



CHEYENNE REGIONAL FREIGHT MOBILITY PLAN

ADOPTED JUNE 30, 2016



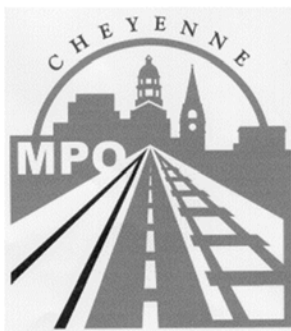


Cheyenne Regional Freight Mobility Plan

Final Report

Prepared for:

Cheyenne Metropolitan Planning Organization



May 27, 2016

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CHAPTER 1 INTRODUCTION

1.1 Background

“The Magic City of the Plains” as early Cheyenne was known, started as a railroad town in 1867. In the same year, Fort D.A. Russell was established just west of the town, which was later renamed to Fort Francis E. Warren to honor Wyoming’s territorial governor and first senator. Today the fort operates as Warren Air Force Base. When the First Transcontinental Railroad was completed in 1869, it connected the well-established cities of the eastern United States to the burgeoning Western Territories and the State of California. Cheyenne became a railroad hub for the Union Pacific and a frontier commerce center for cattle trade.

Today, Cheyenne is located at the crossroads of several important transportation corridors. Interstate 80, a major east/west freight corridor, intersects with Interstate 25 in the metropolitan area. Several U.S. Highways also traverse the region. Union Pacific’s (UP) main rail line, connecting the west coast with the Midwest, passes through Cheyenne, as does an important north-south Burlington Northern Santa Fe (BNSF) rail line. Cheyenne’s access to high-level transcontinental transportation corridors is a major strength for its economy. If not properly planned for, freight activity can be a double-edged sword: Freight is usually a sign of a robust economy competing in global markets; however, if not planned for, freight can add unpleasant side-effects to community livability and regional mobility. For example, truck traffic can bring unwelcome externalities such as noise, dust, vibration, emissions and premature road deterioration. Train traffic and associated terminal activities can also create noise, dust and vibration, and delay home to work trips, shopping trips, and recreational trips.

The Freight Mobility Plan, sponsored by Cheyenne Metropolitan Planning Organization (MPO), included participation for the Wyoming Department of Transportation, the City of Cheyenne, and Laramie County. The Freight Mobility Plan examines Cheyenne’s freight assets (supply), as well as current and projected freight activities upon those assets (demand). This report includes an analysis of the region’s Strengths, Weaknesses, Opportunities and Threats (SWOT) incorporating analysis completed on Trends and Issues affecting freight in the region, and enhances quantitative data and analysis with qualitative feedback from stakeholder outreach activities. The Freight Mobility Study presents an initial framework for regional Vision, Goals and Performance Measures, and concludes with projects, programs and policies to enhance the movement of freight.

The Cheyenne Freight Mobility Plan supports the long-range transportation planning efforts of the MPO, and addresses negative externalities from freight, while maintaining and enhancing the economic benefits from freight activity:

“To maximize trade’s economic returns, metropolitan areas need a firm understanding of their economic position as well as a supportive policy framework. To do that, metro leaders need to understand global trading networks. They must also recognize the importance of transportation assets – both within their region and beyond – to enable trade.”¹

¹ Adie Tomer, Joseph Kane, and Robert Puentes, *Metro Freight: The Global Goods Trade that Moves Metro Economies*. Global Cities Initiative, Brookings and JP Morgan Chase. October 2013. Pg 1.



1.2 Project Purpose

The purpose of the project is to provide support and assistance to Cheyenne MPO planning staff, in coordination with the Freight Steering Committee and other agency planning partners, to provide a comprehensive, multimodal examination of the regional freight system, using a Strengths, Weaknesses, Opportunities, and Threats (SWOT) approach. Freight related transportation needs were evaluated and an implementation plan prepared to support freight mobility and economic development. This Regional Freight Mobility Plan provides information to be used in future updates to *PlanCheyenne*, the Region's Long Range Transportation Plan.

1.3 Public and Stakeholder Involvement

Effectively engaging and communicating with key stakeholders and the public is an important step in building a common understanding about important relationships between transportation and economic development. Input from stakeholders is an important component of transportation planning and programming resulting in better decision making for people and goods movements. In freight oriented transportation planning efforts "engaging the private sector" is established by two-way communications with private sector stakeholders most affected by freight related transportation planning and investment decisions. A public involvement plan for this study effort was designed to encourage stakeholders to share their knowledge and perspectives about their existing business transportation practices, challenges and opportunities affecting transportation and economic development in the region, and explore new opportunities to enhance the economy in the future.

Steering Committee

Throughout the study process, meetings were held with a project stakeholder team including:

- Tom Mason, MPO;
- Mike Hutton and Shelia Foertsch, Wyoming Trucking Association;
- Anja Bendel, Cheyenne LEADS;
- Rob Geringer, Laramie County Public Works;
- Dan Cooley, Laramie County Planning;
- Ed Fritz, WYDOT Planning;
- John Hall, City Engineering;
- Nathan Beauheim, City Engineering;
- Mark Wingate, Systems Planning Engineer WYDOT; and
- Sara Thompson Cassidy, Director of Public Affairs for Union Pacific Railroad in Colorado and Wyoming.

Stakeholder Outreach

Participation from the freight community was paramount to identifying the Strengths, Weaknesses, Opportunities, and Threats which are unique to the Cheyenne Metropolitan Region. This was accomplished in several ways:

1. Shipper / Receiver Interviews – 15 companies were interviewed to collect information about how key supply chains work in the Cheyenne Region; to gather input about the condition, performance and access to the Cheyenne regional transportation system; and to provide a reality check for data sources about goods movement.
2. Motor Carrier Surveys – four companies were surveyed to develop a better understanding about highway freight movements in the Cheyenne Region; The purpose of the survey was to identify

key motor carrier stakeholders for continuing engagement, and identify bottlenecks and deficiencies in the current transportation systems that hamper efficient freight operations in the Cheyenne Region.

3. Truck Driver Issues Survey / Driver Breakroom Maps – four companies posted maps of the Cheyenne highway and street network in the driver break rooms of their trucking terminals. Drivers were asked to identify areas within the network which they felt had traffic issues, infrastructure deficiencies, and / or safety problems.
4. Regional Freight Forum – a half day forum was held at the Laramie County Library on December 9, 2015. Companies who had participated in the surveys and interviews were invited to attend, and Cheyenne LEADS (the Cheyenne/Laramie County economic development corporation) did a one-time e-mail blast to their membership with an invitation to the workshop. **Figure 1-1** shows the Forum invitation.

Figure 1-1: Freight Forum Invitation



Appendix A includes public involvement materials for this Freight Study including the following:

- Shipper/Receiver Interview Guides
- Shipper/Receiver Interview Summary
- Motor Carrier Interview Guides
- Motor Carrier Interview Summary
- Driver Break Room Map Instructions
- Regional Freight Forum Notes and Sign in Sheets



Public Meeting

A public open house was held on May 16, 2016 to provide an opportunity for members of the public, stakeholders, and public officials to review the results of the study and provide input on study recommendations and findings.

During public meetings convened throughout this study process and through stakeholder outreach for this Cheyenne Freight Mobility Plan, comments were received from a variety of stakeholders. They included:

- Truck parking issues and lack of available facilities to park trucks when there is inclement weather on the interstate.
- Concern for increased communication between public agencies and private industry related to freight transportation issues, including WYDOT, County, City, and private companies in order to plan for the future.
- Concerns with oversight regulations regarding size and weight of vehicles, which may discourage companies from operating through the area.
- Identification of design concerns where truck movement is difficult.

1.4 Plan Organization

The MPO noted in the Request for Proposals the first objective of the study was to conduct a comprehensive *Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis* of the region's freight system. The SWOT analysis is presented in Chapter 5. The information was developed from the overview of freight assets (Supply Analysis) and from the stakeholder outreach described Chapter 2. Other data included in the analysis was from the freight demand described in Chapter 3 and freight trends and issues described in Chapter 4.

The second objective of the study was to develop an action program with policies, strategies, projects and program metrics to address short and long term freight needs of the region. The goals, objectives, and performance measures are described in Chapter 6 which will assist in future freight investment decisions. Chapter 7 of the report presents the regional projects and policies.

CHAPTER 2 BACKGROUND

The freight network serving the Cheyenne area is comprised of highway, railway, aviation, and pipeline systems. This chapter presents a description and inventory for each mode and also describes the location of major freight generators.

In addition, this chapter provides information to address a number of issues identified within the *2014 Update to Plan Cheyenne*. These issues include the following: growth within the oil industry and the effects on rail transportation; adequate truck parking to accommodate trucks

- during bad weather;
- traffic congestion at at-grade rail crossings;
- concerns from the trucking industry regarding truck routes; and
- roadways serving local residential areas not accommodating the delivery of goods to residences.

2.1 Highway Inventory

Trucks are an essential transportation mode for moving goods throughout the United States. In order for effective freight movement by trucks, it is essential to maintain a good state of repair on interstate, state, county, and city roads. Maintaining good physical condition (i.e., pavement and bridge decks) and providing adequate lane capacity on key freight facilities are priorities for critical truck freight links within the regional transportation network. This chapter provides a description and narrative of the following regional MPO highway system characteristics:

- Functional roadway classifications
- National Highway System (NHS)
- Designated national and regional truck routes
- Traffic flows and levels of congestion
- Truck volumes
- Crashes
- Revenue generation
- Oil and gas
- Roadway design

2.2 Functional Classification

A roadway network is based on a variety of facilities with varying characteristics that, combined together, make up the local/regional roadway system. As a critical part of the roadway system, state highways serve high-speed, longer-distance trips, while local streets and roads are designed to carry vehicles traveling lower speeds and making shorter trip lengths. Roadways are characterized by function and access. Roadways serving longer distance local/regional travel are arterials, and those serving shorter trips, or those which gather slower traffic on nearby streets onto a higher volume local road, are collectors.

The Interstate 25/Interstate 80 (I-25/I-80) interchange and adjacent highway facilities are the largest and most heavily used within the state of Wyoming. This segment of the Federal Interstate System provides local, regional, state, national access, and is the primary interchange in Wyoming for interstate commerce traveling border-to-border and coast-to-coast.

Lincolnway, Pershing Boulevard and Central Avenue are the main arterials providing access into Cheyenne from I-25. The Pershing Boulevard exit serves as the primary access point to F.E. Warren Air



Force Base on the west side of I-25. Lincolnway, Central Avenue/South Greeley Highway (U.S. Highway 85 [US-85]) and College Drive are the main arterials into Cheyenne from I-80. North and South Cheyenne are divided by railroad tracks that run parallel to Lincolnway, Nationway and Campstool Road; each of these roads is classified as an arterial roadway.

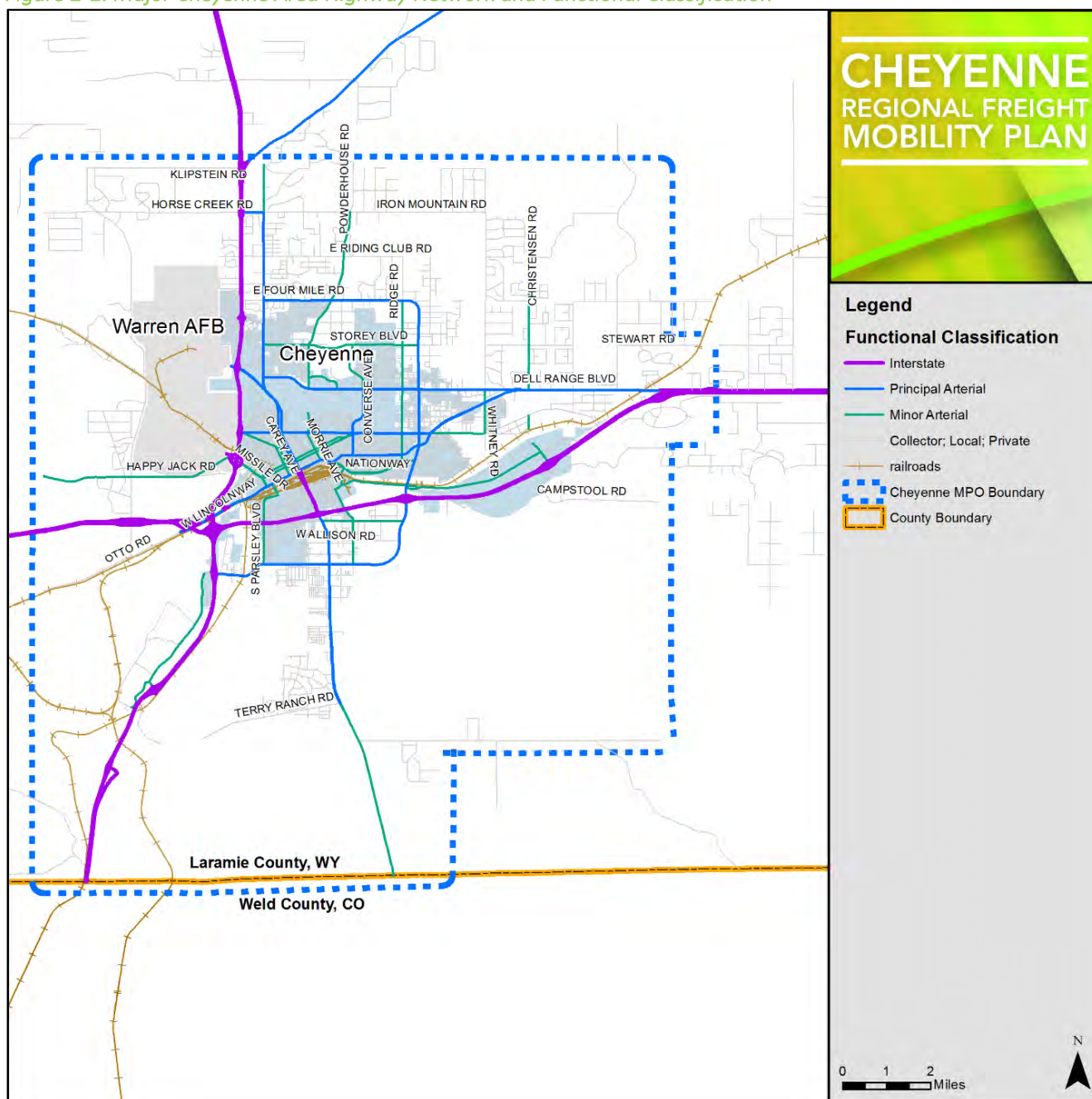
The Cheyenne regional highway system functional classification is shown in **Figure 2-1**. Interstates and other primary arterials include I-25 and I-80, US-30 and US-85, and other major city and county roadways. This is the key highway system that serves freight movements in and through the Cheyenne area. Freight traffic with a destination within the Cheyenne area primarily utilizes roads classified as major arterials, followed by minor arterials as needed. Freight traffic typically utilizes local and/or collector streets as little as possible, and only when necessary in order to reach a local destination.

2.3 National Highway System

When defining The National Highway System (NHS), the Federal Highway Administration (FHWA) describes a system consisting of roadways important to the nation's economy, defense and mobility. The FHWA also breaks the NHS down into subsystems of roadways, including interstate, other principal arterials, strategic highway networks (STRAHNET), major strategic highway network connectors and intermodal connectors². **Figure 2-2** shows the NHS system for the Cheyenne, Wyoming area.

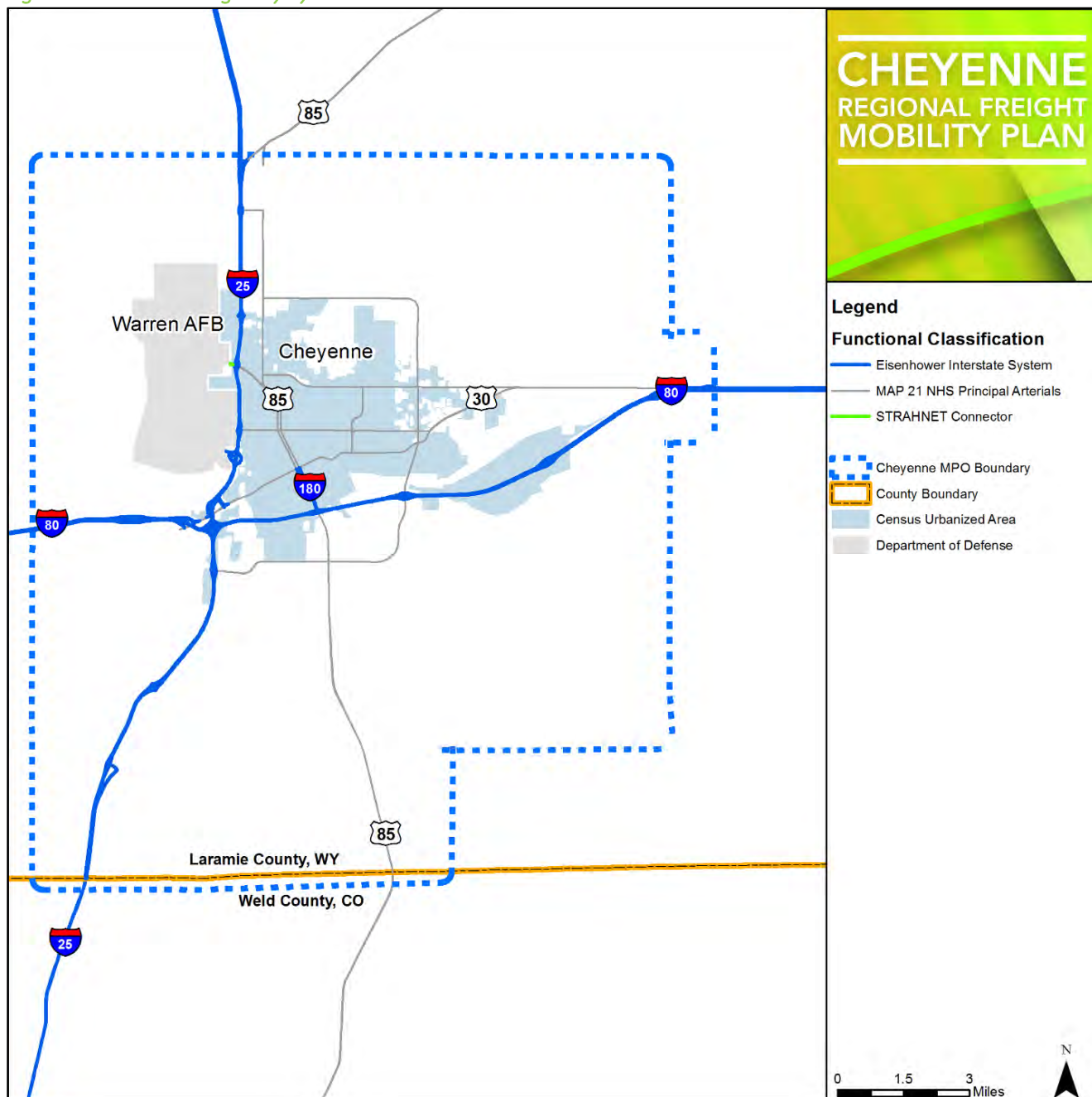
² http://www.fhwa.dot.gov/planning/national_highway_system/

Figure 2-1: Major Cheyenne Area Highway Network and Functional Classification



Source: U.S. Department of Transportation, 2016

Figure 2-2: National Highway System



Source: U.S. Department of Transportation, 2016



2.4 National/Regional Truck Route System

Truck routes have been established to encourage truck travel on certain routes and, in some cases, to restrict truck use along other routes. **Figure 2-3** outlines Cheyenne's existing regional truck route map. As shown on the map, I-80, I-25, College Drive, E Four Mile Road, Yellowstone Road, and South Greeley Highway are designated to serve as the Main System. The Main System carries the majority of truck traffic that enters or travels through Cheyenne and the region. I-80, running through the southern portion of Cheyenne, is a principal freight corridor connecting western U.S. coast ports and the Midwest. I-80 truck facilities are frequently used by local and regional businesses such as Walmart, Lowe's, Sierra Trading Post, Holly Frontier Refinery, Cheyenne LEADS Business Park tenants and many others.

Access to destinations in and around Cheyenne is provided through the Secondary System, the routes include Clear Creek Parkway, Lincolnway (west of Central Avenue and east of Missile Drive), Nationway, Campstool Road, Missile Drive, Dell Range Boulevard and other minor arterial routes. Portions of Central Avenue, Warren Avenue and Lincolnway have been designated as Local Deliveries in order to allow direct pick-up and delivery access to residences and businesses.

The roadway system in the Cheyenne area is mostly uncongested, particularly on principal arterials and the main truck route system. Traffic problems generally occur at intersections during peak commute times. *PlanCheyenne* identified areas that currently experiencing some level of traffic congestion as the following:

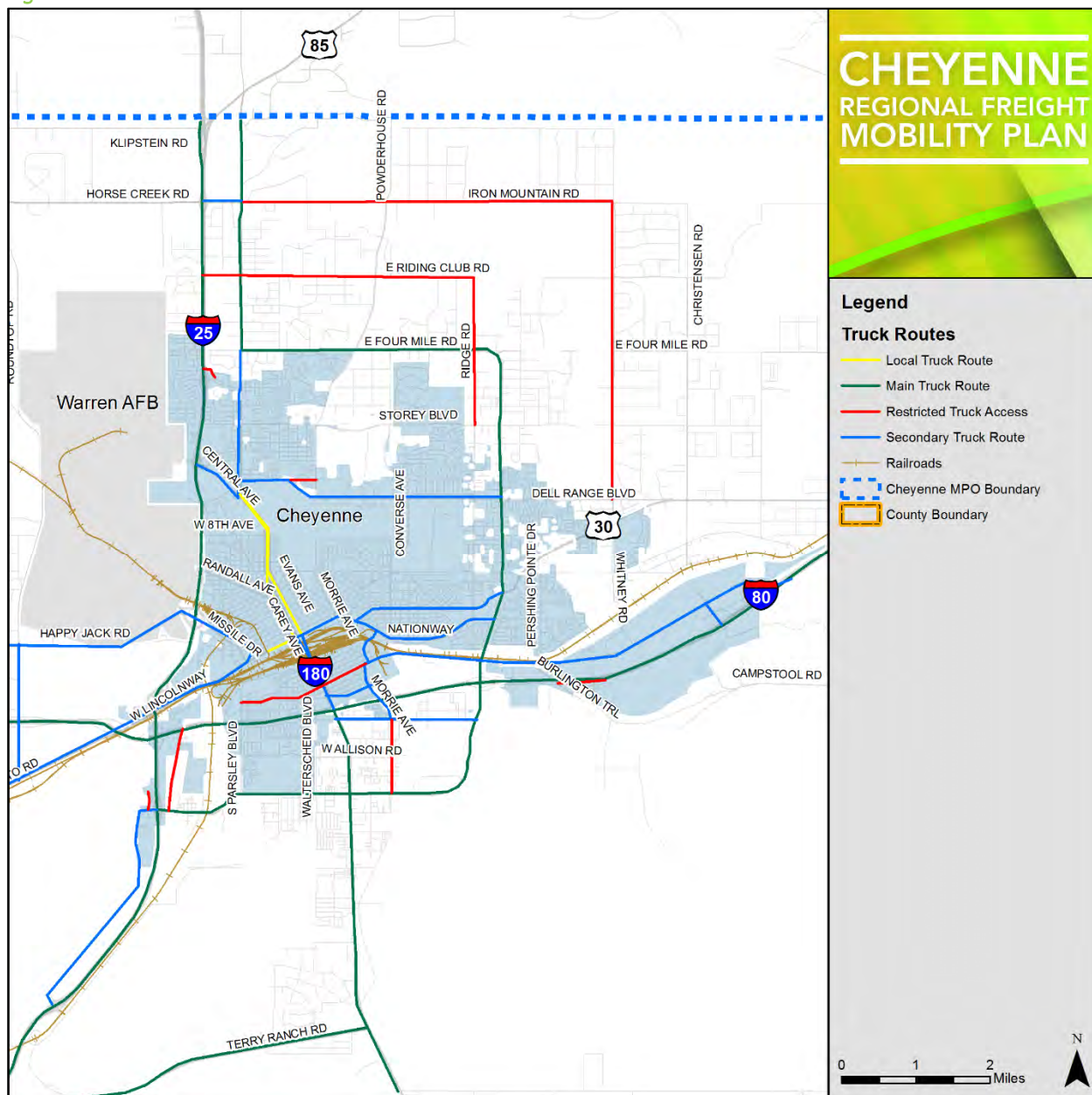
Congested (LOS E and F):

- Secondary Truck Route
 - Dell Range Boulevard between Prairie Avenue and Rue Terre
 - Dell Range Boulevard between Blue Grass Circle and Mountain Road
 - Yellowstone Road between Central Avenue and Dell Range Boulevard
- Non-designated
 - East 12th Street between North College Drive and Adams Avenue

Congesting (LOS D):

- Main Truck Route
 - South Greeley Highway at the I-80 interchange
- Secondary Truck Route
 - Dell Range Boulevard between Yellowstone Road and Bluegrass Circle as well as between Rue Terre and Blue Grass Circle, and between Mountain Road and Windmill Road
 - East Lincolnway between Warren Avenue and Dunn Avenue
- Local Truck Route
 - Central Avenue between Yellowstone Road and Eighth Avenue
- Non-designated
 - Masonway between Grandview Avenue and Converse Avenue
 - East 12th Street between Adams Avenue and Cleveland Avenue

Figure 2-3: Truck Routes



2.5 Traffic Flow and Levels of Congestion

Traffic volumes have a direct impact on traffic flow and levels of congestion. **Table 2-1** lists traffic volumes and route designations for the major roads in and around Cheyenne that experience congestion. The west portion of Dell Range has the highest level of congestion and is considered a bottleneck. The other locations are becoming congested with minor delays occurring for truck movement.



Table 2-1: Traffic Flows

Roads	Average Daily Traffic (ADT)	Truck Route Designation
West portion of Dell Range Blvd.	35,000	Secondary
Central Ave. at Yellowstone Rd.	27,500	Secondary
Lincolnway through Downtown Cheyenne and to the east	28,700	Lincolnway through Downtown → Local Lincolnway to the east of Central Ave. → Secondary
US-85 south of I-80	24,000	Main
Yellowstone Rd. near Central Ave.	24,000	Secondary
Pershing Blvd. near Warren Ave.	20,000	Pershing not designated
One-way pair of Central and Warren Ave. in Downtown	24,000 (combined)	Local

Source: WYDOT, 2016

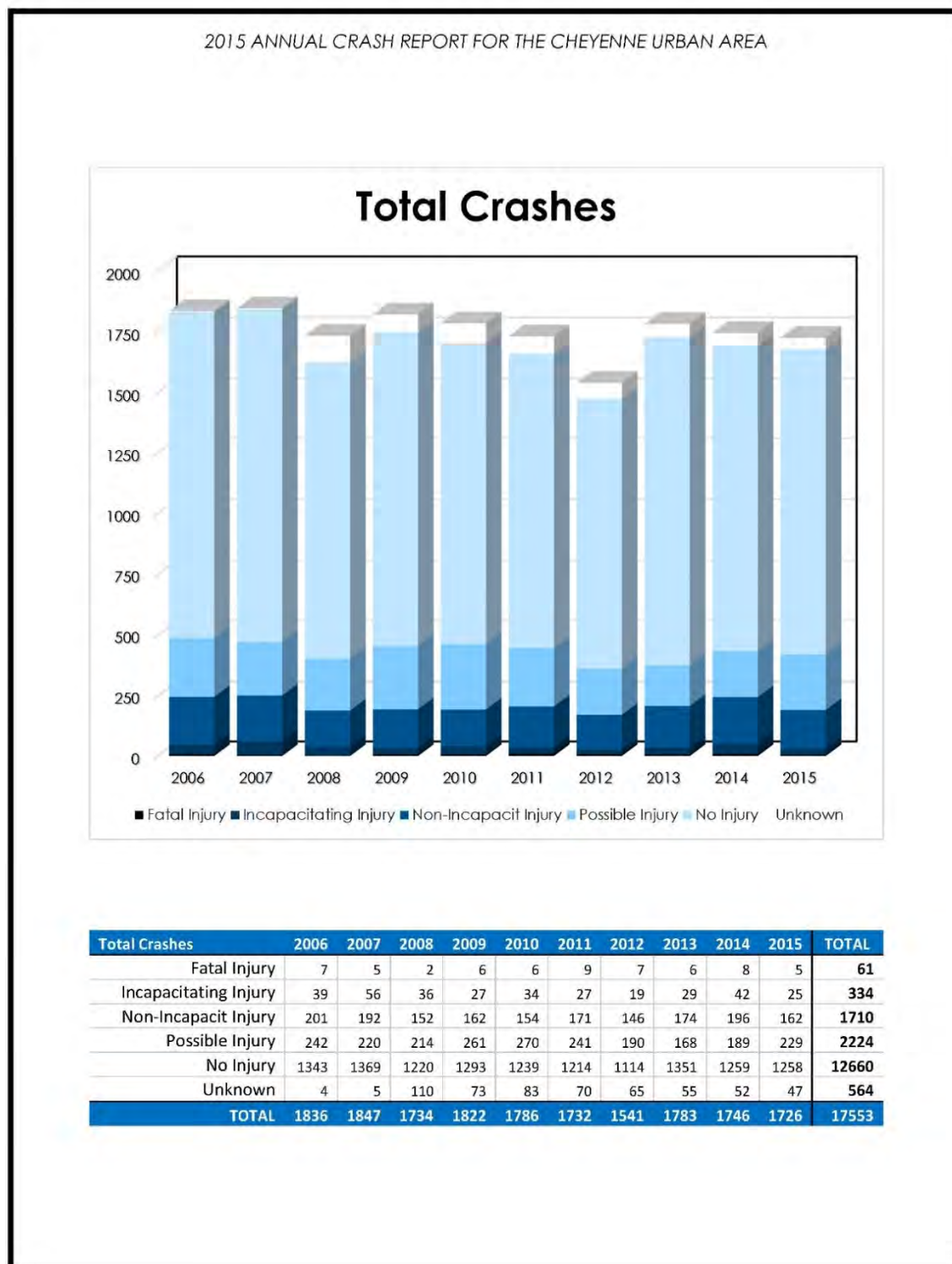
2.6 Truck Volumes

The highest average daily truck volumes occur along I-80, where they approach 6,000 per day west of I-25 and range between 4,400 and 5,000 per day east of I-25. In addition, average daily truck volumes reach 4,600 on I-25 south of Cheyenne. On I-25 to the north of I-80, average daily truck volumes are 2,500 or less. Other routes with truck volumes averaging near 1,000 per day include US-85, US-30, Route 212 (College Drive), and a section of Route 210, west of I-25.

2.7 Crashes

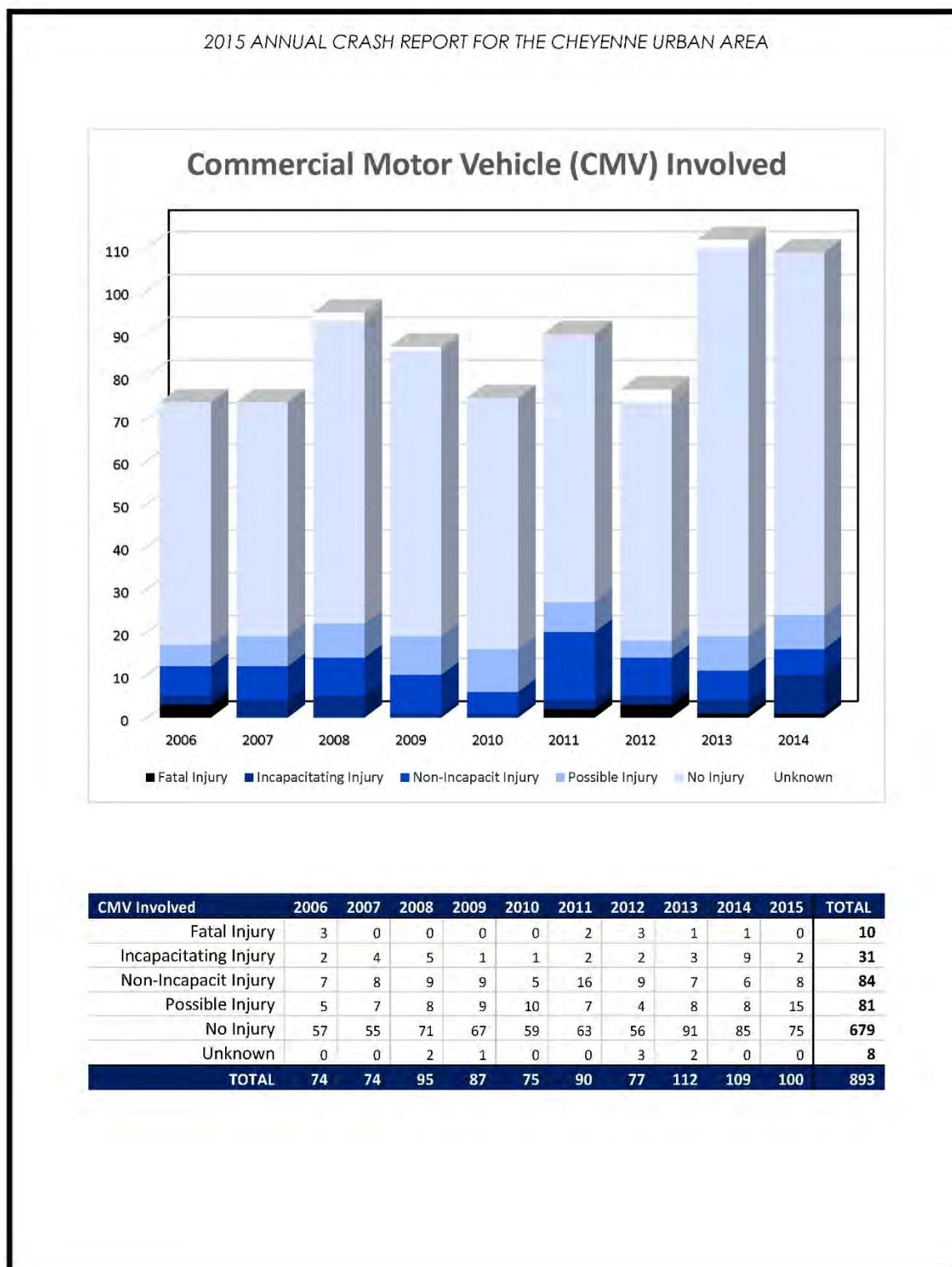
The Wyoming Department of Transportation tracks the number of crashes (i.e., car/car, car/truck, etc.), the severity of injuries experienced, and other factors related to crashes statewide. **Figure 2-4** demonstrates five-year averages of all crashes in Cheyenne by severity from 2006 to 2015. The number of commercial vehicle crashes for 2006 - 2014 are presented in **Figure 2-5**.

Figure 2-4: Cheyenne Area Total Crashes 2006 - 2015



Note: Data shown for each year represents an average of data for that year and the four previous years, as tabulated by the Wyoming Department of Transportation.

Figure 2-5: Cheyenne Area Commercial Motor Vehicle Crashes 2006 -2014





In 2008, Cheyenne developed a Transportation Safety Management Plan (TSMP), which defined the transportation safety issues in the region, key crash factors, and devised strategies to reduce fatalities and injuries on the roadways. The TSMP established a goal of reducing the number of fatal and injury crashes in Cheyenne by 10 percent, from a five-year average of 451 fatal and injury crashes in 2008 to 406 fatal and injury crashes by 2020. From 2006 to 2015, Cheyenne experienced an annual average of 433 fatal and injury crashes. The intention of the strategies incorporated in *PlanCheyenne* and other dedicated safety plans will lead to further reductions in fatal and injury crashes and an ultimate achievement of the proposed 2020 safety goal.

The 10 intersections with the highest crash rates in the Cheyenne urban area are listed in **Table 2-2**. Crash rate refers to the number of crashes per million entering vehicles (MEV) at an intersection. The crash rates in **Table 2-2** are calculated based on crash data from the year 2006 through 2015. All intersections within the Cheyenne area have lower average annual crash rates compared to the statewide annual average of 1.92³.

Table 2-2: Crash Rates⁴

Cheyenne Crash Rates at Signalized Intersections		
2006-2015		
Rank	Intersection	MEV
1	Dell Range Boulevard & Converse	1.45
2	Dell Range Boulevard & College Drive	1.41
3	College Drive & Pershing Boulevard	1.44
4	Dell Range Boulevard & Ridge Road	1.11
5	Yellowstone Road & Central Avenue	1.11
6	South Greeley Hwy & Fox Farm Road	1.08
7	Nationway & Logan Avenue	1.07
8	South Greeley Hwy & College Drive	1.02
9	College Drive & 12 th Street	1.02
10	Pershing Boulevard and Ridge Road	0.96

* Crash Rate = Number of crashes per million entering vehicle (MEV)

³ Cheyenne MPO, CARE Database

³ I-80/I-25 Interchange Study Report; November, 2008.

⁴ Source: 2015 Annual Crash Report for the Cheyenne Urban Area, Cheyenne MPO.



2.8 Physical Constraints on the Road Network

Oversize loads / Restrictions

The Wyoming Highway Patrol requires any load travelling on a road within the WYDOT system, in excess of 120-foot overall length, 18 feet wide, and/or 17 feet in height, contact the Overweight Loads Office at the Wyoming Highway Patrol prior to hauling on the WYDOT system.

One location within the Cheyenne MPO boundary has oversize length restriction, which is located at the ramps of the Vandehei Interchange of I-25. Vandehei Avenue has not been designated as a truck route. The restrictions at this location are:

- Loads over the length of 60 feet (single vehicle length)
- Loads over the width of 8 feet and 6 inches
- Loads over the height of 14 feet and have a length exceeding 50 feet (single vehicle unit).

The 2016 Wyoming Inventory of Limited Vertical Clearances lists several locations on the WYDOT system within the Cheyenne MPO boundary with a vertical clearance of less than 18' – 0". These structures include:

- Interstate 25 (Main Truck Route)
 - Eastbound and Westbound lanes of the Randall Avenue Interchange at mile marker 11.24
 - I-25 Northbound and Southbound lanes of the Country Club Road Separation at mile marker 12.15
 - I-25 Northbound and Southbound lanes of the Central Avenue Interchange (US-85) at mile marker 12.70
 - I-25 Northbound and Southbound lanes of the Vandehei Interchange at mile marker 13.83
 - I-25 Northbound and Southbound lanes of the Iron Mountain Interchange (WY-211) at mile marker 16.23
 - I-25 Northbound and Southbound lanes of the Missile Site A Interchange at mile marker 25.45
- Interstate 80 (Main Truck Route)
 - I-80 Eastbound and Westbound lanes of the I-25/I-80 Interchange at mile marker 359.60
 - I-80 both lanes of the Southwest Drive Separation under I-80 at mile marker 359.99 (Southwest Drive south of this underpass is listed as a "Restricted Truck Access", land north of this underpass is zoned Industrial.)
 - I-80 Eastbound and Westbound lanes of the BNRR separation at mile marker 360.39
 - I-80 Eastbound and Westbound lanes of the Tank Farm Road Separation (Parsley Boulevard) at mile marker 360.78
 - I-80 both lanes of the Walterscheid Boulevard Separation under I-80 at mile marker 361.79 (Walterscheid Boulevard is not listed as a truck route on the current truck route map.)
 - I-80 both lanes of the Morrie Avenue Separation under I-80 at mile marker 362.65 (Morrie Avenue is listed as a "Secondary Truck Route.")



- I-80 Eastbound and Westbound lanes of the Sun Valley Interchange (WY-212) at mile marker 364.00
 - I-80 both lanes of the Campstool Interchange under I-80 at mile marker 367.42 (Campstool Road is listed as a “Secondary Truck Route.”)
 - I-80 westbound lane of the Archer Interchange at mile marker 370.39
- Interstate I-180 (Secondary Truck Route)
 - I-180 Northbound and Southbound lanes of the US-85 Interchange (I-80) at mile marker 8.50
 - I-180 both lanes of the Deming Drive Separation under I-180 at mile marker 8.67 (West of I-180 is Deming Drive – Deming Drive is not listed as a truck route; East of I-180 is E. 1st Street – E 1st Street is a “Secondary Truck Route.”)
- US Highway 85 / South Greeley Highway (Main Truck Route)
 - US-85 Northbound and Southbound lanes of the I-180 Interchange (I-80) at mile marker 8.50
 - US-85 Southbound lane of the US-85/87 Interchange (I-25) at mile marker 16.94
- Wyoming Highway 210 / Happy Jack Road (Secondary Truck Route)
 - WY-210 Eastbound and Westbound lanes of the Missile Drive Interchange (WY-210) at mile marker 10.59
- Wyoming Highway 222 / Round Top Road (Secondary Truck Route)
 - WY-222 both lanes of the Roundtop Road Interchange (I-80) at mile marker 0.78
- Wyoming Highway 223 / Terry Ranch Road (Main Truck Route)
 - WY-223 both lanes of the Terry Ranch Road Interchange (I-25) at mile marker 0.00
- Wyoming Highway 225 / Otto Road (Secondary Truck Route)
 - WY-225 both lanes of the Terry Ranch Road Interchange (I-25) at mile marker 348.36

On occasion, a truck hauling an oversized load will strike a structure. WYDOT compiled a listing of structures that have been struck by oversized loads within the Cheyenne MPO boundary as shown in **Table 2-3**. When this happens the structure must be inspected to ensure its integrity prior to being put back into public use. As the table indicates, the bridge under Parsley Boulevard has been hit several times in recent history. This bridge has a vertical clearance of 16’-2”. WYDOT lists this bridge in “Poor” condition and it is considered Structurally Deficient.



Table 2-3: Bridges Struck by Oversized Loads in Cheyenne MPO Boundary

Bridges Struck By Oversized Loads in Cheyenne MPO Boundary						
Str No	Facility Carried	Reference Marker	Facility Under	Reference Marker	Location	Impact Date
ABK	Country Club Rd.	99.39	I-25/NBL	12.66	Cheyenne	1998
EOI	Central Ave	12.61	I-25/NBL	12.69	Cheyenne	Pre-2012
AYZ	I-80/EBL	359.99	Southwest Drive	1.15	Cheyenne	??
AZA	I-80/WBL	359.99	Southwest Drive	1.15	Cheyenne	1976
AZI	I-80/EBL	362.04	US-85	8.50	US 85 Int.	??
DBS	I-80/WBL	367.42	Campstool Road	5.00	Cheyenne	11/22/2013
AZD	Parsley Blvd	0.94	I-80	360.79	Cheyenne	1983
AZD	Parsley Blvd	0.94	I-80	360.79	Cheyenne	1986
AZD	Parsley Blvd	0.94	I-80	360.79	Cheyenne	2001
AZD	Parsley Blvd	0.94	I-80	360.79	Cheyenne	4/4/2013
AZD	Parsley Blvd	0.94	I-80	360.79	Cheyenne	9/16/2013
AZD	Parsley Blvd	0.94	I-80	360.79	Cheyenne	2/28/2014

Source: WYDOT, 2016

2.9 Roadway Network Limitations

South Industrial Road and College Drive

The intersection of South Industrial Road and College Drive is heavily used by the freight community in the region. South Industrial Road is the main access to several industrial businesses including construction, manufacturing, truck sales, and service. The intersection of South Industrial Road and College Drive is very close to the signalized intersection at the on and off ramps of eastbound I-80. The proximity of these two intersections causes southbound traffic on College Drive, while turning left onto South Industrial Road, to stack beyond the signalized intersection. Members of the freight community have also expressed concern about long wait time for vehicles on South Industrial Road to turn onto College Drive.

The *Fox Farm Road Corridor Plan*, published in September 2013, briefly addresses these concerns at South Industrial Road, at I-80 on and off ramps, and at College Drive. The Plan offers options for improving the geometry of the intersections but does not offer a preferred recommendation or solution. The options include eliminating left hand turns from College Drive to South Industrial Road and reconfiguring the I-80 eastbound on ramp and South Industrial Road intersections with College Drive so that there would be only one intersection with College Drive rather than the roadway network that exists today.



Interstate Interchanges

The I-25/ I-80 interchange is the most heavily used interchange in the state. Lincolnway is the main arterial into Cheyenne and provides access from I-25 and I-80. WYDOT, the Cheyenne MPO, and the Federal Highway Administration (FHWA) initiated an I-25 / I-80 interchange study in 2007. The final report, prepared by CH2M Hill, Inc., is dated November 2008⁵. This study included the interchanges of I-25/I-80, I-25/Lincolnway and I-80/Lincolnway.

The study cites the geometry of the loop ramps, short acceleration and deceleration lengths and weaving conflicts of the I-25/I-80 interchange as being challenging for large truck operations. The study recommends reconstructing the I-25/I-80 interchange from the current full clover leaf system to a double-loop turbine interchange. The approximate project cost for this improvement is \$132 million (2008 dollars).

The complicated geometry and restricted amount of space for the Lincolnway interstate interchanges require that all three of these interchanges be studied jointly. Recommendations of the study included that the I-25/Lincolnway interchange be constructed to operate as a weaved diamond configuration. A partial cloverleaf (PARCLO) interchange is recommended to replace the I-80/Lincolnway interchange. The approximate project cost for these improvements are \$36 million for the I-25/Lincolnway Interchange and \$20 million for the I-80/Lincolnway Interchange (2008 dollars).

Southwest Drive

Southwest Drive connects College Drive to Lincolnway immediately east of I-25. This roadway is classified as a collector. The section between College Drive and the underpass crossing of I-80 is listed as a “Restricted Truck Access” on **Figure 2-6** and **Figure 2-7**. The north end of Southwest Drive, just south of the intersection with Lincolnway, has an at-grade crossing with the Union Pacific railroad tracks. This at-grade crossing currently carries 60 trains per day. With truck traffic being restricted onto Southwest Drive from College Drive and the highly used at-grade railroad crossing on the north end, Southwest Drive is frequently inaccessible to roadway freight traffic. This is a concern for future economic development and long-term sustainability of this area especially as the land between Lincolnway and I-80 is currently zoned light industrial.

⁵ I-80 / I-25 Interchange Study, CH2M Hill, Inc, November 2008

Figure 2-6: Restricted Access and Figure 2-7: Southwest Drive/I-80 Crossing



Figure 2-8: Southwest Drive at Grade Crossing





While Southwest Drive is classified as a collector roadway, the street cross section south of I-80 is not currently constructed to collector roadway standards for either Laramie County or City of Cheyenne. Portions of Southwest Drive are within City of Cheyenne public right-of-way, and some portions are within Laramie County public-right-of-way. The narrow roadway cross section and proximity to residential development are likely reasons why the southern portion of this road has restricted truck access. Additionally, discussions with the freight community indicated concerns with trucks passing under the I-80 bridge due to restricted clearance.

Christensen Road Project

The Cheyenne Metropolitan Planning Organization has submitted multiple applications for the Federal Transportation Investment Generating Economic Recovery (TIGER) grant program for the Christensen Project. The applications propose to construct a roadway beginning at the intersection of Commerce Circle and Christensen Road, heading generally north, where a grade-separated structure is proposed over the Union Pacific railroad tracks, following to an intersection with East Pershing Boulevard, and continues north to an intersection with US Highway 30 (US 30). This project would be coordinated with the City of Cheyenne Engineering Department, Laramie County, and the Wyoming Department of Transportation. There is currently no roadway connection between Commerce Circle and US 30.

Two existing principal arterials connect Interstate 80 to US 30 -- the Christensen Road extension would be a third connection. The intersection of Commerce Circle and Christensen Road (on the southern end of the proposed project) is located within both the LEADS Cheyenne Business Park and the Campstool Business Park. Both business parks generate freight travel into and out of the region. This proposed roadway will provide greater connectivity within the roadway network for residents and businesses of the rapidly growing eastern edge of Cheyenne.

Engineering design plans for this roadway are at the 80 percent level. Funding has not yet been identified or secured for the \$14.6 million project.

2.10 Revenue Generation

I-80 Tolling Study

A study examining the feasibility of placing a toll facility along I-80 across southern Wyoming to increase revenues for improvements was conducted during 2008-2009.

The study found that a typical section of I-80 in Wyoming has an average daily traffic count of approximately 13,000 vehicles, with heavy trucks making up about half of the traffic. Traffic is projected to increase, with heavy truck volume alone approaching nearly 16,000 per day by 2037. Meanwhile, estimates show maintaining I-80 in its present condition over the next 30 years could cost more than \$6.4 billion after adjusting for inflation, far exceeding the total revenue expected to be available for maintenance of the entire state highway system.

In addition, the 2009 study provided information pertaining to the available types of available tolling technology (including electronic and automated tolling), how tolling technology could be implemented along I-80, and whether tolling technology can be integrated with various types of intelligent transportation system (ITS) technology.

The I-80 Tolling Study:

- Identified safety improvements from adding capacity and instituting tolling;

- Described the number and location of tolling points needed to optimize revenue while minimizing operational costs and inconvenience to the public;
- Provided information for developing a strategy to gain federal approval for tolling, obtaining environmental clearances, and resolving possible legal challenges.

In 2010, the Wyoming Legislature voted against continued development of the tolling concept. Since then, no further studies regarding the potential for tolling within Wyoming have occurred.

2.11 Gas Tax

As of July 1, 2013, Wyoming increased the state fuel tax from 14 to 24 cents. **Table 2-4** shows the allocation of state fuel tax revenue.

Table 2-4: Wyoming Gas Tax Distribution

Recipient	Gas Tax Designation (cents)	Explanation of Distribution
Federal Highway Fund	13.23	
State County Road Fund	3.22	Based on population and area (size)
County Road Fund	3.10	Based on county area (size), rural population, and assessed valuation
Municipal Street Fund	3.45	Distributed by gasoline sales and population
Leaky Underground Tank Fund	100% of the additional \$0.1/gallon	

Source: http://www.wyotax.org/gasoline_tax.aspx

2.12 Truck Parking Facilities

A major issue in the trucking industry has been the availability of overnight truck parking and parking during weather events. At times, trucks park along exit and entrance ramps, at rest stops and information centers, and often along city streets or in the Swan Ranch area. Nearly all of the formal truck parking facilities are located outside the Cheyenne MPO planning area. According to *2014 Cheyenne Area Transportation Master Plan*, “the freight industry supports construction/designation of a truck parking lot adjacent to I-80, east of Cheyenne along with early warning notifications.”⁶ The locations of truck parking facilities near the MPO boundaries are shown in **Table 2-5**.⁷

Existing parking spaces are not sufficient for the truck traffic volumes Cheyenne experiences during bad weather conditions or during other closures of the interstates into and out of Cheyenne, or for future predicted increases of truck volumes within the region.

⁶ <https://www.cheyennecity.org/index.aspx?NID=666>

⁷ Wyoming Truck Parking Map, 12/2012 v1, provided by the Wyoming Department of Transportation (WYDOT).



