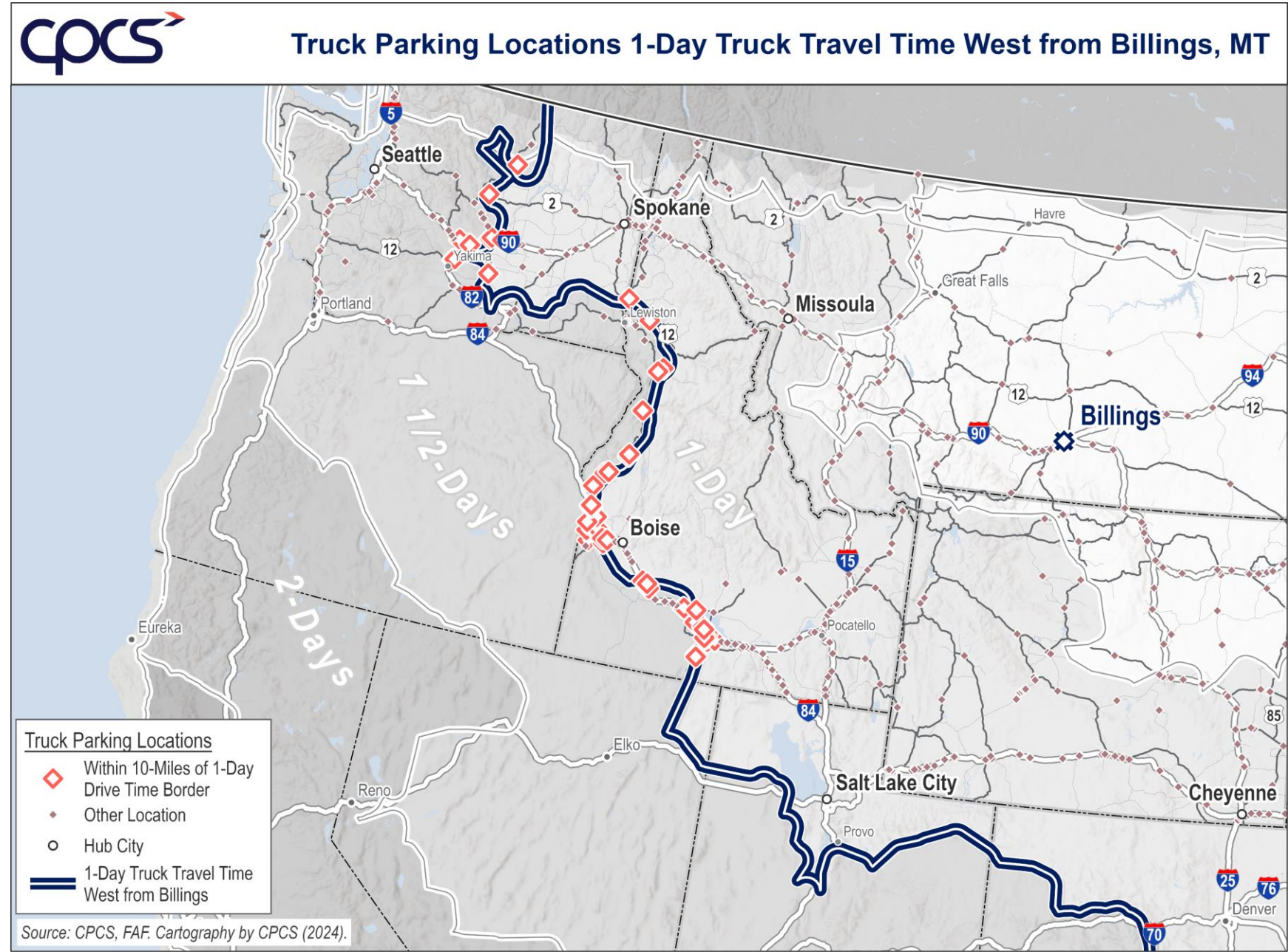
Billings:

- Reliance on distribution hubs in the intermountain west
- 1+ Day drive to Seattle/Twin Cities

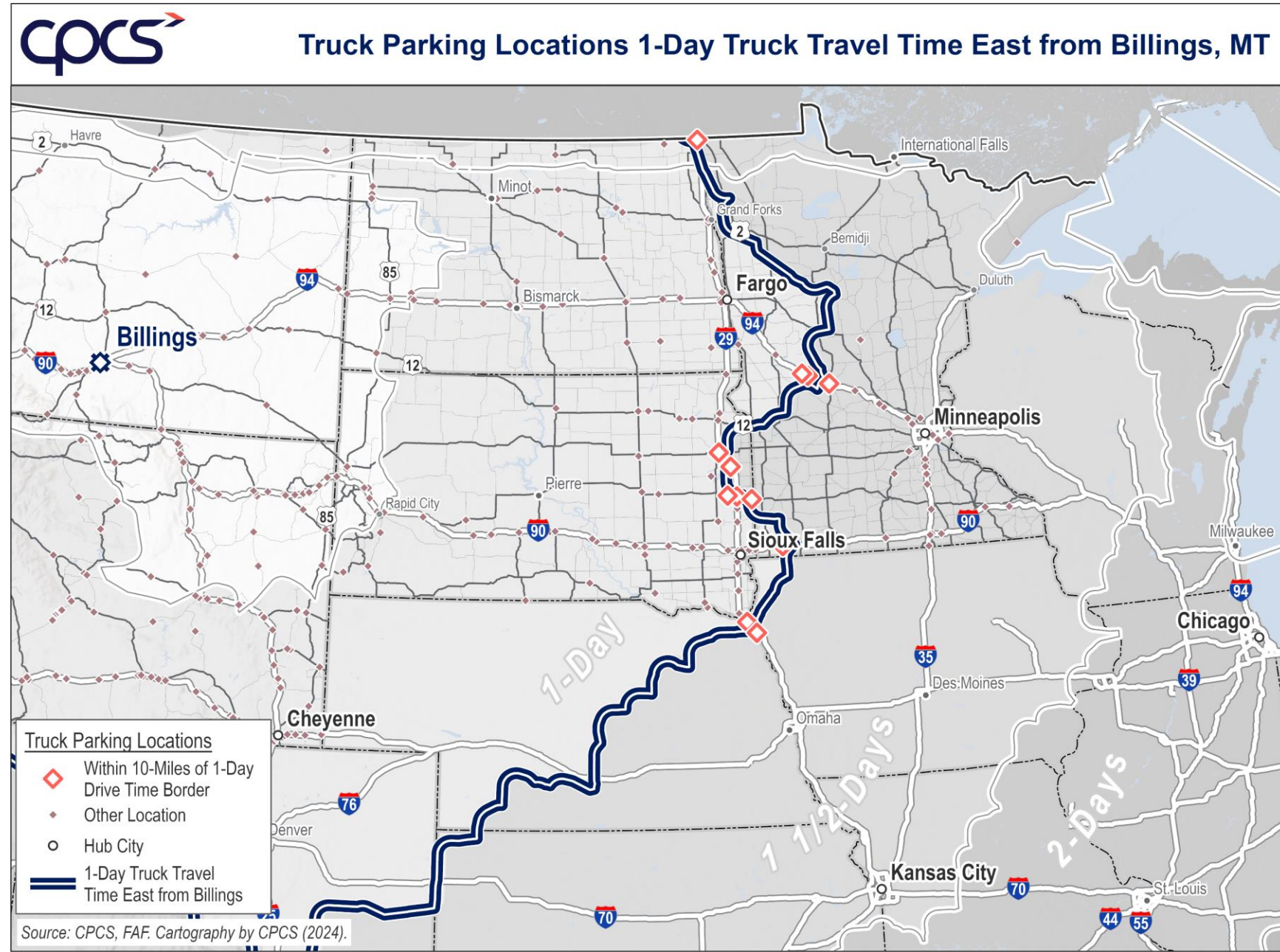
Insight: Key trade occurs N/S, not E/W, in parts of the NWP



Regional Freight Hub Analysis

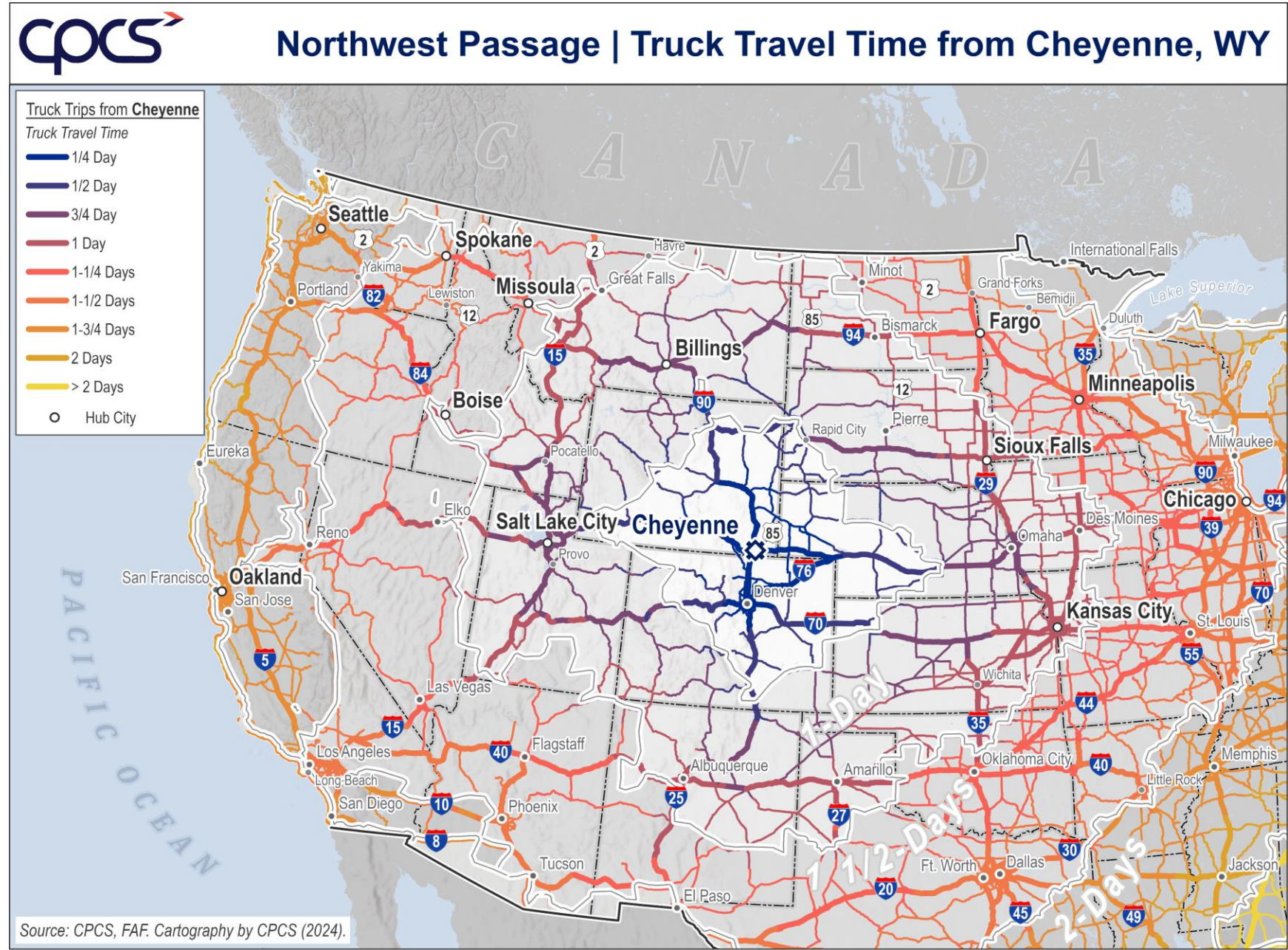


Regional Freight Hub Analysis



Regional Freight Hub Analysis

Insight: Key trade occurs N/S, not E/W, in parts of the NWP

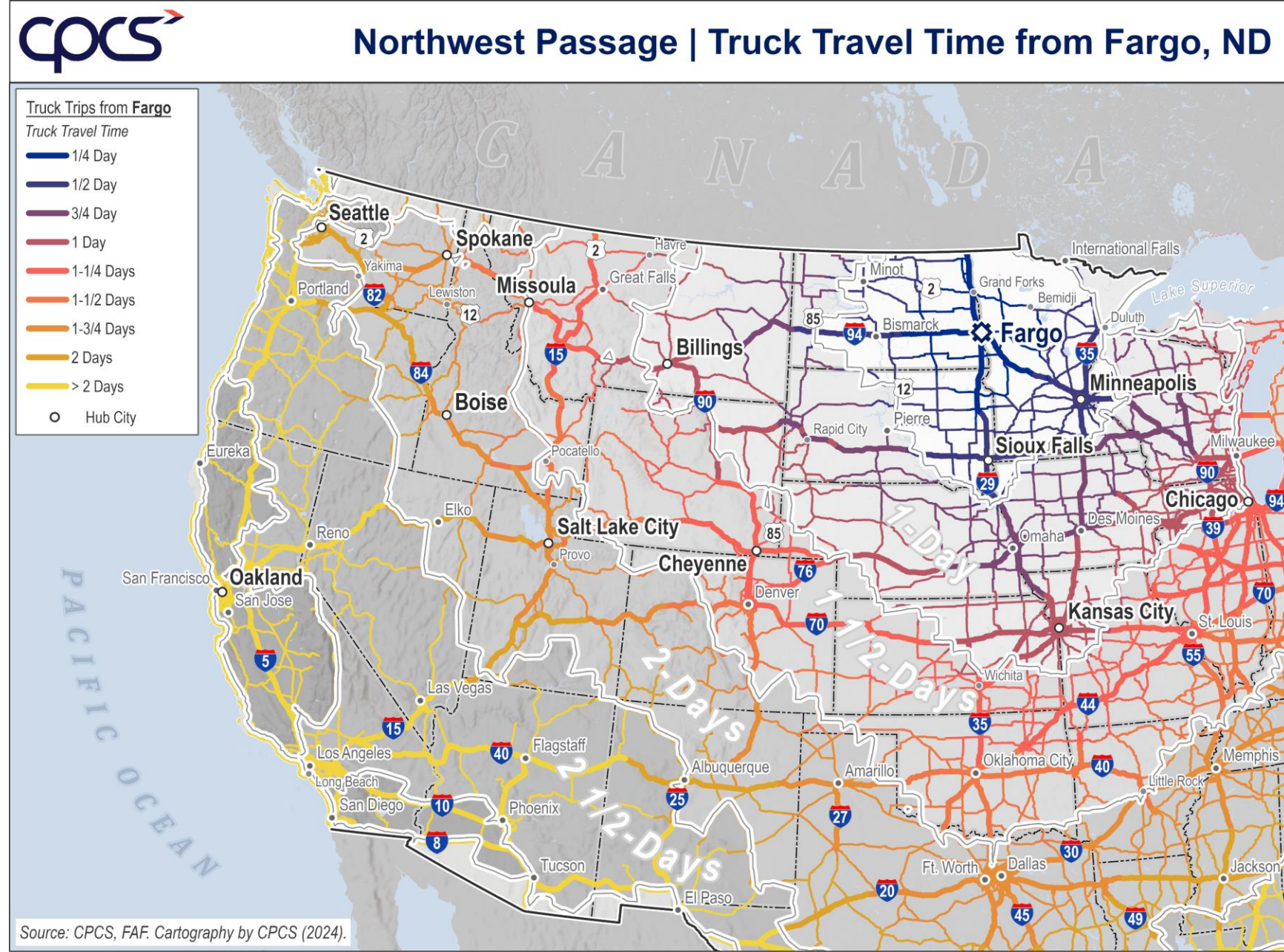


Regional Freight Hub Analysis

Fargo, Sioux Falls, Kansas City:

- Good E/W connectivity
- Good N/S connectivity

Insight: Interstate access + flat terrain = CONNECTIVITY!

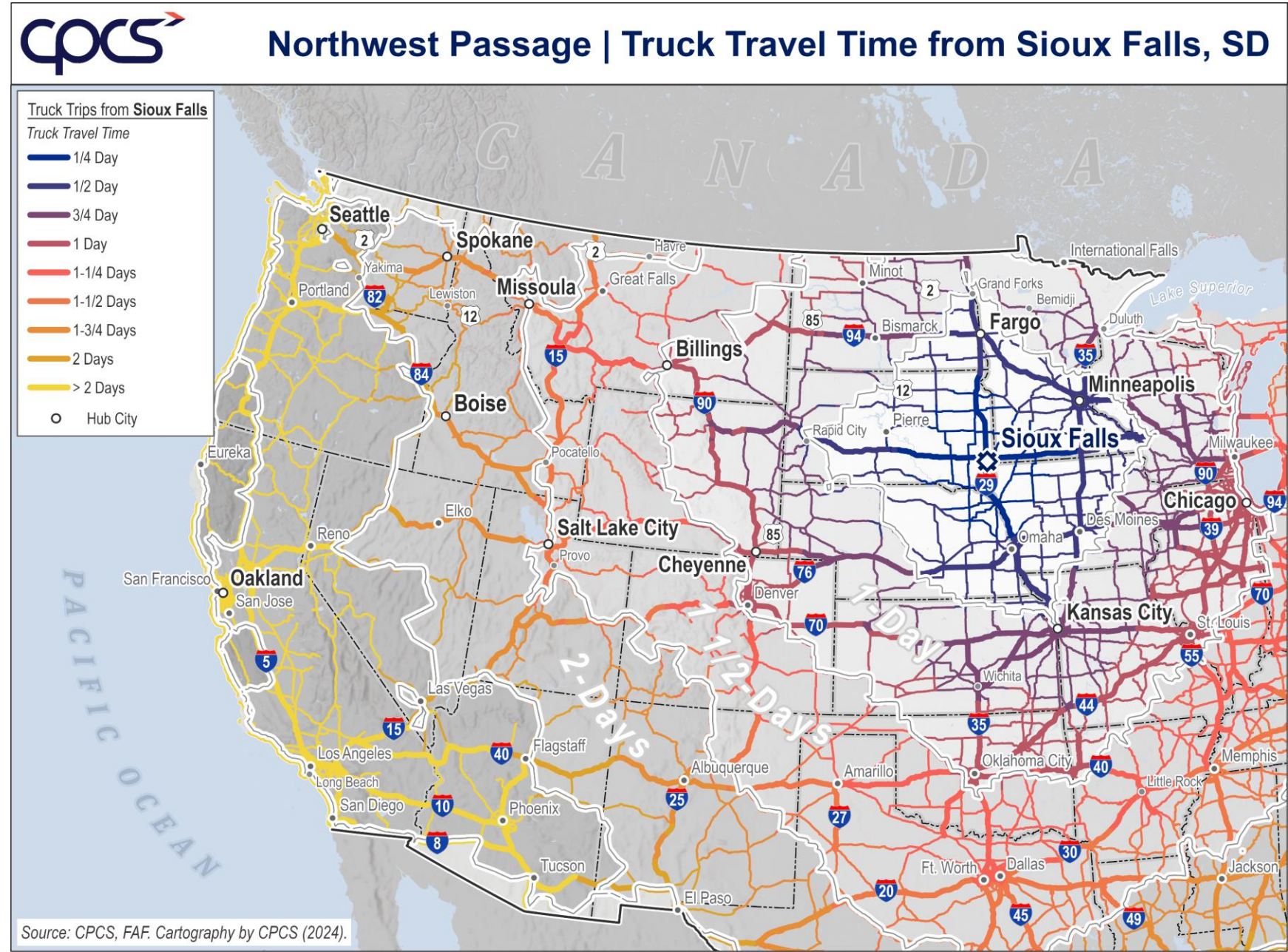


Regional Freight Hub Analysis

Fargo, Sioux Falls, Kansas City:

- Good E/W connectivity
- Good N/S connectivity

Insight: Interstate access + flat terrain = CONNECTIVITY!