Table 2-5: I-80 and I-25 Truck Parking Facilities

Interstate / Exit No.	Name	Truck Parking Spaces
I-80 / 345	Warren Road Truck Parking Area	41
I-80 / 359	W. Lincolnway Little America Travel Center	20
I-80 / 362	I-180 Diamond Shamrock	5
I-80 / 367	Campstool Road Pilot Truck Stop	120*
I-80 / 370	Archer Sapp Brothers Truck Stop	84
I-80 / 377	Hillsdale TA Travel Center	140
I-25 / 4	High Plains Road SE WY Info Center	20
I-25 / 7	Loves Truck Stop	50
I-25 / 7	Flying J Truck Stop	180
I-25 / 7	Diamond Shamrock	25
I-25 / 9	US 30 Big D Truck Stop	30

* The Campstool Road Pilot Truck Stop does not appear to have 120 truck parking spaces available at this facility. The web site, <http://pilotflyingj.com/view-location?id=402>, indicates that there are 90 parking spaces.

2.13 Oil and Gas

The Cheyenne area has experienced an expansion in the oil and gas industry within the past decade. Oil wells are located throughout Laramie County, most primarily outside the MPO planning area. The locations of wells closest to the MPO planning area are displayed in **Figure 2-9**. Additional wells are located in the remainder of the county outside of MPO boundaries. The Laramie County Planning and Development Office updates their oil and gas map on a monthly basis. Maps and more information regarding oil and gas areas in Laramie County can be found here:

<http://www.laramiecounty.com/departments/planning/oil.asp>.

As part of the oil extraction process, heavy trucks are necessary in order to transport materials to and from extraction sites. Many of the roads in the county were not constructed to accommodate trucks with heavier loads or for high volumes of heavy equipment. The increase in truck traffic also impacts local streets within the MPO planning area as trucks make connections between major highways and the well pads.

The cost of wear and tear on roadways is a significant issue for government, particularly in the repair or replacement of roads originally designed for lower traffic loads and volumes. Most paved county roads



have not been engineered to last over a normal life cycle for higher truck volumes. Damage from excessive truck volumes on county roads can result in costs ranging up to \$500,000 per mile.⁸

Figures 2-10 through 2-13 display the current condition of Laramie County roads in the vicinity of the MPO planning area. These figures are based on several different condition measurement indices such as rut depth, serviceability, and roughness.

Laramie County is proactively monitoring the development of well sites and the haul routes used to access these sites. Developers are required to go through a permitting and development process to get site approval and permits prior to use. At the pre-application meeting, the developer must submit a haul route map. The Laramie County Public Works Office reviews the haul map to determine the location condition and surroundings of the proposed routes and makes recommendations for use. For instance, if a proposed route is on a dirt road in proximity to a residential area, the developer and operator will be notified dust control procedures are required. If the proposed route is on a paved road showing signs of pavement failure, the County may suggest an alternate route. In some cases, the County and the operator will enter into a Road Use Agreement, where the County performs a video log of the roadway before and after operator use. The operator is then responsible for mitigating any damage that has occurred.

County foremen are assigned to various areas within the County to monitor road conditions and oil well traffic. If a roadway needs repair, the operator is notified. The operator can elect to repair the roadway, or the County will make repairs to the roadway at the operator's expense. The road condition monitoring helps ensure roadways remain in good condition throughout the operator use period, rather than waiting until the end of the roadway's useful life. One recommendation the County typically makes to all operators is the construction of temporary pipelines to bring fracking water to well sites rather than constantly hauling water over the roads. This practice resulted in a high degree of reduction in heavy truck traffic on County roads.

The Laramie County Public Works Department requires an oversize/overweight permit for any truck hauling more than 80,000 pounds or loads in excess of 14 feet high, 8-foot-6-inch width, or 60 feet or more in length.

⁸ Wyoming County Paved Roads Management and Monitoring, University of Wyoming College of Engineering

Figure 2-9: Oil and Gas Well Locations

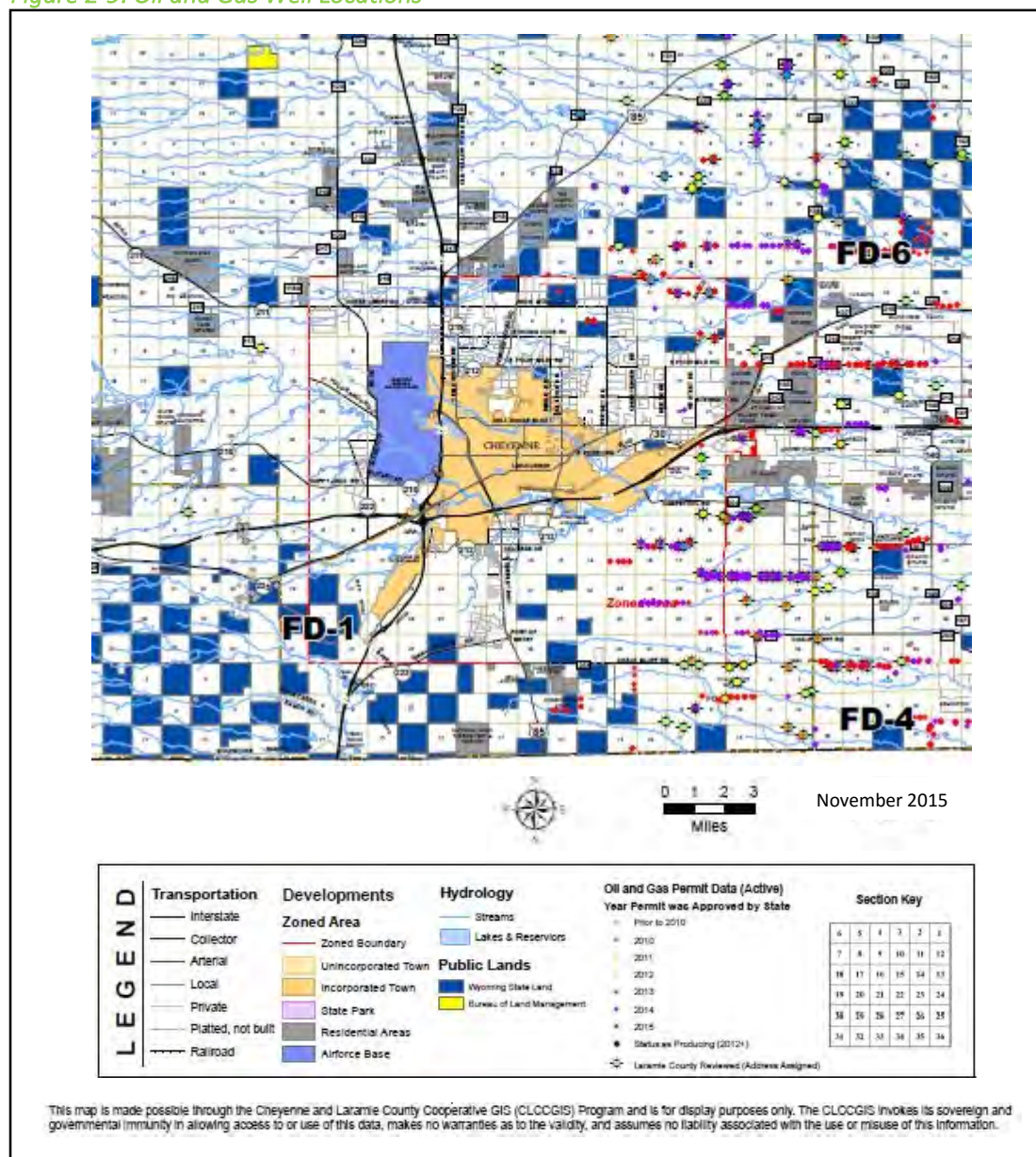


Figure 2-10: County Road Pavement Conditions – Rut Depth

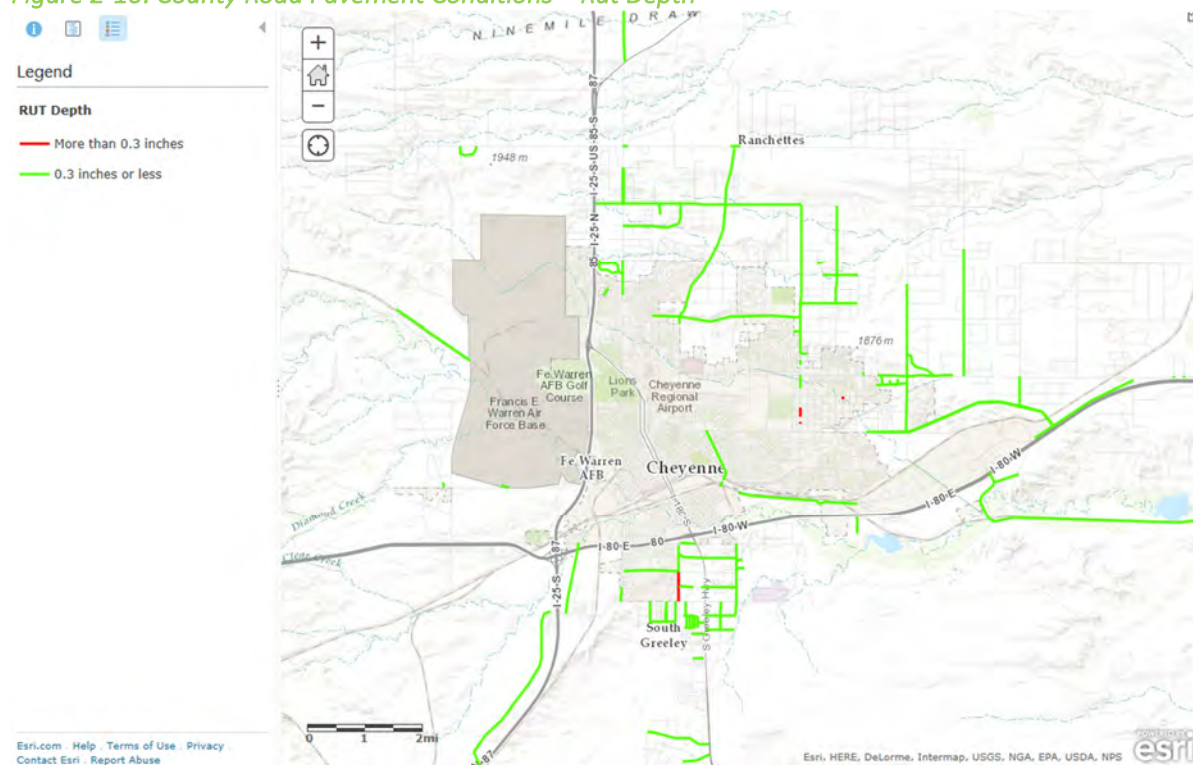


Figure 2-11: County Road Pavement Condition Index

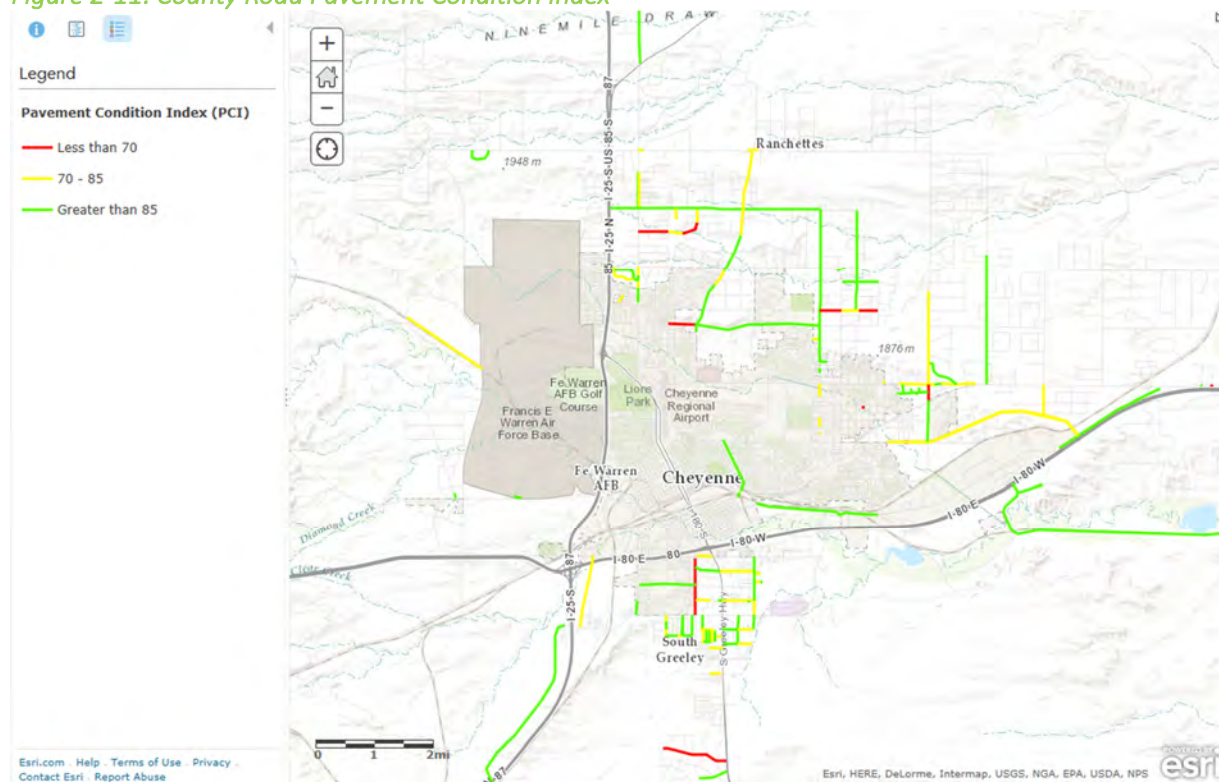


Figure 2-12: County Road Pavement Serviceability Index

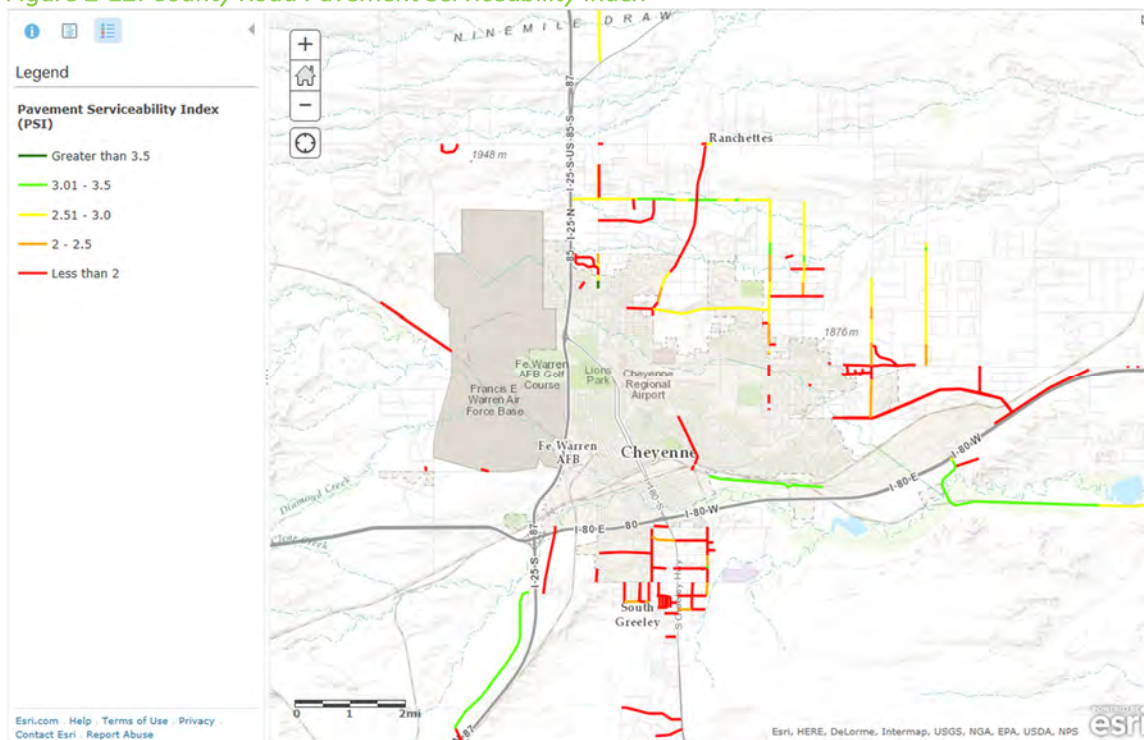
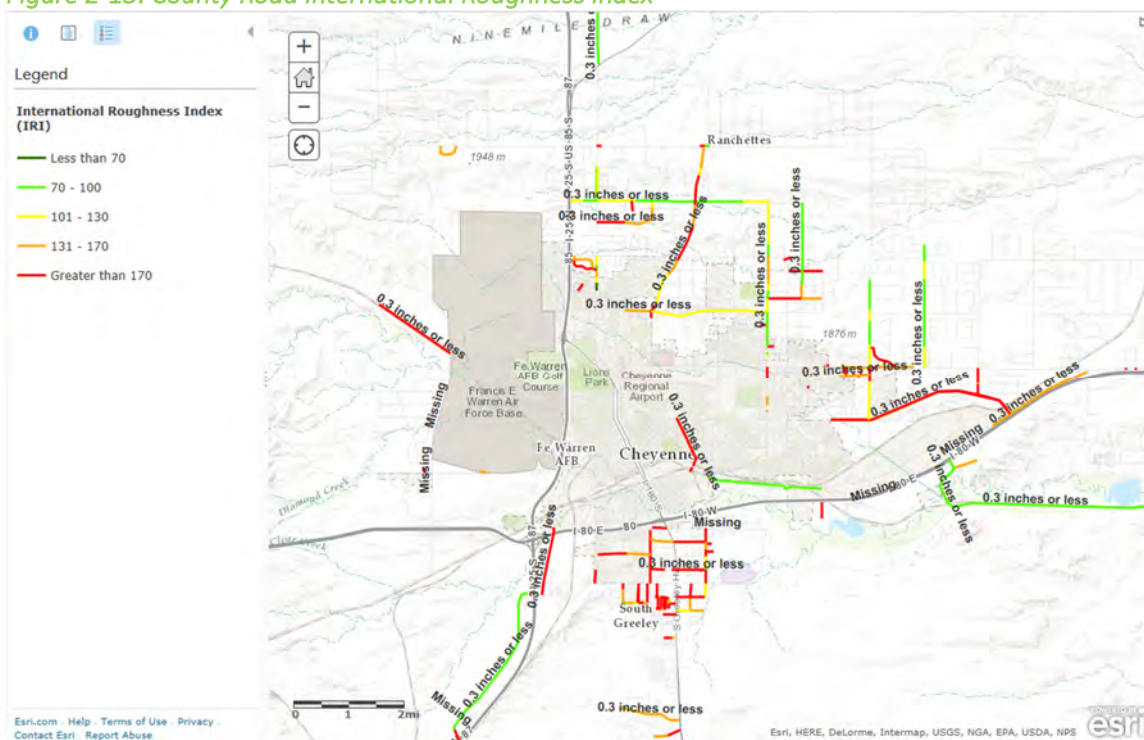


Figure 2-13: County Road International Roughness Index



NOTE: Source for Figures 2-10 through 2-13: State Wide Pavement Management for Counties 2014, Wyoming Technology Transfer Center



2.14 Stakeholder Input on Roadway Constraints

To better understand concerns of motor carriers within the MPO boundary, interviews were conducted with motor carriers and shippers/receivers. As part of the interview process, maps of the region were posted in driver break rooms with instructions to identify areas that may pose an issue to truck navigation of the roadway system. Drivers were asked to identify areas with traffic issues or areas with an infrastructure deficiency or safety problem. Drivers were not limited to identifying designated truck routes but were asked to identify any areas of concern. A detailed list of driver responses is provided in **Appendix A**.

One item mentioned was that some local roadways do not provide truck access to residential areas. This problem is more noticeable as deliveries to residences have increased due to web-based retailing. This issue is not limited to residential deliveries. Many local businesses are not located on a designated truck route and regularly require deliveries via trucks. As noted in several regional planning efforts and studies, not all roadways within Laramie County are designed to accommodate large truck traffic or increasing levels of commercial traffic. In addition, other areas of the region, especially the Downtown Cheyenne area, have migrated toward designing and maintaining multi-modal transportation systems in order to provide residents and businesses with a pedestrian-friendly environment, alternative modes including bicycles and more short-term parking options for customers of local businesses.

2.15 Railroad Inventory

Rapid growth in the regional oil industry is likely to result in increased rail freight activity with potential safety implications, especially at at-grade rail crossings. The American Association of State Highway and Transportation Officials' (AASHTO), A Policy on Geometric Design of Highways and Streets (commonly known as the Green Book) lays strong emphasis on elimination of at-grade rail crossings along high-volume streets; thus, justifying grade separation along roadways. The FHWA Railroad-Highway Grade Crossing Handbook – Revised 2nd Edition provides guidance to planners and engineers to select the most appropriate traffic control devices at highway-rail grade crossings.

Railroad System Summary

The Cheyenne metropolitan area is served by two Class I rail systems, Union Pacific (UP) and Burlington Northern and Santa Fe Railway (BNSF) and one Class III rail system, Swan Ranch Railroad (SRRR). Wyoming is the nation's largest originator of coal shipments in the United States. The rail traffic is unique in this area because coal trains and other freight move through downtown Cheyenne. The through rail traffic also includes a large volume of transcontinental rail traffic between the Pacific Coast, the Midwest and East Coast. Passenger rail traffic through Cheyenne was discontinued by Amtrak in 1997.

The UP main line through Cheyenne is a key part of the nation's Strategic Rail Corridor Network (STRACNET), a 38,000-mile interconnected rail network that serves the deployment and distribution of military resources.

Railroads

BNSF Railway Company

BNSF operates more than 970 miles in Wyoming, owning 965 miles, with 106 miles owned jointly with UP in the Southern Powder River Basin coal production area. This joint route through Cheyenne is the Donkey Creek subdivision running south from Gillette, Wyoming to Denver, Colorado. The maximum train speed is 49 miles per hour (mph), with a maximum allowable gross weight of 286,000 pounds per freight railcar. This line has four to six through trains per day transporting intermodal, automotive and general manifest traffic between Denver, Colorado; Laurel, Montana; and the Pacific Northwest.



Union Pacific (UP) Railroad Company

UP owns and operates more than 879 miles in Wyoming, with 106 miles jointly owned and operated with BNSF in the Southern Powder River Basin coal production area. Two UP subdivisions meet in Cheyenne – the western is the Laramie subdivision, running from Cheyenne to Rawlins, Wyoming and the eastern is the Sidney subdivision, running from Cheyenne to North Platte, Nebraska. This overall route is a part of UP's transcontinental central corridor and transports intermodal, automobile, grain, manifest, and coal traffic and operates 65-75 through trains per day on the Laramie subdivision. The Laramie subdivision main line track segments have a maximum train speed of 70 mph and a maximum gross weight of 315,000 pounds per freight railcar. The Sidney subdivision has coal, grain and manifest traffic. The subdivision connects with the Yoder subdivision in Egbert. The Sidney subdivision operates 70-80 through trains per day. The Sidney subdivision track main line segments have a maximum speed of 70 mph and a maximum gross weight of 315,000 pounds per freight railcar.

Swan Ranch Railroad Company

The Swan Ranch Railroad (SRRR) switches at the Cheyenne Logistics Hub, which is the first phase of Granite Peak Development's 7,200-acre Swan Ranch Industrial Park. This shortline switching company is a subsidiary of WATCO Transportation Services and initiated operation on December 28, 2011. SRRR currently has 16.1 miles of track, interchanging traffic with BNSF and UP at Speer Road. The SRRR has direct access to two Class I carriers, and additional access to the Class I Norfolk Southern Railroad Company (NS) via trackage rights. The Swan Ranch is located near the interchange of I-25 and I-80 on the southwest side of Cheyenne and contains transloading facilities and access to sites for energy and manufacturing. In 2012, SRRR's traffic was primarily crude oil and asphalt oil, amounting to 450 carloads for the year. Traffic numbers are anticipated to increase as the industrial park develops. Currently, 14 companies located are in the logistics hub.

Interchange Leads and Terminal Yards

BNSF Railway Company

BNSF has a downtown industrial lead and a rail terminal yard for general manifest carloads in Cheyenne. Carload interchanges occur with the UP network and with SRRR at Speer Road. The BNSF terminal yard does not have the transload option. No BNSF intermodal terminals are located in Wyoming.

Union Pacific (UP) Railroad Company

UP has no industrial leads in Cheyenne. The UP rail terminal yard in Cheyenne handles both transload and general manifest carloads. Carload interchanges occur between the BNSF network and the SRRR at Speer Road. No UP intermodal terminals are located in Wyoming.

Swan Ranch Railroad Company

The SRRR is an industrial freight switching rail company with transload and carload delivery options. Carload interchanges with BNSF and UP occur at Speer Road.

Industrial Areas Served by Rail

The Cheyenne Logistics Hub at the Swan Ranch is the main industrial area served by rail in the Cheyenne metropolitan area. The first phase of this new industrial park uses 1,200 acres out of a total 7,200 available acres. Infrastructure is also in place for future development and expansion.

The Cheyenne Logistics Hub rail service is provided by SRRR through carload interchanges with both UP and BNSF at the southern end of the logistics park. The classification yard and the loop facility in the park allow for the receipt and delivery of unit trains and manifest loads. SRRR has two locomotives onsite and accepts both hazardous materials (haz-mat) and non-hazardous material rail shipments.

Highway-Rail Crossings

Laramie County has a total of 151 grade crossings on the BNSF and UP railroad networks. **Table 2-6** displays grade crossings by owner type. **Figure 2-14** illustrates the at-grade crossing of the BNSF on College Drive.

Table 2-6: Railroad Grade Crossings

Crossing Type	Union Pacific	BNSF
Grade Separated Private	2	4
Grade Separated Public	20	9
At-Grade Private	37	30
At-Grade Public	26	23
Total	85	66

The Annual Daily Traffic (ADT) counts for the public at-grade railroad crossings for UP and BNSF are shown in **Table 2-7** below.

Table 2-7: Public At-Grade ADT

ADT Designation	UP	BNSF
Average	476	1,952
High	2,370	12,481
Low	13	17

Grade separation reduces the conflicts between trains and vehicles/pedestrians. The Wyoming Department of Transportation (WYDOT) has a hazard rating formula that serves as a guide to identify potential locations for new grade-separation structures. The formula is based on exposure factor (*daily trains × vehicles*), sight distance, number of tracks, speed of trains and vehicles and other factors. For this report, the exposure factor has been calculated, which is the first part of the hazard rating formula.

Table 2-8 lists the exposure factor for 22 railway-highway crossings located within the MPO planning area and available ADT information. A general guideline by the U.S. DOT shows an exposure factor greater than 500,000 in urban areas and 125,000 in rural areas as a threshold for considering grade separated crossings. This provides a general screening of at-grade crossings, which then the WYDOT methodology would be used for further analysis. Using the exposure factor approach, the BNSF crossing at College Drive (highlighted in yellow in **Table 2-8** and shown in **Figure 2-14**) is an urban crossing that meets the criteria for improvements to eliminate the at-grade crossing and could be considered further. The WYDOT hazard rating formula shows this location to be rated in the top 17 percent.

Several quiet zone projects have been identified in the Cheyenne area to minimize disturbance to local residences. Quiet zone projects include: (1) 24th Street and BNSF Quiet Zone Project, and, (2) Southwest Drive at Union Pacific by US-30.

Figure 2-15 outlines the rail lines that serve the Cheyenne metropolitan area, along with public at-grade railroad crossings. This figure is a close-up of the rail crossings and does not display the entire area of the MPO boundary.

Figure 2-14: College Drive at BNSF At-Grade Crossing



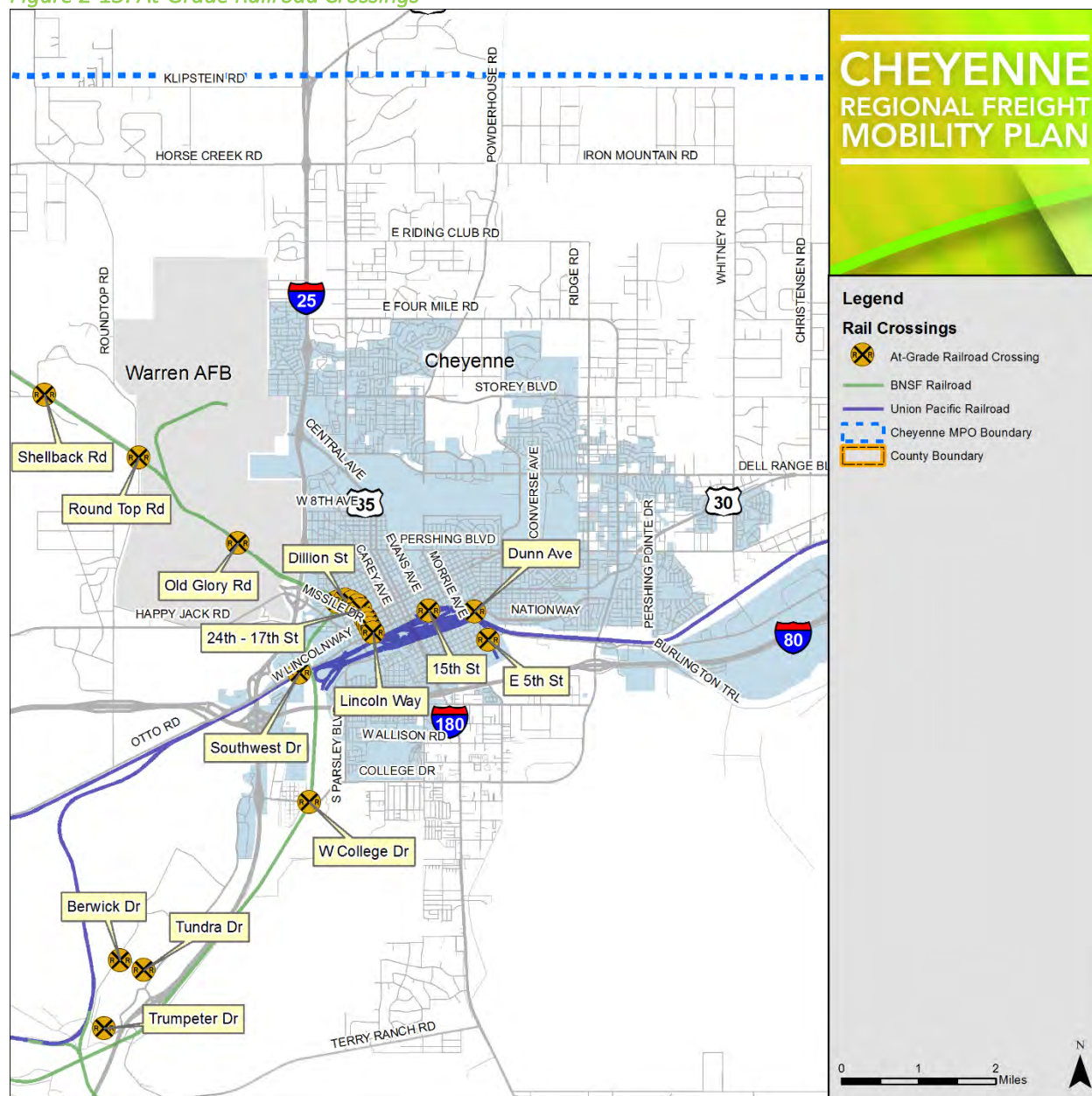


Table 2-8: At-Grade Railroad Crossings

Rail	Street Name	Max Train Speed (mph)	Adjacent Land Use	Functional Classification of Road at Crossing	AADT*	Quiet Zone	Total Trains per Day	Exposure Factor
BNSF	College Drive	50	Open Space	Urban Principal Arterial	8,162	No	17	138,754
UP	Southwest Drive	40	Commercial	Urban Collector	2,033	24 Hour	60	121,980
BNSF	Old Glory Road	20	Industrial	Rural Minor Arterial	4,000	24 Hour	16	64,000
BNSF	Lincoln Way	20	Commercial	Urban Principal Arterial	15,980	No	4	63,920
BNSF	24th Street	20	Industrial	Urban Collector	2,667	24 Hour	17	45,339
UP	WYCON Entrance	70	Industrial	Rural Local	800	No	40	32,000
BNSF	23rd Street	20	Industrial	Urban Collector	6,698	No	4	26,792
UP	E Fifth Street	10	Industrial	Urban Collector	3,098	No	6	18,588
BNSF	24th Street	20	Industrial	Urban Collector	3,078	No	4	12,312
BNSF	20th Street	20	Industrial	Urban Minor Arterial	2,474	No	4	9,896
BNSF	19th Street	20	Industrial	Urban Minor Arterial	2,212	No	4	8,848
BNSF	Missile Drive	20	Open Space	Rural Local	480	No	16	7,680
BNSF	Round Top Road	20	Open Space	Rural Minor Collector	394	No	16	6,304
BNSF	22nd Street	20	Industrial	Urban Local	984	No	4	3,936
BNSF	21st Street	20	Industrial	Urban Local	984	No	4	3,936
UP	15th Street	10	Commercial	Urban Local	984	No	4	3,936
BNSF	17th Street	20	Industrial	Urban Collector	597	No	4	2,388
UP	Dunn Avenue	5	Industrial	Urban Local	984	No	2	1,968
BNSF	Shellback Road	49	Open Space	Rural Local	61	No	16	976
BNSF	18th Street	20	Industrial	Urban Collector	229	No	4	916
BNSF	Speer Road	49	Open Space	Rural Local	30	No	17	510
BNSF	Duck Creek Road	49	Open Space	Rural Local	12	No	17	204

*AADT = Average Annual Daily Traffic

Figure 2-15: At-Grade Railroad Crossings



A grade-separated highway-rail crossing is a long-term investment involving many components for consideration. The FHWA recommends basing such important decisions on long-term, fully allocated life cycle costs likely to be incurred by the highway and railroad users rather than initial construction costs. The components to be considered in the analysis include:

- Eliminating train/vehicle collisions, including the resultant property damage, medical costs, and liability for such;
- Savings in highway-rail grade crossing surface and crossing signal installation and maintenance costs;
- Driver delay cost savings associated with time saved;



- Costs associated with providing increased highway storage capacity to accommodate queues as a result of a train crossing a roadway;
- Fuel and pollution mitigation cost savings caused by queued vehicles no longer idling;
- Effects of upstream propagation of queuing resulting in congestion on remainder of the roadways;
- The benefits of improved emergency access;
- The potential for closing one or more additional adjacent crossings;
- Possible train derailment costs.

The U.S. Department of Transportation (U.S. DOT) established a Technical Working Group (TWG) consisting of representatives from the FHWA, the Federal Railroad Administration (FRA), the Federal Transit Administration (FTA), and the National Highway Traffic Safety Administration (NHTSA). The TWG developed a document intended to provide guidance to engineers in making decisions on the selection of traffic control devices. The TWG recommends evaluating a highway-rail grade crossing based on one or more of the following conditions to determine the need for grade separation:

- The highway is a part of the designated NHS.
- The highway is otherwise designed to have partial controlled access.
- The posted highway speed exceeds 55 mph.
- Average Annual Daily Traffic (AADT) exceeds 50,000 in urban areas or 25,000 in rural areas.
- Maximum authorized train speed exceeds 100 mph.
- Locations having an average of 75 or more passenger or freight trains per day or 150 million gross tons per year.
- Crossing exposure (the product of the number of trains per day and AADT) exceeds 500,000 in urban areas or 125,000 in rural areas.

2.16 Air Cargo Inventory

Air Cargo Carriers

Commercial air service in the Cheyenne area is provided from the Cheyenne Regional Airport (CYS). Centrally located, the airport provides daily commercial flights to Denver International Airport (DIA) and regularly scheduled charter flights to Wendover, Nevada. The airport also serves as a hub for charter flights within the region. An updated Master Plan for the airport was completed in April 2013. The Master Plan calls for relocating the main terminal from Eighth Avenue to the intersection of Morrie Avenue and Airport Parkway. The airport is currently located in the center of the City of Cheyenne, approximately three miles north of I-80 and one mile east of I-25. The airport is used for commercial passenger flights, charter, military, business, recreational and general aviation flights, and flight training.

The airport is owned and operated by the Cheyenne Regional Airport Board. The daily operations of the airport are presently managed by the Airport Manager.

The Wyoming Air National Guard 153 Airlift Wing is based at the airport and operates C-130s and other aircraft. Great Lakes Aviation, a regional airline, is based at the airport and provides five weekday scheduled passenger flights to/from Denver on 19-seat Beechcraft 1900D aircraft. In addition to scheduled flights, the airport is occasionally served by charter flights to Wendover, Nevada, and other destinations. There is one flight school, Wings of Wyoming, and one Fixed Base Operator (FBO), Legend Aero Serve, located at the airport.

In 2011, American Eagle Airlines, a subsidiary of American Airlines, began direct service to Dallas/Fort Worth International Airport (DFW) on Embraer Jet (ERJ) 140s, significantly increasing the number of enplanements at CYS. However, in 2012 American Airlines declared bankruptcy and terminated service from CYS to DFW in April, 2012. This resulted in the enplanement counts returning to pre-2011 levels. Total general operations have declined approximately five percent per year since 2007. The greatest decline was non-scheduled general aviation operations, which are down by 10 percent annually.

The Airport Master Plan reported total operations (take-off or landing) at the airport including commercial, general aviation (GA), military, and overall total operations, shown in **Table 2-9**. The Master Plan compared the relationship between the airport's theoretical demand and its capacity and concluded that the capacities of the runway system at CYS far exceed the operations forecasted for the entire 20-year planning horizon. Therefore, no airfield improvements are warranted on the basis of capacity.

Table 2-9: Forecast of Total Operations at Cheyenne Airport

Year	Commercial Operations	GA Operations	Military Operations	Total Operations
2011	4,490	19,420	24,700	48,610
2016	3,250	23,240	26,180	52,670
2021	3,250	23,790	26,570	53,610
2031	3,250	29,320	37,370	59,940
CAGR 2011-2031	-1.6%	1.9%	0.5%	1.1%

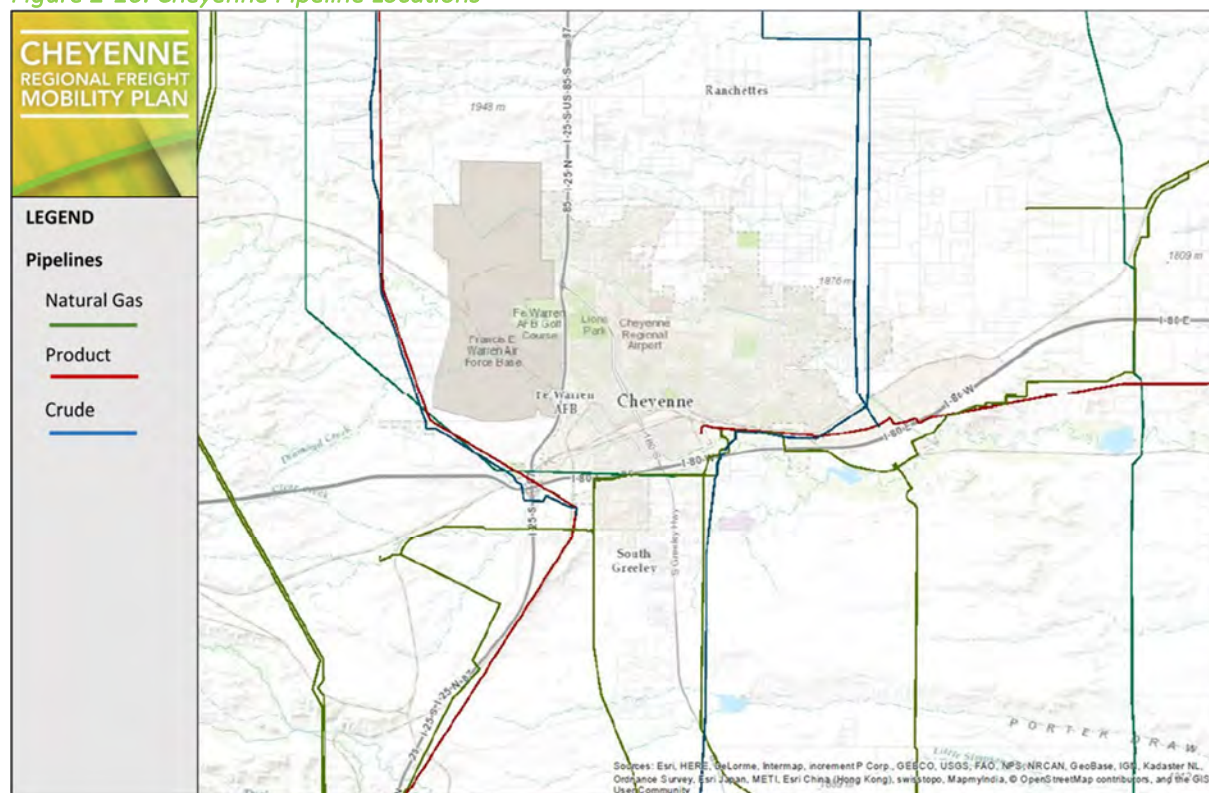
Source: Cheyenne Airport Master Plan, 2013

2.17 Pipeline Inventory

One of Wyoming's fastest growing freight generators developed from the oil and gas industry. The area has seen an increase in truck traffic to and from well pad sites. Pipelines could provide opportunity to reduce local freight traffic in lieu of regionalized loading facilities. Additionally, the load-out facilities occur in both rail and truck freight nodes with opportunities in the Cheyenne MPO boundary, especially the Swan Ranch development. Despite the short-term decrease in oil and gas prices, the long-term outlook is for a general increase in production in the Denver-Julesburg Basin and continued production in the Powder River Basin. With the forecasted production, it is anticipated oil and natural gas

operations will continue to drive up freight traffic flow, both rail or truck, in order to deliver products. **Figure 2-16** depicts the location of the current oil and gas pipelines within the Cheyenne MPO area.

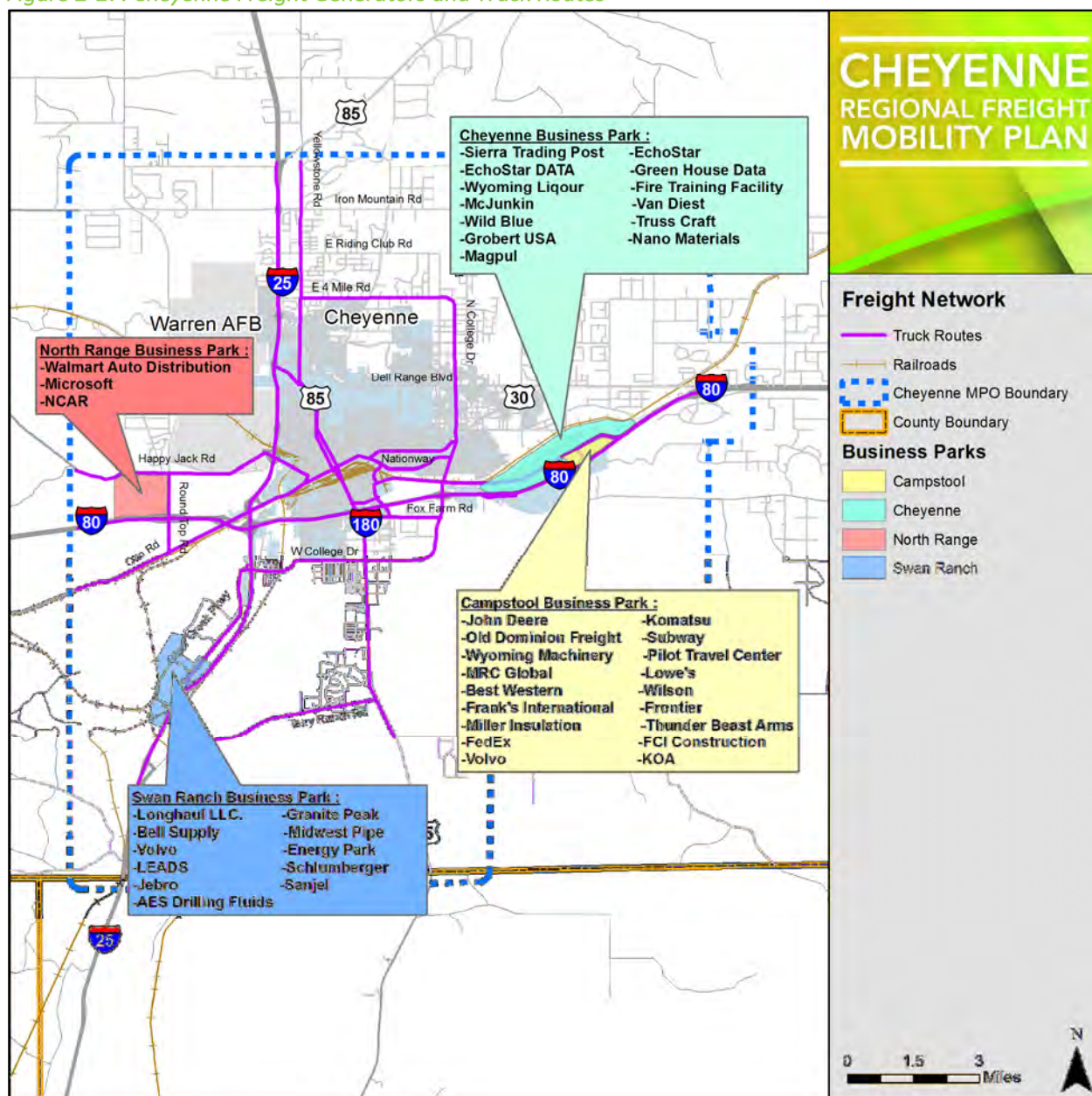
Figure 2-16: Cheyenne Pipeline Locations



2.18 Freight Generators

Freight generators are sites that generate or receive regular loads of freight. These sites include factories, distribution centers, and large retailers. The Cheyenne area has a growing manufacturing and distribution industry base which includes several major companies such as Lowe's, Walmart, Sierra Trading Post and Holly Frontier Refinery; all have distribution centers in the Cheyenne area. Numerous business parks also generate freight in the Cheyenne area. **Figure 2-17** displays regional truck routes and rail lines related to Cheyenne's primary freight generators within and through major regional freight generator sites.

Figure 2-17: Cheyenne Freight Generators and Truck Routes



2.19 Future Development

The MPO prepared population and employment forecasts for the Cheyenne area, which show growth in both population and employment over the next 25 to 50 years. **Table 2-10** presents the estimates.

Table 2-10: Cheyenne Population and Employment Forecasts

Years	Employment Increase	Population Increase
10	6,500 – 8,800	8,700 – 11,300
25	14,500 – 20,100	24,700 – 31,600
50	27,500 – 38,700	47,200 – 61,800

The projected populations shown above will increase the demand for goods. The increase in employment also reflects a corresponding increase for industrial and warehouse/distribution employment.

The growth in population and employment is also reflected in the region's future land use plan prepared by the City of Cheyenne, shown in **Figure 2-18**. The increase in industrial land area as depicted in purple on the map.

Perhaps the largest future truck and rail freight generator is Swan Ranch. Swan Ranch is a large industrial and commercial development currently evolving with a heavy emphasis on freight. Plans have been filed to develop 176 commercial acres, 535 light industrial acres and 2,217 acres of heavy industry. The traffic study completed for the project estimated a daily trip generation of 68,800 trips after ultimate development.

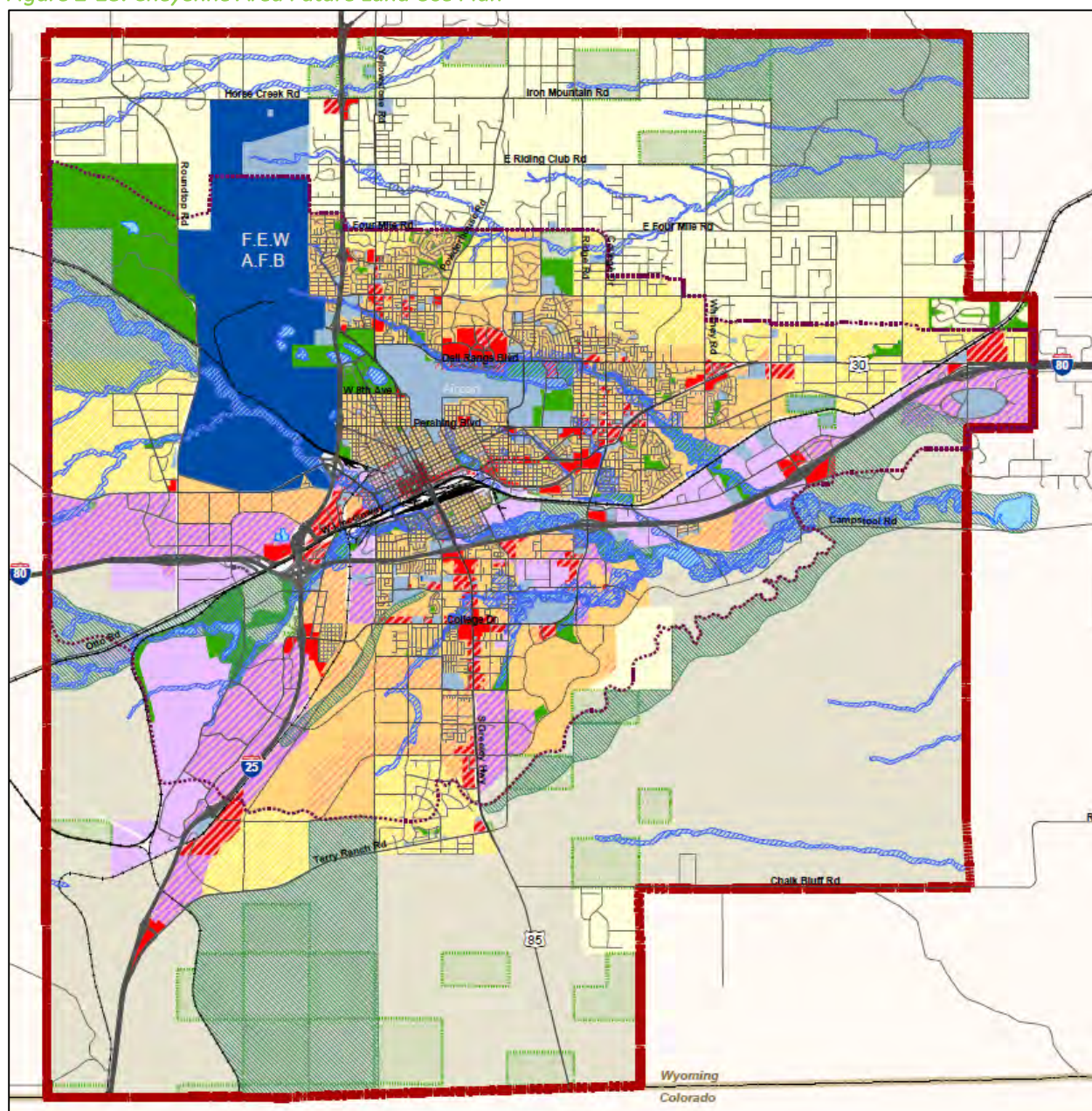
A second major regional freight generator site is the North Range Business Park. This is a 540 acre, light industrial and commercial development that provides 20 lots for businesses. The 2005 traffic study for this development projected 50,600 daily trips for full development of this site.