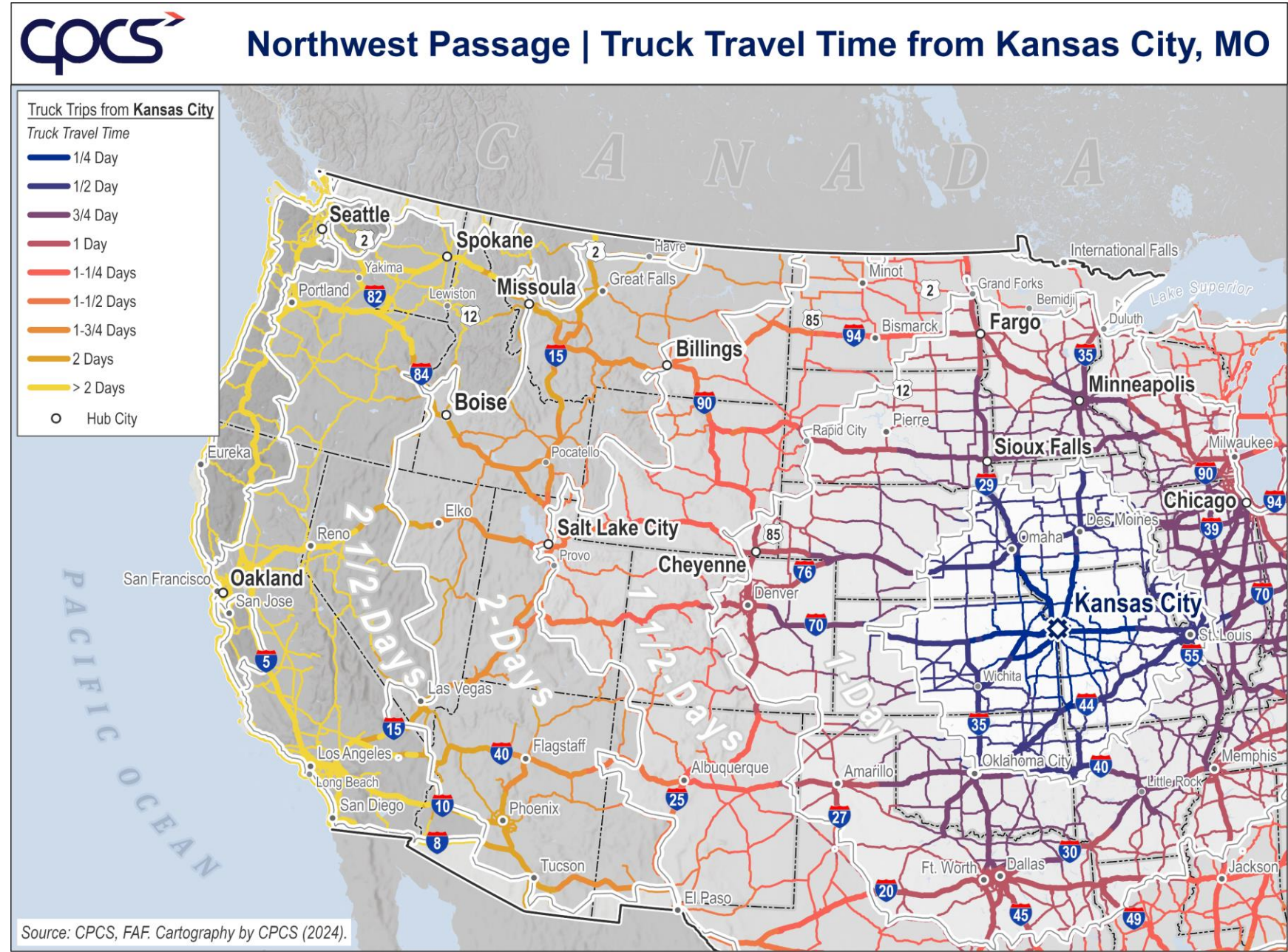


Regional Freight Hub Analysis

Fargo, Sioux Falls, Kansas City:

- Good E/W connectivity
- Good N/S connectivity

Insight: Interstate access + flat terrain = CONNECTIVITY!

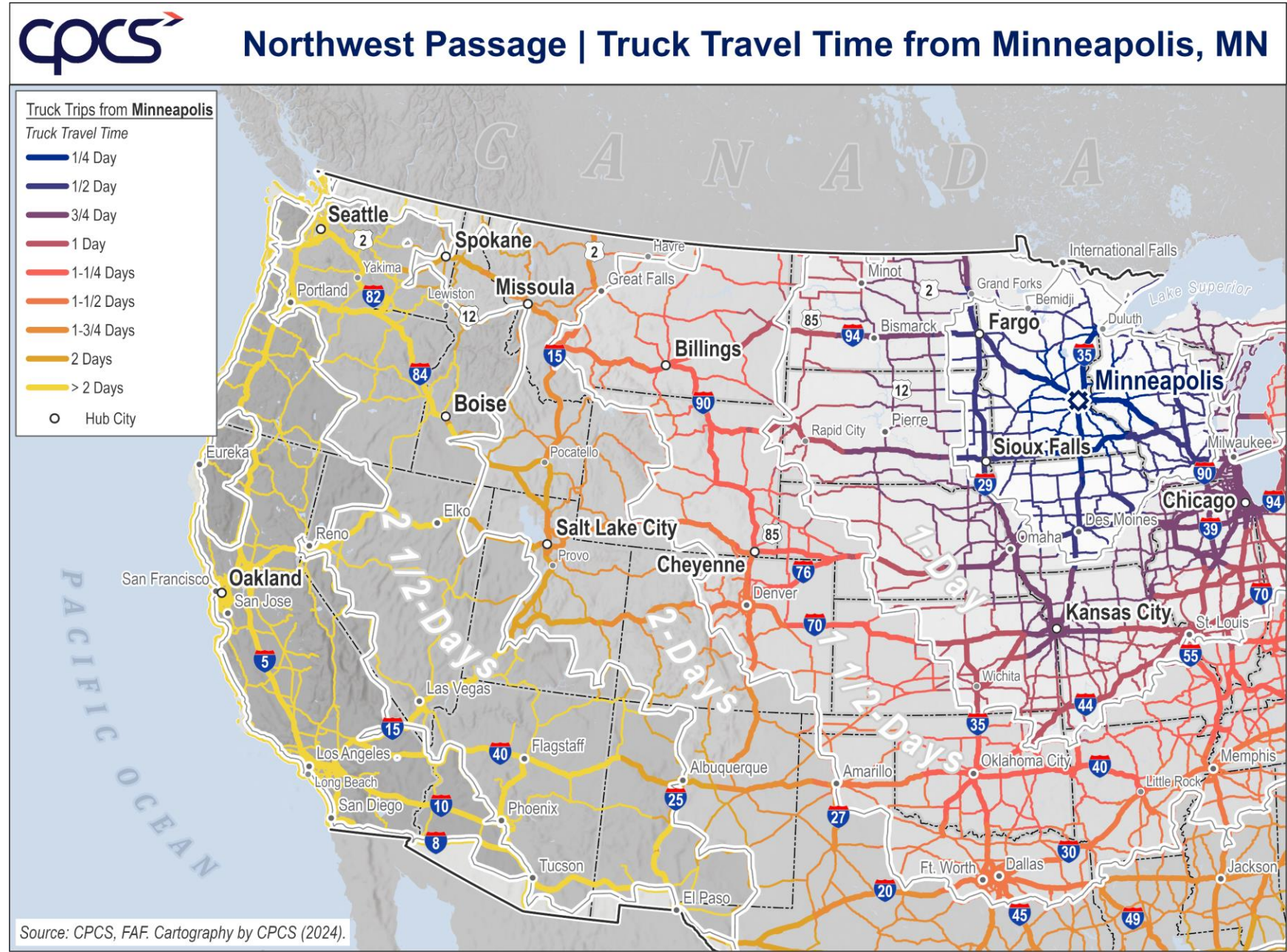


Regional Freight Hub Analysis

Minneapolis, Chicago:

- Good E/W connectivity
- Good N/S connectivity
- Large consumption markets

Insight: Congested corridors need to be complemented by rail service.

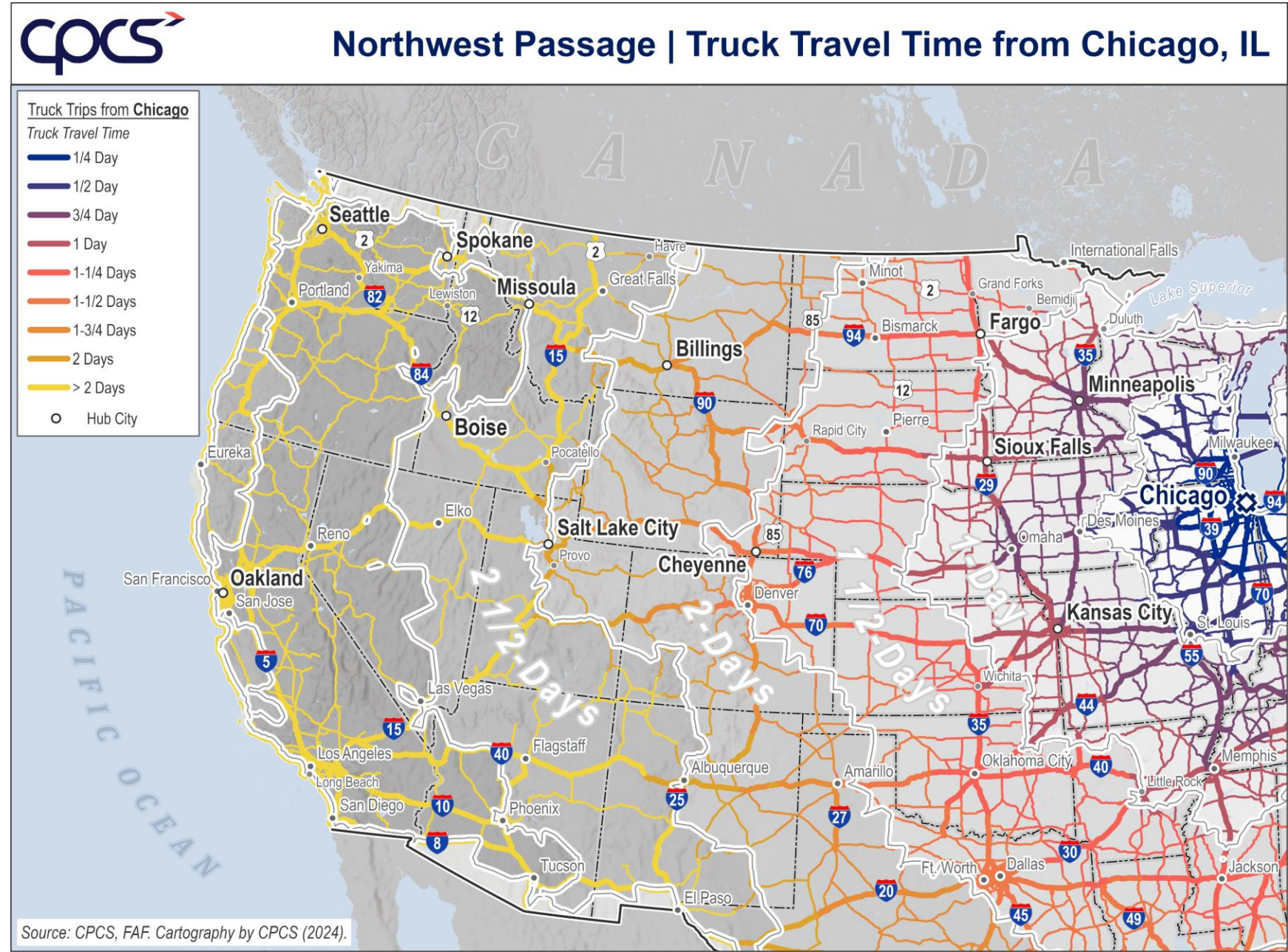


Regional Freight Hub Analysis

Minneapolis, Chicago:

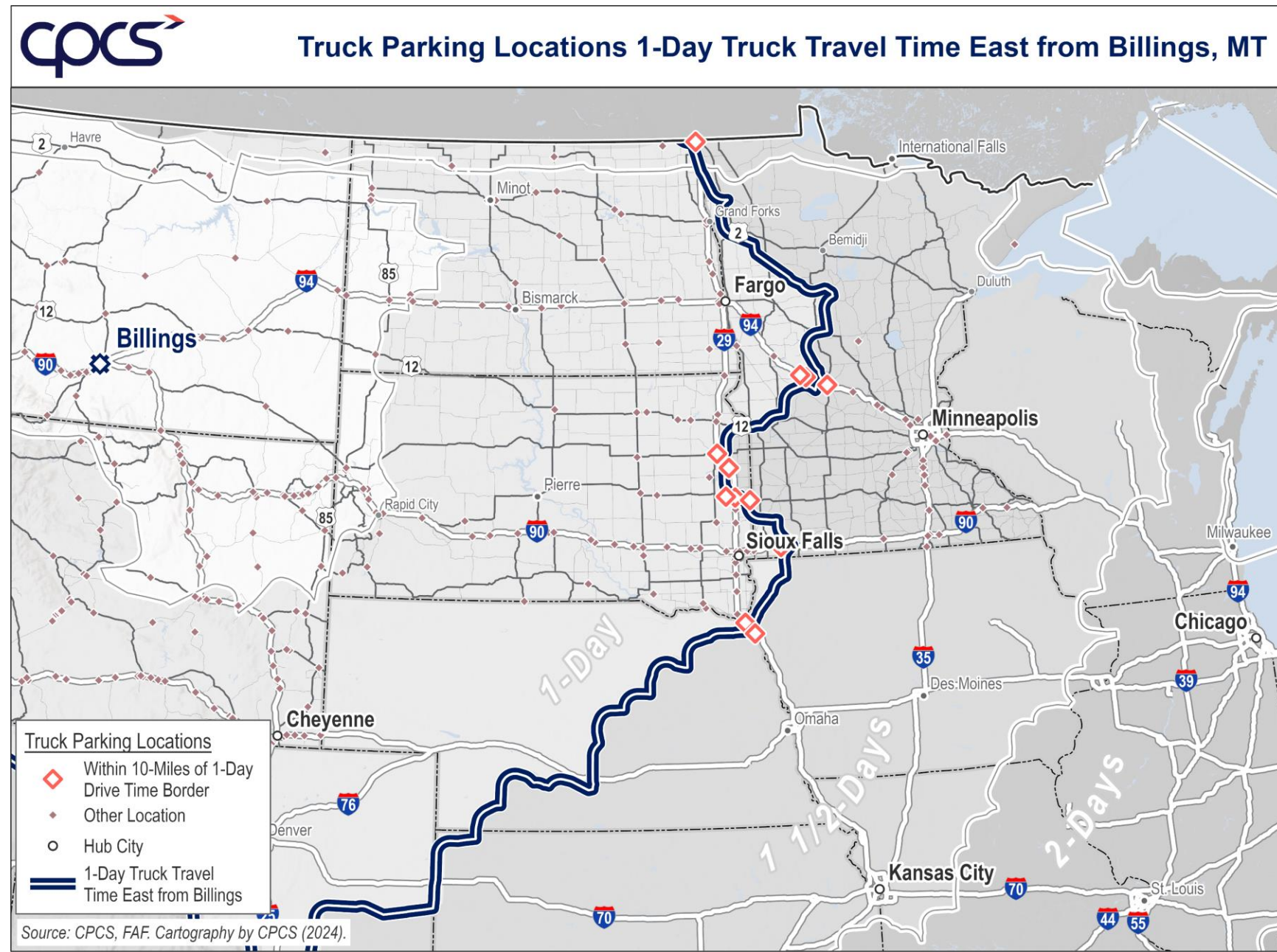
- Good E/W connectivity
- Good N/S connectivity
- Large consumption markets

Insight: Congested corridors need to be complemented by rail service.



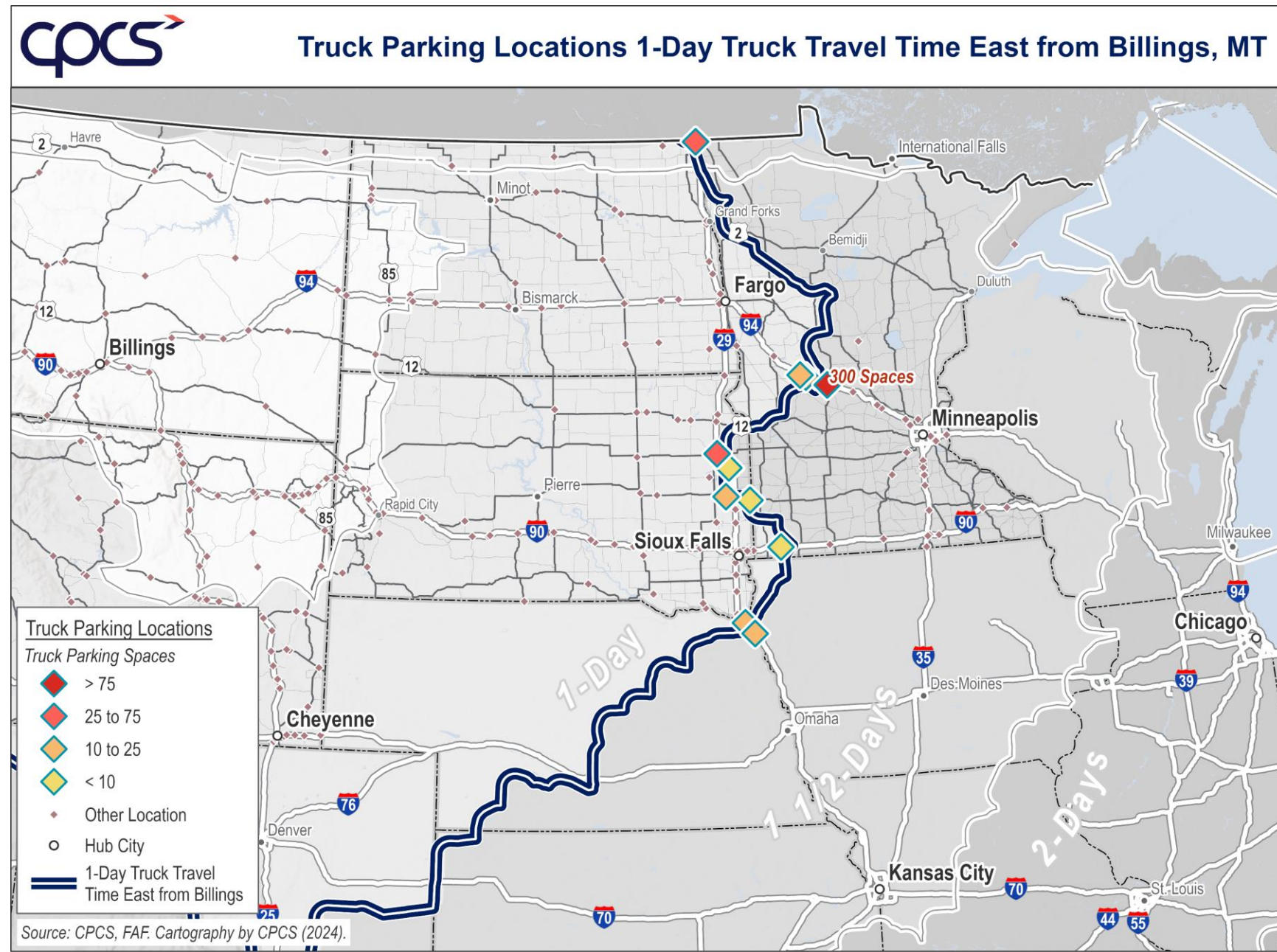
What Comes Next?

- Are truck parking facilities located where they are needed?



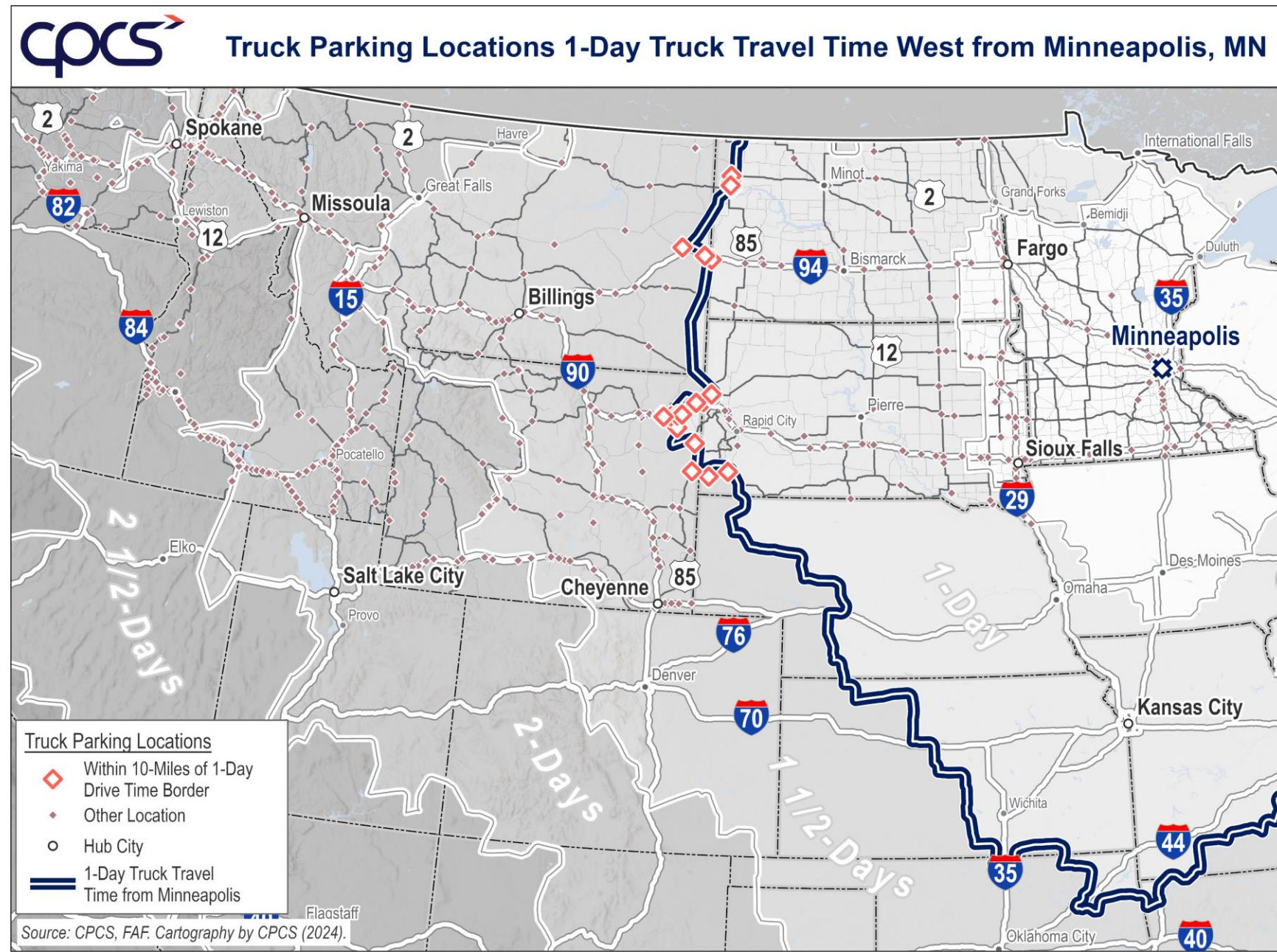
What Comes Next?

- How much truck parking is available?



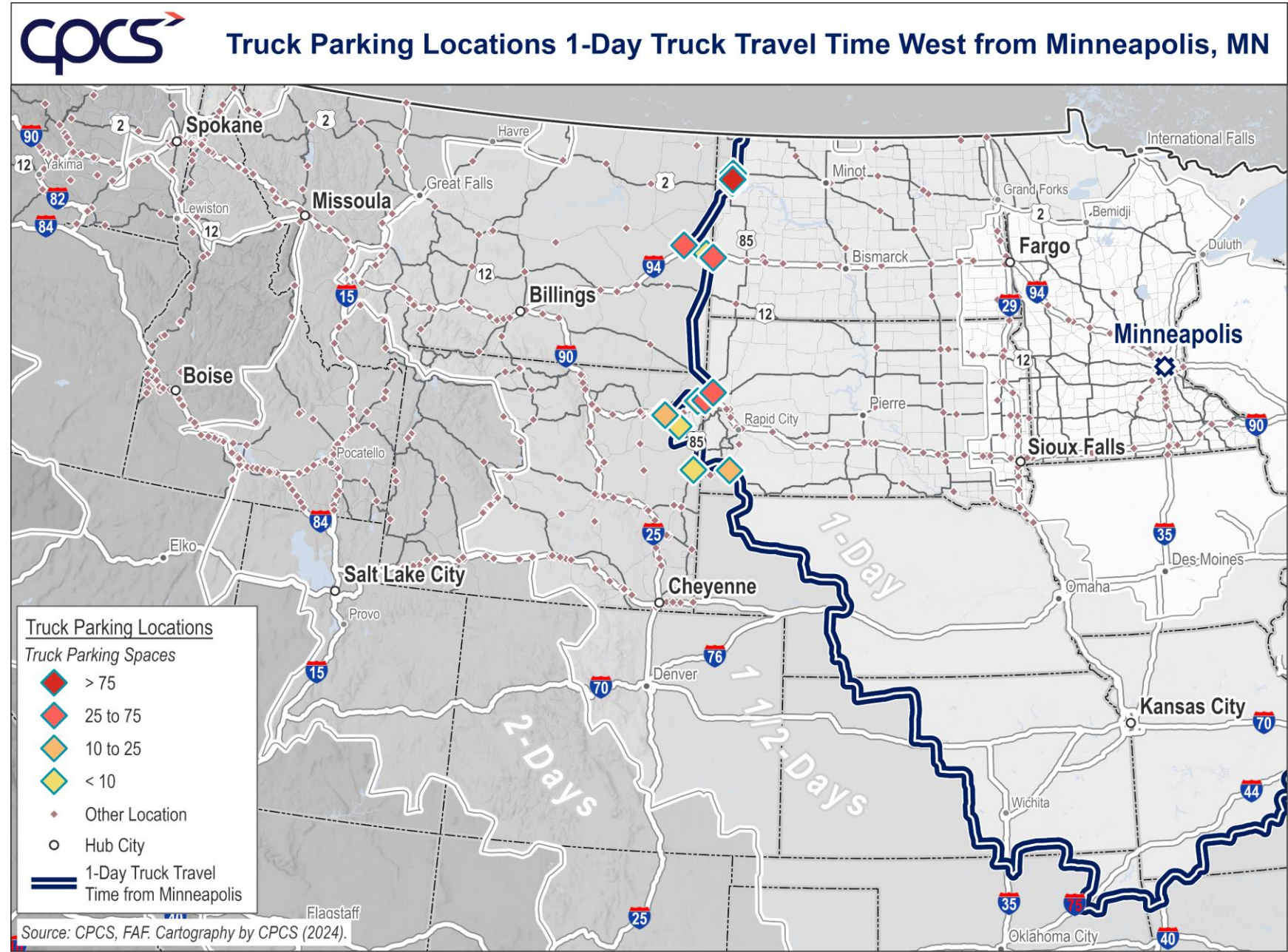
What Comes Next?

- Are truck parking facilities located where they are needed?



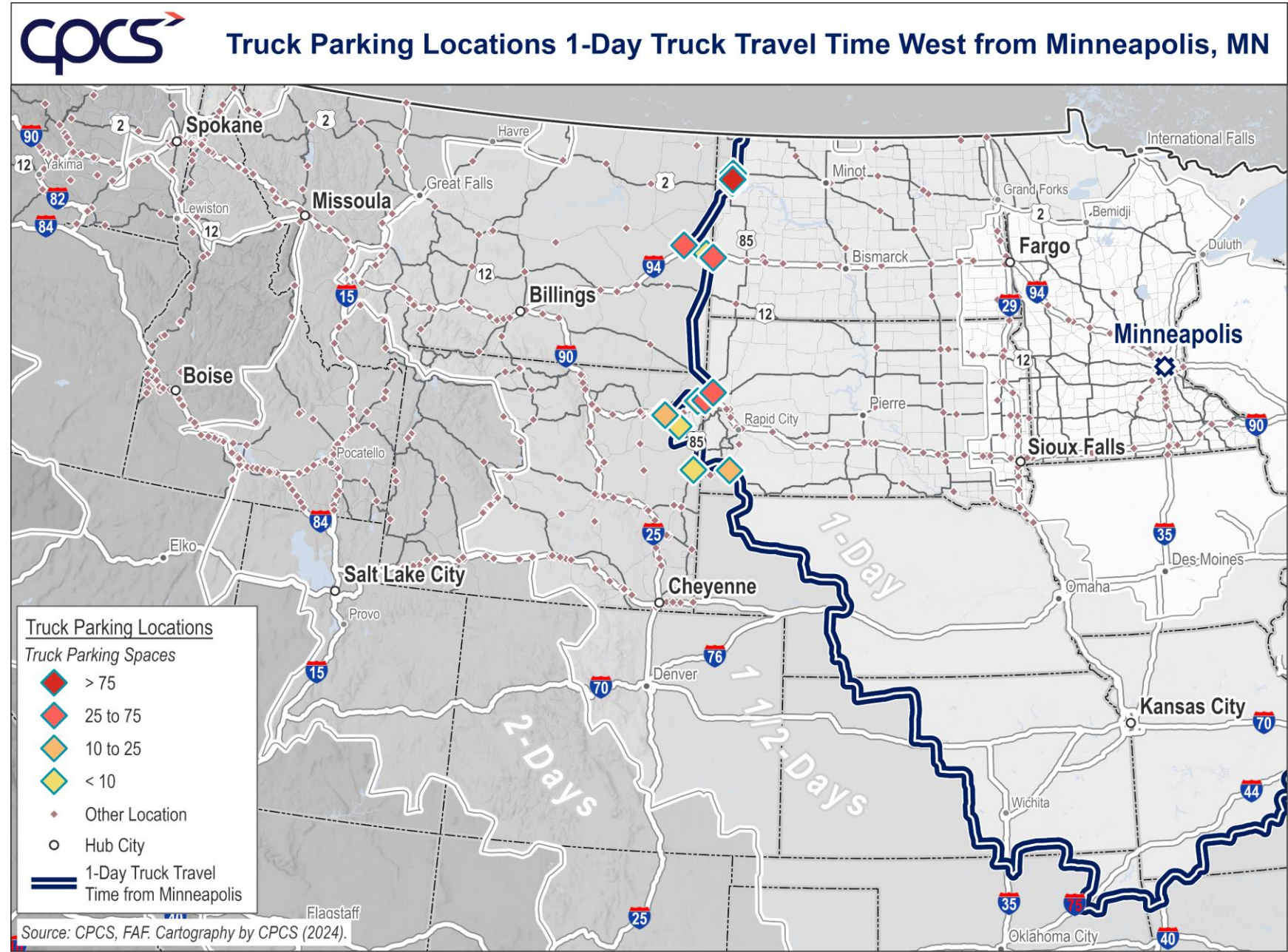
What Comes Next?

- How much truck parking is available?



What Comes Next?

- How much truck parking is available?
- *Is truck parking sufficient?*
 - *TBD*





Questions?

- What insights are important for your freight and truck parking planning?



Agenda

Project Background

Addressing Comments from Roundtable 1

Stakeholder Consultations and Findings

Regional Freight Hub Analysis

Next Steps



Next Steps



Continue Analysis

Continue analysis to assess truck travel times, hours of service, and truck parking locations within the NWP



Schedule Final Roundtable

To review project findings and discuss how findings should be shared with the larger Freight Task Force and other stakeholders



Contact Information

Dave Huft

Chair, NWP Steering Committee
South Dakota DOT
dave.huft@state.sd.us

Erika Witzke

Consultant Project Manager
NWP Freight Task Force
ewitzke@cpcstrans.com

Sarah Morgan

Consultant Project Coordinator
NWP Freight Task Force
smorgan@cpcstrans.com

Roundtable 3



Truck Travel Times and Need for Hours-of-Service Truck Parking Assessment

Roundtable 3

December 18, 2024



Introductions

- Name
- Organization
- Your role as it pertains to truck parking

Idaho
Minnesota

Montana
North Dakota
South Dakota

Washington
Wyoming



Agenda

Project Overview

About the Corridor

Stakeholder Engagement

Truck Parking Assessment

Key Findings and Next Steps



Project Overview

This project aimed **to increase the Freight Task Force's understanding of the travel times of trucks moving in the NWP**, and based on the origins, destinations, and duration of trips, **assess where truck parking may be needed** along the region's key corridors to meet federal hours-of-service requirements.

Key project components included:

- Data Collection and Analysis
- Stakeholder Consultations
- Roundtable Participation
- Mapping and Visualization of Findings



Hours-of-Service Requirements

The federal HOS requirements are regulations established by the FMCSA to ensure that commercial truck and bus drivers have adequate rest and work limits, thereby promoting road safety.

Requirement	Specifics
Daily Driving Limits	11-Hour Driving Limit
	14-Hour Duty Limit
Rest Periods	30-Minute break
Weekly Driving Limits	60/70-Hour Driving Limit
	34-Hour Restart Rule
Electronic Logging Devices	ELDs are required to automatically track a driver's HOS
Exceptions and Special Conditions	Adverse Driving Conditions
	Short Haul Exemption
	Sleeper Berth Rule



Agenda

Project Overview

About the Corridor

Stakeholder Engagement

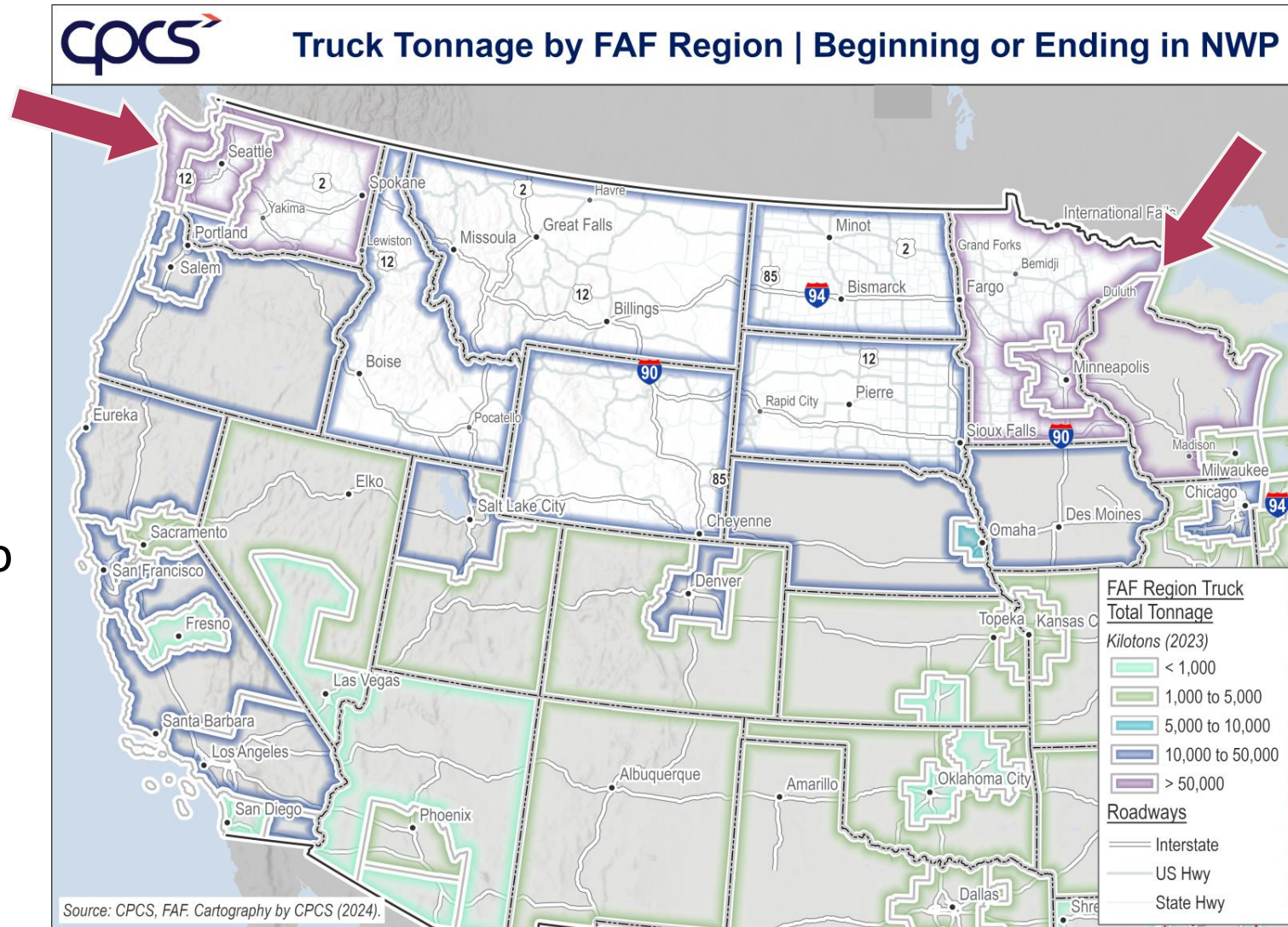
Truck Parking Assessment

Key Findings and Next Steps

About the North/West Passage Corridor

A significant amount of freight tonnage is generated within the Western US.

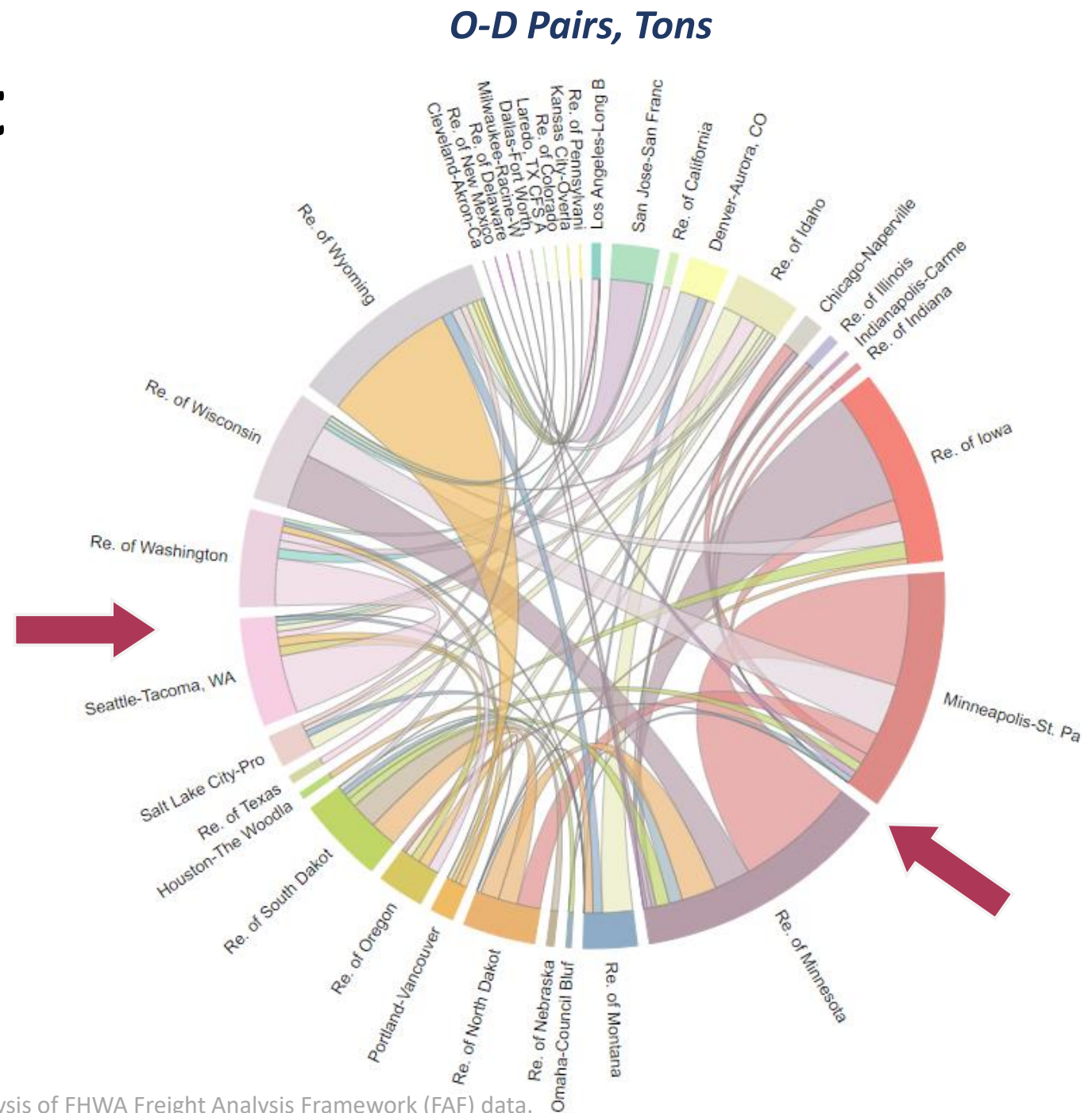
Within the North/West Passage, Washington and Minnesota lead the corridor for freight coming to or departing from the region by truck.



Selection of Freight Hubs for Analysis

Freight hubs were identified to use as origin-destination points from which to base the rest of the project's analysis.

Roundtable participants selected hub cities from a list of the top 100 O-D pairs that originate, are destined to, or pass through the NWP.