In order to accommodate the projected growth of the region, a long-range transportation plan was developed. The Cheyenne Long-Range Transportation Plan is based upon the future land use plan and future forecasts of population and employment. The plan identifies transportation needs and forecasts available revenues⁹.

Figure 2-19 displays the location of future funded projects within the region over the long term. The Transportation Plan includes numerous projects to support future industrial growth and freight-related industrial growth.

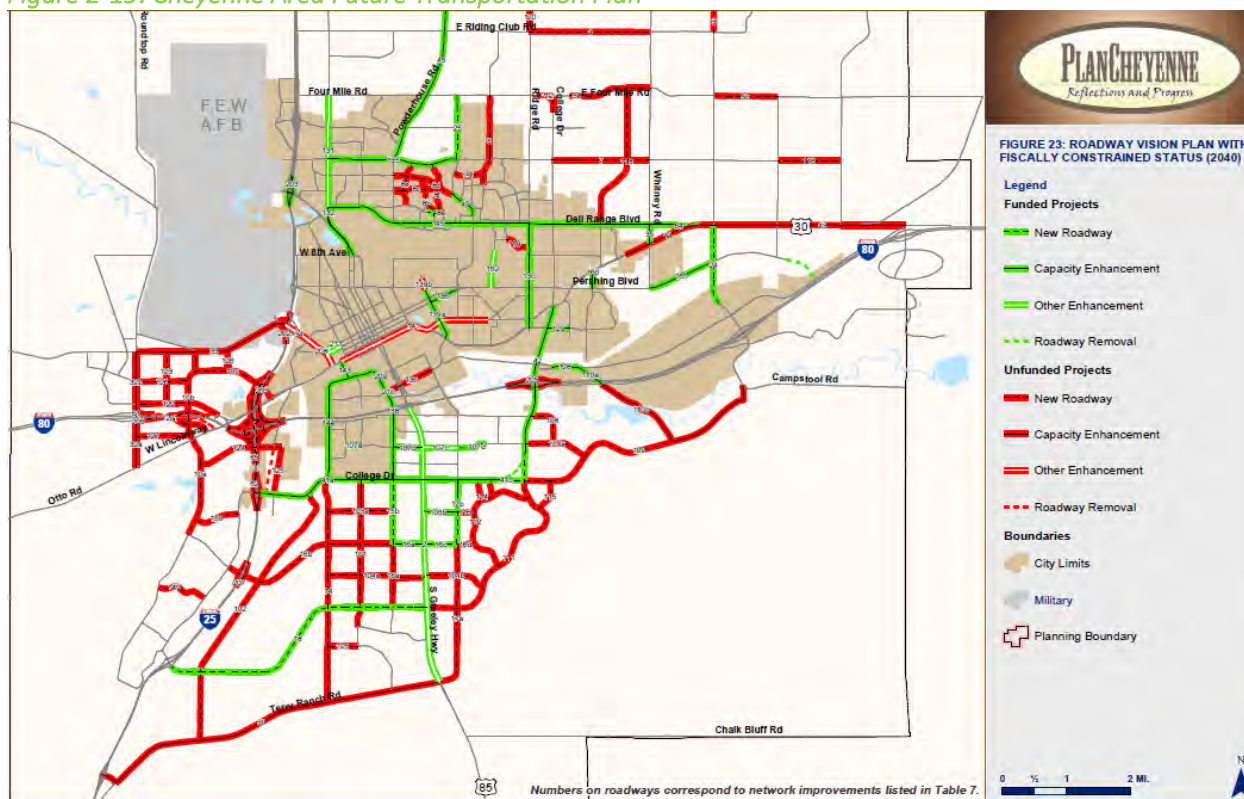
⁹ Source: *PlanCheyenne, 2014*

Figure 2-18: Cheyenne Area Future Land Use Plan



Source: PlanCheyenne, 2014

Figure 2-19: Cheyenne Area Future Transportation Plan



Source: PlanCheyenne, 2014

2.20 Summary

The freight network serving the Cheyenne area is comprised of highway, railway, aviation and pipeline systems. As part of the highway system review, a system of truck routes had been developed. This truck route system was reviewed to identify locations of traffic congestion, higher crash locations, and locations in which the current roadway may limit truck movement. Road condition was also presented for rural roads used for movement of oil from oil wells.

The movement of freight on the rail system was reviewed. Attention was given to the location and traffic characteristics of at-grade rail crossing. A number of locations were identified for further assessment for grade separation. Aviation and pipeline use was described in relation to freight activity. The location of major traffic and freight generators was also described. This information provides base information to identify potential investments in the freight network. These potential investments are described in the following chapters.



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CHAPTER 3 FREIGHT: AN EXPRESSION OF ECONOMIC VITALITY

Freight is a demand driven activity enabled by a digital economy, where companies and consumers now shop the globe for goods and services. National statistics suggest that between 40 and 50 tons of freight are generated per capita each year, a figure expected to grow to 70 tons by 2040. As a result, freight demand is most often motivated by trade in support of population concentrations or industry, and, in most cases, by both.

While the U.S. output in advanced manufacturing is growing, economic activity related to traditional goods manufacturing declined over the past several decades. Labor-intensive forms of traditional manufacturing activity shifted to developing countries where labor costs are much lower. Countries such as China, India and other emerging economies throughout Asia, Eastern Europe and South America now produce much of the world's consumer goods. With consumer products manufactured around the globe, the US economy has become much more dependent upon trade and the transportation networks required for enabling the efficient movement of raw materials, components and final products. As income in developing nations continues to grow, it is highly probable emerging nations will increase purchases of advanced technology products that the U.S. now excels in manufacturing. According to the U.S. Department of Transportation, the U.S. economy grew by 68 percent from 1990 to 2011. During that same period, foreign trade in the U.S. grew an astounding 210 percent.¹⁰

3.1 Exploring Freight Flows in the Cheyenne Region

Freight or commodity flows are a primary means of examining the level of demand upon various modal elements of a freight transportation network. Commodity flows also provide insights about key trade and market relationships for a state or region. Commodity flow data are the aggregation of individual commodity origin/destination pairs. Since individual commodity movements for most states and regions number in the millions on an annual basis; thus commodity flow data are typically derived using sampling and modeling estimations.

Two primary sources of freight flow data are:

- TRANSEARCH™, a proprietary data set marketed and sold by IHS-Global Insight; and,
- The Freight Analysis Framework, version 4 (FAF-4), from the Federal Highway Administration (FHWA).

Both data sources derive from the Commodity Flow Survey conducted every five years by the Census Bureau and Federal Bureau of Transportation Statistics. The largest drawback of TRANSEARCH data is cost. For an area like Cheyenne, a customized TRANSEARCH database would likely cost in excess of \$35,000.

FAF-4 information, on the other hand, is free. However, the weakness of the data is its geographic detail. The most recent version, FAF-4 released in October of 2015, represents origins and destinations for 132 domestic regions based primarily on population. The origin/destination for Wyoming flows are for the entire state.

A commonly-used technique for disaggregating FAF-4 data into more discreet geography is to use industry employment data. The underlining assumption is sub-state commodity volumes as a percentage of statewide volume are equivalent to sub-state employment as a percentage of statewide employment. The FAF-4 freight flows are grouped into a 2-digit classification scheme known as the

¹⁰ U.S. Department of Transportation, Bureau of Transportation Statistics; *Freight Facts and Figures 2013*. pg.1

Standard Classification of Transported Goods (SCTG). The SCTG is consistent with the 2-digit North American Industry Classification System (NAICS). Both SCTG and NAICS go up to a 5-digit level of detail. At a 2-digit level, the SCTG includes 44 commodity groups.

For the Cheyenne region, an initial attempt was made to disaggregate the FAF-4 Wyoming data using 2-digit NAICS employment data to provide a more specific view of commodity flows in and out of Cheyenne. However, Wyoming's commodity flows are dominated by coal. In 2015, FAF-4 data states coal was 78 percent of Wyoming's outbound commodity tonnage and 44 percent of all inbound commodity tonnage. Virtually no coal extraction takes place in the Cheyenne Region. However, Cheyenne does have oil and gas extraction and does support for mining. At the 2-digit level, this is NAICS code 21: Mining, Quarrying and Oil and Gas Extraction. As a result, disaggregating statewide commodity data by using 2-digit NACIS employment data suggests high-volumes of coal are being shipped from Cheyenne.

The 3-digit NAICS employment data for local Cheyenne companies (i.e., the refinery) states many fields with "N/A" or not available in public databases.

With current FAF-4 data limitations, this examination of freight flows for the Cheyenne – Laramie County Region identifies the composition of the regional economy compared to Wyoming and the United States. The analysis includes FAF-4 data for "The rest of Wyoming" and recent foreign trade data specifically for Cheyenne.

3.2 Comparing Economies: The United States, Wyoming, and Cheyenne

Figure 3-1, on the following page, shows employment by industry by percentage for the U.S., State of Wyoming, and Laramie County. The exhibit also shows the location quotients (LQ) for the state of Wyoming as compared to the U.S., and for Laramie County as compared to the U.S.

A location quotient is a metric used in economic analysis as a measure of industrial concentration within a specific geography (i.e., Wyoming or Laramie County), as compared to a broader base geography or economic region (i.e., the U.S. economy). The LQ is calculated as the ratio of an industry's share of the local economy to the respective industry's share of the base economy. The industrial share of the economy is calculated as a percentage of employment in the industry against the total employment within the economy. Employment concentration, though imperfect, serves as a good proxy for the industrial concentration of regional economies.

An industry with a LQ of less than 1.0 suggests the industry's role in the local economy is proportionally smaller than the same industry's share in the base economy. A LQ less than 1.0 also suggests the local economy is likely to be a net importer of the goods and/or services from that industry.

An industry with a LQ greater than 1.0 demonstrates the local economy's share of that industry is proportionally larger than the same industry's share in the base economy. A LQ greater than 1.0 suggests local output from that industry exceeds local demand for those goods and services, allowing the excess production to be exported.



Figure 3-1: Percentage of Employment and Location Quotient (LQ) by Industry - 2014

Industry	U.S. TOTAL	Wyoming Statewide	WY LQ	Laramie County	Laramie Co LQ
NAICS 11 Agriculture, forestry, fishing & hunting	1.07%	1.18%	1.11	1.03%	0.96
NAICS 21 Mining, quarrying, & oil-gas extraction	0.73%	12.51%	17.17	1.42%	1.95
NAICS 22 Utilities	0.48%	1.14%	2.4	0.51%	1.07
NAICS 23 Construction	5.29%	10.90%	2.06	10.18%	1.93
NAICS 31-33 Manufacturing	10.52%	4.50%	0.43	4.25%	0.4
NAICS 42 Wholesale trade	5.03%	4.36%	0.87	3.11%	0.62
NAICS 44-45 Retail trade	13.28%	13.66%	1.03	16.86%	1.27
NAICS 54 Professional and technical services	7.22%	4.37%	0.6	5.00%	0.69
NAICS 55 Mgmt. of companies & enterprises	1.86%	0.46%	0.25	0.24%	0.13
NAICS 56 Administrative and waste services	7.42%	3.62%	0.49	5.39%	0.73
NAICS 61 Educational services	2.31%	0.77%	0.34	0.74%	0.32
NAICS 62 Health care and social assistance	15.49%	11.03%	0.71	12.53%	0.81
NAICS 48-49 Transportation and warehousing	3.80%	4.83%	1.27	9.37%	2.47
NAICS 51 Information	2.36%	1.73%	0.73	3.61%	1.53
NAICS 52 Finance and insurance	4.87%	3.11%	0.64	5.21%	1.07
NAICS 53 Real estate and rental and leasing	1.77%	2.04%	1.16	1.81%	1.03
NAICS 71 Arts, entertainment, and recreation	1.81%	1.37%	0.76	0.94%	0.52
NAICS 72 Accommodation and food services	10.84%	14.83%	1.37	13.82%	1.27
NAICS 81 Other services, except public admin	3.66%	3.59%	0.98	3.99%	1.09

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

It is common for the employment composition of states and sub-state economic areas to closely mirror one another in relation to national employment concentrations across many industries. This is the case for many of the industries in Wyoming and Laramie County. Of the eight Wyoming industries statewide with a LQ greater than 1.0, seven of these industries also exhibit a LQ greater than 1.0 in the Laramie County economy, with the exception of *Agriculture, forestry, fishing and hunting*.

Three industries in Laramie County have LQs greater than 1.0 and are not reflected as strongly in the statewide economy:

- *Information,*
- *Finance and insurance, and*
- *Other services, except public administration.*

Table 3-1 presents the top five industry concentrations/location quotients for both Wyoming and Laramie County:

Table 3-1: Top LQ for Wyoming and Laramie County Wyoming (common sectors in blue)

Top Five LQs for Wyoming	Top Five LQs for Laramie County
1. Mining, quarrying, oil and gas extraction – 17.17	1. Transportation and warehousing – 2.47
2. Utilities – 2.4	2. Mining, quarrying, oil and gas extraction – 1.95
3. Construction – 2.06	3. Construction – 1.93
4. Accommodation and food services – 1.37	4. Information – 1.53
5. Transportation and warehousing - 1.27	5. Accommodation and food services – 1.27
	5. Retail trade – 1.27 (tied)

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

As noted earlier, Wyoming's statewide economy is highly concentrated in *Mining, quarrying and oil and gas extraction* with a 17.17 LQ score. In 2014, the Powder River Basin region of Wyoming produced 41 percent of all coal mined in the U.S.; however, all of this production occurs well north of Cheyenne in Northeast Wyoming and Southeast Montana. More than 250 wells produce oil and gas in Laramie County and the area around Cheyenne. In 2014, Laramie County produced approximately 3.8 million barrels of oil, 5 percent of the Wyoming state total.¹¹

The Cheyenne Refinery located in Cheyenne (one of five petroleum refineries in Wyoming) has a crude oil capacity of 52,000 barrels per day.

"Crude oil is purchased from local producers and is also imported via the Express Pipeline from Canada. Cheyenne's refined products are marketed primarily in the eastern slope of the Rocky Mountain region,

¹¹ Wyoming Oil and Gas Conservation Commission, online reports: <http://wogcc.state.wy.us/>

which includes eastern Colorado (including the Denver metropolitan area), eastern Wyoming and western Nebraska (the Eastern Slope).¹²

While *Mining* is the most concentrated industry in Wyoming, *Transportation and warehousing* is the most concentrated industry in Cheyenne, with a LQ of 2.47 for Laramie County. The *Transportation and warehousing* sector includes industries that provide transportation for both passengers and cargo, warehousing and storage of goods, scenic/sightseeing transportation, and support activities for transportation modes.¹³

Beyond the transportation sector, the industry sector most often associated with goods movement is *Manufacturing*. Neither the statewide economy, nor the Cheyenne regional economy, shows manufacturing as a strength in relation to the U.S. national economy. Both Wyoming and Laramie County have *Manufacturing* sector LQs of 0.4, as compared to the nation. Nonetheless, *Manufacturing* accounts for more than four percent of county-wide employment in Laramie County.

Table 3-2 examines the LQs at the subsector level within the *Manufacturing* sector for Laramie County, using the State of Wyoming as the base region. The table shows Laramie County's manufacturing is most concentrated in *Fabricated metal products, Machinery manufacturing, and Wood products manufacturing*.

Table 3-2: LQ for Laramie County at the Manufacturing Subsector Level (2014)

Industry	Laramie County Vs. Wyoming
Base Industry: NAICS 31-33 Manufacturing	1.00
NAICS 332 Fabricated metal product manufacturing	2.24
NAICS 333 Machinery manufacturing	1.99
NAICS 321 Wood product manufacturing	1.77

3.3 Cheyenne's Commodity Flows

Freight is a demand-driven activity resulting from the consumption by the region's population and businesses, as well as the product outputs of those businesses. The previous section discussed the similarities and differences in the economies of Cheyenne/Laramie County, Wyoming and the U.S. This comparison also suggests Cheyenne is a hub for transportation and warehousing activity. With the exception of trade data on foreign exports, much of the available commodity data examined in the following section is at a statewide level. Given the relative similarities of the industry make-up for Laramie County and for the State of Wyoming, aside from coal mining, it is assumed mode shares, directional flows, product movement, and key markets are similar as well.

3.4 Mode Share

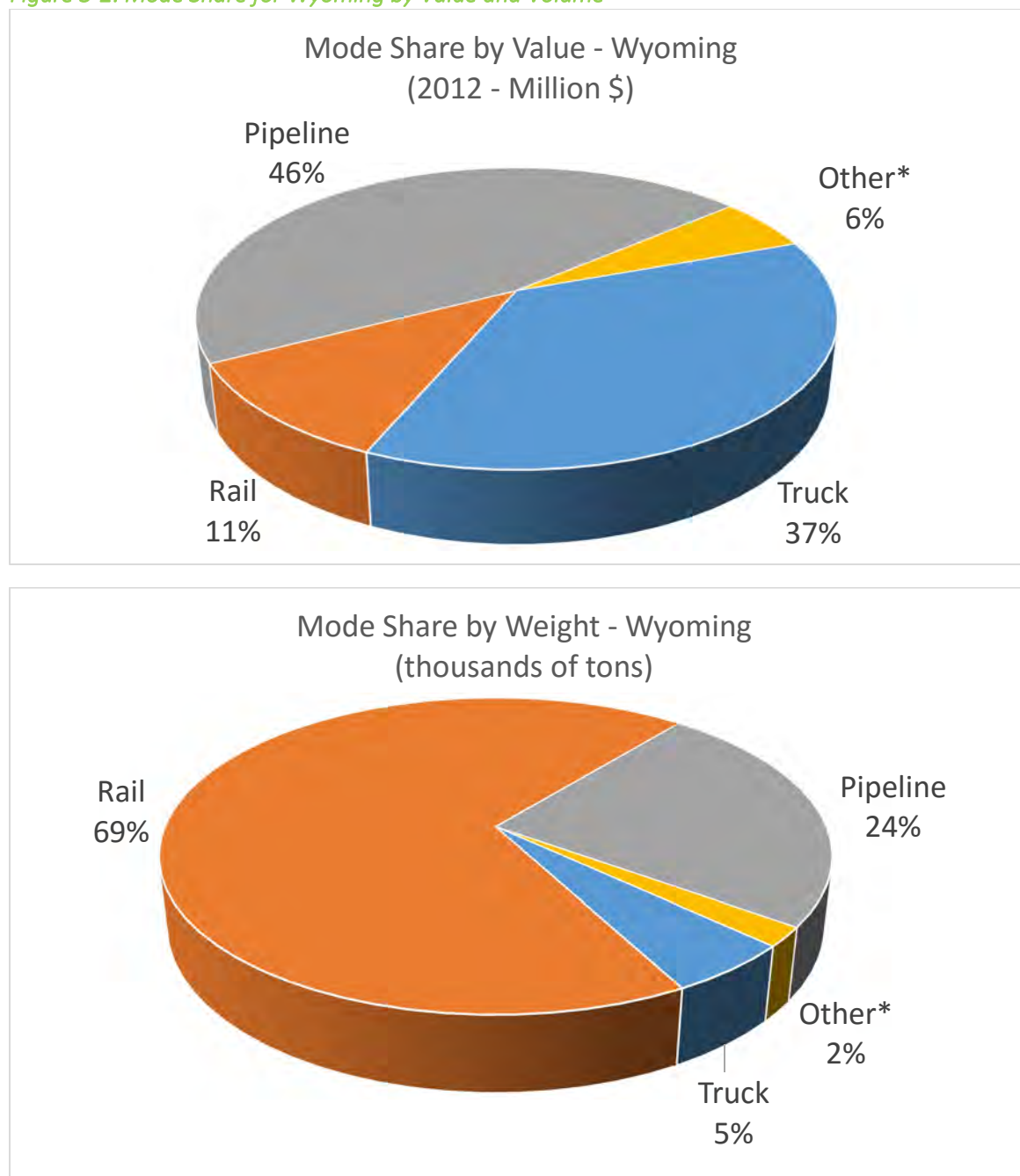
Figure 3-2 uses FAF-4 data for the State of Wyoming to show the modal makeup for Wyoming commodity flows statewide for 2012. By value, the *Truck* accounts for 37 percent of all goods movement in Wyoming, as compared to a 71 percent truck share by value nationwide. *Pipeline* has the highest

¹² Hollyfrontier website: <http://www.hollyfrontier.com/operations/refineries/cheyenne/default.aspx>

¹³ U.S. Bureau of Labor Statistics; Industries at a Glance: <http://www.bls.gov/iag/tgs/iag48-49.htm>

modal share by value in Wyoming (46 percent), while nationally pipelines account for 5 percent. By value, rail accounts for 3.5 percent of flows nationally, while in Wyoming rail accounts for 11 percent.

Figure 3-2: Mode Share for Wyoming by Value and Volume



Source: Federal Highway Administration (FHWA) – Freight Analysis Framework Version 4.

* Other includes three FAF-4 mode categories: Air-truck, Multiple Modes and “Other and Unknown”

When examined by weight, the rail mode dominates Wyoming freight flows with a 69 percent mode share, as compared to just a 10 percent rail mode share nationally. Nationally, rail accounts for 43 percent, while trucking contracts, remain the dominant mode at 53 percent. The modal share of multiple modes also shrinks to 4 percent of all shipments by weight.

By both weight and value, the modal composition of Wyoming freight movements is significantly different from the national profile, with rail and pipeline outpacing highway/truck movements by a large margin. Nationally, truck freight ranks first in both weight and value by a large margin. It is likely that railroads and pipelines lead Wyoming's modal shares due to the extraction such as coal and petroleum.

3.5 Directional Flows

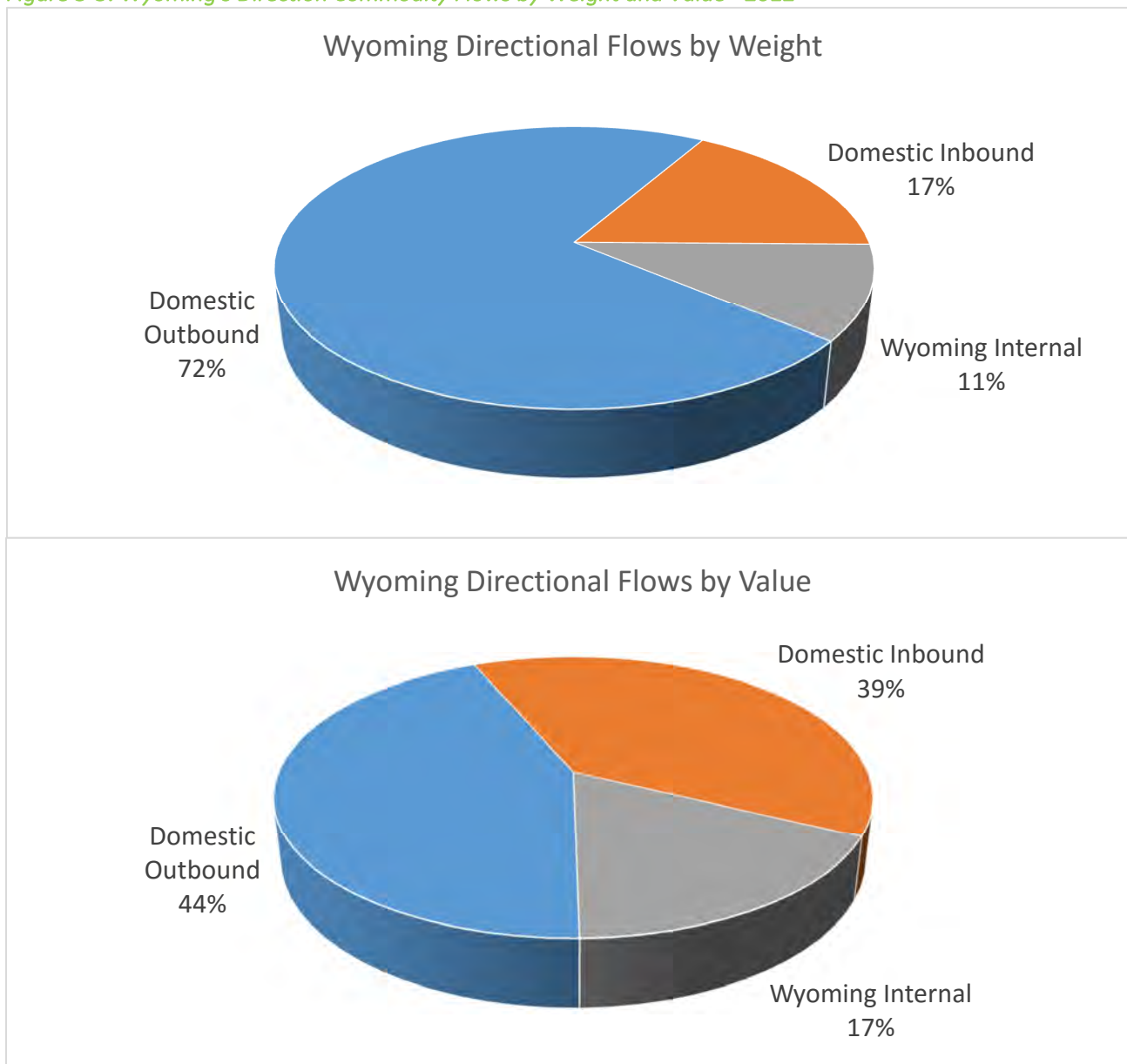
Figure 3-3, on the following page, shows the directional split of commodity flows across all modes for Wyoming. By weight, Wyoming trade to external regions accounts for nearly three-quarters of all flows, likely due to the large volumes of coal produced in the state. By value, domestic exports (movements out of Wyoming to other states) are just five percent higher than domestic imports to the state, with internal movements (both an origin and destination within the state) making up the remaining 17 percent.

3.6 Wyoming's Domestic Import Movements

Figure 3-4 displays the commodity analysis of goods with a domestic origin outside of Wyoming and moving to a destination within Wyoming. Somewhat surprisingly, *Coal n.e.c. (Coal Not Elsewhere Classified)*, Wyoming's largest individual commodity import, accounts for 61 percent of all inbound commodity movements by weight. The Standard Classification of Transported Goods (SCTG) defines *Coal n.e.c.* as refined petroleum products, including lubricating oils, greases, kerosene, jet fuel, liquefied natural gas, propane, and many other products. Closer examination of FAF-4 data also reveals most of the *Coal n.e.c.* products moving into Wyoming are coming from Colorado via pipeline.

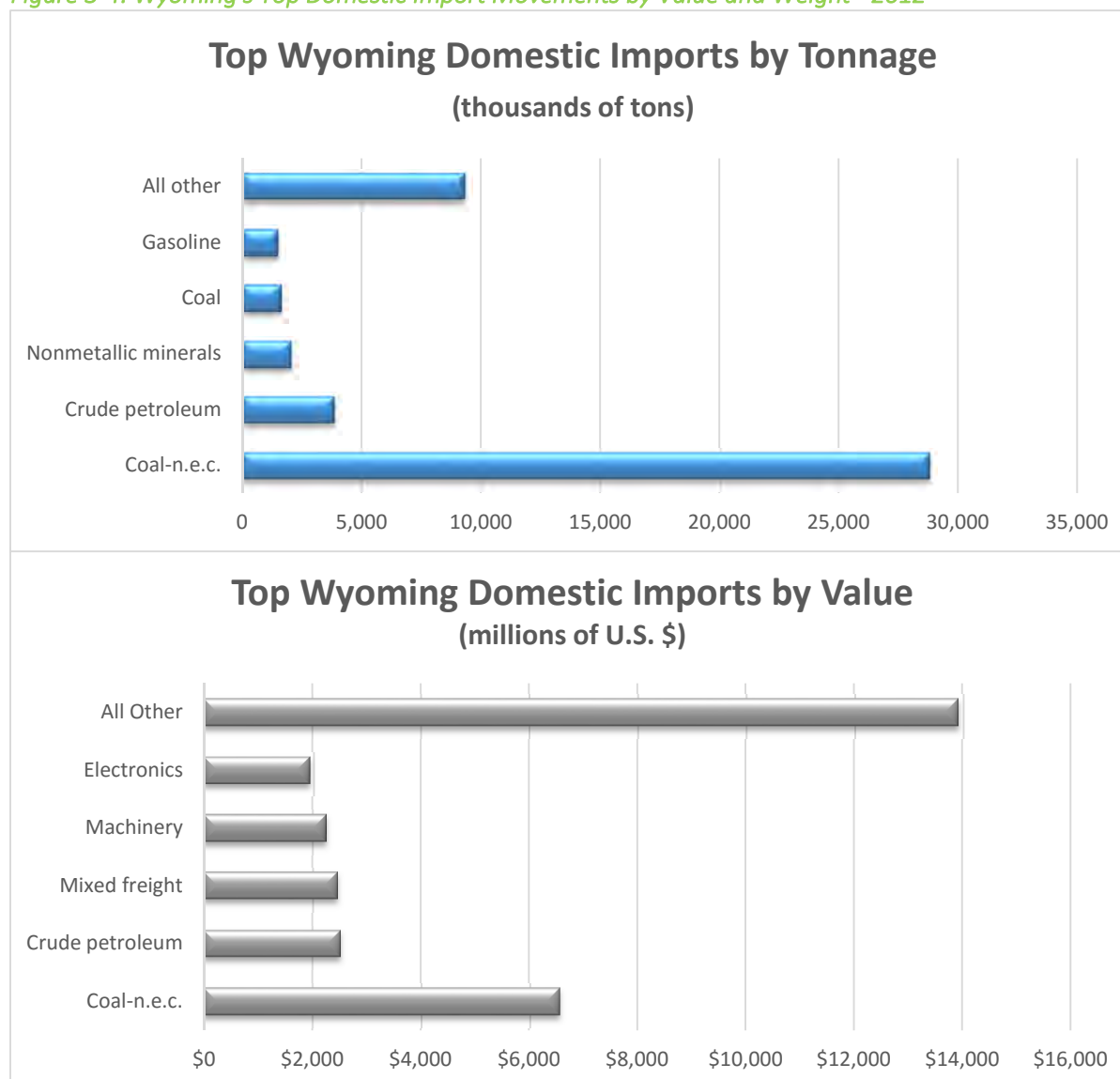
By weight, the only non-energy commodity among the top five Wyoming domestic imports is *Non-metallic Minerals*, which includes a wide variety of minerals such as salt, Sulphur, clay, and gypsum. By value, several consumer and commercial product categories show up in the top five, such as *Mixed Freight* (often consumer/retail products in mixed truckloads or containers), *Machinery*, and *Electronics*.

Figure 3-3: Wyoming's Directional Commodity Flows by Weight and Value - 2012



Source: FHWA FAF-4

Figure 3-4: Wyoming's Top Domestic Import Movements by Value and Weight - 2012

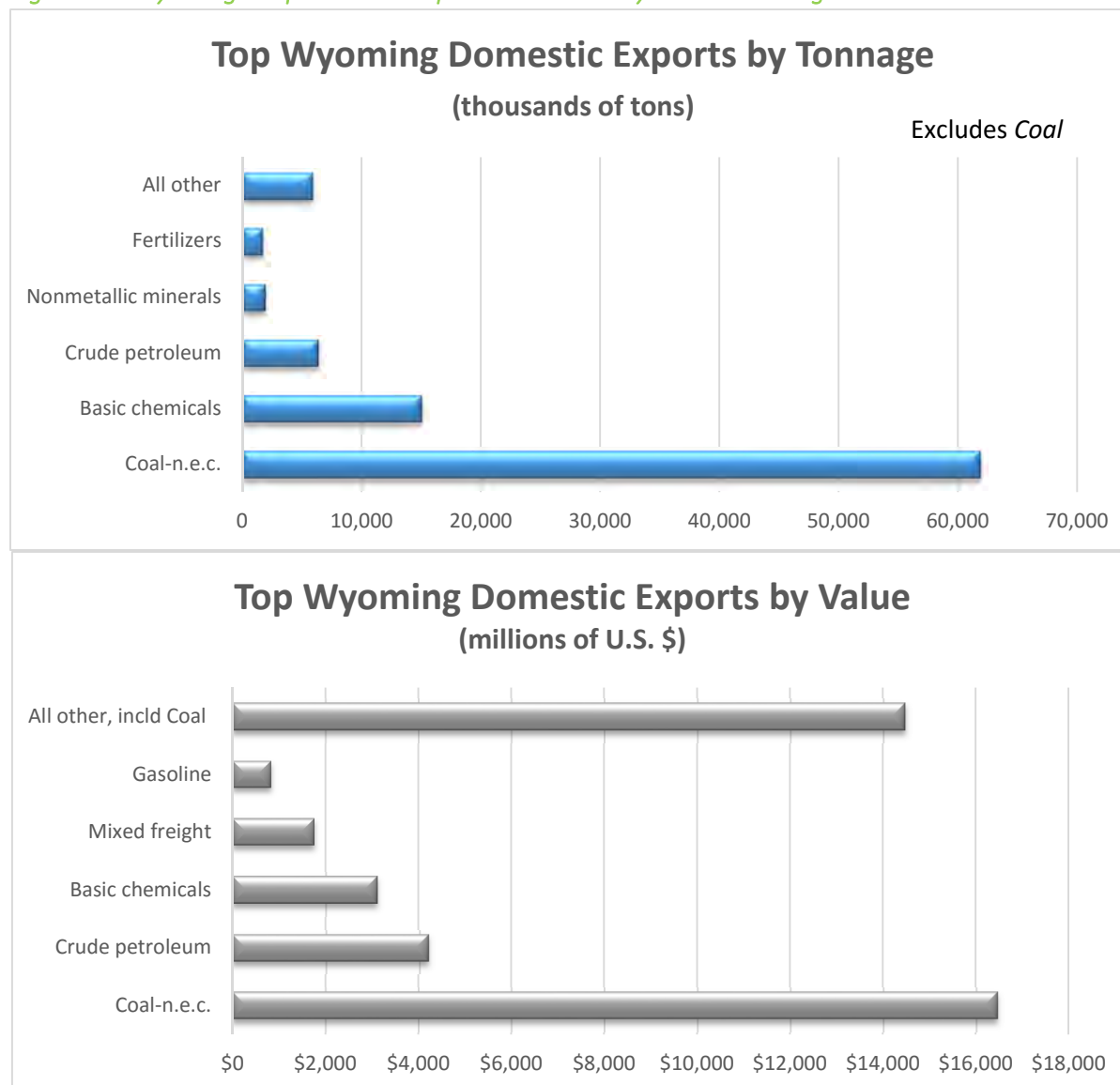


Source: FHWA FAF-4

3.7 Wyoming's Domestic Export Movements

Figure 3-5 provides a high-level review of Wyoming's outbound freight flows to other domestic markets. As already noted, *Coal* dominates Wyoming's exports, especially by weight, and comprises nearly 80 percent of all outbound commodity movements. To allow other commodities to be fairly examined, outbound *Coal* movements have been excluded from the top bar chart (weight). In the bottom chart (value), *Coal* is removed as a stand-alone commodity and included as part of the *All Other* category. After removing *Coal* from outbound tonnages, *Coal-n.e.c.* becomes the top individual commodity by weight and value. *Petroleum* and petroleum-related products such as chemicals, gasoline and fertilizers appear in the top commodity exports by either weight or value. *Mixed Freight*, which may reflect Cheyenne's prominence as a retail distribution hub, is among the top five outbound commodities by value. *Non-metallic minerals* is the only non-energy or chemical commodity group in the top five by weight.

Figure 3-5: Wyoming's Top Domestic Export Movements by Value and Weight - 2012

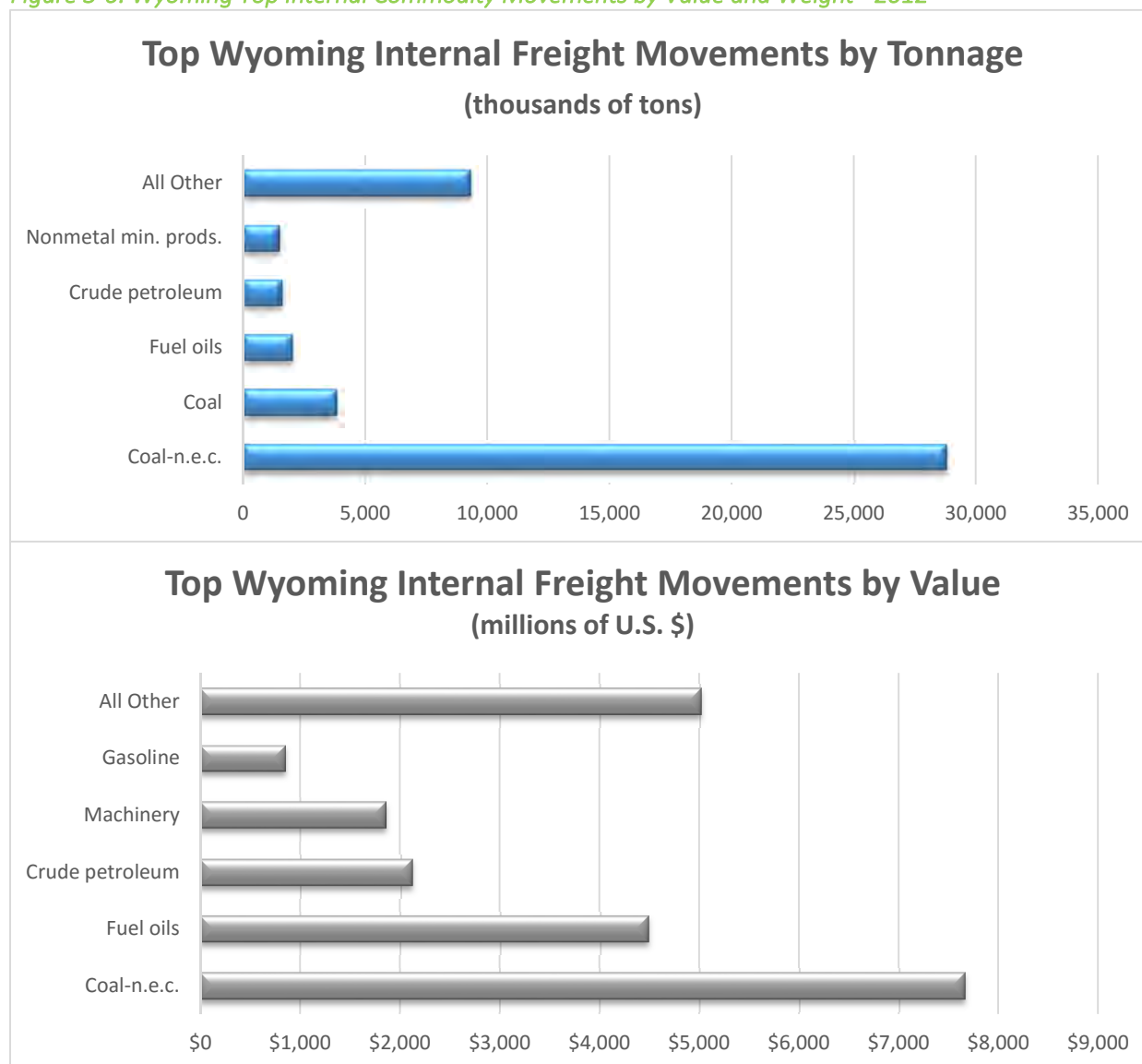


Source: FHWA FAF-4

Internal Commodity Movements in Wyoming

Figure 3-6 on the following page, provides a breakdown of commodities in Wyoming with an origin and destination within the state. By weight and value, *Coal n.e.c.* and several other energy-related products are the top commodity movements. *Nonmetallic Mineral Products* is the only non-energy related commodity group by weight in the top five, while *Machinery* holds the same distinction by value. By weight, *Waste/scrap* and *Gravel* rank second and third. Together, the top three commodities by weight account for 75 percent of internal flows by weight.

Figure 3-6: Wyoming Top Internal Commodity Movements by Value and Weight - 2012



Source: FHWA FAF-4

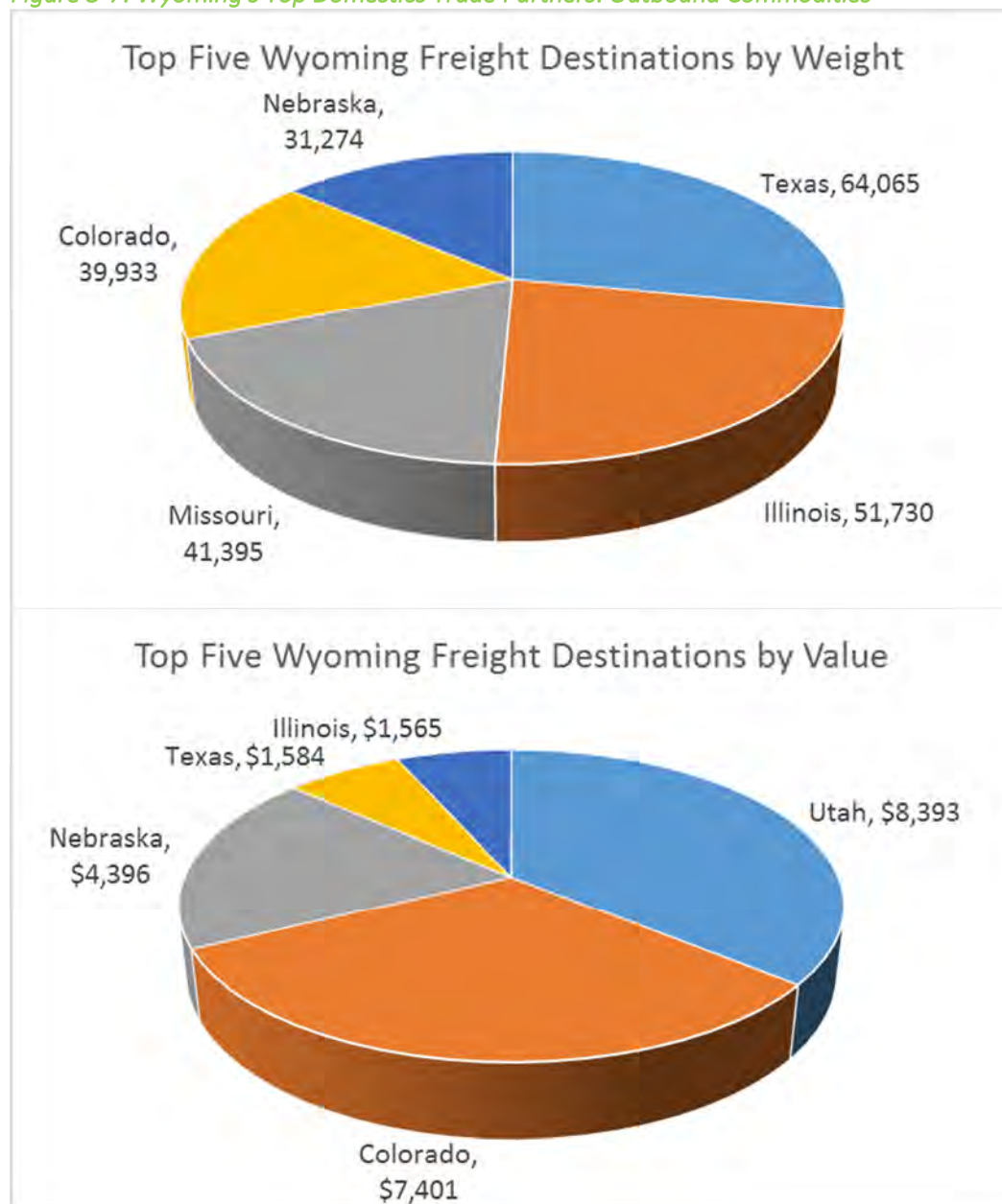
3.8 Top Domestic Trading Partners

By weight, approximately 15 percent of all freight flows in Wyoming have an origin and a destination in the state. However, looking beyond internal flows, **Figure 3-7** also shows the top five destination states for Wyoming products by weight and value. Texas is the primary destination by weight, and fourth by value. Excluding internal flows, the top five state destinations of Texas, Illinois, Missouri, Colorado and Nebraska account for 51 percent of all Wyoming domestic exports by weight.

By value, Utah is the primary destination of Wyoming flows, followed closely by Colorado. Together Colorado and Utah account for nearly 50 percent of all Wyoming domestic exports by value (excluding internal flows). Together, the top five states account for 70 percent of all domestic exports by value. The top five origin states for inbound freight to Wyoming by weight are Colorado, Utah, Montana, South Dakota and Oklahoma. These five states account for 93 percent of inbound flows. By value, the top five

origin states are Colorado, Utah, Montana, Texas and California, with these five states comprising 69 percent of all inbound flows by value.

Figure 3-7: Wyoming's Top Domestic Trade Partners: Outbound Commodities



Source: FHWA FAF-4



3.9 Cheyenne's Foreign Exports

“Goods trade delivers unquestionable returns to metropolitan economies, making it imperative that metropolitan leaders understand how their economic base relates to current and prospective trade partners... Metropolitan freight connectivity enables this access and the ensuing modern global value chains. Without it, trade cannot occur.”¹⁴

Researchers at the Brookings Institution, in cooperation with JP Morgan Chase, examined the economic connection between foreign trade activity and the economic vitality of metropolitan areas. Research found that trade is a fundamental element of economic growth for urban areas, and for every trade sector job created, three local sector jobs are also created.¹⁵

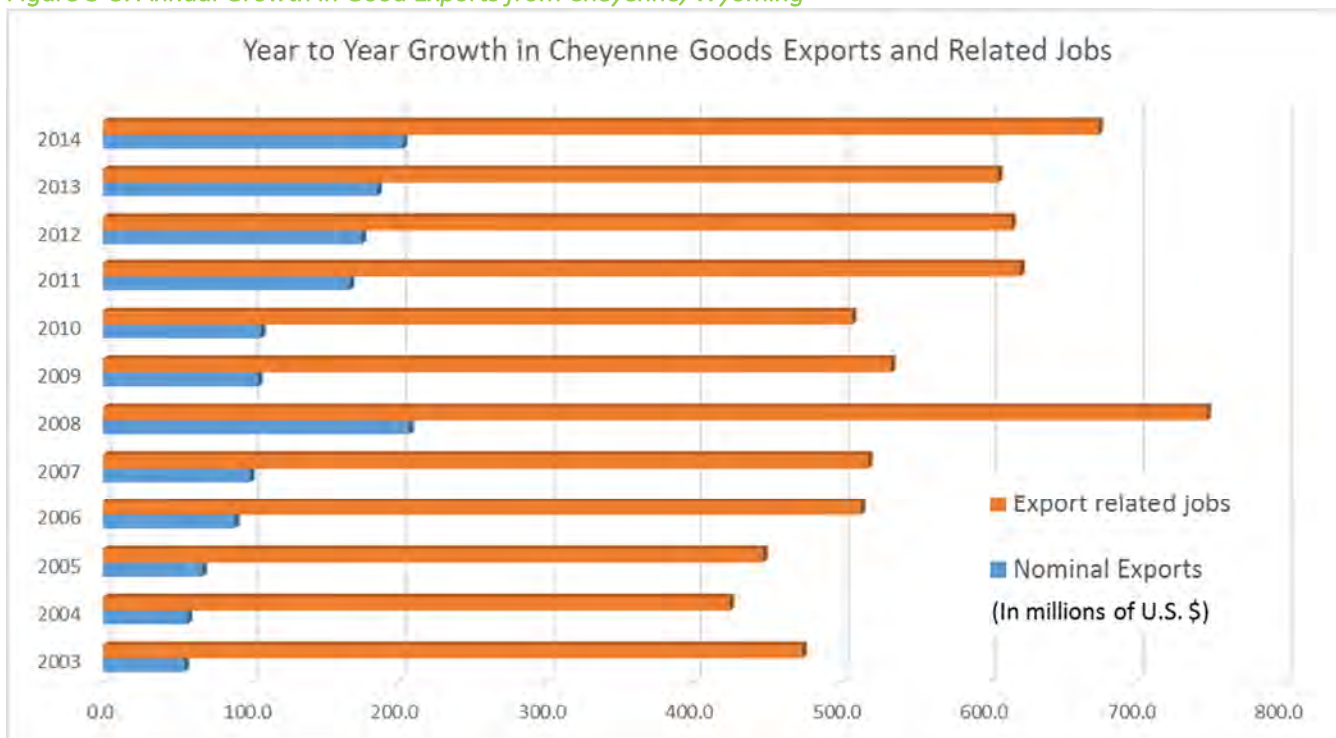
The information presented in this section of the report is derived from a data series produced by the Brookings Institution to examine the impact of foreign trade on state and local economies. The chart in **Figure 3-8** shows the growth in goods exports from Cheyenne to foreign countries between 2003 and 2014. During this period, the value of Cheyenne's foreign exports grew by 267 percent, while export supported jobs grew 42 percent. According to the Brookings Institute, in 2014 the total value of exports from Cheyenne reached \$203 million.

Cheyenne's leading export industries by 2014 total value are shown in **Table 3-3**. Of eight export-related industry sectors identified in Cheyenne, three are goods-producing industries. The other five are service-producing industries such as *Engineering, Information and Technology* and *Tourism*. In 2014, however, *Manufacturing* in Cheyenne accounted for 35 percent of the export economy. Most of Cheyenne's manufacturing export trade comes from petroleum related products, with Canada and Western Asia being the top foreign markets.

¹⁴ Adie Tomer, Joseph Kane, and Robert Puentes; *Metro Freight: The Global Goods Trade that Moves Metro Economies*. Brookings Metropolitan Policy Program. October 2013.

¹⁵ The traded sector includes industries and firms who produce goods and services that are consumed outside the region of production (from ECONorthwest – *The Traded Sector in Portland's Regional Economy*).

Figure 3-8: Annual Growth in Good Exports from Cheyenne, Wyoming



Source: Brookings Institution, Metropolitan Policy Program: Global Cities Initiative (Goods exports exclude service industry exports).