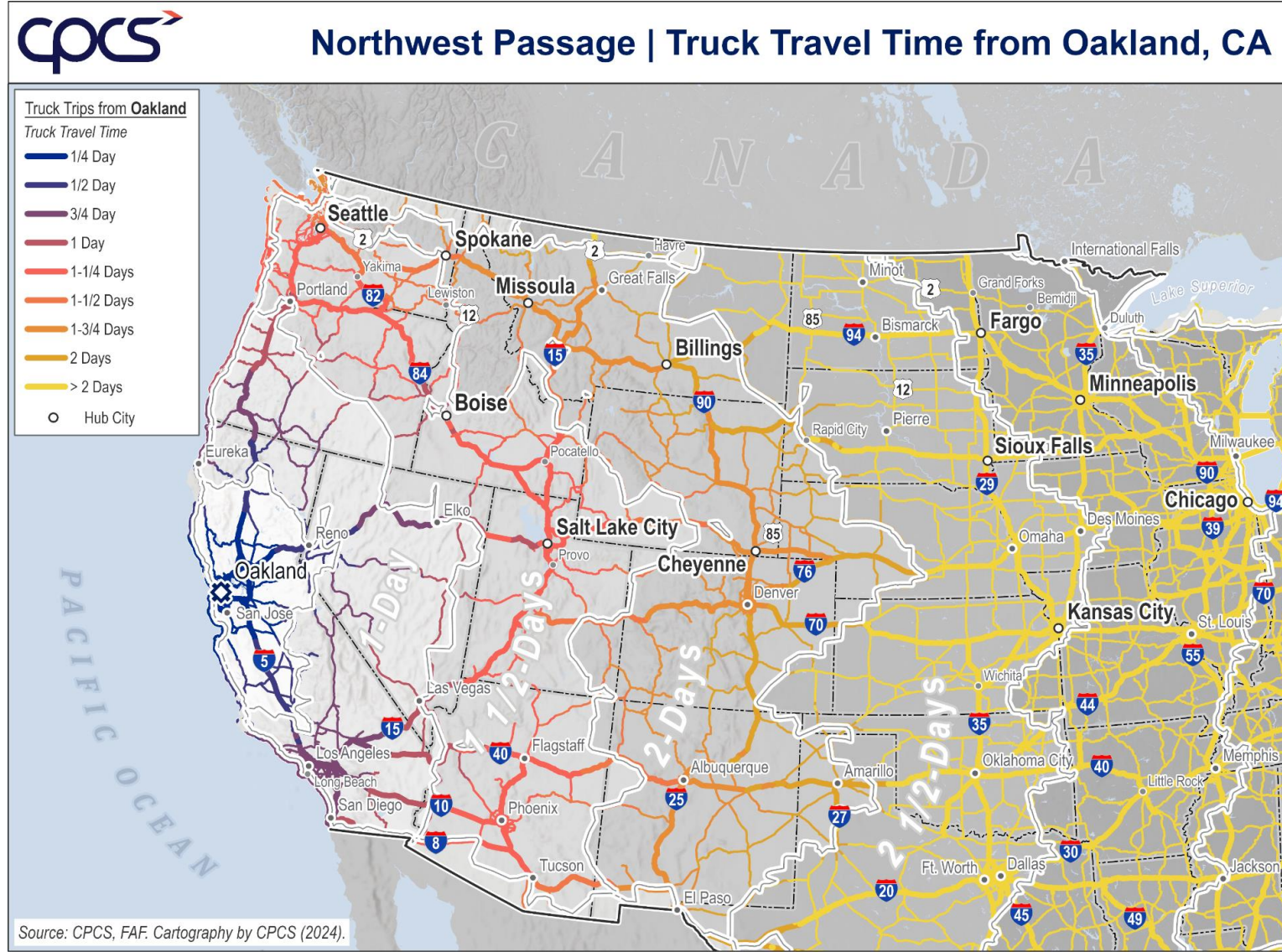
Selection of Freight Hubs for Analysis

The freight hubs selected for analysis were:

- Oakland, CA
- Seattle/Tacoma, WA
- Spokane, WA
- Boise, ID
- Missoula, MT
- Salt Lake City, UT
- Billings, MT
- Cheyenne, WY
- Fargo, ND
- Sioux Falls, SD
- Kansas City, MO
- Minneapolis, MN
- Chicago, IL

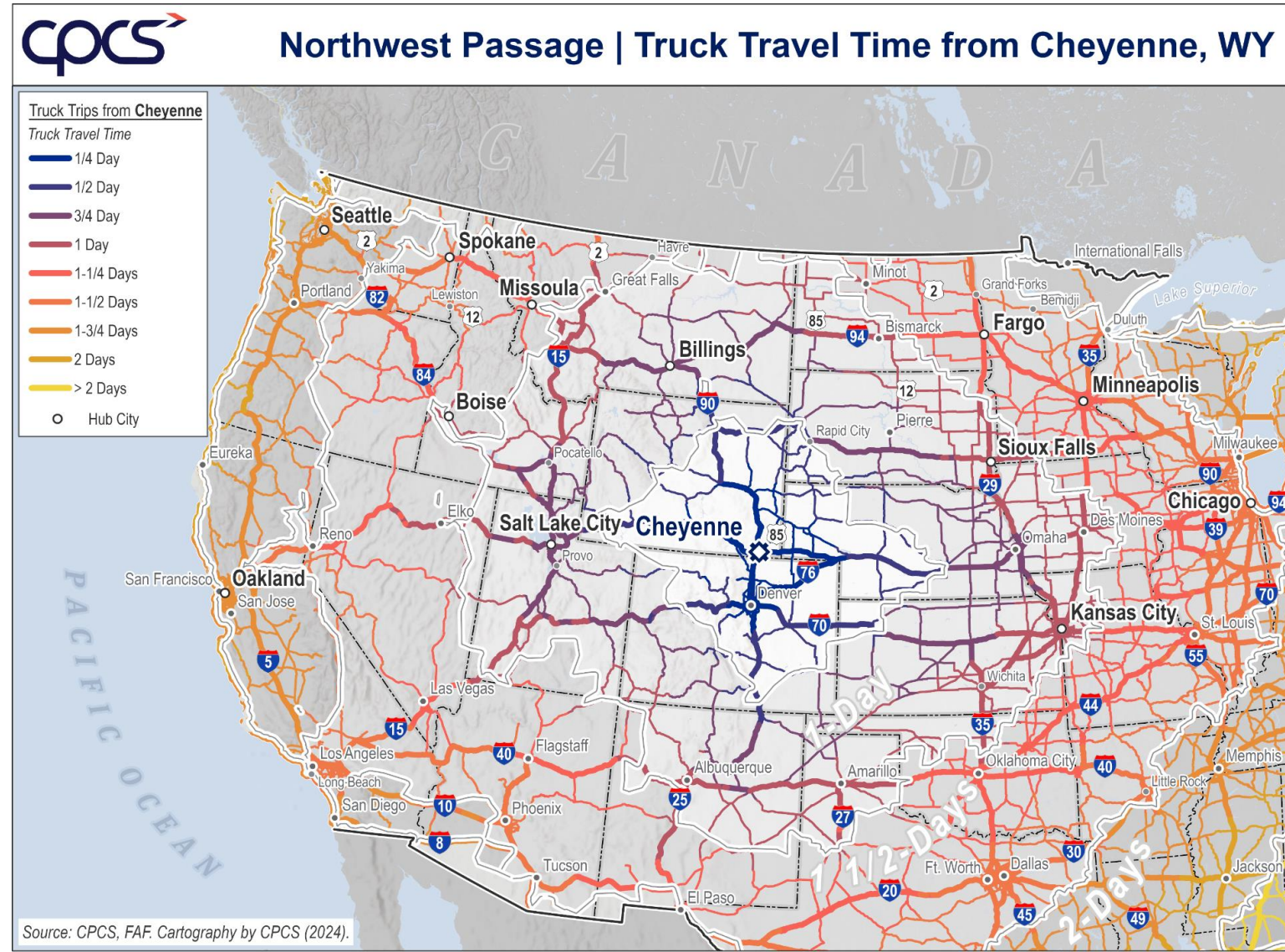
Freight Hubs for Analysis

A series of maps to understand how travel times differ between the freight hubs were developed.



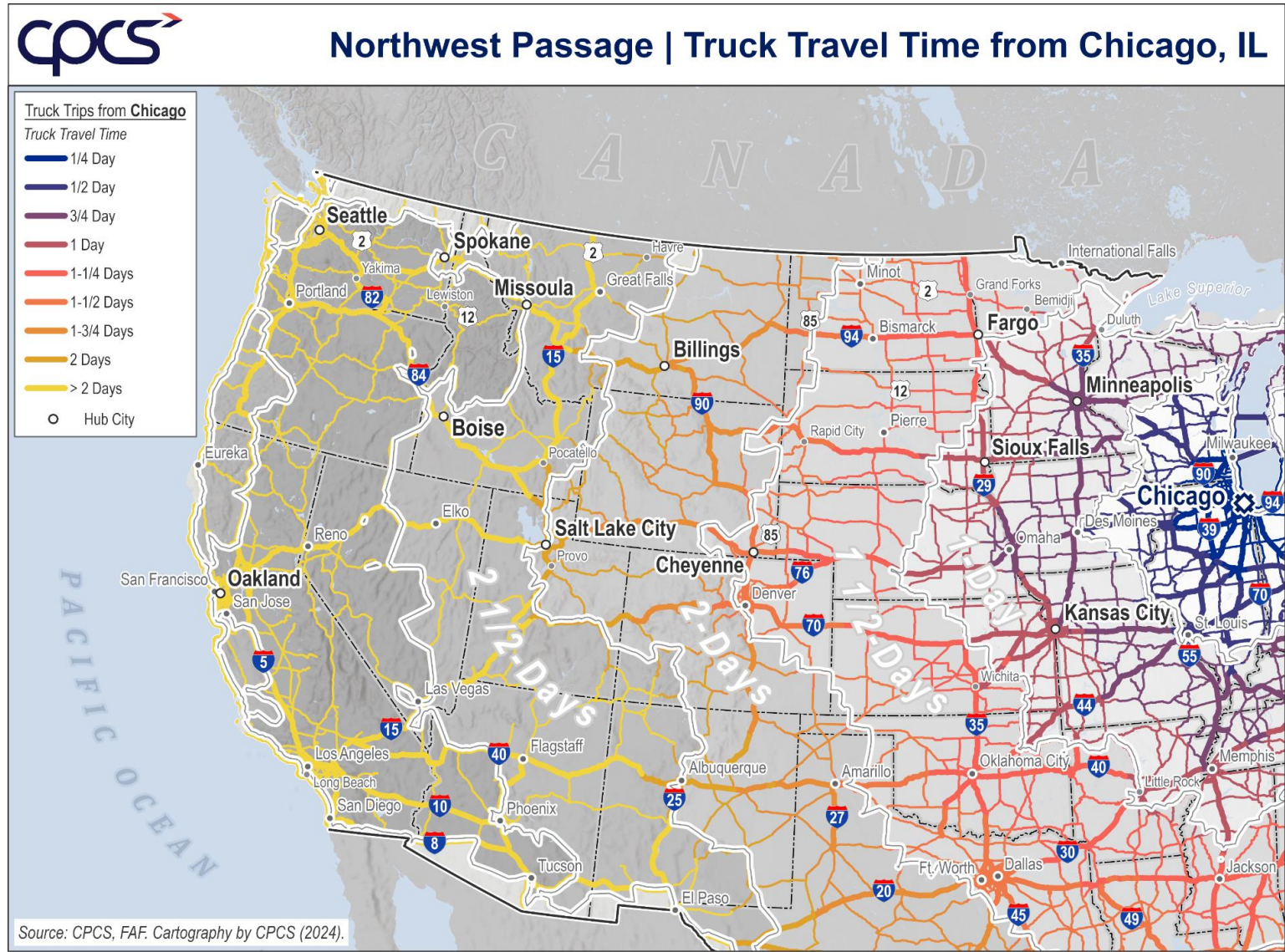
Freight Hubs for Analysis

A series of maps to understand how travel times differ between the freight hubs were developed.



Freight Hubs for Analysis

A series of maps to understand how travel times differ between the freight hubs were developed.





Agenda

Project Overview

About the Corridor

Stakeholder Engagement

Truck Parking Assessment

Key Findings and Next Steps



Stakeholder Engagement

Roundtables

Convened with representatives of the North/West Passage to share insight into the progression of the project and analysis of findings.

Consultations

Consultations were conducted with subject matter experts and the corridor's state trucking associations.



Completed Consultations

- **Kevin Hawley**, Wyoming Trucking Association
- **Allen Hodges**, Idaho Truckers Association
- **Kacey Heidrich**, North Dakota Motor Carriers Association
- **Dan Murray**, American Transportation Research Institute
- **Duane Williams**, Motor Carriers of Montana
- **Tilden Curl**, OOIDA Board Member + truck driver
- **Tom Weakley**, OOIDA (written submission)
- **Michelle Wells**, South Dakota Trucking Association (written submission)



Consultation Findings

How do Truck Drivers Decide Where and When to Stop?

- **Drivers seek to balance the demands** of tight schedules with the limitations of Federal Hours of Service requirements.
- **Many drivers will prioritize distance traveled** over all else when carrying a load.
- Some drivers will choose to **continue past open truck parking to get as far along their route** as possible within their allowed HOS.

Driver Detention due to Loading and Unloading

- Driver detention: the additional time that a driver spends at a facility to load or unload their truck, beyond their scheduled appointment time.
- **In 2023, truckers reported that they were detained at nearly 40% of all pick-up and drop-off stops.**

Inclement Weather in the North/West Passage

- Strong winds can close roads to trucks while large snowstorms can close entire highways.
- When closures occur, drivers often use significant amounts of their HOS while traveling minimal distances.
- **Closures increase the demand for truck parking, forcing drivers to look for safe parking elsewhere**, sometimes in violation of their HOS, or park in an undesignated location.



Agenda

Project Overview

About the Corridor

Stakeholder Consultations and Findings

Truck Parking Assessment

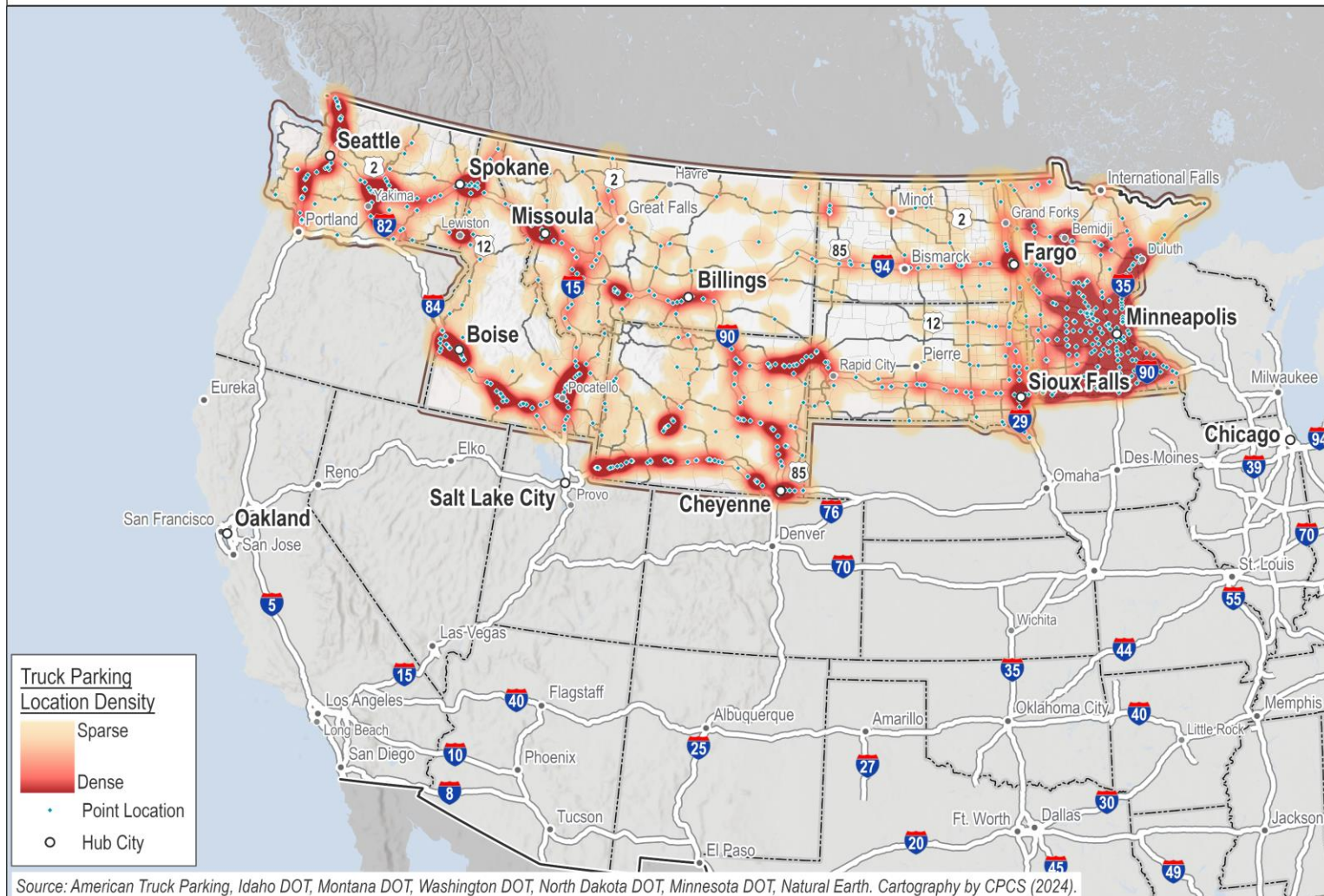
Key Findings and Next Steps

Truck Parking Assessment

Truck parking locations are typically clustered along the corridor's major interstates and interchanges.



North/West Passage Truck Parking Locations



Truck Parking Assessment

Metric	Idaho		Minnesota		Montana		North Dakota		South Dakota		Washington		Wyoming		Total	
	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total
Count of Public Facilities	37	31%	51	70%	73	56%	20	27%	22	26%	32	35%	89	56%	324	37%
Count of Private Facilities	81	69%	163	30%	57	44%	54	73%	62	74%	59	65%	69	44%	545	63%
Total Facilities	118	100%	214	100%	130	100%	74	100%	84	100%	91	100%	158	100%	869	100%
Number of Public Spaces	650	16%	677	21%	653	25%	177	9%	318	17%	730	20%	891	26%	4,096	18%
Number of Private Spaces	3,305	84%	4,169	79%	1,946	75%	1,826	91%	1,561	83%	2,974	80%	2,549	74%	18,330	82%
Total Spaces	3,955	100%	4,846	100%	2,599	100%	2,003	100%	1,879	100%	3,704	100%	3,440	100%	22,426	100%

Sources: CPCS Analysis of data from Idaho Transportation Department, Minnesota Department of Transportation, Montana Department of Transportation, North Dakota Department of Transportation, Washington State Department of Transportation, and American Truck Parking

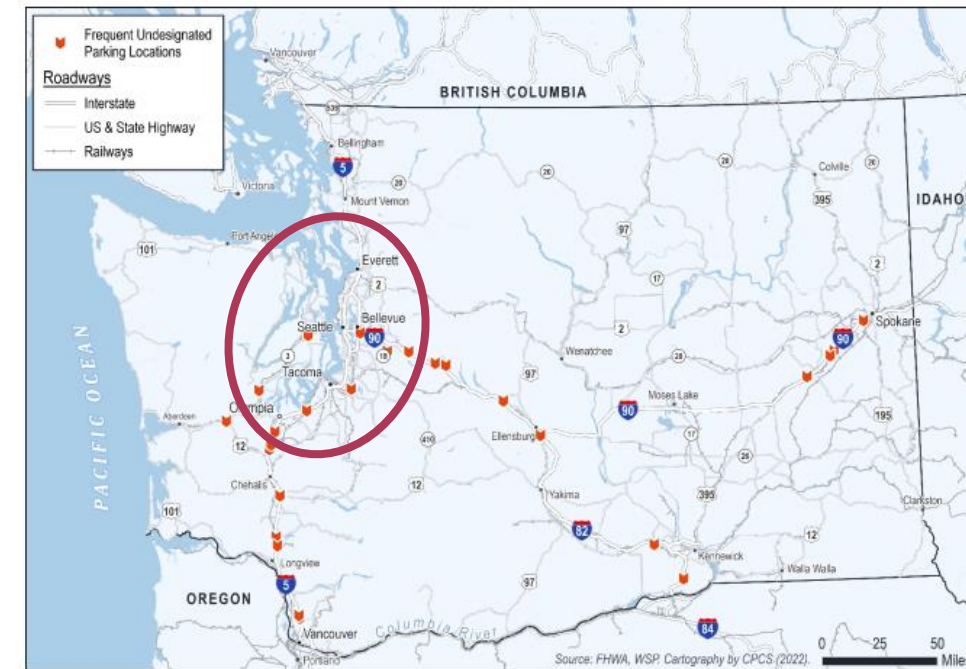
Truck Parking Assessment

Washington

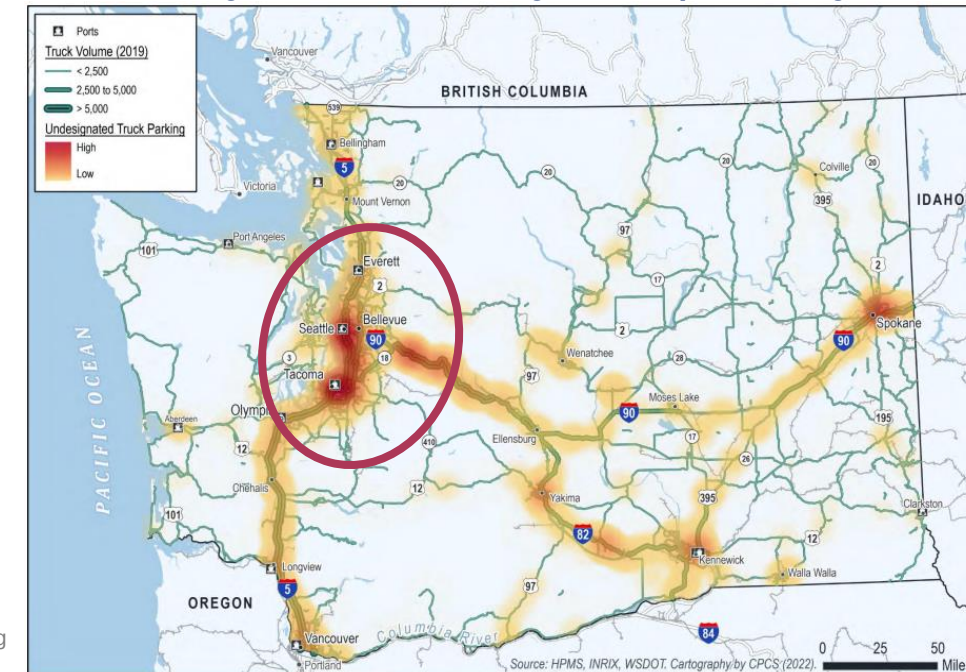
Truck parking studies and initiatives conducted by Washington State, combined with the truck parking location and truck travel time analyses in this project, reveal two key observations:

- Undesignated truck parking occurs even in areas with a dense supply of designated truck parking, and
- A persistent undesignated truck parking hotspot exists east of Seattle along I-90.

Locations of Frequent Undesignated Parking



Undesignated Truck Parking Heat Map, Washington



Truck Parking Assessment

Washington

- Trucks traveling from locations such as Boise can reach Seattle within a day's drive.
- Many drivers choose to park outside Seattle to avoid traffic or wait for their scheduled pick-up/drop-off windows, which aligns with the identified areas of dense undesigned parking in the state.

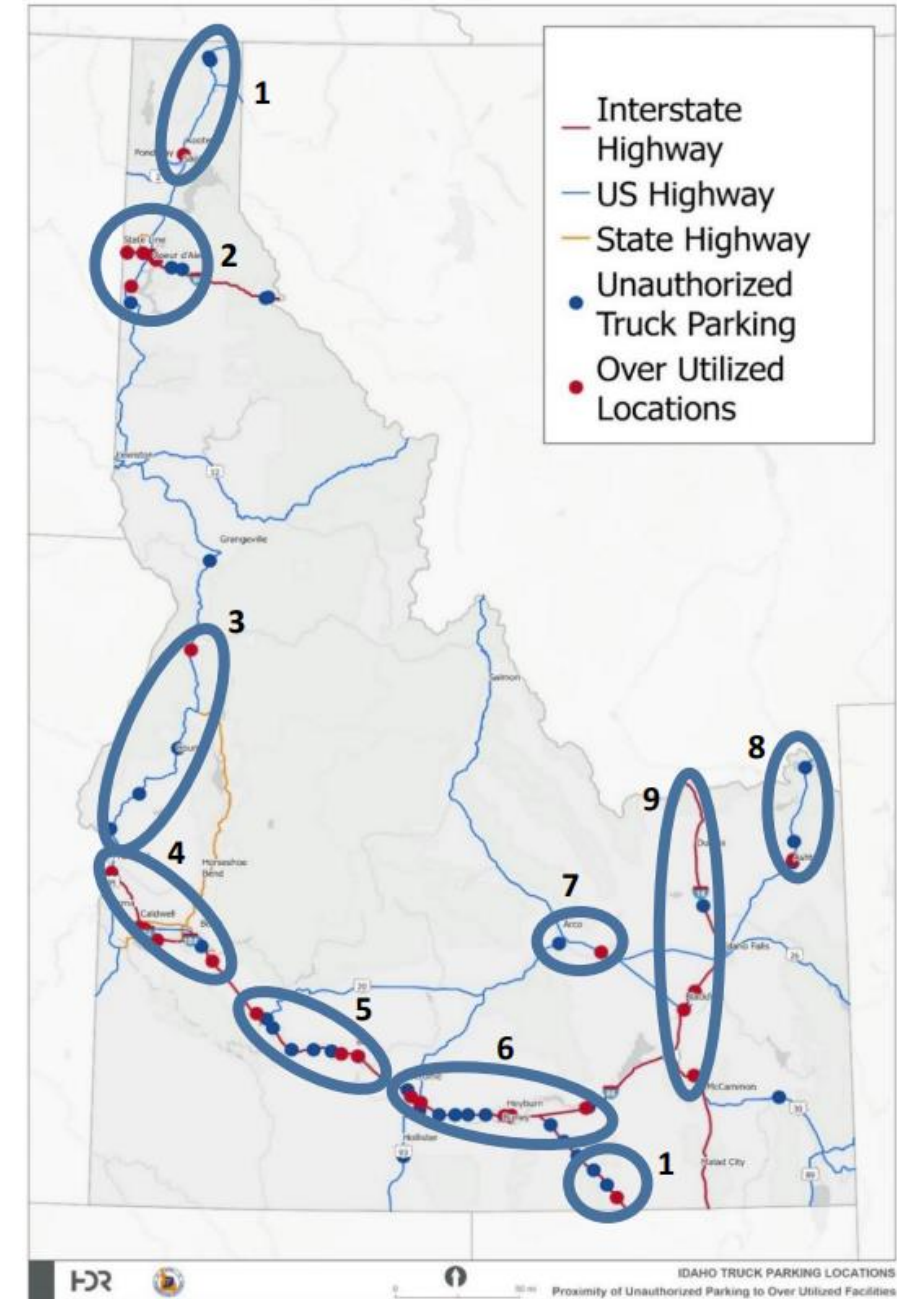




Truck Parking Assessment

Idaho

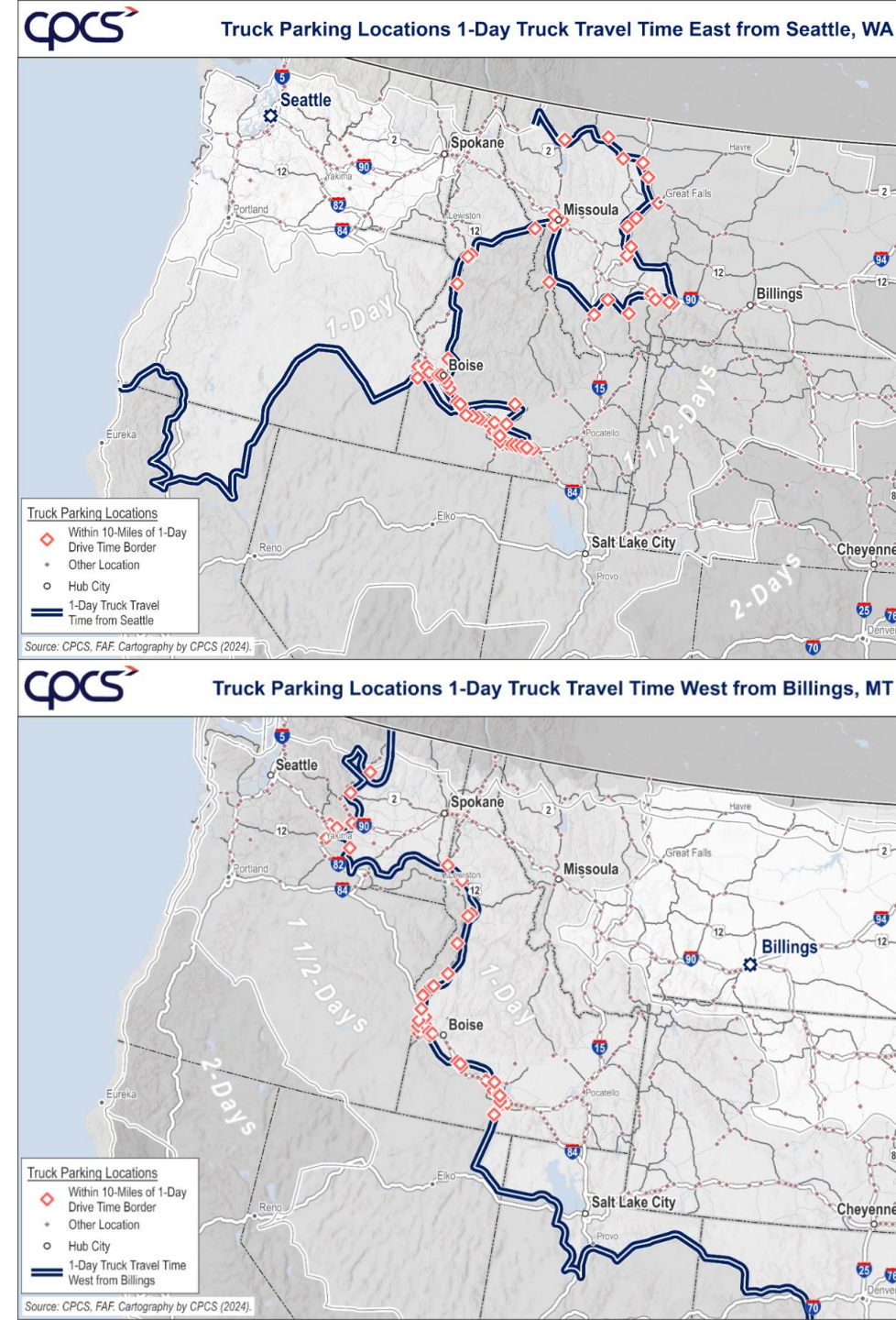
- The majority of Idaho's truck parking facilities are in southern part of the state, but truck parking demand analysis still identifies this corridor as having capacity needs.



Truck Parking Assessment

Idaho

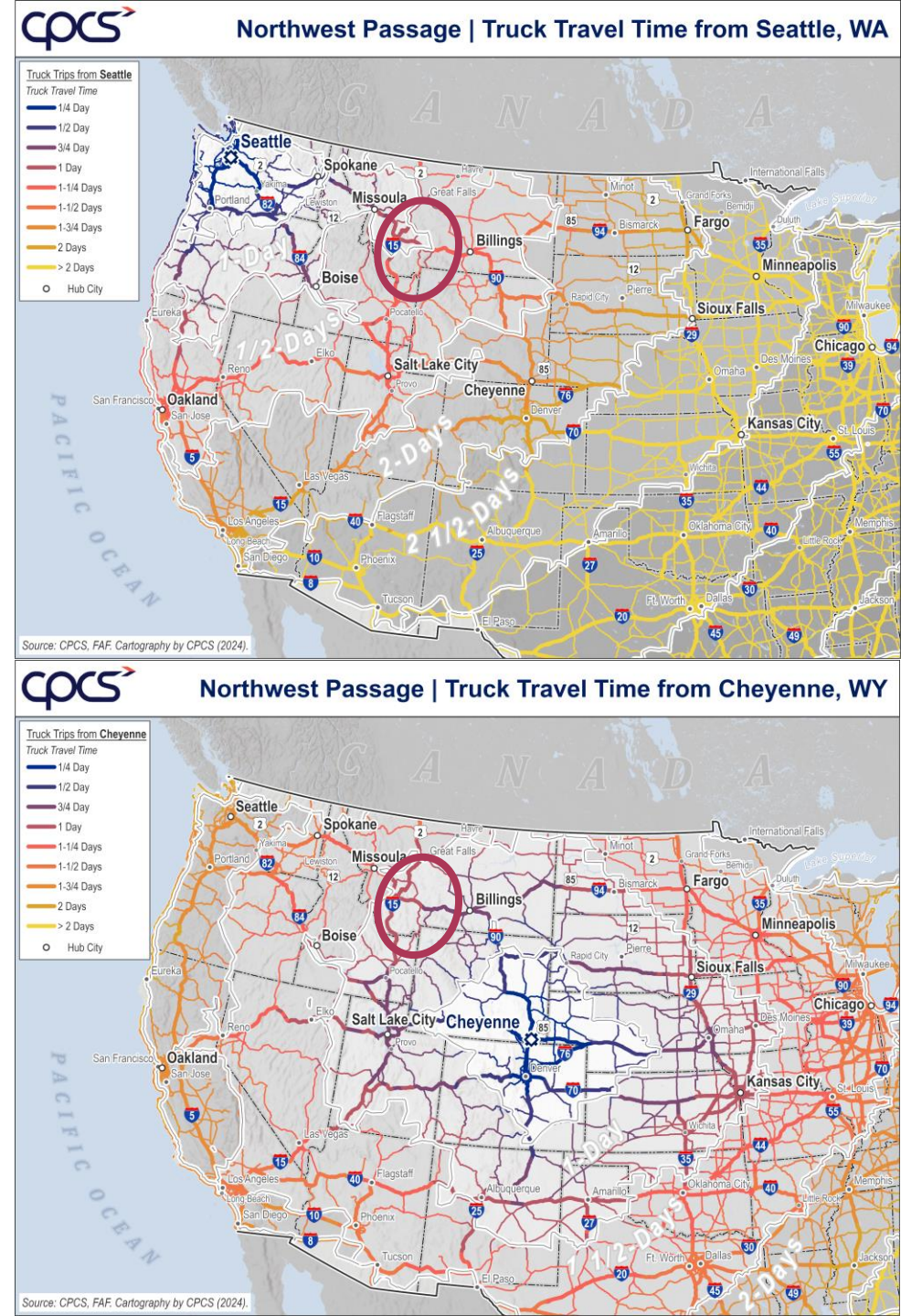
- Trucks departing from Seattle and heading east at the beginning of their HOS would likely need to stop and park along I-84 in Idaho.
- Truck drivers who begin their HOS in Billings, MT and drive west may also face expiring HOS along I-84 in Idaho.
- This convergence illustrates the high truck parking demand that is seen along this corridor and explains why, **despite there being significant parking resources already available, ITD still finds there to be a need for greater truck parking capacity in the area.**



Truck Parking Assessment

Montana

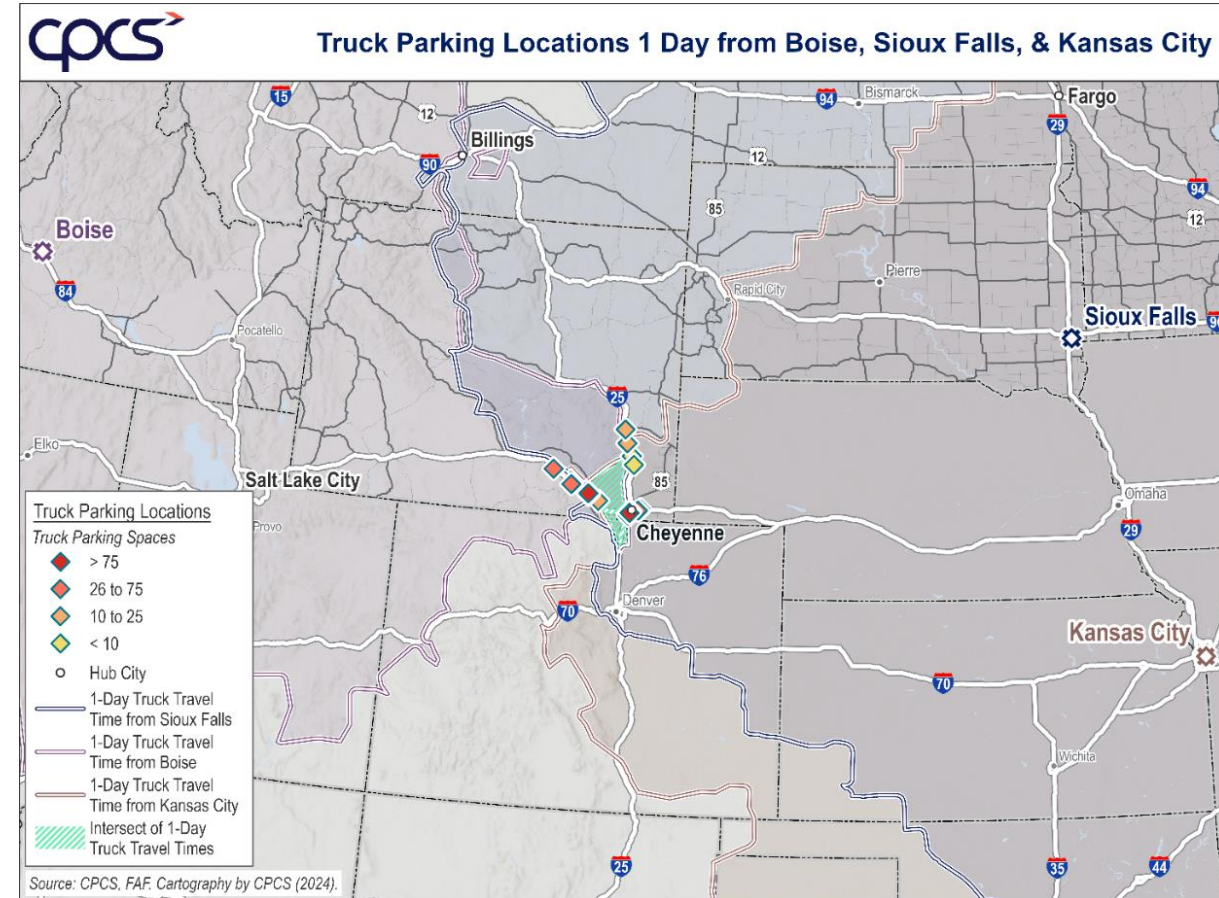
- Western Montana sees increased truck parking demand as drivers reach the end of their HOS.
- Montana DOT reported that the areas around **Three Forks and Butte** have a need for increased truck parking capacity.
- Drivers departing from Seattle and Cheyenne are likely to need truck parking in this area based on their 1-day travel time bands

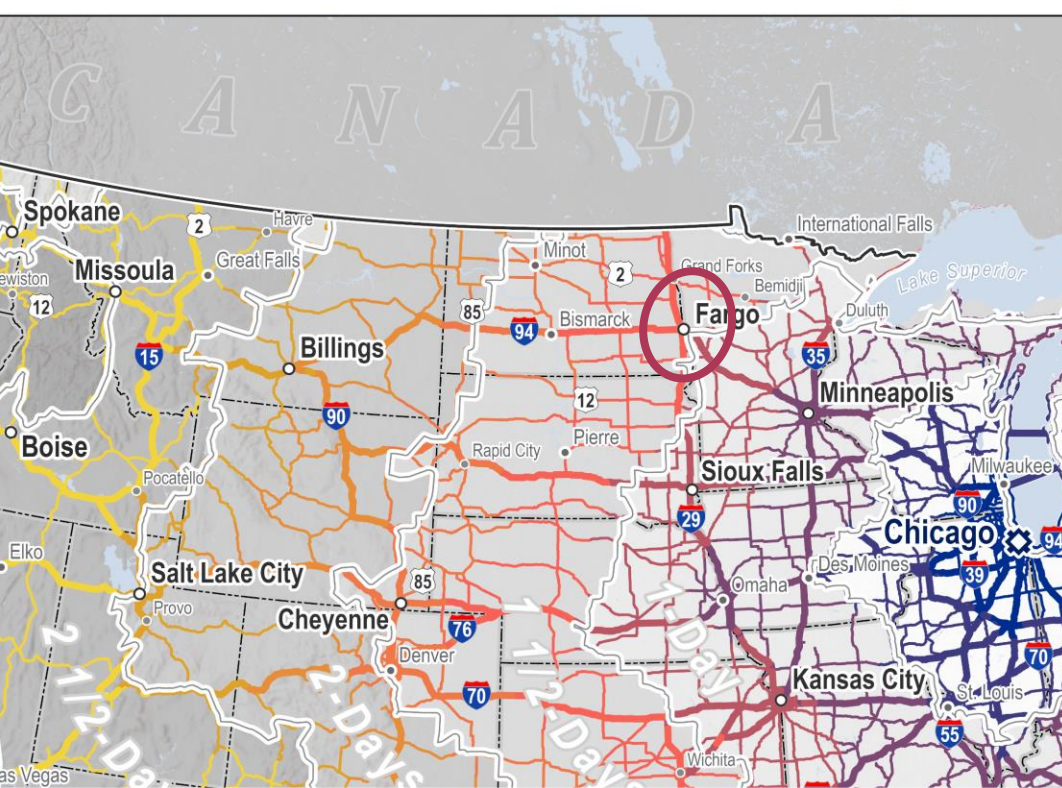


Truck Parking Assessment

Wyoming

- The area near Cheyenne is at the **convergence of three different 1-day travel bands**: Boise, Sioux Falls, and Kansas City.
- While existing truck parking facilities are in this area already, WYDOT has ranked this area their second highest priority for expanding truck parking capacity to accommodate trucks, particularly during adverse weather conditions.

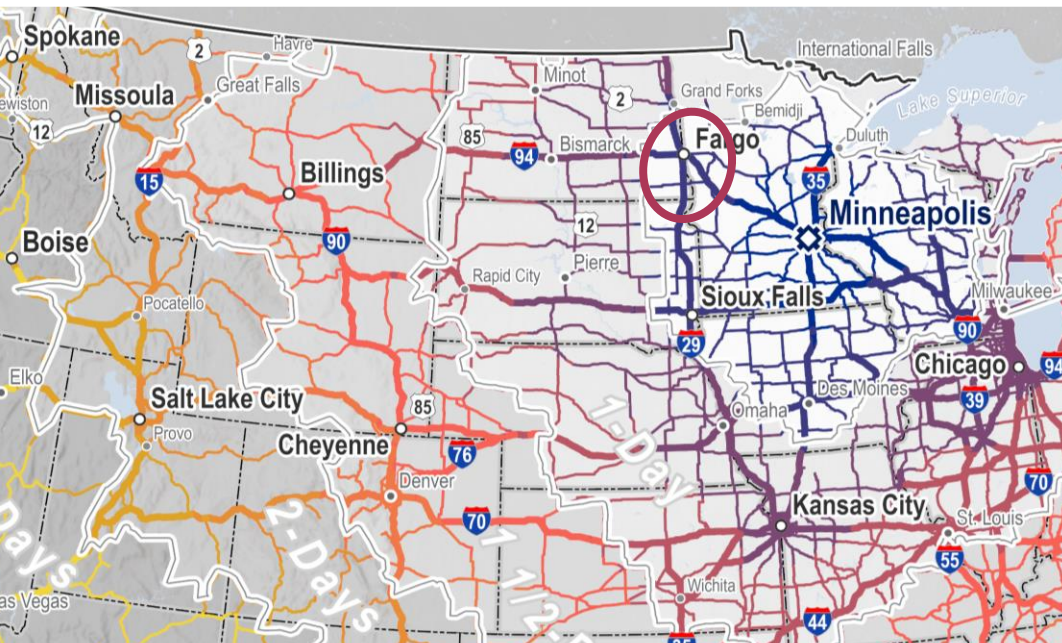




Truck Parking Assessment

North Dakota

- Cass County, ND and the Fargo area experience heightened truck parking activity.
- Cass County sits at the end of the 1-day travel time bands for drivers heading west from Chicago.
- Drivers from Minneapolis are nearing the edge of the ½ day travel band in this area and may require parking to stop for a break or to stage for pick-up and drop-off.