Table 3-3: Top Cheyenne Export Industries in 2014

Industry	2014 Export value (millions of \$)	Annualized Growth Rate (2003-2014)
Manufacturing	\$157.4	+7.3%
Agriculture, Forestry and Fishing	\$23.3	+8.0%
Mining, Oil and Gas Extraction	\$22.4	25.5%

Source: Brookings Institution, Metropolitan Policy Program: Global Cities Initiative



CHAPTER 4 CHEYENNE REGIONAL FREIGHT TRENDS AND ISSUES

This chapter identifies and explores significant trends and issues impacting the freight system in Cheyenne today and in the future. These trends and issues have the potential to affect the demand for freight-related infrastructure throughout the Cheyenne Region and could have implications for freight planning purposes. The trends and issues were reviewed based on effects on the origin, destination, routing, volume and type of freight movement involved. Using a framework based on prior research examining strategic issues facing transportation, the discussion of trends and issues were structured around the five topic areas shown below:

1. Demographic and Societal Changes
2. Economics
3. Energy and Environment
4. Technology
5. Government/Regulation

Cheyenne is located at the crossroads of several important transportation corridors. Interstate 80, a major U.S. freight corridor, intersects with Interstate 25 in the metropolitan area. Several U.S. Highways also traverse the region. Union Pacific's main rail line connecting the west coast with the Midwest passes through Cheyenne, as does an important north-south BNSF rail line. This indicates a substantial amount of freight movement in and around Cheyenne. Any future national trend in freight movement, in addition to local trends and issues, will likely have a significant effect on the region.

4.1 Demographic and Societal Changes

Population Trends

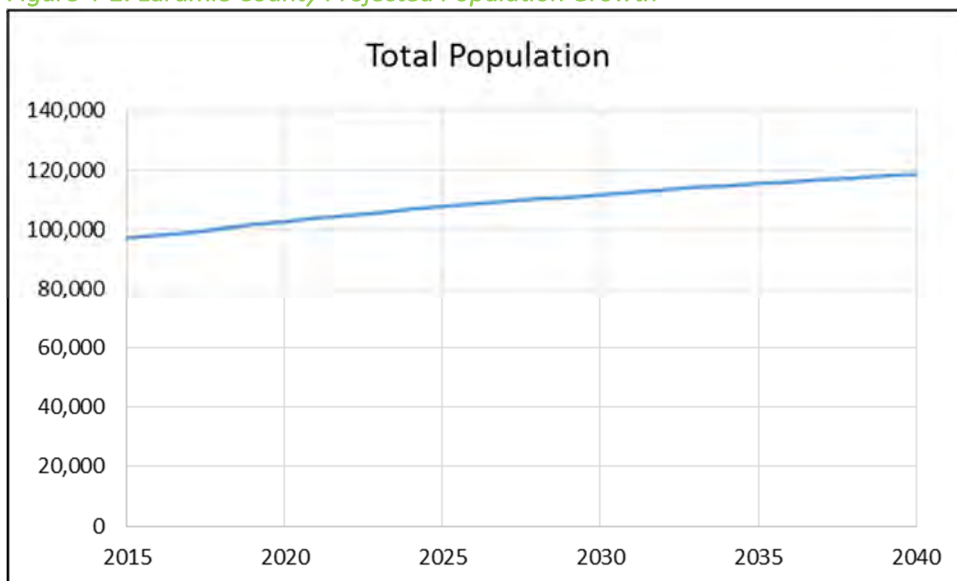
Freight is a demand driven activity; more people translates to more consumption of goods, commodities and services, all of which increase freight activity. According to the USDOT, the annual freight tonnage by capita within the United States is expected to increase from 55 tons in 2010 to 70 tons in 2040.¹⁶ The total population of Laramie County is expected to grow to over 100,000 by 2018 and reach 118,620 by 2040¹⁷ as shown in **Figure 4-1**. This expansion of population translates into a continued and sustained increase in goods consumed, along with a corresponding sustainable increase in overall freight activity within both Cheyenne and Laramie County.

¹⁶ FHWA, Freight Facts and Figures; Tables 2-1 and 2-1M. Weight of Shipments by Transportation Mode: 2007, 2009, and 2040.

http://ops.fhwa.dot.gov/freight/freight_analysis/nat_freight_stats/docs/10factsfigures/table2_1.htm

¹⁷ Wyoming Department of Administration & Information, Economic Analysis Division (<http://eadiv.state.wy.us>), August 2015

Figure 4-1: Laramie County Projected Population Growth



Source: Economic Analysis Division, WY Department of Administration & Information

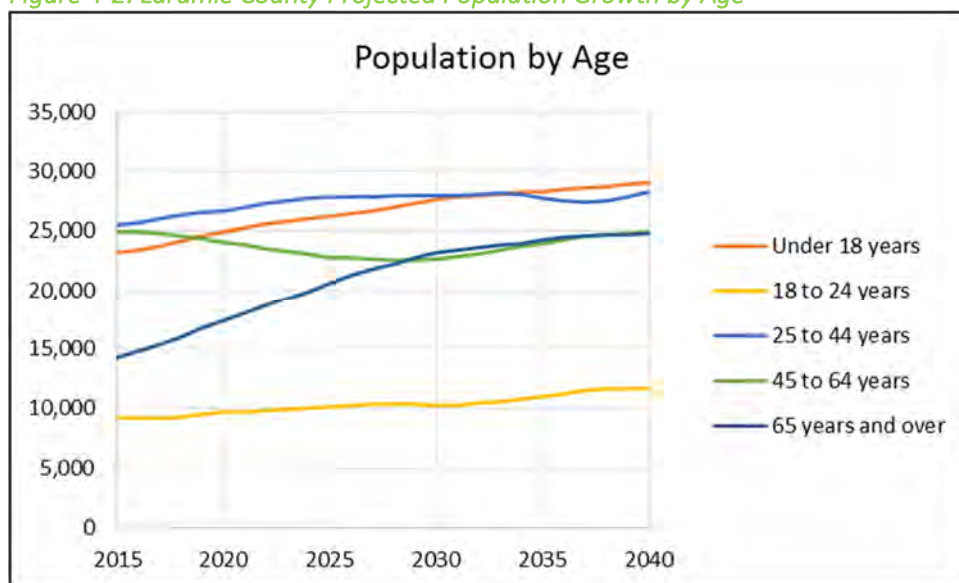
One major factor for the population growth in Cheyenne and Laramie County is due to the growth in new jobs. Between 2010 and 2013, Laramie County created 2,240 new jobs, an increase of 5.3 percent. Over those same three years, Laramie County added 3,760 new residents, a net increase of 4.1 percent. During this three-year period, the number of new jobs created was more than the number of new workers added to the local work force. Currently, the unemployment rate in Laramie County is 4.8 percent, which indicates approximately 2,000 unemployed workers.¹⁸ If the trend continues, more jobs than new workers, the existing labor shortage will worsen and may eventually threaten the growth of local businesses in Cheyenne and Laramie County. The Cheyenne LEADS Workforce Study, completed in 2014, identified *Transportation and Logistics* as a critical industry cluster within Cheyenne and Laramie County, and as a critical occupation cluster for future economic development efforts in Cheyenne. A workforce skilled in supporting key local industries such as transportation and warehousing is of critical importance to the future area economy.

Another factor affecting local business growth is the age of the workforce. Throughout the U.S., there has been much discussion regarding the high proportion of the workforce approaching retirement and how communities are considering the replacement of retiring workers. Population by age group is shown in **Figure 4-2**. Over the next 25 years, the 65 years and over age group is projected to grow the fastest in Laramie County, a trend not dissimilar from the rest of the country. Most of these workers will exit the active workforce. Fortunately, while Laramie County does have many workers nearing retirement, the percentage of growth is less than in some other areas of the country.¹⁹ Nonetheless, it is still an issue Cheyenne and Laramie County will need to address thorough workforce education efforts in coming years.

¹⁸ Cheyenne LEADS Workforce Study, 2014, pg 45.

¹⁹ Cheyenne LEADS Workforce Study, 2014, pg 54.

Figure 4-2: Laramie County Projected Population Growth by Age



Source: Economic Analysis Division, WY Department of Administration & Information

4.2 Mega-Regions

Cheyenne is at the northern end of the “Front Range” mega-region, which extends south through Denver and to Albuquerque. Mega-regions have been described as “the name given to one or a grouping of several urban areas, linked by social, economic, demographic, environmental and cultural ties.”²⁰ Geographers, planners and economists are paying more attention to the concept of mega-regions, rather than particular cities, states or nations, because they are the real driving force within a global economy.

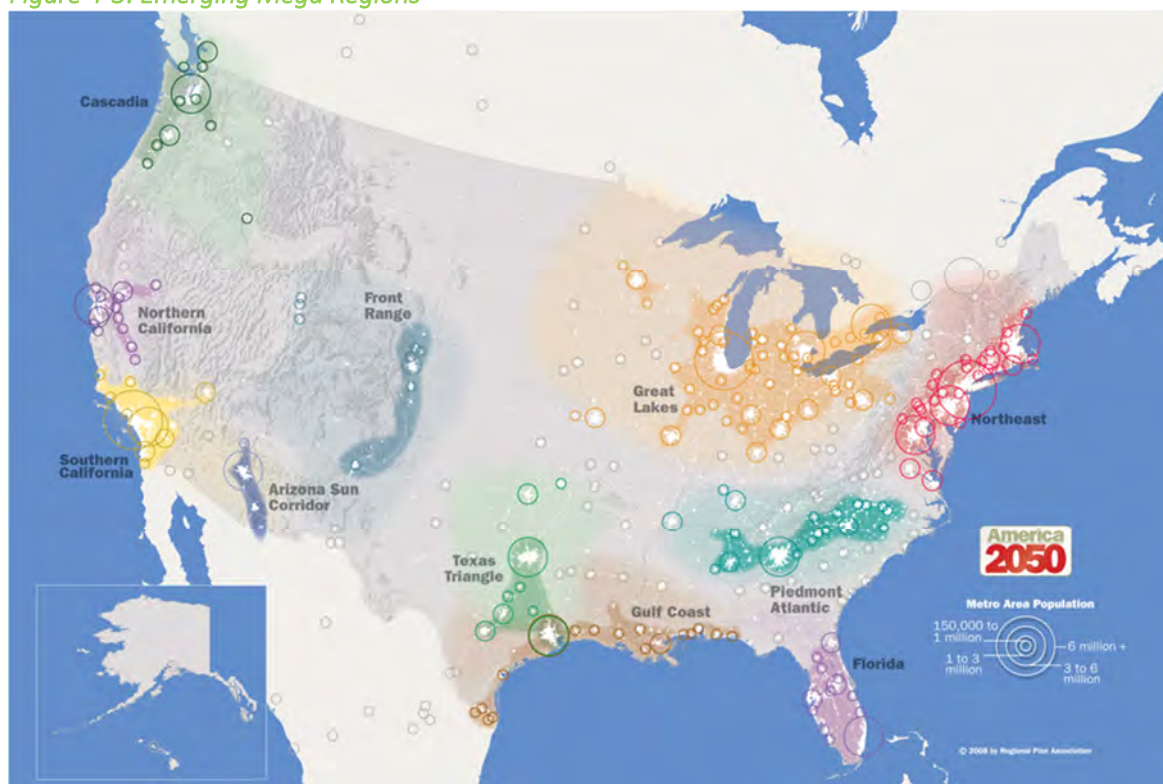
Ten mega-regions in the United States were identified by the Regional Plan Association in their report “America 2050: A Prospectus”.²¹ These are shown in **Figure 4-3**. By mid-century, these 10 mega-regions will represent more than 70 percent of the nation’s population and economic growth. As these mega-regions increase their roles within the national and global economy, pressure due to increased congestion on ports, highway facilities, railroads, intermodal yards, and other freight facilities will only increase. While specific area delineation differs, by one count megaregions in the United States account for only 30 percent of the geographical area, but 77 percent of both population and employment, 81 percent of gross regional product, and 92 percent of Fortune 500 Companies’ revenue (all 2008).²² Effective freight planning considers not only movements within each of these mega-regions, but also freight movement from one mega-region to other mega-regions.

²⁰ Attributed to Shirley Franklin in “Planning for Megaregions”, Fleming, Billy, *The New Planner*. Winter 2012 American Planning Association.

²¹ America 2050 Prospective, page 4.

²² Ross, C., & Woo, M., “Megaregions and Mobility.” *The Bridge*. National Academy of Engineering. Vol 41, No 1 Spring 2011: pgs. 27-34

Figure 4-3: Emerging Mega Regions



Source: Regional Plan Association

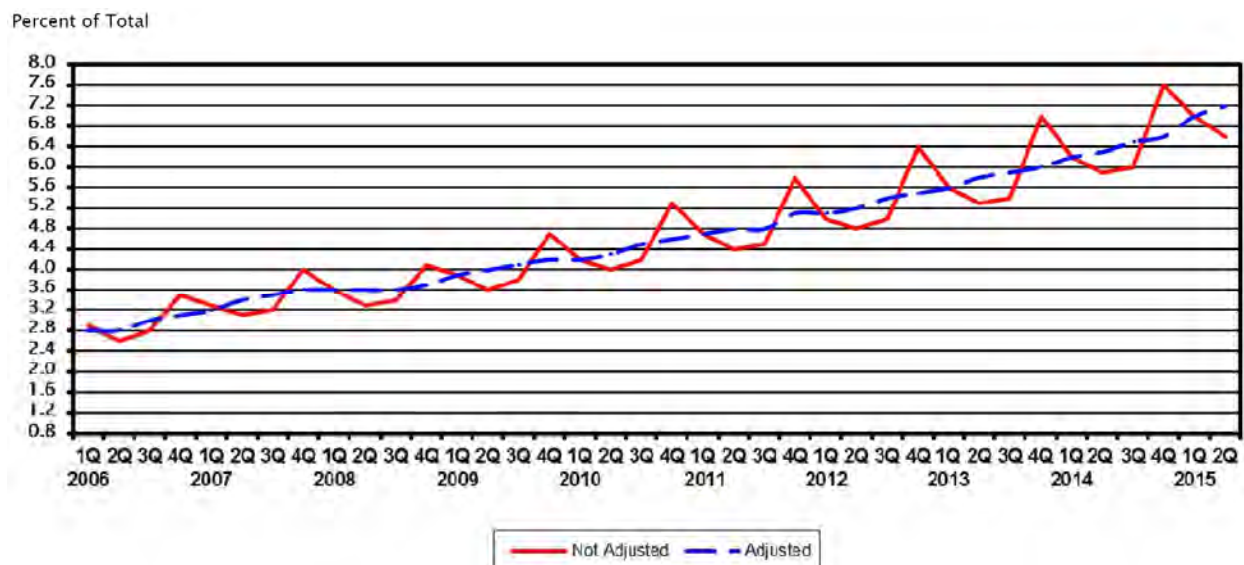
4.3 E-commerce / Home Delivery

In the U.S., E-commerce increased from 0.6 percent of total retail activity in 1999, to 7.2 percent in the second quarter of 2015²³. U.S. e-commerce sales are shown in **Figure 4-4**. The rapid increase of e-commerce due to prolific increases in direct home delivery has considerably impacted the freight network. Similar to traditional retailers such as Wal-Mart and Target, which have implemented a series of distribution warehouses as part of their supply chain management in order to facilitate just-in-time delivery, e-retailers such as Amazon and eBay have constructed a series of centralized distribution centers around the country. E-commerce requires fast, on-time delivery, which is sensitive to both distance and congestion. These distribution centers help the e-commerce retailers achieve next-day or even same day delivery for their products. The quest for next-day or same day product delivery as an industry standard has become even more apparent as Amazon stock is quickly outpacing other less mobile competitors such as Walmart and Target. As e-commerce continues to grow and the demand for instantaneous delivery to the home becomes even more pronounced, drone delivery, and mobile 3-D printing are just some of the strategies evolving to meet public demand.

²³ U.S. Census Bureau News, Quarterly Retail E-Commerce Sales, 2nd Quarter 2015. 8/17/2015

Figure 4-4: Estimated Quarterly U.S. Retail E-Commerce Sales

(Shown as a Percent of Total Quarterly Retail Sales – 1st Quarter 2006 – 2nd Quarter 2015)



Source: U.S. Census Bureau News, Quarterly Retail E-Commerce Sales, 2nd Quarter 2015. 8/17/2015

Related to this trend is the increased penetration of neighborhoods by parcel delivery vehicles (FedEx, UPS, etc.) as they deliver physical products ordered online. In 2003, the Bureau of Transportation Statistics estimated approximately one out of every two non-institutionalized U.S. adults made at least one purchase in May of that year requiring home delivery and was delivered by a company other than the U.S. Postal Service.²⁴ FedEx Ground, which includes FedEx Home Delivery, saw its daily package volume increase from 1.52 million in 2001, to 3.52 million in 2010, an annual average growth rate of 9.5 percent,²⁵ not including FedEx's express or freight service.

According to the 2007 Commodity Flow Survey, the percent by value of freight shipped by parcel, U.S. Postal Services or courier, increased from 11.8 percent of total freight by value in 2002 to 13.4 percent in 2007. The average miles per truck fleet shipment were 975, much higher than the average miles per shipment for all modes of 619.²⁶ As residential deliveries increase, the opportunity for related congestion and wear-and-tear to the local road network also increases. In addition, the U.S. Postal Service has recently been adding additional delivery hours on Saturdays (and in some cases on Sundays) to meet the demand for parcel delivery seven days per week.

²⁴ "Home Shopping Increases Neighborhood Parcel Deliveries." OmniStats, Volume 3, Issue 2. Bureau of Transportation Statistics, August 2003.

²⁵ FedEx Historical Statistics, FY 2001 to FY 2010, FedEx Corporation.

²⁶ 2007 Commodity Flow Survey, Bureau of Transportation Statistics and U.S. Census Bureau.



4.4 International Trade Routes and the Panama Canal Expansion

The Panama Canal, completed in 1914, created one of the most important trade routes in the world, linking the Atlantic and Pacific Oceans. After nearly a century the canal is undergoing a \$5.25-billion-dollar expansion to accommodate more traffic and larger ships. When the expanded canal opens in 2016, the new locks will allow for deeper, longer and wider 'New Panamax' vessels, essentially doubling existing throughput capacity. In addition to larger ships, capacity enhancements will also allow 12 to 14 additional vessels to transit the canal system every day. The expansion will reduce canal delays and potentially reduce shipper costs. The canal expansion could help Cheyenne's growing agriculture exports to South American countries where the U.S. has free trade agreements. According to the Brookings Institution Export Monitor 2015, Agriculture was the 4th highest value export from the Cheyenne region, with exports of \$23.1 million in 2014.²⁷

While the full impact of the Panama Canal expansion cannot be determined yet, it will likely have only modest impacts on Cheyenne. Much of the cargo shipped from Asia arrives at ports on the West Coast and is transported by rail or truck to the U.S. interior. For example, cargo moving from the Port of Oakland to Chicago on the Union Pacific Railroad passes through Cheyenne. There are other deciding factors that have yet to be fully determined with regard to the Panama Canal expansion and its impact on internal ports such as Cheyenne, including what transit fees will be charged for passage through the new locks and how Class 1 railroads may respond to the competition for cargo with price discounts or other incentives. At this time these impacts cannot be estimated to determine exactly how they may affect Cheyenne and/or the overall region. It is likely that other issues, such as potential changes in U.S. policy regarding petroleum exports and which U.S. ports may develop coal-handling facilities, will have a greater impact on trade routes as they relate to Cheyenne than the impending opening of new locks in the Panama Canal.

4.5 Warehousing and Logistics

Several factors make Cheyenne an attractive location for locating warehousing/distribution centers and logistics facilities. Cheyenne offers proximity to a sizeable consumer market, low energy costs, low labor costs, availability of land and access to rail and highway networks. In 2002, Lowe's, a major home improvement retailer, opened a large regional distribution center in Cheyenne. This distribution center receives products from suppliers in all areas of the U.S. and distributes them to stores across the western U.S. In 2007, Walmart also opened a large regional distribution center in Cheyenne.

More companies could be locate large distribution centers in Cheyenne, given the proximity to large and rapidly growing population centers further south along the Front Range. Many factors, however, go into determining the location of distribution centers. Some companies may decide that the extra distance from Cheyenne to the Denver Metro area, which is closer to larger population centers, is not worth the local advantages mentioned previously. Increased future fuel costs could also influence a company's decision to locate in Cheyenne.

4.6 Re-Shoring / Short-Shoring

A central theme regarding impacts of globalization on the American economy over the past decade has been the migration of domestic manufacturing to overseas markets, most notably China. As the Boston Consulting Group summarizes, "...China has offered a virtually unbeatable combination of seemingly

²⁷ Brookings Institution Export Monitor, May 13, 2015 (Accessed September 23, 2015).

limitless cheap labor, a growing pool of engineers, a fixed currency, and local governments willing to offer inexpensive land, free infrastructure, and generous financial incentives.”²⁸

Many economists predict rising wage rates, a gaining Yuan, increasing shipping and land costs in China, coupled against greater American worker flexibility, compromised unions, and increased automation will erode China’s economic advantage for manufacturing within the next five years. This is especially true when comparing manufacturing in coastal Chinese cities against areas in the U.S. such as South Carolina, Tennessee and Alabama. Interior and secondary Chinese cities with a wage rate advantage over their coastal countrymen may suffer from poor infrastructure, poor supply chains or lack sufficient skilled labor. Industries most likely to benefit from reshoring production are those where labor accounts for a small portion of final cost, and where production volumes are relatively small, such as auto parts, white goods (appliances, etc.), or construction equipment. Industries making labor-intensive and mass-produced products such as apparel will likely first be attracted to other low-cost countries in south Asia. Products re-shored to the U.S. will likely be those products selling to the U.S. market.

Labor is only one component of the manufacturing process is rising in China. Electricity rates have surged by 15 percent since 2010, whereas manufacturers in the U.S. are exploiting cheap domestic natural gas reserves for electricity and chemical by-products. In addition, prices for commercial land in China are higher than much of the U.S.—the Chinese national average is \$10.22 per square foot, compared to a range between \$1.30 and \$7.43 per square foot in the southern U.S.²⁹ Savings realized by moving production to an inland city within China would be partially or wholly negated by increased transportation costs and less developed supply chains. Differences in costs will also be squeezed as shipping rates react to unstable oil prices and shortages in container port capacity, which are currently occurring.

Companies realize the benefits of basing manufacturing closer to designers, engineers, and U.S. customers. As General Electric CEO, Jeffrey Immelt noted in the *Harvard Business Review* in March 2012, “...speed to market is everything, separating design and development from manufacturing doesn’t make sense.”³⁰ This also includes the benefits of maintaining tighter control over suppliers, and protecting sensitive industrial knowledge and practices against intellectual piracy.

Longer supply chains can also be more sensitive to natural disasters, as automakers and computer manufacturers discovered in 2011. A Japanese earthquake and tsunami, along with major floods in Thailand, disrupted supply chains across multiple industries that year.

4.7 Energy and Environment

Coal and the Powder River Basin

The U.S. is the second largest coal-producing nation in the world, and Wyoming leads all states in coal production. The epicenter of U.S. coal production is the Powder River Basin (PRB), a geologic structural basin extending from Southeast Montana across northeast Wyoming. In 2013, Wyoming produced 383 million short tons of coal, nearly 60 percent of the U.S. total production. However, coal as an energy source in the U.S., is in decline. For the first time in over two decades total, U.S. coal production fell below one billion short tons in 2013. This

“Wyoming supplies more energy to other states than any other state.”

--U.S. Energy Information Administration,
Wyoming State Energy Profile.

²⁸ “Made in America, Again” Boston Consulting Group.

²⁹ “Made in America, Again” Boston Consulting Group.

³⁰ MIT Technological Review, “Business Report – Next Wave of Manufacturing.” January 2013.



decline in U.S. coal production is directly linked to the introduction of stricter federal pollution standards for power plants. To comply with more stringent emission standards many coal-fired electric generating plants are converting to cleaner natural gas. The introduction of fracking technology has driven down the price of natural gas, which burns cleaner than coal.

Cheyenne is located to the south of the PRB, but nearly all PRB coal exits the basin by rail to points all across the U.S. As a result, many coal trains pass through Cheyenne. However, as reported in the 2013 Wyoming Statewide Freight Plan (Freight Trends Report), the number of rail cars carrying coal declined to the lowest count since 1993, a total of 5.93 million.³¹ While the domestic demand for coal is likely to continue to decline, foreign demand for U.S. coal has been growing. Currently about one-half of U.S. coal exports are bound for Europe, and export markets in Asia are viewed as a future growth market. One U.S. coal producer recently predicted a 700 percent growth in export markets over the next six years, destined to markets such as India, South Korea, Japan and China.³²

Proposals for exporting PRB coal through ports in the Pacific Northwest have been met with stiff opposition from environmental groups. Unless environmental hurdles to Pacific Northwest coal exporting facilities can be overcome, exports through the Gulf Coast and Panama Canal might be the next best option – potentially increasing the number of coal trains passing through Cheyenne.

A Cheyenne-based research center may also play a role in the domestic future of coal as an energy resource:

“To ensure that Wyoming coal remains a viable energy source in the future, GE Energy and the University of Wyoming have partnered to research advanced coal gasification technologies. Together they are developing the High Plains Gasification-Advanced Technology Center in Laramie County.

The \$100 million to \$120 million research and technology center will explore methods of using Wyoming coal to produce electricity, hydrogen, chemicals and other forms of energy while virtually eliminating air pollution and greenhouse gas emissions.”³³

4.8 Wind Energy

Wyoming has a rich resource in wind energy. This wind power is conceptually shown in **Figure 4-5**. It ranks number one in terms of land-based Class 6 and 7 wind sites, which are considered the best sites based on wind speed and power generation.³⁴ Much of this land is located in the southeast part of the state, near Cheyenne.

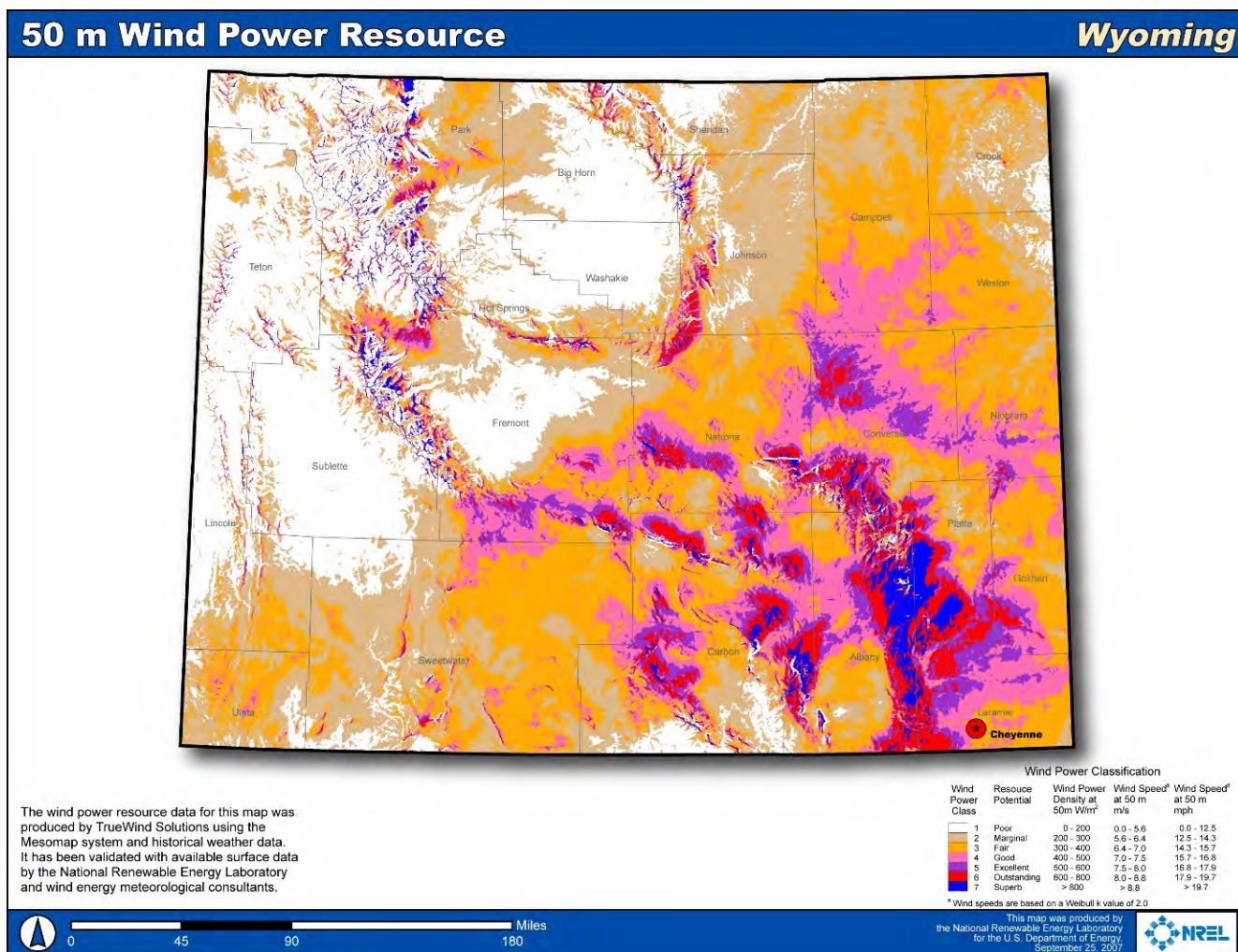
³¹ The car origination count is for Class I carriers only. *Freight Trends, Wyoming State Freight Plan*, Oct. 28, 2014.

³² US Coal Exports Website. *In the News*: <http://www.uscoalexports.org/2015/03/25/cldpk/> accessed 9-23-15.

³³ Wyoming Economic Development Website: <http://www.businessclimate.com/wyoming-economic-development/wyoming-coal-resources-power-america> accessed 9-23-2015.

³⁴ Wind Energy Resource Center, University of Wyoming

Figure 4-5: Wind Power Potential in Wyoming



Source: National Renewable Energy Laboratory

Currently, Wyoming ranks 7th in the U.S. in terms of total potential wind resources, but 15th in the production of wind energy.³⁵ A lot of wind potential remains to be developed and Cheyenne has the opportunity to capitalize on this potential. Currently, no wind-related manufacturing facilities exist within the state. Wind-related manufacturing firms could take advantage of Wyoming's low labor costs and proximity to large areas of potential wind resource. This combination could make Wyoming an emerging market for the wind industry.

4.9 Technology

ITS / Traffic Operations

Increases in Intelligent Transportation Systems (ITS) and traffic operations influence freight movement, particularly through and around metropolitan areas. ITS can be defined as a suite of technologies that, in aggregate, allow for the more efficient operation and flow of traffic without necessarily building more infrastructure or roadway. ITS technologies can potentially increase the speed or reliability of truck

³⁵ "Wyoming State Wind Facts." American Wind Energy Association, 2015.



traffic and commercial traffic through the use of a coordinated suite of technologies, including traffic signal timing and optimization, ramp metering, variable speed limits, Active Lane Use control, congestion pricing, traveler information systems, and traffic incident management.

Upgrading traffic signal equipment and implementing more efficient traffic signal timing and communication are significant ways to improve traffic movement along travel corridors. Traffic signal timing provides an opportunity to reduce vehicle delay on arterial streets by up to 15 percent, with as much as 30 percent during peak hours.³⁶

Variable speed limits moderate freeway traffic flow in response to traffic congestion, weather and construction. Variable speed limits can be advisory or regulatory. The speed limit is varied based on downstream conditions that drivers are heading towards, not necessarily conditions at the site where speed limits are changed. A moderated traffic flow results in higher highway vehicle efficiency, capacity, and safety. When congestion (either recurring or due to traffic incidents) is detected, a traffic management center modifies speed limits upstream of the congestion so vehicles have slowed down prior to reaching congested areas or work zones. This speed reduction lowers the number of additional traffic incidents once the congested area is reached and harmonizes the speed and traffic flow over a larger segment of the highway. Speed limit variations across the entire facility smooth the flow of traffic, which may prevent further congestion. The process results in traffic traveling through congestion-prone areas more effectively and with less delay. Variable speed limits can improve travel mobility in congested freeway locations by increasing average throughput and decreasing travel delay. It also can improve travel and work zone safety.

Active lane use control is one element of active traffic management which seeks to dynamically manage recurrent and non-recurrent congestion based on prevailing traffic conditions.³⁷ Active transportation strategies are used in Europe with great success. The Federal Highway Administration (FHWA) organized research trips to investigate the effectiveness of these strategies to begin the process of testing these strategies in the United States. Active lane use control strategies are typically used on freeways to manage traffic flow and safety, and include strategies such as speed harmonization, temporary shoulder use, and truck restrictions.

Speed harmonization on freeways is similar to the variable speeds strategy but would be part of an overall system used throughout a traffic corridor. Temporary shoulder use can be implemented to temporarily increase capacity during peak travel periods. Truck restrictions can be implemented in a traffic corridor to better segregate vehicles when implementing lane management strategies that may not allow for safe operation in particular lanes.

Autonomous Vehicles

In May 2015, automotive manufacturer Daimler introduced a self-driving truck that has been cleared to drive on highways in Nevada. This is the first time a self-driving truck has been approved for operation on public roads in the U.S. Daimler will be testing it on Nevada highways over the next few years in order to fine tune the technology and prepare for further concept development. The truck uses a camera mounted above the dashboard to recognize pavement markings and keep the truck within its lane through the use of geofencing technology, which is dependent upon GPS and other satellite data to determine vehicle positioning. The truck also has radar capabilities to detect other vehicles ahead and

³⁶ FHWA, Olsson Associates

³⁷ FHWA-PL-07-012 Active Traffic Management: The Next Step in Congestion Management, March 2007



on either side to automatically comply with current road speed limits and reduce the potential for vehicle collisions.

Autonomous trucks have several key advantages over the current truck fleet. First, they have the potential to streamline fuel use and reduce emissions, as the truck accelerates and decelerates more gently than a human driver can do. In addition, autonomous vehicles can be programmed to travel in convoys, with one truck drafting behind another, reducing air resistance (drag), and fuel consumption. Finally, autonomous trucks eliminate the potential of human error that might cause an accident or worse, loss of human life. A fully autonomous truck of the future may reduce the need for a driver, or reduce performance fatigue and other driver errors, keeping labor costs down and reducing the need to find and train over-the-road truck drivers in a difficult driver shortage environment.

Like self-driving cars, the autonomous truck is several years away from commercial release. Many hurdles have to be overcome and policy and regulatory issues that to be resolved. However, when these issues are resolved and autonomous trucks hit the roads, commercial truck freight movements in the U.S. are likely to change significantly from how they occur today.

Smart Vehicles / Connected Vehicle Technology

“Connected Vehicle research has the potential to transform travel as we know it. Using leading edge technologies — advanced wireless communications, on-board computer processing, advanced vehicle-sensors, GPS navigation, smart infrastructure, and others — Connected Vehicles provide the capability to identify threats and hazards on the roadway and communicate this information over wireless networks to give drivers alerts and warnings. At the core of this research is a networked environment supporting very high speed transactions among vehicles (V2V), and between vehicles and infrastructure components (V2I) or hand held devices (V2D) to enable numerous safety and mobility applications. This connectivity offers the opportunity to know much more about traffic and roadway conditions than ever before. It may be possible for equipped vehicles to anonymously send information that includes travel time and environmental conditions, making it possible one day to know traffic conditions along every major street in urban areas, as well as along every interstate highway across the nation. This information could lead to improved traffic signal control, ubiquitous traveler information, better transportation plans, and reduced cost for existing transportation data collection methods, among other benefits.”³⁸

As suggested by the above statement, highway transportation is on the cusp of significant technological advancement in how vehicles share information with one another and with the infrastructure over which they travel. These technologies could be especially useful in assisting the safe and efficient movement of freight on the highway system. For example, Vehicle-to-Infrastructure communications could help commercial vehicle drivers:

- Maintain the center of the lane
- Identify when lane changes can be made safely
- Provide advance warning of height or width restrictions
- Notify drivers of availability of parking at upcoming rest areas or truck havens
- Provide real-time, real-place driving/pavement conditions during cold weather

³⁸ Source: FHWA Office of Operations website: <http://ops.fhwa.dot.gov/travelinfo/infostructure/aboutinfo.htm> (Accessed September 28, 2015).

- Notify driver when approaching congestion, work zones, or traffic incidents

Vehicle-to-Vehicle communications could assist drivers by:

- Maintaining safe and consistent spacing between vehicles
- Notifying the driver of approaching emergency vehicles
- Warning the driver of vehicles in blind spots

While these technologies are still several years away from full commercial implementation, testing has already begun. In fact, Wyoming was one of four national DOT applicants recently selected by the USDOT in summer 2015 for a Connected Vehicle operational test pilot project involving some of the technology mentioned above. The project, which kicked off in September 2015, is a large collaboration between WYDOT, the University of Wyoming, and many private industry partners and vendors. The three-phase project will focus on commercial vehicle operators by developing applications that utilize vehicle-to-infrastructure and vehicle-to-vehicle communications to provide a wide range of tailored commercial vehicle services, such as travel advisories, specialized roadside alerts, parking availability notifications and dynamic travel guidance. Information provided by the developed applications will be made available directly to equipped commercial vehicle fleets or through data connections to private fleet management centers, who will route the information via their own communications systems directly to individual truck operators.

The focus of this significant project is to ensure that commercial vehicle operators traveling along Interstate 80 through Wyoming receive up-to-date travel information, including road, parking, weather and safety alerts, for safe and efficient travel. If successful, it may also position Wyoming as a national leader in the development and testing of connected vehicle commercial vehicle applications.

4.10 Government/Regulation

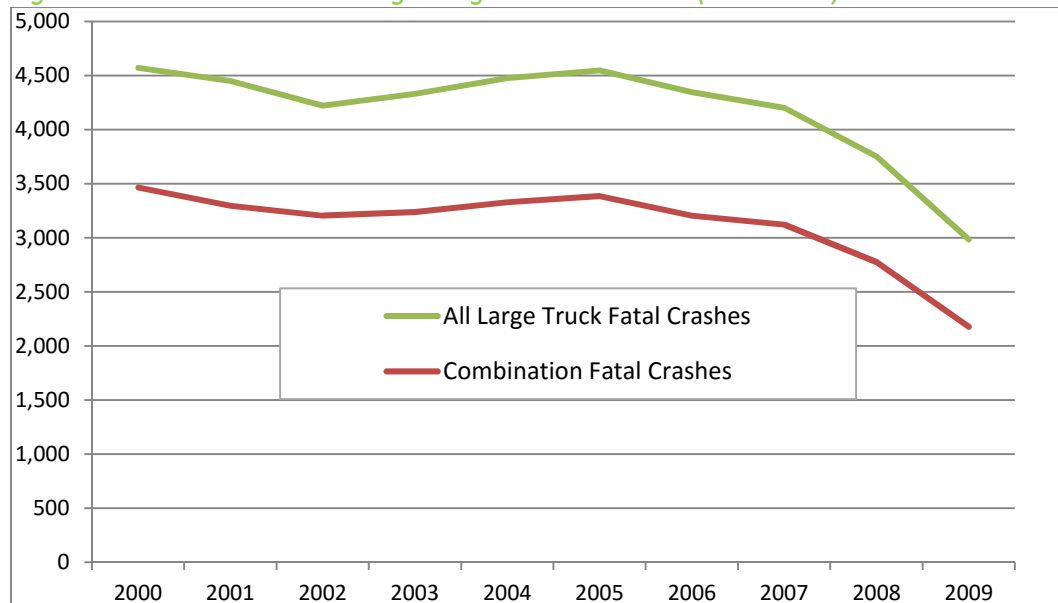
Commercial Driver Regulations

The Federal Motor Carrier Safety Administration (FMCSA) regulates hours of service (HOS) for commercial truck drivers with the goal of increasing safety and preventing job conditions that cause excess fatigue. Drivers of property-carrying commercial vehicles are limited to driving a maximum of 11 hours, after a minimum of ten (10) consecutive hours of rest. Drivers are also limited to 60 hours of driving in seven (7) days or 70 hours in eight (8) days. FMCSA updated HOS regulations in December 2011 to limit '34-hour restarts' to once per week. This provision allows for a driver to 'reset' the amount of hours they have driven for a given week by being off-duty for 34 consecutive hours. The new rule also requires drivers to take a 30 minute rest every 8 hours.³⁹ The new provisions took effect on July 1, 2013, after many legal challenges from the American Trucking Associations (ATA), U.S. Chamber of Commerce, and others.

The FMCSA updated regulations in 2003 to more closely follow the body's natural circadian rhythm, which is how humans function on a 24-hour cycle. The 2003 regulations changed the previous HOS regulations of 15 hours on duty/ 8 hours off duty to the current 14-hour work period, of which 11 can be driving, followed by a required 10 hour off-duty period. This resulted in a significant decrease of fatalities, as shown in **Figure 4-6**.

³⁹ "Hours of Service of Drivers, Final Rule." *Federal Register* 76 (27 December 2011): 81134-81188. Web: <http://www.fmcsa.dot.gov/rules-regulations/administration/rulemakings/final/HOS-Final-Rule-12-27-11.pdf>

Figure 4-6: Fatal Crashes Involving a Large Truck in the U.S. (2000-2009)



Source: Federal Highway Administration, Fatality Analysis Reporting System (FARS)

The impact of these regulations can also be felt in freight networks. If the 2003 regulations been changed to reduce driving time from 11 to 10 hours, terminals that could not be reached by truck in 10 hours, may have had to be relocated. This change in regulations has also affected the number of turns a driver is able to do, restricting the ability of a driver to turn around and return home after making a delivery that is located five hours away. The ATA expressed displeasure at the frequency of changes made to the regulations by the FMCSA because of the increased effort companies must place on compliance and driver retraining.

Federal regulations require all interstate truck drivers to be 21 years of age or older. However, states are able to set their own age requirement for drivers operating intrastate; Wyoming has an age requirement of 18 years. There is some industry concern the federal age requirement for interstate trucking restricts the labor market for drivers. Combining this restriction with the discretion insurance companies place on younger truck drivers, carriers often prefer to hire individuals over the age of 23. This is perceived as a negative by the industry due to the fact that as individuals get older, start having families and have increased responsibilities, the long hours and variable locations associated with the truck driving profession become less desirable to them.

4.11 Truck Havens / Truck Parking

Truck parking was identified as a national problem in certain areas of the United States (U.S.) in the 1990s, when the United States Department of Transportation (USDOT) examined the issue at the request of Congress. Since then many states have undertaken activities to expand truck parking both on their own and in conjunction with the private sector. Kentucky developed the *Truck Haven Program* allowing trucks to park at weigh and safety inspection facilities, while other states have built new or modified existing rest areas with additional truck parking spaces. Iowa closed several permanent weigh stations and turned them into truck parking locations, and has rebuilt several rest areas with expanded truck parking. In 2010, Virginia announced a pilot program to use undeveloped Virginia DOT properties as truck safety rest areas. In addition, that same year, the state reopened all of its previously closed rest



areas. Virginia recently announced it will seek sponsorship and advertising to fund the rest areas, allowing the state to keep the facilities open on a permanent basis.

Technology also assists with truck parking. Several states experimented with technology to monitor available parking spaces at rest areas and truck parking areas. Information is transmitted to dynamic or variable electronic message signs positioned along the road so truckers have real-time information about how many spaces are available up ahead. In February 2015, the Federal Motor Carrier Safety Administration began a six-month feasibility test of this technology in Tennessee, which includes the ability to make advance reservations. Truck drivers are able to reserve a parking space at certain public truck-parking areas up to 24 hours in advance using either an application on their smartphone, or by calling a phone number.⁴⁰ The private sector is also using a reservation-based system aimed at over the road truck drivers. TA/Petro travel centers give truckers the ability to reserve a parking space in advance, in addition to general first come/first serve parking.

According to the Wyoming Truck Parking Map produced by the Wyoming Department of Transportation, over 500 truck parking spaces are available in Cheyenne and the immediate vicinity.⁴¹ Despite this, there continue to be issues with trucks parking on roads in the city and causing complaints, especially near the Walmart distribution center on the west side of town.⁴² If freight movement and truck activity continues to increase, truck parking could become a bigger issue to be addressed in the near future in Cheyenne.

4.12 Conclusion

The purpose of identifying major trends and issues likely to impact freight transportation in Cheyenne in the foreseeable future is to provide additional information about the future that traditional forecasting techniques are likely to overlook. As futurist Paul Saffo notes: *"The goal of forecasting is not to predict the future, but to tell you what you need to know to take meaningful action in the present."*⁴³

This Final Report provides a general overview of these trends and issues beyond or outside current performance metrics in the evaluation of the regional transportation system impacting Cheyenne and Laramie County.

⁴⁰ "Truck Parking Management Systems." National Center for Freight and Infrastructure Research and Education, July 1, 2015.

⁴¹ <http://www.dot.state.wy.us/files/live/sites/wydot/files/shared/Public%20Affairs/Maps/Truck%20parking%20map.pdf> (Accessed September 28, 2015).

⁴² "Trucks parked at Roundtop Road are causing headaches." Wyoming Tribune Eagle, December 30, 2012.

⁴³ Paul Saffo, *Six Rules for Effective Forecasting*, Harvard Business Review, July-August 2007

CHAPTER 5 STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS (SWOT)

5.1 Introduction

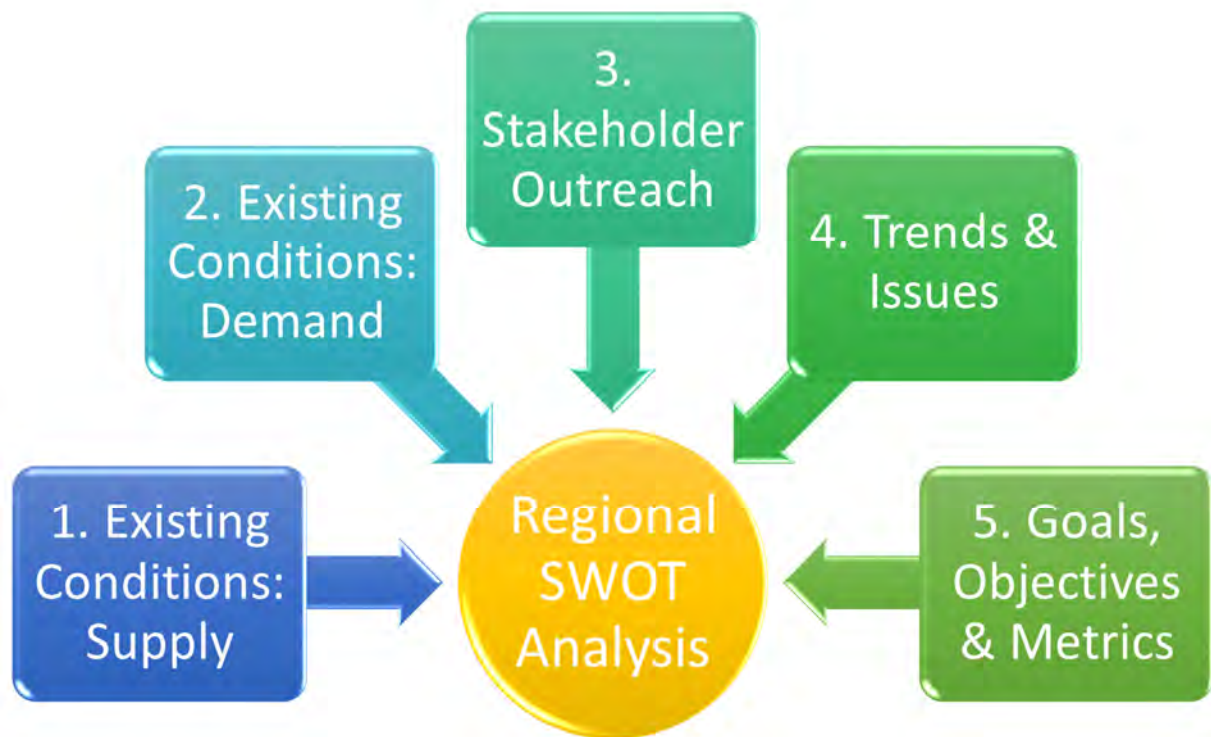
Today, Cheyenne is located at the crossroads of several important transportation corridors. Interstate 80, a major east-west freight corridor, intersects with Interstate 25 in the metropolitan area. Several U.S. Highways also traverse the region. Union Pacific's main rail line connecting the west coast with the Midwest passes through Cheyenne, as does an important north-south BNSF rail line. Cheyenne's access to high-level transcontinental transportation corridors is a major strength for its economy. If not properly planned for, freight activity can be a double-edged sword: Freight is usually a sign of a robust economy competing in global markets; however, if not planned for, freight can intensify unpleasant side-effects to community livability and regional mobility. For example, truck traffic can bring unwelcome externalities such as noise, dust, vibration, emissions and premature road deterioration. Train traffic and associated terminal activities can also create noise, dust and vibration, and delay home to work trips, shopping trips, and recreational trips.

The Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis incorporate the results from the chapters previously completed. Chapters examined Cheyenne's freight assets (supply), as well as current and projected freight activities upon those assets (demand). Previous chapters also include an examination of trends and issues affecting freight in the region, and qualitative feedback from stakeholder outreach activities.

5.2 Strengths, Weaknesses, Opportunities and Threats (SWOT) Overview

In its request for proposals to conduct the Cheyenne Regional Freight Mobility Plan, the MPO noted that the first objective of the study was to conduct a comprehensive Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis of the regions freight system. To achieve the SWOT objective the consultant team completed several tasks as shown in **Figure 5-1**.

Figure 5-1: Cheyenne Regional Freight Mobility SWOT Analysis Elements



One goal of the Cheyenne Freight Mobility Study was to identify an actionable program of policies, strategies, projects and program metrics to address short and long term freight needs of the region. This program is designed to advance the regions economic growth via sound transportation infrastructure and services.

Local road improvements, technology enhancements and education present some of the most compelling opportunities to address weaknesses identified in the SWOT Analysis. The Wyoming DOT is a leader in Intelligent Transportation Services (ITS) and its recent *Connected Vehicle* grant award should afford opportunities for the MPO to address the most urgent needs expressed by carriers serving the Cheyenne Region. Workforce education has not always been viewed as an appropriate role for government planning agencies, but the successful facilitation of workforce strategies by a number of MPOs around the country makes it worthy of further consideration. Some of the opportunities for Cheyenne depend upon actions of others, including key supply chain and trade and to opportunities for future trade relationship building.

This document concludes with a summary of the opportunities to be explored in more depth for the next major task of the study: Program Analysis. The final section suggests the framework for moving the work plan forward with implementation steps for integrating freight into the MPO planning process, adopting policies to support the regional freight economy, and consideration of projects that could be included in the MPO TIP or through new programs made available through Fixing America's Surface Transportation Act (FAST Act).

5.3 Summary of Strengths, Weaknesses, Opportunities and Threats

The primary goal of this SWOT Analysis is to present an objective summary of the quantitative and qualitative information gathered during several major tasks undertaken to evaluate the current freight mobility conditions in the Cheyenne Region. Themes from the SWOT analysis are highlighted in **Figure 5-2**. A program analysis of recommendations for actions and projects the MPO can implement will improve the effectiveness of the existing freight network. The key findings from this SWOT analysis provide the framework for program analysis.