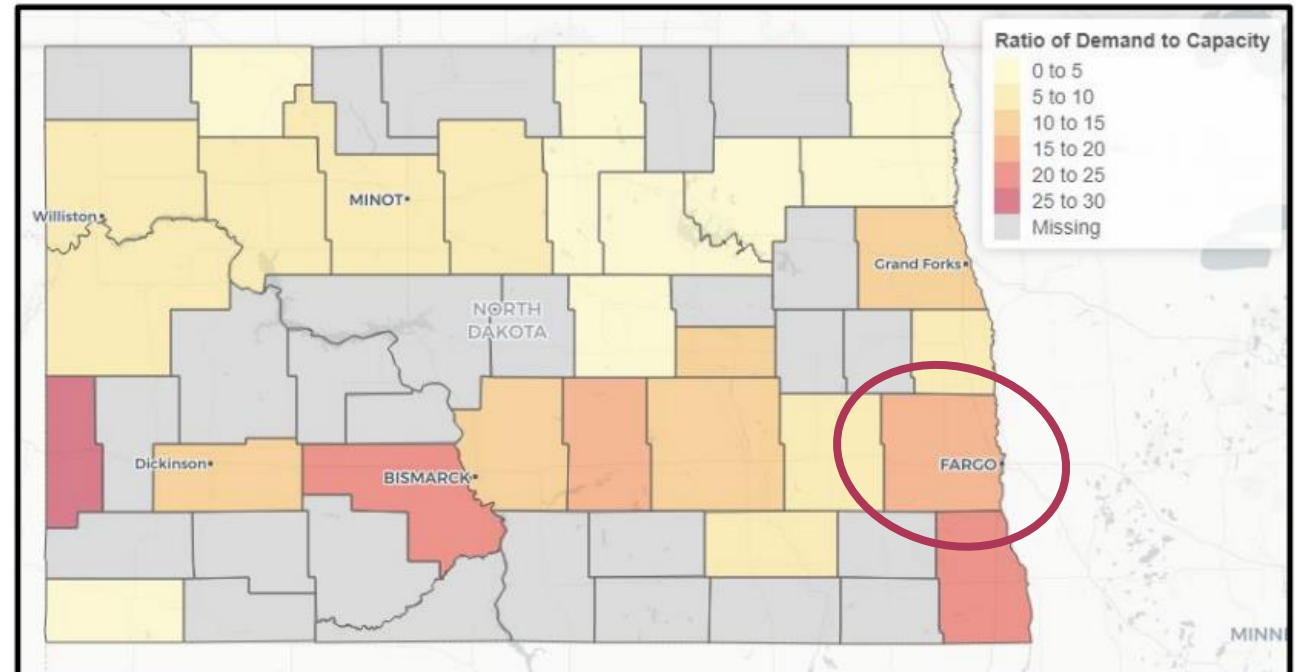


Truck Parking Assessment

North Dakota

- Despite Cass County's heightened truck parking activity, it has a relatively low truck parking demand to capacity ratio.
- This indicates that the existing truck parking facilities are adequate for the current levels of demand – **as demand occurs throughout the day, not only overnight.**

Ratio of Truck Parking Activity to Total Truck Parking Spaces by County

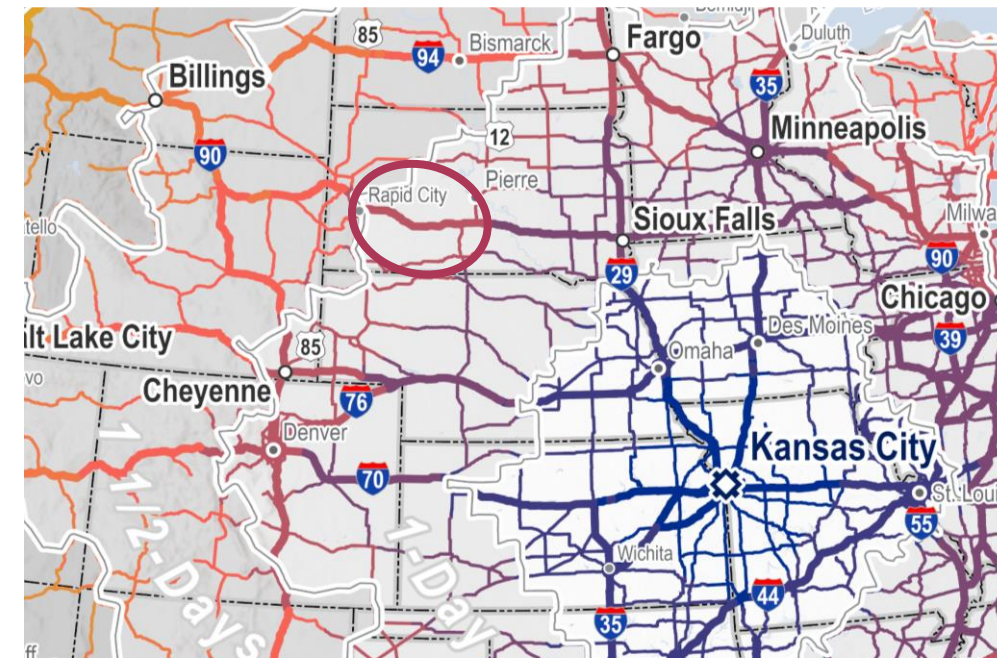
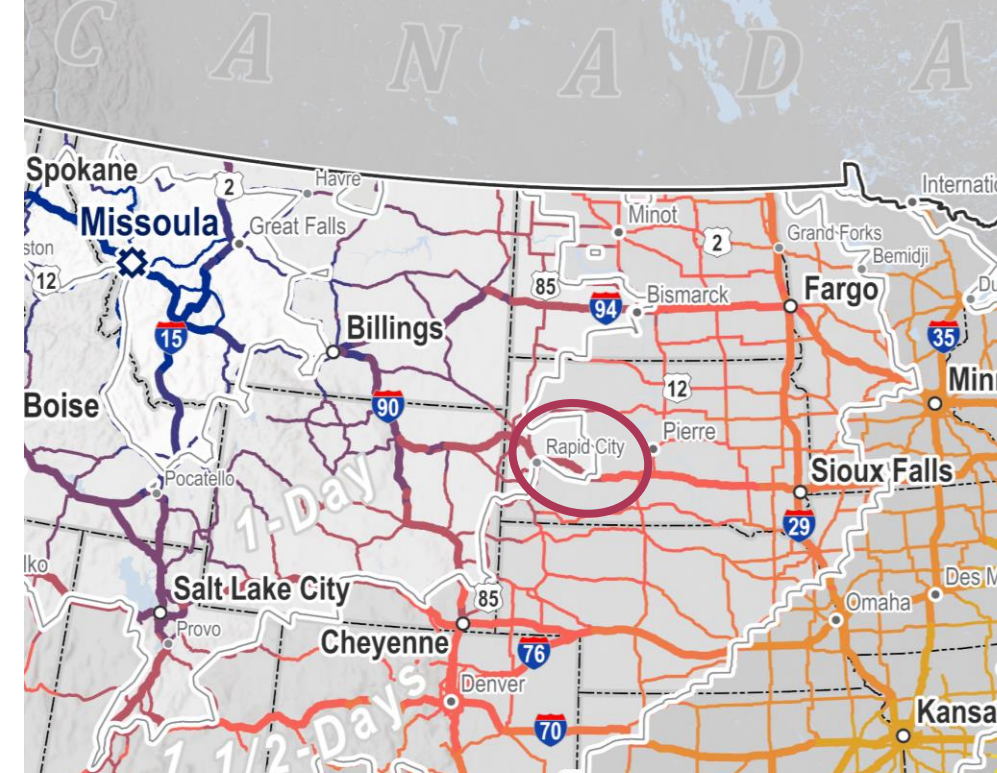


Source: North Dakota Department of Transportation, North Dakota Freight and Rail Plan, page 4-36

Truck Parking Assessment

South Dakota

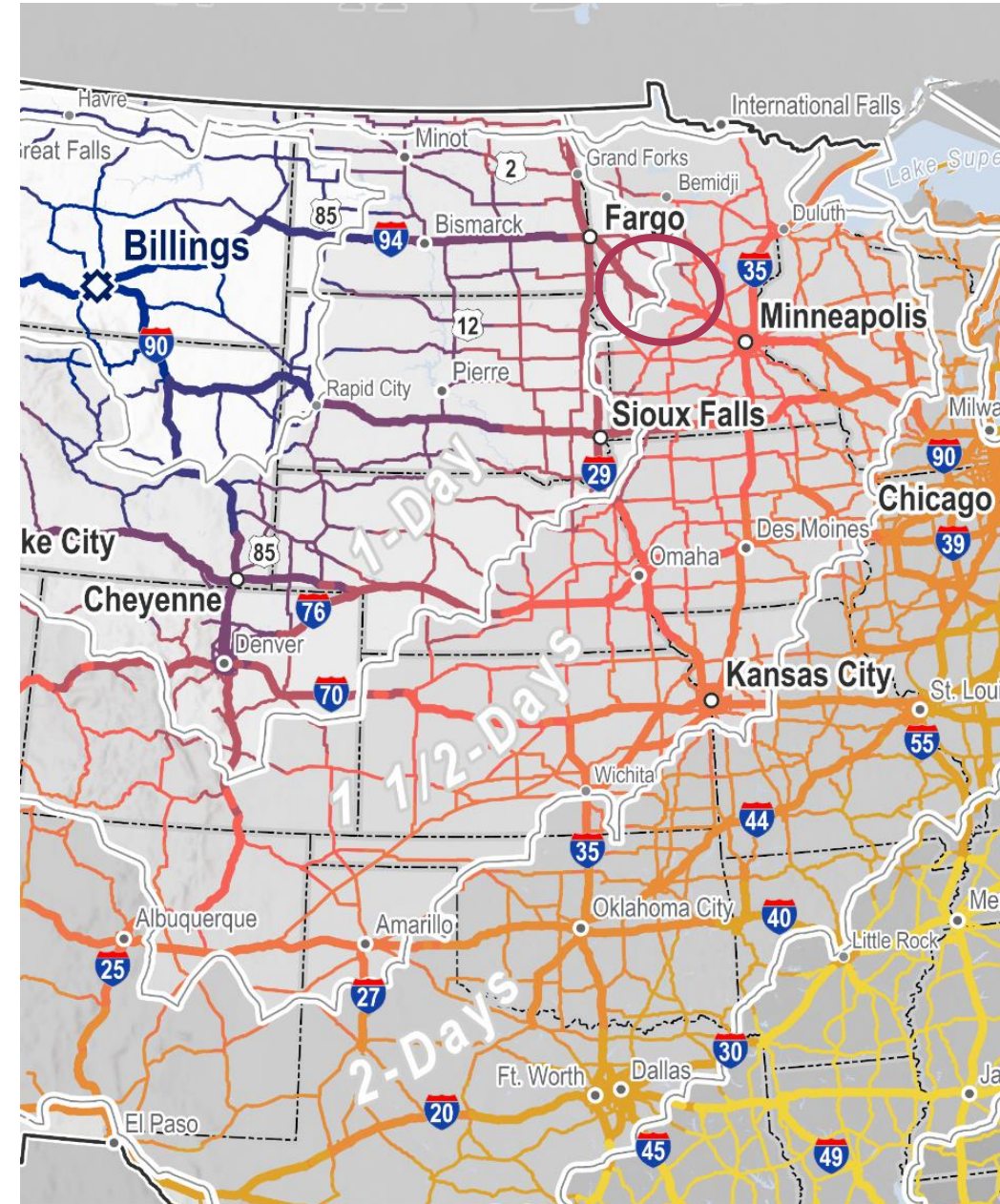
- SDDOT has identified rest areas that experience overcrowding, particularly overnight.
- The Wasta eastbound rest area on I-90 is one such site and sits near the end of the 1-day drive band for drivers traveling from **Missoula** and **Kansas City**.
- The Chamberlain rest area on I-90 also sits at the edge of the 1-day drive band for drivers heading west from Chicago
 - This rest area also reportedly experiences overnight crowding.



Truck Parking Assessment

Minnesota

- Truck parking facilities south of Minneapolis have been identified as being over capacity.
- Minnesota legislature approved funding for truck parking projects in fiscal year 2025.
 - Includes funding for land acquisition, predesign, design and construction of expanded truck parking at Big Spunk Rest Area on I-94 in Avon and the Enfield Rest Areas.
 - Big Spunk Rest Area aligns with the 1-day travel band for drivers heading west from Billings, MT.





Questions?



Agenda

Project Overview

About the Corridor

Stakeholder Consultations and Findings

Truck Parking Assessment

Key Findings and Next Steps



Key Findings

Significant efforts are underway in the North/West Passage to identify and understand truck parking issues. Findings fall under several key themes:

- Importance of a single, multi-state truck parking inventory
- Location of activity hubs and overall geography are significant factors in siting parking
- Correlation evident between hot spots and travel band evaluation
- Value in including driver perspectives in truck parking planning and design

Truck parking issues cut across the NWP corridor. There could be benefits to a corridor-wide approach to truck parking planning, implementation, and operations.



Next Steps



Share Results within NWP States

Share findings with other state public agencies that touch truck parking in the NWP.



Share Results with the Trucking Industry

Share findings with the broader trucking industry.



Continue Collaborating on Truck Parking in the NWP

Continue collaboration on truck parking during new and upcoming projects.

Next Steps



Share Results within NWP States

Share findings with other state public agencies that touch truck parking in the NWP.

Share final products with the Freight Task Force:

Final Report

7-state NWP truck parking inventory including public and private facilities

Repository of publicly available truck parking-related studies developed by NWP states

Encourage distribution to all staff within each state that “touch” truck parking to establish a common understanding of the system

Next Steps



Share Results with the Trucking Industry

Share findings with the broader trucking industry.

Inventory and information compiled through this research could offer a starting point for engagement when truck parking issues are identified

- States have insight into market decisions for locating truck parking
- Private sector has knowledge of the location and capacity of truck parking facilities across the corridor

Next Steps



Continue Collaborating on Truck Parking in the NWP

Continue collaboration on truck parking during new and upcoming projects.

This research serves as a starting point for future discussions among the NWP on shared interests related to truck parking and identifies actions:

Convene quarterly discussions focused on truck parking initiatives in each state

Explore strategic deployment of truck parking technology and enhancements

Develop a unified strategy to address truck parking issues that transcend individual state boundaries

Engage with private sector to understand their capital investment plans

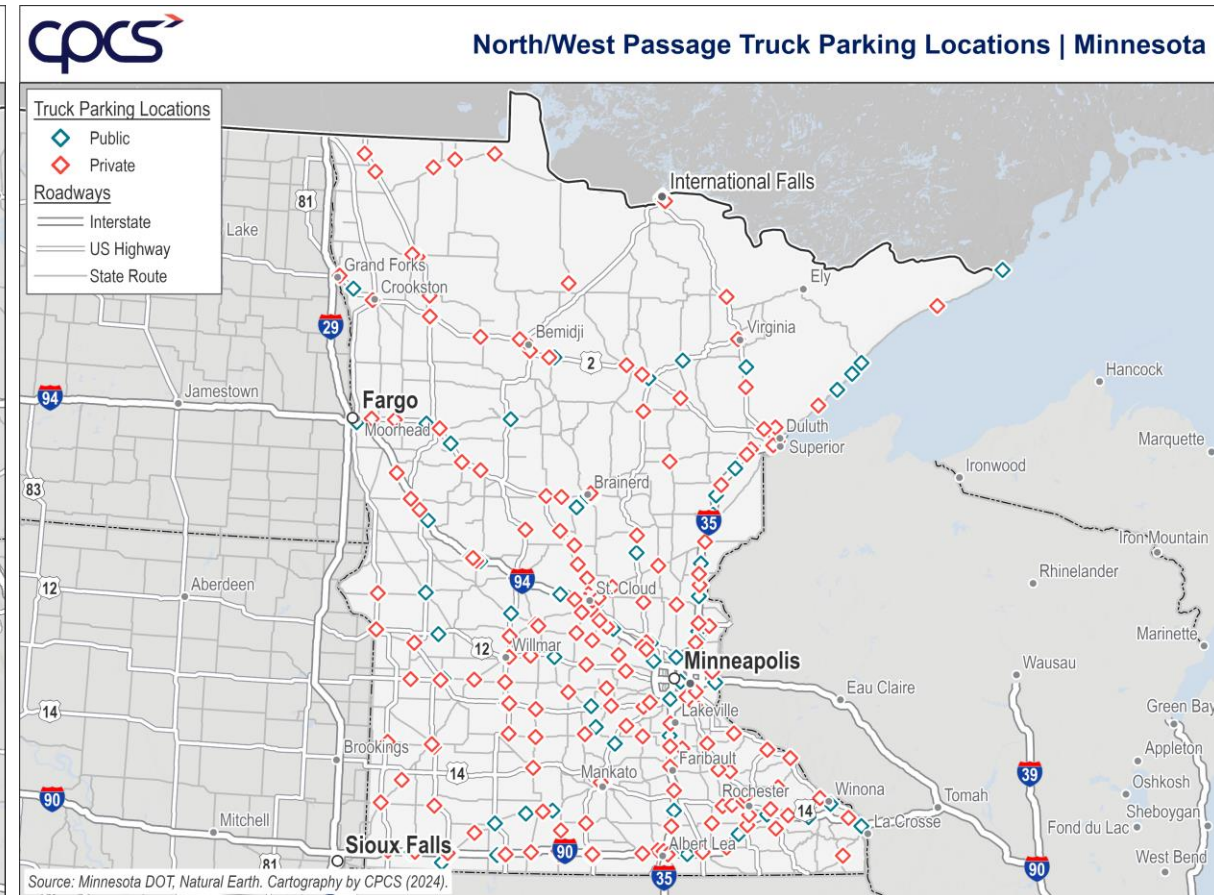
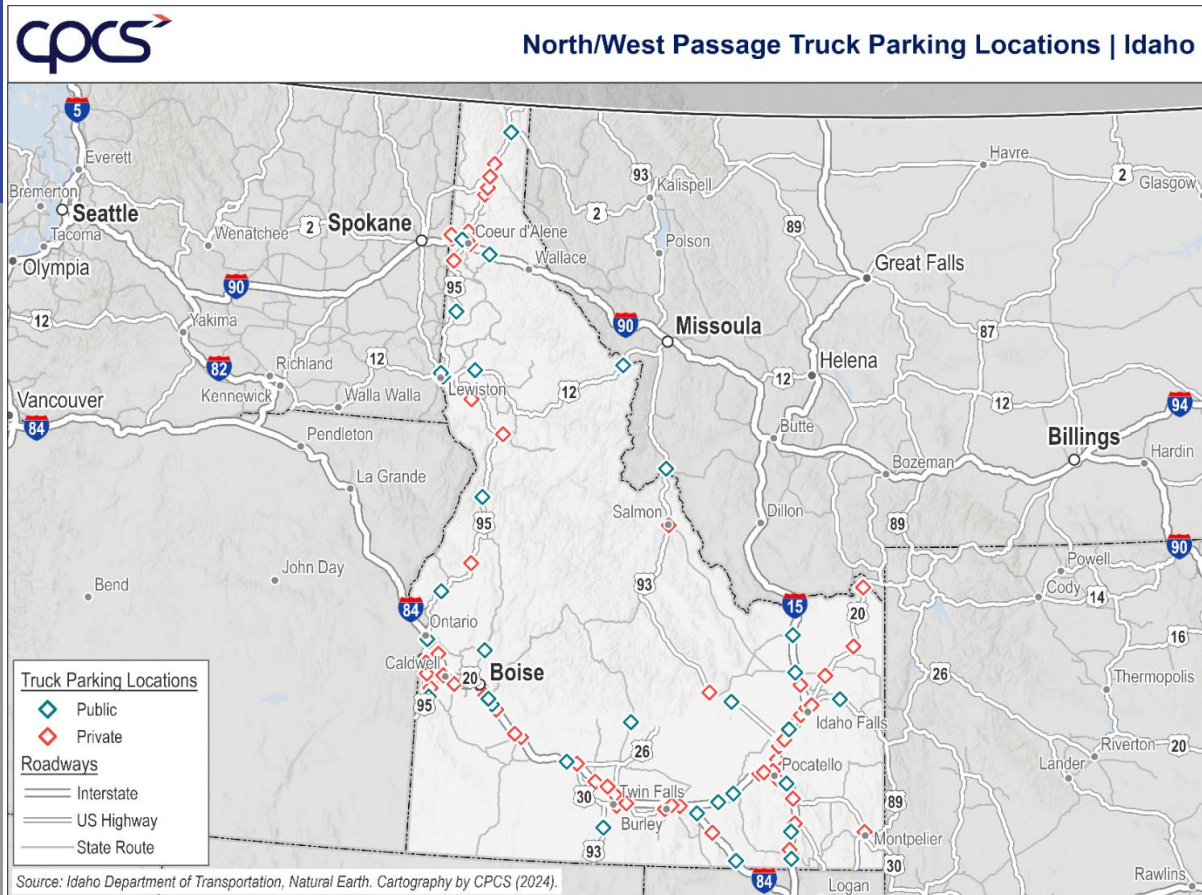
Examine hot spots/issues in border regions

Advance truck parking grant applications as a corridor

Discuss detailed investment plans underway to identify potential shared solutions

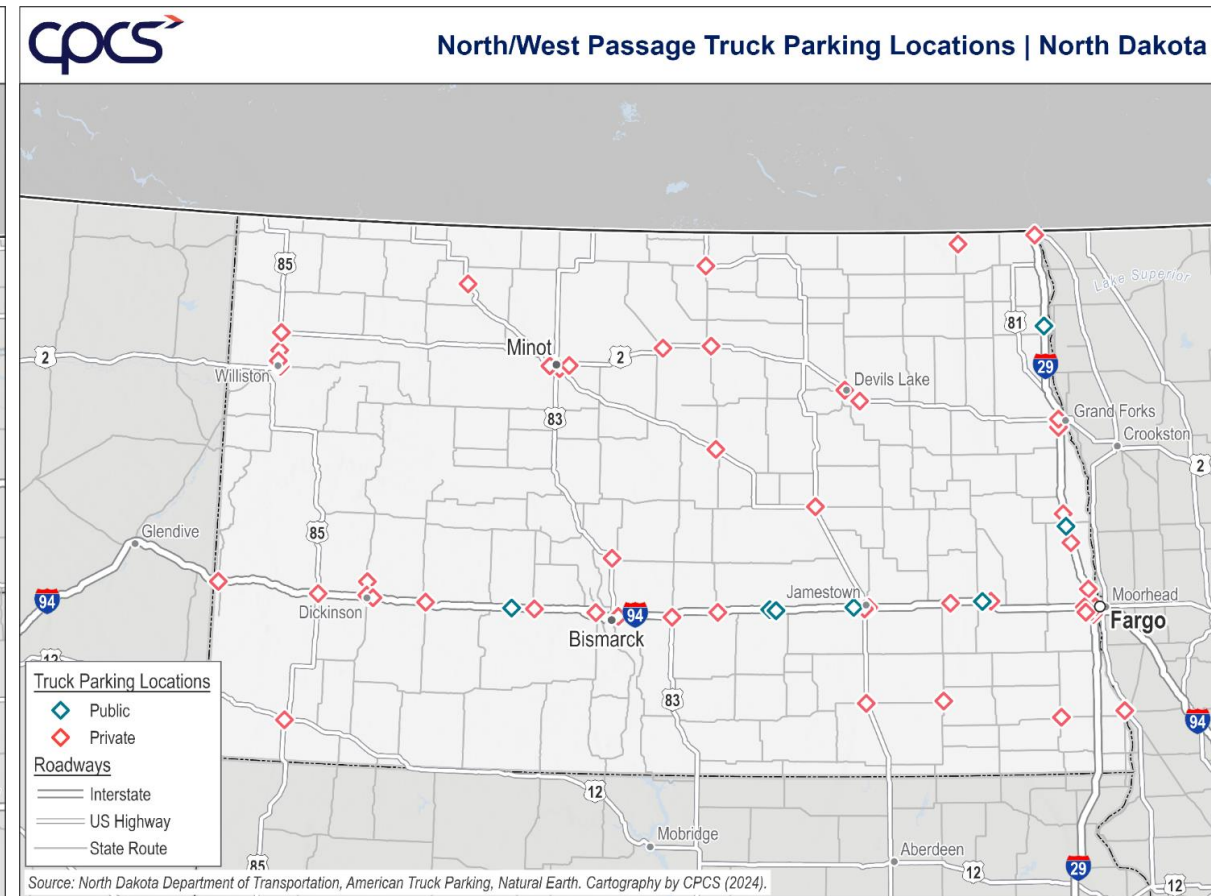
Additional Resources from Research

State Truck Parking Inventory Maps



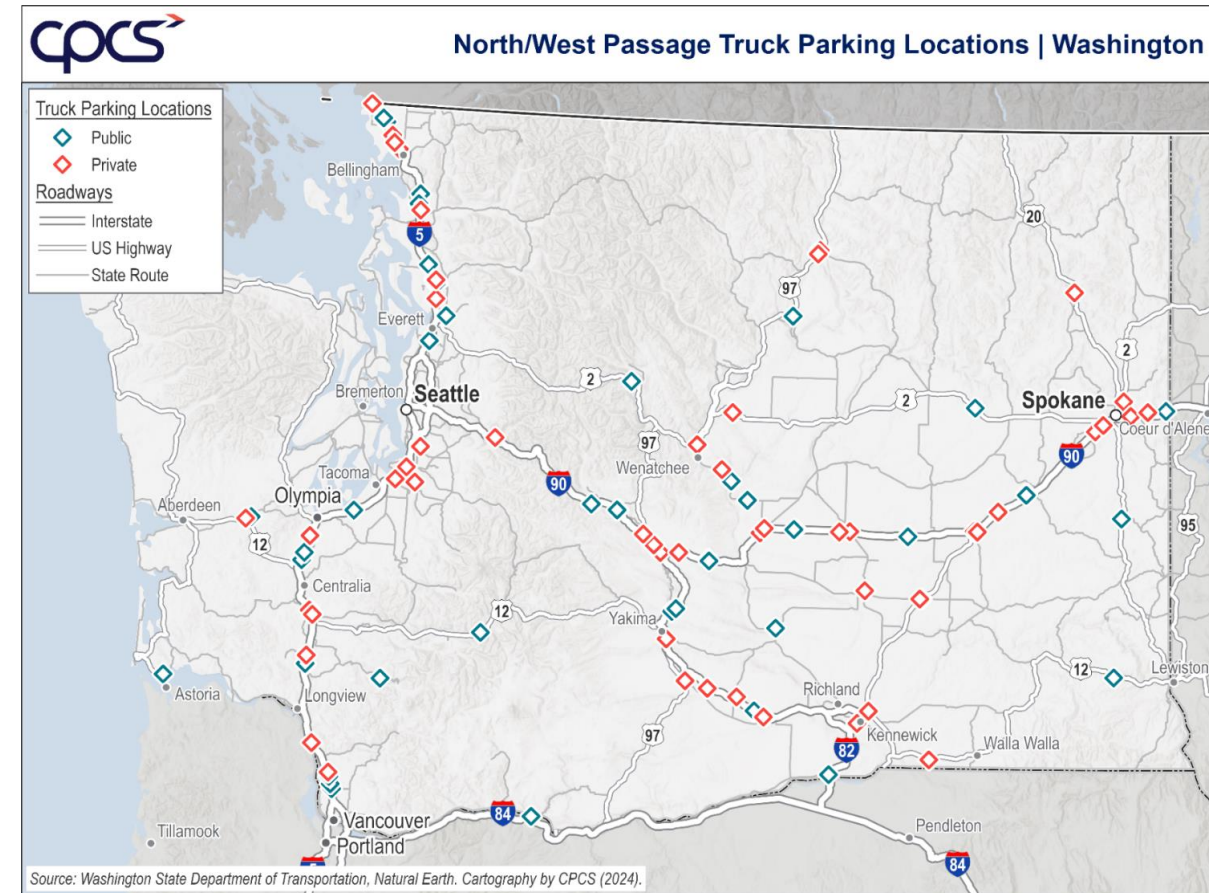
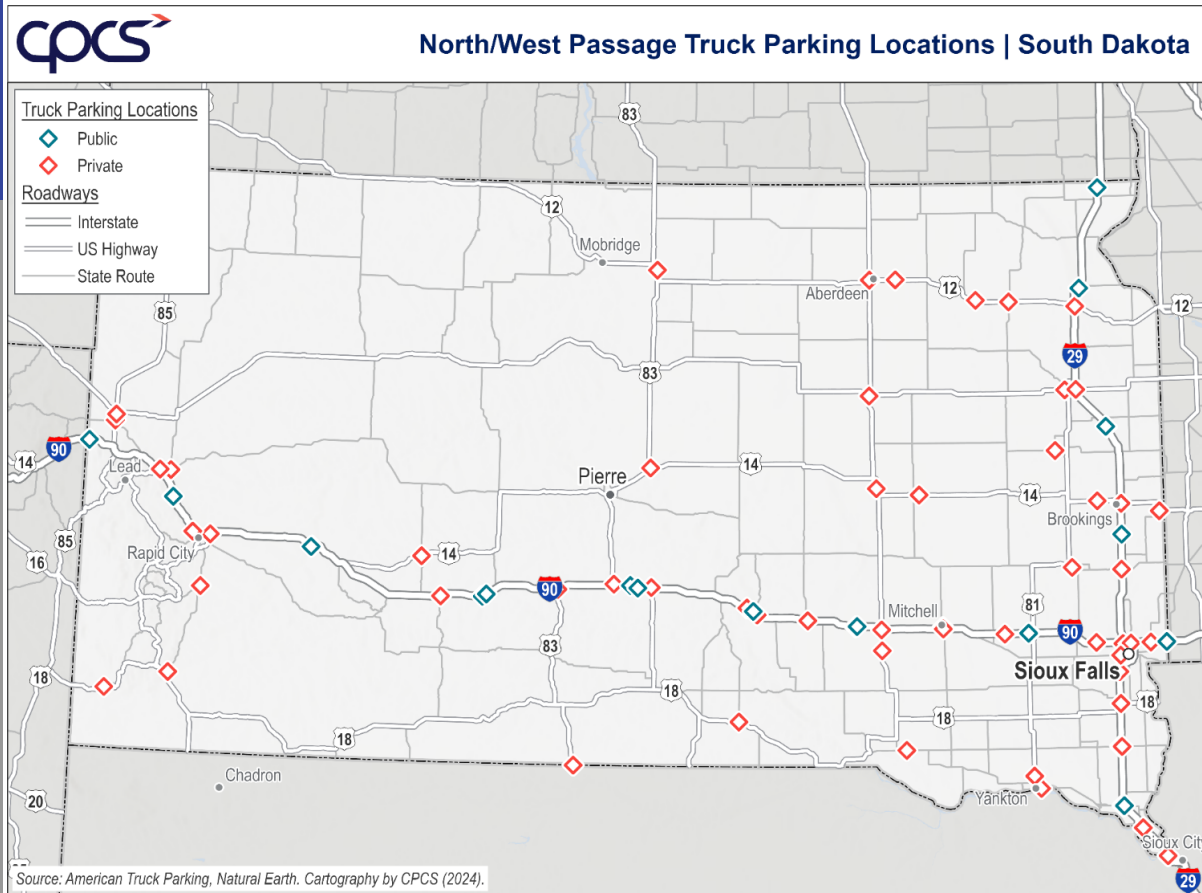
Additional Resources from Research

State Truck Parking Inventory Maps



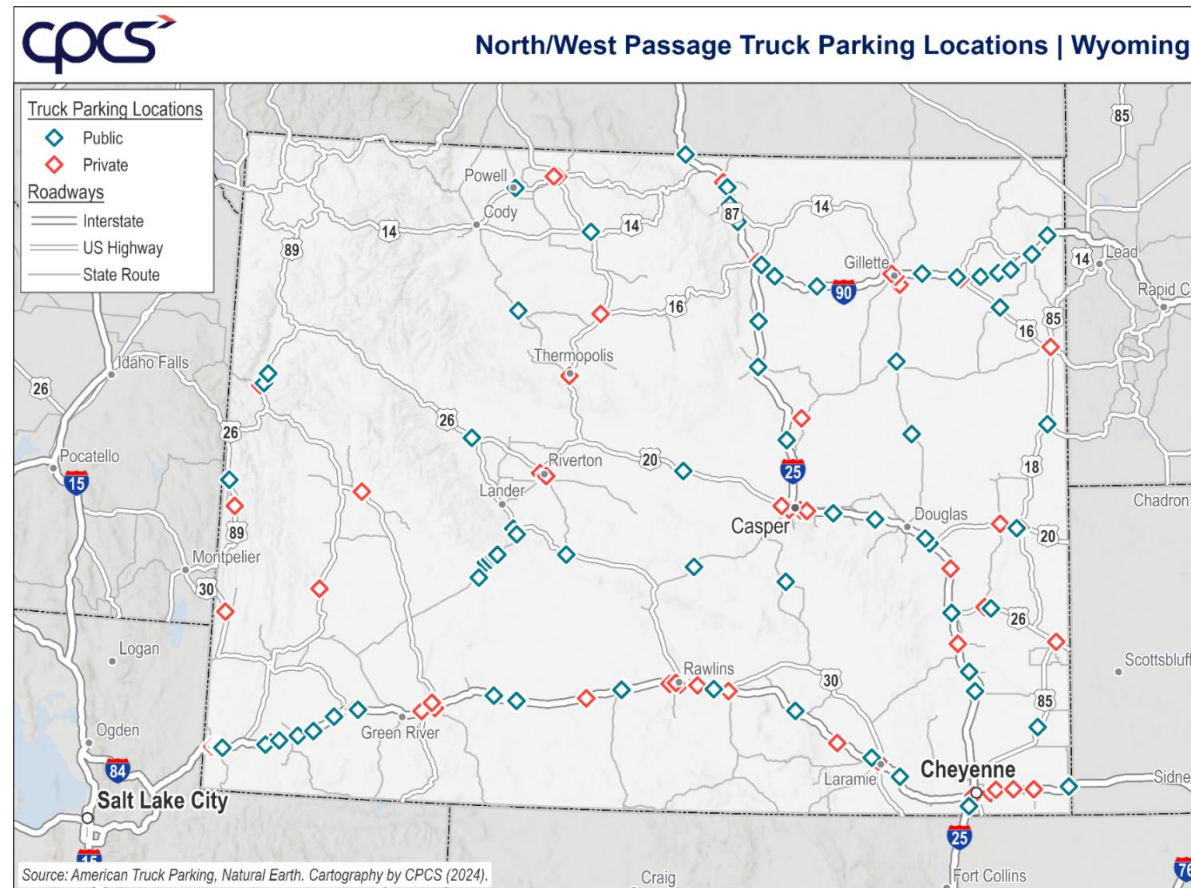
Additional Resources from Research

State Truck Parking Inventory Maps



Additional Resources from Research

State Truck Parking Inventory Maps





Questions?

Dave Huft

Chair, NWP Steering Committee

South Dakota DOT

dave.huft@state.sd.us

Erika Witzke

Consultant Project Manager

NWP Freight Task Force

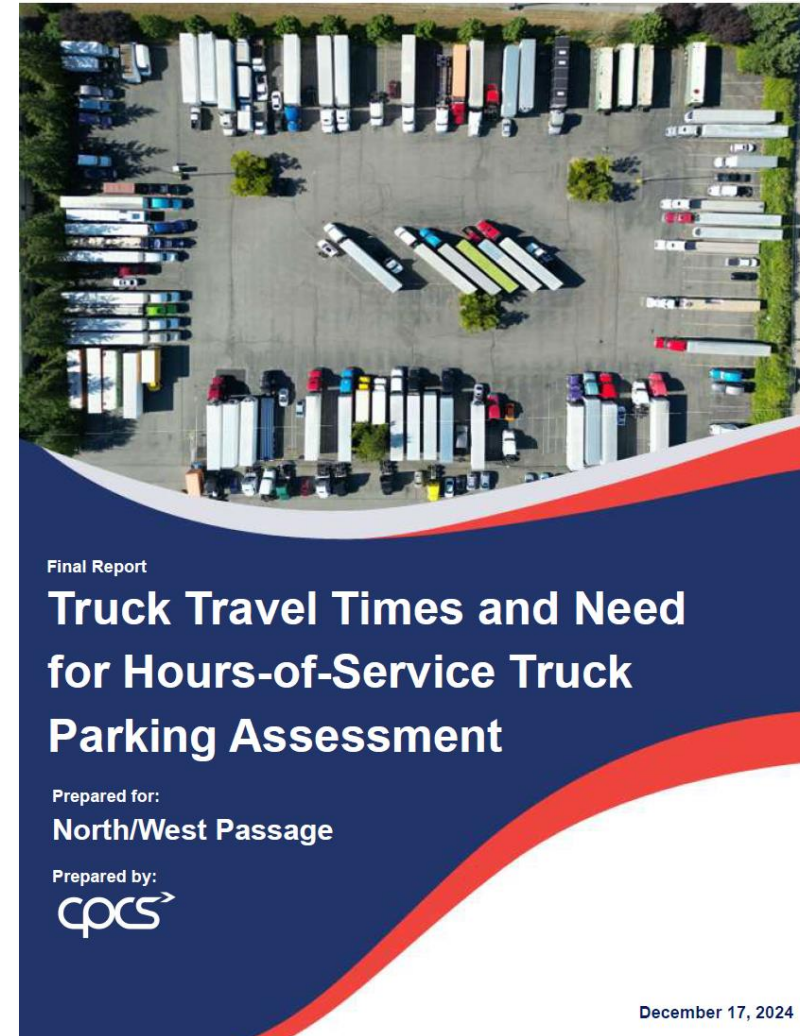
ewitzke@cpcstrans.com

Sarah Morgan

Consultant Project Coordinator

NWP Freight Task Force

smorgan@cpcstrans.com



Appendix B Stakeholder Engagement

Consultations

Consultations were completed with the below individuals, representing states in the North/West Passage and a variety of perspectives from the trucking industry:

- Kevin Hawley, Wyoming Trucking Association
- Allen Hodges, Idaho Truckers Association
- Kacey Heidrich, North Dakota Motor Carriers Association
- Dan Murray, American Transportation Research Institute
- Duane Williams, Motor Carriers of Montana
- Tilden Curl, OOIDA Board Member and truck driver
- Tom Weakley, OOIDA (written submission)
- Michelle Wells, South Dakota Trucking Association (written submission)