Using the data analysis and stakeholder input, a high-level summary of the SWOT for Cheyenne is presented in **Figure 5-2**. Consistent with its origins, Cheyenne's greatest strengths lie in its existing transportation infrastructure (two Class 1 railroads, and two intersecting Interstate Highways). The existing infrastructure however can be unreliable at times (namely highways) due to severe weather. While Cheyenne has experienced significant growth in the *Transportation and Warehousing* industry sector, access to skilled labor is a concern among shippers in the community.

5.4 Opportunities Discussion

Applying Technology to Increase Commercial Vehicle Safety and Efficiency

"Connected Vehicle research has the potential to transform travel as we know it. Using leading edge technologies — advanced wireless communications, on-board computer processing, advanced vehicle-sensors, GPS navigation, smart infrastructure, and others — Connected Vehicles provide the capability to identify threats and hazards on the roadway and communicate this information over wireless networks to give drivers alerts and warnings."

Source: FHWA Office of Operations website

Highway transportation is on the cusp of significant technology advancement in how vehicles share information with one another and the infrastructure on which they travel. These technologies could be especially useful for safe and efficient movement of large trucks.

In early 2015, USDOT announced a competitive grant program for pilot project deployment demonstrations of connected vehicle technologies. In September 2015, USDOT announced three Wave 1 deployment sites, including Southern Wyoming. The Wyoming deployment demonstration is currently the only pilot to focus exclusively on commercial vehicle operations. The goal of the Wyoming Connected vehicle demonstration is to:

*"...Develop a suite of applications that utilize vehicle to infrastructure (V2I) and vehicle to vehicle (V2V) communication technology to reduce the impact of adverse weather on truck travel in the I-80 corridor. These applications support a flexible range of services from advisories, roadside alerts, parking notifications and dynamic travel guidance. Information from these applications are made available directly to the equipped fleets or through data connections to fleet management centers (who will then communicate it to their trucks using their own systems)."*⁴⁴

⁴⁴ *Connected Vehicle Pilot Program Phase 1, Concept of Operations (ConOps), IFC/Wyoming.* FHWA-JPO-16-27. Draft Report, December 14, 2015.

Figure 5-2: Cheyenne's Key Freight Related Strengths, Weaknesses, Opportunities and Threats

Strengths	Weaknesses
<ul style="list-style-type: none"> Freight Infrastructure Assets: A cross roads of high-level transcontinental freight transportation corridors: <ul style="list-style-type: none"> I-80 / I-25 UP / BNSF Railroads Energy resources (natural gas, oil and wind) Low cost property on the northern edge of a high growth mega-region Access to premium transportation infrastructure and services (carriers) Strong growth in export trade WYDOT weather notifications system 	<ul style="list-style-type: none"> Frequent roadway closures due to high-plains weather Last mile transportation (local roads) not well designed for high volume truck traffic Access to transportation and warehousing work force Volatility and changing trends in energy markets Limited truck parking – especially during inclement weather Lack of diversity in regional manufacturing Distance to major suppliers Capacity issues in key markets
Opportunities	Threats
<ul style="list-style-type: none"> Improvements to last mile truck routes Technology improvements (e.g. connected vehicles) as a means to increased safety and efficiency Workforce education / transportation and warehousing jobs Outreach and education to increase public awareness about the importance of transportation and warehousing jobs Explore additional export opportunities, including petroleum export markets Regional freight forum for information exchange and coordination Plan for future freight development and greater access to rail services 	<ul style="list-style-type: none"> Environmental trends curtailing domestic use of coal Public perceptions of railroad safety and of resource extraction industries Work force development, and availability – “worker retention” Coastal opposition to coal/oil export facilities Illegal operations by-passing enforcement sites Oil and gas economy Deteriorating infrastructure Supply of commercial vehicle drivers

CHAPTER 6 GOALS, OBJECTIVES, AND PERFORMANCE MEASURES

6.1 Introduction

National, state, and local levels of government, ranging from the Department of Transportation (USDOT) to state Departments of Transportation to municipalities/counties and the freight industry itself, are focused upon improving the efficiency and safety of freight movements across the country. The current federal transportation bill, Fixing America's Surface Transportation Act (FAST Act), includes a number of provisions and performance requirements designed to enhance freight movement in support of national efficiency measures. The FAST Act identifies the condition and performance components of a desired National Freight Network, and identified incentives for the prioritizing of projects that advance freight performance targets.

USDOT, in consultation with partners and stakeholders, is in the process of developing a national freight strategic plan. States are being encouraged to develop individual freight plans and establish freight advisory committees to coordinate and prioritize efficient and effective freight programs and systems. The FAST Act establishes both formula and discretionary grant programs to fund critical transportation projects to support efficient and effective freight movements along strategic corridors and regions. FAST emphasizes the importance of federal coordination focusing upon the needs of freight transportation providers in particular. For the first time a dedicated source of federal funding for freight and related multimodal projects exists.

The Wyoming DOT recently completed a statewide freight plan with aligned goals and objectives in developing and maintaining an efficient and effective freight system. The Long Range Transportation Plan for the Cheyenne MPO, *PlanCheyenne*, also includes information related to the regional and statewide freight system. The purpose of this report is to present aligned goals, objectives, and performance measures from federal, state, and regional plans to assist in the evaluation of freight projects through the MPO project selection process.

6.2 National Transportation Goals

The FAST Act includes seven national performance goals. These seven national performance goals are as follows:

1. **Safety** – To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
2. **Infrastructure Condition** – To maintain the highway infrastructure assets in a state of good repair.
3. **Congestion Reduction** – To achieve a significant reduction in congestion on the National Highway System.
4. **System Reliability** – To improve the efficiency of the surface transportation system.
5. **Freight Movement and Economic Vitality** – To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
6. **Environmental Sustainability** – To enhance the performance of the transportation system while protecting and enhancing the natural environment.

Reduced Project Delivery Delays – To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the

project development and delivery process, including reducing regulatory burdens and improving agency work practices.

6.3 FAST Act Planning Factors

Ten planning factors, shown in **Table 6-1**, must be considered in the development of long-range transportation plans and are mandated in the FAST Act, the current federal transportation legislation.

Table 6-1: MPO Planning Factors and the Relationship to Freight

MPO Planning Factors	Relationship to Freight
1. Economic Vitality	<ul style="list-style-type: none"> - Research shows export trade contributes to vital urban economies - Freight activities support regional economic growth and jobs
2. Safety	<ul style="list-style-type: none"> - Improvements to freight networks to improve mobility can also result in fewer truck and rail involved crashes.
3. Security	<ul style="list-style-type: none"> - Enhanced freight security through ITS and other measures can reduce the likelihood of terrorist attacks and improve business resiliency/ continuity in the case of a man-made or natural disaster
4. Accessibility and Mobility	<ul style="list-style-type: none"> - Improves the productivity of the regional economy - Improves connections between freight modes - Improves access to freight intensive land uses
5. Environment, Energy, & Quality of Life	<ul style="list-style-type: none"> - Freight operational improvements can reduce energy consumption and emissions - Strategic land use planning can reduce overall truck miles, fuel consumption and emissions. - Freight planning that results in the development of rail, barge or pipeline facilities can shift freight from highways to more efficient modes.
6. Integration and Connectivity	<ul style="list-style-type: none"> - Freight system improvements should enhance multimodal connections
7. Efficient System Management	<ul style="list-style-type: none"> - Strategic freight operational improvements can maximize system benefits and reduce overall capital costs.
8. System Preservation	<ul style="list-style-type: none"> - Freight planning can help identify key truck routes and routes that need to accommodate heavy loads. - Highway and bridge designs that seek to accommodate large trucks can prevent premature deterioration - Effective truck size and weight enforcement can prevent premature pavement and bridge deterioration
9. Resiliency and reliability	<ul style="list-style-type: none"> - Freight planning can contribute to reducing or mitigating storm water impacts.
10. Travel and tourism	<ul style="list-style-type: none"> - Consider how freight movement can be accomplished while not impacting this goal.

Source: Adapted from FHWA Freight and Land Use Handbook.



6.4 Wyoming Statewide Freight Goals

In 2015, Wyoming DOT completed its Statewide Freight Plan. The comprehensive study identified key issues and opportunities for Wyoming's statewide freight network. With the help of a large, diverse stakeholder group and the public outreach process, the statewide Freight Plan defines a framework for the development of the state's freight network in accordance with the federal requirements defined under MAP-21 and carried forward into the FAST Act.

The goals of the Statewide Freight Plan provide a framework for the intended outcomes of the Cheyenne MPO Freight Study. The State's freight goals seek to address the following issues:

- Safety
- Economic Development
- Efficiency
- Environment
- Reliability

6.5 Metropolitan Planning Organization (MPO) Goals

PlanCheyenne identifies future transportation investments for all modes of transportation in the region. A particular focus of *PlanCheyenne* is determining the infrastructure impacts associated with increasing heavy truck traffic due to the expansion of industrial and commercial business related to oil and gas activity in the southwest portion of Cheyenne.

As part of the greater vision for *PlanCheyenne*, a principle and related policies were developed to assist in implementing the state and regional combined vision for freight mobility within the Cheyenne area:

- **Principle:** The Cheyenne area will accommodate truck and freight goods movement.
- **Policy: Freight Mobility** – Maintain a truck routing plan with designated truck routes to provide commercial access and minimize truck travel through residential neighborhoods.
- **Policy: Industrial Development** – Coordinate industrial development with transportation investments to promote freight efficiency, productivity, and economic competitiveness.

As part of the 2014 Update to *PlanCheyenne*, the following freight issues were identified within the Cheyenne MPO area:

- Growth in the deep layered oil industry is spurring increased rail-based industrial use. The economic benefits of and transportation access to facilities, such as the Cheyenne Logistics Hub at Swan Ranch were identified as critical and influential to this report.
- Lack of adequate truck parking facilities and rest areas along major regional truck routes, especially during roadway closures due to bad weather.
- Increasing traffic congestion, uncertainty, and safety at at-grade rail crossings related to increased rail activity due to the rapid growth of the regional oil industry.
- Concerns voiced by the trucking industry about difficulties experienced by trucks in negotiating regional roundabouts (e.g., I-25 and Vandehei Avenue).

- Roadways serving residential areas do not accommodate vehicles delivering goods to homes.

During public meetings convened throughout this study process and through stakeholder outreach for this Cheyenne Freight Mobility Plan, additional comments were received from a variety of stakeholders. They included the following:

- Truck parking issues and lack of available facilities to park trucks when there is inclement weather on the interstate.
- Concern for increased communication between public agencies and private industry related to freight transportation issues, including WYDOT, County, City, and private companies in order to plan for the future.
- Concerns with oversight regulations regarding size and weight of vehicles, which may discourage companies from operating through the area.

6.6 Goals, Objectives, & Performance Measures of Cheyenne's Freight Network

Regional goals for the Cheyenne freight network were developed parallel with national and state DOT priorities and performance measures. The goals reflect input from local stakeholders and the general public. Performance measures were developed based on the USDOT transportation performance goals framework. The performance measures identified in this report will be used to identify projects for programming for inclusion within the regional Long Range Transportation Plan.

Based on the data reviewed for this project and input provided by freight operators and the general public, there is a need to establish regional truck routes, to encourage/require truck route use, and to construct and operate truck routes to be consistent with regional freight movements. However, it is also recognized all regional roads cannot be designed and constructed to accommodate large or heavy vehicles; as doing so compromises other regional goals, and is not efficient nor cost effective. This is especially true in Downtown Cheyenne, where potential accommodations for increased freight movements would likely conflict with other City goals for designing a more pedestrian-friendly environment and providing additional on street parking facilities.

The goals, objectives, and performance measures of Cheyenne's freight network include:

- **Goal 1 - Safety** – In order to achieve a significant reduction in traffic fatalities and serious injuries on public roads, concentrate freight traffic to the truck route network and address network safety concerns.
 - Measure: Reduce crash rates on regional truck route system.
- **Goal 2 - Infrastructure Condition** – To maintain the highway infrastructure assets in a state of good repair by designing or modifying roadways on the truck route network to accommodate the number of trucks and the corresponding weight load.
 - Measure: Reduce deficient miles of excessive rut depth, pavement serviceability and roughness; reduce structurally deficient and low clearances bridges.
- **Goal 3 - Congestion Reduction** – To achieve a significant reduction in congestion on the National Highway System, which is represented as part of the regional truck route network.



- Measure: Address traffic bottlenecks and reduce delays by reducing the number of intersections with LOS E or F on regional truck routes.
- **Goal 4 - System Reliability** – To improve the efficiency of the surface transportation system, with emphasis on regional truck routes and major at-grade rail crossings. Address impacts of weather on truck freight movement.
 - Measure: Minimize rail – vehicle delays by addressing higher volumes at-grade railroad crossings.
 - Measure: Parking spaces available for truck parking during weather closures on Interstate.
- **Goal 5 - Freight Movement and Economic Vitality** – To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets and support regional economic development.
 - Measure: Reduce rail delays and address design deficiencies at interstate interchanges and along routes that are part of the national freight network.



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CHAPTER 7 PROGRAM ANALYSIS

The purpose of a program analysis is to describe an actionable framework of strategies and projects the Cheyenne MPO may consider in its on-going planning activities. This chapter describes steps that can be taken to further develop a freight integrated multi-modal planning process, including education and training of local planning partners on freight issues and opportunities for broader freight partnerships. Also presented in this chapter are project implementation details such as time lines and costs associated with transportation projects or strategy across the time spectrum from Near-term “quick-fix” projects, to long-term projects requiring advanced programming.

The focus of this chapter is intended to be more specific in recommending policy actions and projects to help address or mitigate weaknesses and threats identified in the Strength, Weaknesses, Opportunities and Threats (SWOT) Analysis presented in Chapter 5, but also advance opportunities for improved freight connectivity and access throughout the Cheyenne Region.

7.1 FAST Act Funding

Designating Critical Urban Freight Corridors

Since its very beginning, freight has been important to the City of Cheyenne. Today, Class I railroads maintain a robust presence and the *Transportation and Warehousing* industry sector makes up approximately 10 percent of Cheyenne’s regional employment. It is important then that an activity so prominent in the history of Cheyenne and so important to its future economic vitality be promoted and leveraged under available federal funding programs.

In late 2015, Congress passed and the President signed and passed into law, The *Fixing America’s Surface Transportation Act* (FAST Act). This surface transportation reauthorization bill largely maintained existing programs and funding for highways and transit. However, among the changes the FAST Act introduced was the establishment of both formula and discretionary grant programs to fund critical transportation projects that benefit freight. For the first time in U.S. history, the FAST Act provides a dedicated source of Federal funding for freight projects, including intermodal projects.

The freight funding provided by the FAST Act is divided into two programs:

1. **Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies (FASTLANE) Grant Program:** A discretionary freight-focused grant program that provides \$4.5 billion over 5 years. The authorization amount for fiscal year 2016 was \$800 million with 25 percent reserved for rural projects and 10 percent for smaller projects. FASTLANE allows States, Metropolitan Planning Organizations (MPOs), local governments, tribal governments, port authorities and other parties “to apply for funding to complete projects that improve safety and hold the greatest promise to eliminate freight bottlenecks and improve critical freight movements.”⁴⁵ FASTLANE grants support projects of national or regional significance, and include intermodal projects.
2. **Nationally Significant Freight and Highway Projects Program:** The FAST Act establishes a formula program for states, consisting of \$6.3 billion over five years. The formula program funds are

⁴⁵ U.S. Department of Transportation website: The FAST Act: Freight Provisions:
<https://www.transportation.gov/fastact/freight-factsheet>

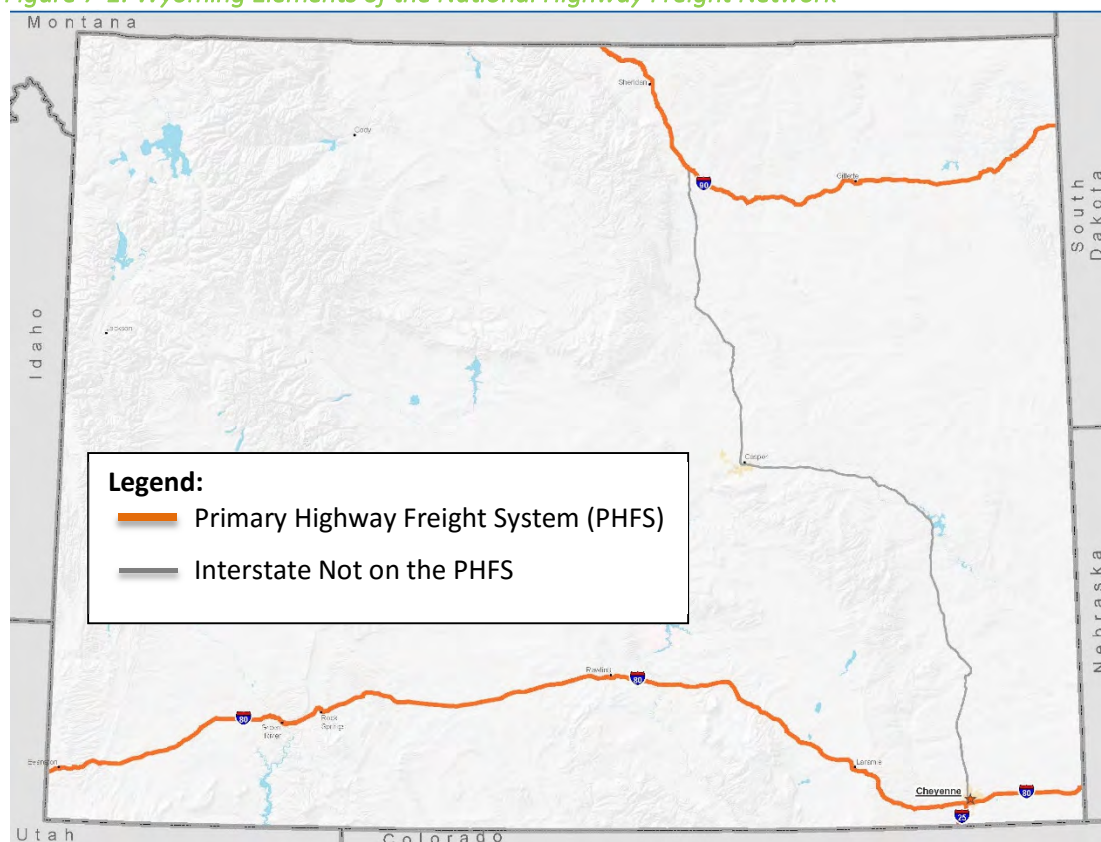
eligible for projects on the National Highway Freight Network (up to 10 percent of the funds may be used for intermodal projects).

Wyoming Elements of the National Highway Freight Network

The FAST Act repealed two previous freight networks established under Moving Ahead for Progress in the 21st Century (MAP-21) and directed FHWA to establish a National Highway Freight Network (NHFN). However, the Primary Freight Network established by MAP-21 and repealed by the FAST Act became one of four subsystems forming NHFN. The Primary Highway Freight System (PHFS) were identified under MAP-21 as the most critical highway portions of the U.S. freight system using measurable and objective national data. Under FAST, other Interstate highways not on the PHFS were added to the NHFN to provide continuity and important connections to freight facilities. The other two subsystems of the NHFN are: Critical Rural Freight Corridors (CRFC), and, Critical Urban Freight Corridors (CUFC).

In Wyoming, portions of three Interstate Highway facilities are elements of the PHFS: I-25, I-80, and I-90, as shown in **Figure 7-1**. Under the FAST Act, the remaining Interstate Highway segments in Wyoming (I-180 and I-25 between I-80 and I-90) were also added to the NHFN.

Figure 7-1: Wyoming Elements of the National Highway Freight Network



Source: FHWA http://ops.fhwa.dot.gov/freight/infrastructure/ismt/state_maps/states/wyoming.htm

Under the provisions of the FAST Act, states and in some cases MPO's have the opportunity to add a limited number of miles to the NHFN by designating CRFCs and CUFCs. Under the FAST Act criteria CRFC are to be designated by the State, provided the roadway meets one or more of seven criteria (see 23 U.S.C. 167(e)). The determination of who designates of CUFCs in a state is dependent on the size of the



urban area: *In an urbanized area with a population of 500,000 or more individuals, the MPO, in consultation with the State, may designate a CUFC. In an urbanized area with a population of less than 500,000 individuals, the State, in consultation with the MPO, may designate a CUFC.*

CUFC's must be in an urbanized area and meet one or more of the following four criteria:

(A) connects an intermodal facility to:

1. the PHFS;
2. the Interstate System; or
3. an intermodal freight facility;

(B) is located within a corridor of a route on the PHFS and provides an alternative highway option important to goods movement;

(C) serves a major freight generator, logistic center, or manufacturing and warehouse industrial land; or

(D) is important to the movement of freight within the region, as determined by the MPO or the State.

Guidance from FHWA (http://ops.fhwa.dot.gov/fastact/crhc/sec_1116_gdnce.pdf) also encourages states to consider first and/or last mile connector routes to and from high-volume freight corridor or facilities. It must also be noted that the designation of CUFC is limited to a maximum of 75 miles or 10 percent of the PHFS in the State, whichever is greater. In Wyoming 621.04 miles of Interstate highways have been designated as PHFS routes, so 75 miles is the appropriate maximum number of additional CURC's the state will be able to designate. During the course of the Cheyenne Regional Freight Mobility Plan, emphasis was placed on identifying important first/last mile truck routes. These routes are discussed in the following section.

7.2 Regional Freight Projects – First/Last Mile Truck Routes

While regional road networks may experience significantly lower truck volumes than Interstate or other Primary Highway Freight System routes, regional truck networks are often essential to the economic vitality of regional trade centers. New construction or rehabilitation projects on commercial corridors should be designed and built to accommodate large trucks. Over the past several decades, heavy truck designs have continued to evolve, even though state and/or federal size and weight limits have remained largely static. For example, federal law prohibits states from imposing overall length limits on trucks traveling the National Network of Highways.⁴⁶ As a result, over several decades many over-the-road trucks have become longer as truck “sleeper cabs” have expanded to accommodate more conveniences while on the road. While the cargo carrying portion of large trucks has remained relatively unchanged, many trucks on the road today have longer wheelbases than 10 or 20 years ago.

In 2003, the Transportation Research Board conducted a study of the engineering specifications required to accommodate modern large truck designs. National Cooperative Highway Research Program (NCHRP) publication 505: *Review of Truck Characteristics as Factors in Roadway Design*, found a number of AASHTO design standards required updates to accommodate some of the most common large trucks on the road. Often such design standards take years to trickle down to local road agencies.

⁴⁶ In Wyoming all Federal-Aid Primary highways.

Strategies to improve truck vehicle operations include managing key truck routes for efficient freight movement. For example, where these routes pass through commercial or community business districts, access management rules can be implemented to preserve truck mobility in and out of key facilities and traffic signals timed to accommodate truck movements from known freight generators and receivers. Construction activity can also be scheduled to minimize disruptions during peak business activity/seasons, and efforts should be made to avoid disrupting a key route and its relief route simultaneously. As efforts are made to coordinate construction activities with local industry, considerations can be made to avoid commercially sensitive time periods (like month-end) and understanding the time patterns of line-haul and city freight schedules.

Design elements for truck routes should include considerations such as adequate acceleration lanes, climbing lanes for trucks on steep grades, wide shoulders, sufficient pavement strength, sufficient storage in left hand turning lanes, and adequate turning radii.

Based on the evaluation of data, stakeholder and staff input, and visual inspection of transportation facilities, the following regional freight project recommendations are listed below. These projects address the project goals, objectives, and performance measures previously discussed.

Near-Term Projects

- Campstool Way/ Campstool Road from College Drive to Lexington Avenue
- S. Industrial Road and College Drive
- East 5th Street and Interstate 180
- Converse Avenue and Dell Range Boulevard
- I-25 Port of Entry
- Truck Parking Study
- Transload Market Assessment

Mid-Term Projects

- S. Industrial Road and College Drive
- East 5th Street and Interstate 180
- College Drive and Dell Range Boulevard
- Burlington Trail Road and intersection with South Industrial Road/HR Ranch Road
- Fox Farm Road / Morrie Avenue / Avenue C Intersection
- Christensen Road and Overpass
- Southwest Drive Connector

Long-Term Projects

- I-80 / I-25 / Lincolnway Interchanges
- College Drive Grade Separated Railroad Crossing

Tables 7-1 through 7-14 and **Figures 7-2 through 7-24** provide more detailed information about the proposed near-, mid- and long-term projects to enhance the Cheyenne regional freight network. Where possible, costs to complete the proposed enhancements are compiled and listed by source and year.

Table 7-1: Campstool Way/Campstool Road

Project #1	Campstool Way/ Campstool Road from College Drive to Lexington Avenue
Source	Motor Carrier Survey
Problem	<p>(1) Roadway striping is faded, making it difficult to anticipate lane configuration changes as vehicles approach College Drive, as well as eastbound when additional travel lane is dropped.</p> <p>(2) Reduction from 4 travel lanes to 2 travel lanes east of Livingston Avenue takes place immediately east of the Livingston Avenue /Campstool Road intersection. Heavy freight traffic on Campstool Road and side streets has difficulty turning onto Campstool Road and merging into single lane.</p>
Proposed Actions	<p>(1) Refresh pavement striping</p> <p>(2) Conduct traffic study for entirety of Campstool Road corridor as traffic has increased with the addition of development, such as Wal-Mart and multiple businesses in LEEDS Business Park and Campstool Business Park. Consideration to be given to studying this corridor both with and without the Christensen Road and Overpass connection to determine impacts to future traffic volumes if this connector doesn't come to fruition.</p>
Truck Route Classification	College Drive is a "Main Truck Route", Campstool Road is a "Secondary Truck Route."
Projected Cost (2016 Dollars)	(1) \$1,500 (materials and application)
Action Plan	Near-Term: (1) Refresh striping (2) Conduct corridor study
Goal Area Addressed	Infrastructure Condition, System Reliability

Figure 7-2: Campstool Way Looking Westbound Toward College Drive



Figure 7-3: Campstool Road Looking Eastbound



Figure 7-4: Campstool Way from College Dr to Lexington Ave



Table 7-2: South Industrial Road and College Drive

Project # 2	South Industrial Road and College Drive
Source	Motor Carrier Survey
Problem	Difficult for trucks to find a gap in traffic to turn left from westbound South Industrial Road to southbound College Drive. Not enough storage space for vehicles turning left from southbound College Drive to South Industrial Road.
Proposed Actions	Conduct further study to consider geometric and/or signal timing improvements to these intersections (South Industrial Road / College Drive/ I-80 East Bound Off Ramp). Preliminary study was completed with the <i>Fox Farm Road Corridor Plan</i> .
Truck Route Classification	College Drive is a "Main Truck Route," South Industrial Road is not classified on the Truck Route system, but is the western access to the adjacent Heavy Industrial zone.
Projected Cost (2016 Dollars)	No cost for signal timing adjustments Geometric improvement costs will vary based on recommendations
Action Plan	Near-Term: Conduct study for signal timing and geometric improvements Mid-Term: Geometric improvements
Goal Area Addressed	Safety & System Reliability

Figure 7-5: South Industrial Rd and College Drive



Figure 7-6: South Industrial Road Looking Northwest



Table 7-3: East 5th Street and Interstate I-180

Project #3	East 5th Street and Interstate 180
Source	Motor Carrier Survey
Problem	There is no protected left turn signal. Corner radii are small for right hand turns.
Proposed Actions	(1) Conduct traffic counts including turning movement counts at the intersection to determine if a protected left turn signal is warranted. (2) Reconstruct corner radii to accommodate trucks.
Truck Route Classification	I-180, Warren Avenue, and E. 5 th Street (between Warren Avenue and I-180 is a Secondary Truck Route. E. 5 th Street is a Restrictive Truck Access route, trucks from Logan and Morrie Avenue are to take E. 1 st Street to Warren Avenue and access I-180 via the intersection of Warren Avenue/E 5 th Street/I-180.
Projected Cost (2016 Dollars)	\$290,000 for reconstructing corner radii at both the northeast and northwest corners of I-180 and East 5 th Street from existing 20'± radius to 30' radius (construction costs).
Action Plan	Near-Term: Traffic study, implement recommendations to signals Mid-Term: Reconstruct corner radii
Goal Area Addressed	Infrastructure Condition

Figure 7-7: East Street and Interstate I-180 Aerial



Figure 7-8: 5th Street Looking West at I-180



Table 7-4: Converse Avenue and Dell Range Boulevard

Project #4	Converse Avenue and Dell Range Boulevard
Source	Motor Carrier Survey
Problem	Corner radius at northeast corner is too small for trucks to maneuver
Proposed Actions	Reconstruct north east corner radius
Truck Route Classification	This portion of Dell Range, west of College Drive, is a "Secondary Truck Route."
Projected Cost (2016 Dollars)	\$160,000 for reconstructing corner radii at northeast corner of Dell Range Boulevard and Converse Avenue from existing 25'± radius to 30' radius (construction costs). Cost of right-of-way acquisition, if necessary, has not been included in the \$160,000 estimate.
Action Plan	Near-Term: Reconstruct northeast radius
Goal Area Addressed	System Reliability

Figure 7-9: Converse Ave and Dell Range Blvd Aerial



Figure 7-10: Converse Avenue Looking North



Converse Avenue looking north

Table 7-5: College Drive and Dell Range Blvd

Project #5	College Drive and Dell Range Boulevard
Source	Motor Carrier Survey
Problem	Left turn lane for northbound College Drive traffic headed west on Dell Range is not long enough.
Proposed Actions	The <i>Dell Range Boulevard Corridor Study</i> recommends adding a dual left turn lane for traffic headed westbound on Dell Range. This movement operates at a LOS F.
Truck Route Classification	College Drive is a "Main Truck Route" and Dell Range west of College is a "Secondary Truck Route"
Projected Cost (2016 Dollars)	\$395,000 for widening College Drive to accommodate an additional lane; widening is necessary on both the north and south legs of the intersection to align thru travel lanes (construction costs). Cost of right-of-way acquisition has not been included in the \$340,000 estimate.
Action Plan	Mid-Term: Widen College Drive for dual left turn lane.
Goal Area Addressed	Congestion Reduction

Figure 7-11: College Drive Intersection Improvements from the Dell Range Boulevard Corridor Study

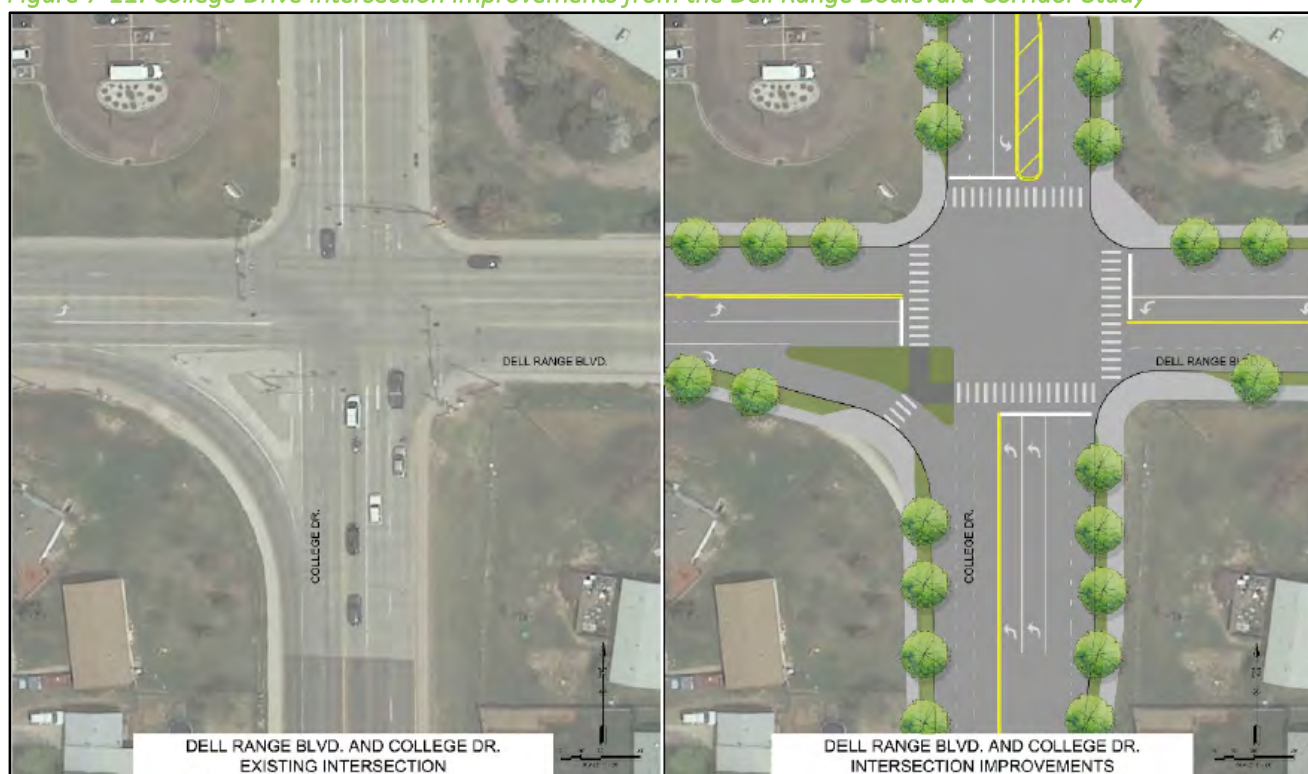




Table 7-6: I-25 Port of Entry Discussions

Project #6	I-25 Port of Entry
Source	Regional Freight Forum
Problem	Location of port of entry is not ideal for freight traffic to access Swan Ranch. High Plains Interchange, the southern-most interchange to access Swan Ranch, is located south of the I-25 port of entry. Freight traffic to Swan Ranch must drive past the High Plains Interchange, stop at the port of entry, and then return south to Swan Ranch. Additionally, with the proposed future High Plains Road that will connect the High Plains Interchange to South Greeley Highway, freight haulers will have the potential to bypass all of the southern ports into Cheyenne.
Proposed Actions	The Wyoming Department of Transportation (WYDOT) has expressed an interest in combining ports of entry with the Colorado Department of Transportation (CDOT) for both the I-25 and Highway 287 (US 287). Allowing CDOT to manage the I-25 port of entry would allow freight headed north of I-25 to stop at the CDOT port and then proceed directly to the High Plains Interchange.
Truck Route Classification	I-25 is a "Primary Truck Route"
Projected Cost	Combining port of entry duties with CDOT is a potential cost savings to both WYDOT and CDOT as each state is responsible for maintaining one of the facilities and not both.
Action Plan	Near-Term: Begin discussions with Colorado Department of Transportation to gauge interest in combining ports of entry along Colorado / Wyoming border including I-25 and US 287.
Goal Area Addressed	Freight Movement and Economic Vitality

Figure 7-12: Port of Entries Aerial



Table 7-7: Truck Parking Study

Project #7	Truck Parking Study
Source	Regional Freight Forum and Motor Carrier Survey
Problem	During inclement weather and/or in association with traffic accidents, I-80 and I-25 out of Cheyenne are frequently closed. When this occurs, especially during long closures, there can be more trucks in the Cheyenne metropolitan area than there are available truck parking spaces. Trucks make use of any available space to park, including along city and county streets, and in the business parks. Many of these roadways were not constructed with adequate shoulders to sustain truck parking. Additionally, parked trucks create access problems for adjacent businesses. In some areas where trucks are parked there is not access to restroom facilities and/or food.
Proposed Actions	Engage regional businesses and conduct a Truck Parking Study to determine the best course of action.
Truck Route Classification	I-25 and I-80 are a "Primary Truck Routes"
Action Plan	Near-Term: Conduct a Truck Parking Study
Goal Area Addressed	System Reliability

Figure 7-14: Wyoming Truck Parking



Figure 7-13: Wyoming Truck Parking Map



Source: Wyoming Truck Parking Map, 12/2012 v1, provided by WYDOT



Figure 7-15: Image from the Roundtop Road Traffic Camera, WYDOT





Table 7-8: Transload Market Assessment

Project #8	Transload Market Assessment
Source	Regional Freight Forum
Problem	<p>During the regional freight forum participants indicated that there is a lot of freight being trucked into Cheyenne that could move by rail. The commodity analysis conducted for the Cheyenne Regional Freight Mobility Study did not provide enough detail to determine the overall regional demand for transload services, or determine why transload facilities developed at the Cheyenne Logistics Hub in Swan Ranch may not be meeting current needs.</p> <p>A market assessment would seek to understand more specifically how freight moves into and out of the Cheyenne Region by analyzing current and future commodity flow data, and determine those commodity movements that could be made more efficient or cost effective by the expansion of transload services. The study would also complete stakeholder interviews for the purpose of gathering intelligence about planned growth among existing rail shippers in the region.</p>
Proposed Actions	Engage regional businesses and conduct a market assessment of transload services demand.
Truck Route Classification	N/A
Action Plan	Near-Term: Conduct a Market Assessment
Goal Area Addressed	System Integration and connectivity; Environment, Energy and Quality of Life

Table 7-9: Burlington Trail Road and Intersection with South Industrial Road

Project #9	Burlington Trail Road and Intersection with South Industrial Road / HR Ranch Road
Source	Motor Carrier Survey
Problem	Skewed intersection with heavy industrial traffic at 3 of the 4 legs reduces efficiency and safety of the intersection.
Proposed Actions	The <i>Fox Farm Road Corridor Plan</i> identifies this intersection as a concern for freight traffic due to the skewed intersection design. This study recommends realigning the intersection to improve the angle and add a free right-turn for southbound Burlington Trail Road traffic desiring to make a right turn onto South Industrial Road.
Truck Route Classification	South Industrial Road is not classified on the Truck Route system. Burlington Trail Road is proposed as a "Local Truck Route." Burlington Trail Road is the eastern access to the adjacent Heavy Industrial zone. HR Ranch Road is Restricted to Truck Access.
Projected Cost (2016 Dollars)	\$1,100,000 for reconstruction of intersection and Burlington Trail Road to Campstool Road. Cost includes greenway adjacent to Burlington Trail Road as suggested by the <i>Fox Farm Road Corridor Plan</i> , but not the pedestrian underpass north of Campstool Road (construction costs).
Action Plan	Mid-Term: Reconstruct intersection
Goal Area Addressed	System Reliability and Safety

Figure 7-16: Recommended Alternatives for Burlington Trail Road from Fox Farm Road Corridor Plan

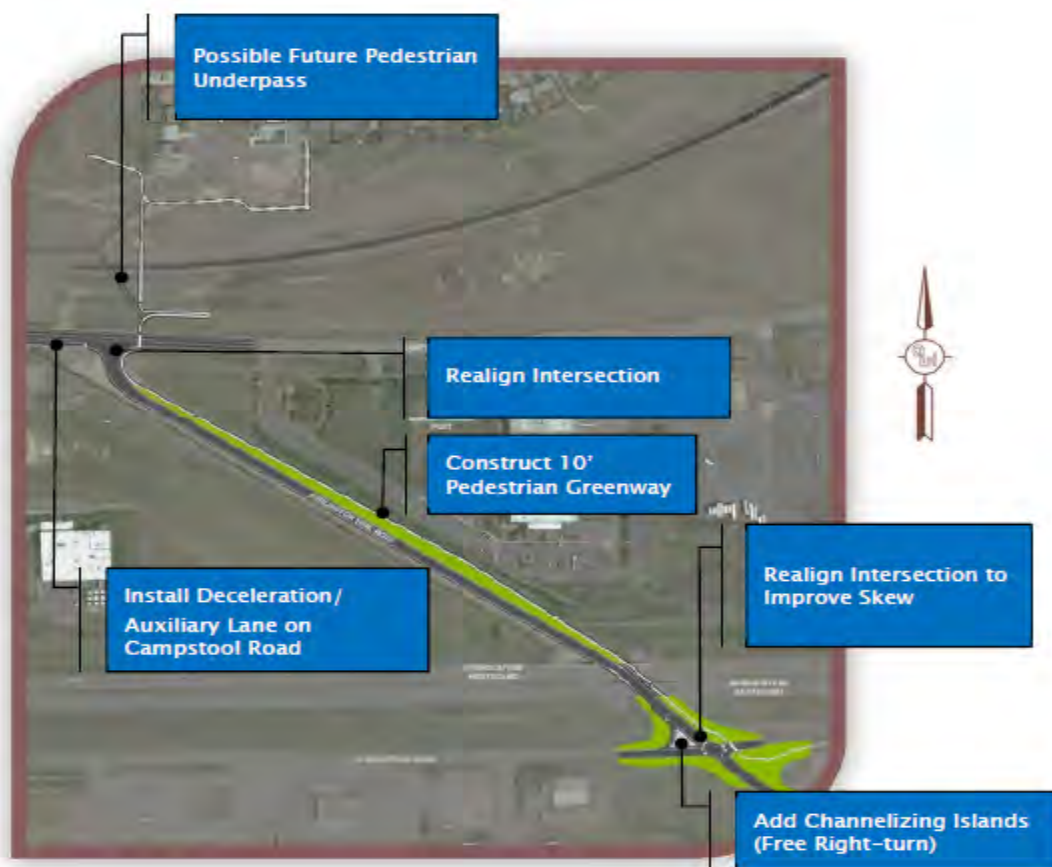


Table 7-10: Fox Farm Road/Morrie Ave/Ave C Intersection

Project # 10	Fox Farm Road / Morrie Avenue / Avenue C Intersection
Source	Motor Carrier Survey
Problem	Four-way stop intersection causes delays. Intersection has inadequate turning radii.
Proposed Actions	The <i>Fox Farm Road Corridor Plan</i> identifies this intersection as a problem for freight traffic. This study analyzed both a traditional intersection and a roundabout intersection at this location. The study states that projections from Sustainable Traffic Solutions, Inc., indicate this intersection will meet warrants for a traffic signal in 5 years or less (the <i>Fox Farm Road Corridor Plan</i> dated September 2013.)
Truck Route Classification	Fox Farm Road and Morrie Avenue are “Secondary Truck Routes”, Avenue C is “Restricted Truck Access”.
Projected Cost	Per the <i>Fox Farm Road Corridor Plan</i> : \$330,000 for either a traditional intersection or a roundabout intersection. Note that a roundabout intersection will require right-of-way acquisition. Cost of right-of-way acquisition has not been included in the \$330,000 estimate.
Action Plan	Mid-Term: Reconstruct intersection
Goal Area Addressed	System Reliability

Figure 7-17: Conceptual Standard Intersection Alternative with Traffic Signal, from Fox Farm Road Corridor Plan

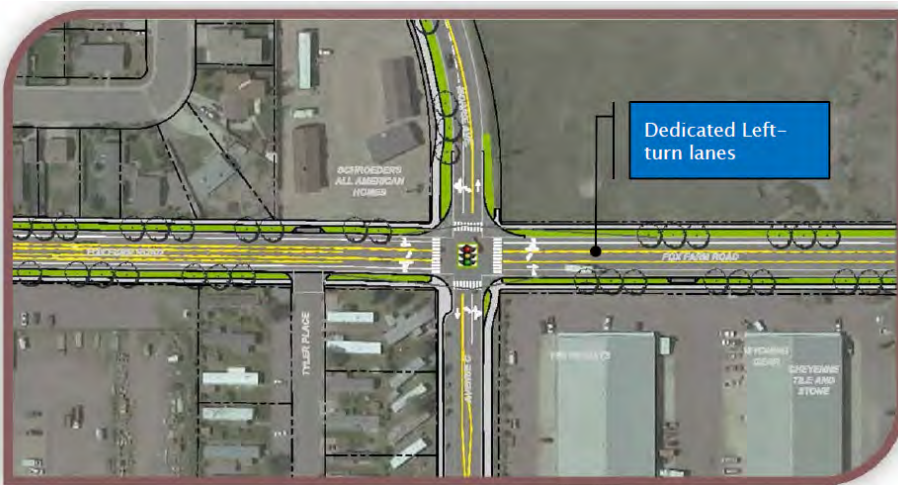


Figure 7-18: Conceptual Roundabout Alternative, from Fox Farm Road Corridor Plan

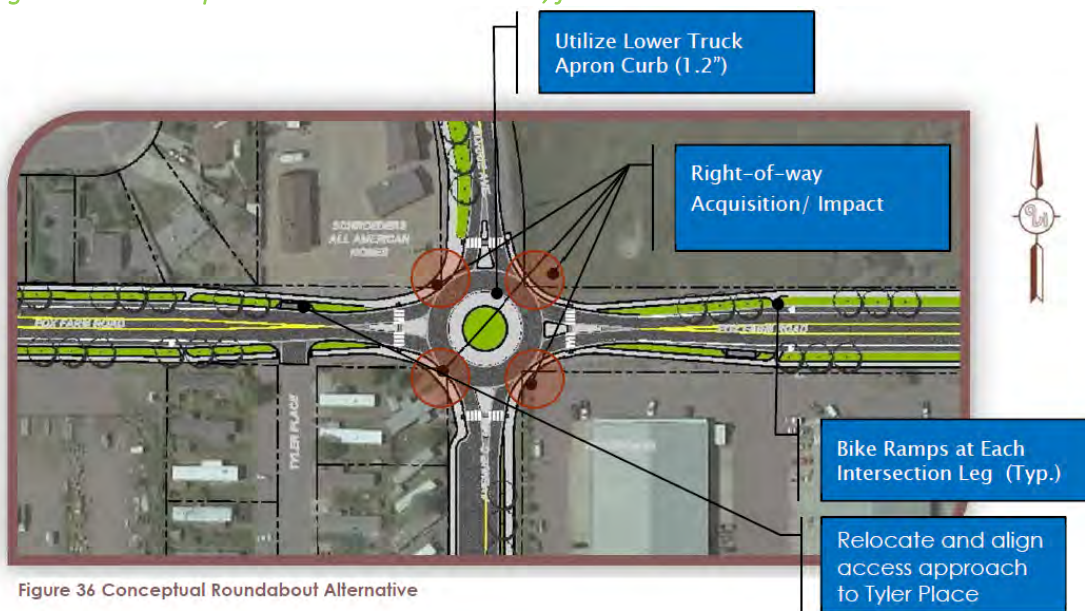


Table 7-11: Christensen Road and Overpass

Project #11	Christensen Road and Overpass
Source	Regional Freight Forum and Motor Carrier Survey
Problem	Connection is desired between US Highway 30, Pershing Boulevard and Commerce Circle for greater connectivity with the roadway network.
Proposed Actions	Construct a roadway starting at the intersection of Commerce Circle and Christensen Road, headed generally north where a grade-separated structure is proposed over the Union Pacific rail road tracks, to an intersection with East Pershing Boulevard, and continuing north to an intersection with US Highway 30.
Truck Route Classification	Christensen Road south of Commerce Circle is a "Secondary Truck Route".
Projected Cost	\$14.6 million per the application for the <i>TIGER Discretionary Grant 2015 Application – "The Christensen Project: A Bridge to Prosperity."</i>
Action Plan	Mid-Term: Construct Christensen Road and overpass
Goal Area Addressed	Freight Movement and Economic Vitality

Figure 7-19: Map of Christensen Railroad and Corridor Project from TIGER Grant 2015





Table 7-12: Southwest Drive Connector

Project #12	Southwest Drive Connector -
Source	Regional Freight Forum and Motor Carrier Survey
Problem	Southern portion of Southwest Drive, from College Drive to the underpass at I-80, is a “Restricted Truck Route” because of the residential nature of the adjacent land and the narrow street section; the northern end of Southwest Drive is frequently inaccessible due to the at-grade crossing of the Union Pacific Railroad tracks, which is just south of the intersection of Southwest Drive and Lincolnway. This crossing experiences an average of 60 trains per day. The land on the west side of Southwest Drive is zoned as Light Industrial. Timely access to this land is hindered for freight traffic.
Proposed Actions	Construct a new roadway to connect Southwest Drive to Parsley Boulevard, south of I-80. A conceptual design for this roadway was prepared by A.V.I. in the <i>South Network Masterplan South Cheyenne Streets</i> , dated May 20, 2004. The proposed roadway will require a grade-separated crossing of the Burlington Northern Railroad tracks, which lies approximately half way between Southwest Drive and Parsley Boulevard.
Truck Route Classification	Parsley Boulevard is proposed as a “Local Truck Route” on the Truck Route Map revised within this Freight Study project.
Projected Cost	A.V.I. estimated the construction costs to be \$2,680,000 in 2004. That estimate has been updated with current bid pricing to be \$4,400,000 for construction cost in current dollars.
Action Plan	Mid-Term: Construct roadway
Goal Area Addressed	Freight Movement and Economic Vitality

Figure 7-20: Southwest Drive Connector Aerial Location Map



FIGURE No.2

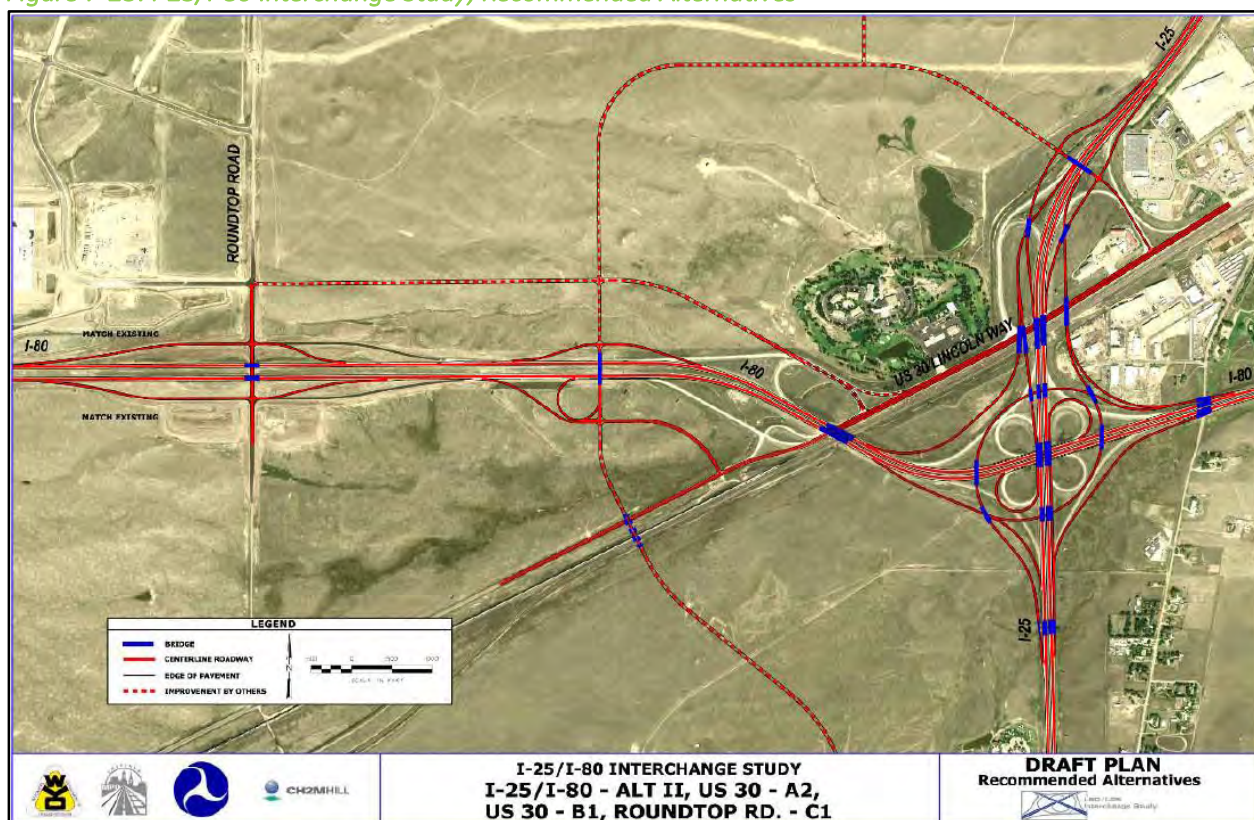
Table 7-13: I-80/I-25/Lincolnway Interchanges

Project #13	I-80/I-25/Lincolnway Interchanges
Source	Regional Freight Forum
Problem	Geometry of loop ramps, short acceleration and deceleration lengths, and weaving conflicts of the I-80 / I-25 interchanges are challenging for trucks.
Proposed Actions	Reconstruct each of the interstate interchanges: I-80/Lincolnway, I-25/Lincolnway, and I-80/I-25
Truck Route Classification	I-80 and I-25 are "Primary Truck Routes"
Projected Cost	\$132 million for the I-80 / I-25 Interchange reconstruction; \$36 million for the I-25 / Lincolnway Interchange; \$20 million for the I-80 / Lincolnway Interchange, per the <i>I-80 / I-25 Interchange Study</i> (2008 dollars)
Action Plan	Long-Term: Reconstruct Interchanges
Goal Area Addressed	Safety and System Reliability

Figure 7-22: I-80/I-25/Lincolnway Interchanges



Figure 7-23: I-25/I-80 Interchange Study; Recommended Alternatives



Source: I-25 / I-80 Interchange Study, Recommended Alternatives

Table 7-14: College Drive Grade Separated Railroad Crossing

Project #14	College Drive Grade Separated Railroad Crossing
Source	Regional Freight Forum
Problem	The existing at-grade crossing of College Drive and the Burlington Northern railroad tracks is an urban crossing that meets the criteria for a grade separated crossing. Using the WYDOT Hazard Rating Formula, this crossing is in the top 17% of hazardous crossings. A general guideline by the U.S. DOT shows an exposure factor greater than 125,000 in urban areas as a threshold for considering a grade separated crossing. The exposure factor of this crossing is above the guideline of 125,000 at 138,754.
Proposed Actions	Design and construct a grade-separated crossing at this location.
Truck Route Classification	College Drive is a "Main Truck Route".
Action Plan	Long-Term: Design and construct grade separated crossing
Goal Area Addressed	System Reliability

Figure 7-24: College Drive Grade Separated Crossing Aerial Location Map





7.3 Planning Activities

A Comprehensive, Cooperative and Continuing (3C) planning process is necessary for the MPO to plan Cheyenne's future transportation needs. A major part of this process is to address present and future travel demands, as well as to provide transportation needs for a growing population and economic base. As part of the 3-C planning process, the MPO prepares a Near-range list of projects called the Transportation Improvement Plan (TIP), and a long-range plan of projects called the Metropolitan Transportation Plan (MTP). The TIP and MTP contain a prioritized list of all proposed highway, street, transit, airport, and public utility projects in the metropolitan area. The TIP, is programmed for a three-year timeframe. The MTP is a program for a period of over 20 years. Projects described in this chapter can be assessed for inclusion into the MTP and TIP. The goals, objectives and performance measures described in Chapter 6 can be incorporated into the performance-based planning system for the MTP and TIP.