Appendix C Truck Parking Inventory

Truck Parking Inventory

Idaho

Figure 33: Idaho Truck Parking Facilities

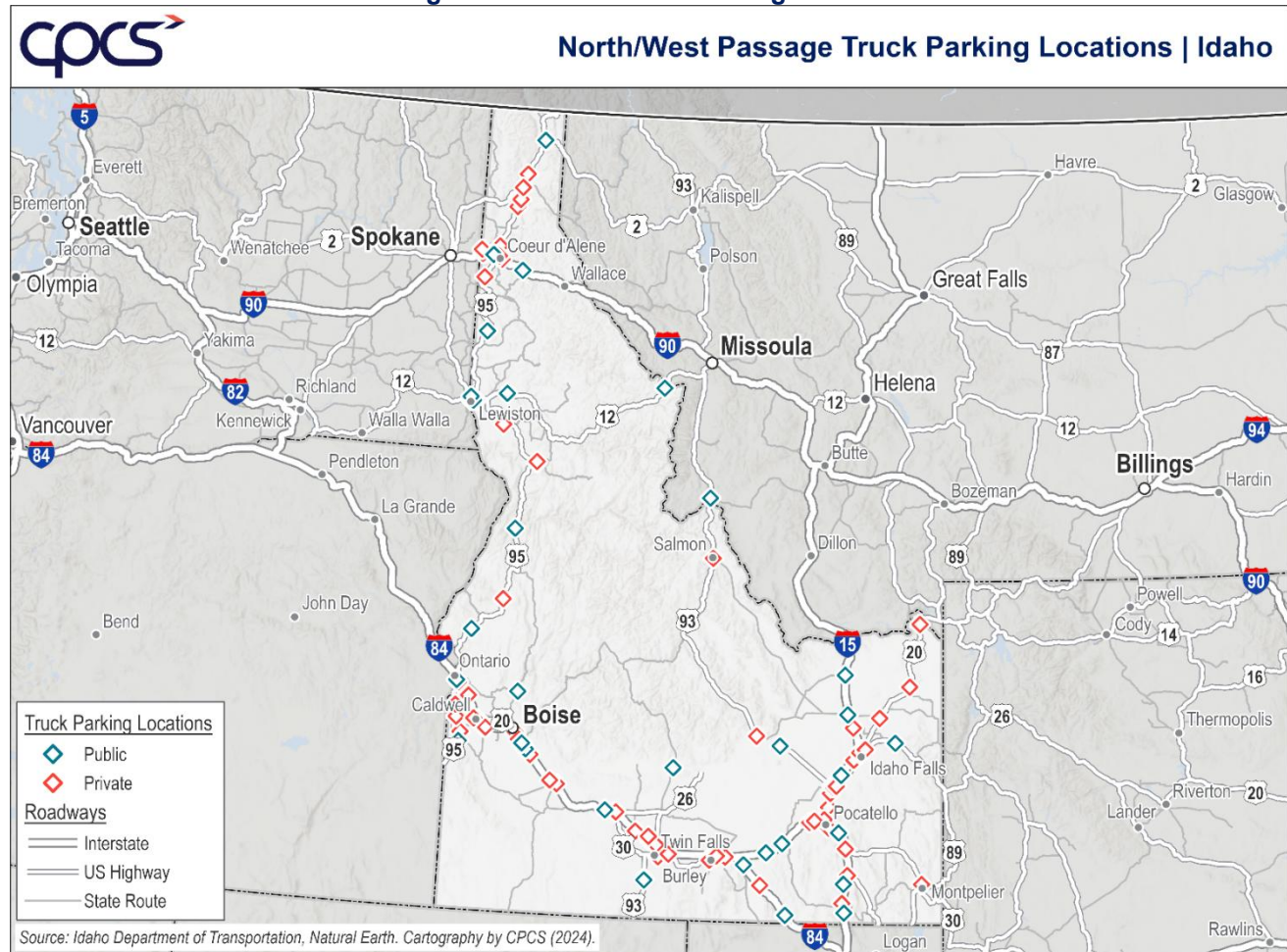
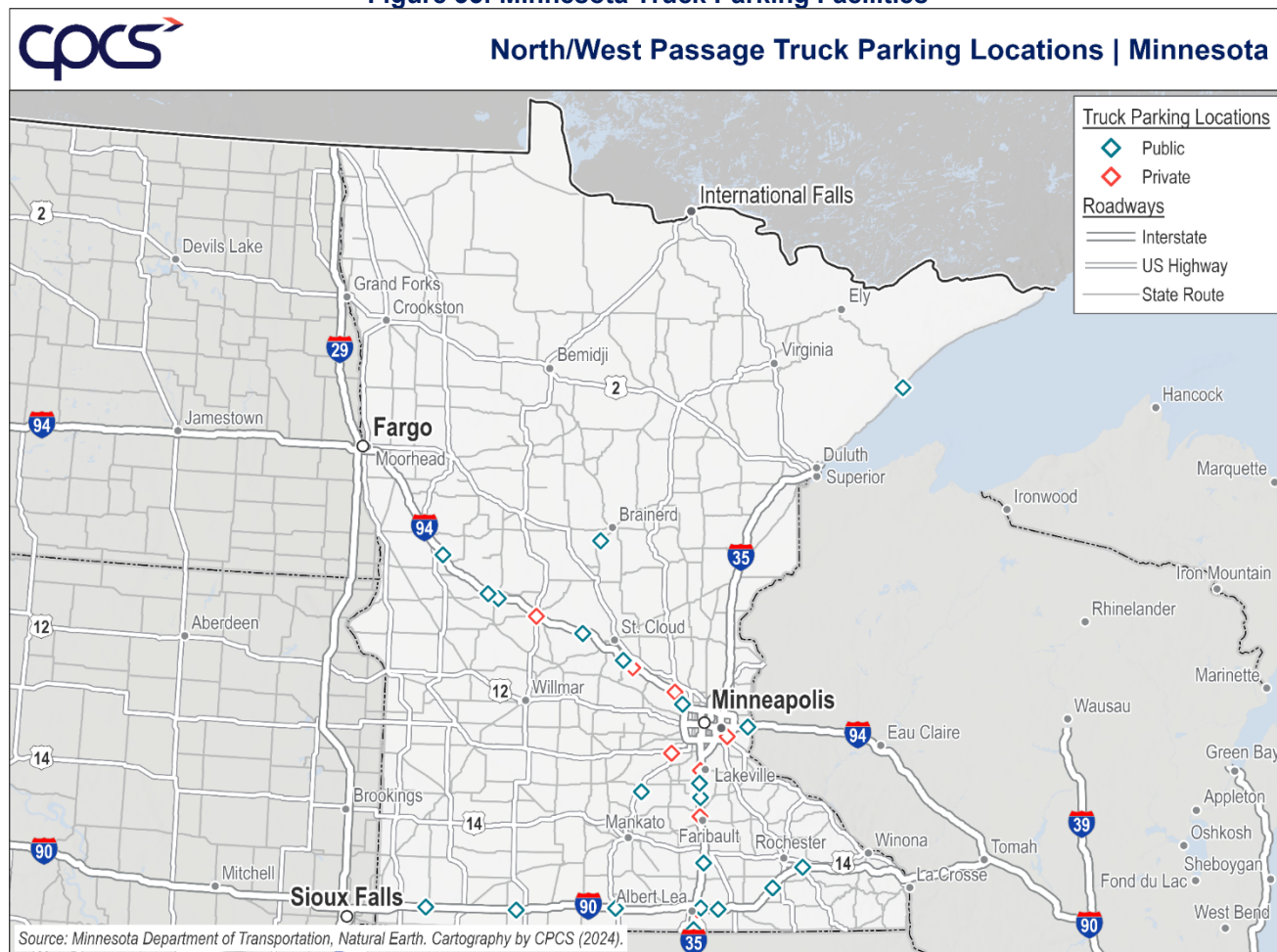


Figure 34: Count of Idaho Truck Parking Facilities

Facility Type	Count	% of Total
Public	37	31%
Private	81	69%
Total	118	100%

Minnesota

Figure 35: Minnesota Truck Parking Facilities



*Map is being updated to reflect current Minnesota truck parking inventory.

Figure 36: Count of Minnesota Truck Parking Facilities

Facility Type	Count	% of Total
Public	51	24%
Private	163	76%
Total	214	100%

Montana

Figure 37: Montana Truck Parking Facilities



Figure 38: Count of Montana Truck Parking Facilities

Facility Type	Count	% of Total
Public	73	56%
Private	57	44%
Total	130	100%

North Dakota

Figure 39: North Dakota Truck Parking Facilities

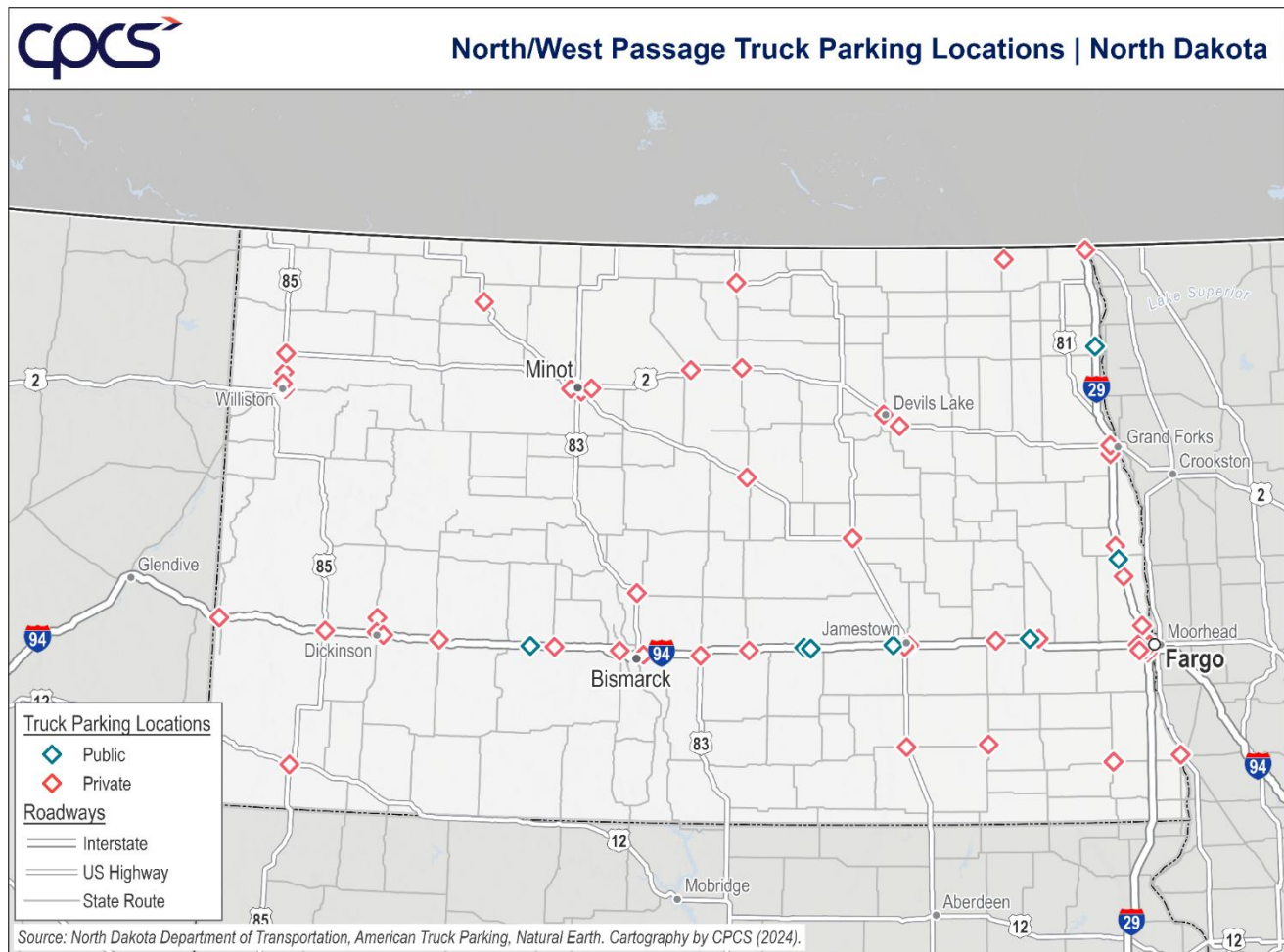


Figure 40: Count of North Dakota Truck Parking Facilities

Facility Type	Count	% of Total
Public	20	27%
Private	54	73%
Total	74	100%

South Dakota

Figure 41: South Dakota Truck Parking Facilities

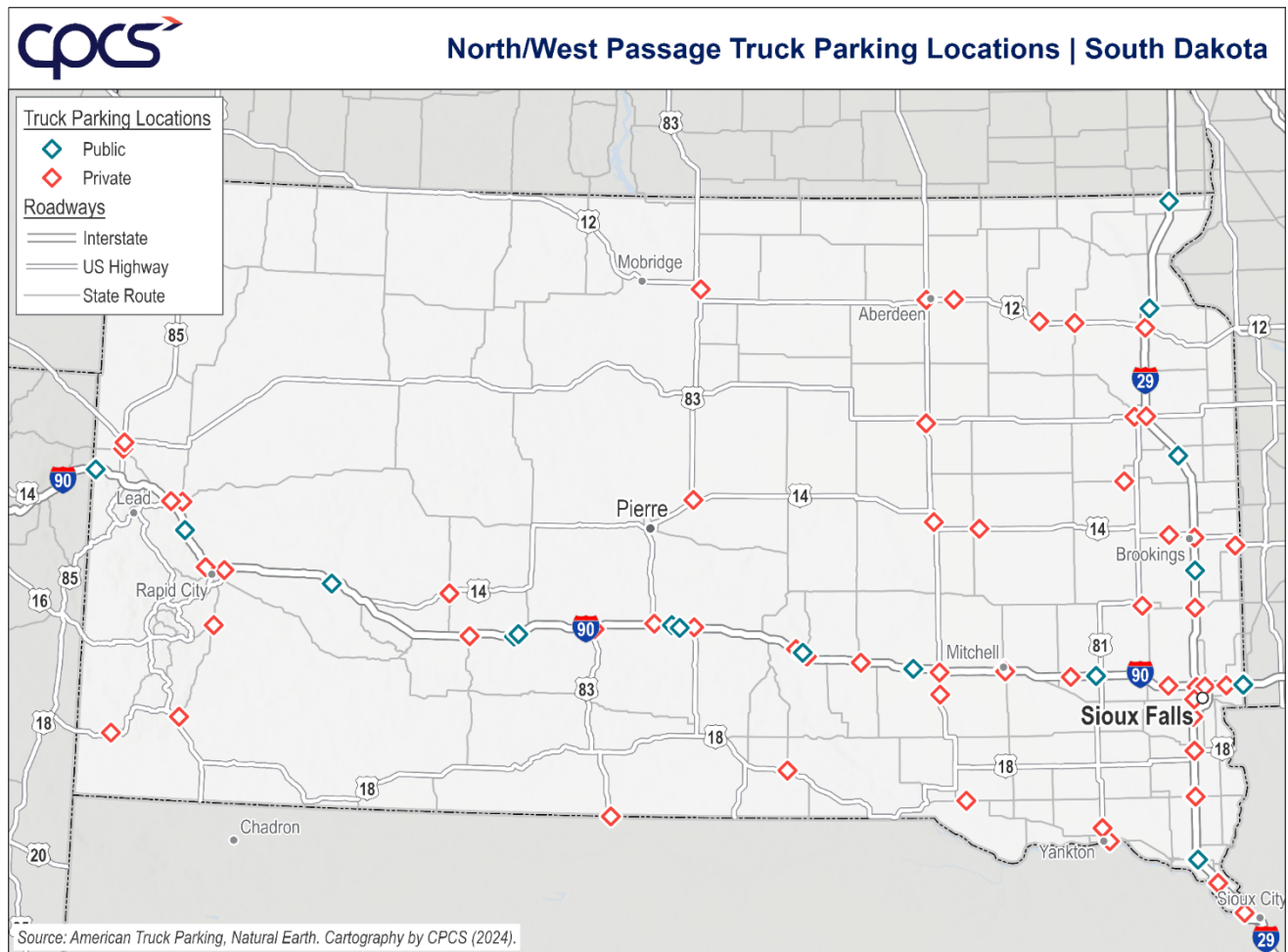


Figure 42: Count of South Dakota Truck Parking Facilities

Facility Type	Count	% of Total
Public	22	26%
Private	62	74%
Total	84	100%

Washington

Figure 43: Washington Truck Parking Locations

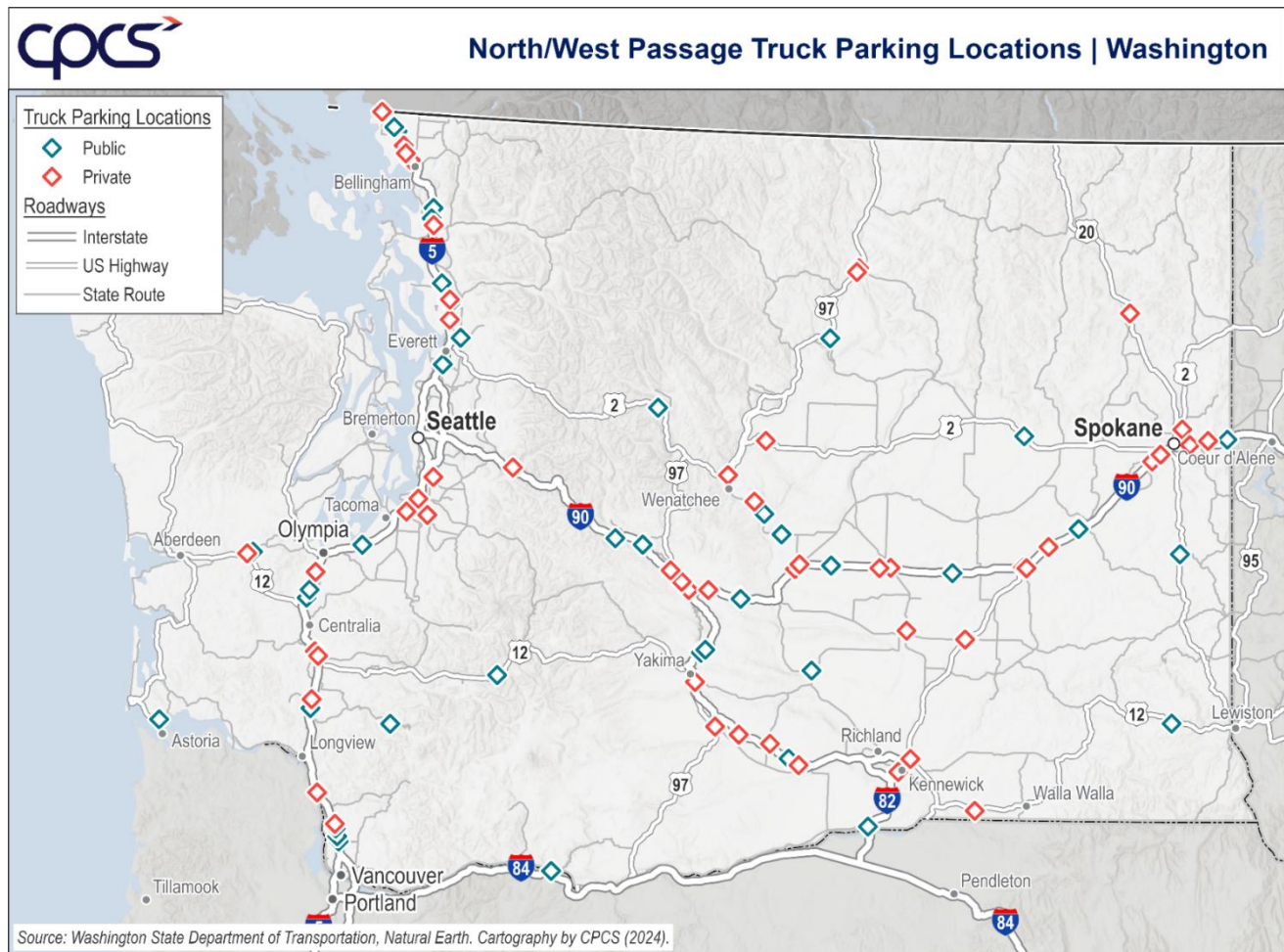


Figure 44: Count of Washington Truck Parking Facilities

Facility Type	Count	% of Total
Public	32	35%
Private	59	65%
Total	91	100%

Wyoming

Figure 45: Wyoming Truck Parking Locations

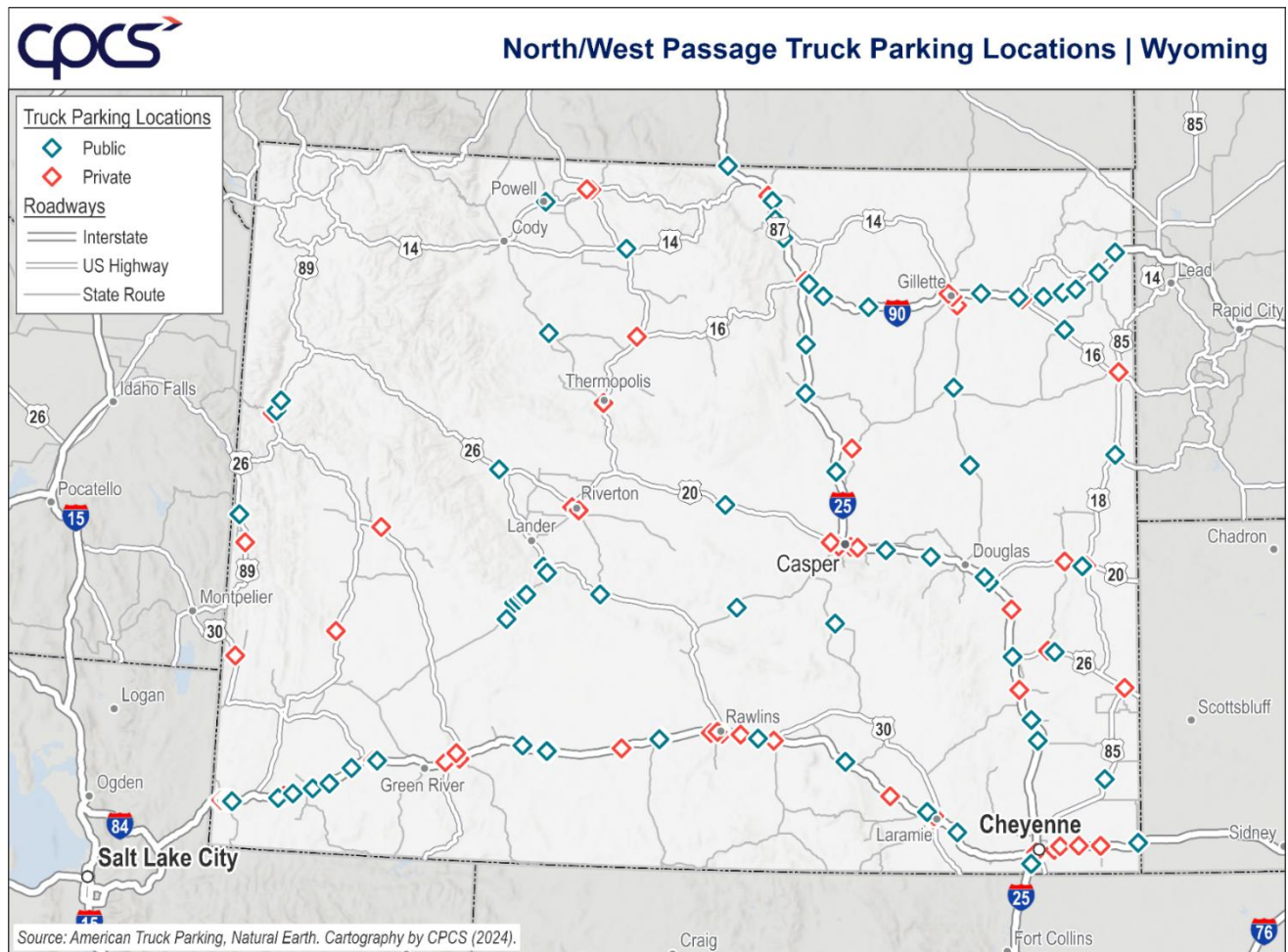


Figure 46: Count of Wyoming Truck Parking Locations

Facility Type	Count	% of Total
Public	89	56%
Private	69	44%
Total	158	100%



CONTACT INFORMATION

1028 33rd Street NW, Suite 320
Washington, DC, 20007
P: +1 (571) 214-4509

hello@cpcstrans.com

www.cpcstrans.com