In addition, other planning activities can be expanded or enhanced from the findings of this Regional Freight Mobility Plan. These activities are describe in the following sections.

7.4 Data

The data sources collected for this Freight Mobility Plan are summarized below. This information can be used for other MPO planning tasks.

- **Traffic Data** – 2012-2015 average daily traffic (ADT) counts from Cheyenne MPO. This data was used to describe overall traffic flows and identify general locations of traffic congestion.
- **Crash Data** – 2011 annual crash report for the Cheyenne urban area compiled by the WYDOT. This was used to identify the locations having a higher concentration of crashes.
- **Bridge Condition** – WYDOT inspection reports. This information was used to show the condition of bridges.
- **Freight Flow Data** – The Freight Analysis Framework (FAF-4) is produced through a partnership between Bureau of Transportation Statistics (BTS) and Federal Highway Administration (FHWA) to show freight movement to and from the State of Wyoming. It was then disaggregated into estimates of freight movement to and from the Cheyenne metropolitan area.
- **Highway-Rail Crossing Inventory**- railroad at-grade crossings with public roads were inventoried from a number of sources. The crossings were evaluated to identify higher conflict locations. This data and the analysis was used to identify locations where grade separation could be considered.
- **Truck Route Network and Truck Parking Facilities** – the City of Cheyenne developed a
 - Functional classification map (WYDOT)
 - National highway system (FHWA)
 - Wyoming truck parking along I-80 map
- **Swan Ranch Rail Park Information** – Swan Ranch is the Cheyenne logistic hub.
 - Conceptual master plan (Granite Peak Development LLC)
 - Overland trails
 - Availability map



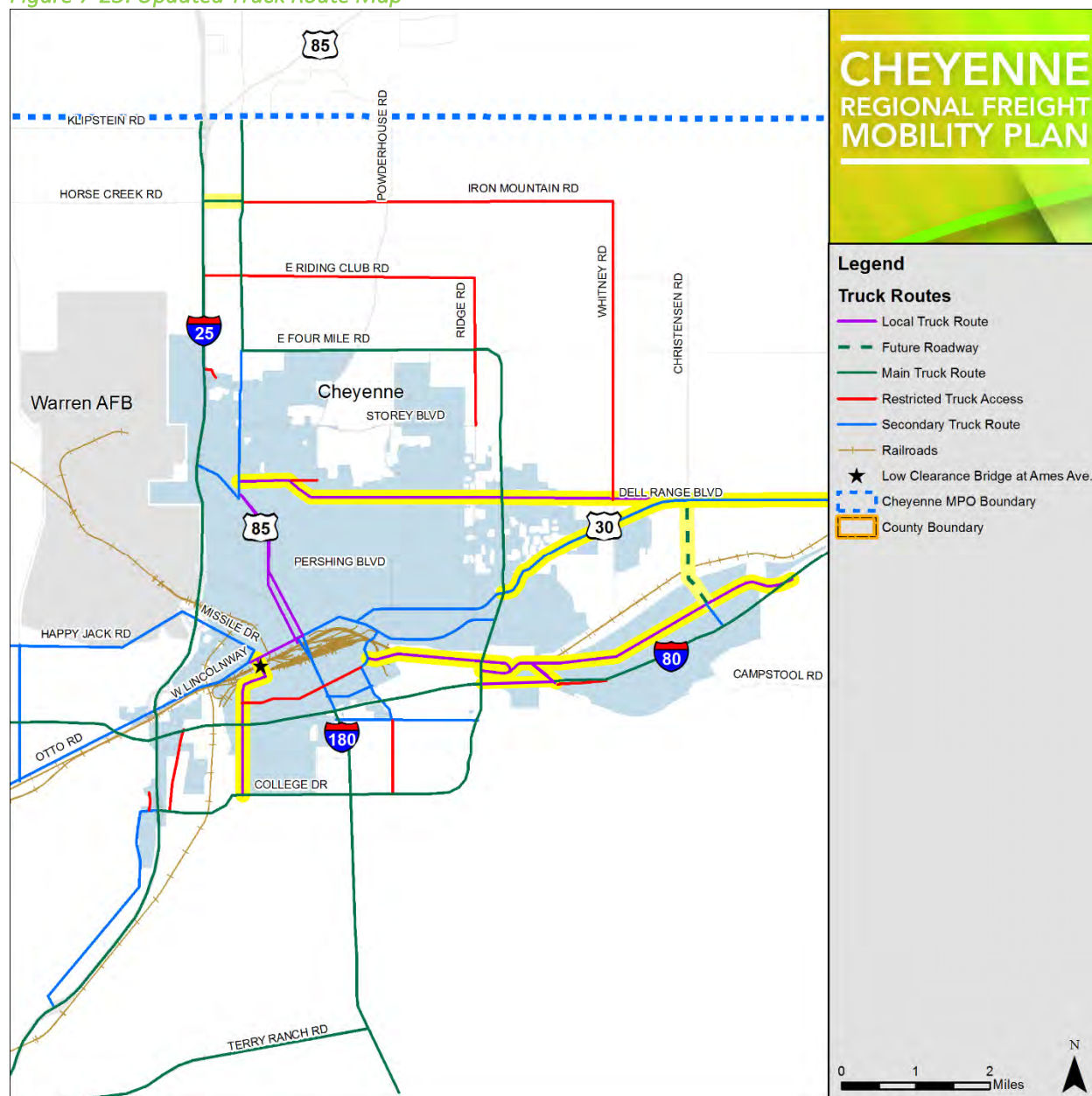
- FHWA's Freight Management and Operations website
resource: <http://www.ops.fhwa.dot.gov/freight/>
 - Freight Analysis Framework: http://ops.fhwa.dot.gov/freight/freight_analysis/faf/index.htm
 - Freight Performance Measures:
http://www.ops.fhwa.dot.gov/freight/freight_analysis/perform_meas/index.htm
 - For freight performance measures and other trucking data also visit: <http://atri-online.org/>
 - Commercial vehicle crash query tool:
<https://ai.fmcsa.dot.gov/CrashStatistics/rptSummary.aspx>

7.5 Update to Truck Route Map

PlanCheyenne contains the latest version of the Truck Route map, dated 2011. A comprehensive review of the existing truck routes was completed. **Figure 7-25** on the following page shows the updated Truck Routes map, which includes the following changes:

- Horse Creek Road from I-25 to Yellowstone Road upgraded from a Secondary Truck Route to a Main Truck Route.
- Dell Range Boulevard between Yellowstone Road and College Drive downgraded from a Secondary Truck Route to a Local Truck Route.
- Dell Range Boulevard from College Drive to US-30 added as a Local Truck Route.
- US-30 added as a Secondary Truck Route from College Drive to Archer Parkway.
- Future Christiansen Road added as a Future Secondary Truck Route from Campstool Road/Venture Boulevard to Dell Range Boulevard.
- Campstool Road downgraded from a Secondary Truck Route to a Local Truck Route from Morrie Avenue to Archer Parkway.
- Campstool Way from College Drive to Campstool Road added as a Local Truck Route.
- South Industrial Road added as a Local Truck Route from College Drive to Burlington Trail Road.
- Burlington Trail Road added as a Local Truck Route from South Industrial Road/HR Ranch Road to Campstool Road.
- Parsley Boulevard added as a Local Truck Route from College Drive to Ames Avenue.
- Ames Avenue added as a Local Truck Route from Parsley Boulevard to West Lincolnway. This route noted to have a low vertical clearance at both of the railroad underpass structures. Ames Avenue added as a Local Truck Route from Parsley Boulevard to West Lincolnway. This route has been noted to have a low vertical clearance at both of the railroad underpass structures. These underpasses are signed with a clearance of 13 ft 0 in.

Figure 7-25: Updated Truck Route Map





7.6 Freight and Land Use Considerations for the Cheyenne Region

Among the stated goals for the Cheyenne Regional Freight Mobility Plan was *“a plan that will guide the orderly growth of, improvement of existing and funding of future development for safe freight corridors, routes, access and intermodal distribution facilities...”*⁴⁷. This section describes freight supportive land use and zoning policies to be considered.

Utilize Zoning Authority to Create Buffer Areas Around Freight Intensive Land-Uses

Freight activity has been shown to provide significant positive benefits to regional economies. This is certainly true for Cheyenne where transportation and warehousing is a significant contributor to jobs and income. However, freight activity also creates negative impacts such as air pollution, noise, and dust. Trucks and trains often interrupt commuters and other motorized and non-motorized transportation system users increasing traffic safety hazards. Additionally, heavy vehicle loads can prematurely deteriorate pavements and bridges. Before widespread adoption of the automobile, urban residents often lived near industrial and transportation centers for ease of access to jobs and services. Today cities tend to separate neighborhoods from commercial and industrial areas through zoning and land use regulation. The City of Cheyenne has adopted more than 20 land use designations (zoning districts) in city codes. A map of the existing land use designations governing regional development is shown in **Figure 7-26**.

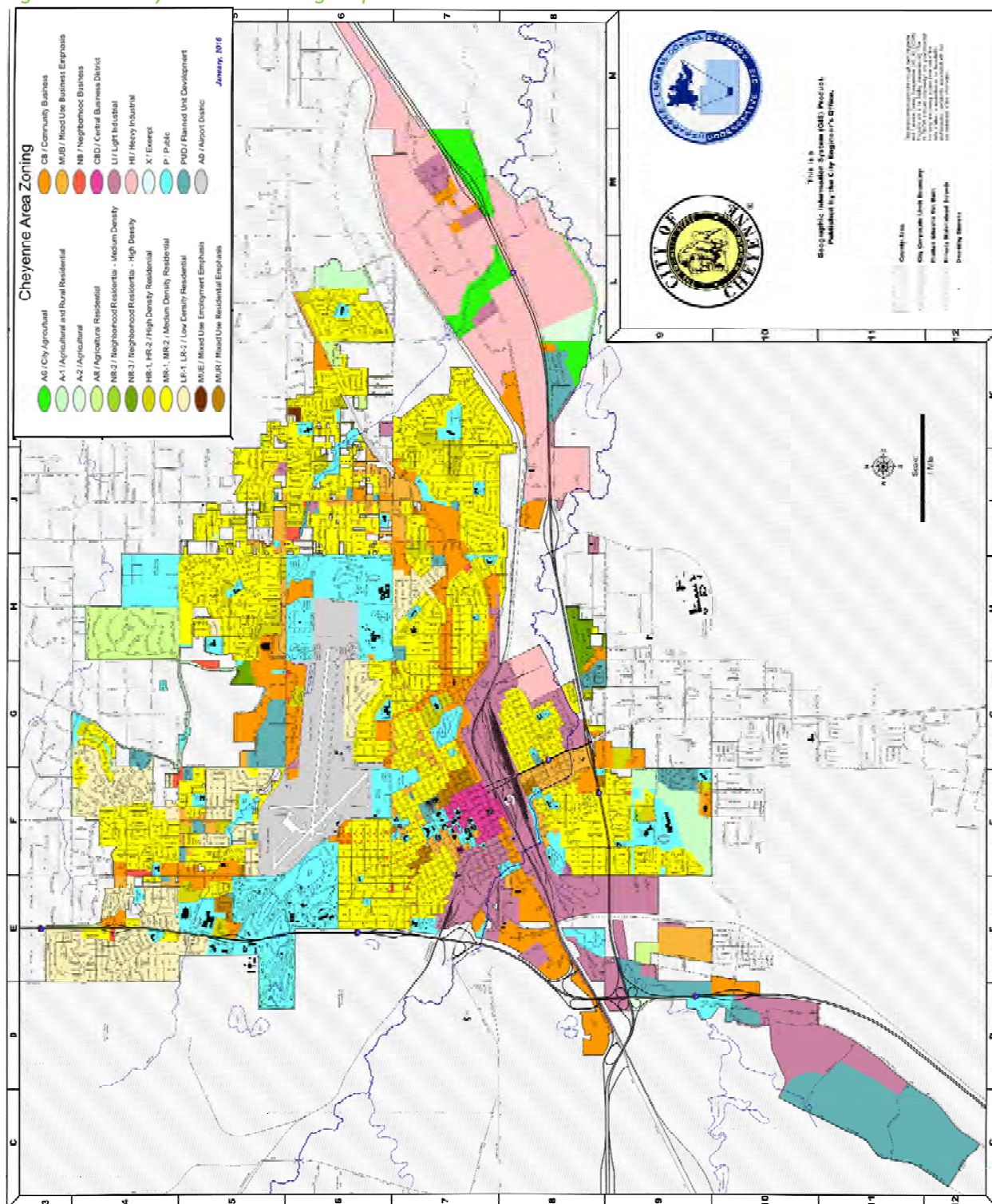
The map shows Cheyenne’s Central Business District is bordered on two sides by light industrial development, including Union Pacific and BNSF rail yards. Most of Cheyenne’s designated heavy industrial land use areas lie away from downtown and residential neighborhoods to the east/south east in the Cheyenne Business Park and Campstool Business Park; and to the Southwest the Swan Ranch Logistics Hub. However, the heavy industrial area where the Holly Frontier Refinery is located is an all too common example of a residential neighborhood now squeezed between a heavy industrial facility that generates diesel fumes, heavy truck noise, and other offensive odors with a very busy rail yard. The South Side Historic District neighborhood comprises the original “blue collar” residential area of Cheyenne and includes the southern half of the original city plat as filed in 1867 by General Grenville M. Dodge, chief engineer of the Union Pacific Railroad.⁴⁸ While neighborhoods like Cheyenne’s South Side are a common occurrence in historic cities with an industrial past, placing neighborhoods directly adjacent to heavy industrial and intensive transportation development typically leads to depressed home values and urban decay.

Good land use planning suggests many of the conflicts that arise between neighborhoods and commercial/industrial areas with a lot of freight activity can be ameliorated through the creation of buffer areas. Buffer areas can be created through the traditional zoning process; for instance, future industrial land uses can be surrounded by commercial, agriculture or other non-residential zoning. Another option for Cheyenne is to strengthen existing industrial district standards to require buffer areas or consider the creation of a new zoning classification specific to freight intensive land uses requires buffer areas.

⁴⁷ Cheyenne Metropolitan Planning Organization: *Freight Mobility Study, Strengths, Weaknesses, Opportunities and Threats; Request for Proposals*. March 23, 2015. Pg. 4.

⁴⁸ Wyoming State Historic Preservation Website: <http://wyoshpo.state.wy.us/NationalRegister/Site.aspx?ID=222>

Figure 7-26: Cheyenne Area Zoning Map





Cheyenne's existing Industrial District Standards:

The City of Cheyenne currently has two zoning districts that recognize freight intensive uses: Light Industrial; and, Heavy Industrial. The following descriptions are taken from the most recent version of Cheyenne's online Unified Development Code (UDC) (last amended Aug. 25, 2014).

Light Industrial (LI)

a. *Intent.* The LI district is intended for environmentally controlled manufacturing or intensive employment uses that may have accessory commercial, service or office uses, but which cannot readily fit into other general business or mixed-use areas due to the nature or intensity of operations. The uses and building and site designs associated with uses in this district produce little or no impacts beyond the property lines.

b. *Applicability.* The LI district is applicable to larger land areas that are capable of providing substantial buffers to adjacent sites, buildings, and land uses to minimize the potential for incompatible and negative impacts of uses in the district.

c. *Context.* This district is most appropriate in areas with access to major regional transportation infrastructure, specifically areas designated Industrial in the Comprehensive Plan, and in limited applications within Mixed-use Employment Campus in the Comprehensive Plan. The district should be sized according to market demands and employment forecasts

Heavy Industrial (HI)

a. *Intent.* The HI district is intended for uses of very high intensity which should be isolated and buffered in order to protect the community and to ensure unimpeded operation of the use. These uses do not fit into other general business or mixed-use areas due to the nature or intensity of operations. The uses and building and site designs associated with uses in this district can produce impacts beyond the property lines, and the district should be remote from other differing and incompatible land uses.

b. *Applicability.* The HI district is applicable to larger land areas remote from other differing or incompatible to minimize the potential for incompatible and negative impacts of uses in the district.

c. *Context.* This district is most appropriate in areas with access to major regional transportation infrastructure, specifically areas designated Industrial in the Comprehensive Plan. The district should be sized according to market demands and employment forecasts and the inherent suitability of particular land areas to meet the intent of the district.

While both industrial district classifications recognize the need for buffer areas, neither description specifies what constitutes a buffer area, and accompanying regulations for lot area and setbacks, require only that LI district buildings be setback 25 feet on all sides from adjacent property lines and streets. For HI district buildings the set back is 40 feet. The UDC (Section 6.3.5) does provide three different levels of landscape buffers to be placed between properties that are zoned differently. These landscape buffers can include plantings and fences and vary in width from 10 feet to 25 feet.

Some cities and counties have developed zoning regulations specific to transportation and warehousing development. For example, Romulus, Michigan a suburb of Detroit, has adopted a *Transportation, Warehousing and Storage (TSW)* sub-district to an Industrial Transportation District ordinance. The zoning



rules governing the TSW sub-district requires a minimum lot size of four acres, direct ingress and egress on to a major arterial, and requires that the minimum setbacks, greenbelts and landscape buffer zones be increased by 50 percent over the requirements for general industrial developments.

A number of port cities have developed special “port district” zoning laws, and some communities have developed “logistics districts.” St. Tammany Parish in Louisiana, situated on the Gulf Coast at the intersections of I-10 and I-12 has adopted an Advanced Manufacturing and Logistics District:

The purpose of this district is to provide for the location of very large scale facilities for the research and development, manufacturing and transportation/logistics industries. Such facilities should be located in close proximity to major transportation routes, with the ideal location allowing for multi modal opportunities.⁴⁹

A number of cities are also using “overlay district” ordinances. Overlay districts incorporate various development regulations across a specified area and are special zones that lie on top of existing zoning categories to supplement or supersede existing regulations. An overlay district typically provides a higher level of regulation than required by the existing zoning classification, but also permit exceptions or less-restrictive guidelines. In cases where conflicting standards are given by an overlay district and the underlying zoning category, those of the overlay district take priority.

Mesquite Texas recently created a *Logistics Hub* overlay district to:

- *Create identity for the concentration of industrial land uses within the area, and provide opportunities for transportation funding through programs that support industrial and economic development.*
- *Recognize the importance of the area to the City’s economic well-being, and preserve and encourage the further development of available land within the area for industry, which creates jobs and improves the tax base.*
- *Protect, through reasonable regulation, the residential enclaves within and on the boundary of the area from the external impacts of heavy industry, trucking and land uses that support trucking activity.*
- *Adopt responsible environmental and aesthetic measures to bring visual order, cleanliness and appeal to the Big Town Gateway in keeping with the industrial character of the area.*

The new Mesquite ordinance specifies which routes will serve as gateways to the district, sets specific standards for sound walls and buffering, and provides guidance for site designs and even truck parking.⁵⁰

In 2012, the FHWA published a *Freight and Land Use Handbook* that further discusses the use of zoning overlay districts.⁵¹ The handbook discusses two types of overlay districts: a) Form-based zoning, and b) Performance Zoning. Form-based zoning is most often used to regulate building form typically in urban districts where specific physical form and aesthetics are important. Performance zoning establishes performance standards to address the intensity of activities on any given parcel and mitigate the impacts on surrounding areas.

⁴⁹ http://www2.stpgov.org/planning/udc/sectopm_5.38_aml_advanced_manufacturing_and_logistics_district.pdf

⁵⁰ <https://www.cityofmesquite.com/DocumentCenter/View/5941>

⁵¹ USDOT, FHWA: *FHWA Freight and Land Use Handbook*. April 2012. FHWA-HOP-12-006.



Many communities also use zoning as a means of preserving large parcels of land with good transportation access for future industrial uses. However, with thousands of acres of light and heavy industrial parcels available at the Cheyenne Logistics Hub at Swan Ranch, Cheyenne seems well positioned for accommodating industrial growth in the foreseeable future.

7.7 Explore Technology improvements for Increasing Safety and Efficiency

Intelligent transportation systems (ITS) have proven to be a relatively low-cost means to improve highway operations for commercial vehicles, increasing safety and efficiently collecting traffic data. ITS technologies provide the additional benefit of producing data streams that are often very useful for freight-related transportation planning efforts.

Outreach with trucking companies and shippers in the Cheyenne region identified two issues to be addressed through technology: a) Advanced notice of weather conditions; and b) Reliable information regarding the availability of truck parking.

Commercial Vehicle Traveler Information Services

Many sources of traveler and forecast information are available to the public and to commercial vehicle operations (CVO) provided through agency-sponsored websites and tools, regional aggregations, and private sources, many of which are interlinked back to private forecasting services or the National Weather Service (NWS). These sites provide many types of traveler information, including real-time conditions (e.g. congestion, construction, current weather, road conditions), static information (e.g. rest areas, weigh stations, truck stops), and weather forecasts. One frequent complaint from the CVO community is travel advisories are often location specific (e.g. the Denver metro area). For instance, many metropolitan areas have installed traffic management centers (TMCs) to provide incident and weather advisories to the traveling public. Most TMC's direct advisories to commuters within a metropolitan area. Truck drivers however frequently travel 400 – 500 miles in a day and may cross multiple geopolitical boundaries.

Feedback from the CVO community suggests detailed weather forecasts are needed to make routing and schedule judgments, which are not commonly available. The Wyoming DOT is one of the few state agencies that provides corridor-based conditions and weather forecasts specifically directed at the commercial vehicle segment of the driving population.

In 2015, Olsson Associates examined WYDOT's CVO travel advisory services at the request of the North/West Passage (NWP) Coalition. The NWP is comprised of eight states: Idaho, Minnesota, Montana, North Dakota, South Dakota, Washington, Wisconsin, and Wyoming traversed by I-90 and I-94. As largely rural states that often encounter extreme weather conditions, the eight DOTs in these states pooled resources to focus on developing effective methods for sharing, coordinating, and integrating traveler information and operational activities across state and provincial borders. <http://www.nwpassage.info/>

WYDOT developed a Commercial Vehicle Operations Portal (CVOP).

The CVOP: is a free service provided by WYDOT to commercial vehicle operators traveling the state of Wyoming. The purpose of the portal is to provide commercial vehicle operators with road and travel information tailored to commercial vehicles. The portal includes a new tool developed specifically for commercial vehicles based on feedback we have received. This tool provides customized road weather



forecasts that predict wind, visibility and surface impacts along Wyoming's three interstates (I-25, I-80 and I-90) and other routes most heavily travelled by truck traffic.⁵²

Users must register and log-in to the WYDOT CVOP site. The CVOP system is populated once per day through the summer and twice per day through the winter by a contract forecasting service. The system provides 12 hour forecasts over a 72-hour period, including wind, road surface conditions, and visibility. It also allows WYDOT operations personnel to send alerts via email and text to users who sign up for the service regarding emergencies and changing conditions. **Figure 7-27** shows the tabular representation of the forecast data. It is sorted by highway and by mile marker. The filter options described for the graphical interface also adjust the tabular display accordingly.

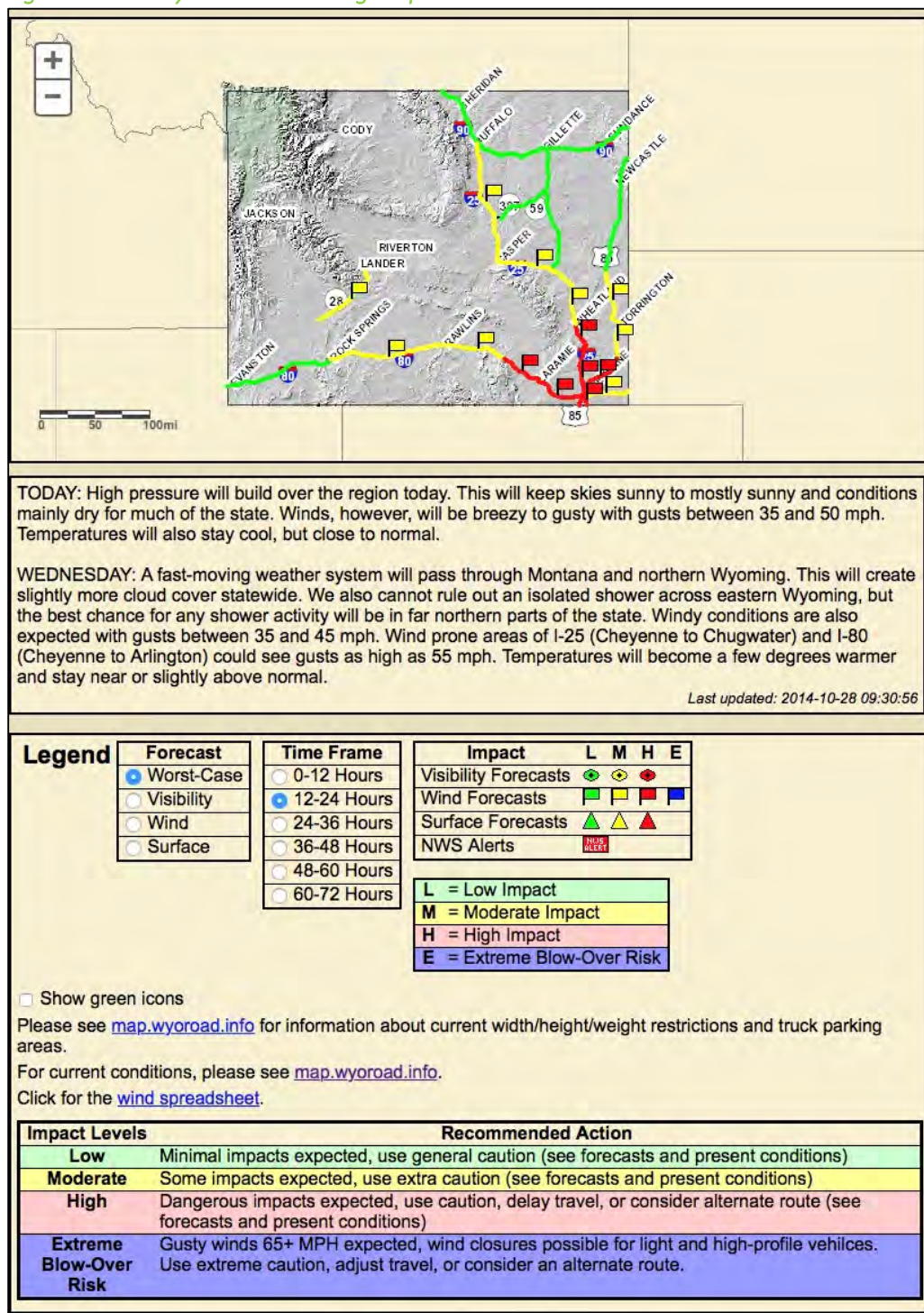
During the examination of the CVOP service for the NWP, Olsson identified other systems under development, including a regional traveler information website (the OTIIS project) which is now live: <http://roadstosafediscovery.com/>. However, the NWP Traveler information site only covers I-90 across Northern Wyoming. The research on CVO traveler services also determined the National Weather Service (NWS) is working with some state DOTs to provide corridor level weather forecasts. The WYDOT general Traveler Information website provides links to NWS forecasts for each city listed across a highway corridor in the state.

Based upon the investigation into the existing CVO services offered by WYDOT, it is possible for existing services to be advertised better through flyers or other materials distributed at safety rest areas or truck stops. In 2015, information from WYDOT in support of its "Connected Vehicles" pilot (discussed in the next section) suggests approximately 150 commercial vehicle operators are registered to use the CVOP site. This likely represents only a fraction of the trucking companies and drivers using I-80 and I-25 daily.

The research into the topic of CVO traveler services conducted by Olsson in 2015 suggests WYDOT currently offers some of the best weather advisory information to the trucking industry in the nation. The largest drawback to the existing services is they do not extend beyond Wyoming borders. While WYDOT's general travel information service website provides links to neighboring states, the CVOP site does not appear to offer similar links. Given that many of Cheyenne's businesses ship and receive products to and from the Denver Area, the Cheyenne MPO may wish to consider providing links through its own website or continue working with WYDOT to address concerns raised by local trucking companies.

⁵² WYDOT CVOP website: <https://apps.wyoroad.info/cvop/>

Figure 7-27: Cheyenne Area Zoning Map



Source: WYDOT CVOP

Connected Vehicles – The Next Transportation Revolution

A *Transportation Revolution* is a brochure available from the USDOT describing the technology bundles that allow vehicles to communicate and share information with one another, as well as, communicate with roadside infrastructure. Central to the connected vehicle technologies are dedicated Near-range

communications (DSRC), GPS and other wireless technologies that share information on speed, position, direction, brake status, and other on-board diagnostics.

The possibilities for technology to improve safety, reduce congestion (vehicles currently occupy only about five percent of the available road space) and improve productivity. Semi-autonomous driving features already exist in many new car models.

To help advance connected vehicle technologies, USDOT released a competitive grant solicitation in early 2015 to support the development of pilot deployments. In September 2015, USDOT announced the selection of three connected vehicle program deployment sites: Wyoming's application to improve the safe and efficient movement of trucks across I-80 was one of the three funded pilots.

The primary objective for the CV Pilot ICF/Wyoming pilot deployment is to reduce the number of weather related incidents (including secondary incidents) in the corridor in order to improve safety and reduce incident-related delays. This deployment will utilize connected vehicle technology to improve and monitor performance on Interstate 80 (I-80), which is a freight-intensive corridor with a daily volume of 11,000 to 16,000 vehicles, many of which are heavy-duty trucks (30% to 55%). The I-80 corridor is about 402 miles long and reaches its maximum elevation of 8,640 feet above sea level at Sherman Summit, near Buford... As a result of the high elevation, the corridor is particularly subject to winter weather events, most commonly between the months of October and May. Weather events typical to the corridor are ice and snow covered road surfaces, poor visibility, and high wind events (i.e., wind speeds exceeding 30 mph and wind gusts exceeding 40 mph) that often lead to truck blow-overs. Between 2002 and 2012, more than 3,470 high-wind crashes were observed.

This Pilot will develop applications that use vehicle to infrastructure (V2I) and vehicle to vehicle (V2V) connectivity to support a flexible range of services that improves safety and mobility. Information from these applications will be made available directly to the equipped fleets or through data connections to fleet management centers, that will then communicate it to their trucks using their own systems. The applications to be deployed include Road Weather Advisories and Warnings for Motorists and Freight Carriers, Weather-Responsive Variable Speed Limit System, Freight-Specific Dynamic Travel Planning, Spot Weather Impact Warning, Situational Awareness, and others as determined by the user needs of truck drivers, fleet managers in the corridor. Wyoming DOT will conduct the pilot in three phases as directed by the federal contract. In the first phase which elaborates the deployment concepts, Wyoming DOT will be supported by a multidisciplinary team including ICF International, University of Wyoming, National Center for Atmospheric Research, Trihydro, University of Maryland - Center for Advanced Transportation Technologies, and McFarland Management. Additional partners and stakeholders will be engaged in the development and deployment phases of the pilot.⁵³

At the Wyoming connected vehicle project kick-off meeting held in September 2015, the contractor team announced their intention to include stakeholders throughout the project deployment process. While the list of stakeholders includes fleet operators and freight operators, it does not include the Cheyenne MPO. Olsson Associates recommends the Cheyenne MPO to contact Ali Ragan, WYDOT's project manager (307-777-2985 / Ali.ragan@wyo.gov) to request being added as a project stakeholder.

⁵³ USDOT Intelligent Transportation Systems Joint Program Office Website:
<http://www.its.dot.gov/pilots/wave1.htm>



Using Technology to Help Address Truck Parking Needs in the Cheyenne Region

Another issue repeatedly heard throughout the course of the Freight Mobility Study is the need for additional truck parking in the region, especially during weather events that close I-80 and/or I-25. The availability of suitable truck parking facilities is not an issue isolated to the Cheyenne Region. In 1996 a study conducted for FHWA first brought to light the shortage of truck parking in the U.S. That study and several subsequent efforts noted the lack of readily available truck parking in many states. Previous research demonstrated the problem stems from a lack of real-time information about truck parking availability, especially parking facilities located a short distance off primary highway facilities.

Under Moving Ahead for Progress in the 21st Century (MAP-21) Congress also passed what became known as Jason's Law Truck Parking Survey. The law was named in memory of truck driver Jason Rivenburg who was murdered in an abandoned gas station where he had parked to rest before delivering a load at a nearby facility. Jason's law required FHWA to conduct a survey to assess the supply and demand of truck parking nationwide. Generally, Wyoming ranked third in overall spaces available per 100,000 miles of daily combination VMT (Montana and Missouri ranked first and second).

The state survey recorded 867 public truck parking spaces and 4,314 private truck parking spaces in Wyoming, for a total of 5,181 available truck parking spaces. Surveys of truck drivers generally responded favorably to Wyoming having sufficient truck parking. However, in the survey of state DOTs, Wyoming officials reported observing trucks parked at freeway interchange ramps, commercial areas, and on local streets near freeways. States also reported weather events result in significant parking shortages. Results of the study can be found at:

http://www.ops.fhwa.dot.gov/freight/infrastructure/truck_parking/jasons_law/truckparkingsurvey/ch3.htm

Since the completion of the truck parking survey, USDOT has taken steps to form a National Truck Parking Coalition to continue a dialogue with stakeholder to discuss issues and solutions.

To help address truck parking issues, over the past decade the USDOT awarded grants to conduct pilot studies. Michigan and Minnesota were two states that received grants to research and develop advanced truck parking notification systems, which are now being commercialized. The systems tested in Minnesota and Michigan have a fundamentally different approaches to identifying parking shortages. The Michigan system is an "In/Out" system that tracks the number of trucks entering and exiting a parking facility. The Minnesota system is a "presence" system that detects where a vehicle is occupying a parking space. In/Out systems are considered less reliable, but also less expensive.

Michigan Truck Parking Information and Management System (TPIMS) – This system is designed to be scalable and portable to any corridor. The initial application is being deployed by the Michigan DOT along I-94 in southwest Michigan. However, it is envisioned that such a system, especially when integrated with other information systems and services, would be valuable for enhancing multistate corridor operations. Interfaces are being implemented between the Michigan DOT Advanced Traffic Management System (ATMS) software and both the ParkingCarma and Kapsch systems to share data and disseminate the parking availability information. The system was activated September 2014. MDOT is using a number of high-tech methods to share the parking availability information, including dynamic roadside truck parking signs and the website: MiDrive (<http://mdotnetpublic.state.mi.us/drive/Default.aspx>). The Michigan technology is now being marketed through a company called *Truck Smart Parking Services* (www.trucksmartparkingservices.com).

Minnesota Truck Parking Availability Study: This project targets the development of an automated truck stop management system to determine the number of occupied parking spaces at MnDOT safety rest areas and commercial truck stops using video technology. The system uses a network of cameras to monitor parking availability at truck stops, automatically identifying available spaces in real time. In this project, the information will be used to notify drivers and carriers about parking availability via a website, in-cab messaging, and variable message displays a few miles ahead of the rest area on the highway. The system was installed at several MnDOT safety rest areas on I-94. The demonstration project was recently completed and deemed successful. Researchers from the University of Minnesota are now seeking patents for the technology. Additional information can be found at the project website:

<http://www.cts.umn.edu/research/featured/truckparking>

In November 2015, USDOT also awarded a \$25 million TIGER Grant to an eight state coalition (Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Ohio and Wisconsin) to develop and implement a Regional Truck Parking Information and Management System (TPIMS).

The Cheyenne MPO may wish to work with WYDOT and other regional stakeholders to explore potential grant opportunities to implement truck parking technology solutions to help drivers identify parking locations, especially during inclement weather events. Research has shown truck drivers prefer to park within a mile of their designated route, unless they are certain parking is available a further distance away.

7.8 Continue a Regional Dialogue with Freight Stakeholders

One of the persistent challenges for public agencies that seeking to address freight needs through planning and programming efforts is the difficulty of keeping the attention of the private sector. Central to the metropolitan transportation planning is the 3C process: Comprehensive, Cooperative and Continuing. During a regional business forum held as part of the outreach for this freight mobility study, participants were asked to identify their most important topics moving forward: *“Create a forum for community dialogue on freight issues”* ranked in the top three.

Many MPOs around the country have formed variations of freight advisory groups to create a regional dialogue with stakeholders. FHWA has published a guidebook that highlight experiences that both states and MPO’s have had engaging private sector stakeholders in their planning process.⁵⁴ Provided here are a number of examples from MPOs and local planning organizations that have formed regional freight forums for the purpose of a continuing, comprehensive and coordinated freight dialogue:

The Southern Arizona Logistics and Education Organization (SALEO): In 2007, the city of Tucson transferred responsibility for exploring the development of an inland port to the Tucson Regional Economic Opportunities, Inc. (TREO). TREO, formed in 2005 served as the lead economic development agency for the greater Tucson Area and its surrounding community partners. As part of the effort to promote an inland port, the agency formed SALEO: *“SALEO was born from the need to heighten awareness and spotlight the importance of the transportation and logistics industry and especially the role that this industry plays in the region's supply chain as a catalyst for*



⁵⁴ USDOT/FHWA: *A Guidebook for Engaging the Private Sector in Freight Transportation Planning*. May 2010. FHWA-HEP-09-015. http://www.fhwa.dot.gov/planning/freight_planning/guidebook/index.cfm



economic development. As a volunteer organization, SALEO has helped with curriculum development for supply chain management studies which has been adopted by Pima Community College, Cochise College, and Arizona Western and has been articulated into advanced degrees at Northern Arizona University and University of Arizona South. We hold monthly meetings where logistics professionals network, share best practices, and learn from expert presentations on various logistics topics. SALEO's objectives support regional economic development by working with the chambers and various economic development entities which can be found in the "Partnerships" page of our website. Our volunteer efforts help support and market the logistics service providers in the Arizona-Mexico region to advance and improve the efficiency of goods movements. SALEO also plays an advisory role with regional planning agencies in transportation planning and infrastructure development and serves as chair of the logistics subcommittee for Innovation Frontier Arizona (IFA), a collaboration between Pima, Cochise, Santa Cruz and Yuma counties on logistics education and workforce development."⁵⁵

- **The Delaware Valley Goods Movement Taskforce** – The Delaware Valley Regional Planning Commission (DVRPC), the MPO for the Philadelphia Region can boast of having one of the oldest, public-private freight forums in the nation. Created in the early 90's, the Delaware Valley Goods Movement Task Force, has been co-chaired by the DVRPC Executive Director and a PennDOT Deputy Secretary: *"DVRPC's freight advisory committee, the Delaware Valley Goods Movement Task Force, allows the local freight community to participate in formulating regional policies, plans, and programs. This joint public-private sector initiative brings together executives from Class I and shortline railroads, trucking and air freight firms to meet with federal, state, and local agency leaders, toll authorities and national advocacy groups."*⁵⁶
- **Atlanta Freight Advisory Task Force:** Established in 2003 as part of the Atlanta Regional Commission's regional planning process. The Freight Advisory Task Force meets several times throughout the year. The general membership of public/private sector freight representatives includes railroads, trucking companies, airports, chambers of commerce, and community improvement districts. The Task Force provides a forum for dialogue between the freight community and the public sector on freight and goods movement issues.⁵⁷
- **Des Moines Freight Roundtable:** The Freight Roundtable was created in 2004 with the Mission of working with the public and private sectors to maximize regional economic opportunity through the development and advocacy for an efficient transportation system. Today the group consists of members of both the public and private sector. The Freight Roundtable meets bi-monthly on the third Wednesday of the month.⁵⁸

The following text identifies the lessons learned and from the many examples of state and MPO sponsored freight advisory committees (FACs) or groups.

⁵⁵ SALEO Website: <http://saleo.org/about-saleo>

⁵⁶ Delaware Valley Regional Planning Commission website: <http://www.dvrpc.org/Freight/>

⁵⁷ Atlanta Regional Commission website: <http://atlantaregional.com/transportation/freight/freight-advisory-taskforce>

⁵⁸ Des Moines MPO website: <https://dmampo.org/freight-roundtable/>

- **Identify strong leadership:** Successful public/private freight forums benefit from strong leadership. Whether the leader is from the public or private sector, they should be well known and respected in the region and community. Existing groups have called upon retired politicians, private sector rail or trucking executives, manufacturing or warehouse executives, as well as senior leadership from MPOs and DOTs.
- **Focus on outcomes that relate to the target audience:** Case studies of freight advisory groups have shown attendance and participation wanes when meeting topics stray away from addressing private sector issues or challenges. While the private sector often needs some education on the public planning process, process should not become a focus.
- **Begin with a well thought out plan / agenda:** During the course of the Cheyenne Regional Freight Mobility Plan, community stakeholders have raised several issues that lend themselves to a continuing dialogue and the formation of a FAC in Cheyenne. If the Cheyenne MPO decides to facilitate the formation of a FAC, the private sector should be invited to help set agenda's and topics to be addressed. Many FAC's have formed (and in some cases started with) an executive committee that meets to set the future agenda. Developing a Near-term (one-to two-years) business plan of what the FAC wishes to accomplish may also help establish tangible outcomes and a sense of urgency. Topics for the Cheyenne Freight Advisory Committee to address include:
 1. **Develop a workforce education program for transportation and warehousing jobs:**

Participants from transportation and warehousing industries who attended the regional business forum indicated one of the greatest challenges facing businesses in the region is the ability to attract and retain a skilled workforce. LEADS and the Laramie Community College may have initiated discussions on developing a curriculum to address this need; however, this may be an early focus for broader business dialogue in Cheyenne. (This topic formed the basis for forming SALEO in 2007, which continues today).
 2. **Community education about the importance of transportation and warehousing jobs:**

A complement to developing local technical training programs and college curriculums is the ability to attract young people entering the workforce about the freight transportation industry and earning potential. During the business forum representatives noted many workers were coming from Northern Colorado. Transit and/or ride-share programs often support better job access and may be part of the solution to employee retention in the region.

Broader education about the importance of trade and freight related activities to Cheyenne's regional economy is likely to foster "freight as a good neighbor" dialogue and policies. Many MPO's have produced flyers and other education materials to distribute at community events to educate citizens on the importance of trade and freight to the region.
 3. **Engage the local business community to help address truck parking needs:** The qualitative information gathered during the Freight Mobility Study, suggests that the greatness need for truck parking occurs during inclement weather events. While new

technology application may be able to help address this problem, many jurisdictions have also looked to public-private partnerships as a means of addressing truck parking needs. A number of states in recent years have partnered with private firms to expand truck parking, and rest area facilities. For example, Utah executed a public-private partnership agreement with Flying J Truck Stops to expand rest area service offerings.

4. **Conduct a regional demand analysis for transload facilities:** A regional demand analysis study for transload facilities was the top priority resulting from the regional business forum. Responding to this request is will be important to show that the MPO heard what regional businesses had to say. Communities such as Des Moines have used studies such as a transload assessment to bring business leaders together and provide input to the process.
5. **Begin a dialogue with business about how to diversify Cheyenne's economic base.** A recent analysis by the Brookings Institution predicts Wyoming will experience the loss of over 1,500 jobs in the Near-term, and nearly 10,000 in the long term if oil prices remain depressed and more U.S. oil drilling rigs go idle. A number of businesses interviewed for the Freight Mobility Study noted that far more trucks move into the Cheyenne region loaded from Denver, and return empty. "Traffic lane imbalance" is a fairly common occurrence for economic regions that are predominantly "producers" or "consumers." In the case of Cheyenne, the lane imbalance with Denver is likely due to the regions large distribution and warehousing operations which take in products from Denver and then distribute them in multiple directions. Empty miles in one-direction result in higher transportation rates, and can even make getting service more difficult when the supply of trucking services is tight. Understanding Cheyenne's lane balance issues will help point to potential economic development strategies that to attract businesses which can take advantage of excess capacity in unbalanced lanes.

7.9 Summary

The FAST Act introduced both formula and discretionary grant programs to fund critical transportation projects that benefit freight: For the first time in U.S. history the FAST Act provides a dedicated source of Federal funding for freight projects, including intermodal projects. The two new funding programs are:

- Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies (FASTLANE) Grant Program; and
- Nationally Significant Freight and Highway Projects Program.

This final report describes a framework of strategies and projects for the Cheyenne MPO to include in its on-going planning activities. These strategies include: enhancing planning projects to include freight performance measures; identifying projects to enhance the freight network; use of freight planning data; education and training of local planning partners on freight issues and opportunities for broader freight partnerships. Project implementation details were presented for transportation projects ranging from Near-term "quick-fix" projects, to long-term projects requiring advanced programming.



Policy actions were described to address or mitigate weaknesses and threats identified in the Strength, Weaknesses, Opportunities and Threats (SWOT) Analysis. The chapter describes how Intelligent Transportation Systems (ITS) can be used to generate information on highway operations for commercial vehicles, increasing safety and efficiently collecting traffic data. Web sites are included to provide traveler information as weather is a constraint to goods movement at times. These sites provide real-time conditions (e.g. congestion, construction, current weather, road conditions), static information (e.g. rest areas, weigh stations, truck stops), and weather forecasts.

Connected vehicle research and technology was discussed that allows vehicles to communicate and share information with one another, as well as communicate with roadside infrastructure. Central to the connected vehicle technologies are dedicated Near-range communications (DSRC), GPS, and other wireless technologies that share information on speed, position, direction, brake status and other on-board diagnostics.

One issue repeatedly heard throughout the course of the Freight Mobility Study is the need for additional truck parking in the region, especially during weather events that close I-80 and/or I-25. Efforts by the Wyoming Department of Transportation to address this need through technology was described with suggestions for the MPO to complete.

The purpose of the Freight Mobility Study is to provide basic data for MPO staff to use for future planning efforts. The report presents initial framework with a vision, goals, and supporting performance measures for future projects.



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APPENDIX A PUBLIC INVOLVEMENT

- **Shipper/Receiver Interview Guides**
- **Shipper/Receiver Interview Summary**
- **Motor Carrier Interview Guides**
- **Motor Carrier Interview Summary**
- **Driver Break Room Instructions**
- **Regional Freight Forum Notes and Sign-in Sheets**

Cheyenne Regional Freight Mobility Study

Shipper/Receiver Interview Guide

Purpose:

- 1) Collect information about how key supply chains in the Cheyenne Region work
- 2) Gather input about the condition, performance and access to the Cheyenne regional transportation system.
- 3) Provide a reality check for data sources about goods movement
 - Specific commodities moving in large quantities to and from the Region.
 - Major market destinations for outbound products.
 - Major originations of process or production inputs.

NOTICE TO SURVEY RESPONDENTS

All information provided by this survey will remain strictly confidential. No statements or other information will be linked directly to individual respondents in any publication without the express permission of the respondent (i.e. the respondent would be contacted after the survey for permission to attribute any data or quotations). Demographic, organizational, and other individual information collected from survey respondents will be released only to members of the project team and staff acting on their behalf in the course of project-related activities only, including for record-keeping and follow-up purposes. Demographic, organizational, or data related to respondents will be reported only in aggregate formats with other survey responses.

OVERVIEW

This guide is organized as a set of topic areas. Within each topic is a description of subject matter to be probed in the interview. It is neither necessary nor appropriate to inquire about every item listed under each topic. The interviewer should be influenced by:

- Business circumstances. Subjects pertinent in one place may be irrelevant in another, due to size, scope, location, nature of activity, or other factors.
- The amount of time available for the discussion;
- The knowledge of the respondent. Some will know a lot about some things and little about others. If the respondent refers us to someone else for an answer, follow up.
- How forthcoming the respondent is being, and how sensitive the things we are asking about seem to them. If they are opening up and seem motivated to help, go with it. If they seem uncomfortable with a topic, let it go.
- Be flexible with the order of questions. Conversations naturally drift in one direction or another, and it is best to go with the flow. Details listed in the subject matter often emerge on their own.
- The objective is to get a good sense of the functions, needs, and level of activity of the business, and the respondent's view of local conditions. The discussion therefore should cover all of the topic areas to some degree. Then, probe more deeply in promising areas with the most informed, economically important, or helpful respondents.

Most interviews will take place in person at the respondent's facility. The interviewer should observe the access conditions coming into the facility, and should reconnoiter sufficiently to see the lot, apron space, dock doors, rail spur (if any), and visible activity. If the respondent offers a tour, accept it if time allows, and record what is seen.

Understand the respondent's perspective. Ask if they are long-time residents or relatively new to the region; in the first case, they may be able to reflect on trends, and in the second, they may be able to draw comparisons with other areas. Learn their scope of responsibility within their organization, so as to anticipate what they can and cannot answer, or offer to do.

Look for and record the reasons for the patterns of freight operations. For example, respondents whose freight is time sensitive are trying to meet the requirements of their customers, or have goods that are perishable in a variety of ways, or run very low inventories. Time of day and day of week concentrations may be tied to the rhythms of the market – e.g. a food distributor needs to deliver to restaurants at times other than the lunch and dinner rush.

Traffic data typically are commercially sensitive and may not be ready to hand. Ideally, we want to know the product and vehicle volume inbound and outbound for the facility, and its related origins and destinations in some detail. Practically, we will not get this detail in a conversation, and will settle for summarizations like "we ship about 10 trucks a day. Tell respondents that specific information about their operation will not become public, but rather will be combined with other data to compose a general profile of the region. A few will be willing to share traffic data sets or reports; encourage this with promising respondents, and assure them of confidentiality.

Interview Topic Areas

- 1) Business and Operating Conditions - Facility
- 2) Traffic Volumes:
- 3) Temporality
- 4) Service Requirements
- 5) Supply Chain Structure
- 6) Operating Conditions – Cheyenne Region

Cheyenne Regional Shipper Survey

- 1) **Company Size:** How many full-time employees does your company employ in the Cheyenne Region? Please check the category applicable to your firm:

_____ Less than 10 employees _____ 10 - 24 employees
_____ 25 - 49 employees _____ 50 - 99 employees
_____ 100 + employees

- 2) **Type of business:** How would you classify your business?

_____ Transportation and Warehousing
_____ Agri-Business
_____ Manufacturing
_____ Construction
_____ Mining
_____ Retail / Wholesale
_____ Other (specify) _____

- 3) **Company Owned Transportation Assets:** Does your firm own and/or operate any transportation assets **(Please check all that apply)**

_____ Private Truck Fleet – Dry Vans (# of Units _____)
_____ Private Truck Fleet – Special Equipment (e.g., flat-bed, refrigerated, etc.)
_____ Private Rail Cars
_____ Rail Containers
_____ Other (please specify) _____

OUTBOUND TRANSPORTATION

- 4) What are the primary products you ship from your location?

Please list product type and provide STCC code if known:

a _____ b _____
c _____ d _____

- 5) What are the primary markets/final destinations for these products? Please list the top states or countries; (if the market is within 50 miles, please list cities or counties).

a _____ b _____
c _____ d _____

- 6) What are your fastest growing markets / products?

a _____
b _____

- 7) Approximately how many outbound shipments does your company make **weekly**?

a. _____ truckloads b. _____ less than truckload
c. _____ express package/air d. _____ rail car
e. _____ container f. _____ other _____

- 8) What is your estimated average shipment weight for products shipped by weight?

_____ pounds

- 9) What if any seasonal volume peaks do your outbound transportation needs experience?

- 10) On a scale from 1 to 10, with “1” being the least challenging, and “10” being the most challenging, how would you rate the following factors in making your transportation arrangements?

	IMPORTANCE TO YOU	
	Least Challenging	Most Challenging
a. Transit time/ on time delivery	1...2...3...4...5...6...7...8...9...10	
b. Cost (rates)	1...2...3...4...5...6...7...8...9...10	
c. Loss and damage	1...2...3...4...5...6...7...8...9...10	
d. Equipment availability	1...2...3...4...5...6...7...8...9...10	
e. Access to markets	1...2...3...4...5...6...7...8...9...10	
f. Shipment visibility / traceability	1...2...3...4...5...6...7...8...9...10	
g. Regulation	1...2...3...4...5...6...7...8...9...10	
h. Other:	1...2...3...4...5...6...7...8...9...10	

Inbound Transportation

- 11) What are the primary products that you receive or come into your location?
Please list product type and provide STCC code if known:
- a. _____ b. _____
- c. _____ d. _____
- 12) What are the primary origins of these products? Please list the top states or countries; if the market is within Colorado or Wyoming please list cities or counties.
- a. _____ b. _____
- c. _____ d. _____
- 13) Approximately how many inbound shipments does your company receive **weekly**?
- a. _____ truckloads b. _____ less than truckload
- c. _____ express package/air d. _____ rail car
- e. _____ container f. _____ other _____

14) What type of volume peaks do your inbound transportation needs experience?

15) Do you experience the same challenges with inbound transportation arrangements, as you do for outbound? If not, how do inbound challenges differ?

Railroad Service Questions: (Note: If you do not use rail services, skip to Question 22)

16) **Railroad Users:** a) What type of railroad carrier do you currently received service from?

- a. ____ Class I b. ____ Short line
c. ____ Both Class I and SL d. ____ Other / Don't know _____

Who is your primary rail carrier:_____

17) Do you have a rail siding serving your location? If not, how far is the nearest rail facility for the types of rail transportation you use?

- a. _____ Siding at location b. _____ Less than 1 mile
c. _____ 1 to 5 miles d. _____ 5 to 25 miles
e. _____ 25 to 50 miles f. _____ more than 50 miles

18) What type of rail facilities do you use to for shipping or receiving products?

- a. _____ Intermodal b. _____ Bulk transload
c. _____ Break bulk transload d. _____ Direct railcar service

19) What type of railroad equipment is used to move your products?

- a. _____ Container b. _____ Box Car
 c. _____ Hopper Car d. _____ Tanker Car
 e. _____ Other _____

20) How would you rate regional rail transportation based on the following performance factors?

	Poor	Excellent
a. Transit time/On-time service	1...2...3...4...5...6...7...8...9...10	
b. Cost (rates)	1...2...3...4...5...6...7...8...9...10	
c. Loss and damage	1...2...3...4...5...6...7...8...9...10	
d. Equipment availability	1...2...3...4...5...6...7...8...9...10	
e. Shipment visibility / traceability	1...2...3...4...5...6...7...8...9...10	
h. Other _____	1...2...3...4...5...6...7...8...9...10	

21) Are there any service or access improvements that would increase your current use of railroad transportation?

- a. No
 b. Yes, Please explain: _____

Air Cargo Service Questions:

22) Does your company use air cargo? (If "no" skip to question 25)

- a. _____ No If no, skip to question 31
 b. _____ Yes, If so, what is the service provider or type?
 i. _____ Express Carrier (e.g. FedEx, UPS, DHL)
 ii. _____ Freight Forwarder
 iii. _____ Charter

23) **Do you ship international air cargo?**

a. _____ No

b. _____ Yes, If so, what % is international?

What airport?

24) **What are the primary airports used for air cargo shipments?**

Domestic Air Cargo

International Air Cargo

a. _____ b. _____

General Transportation Opinions

25) What are the biggest challenges in creating greater efficiency in your supply chain?

	Least.....Greatest
a. Service availability	1...2...3...4...5...6...7...8...9...10
b. Technology / Information	1...2...3...4...5...6...7...8...9...10
c. Regulation	1...2...3...4...5...6...7...8...9...10
d. Workforce / labor access	1...2...3...4...5...6...7...8...9...10
e. Transportation infrastructure	1...2...3...4...5...6...7...8...9...10
f. Other (specify) _____	1...2...3...4...5...6...7...8...9...10

26) From your perspective, what are the weaknesses in the regional transportation system or the transportation services currently available in the region?

27) What would you consider to be the greatest transportation strength in the region?

28) What opportunities do you see for improving freight transportation in the Cheyenne Region?

29) Do you see any looming threats to the regional freight transportation system in Cheyenne?

Thank you for your time and assistance!

MEMORANDUM



To:

From:

Date: February 16, 2016

Project No.: 38-0103.00

Re: Freight Mobility Study Shipper/Receiver Interview Summary

The goal of the Cheyenne Freight Mobility Study is to gather information about how the key supply chains in the Cheyenne Region work. Interviews were conducted with shippers/receivers from September 2nd to October 5th to gather input about the condition, performance, and access to the Cheyenne regional transportation system from businesses' perspectives.

The information gathered from the interviews is summarized below.

1) Company Size

- a. Less than 10 Employees - 0
- b. 10-24 Employees – 1
- c. 25-49 Employees – 3
- d. 50-99 Employees – 0
- e. 100+ Employees – 7

2) Type of Business

- a. Transportation and Warehousing – 4
- b. Agri-Business – 1
- c. Manufacturing – 5
- d. Construction – 0
- e. Mining – 0
- f. Retail/Wholesale – 3
- g. Other – 1 (Energy Drilling), 1 (Refining)

3) Company Owned Transportation Assets

- a. Private Truck Fleet (# of Units)
 - i. 2 (1) [2 companies reported having 1 private truck]
 - ii. 1 (3)
 - iii. 2 (5)
 - iv. 1 (8)
 - v. 1 (27)
 - vi. 1 (30)
- b. Private Truck Fleet – Special Equipment
 - i. 3 [3 companies reported having special equipment]
- c. Private Rail Cars – 1 (2000 cars)
- d. Rail Containers – 0
- e. Other – 0

Outbound Transportation

4) What are the primary products you ship from your location?

- a. Food Items (2)
- b. Oilfield Equipment

- c. Salvage
- d. Safety hard goods
- e. Bottled gases
- f. Doors, Hardware, and Frames
- g. Apparel/shoes
- h. Outdoor gear
- i. Gasoline
- j. Diesel
- k. Asphalt
- l. Slurry
- m. Firearms accessories
- n. Beer
- o. Wine
- p. Spirits
- q. Steel Tubing
- r. Pesticides/herbicides
- s. Retail products (construction/home improvement)
- t. Fabricated steel

5) What are the primary markets/final destinations for these products?

- a. City of Cheyenne (2)
- b. West Coast
- c. North Dakota
- d. Montana
- e. Kansas
- f. Idaho
- g. Arizona
- h. Nebraska
- i. New Mexico
- j. Canada
- k. Ohio
- l. Texas
- m. California
- n. Utah
- o. Wyoming
- p. Rawlins, WY
- q. Riverton, WY
- r. Casper, WY
- s. Albany County, WY
- t. Goshen County, WY
- u. Niobrara County, WY
- v. Platte County, WY
- w. Laramie County, WY
- x. Fort Collins, CO
- y. Denver, CO
- z. Grover, CO

- aa. Salt Lake City, UT
- bb. Chicago, IL

6) What are your fastest growing markets / products?

- a. Markets
 - i. Colorado (3)
 - ii. Wyoming
 - iii. Online sales
- b. Products
 - i. Food trends
 - ii. Seafood
 - iii. Oilfield
 - iv. Medical supplies
 - v. Rifle stocks
 - vi. Builders hardware
 - vii. Home goods
 - viii. Bud Light

7) Approximately how many outbound shipments does your company make **weekly?**

- a. Truckloads
 - i. 1 (2) [2 companies reported making 1 weekly outbound shipment]
 - ii. 4 (1)
 - iii. 15 (1)
 - iv. 20 (2)
 - v. 24 (2)
 - vi. 35 (1)
 - vii. 45 (1)
 - viii. 55 (1)
 - ix. 150 (1)
 - x. 250 (1)
 - xi. 530 (1)
- b. Less than truckload - 0
- c. Express package/air - 0
- d. Railcar
 - i. 2/month
- e. Container - 0
- f. Other
 - i. 4x4x4 crates – biweekly or monthly

8) What is your estimated average shipment weight for products shipped by weight?

- a. Unknown (2) [2 companies reported that they do not know the average weight]
- b. Variable depending on products (3)
- c. < 20,000 lbs (1)
- d. 1,000 – 46,000 lbs (1)
- e. 12,000 – 20,000 lbs (1)
- f. 2,500 lbs (1)
- g. 26,000 lbs (1)
- h. 29,000 lbs (1)

- i. 45,000 lbs (1)
- j. 48,000 lbs (1)
- k. 80,000 lbs (1)
- l. 180,000 lbs/railcar (1)

9) What if any seasonal volume peaks do your outbound transportation needs experience?

- a. N/A (4)
- b. January – October (2)
- c. March – April
- d. May – September (2)
- e. August (start of school year)
- f. Labor Day
- g. 4th of July
- h. Black Friday (November)
- i. Super Bowl Weekend (February)
- j. Christmas season (late October to Thanksgiving) (3)
- k. Election season
- l. No seasonal peaks, dependent on construction projects and schedules
- m. Weather dependent, different products are needed depending on the amount rail/snow throughout the year

10) On a scale from 1 to 10, with “1” being the least challenging, and “10” being the most challenging, how would you rate the following factors in making your transportation arrangements?

- a. Transit Time/On Time Delivery
 - i. 1 (1)
 - ii. 2 (2) [2 respondents rated a 2]
 - iii. 3 (3)
 - iv. 5 (2)
 - v. 8 (2)
 - vi. 9 (1)
 - vii. 10 (4)
- b. Cost (rates)
 - i. 1 (2)
 - ii. 2 (2)
 - iii. 3 (2)
 - iv. 4 (2)
 - v. 5 (2)
 - vi. 6 (1)
 - vii. 9 (2)
- c. Loss and Damage
 - i. 1 (1)
 - ii. 2 (5)
 - iii. 3 (2)
 - iv. 4 (3)
 - v. 5 (2)
- d. Equipment Availability
 - i. 1 (1)
 - ii. 2 (4)

- iii. 3 (4)
 - iv. 7 (1)
 - v. 8 (3)
- e. Access to Markets
 - i. 1 (4)
 - ii. 2 (3)
 - iii. 3 (3)
 - iv. 4 (1)
 - v. 7 (1)
 - vi. 8 (1)
 - vii. 10 (1)
- f. Shipment Visibility/Traceability
 - i. 1 (5)
 - ii. 2 (5)
 - iii. 3 (1)
 - iv. 4 (1)
 - v. 5 (1)
 - vi. 8 (1)
- g. Regulation
 - i. 1 (4)
 - ii. 2 (4)
 - iii. 4 (3)
 - iv. 6 (1)
 - v. 8 (2)
 - vi. 9 (1)
- h. Other
 - i. 10 (Safety)

Inbound Transportation

11) What are the primary products that you receive or come into your location?

Please list product type and provide STCC code if known:

- a. Food (2) [2 companies reported hauling food]
- b. Paper goods
- c. Oilfield Equipment
- d. Safety hard goods
- e. Bottled gases
- f. Steel beams, angles, channels, plates, and tube
- g. Doors, hardware, and frames
- h. Apparel/shoes
- i. Outdoor gear
- j. Wine
- k. Catalyst
- l. Crude Oil
- m. LPG
- n. Spirits
- o. Herbicides/pesticides
- p. Dry grocery

- q. Produce
- r. Dairy
- s. Meat
- t. Raw materials
- u. Retail products (construction/home improvement)
- v. Beer
- w. Raw materials (steel)

12) What are the primary origins of these products? Please list the top states or countries; if the market is within Colorado or Wyoming please list cities or counties.

- a. Canada
- b. Mexico
- c. Ohio
- d. Texas
- e. North Dakota
- f. Montana
- g. Wyoming
- h. Colorado
- i. Nebraska
- j. California
- k. Arkansas
- l. Illinois
- m. Indiana
- n. Kansas
- o. Blytheville, Arkansas
- p. Baytown, TX
- q. Midlothian, TX
- r. Houston, TX
- s. Fort Collins, CO
- t. Denver, CO
- u. Palisade, CO
- v. Grover, CO
- w. Riverton, WY
- x. Casper, WY
- y. Rawlins, WY
- z. Salt Lake City, UT

13) Approximately how many inbound shipments does your company receive **weekly**?

- a. Truckloads
 - i. 1 (2) [2 companies reported receiving 1 inbound shipment per week]
 - ii. 4
 - iii. 5
 - iv. 10
 - v. 12
 - vi. 15
 - vii. 18 (2)
 - viii. 20
 - ix. 30

- x. 55
 - xi. 450
 - xii. 1050
- b. Less than truckload
 - i. 2
- c. Express package/air
- d. Railcar
 - i. 15
- e. Container
- f. Other
 - i. 4x4x4 crates – biweekly or monthly

14) What type of volume peaks do your inbound transportation needs experience?

- a. N/A
- b. January – September
- c. March – April
- d. May – September (2)
- e. April – September (summer season)
- f. Holidays
- g. August (start of school year)
- h. Election season
- i. Black Friday (November)
- j. Dependent on market for raw materials, materials are ordered when prices are low.
- k. Dependent on size of construction jobs (30-40 rail cars for a large job)

15) Do you experience the same challenges with inbound transportation arrangements, as you do for outbound? If not, how do inbound challenges differ?

- a. Yes (2)
- b. Depends on suppliers, suppliers pay and manage all inbound freight shipments
- c. Challenges with inbound do not exist as much as outbound due to the railroads not being busy at the current time.
- d. Issues with inbound ports for deliveries, Wyoming's ports are some of the strictest in the country.
- e. Railroad irregularities and delays.
- f. Difficult to get freight companies to haul to Cheyenne because they deadhead back to Denver. If there were more companies that needed freight hauled out of Cheyenne it would reduce the inbound costs.

Railroad Service Questions: (3) companies responded that they use rail

16) Railroad Users: a) What type of railroad carrier do you currently received service from?

- a. Class I (1)
- b. Short Line
- c. Both Class I and SL (2)
- d. Other

Who is your primary rail carrier?

- a. BNSF
- b. Union Pacific (3)

- 17) Do you have a rail siding serving your location? If not, how far is the nearest rail facility for the types of rail transportation you use?
- a. Siding at location (3) [3 companies reported having a siding at their location]
 - b. Less than 1 mile (0)
 - c. 1 to 5 miles (0)
 - d. 5 to 25 miles (0)
 - e. 25 to 50 miles (0)
 - f. More than 50 miles (0)
- 18) What type of rail facilities do you use to for shipping or receiving products?
- a. Intermodal (0)
 - b. Bulk transload (0)
 - c. Break bulk transload (1)
 - d. Direct railcar service (2) [2 companies reported having direct railcar service]
- 19) What type of railroad equipment is used to move your products?
- a. Container
 - b. Box Car
 - c. Hopper Car (1)
 - d. Tanker Car (1)
 - e. Other
 - i. Coil Car (1)
 - ii. Flatbeds with bulkheads (1)
- 20) How would you rate regional rail transportation based on the following performance factors?
Rank on a scale of 1 to 10, with 1 being the lowest and ten being the highest.
- a. Transit time/On-time service
 - i. 1
 - ii. 7
 - iii. 10
 - b. Cost (Rates)
 - i. 1
 - ii. 6
 - iii. 10
 - c. Loss and Damage
 - i. 2
 - d. Equipment availability
 - i. 1
 - ii. 8
 - e. Shipment visibility/traceability
 - i. 5
 - ii. 10
 - f. Other
 - i. 10 (Safety)
- 21) Are there any service or access improvements that would increase your current use of railroad transportation?
- a. No (2)

- b. Yes
 - i. More railcar storage capacity at UP Cheyenne yard to support demand at all times

Air Cargo Service Questions:

22) Does your company use air cargo?

- a. Yes (1)
 - i. Express Carrier (1)
 - 1. UPS
 - 2. FedEx
 - ii. Freight Forwarder (0)
 - iii. Charter (0)

23) Do you ship international air cargo?

- a. Yes
 - i. What Percentage
 - 1. 3% - 5%
 - ii. What airport
 - 1. Denver (DIA)

24) What are the primary airports used for air cargo shipments?

- a. Domestic Air Cargo
- b. International Air Cargo

General Transportation Opinions

25) What are the biggest challenges in creating greater efficiency in your supply chain? Rank on a scale of 1 to 10, with 1 being the least challenging and ten being the most challenging.

- a. Service availability
 - i. 1 (4) [4 respondents rated a 1]
 - ii. 2 (1)
 - iii. 4 (1)
 - iv. 7 (1)
 - v. 8 (1)
- b. Technology/Information
 - i. 1 (5)
 - ii. 2 (1)
 - iii. 4 (2)
 - iv. 7 (1)
- c. Regulation
 - i. 1 (5)
 - ii. 2 (1)
 - iii. 8 (2)
 - iv. 9 (1)
 - v. 10 (1)
- d. Workforce/labor access
 - i. 1 (3)
 - ii. 4 (2)
 - iii. 7 (1)

- iv. 8 (2)
- v. 10 (4)
- e. Transportation Infrastructure
 - i. 1 (2)
 - ii. 4 (1)
 - iii. 5 (1)
 - iv. 6 (1)
 - v. 7 (1)
 - vi. 8 (2)
 - vii. 10 (1)
- f. Other
 - i. 9 (2) – Weather

26) From your perspective, what are the weaknesses in the regional transportation system or the transportation services currently available in the region?

- a. Distance from major suppliers
- b. Cost
- c. Road conditions (2)
- d. FedEx service in Cheyenne
- e. Port Regulations
- f. Road closures (2)
- g. Christiansen Road access on east side of town has been delayed
- h. Capacity of transportation system in Colorado
- i. Wait time at fueling stations during peak times (morning hours)
- j. Lack of manufacturers in region outside of oil and gas companies
- k. Lack of parking availability when roadways are closed due to weather.
- l. Lack of manufacturers in region so inbound freight doesn't deadhead back to Denver.
- m. Local intersections
 - i. 24th/Evans – This intersection is located to the east of Cheyenne Regional Hospital, the hospital receives deliveries on this side of the building. Delivery trucks have a hard time getting in and out to make their deliveries because the intersection is small; this is a busy intersection; and the signal cycle length seems to be too short making long wait times.
 - ii. Storey/Sycamore – This intersection is located on the north side of town and provides access to Davis Hospice Center. The intersection is stop controlled for the Sycamore leg. It has poor sight distance for northbound traffic on Sycamore trying to turn onto Storey.
 - iii. Converse/VA Entrance – This intersection provides access to the northwest side of the VA Hospital. The roundabout at the intersection of Converse/19th/Pershing is located to the south of this access. Due to the nature of the roundabout there are fewer gaps in traffic heading north on Converse making it difficult for large trucks to turn onto Converse from the VA.
 - iv. Cleveland Place/Campstool – This intersection is located on the east side of town, east of the newly built Walmart. Campstool Road is two lanes in each direction approaching and west of Livingston Avenue and one lane in each direction east of the intersection. The reduction in lanes causes eastbound vehicles to speed up to merge resulting in faster speeds at the intersection of Cleveland Place. Trucks trying to enter traffic on Campstool from Cleveland

have a difficult time finding adequate gaps for them to accelerate into the traffic stream. If the dual lanes were extended to the east this would help slower vehicles entering traffic.

- v. College/Campstool and Livingston/Campstool – Striping is very faded and it is difficult to see where the lanes are. The traffic patterns recently changed due to the new Walmart and many vehicles do not know what lane they need to be in.
- vi. Lincolnway/Central Ave – The left turn lane from westbound Lincolnway onto southbound Central is very short which results in vehicles being backed up into the through lanes and through the intersection of Warren Ave. Turn signal phase may be too short.
- vii. Lincolnway/Warren Ave. – The left turn lane from eastbound Lincolnway onto northbound Warren is very short which results in vehicles being backed up into the through lanes. Turn signal phase may be too short.
- viii. Fox Farm/Walterscheid – This intersection is located on the south side of town south of I-80 and west of South Greeley Highway. The intersection is currently a 4-way stop which results in increased delays versus other intersection options such as a roundabout.
- ix. Fox Farm/Avenue C - This intersection is located on the south side of town south of I-80 and east of South Greeley Highway. The intersection is currently a 4-way stop which results in increased delays versus other intersection options such as a roundabout.
- x. Dunn/Nationway – This intersection is located just south of Lincolnway. It is difficult for large vehicles to find a gap to enter the traffic stream from Dunn onto Nationway. Vehicles on Nationway are travelling too fast and there are not adequate gaps in traffic to allow for large vehicles to accelerate.

27) What would you consider to be the greatest transportation strength in the region?

- a. I-25 and I-80 corridors (9)
- b. ABF, North Park, Conway, etc. access to freight carriers
- c. Lack of traffic congestion
- d. Class I railroads at Swan Ranch
- e. WYDOT working to keep roads open
- f. WYDOT's system for weather notifications
- g. Fast service
- h. Population base for finding employees
- i. Port employees and highway patrol are very good

28) What opportunities do you see for improving freight transportation in the Cheyenne Region?

- a. Fast service at a reasonable cost
- b. Improve road closure notification system (2)
- c. Provide alternate routes when roads are closed for weather
- d. Eliminate 4-way stops and construct roundabouts
- e. Construct the Christiansen Road project on east side of Cheyenne
- f. Increase the number of manufacturers in region so railroads and freight carriers see the demand and opportunities and will provide better service and pricing. (2)
- g. Improve the quality of the highways.
- h. Improve Dell Range Boulevard and the access for trucks into to retailers along corridor.

- i. Expanding UP rail yard in Cheyenne to accommodate more cars and allowing trucks to carry more weight

29) Do you see any looming threats to the regional freight transportation system in Cheyenne?

- a. No (3)
- b. Weather patterns
- c. Distance to major suppliers
- d. Economy with regards to oil and gas and school spending.
- e. Deteriorating infrastructure, everything is being patched rather than fixed for the long term.
- f. Retaining younger people to work
- g. Quality of the labor pool
- h. Lack of maintenance on transportation system.
- i. Lack of drivers with CDL licenses.
- j. Changing regulations for drivers regarding driving times, HazMat, etc.

General Comments

- There seems to be a big problem finding qualified, competent labor. Many companies do not have an issue filling positions but have problems finding people who are competent at their positions. The companies who are able to find competent able labor are forced to pay higher wages to retain those employees. There seems to be a lack of CDL licensed drivers and many companies have to take it upon themselves to train drivers for their CDL tests.
- The location of Cheyenne at the intersection of I-25 and I-80 is an advantage to many companies. The ability to get freight into and out of town is good, however many companies are paying to ship materials to Cheyenne then paying for empty trucks to head out. If there were more opportunities for trucks to leave Cheyenne full then the prices may become more competitive.
- The road conditions during the winter cause a lot of issues for companies with trucks utilizing the interstate. The alert system is pretty good currently but when the interstate does close there are a lot of trucks that get stuck in Cheyenne. The services available are overwhelmed when there are a large number of trucks staying in the area for an extended period of time. I-80 currently has variable speed limit signs posted but very few vehicles obey the signs, enforcement of the lower speed limits may force drivers to obey the reduced speed limits and reduce the number of crashes that occur on the interstate during inclement weather.

The following companies were interviewed:

1. Airgas – September 2nd
2. Doorways of Wyoming – September 3rd
3. Lowes – September 4th
4. Strata Energy – September 9th
5. Sierra Trading Post – September 9th
6. Walmart – September 9th
7. Orrison Distributing – September 10th
8. Puma Steel – September 10th
9. Laramie County School District #1 – September 14th
10. Searing Industries – September 15th
11. Van Diest Supply Company – September 16th
12. Magpul – September 22nd
13. King Soopers – September 24th
14. Wyoming Liquor Division – September 29th
15. Holly Frontier – October 5th

Companies that were contacted throughout the process but we were unable to set up meetings with include:

1. Albertsons
2. Dyno Nobel
3. Suburban Propane
4. Wyco Pipeline Company
5. MCJunkin Red Man Corporation
6. Teton Distributors
7. Truss Craft

Cheyenne Regional Freight Mobility Study

Motor Carrier / 3PL- Survey Instrument

Purpose:

- 1) Develop a better understanding about highway freight movements in the Cheyenne Region.
- 2) Identify key motor carrier stakeholders for continuing engagement/dialogue.
- 3) Identify bottlenecks or deficiencies in the current transportation systems that hamper efficient freight operations in the Cheyenne Study Area.

NOTICE TO SURVEY RESPONDENTS

All information provided by this survey will remain strictly confidential. No statements or other information will be linked directly to individual respondents in any publication without the express permission of the respondent (i.e. the respondent would be contacted after the survey for permission to attribute any data or quotations). Demographic, organizational, and other individual information collected from survey respondents will be released only to members of the project team and staff acting on their behalf in the course of project-related activities only, including for record-keeping and follow-up purposes. Demographic, organizational, or data related to respondents will be reported only in aggregate formats with other survey responses.

Cheyenne Regional Freight Mobility Study Survey Carriers and 3PLs

- 1) **Company Size:** How many full-time employees does your company employ in the Pacific Hub Region (based on the locations listed above)? Please check the category applicable to your firm:

A. ____ Less than 10 employees B. ____ 10 - 24 employees

C. ____ 25 - 49 employees D. ____ 50 - 99 employees

E. ____ 100+ employees

- 2) How many power units currently operate out of your terminal location?

a. ____ 1 – 10 b. ____ 11 – 25 c. ____ 26 – 50 d. ____ over 50

- 3) Are you a private or “for-hire carrier”

a. ____ For-hire

b. ____ Private

- 4) How would you describe your services (check all that apply)

a. ☐ LTL

b. ☐ Truckload

c. ☐ Express Package

d. ☐ Intermodal
drayage

e. ☐ Specialized

f. ☐ Other:

(e.g. 3PL, warehouse, order fulfillment, construction industry, waste mgmt, etc.)

- 5) What are the primary commodities being hauled by your operation?

a. ☐ General Freight

b. ☐ Bulk (e.g. aggregate, grain, fertilizers, pellets, etc.)

c. ☐ Garbage or refuse

d. ☐ Construction Materials

e. ☐ Bulk liquids (e.g., Petroleum)

f. ☐ Specialized Haulage (temp. control, heavy equipment)

g. ☐ Other: _____

6) What is the geographic area covered by your fleet/terminal?

- | | |
|---|--|
| a. <input type="checkbox"/> Local | b. <input type="checkbox"/> Intra State (Wyoming/Colorado) |
| c. <input type="checkbox"/> Regional (Mtn west) | d. <input type="checkbox"/> Long haul domestic |
| e. <input type="checkbox"/> Long haul international | f. <input type="checkbox"/> Other _____ |

7) What are the primary origins and destinations for the commodities you haul? In serving these locations, what are the primary regional routes that your drivers use?

Origin

Destination

a. _____

Route _____

b. _____

Route _____

c. _____

Route _____

d. _____

Route _____

8) Do your drivers generally use the route that is the shortest distance between the pick up and delivery?

_____ Yes

_____ No, if not, what causes them to use a more circuitous route?

- 9) We would like you to identify areas on the Cheyenne Regional highway system where your drivers experience operational or safety problems. Examples of operational problems that hinder truck movements include:

- Route or bridge restrictions
- Insufficient turning radius,
- Poor traffic signal timing,
- Poor or inadequate signs,
- Intersection conflicts or at-grade railroad crossings.

Please indicate the location of your most difficult problem area(s) and provide a brief description of the problem at that location. Identify locations where your drivers experience the worst traffic problems - bottlenecks that hinder their ability to make pick-ups or deliveries in a timely fashion.

Location Brief Description of Problem

1

2

3

4

5

6

- 10) Are you aware of any issues in the region with regard to truck parking or access to services?

☐ No ☐ Yes, if so, can you please explain?

-
- 11) Would you consider allowing us to post a regional map in your driver break room where drivers could comment on challenges they face when hauling in the region?

☐ Yes ☐ No

Thank you for your cooperation.

MEMORANDUM



To:

From:

Date: October 27, 2015

Project No.: 38-0103.00

Re: Freight Mobility Study Motor Carrier Interview Summary

The goal of the Cheyenne Freight Mobility Study is to gather information about how the key supply chains in the Cheyenne Region work. Interviews were conducted with motor carriers in October to gather input about the condition, performance, and access to develop a better understanding about the freight movement in the Cheyenne Region.

The information gathered from the interviews is summarized below.

1) Company Size

- a. Less than 10 Employees - 0
- b. 10-24 Employees - 1
- c. 25-49 Employees - 0
- d. 50-99 Employees - 1
- e. 100+ Employees - 2

2) How many power units currently operate out of your terminal location?

- a. 1 - 10 = 0
- b. 11 - 25 = 2
- c. 26 - 50 = 2
- d. Over 50 = 0

3) Are you a private or "for-hire carrier"?

- a. For Hire = 2
- b. Private = 2

4) How would you describe our services?

- a. LTL = 1
- b. Express Package = 2
- c. Construction = 1

5) What are the primary commodities being hauled by your operation?

- a. General Freight = 2
- b. Mail = 1
- c. Construction Materials = 1

6) What is the geographic area covered by your fleet/terminal?

- a. Local plus Casper and Denver
- b. Nebraska, Northern Colorado, Wyoming (statewide)
- c. Wyoming, Nebraska, and Colorado
- d. Burns, Carpenter, Pine Bluffs, Kimball, Cheyenne, Fort Collins

7) What are the primary origins and destinations for the commodities you haul? What is the primary route?

Origin	Destination
a. Westland Road	Casper, WY
i. Route: Westland Road to Missile Drive to I-25	
b. Westland Road	Denver
i. Westland Road to Missile Drive to I-25	
c. Denver or Nebraska or Laramie	Converse Ave
i. I-80 to College to Dell Range to Converse	
d. Converse Avenue	Casper
i. Storey to Powderhouse to Four Mile to Yellowstone to Iron Mountain to I-25	
e. Granite Canyon	S. Industrial Road
i. College Drive to I-80 to Harriman Exit	

8) Do your drivers generally use the route that is the shortest distance between pick-up and delivery?

- a. Yes = 1 (product software calculate shortest route and drivers must follow that route)
- b. No = 3
 - i. Try to stay out of the center of town
 - ii. Drivers don't take Storey and Yellowstone to get to I-25 because of the two school zones (Hobbs and Davis)
 - iii. Don't want drivers going on Dell Range between Yellowstone and Converse
 - iv. Avoid Ames underpass because of the restricted clearance

The following companies were interviewed:




- 1. Simon Contractors
- 2. North Park Transport
- 3. United States Postal Service
- 4. United Parcel Service



Cheyenne Regional Freight Mobility Study: Truck Driver Issues Survey

The Cheyenne MPO is undertaking a Freight Mobility Study to examine the regional freight system and identify freight related transportation investments in the region. A key component of the study effort is gathering information from companies that use the transportation system to freight on a daily basis. One of the users segments we most want to hear from are truck drivers that routinely navigate the highway system in and around Cheyenne.

To gather input from regional truck drivers in a cost effective manner we are posting maps of the Cheyenne highway and street network at trucking terminals around the area. We invite you to provide your input by using the numbered dots provided with these maps. Please read the instructions below and write a brief description of the issue you wish to identify next to the line number which corresponds to the number on the dot:

-  **Traffic Issues:** Place a blue dot on the map where you have experienced traffic issues in and around Cheyenne: Examples include signals poorly timed for trucks, lack of curb-side parking, inadequate acceleration lanes, poor directional signage, etc.
-  **Infrastructure Deficiencies:** Place a green dot on the map where you have experienced problems in and around Cheyenne due to the condition of existing infrastructure: Examples include potholes on truck routes, low bridges or posted bridges; insufficient turning radii in an intersection, poorly designed intersections or approaches, etc.
-  **Safety Problems:** Place a red dot on the map where you have experienced safety problems in and around Cheyenne: Examples include intersections where trucks must encroach on other traffic lanes to turn, conflicts with pedestrians or bicycle lanes, raised at-grade rail crossings, etc.

Cheyenne Regional Freight Mobility Study

December 9th, 2015: 7:45 a.m. – 11:45 a.m.

The Freight Forum was held at the Laramie County Library. Attendance sheet is included at the end of these notes. 12 people signed in to the meeting with 6 additional attendees from the consultant team and MPO.

At-large participants were identified/notified through two primary means. 1) Companies who had participated in stakeholder interviews were invited to attend the workshop. Ayres Associates sent 3 invitations via USPS, and 20 via e-mail. 2) Cheyenne LEADS (Cheyenne – Laramie Country Corporate for Economic Development) did a one-time e-mail blast to their membership with an invitation to the workshop. In total more than 400 invitations to the workshop were sent to businesses and individuals in the Cheyenne Area. All members of the study steering committee were also invited to the workshop. The invitation is included at the end of these notes.

Following the meeting members of the consultant team met and debriefed Sara Thompson Cassidy, Director of Public Affairs for Union Pacific RR in Colorado and Wyoming, and Anja Bendel of Cheyenne LEADS. Both Sara and Anja had unexpected conflicts arise that conflicted with attending the workshop.

The workshop began with a power point presentation and discussion from Mark Berndt, Clyde Prem, and Darci Hendon of the consultant team. A PDF of the PowerPoint slides is provided as an attachment. The presentation was intended to provide the following information to workshop attendees:

- An overview of the study purpose, goals and work plan
- A review of key tasks completed to date including:
 - Regional inventory of modal assets used to move freight in, out within and through the region.
 - Key trends and issues affecting freight movement in the region.
 - Preliminary data about key markets and key commodities movements.
 - A summary of stakeholder outreach efforts and notable information heard from area businesses.
- A review of the consultant team members and study schedule

Comments/Discussion following the presentation included:

- Slides with inbound/outbound percentages for coal need to be further researched.
- Campstool Business Park is to be added to the map. Businesses within Campstool Business Park were identified on the map but the Business Park was not called out specifically and was lumped together with LEADS Business Park.
- Swan Ranch currently has 15-16 miles of track, not 3 as identified on the slide.
- Truck parking counts don't include the nearby lots just outside of the MPO boundary (WYDOT lot off I-80 and TA Center). Perhaps these should be added/discussed as they

influence the parking that happens inside the boundary. Pilot truck stop lists 120 available spots – there aren't that many spots

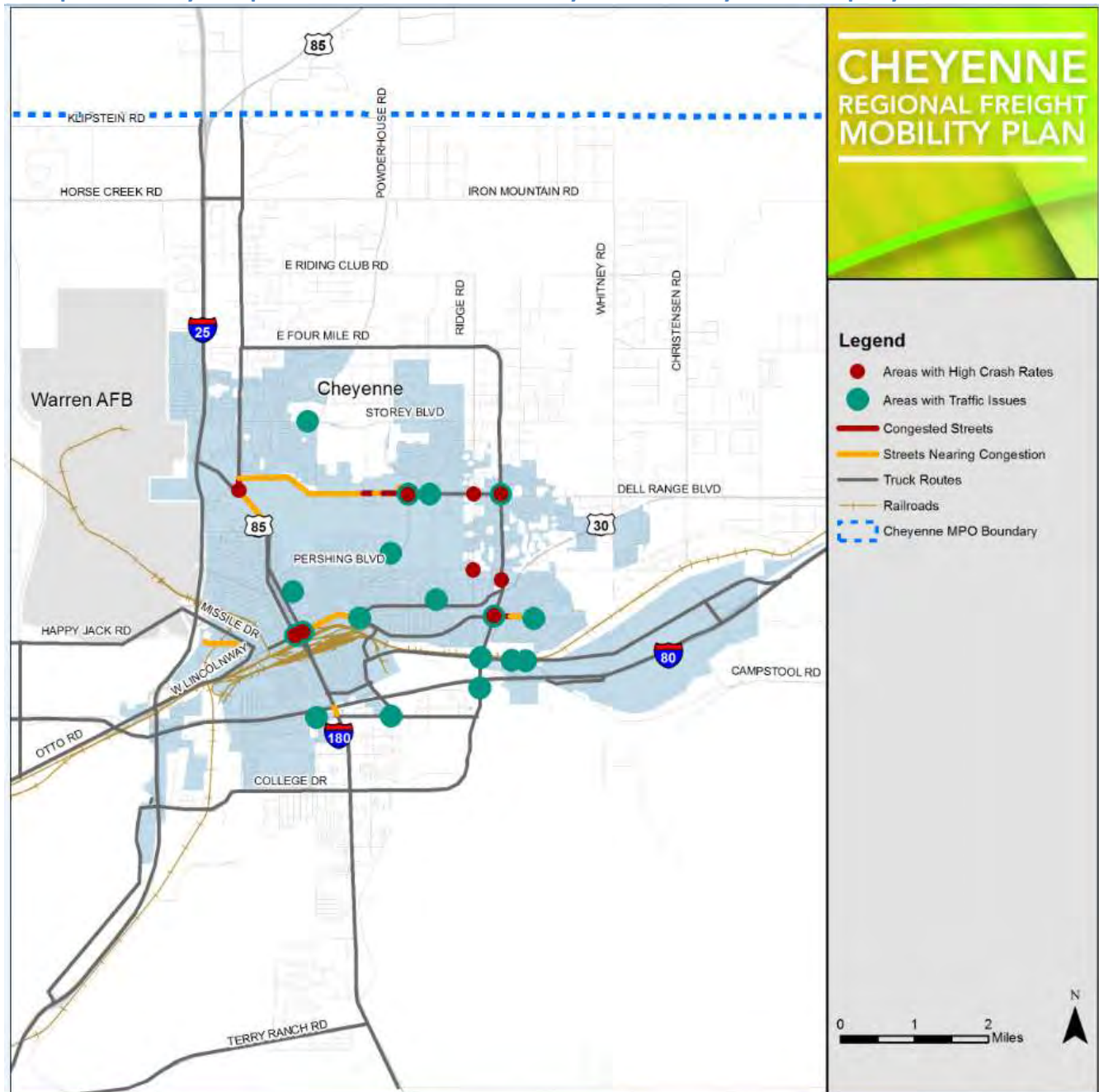
- Slide showing condition of Laramie County roads is only indicating rut depth, there are other measures which result in some routes not being in good condition.
- Three at-grade crossings were shown on the figure which do not exist as at-grade crossings. These are:
 - Co Rd 212 (Grade Separated)
 - Morrie Ave. (Grade Separated)
 - Otto Rd. (Private crossing)
 - Pershing Blvd. (Grade Separated)
- WYDOT has developed their own hazard crossing formula to evaluate at-grade crossings.
- Wyoming recently received a USDOT Connected Vehicles technology grant. Wyoming is just one of three grant recipients, and the only state DOT to receive a grant (New York City and Tampa Bay were the other two grant recipients). Wyoming project is also the only one to concentrate on commercial vehicles. The Wyoming project will focus on the efficient and safe movement of freight through the I-80 east-west corridor. Connected vehicle technologies hold the promise of changing the way we think of transportation significantly.
- A company recently purchased land in Campstool Business Park. They manufacture Mr. Coffee brand items.

Following the PowerPoint Q & A participants were given a break. It was also noted that because the attendance was smaller than expected, instead of breaking into smaller groups after the break, the group would be engaged in a full group discussion.

After the break attendees were given the map on the following page, along with a participants guide that was to be used for taking notes and providing written feedback. Participants were asked to hand-in their worksheets at the end of the session.

Mark Berndt lead the facilitated discussion which would cover both Operational Issues identified during truck driver surveys and company interviews, as well as, policy issues that were heard during interviews. The questions covered during the discussion begin on the next page.

Map: Summary of Operational Issues Identified by Driver Surveys and Company Interviews



Q1: What did you hear from this morning's speakers that stood-out to you? Why?

- Truck parking issues
- Need interconnectivity between WYDOT, County, City, and private companies to plan for the future and make sure the important issues are brought to light and incorporated into the final plan.
- The need for more community discussion on freight transportation issues: Chamber of Commerce and LEADS are available for discussion but their members pay to belong to

the organizations. As a consequence of the payment for membership the members are not as open to discussion.

- Communication seems to be getting better with more forums offered in the past couple years for discussion and coordination between groups.
- The directional traffic levels reported by companies interviewed (e.g. 530 outbound and 1050 inbound): it is surprising that inbound is roughly twice the level of outbound; is this imbalance something that can be capitalized on in the future? Think about how you can market to companies to move here by showing them the opportunity that is available to ship outbound.
 - Mark stated that “unbalanced traffic lanes” are fairly common and may provide an opportunity for economic development. i.e. Companies that can fill trucks returning empty to their origin maybe able to get a better “back-haul” rate.
- Seems that there has not been a lot of input from all of the companies up to this point and there haven’t been a lot of forum discussions leading up to the information that is presented. It would be helpful to figure out a way to include more companies and agencies into the design and report compilation. A better way to communicate and include companies and a way to attract companies to these forums needs to be developed.
- Give an opportunity to other businesses to send personal invitations and provide a shorter time frame for a meeting to discuss these issues (7:45-noon is a large chunk of time for most businesses). Chamber of Commerce or LEADS could take a lead on inviting participants to these forums and discussions.

Q2: Each of you represents different organizations. From your perspective what are some outcomes or goals that the Regional Freight Mobility Plan should achieve?

- Identification of issues throughout the region
- City Engineering Department would like more information about the identified problem areas so “low hanging fruit” can be identified and addressed.
 - *Follow-up note – Darci Hendon from Ayres Associates e-mailed the complete “identified locations” document to City Engineer, John Hall, following the meeting.*
- It would be helpful to identify the issues that could be fixed at a low cost and have an impact to the community quickly.
- It would be helpful to overlap the WYDOT graphs and data to show where people are living versus where the truck traffic is coming through.
- Identification of economic development opportunities (promoting companies to utilize the deadheads that are coming out of the region)

Q3: During our outreach with businesses and shippers in the community a number of policy issues were raised. Are there issues that you believe should be added to the list? Issues you believe are equally important or more important to freight mobility in the region?

- No access to transportation and warehousing program, having a program at LCCC would be helpful

- Employee retention is an issue
- Employees are coming from northern Colorado and Western Nebraska
- Lowes runs their own warehouse employee training every couple of weeks, because of retention and turnover issues.
- Advertise what CDL truck drivers are paid (often they make a lot more than what people think and that may be an attractor for many people).
- The oil industry and fracking were stealing much of the available labor pool for a while. The salaries paid in the private sector also makes it hard for the public sector to compete, causing a retention issue for the public sector as well.
- Companies are having to go further to get employees which causes issues with retention and getting people to work
- How are the changes to the trucking industry and regulations going to impact the transportation and warehousing industry?

Q4: What actions are you aware of that may be underway in the region to address some of these issues?

- There seems to be a focus on attracting data centers.
- LEADS does a great job with business recruitment, but there doesn't seem to be much focus on transportation issues such as workforce needs.

When asked who should lead the discussion about transportation issues/workforce needs, LEADS and the Chamber of Commerce were mentioned as possibilities.

Q5: What other strategies/policies should the region consider to address these issues?

- There needs to be more focus on attracting rail transport and filling railcars at Swan Ranch – transload facility. Lowe's indicated that they ship 15 containers via truck per day to Denver to a rail yard.
- There are a lot of materials and products that are currently being trucked into Cheyenne that should be brought in on rail
- Cost of over-dimension/overweight trucking (permitting) through region discourages a lot of companies from operating through the area
- It is hard to find the data about commodities, markets and the number of trucks and level of shipping activity. This type of data might be useful for presenting information to companies to attract them to the region. It would be helpful to have that data.

Q6a: During our outreach with business shippers in the community a long list of intersection improvements and other potential improvements were identified. Are there locations that you believe should be added to this list?

- Christensen Road overpass needs to be built in the near future. This would have a huge impact on the College Drive interchanges. Trucks take the Pershing exit and then get stuck at the dead end of Christensen Road on the north side of the tracks. Google Maps incorrectly identifies Pershing as the route to take. Google has been notified repeatedly about this error but it is still a problem.

- I-80 and I-25 interchange needs to be identified as a problem spot, the configuration is a clover leaf which is not used anymore.
- Southwest Drive intersection with the railroad needs to be grade separated due to the amount of vehicles and trucks using the routes. Not identified as a truck route but there are a lot of businesses and development opportunities in the area. There is opportunity for economic growth if this is fixed. The problem is that this is a high volume crossing and often completely shuts down vehicle traffic to this road. The south end of Southwest Drive is signed as no trucks allowed and the north end is the at-grade crossing.
- Port of Entry location really affects the traffic flow in and out of Swan Ranch right now. The location forces trucks to use the College Drive interchange to access Swan Ranch which congests the whole interchange, whenever the load status is changed trucks are forced to enter again. It would be helpful to move the Port of Entry to an interchange. A study has been done to look at the possibility of a joint port with Colorado. WYDOT is pursuing discussions with Colorado.
- High Plains interchange is not conducive to longer load truck traffic with the roundabouts. Need to redo the curb around the truck apron to allow for the rear wheels to ride up onto the curb versus skirting the curb. Trucks hauling wind blades and laminated beams use this interchange and have a hard time both when they are loaded and when they are empty.
- College Drive/I-25 diverging diamond does not allow for windmill blades to go through the intersection adding 15-20 minutes to their drive times. Needs some modifications to accommodate larger loads (9-10 trucks per day when blades are being transported here.)
- Development of wind energy sector needs to be taken into account during the design of roadways and truck routes (possibly identify superload corridor).
- The Fox Farm Road study addressed some of these concerns with the I-80 and College interchanges.
- Three interchanges need to be updated:
 - I-25 and I-80
 - I-80 and College
 - I-80/I-25 and Lincolnway

Q6b. Are there other traffic issues you believe are equally or more important to freight mobility in the region?

- Signage identifying where to exit if the interstate is closed to different types of traffic (ie: different weights during high wind.)
- Sharing of information between CDOT and WYDOT to allow for truck drivers to make decisions on their routes earlier
- I-80 Coalition provides coordination between states along I-80
- Truck route needs to be identified and signed to allow for truck drivers to be aware of the routes (possibly signs on the interstate identifying exits to take to access business parks)

- Provide a signage program to allow for the larger distribution centers to provide signage for their facilities
- Truck parking – when interstate is shut down trucks park anywhere they can find a spot including on Overland Trail and Clear Creek Parkway off of Campstool. Many of these roads don't have a pavement section to support trucks and this is causing issues at the edge of pavement/shoulder. Trucks are illegally parking on private property.
- Mark Berndt discussed what other states are doing to offer truck parking including using bus terminals during the night time hours, creating smart phone apps which identify number of parking spaces available at various participating truck stops, "renting"/reserving parking spaces via an app, etc. Mark stated that truck parking is an issues all over the country.

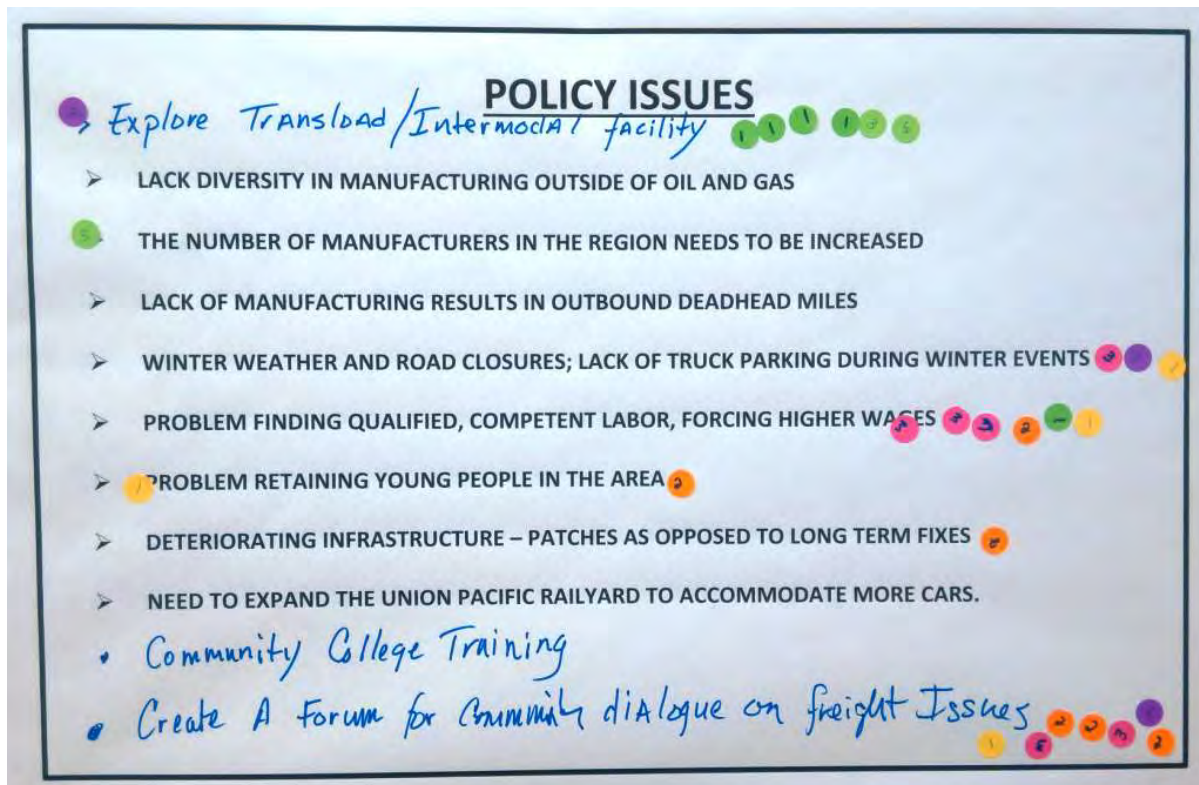
Q7: Given the rather lengthy list of potential projects that have been identified, what performance measures or process should the MPO apply to the project ranking process? Traffic levels? Safety? Other?

- I-80/I-25 Interchange
- Campstool/Christensen Road Bridge (help alleviate traffic throughout the region, allow for hazardous materials to be taken around the City versus through the City)
- Wayfinding signs to major freight hubs
- High Plains Interchange (truck access)
- Port of Entry location
- College Drive diverging for long load trucks
- Southwest Drive rail crossing
- Campstool to College
- South Industrial to College
- College Drive/I-80 Interchange and ramps
- Dell Range corridor
- Truck parking availability
- Additional companies were identified which would be a good source of additional information/feedback:
 - Wyo Machinery
 - Volvo Rents
 - MaxxFleet Automotive
 - Franks International
 - Conway
 - Schlumberger
 - MRC Global
 - Fed Ex Ground
 - Bar S (Oilfield work)

Q8. Participants were given the opportunity to vote for their top 3 most important topics for (1) Policy and (2) Infrastructure Issues. Photos of these results are included. The top 3 results are listed:

POLICY ISSUES:

1. Explore a Transload/Intermodal Facility in the region
2. Finding qualified, competent labor, forcing higher wage
3. Create a forum for community dialog on freight issues



OPERATIONAL ISSUES:

1. Campstool/Christiansen Road Interchange is needed
2. Truck Parking
3. Based on voting, the #3 slot is tied between:
 - I-80 / I-25 Interchange Reconstruction
 - Port of Entry Location
 - Wayfinding Signs to Major Freight Hubs
 - Campstool / College / I-25 Corridor Improvements

Operational Priorities

- I-80 / I-25 Interchange
- Campstool / Christensen Rd
- Wayfinding Signs to major freight hubs
- High Plains Round About
- Location of POE
- College Drive Diverging Diamond
- Campstool / College

Op Priorities

- South Industrial / College
- Dell Range Blvd
- Truck Parking Availability

③ Additional Op Issues

- ① - Campstool / Christensen Rd OVERPASS
- I-80 / I-25 Interchange
- SW Drive Crossing
 - ↳ Really is a truck route
 - Portion of SW Drive is posted
- POE Location Affects Swan Ranch
 - Forces trucks thru interchange
- Joint POE w/ CDOT
- High Plains interchange not conducive to Trucks - Curb is too steep
- I-25 / College

IDENTIFIED TRAFFIC/INFRASTRUCTURE ISSUES

➤ **24TH STREET AND EVANS AVENUE**

- INTERSECTION SIZE AND TURNING RADIUS ISSUES FOR LARGE VEHICLES
- SIGNAL TIMING

➤ **STOREY BOULEVARD AND SYCAMORE ROAD**

- SIGHT DISTANCE FROM SYCAMORE ROAD ONTO STOREY BOULEVARD

➤ **CONVERSE AVENUE AND VA ENTRANCE**

- EXITING ONTO CONVERSE AVENUE IS DIFFICULT, NO GAPS IN TRAFFIC

➤ **DELL RANGE BOULEVARD AND WINDMILL ROAD**

- DECELERATION LANES NEEDED FROM DELL RANGE BOULEVARD ONTO WINDMILL ROAD

➤ **DELL RANGE BOULEVARD AND CONVERSE AVENUE**

- TURNING RADIUS TOO SMALL ON SOUTHEAST CORNER

➤ **HENDERSON DRIVE AND OMAHA DRIVE**

- SIGNAL OR 4-WAY STOP IS NEEDED

➤ **DUNN AVENUE AND NATIONWAY**

- ACCESS ONTO NATIONWAY IS DIFFICULT, NO GAPS IN TRAFFIC

➤ **CLEVELAND PLACE AND CAMPSTOOL ROAD**

- ACCESS ONTO CAMPSTOOL ROAD IS DIFFICULT, NO GAPS IN TRAFFIC
- DUAL TRAVEL LANES NEED TO BE EXTENDED TO THE EAST

➤ **COLLEGE DRIVE AND CAMPSTOOL ROAD**

- STRIPING IS FADED AND LANE DELINEATION IS HARD TO DETERMINE

➤ **COLLEGE DRIVE AND DELL RANGE BOULEVARD**

- LEFT TURN LANE FROM COLLEGE DRIVE ONTO WESTBOUND DELL RANGE BOULEVARD IS TOO SHORT

➤ **COLLEGE DRIVE AND 12TH STREET**

- LEFT TURN LANE FROM COLLEGE DRIVE ONTO WESTBOUND 12TH STREET IS TOO SHORT

➤ **SOUTH INDUSTRIAL ROAD AND COLLEGE DRIVE**

- ACCESS ONTO COLLEGE DRIVE IS DIFFICULT FOR LARGE TRUCKS, NO GAPS IN TRAFFIC

➤ **12TH STREET AND SUN VALLEY DRIVE**

- DANGEROUS INTERSECTION FOR CROSS TRAFFIC AND PEDESTRIANS

➤ **LIVINGSTON AVENUE AND CAMPSTOOL ROAD**

- STRIPING IS FADED AND LANE DELINEATION IS HARD TO DETERMINE

➤ **LINCOLNWAY AND CENTRAL AVENUE**

- LEFT TURN LANE FROM LINCOLNWAY ONTO SOUTHBOUND CENTRAL AVENUE IS TOO SHORT

➤ **LINCOLNWAY AND WARREN AVENUE**

- LEFT TURN LANE FROM LINCOLNWAY ONTO NORTHBOUND WARREN AVENUE IS TOO SHORT

➤ **FOX FARM ROAD AND WALTERSCHEID BOULEVARD**

- 4-WAY STOP CAUSES INCREASED DELAYS, INVESTIGATE A ROUNDABOUT INTERSECTION

➤ **FOX FARM ROAD AND AVENUE C**

- 4-WAY STOP CAUSES INCREASED DELAYS, INVESTIGATE A ROUNDABOUT INTERSECTION



Join Us for the Cheyenne Regional Freight Forum

Cheyenne Regional Freight Forum

When:

Wednesday
December 9, 2015
7:45–Noon

Where:

Laramie County
Public Library
Willow Room
2200 Pioneer Ave.
Cheyenne, WY 82001

Agenda:

7:45–8:15	Registration
8:15–8:30	Welcome
8:30–9:30	Consultant Presentation
9:30–10:00	Break
10:00–11:15	Group Discussion
11:15–11:30	Break
11:30–Noon	Report Out & Adjourn

RSVP to:

Darci Hendon
Ayres Associates
(307) 634-9888 ext. 3593, or
HendonD@AyresAssociates.com

On December 9th from 7:45 to Noon at the Laramie County Library / Willow Room, Share Your Opinions About the Movement of Freight and its Impact On:

- The region's competitive advantages relative to transportation and warehousing services;
- Ideas and perspectives about potential opportunities and challenges that could enhance the economic health of the region specifically related to transportation/freight/trade/economic development;
- Focus attention toward the "next steps" required to achieve success.

Staff from the Cheyenne MPO and the project consultants will be on hand to listen to your ideas and answer your questions.

At the business forum, you will be provided an overview of the study, findings from the regional freight inventory and hear the input we have received from regional businesses about freight concerns and bottlenecks in the Cheyenne Region. We will be asking for your input to verify these issues as we develop our recommendations related to the strengths, opportunities and challenges facing freight mobility and competitiveness in the Cheyenne area.

After the workshop the consultants will develop recommendations to address freight issues and constraints.



Sign in Sheet

Stakeholder Forum Cheyenne Regional Freight Mobility Study Cheyenne Metropolitan Organization

December 9, 2015

Name	Address	Email (if available)
Angela Stauffer	WYDOT Cheyenne	astuffer@wydot.wy.gov
Joe STEPHENSON	Granite Peak Group	jstephen@the-granite-peaks.com
J. Fred Volk	Capital Land Group / #1 Properties	jfred.volk@cheyanneproperties.com
Ed Fritz	WYDOT, Cheyenne	ed.fritz@wyo.gov
MARK WINGATE	WYDOT, CHEYENNE	mark.wingate@wyo.gov
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ROB GERINGER	Laramie County Public Works	rgeringer@laramiecounty.com
Sally Stainbank	Lowes Distribution Center	sally.d.stainbank@lowes.com
Sayashi Chakraborty	MPG	s.chakraborty@cheympo.org
Wendy Volk	#1 Properties, 16106 Yellowstone	wendy.volk@cheyannehomes.com
JOHN HALL	CITY ENGINEER'S OFFICE	jhall@cheyennecity.org
Nathan Beamlein	City Engineer's Office	nbeamlein@cheyennecity.org






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Cheyenne Regional Freight Mobility Plan

Overview Agenda




- What is the Plan? What does it seek to accomplish?
- Why is the plan important?
- Who is doing the plan?
- How long will the plan take to complete?
- Why are we here today?



What is the Plan?

Study Goals and Objectives

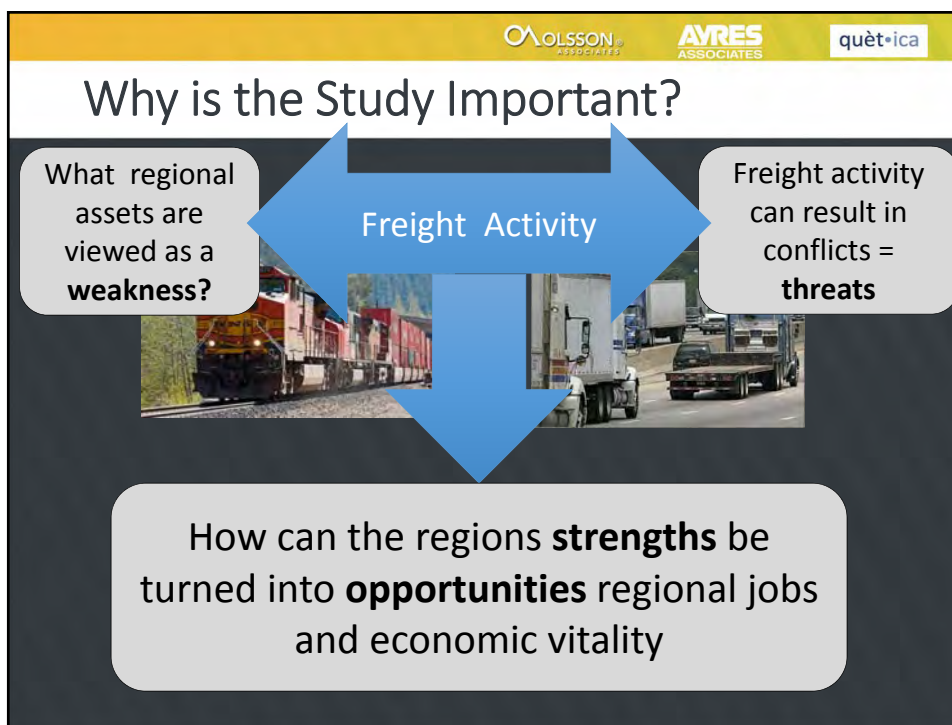
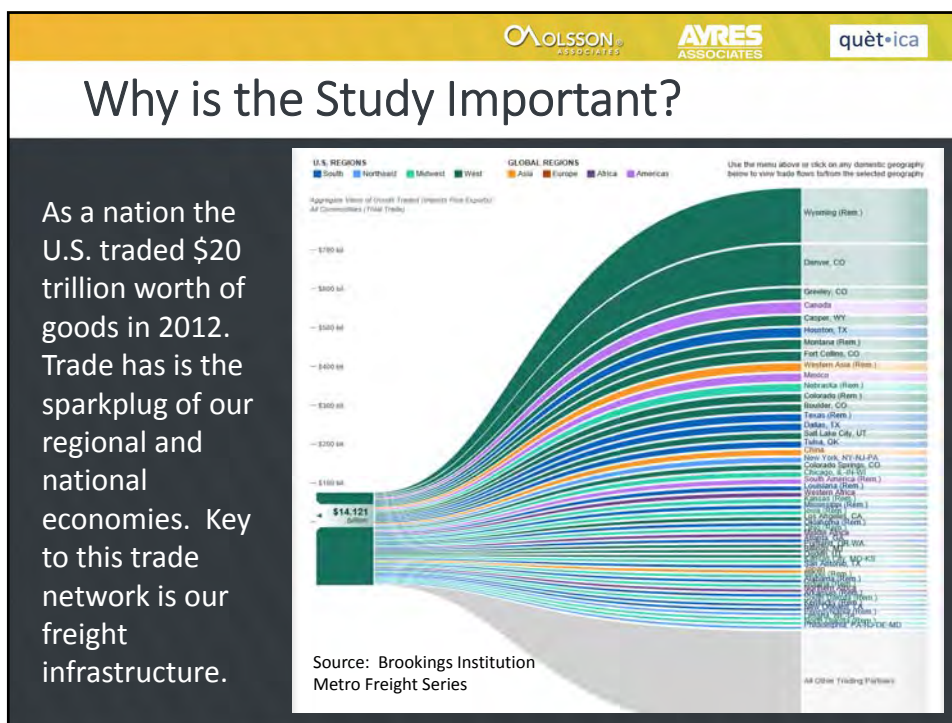
1. A comprehensive study of the freight system to determine Strengths, Weaknesses, Opportunities and Threats
2. A plan that will guide orderly growth of safe freight corridors and routes
3. Examine regional freight movements and patterns
4. Recommendations for improving the contribution of freight to economic efficiency, productivity and competitiveness of the region.
5. Examine freight impacts on land use and promote consistency between freight investments, street and highway design standards, land use planning and development policy.
6. Recommend projects, strategies and services that further the eight planning factors in MAP-21.



What is the Plan?

Major Tasks in the Study

1. Stakeholder Outreach ✓
2. Regional Issues and Trends ✓
3. Existing Conditions ✓
 - a) Inventory of infrastructure ✓
 - b) Commodity profile ✓
 - c) Vision, goals, needs and performance measures
4. Technical Assistance
5. Program Analysis
6. Draft and Final Plan



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Why is the Plan Important

Reauthorization: Fixing America's Surface Transportation Act (FAST)

- Establishes both formula and discretionary grant programs to fund projects that benefit freight.
- The Act emphasizes the importance of Federal coordination to focus local governments on the needs of freight transportation providers.
- See more at:
<https://www.transportation.gov/fastact#sthash.EQghPFue.dpuf>

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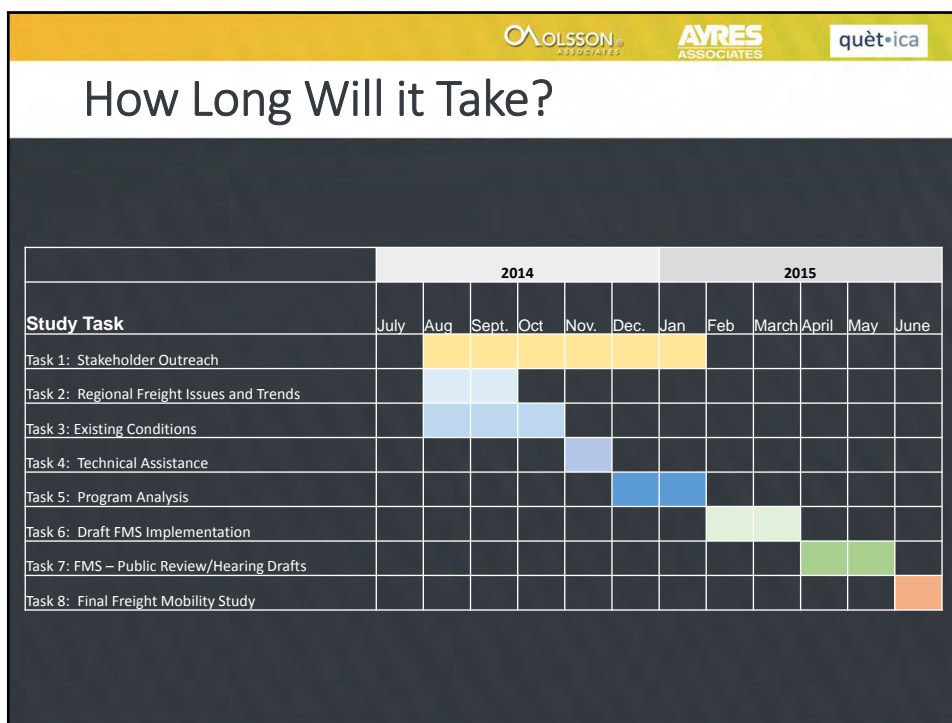
Who's Doing the Plan



CHEYENNE METROPOLITAN PLANNING ORGANIZATION

MPO Study Steering Committee

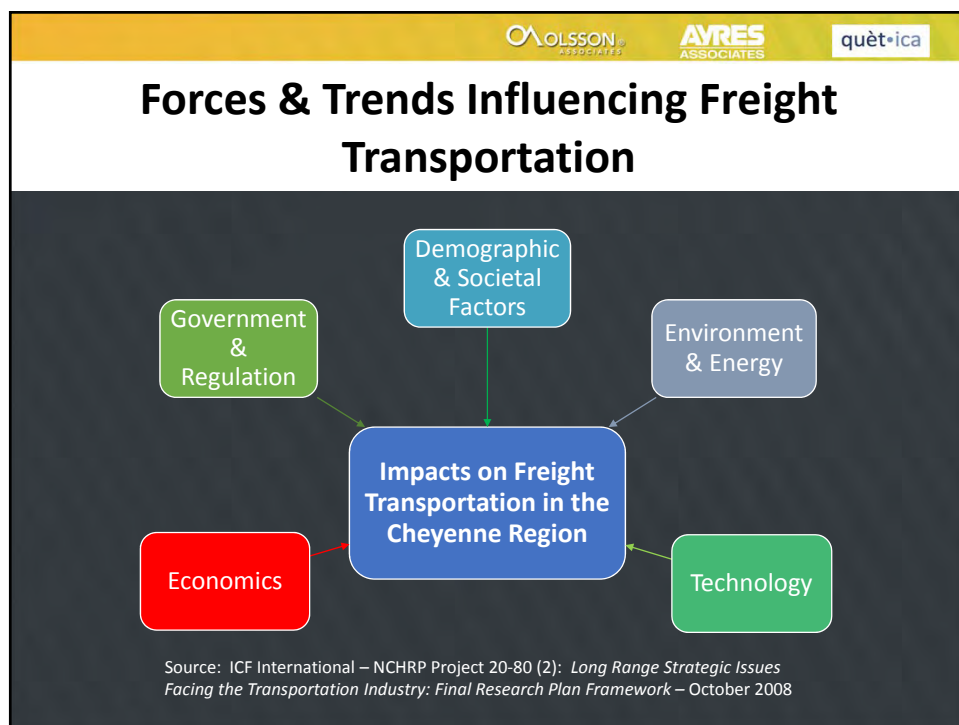
<div style="background-color: white; padding: 10px; margin-bottom: 10px; text-align: center;"> OLSSON ASSOCIATES </div> <ul style="list-style-type: none"> • Overall Project Administration • Inventory • Technical Assistance • Final Report Production 	<div style="background-color: white; padding: 10px; margin-bottom: 10px; text-align: center;"> AVRES ASSOCIATES </div> <ul style="list-style-type: none"> • Stakeholder Outreach • Local Coordination • Project Development 	<div style="background-color: white; padding: 10px; margin-bottom: 10px; text-align: center;"> quêt•ica </div> <ul style="list-style-type: none"> • Technical lead • Stakeholder support • Commodity Analysis • Program Analysis
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Regional Freight Profile

Trends and Issues
Commodity Profile
Regional Multimodal Inventory




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Demographic/Societal Trends & Issues

Key Trends:

- More consumption
- Population growing & aging....
- Increasingly urban; Mega-region domestic trading blocks
- E-commerce and home delivery rising rapidly

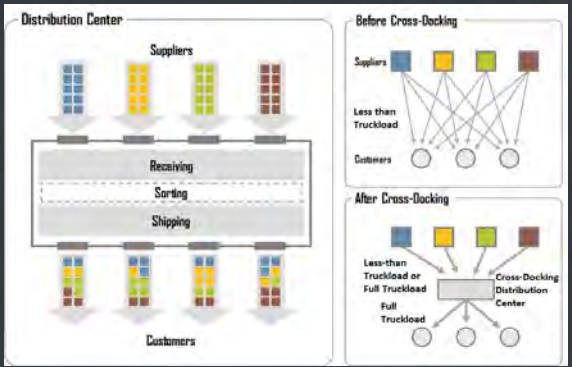


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Economic Trends and Issues

Key Trends:

- International trade routes evolving
- Warehousing and logistics network rationalization
- Near-shoring / Reshoring




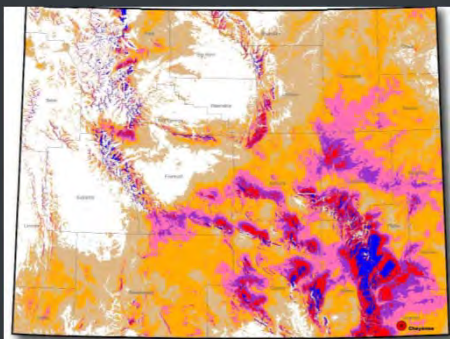
Source: Jean-Paul Rodrigue, Geography of Transport Systems Hofstra University



Energy/Environment Trends and Issues

Key Trends:

- Declining domestic demand for PRB Coal
- Green energy growth and wind potential in WY





Technology Trends and Issues

Key Trends:

- ITS / Advanced Traffic Operations Technology
- Autonomous Vehicles / Smart Vehicles / Connected Vehicles


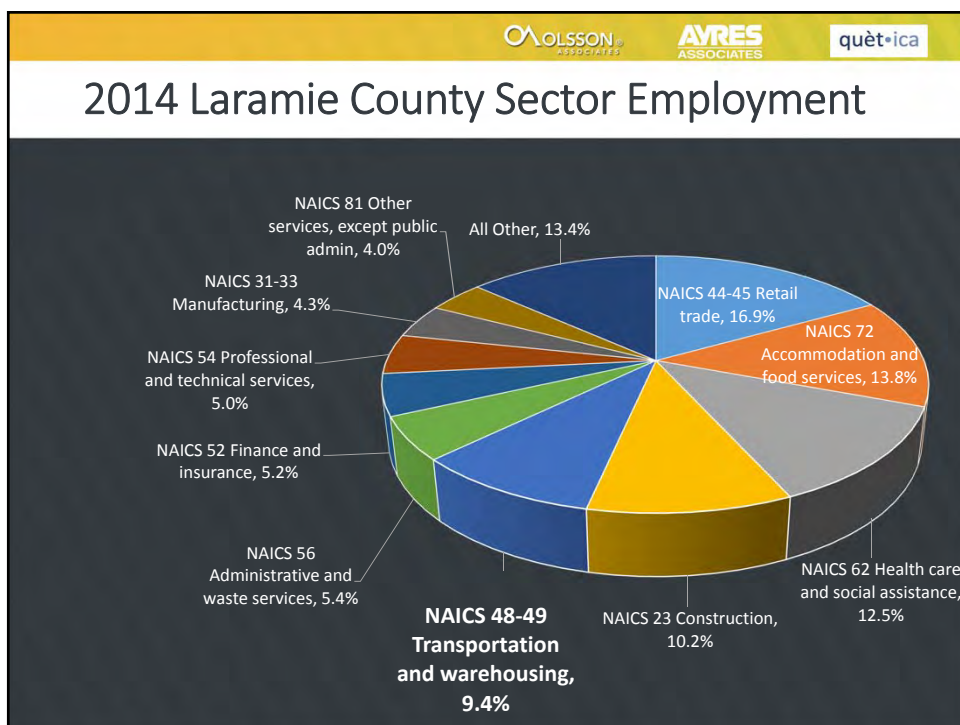


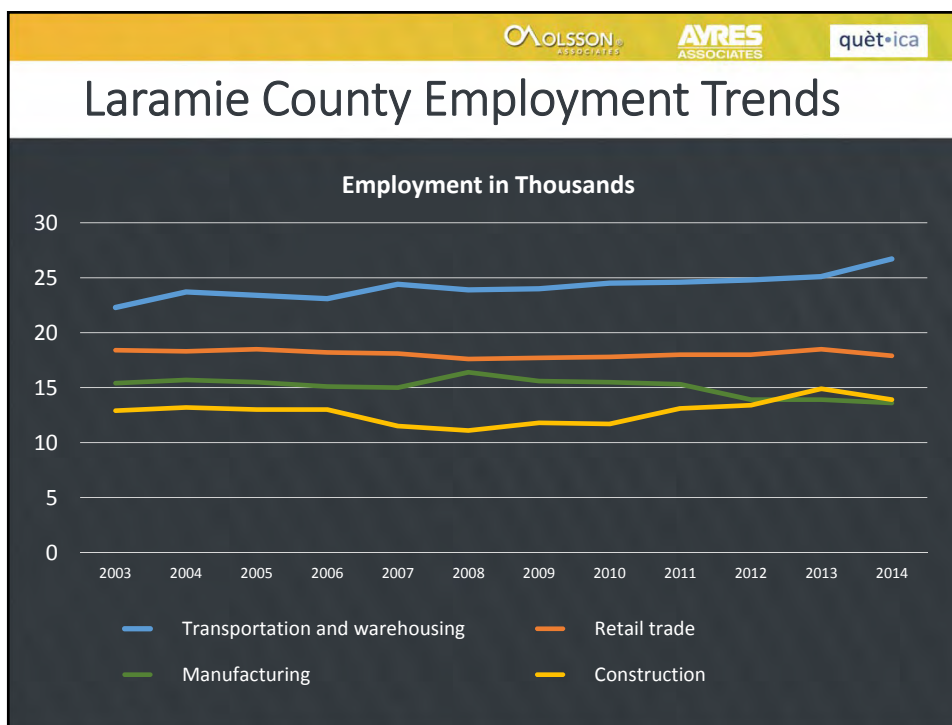
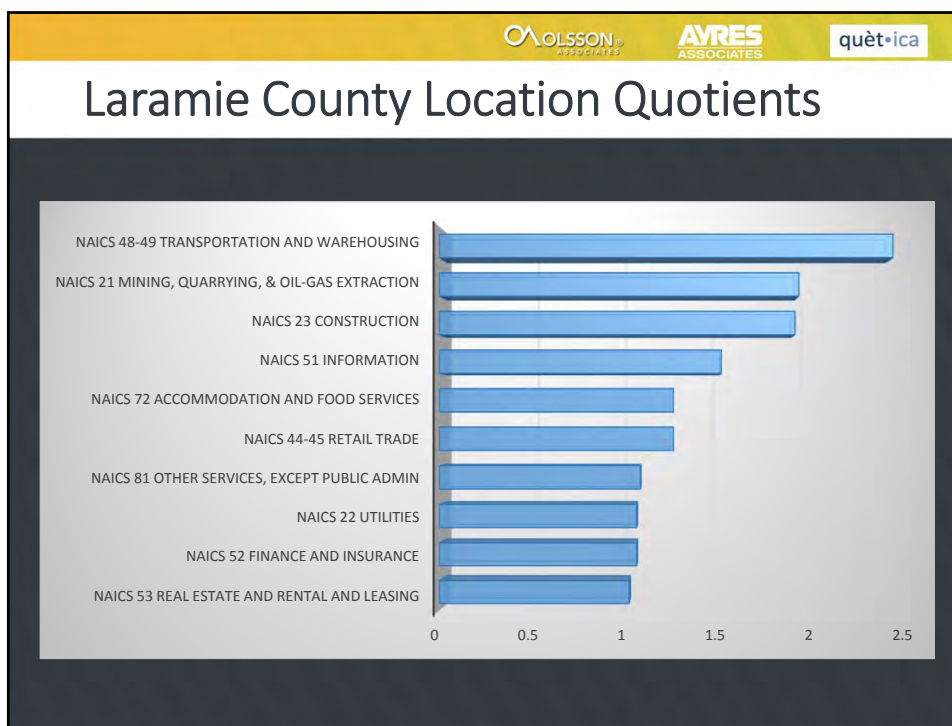
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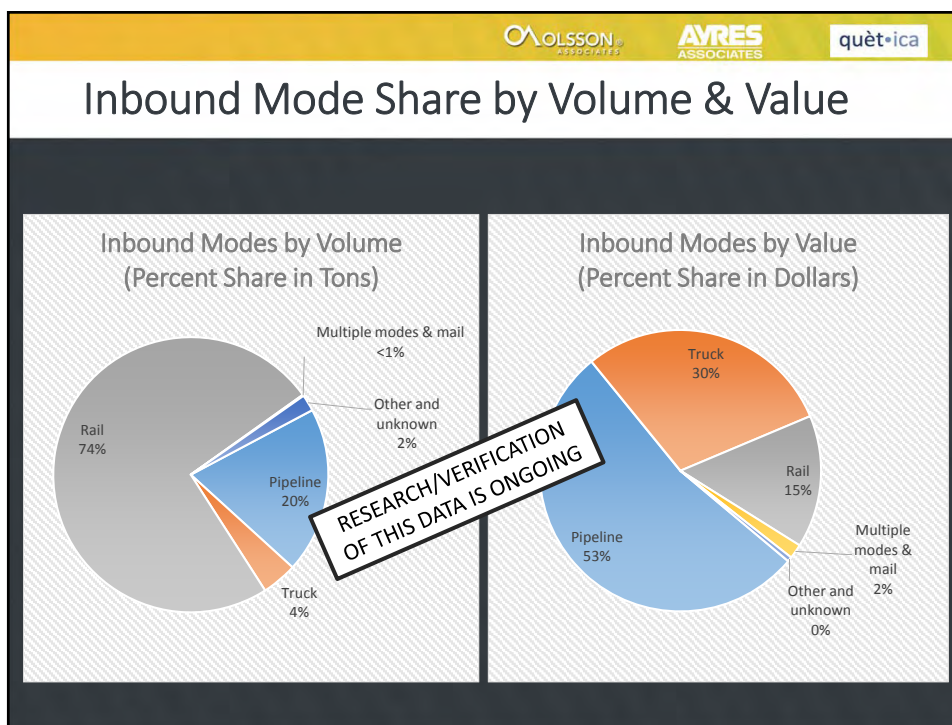
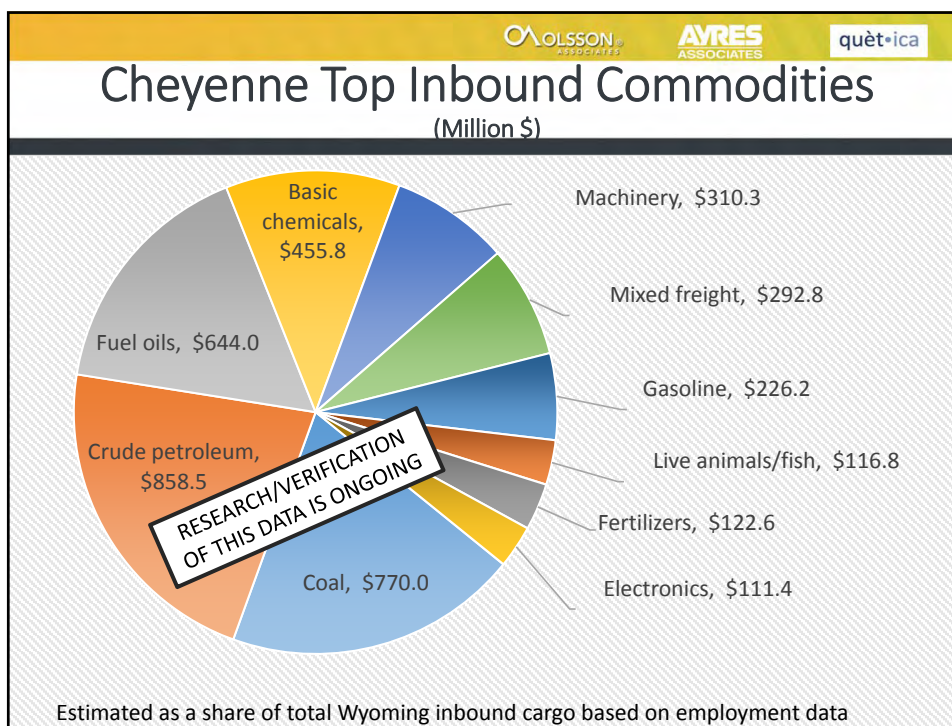
Government/Regulatory Trends & Issues

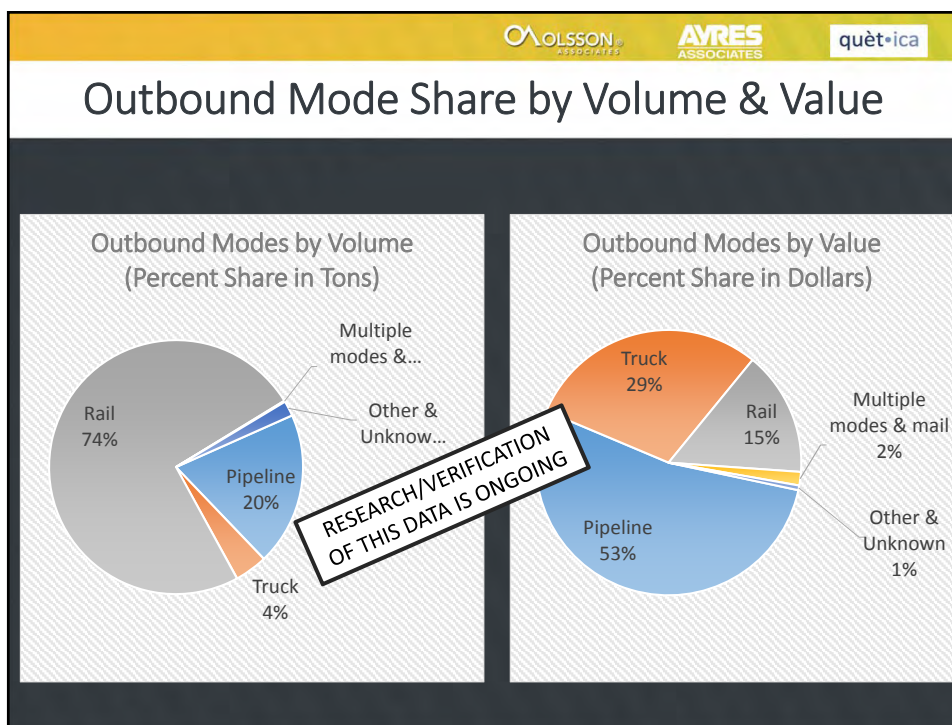
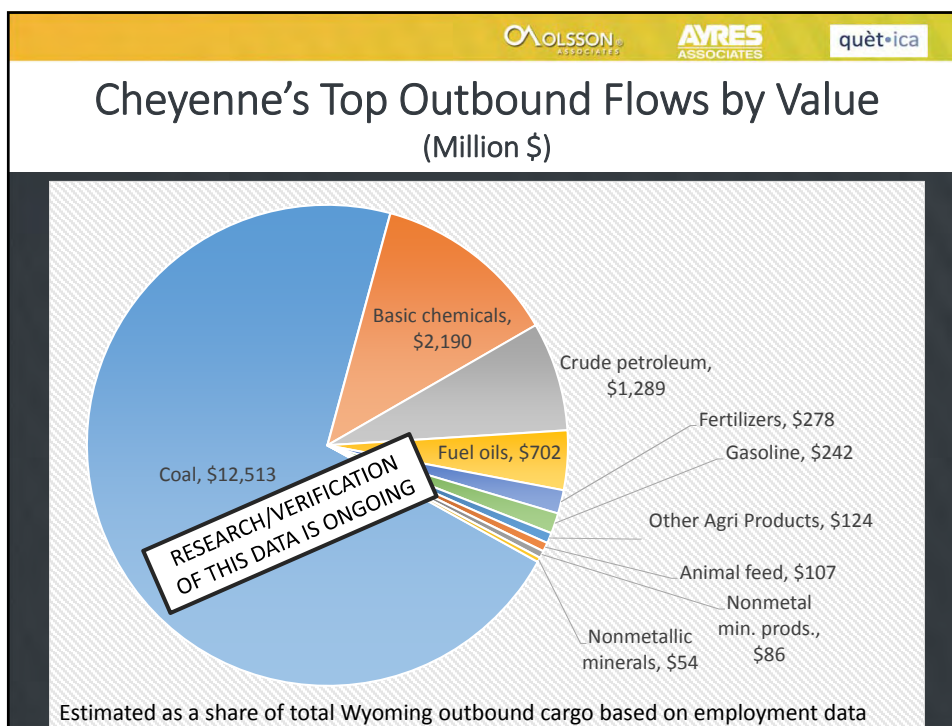
Key Trends:

- Commercial driver regulations
- Truck Havens / Truck Parking









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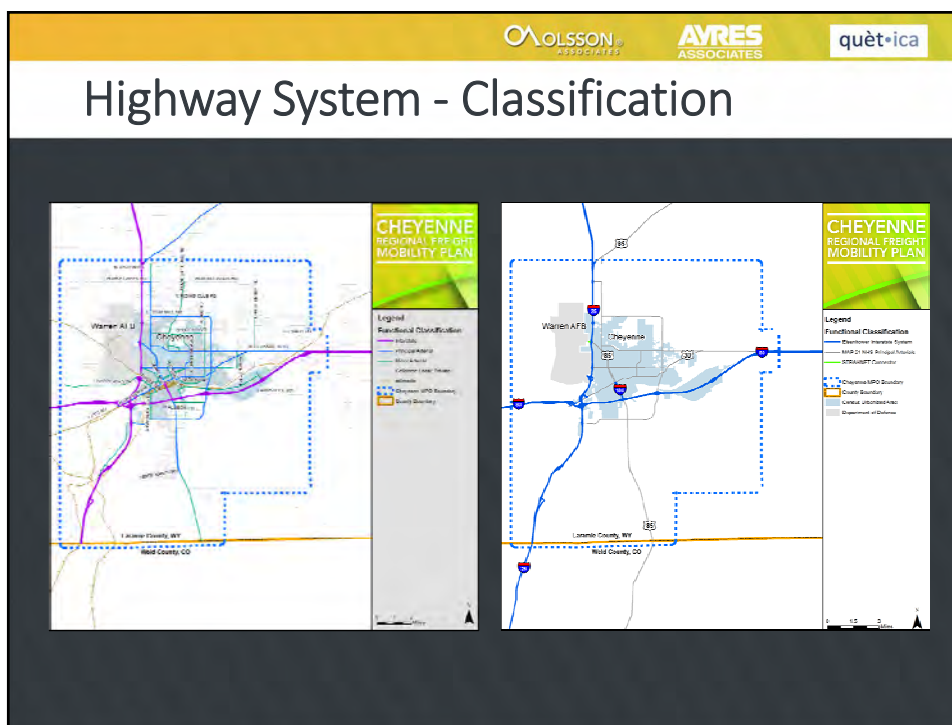
Freight Inventory

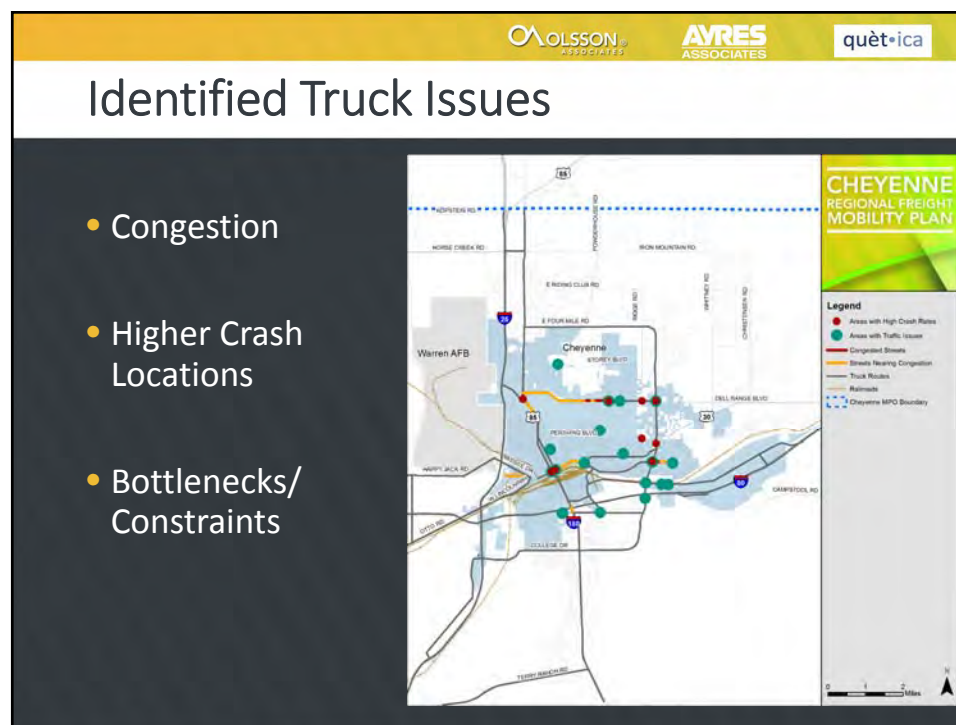
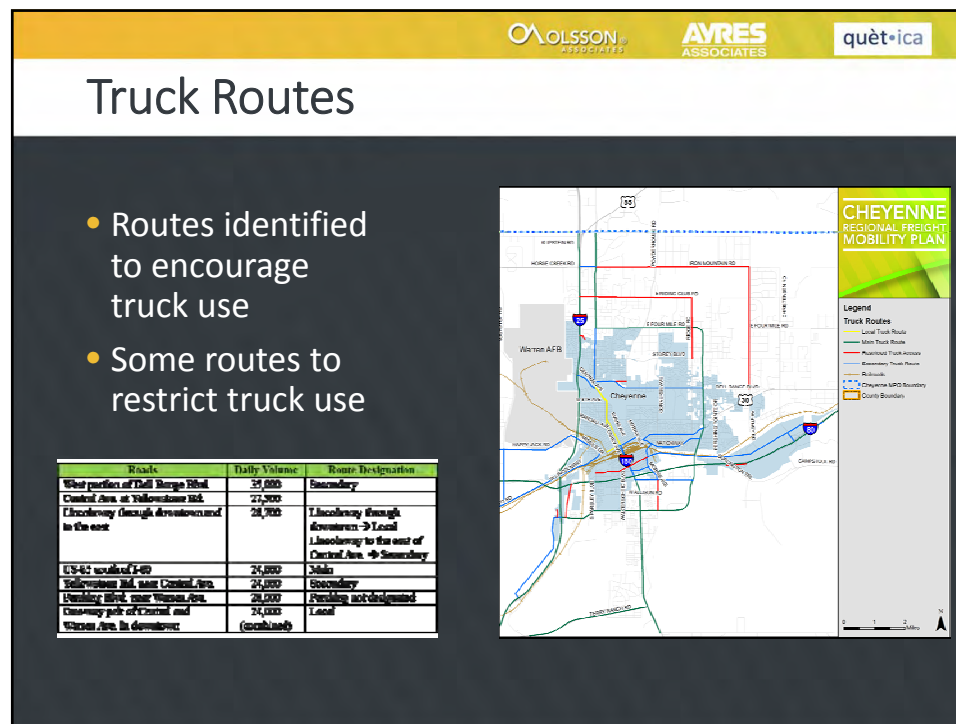
Highways

Railways

Aviation

Pipelines






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Truck Parking

I-80 /25 Truck Parking Facilities

Interstate / Exit No.	Name	Truck Parking Spaces
I-80 / 359	W. Lincolnway Little America Travel Center	20
I-80 / 362	I-180 Diamond Shamrock	5
I-80 / 367	Campstool Road Pilot Truck Stop	120
I-80 / 370	Archer Sapp Brothers Truck Stop	84
I-25 / 7	Loves Truck Stop	54
I-25 / 7	Flying J Truck Stop	115
I-25 / 7	Diamond Shamrock	42

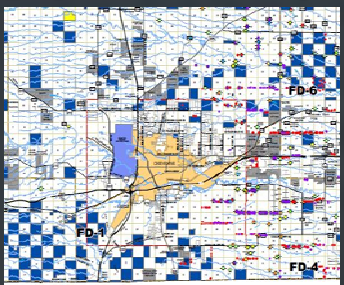
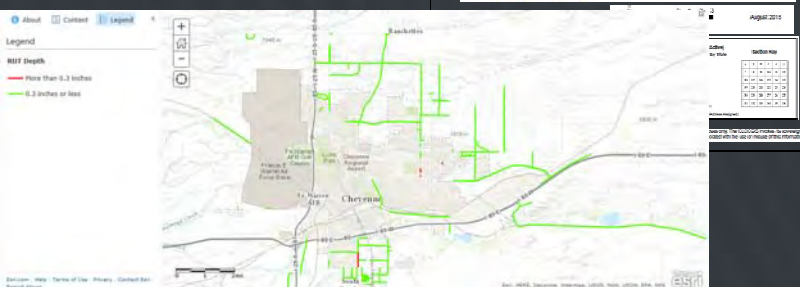


Web Camera: I 80 Roundtop (mm 357.7) - Road Surface

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Oil and Gas Impacts

- Location of wells
- Roads impacted

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Railroads

- Union Pacific
 - UP's transcontinental central corridor
 - 65 – 75 through trains per day
 - Rail Switching Yard in Downtown Cheyenne
 - Sidings for oil and other industries
- BNSF
 - Front Range subdivision from Wendover, Utah to Denver, Colorado
 - 4 – 6 through trains per day
 - Downtown Industrial Lead and a Rail Switching Yard

Source: Google Earth




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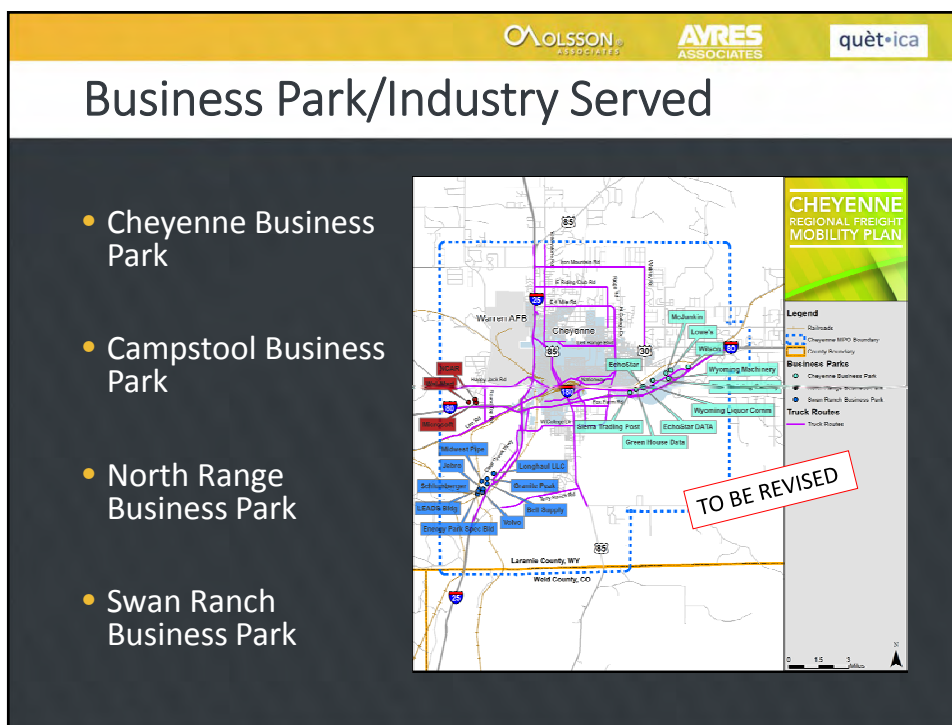
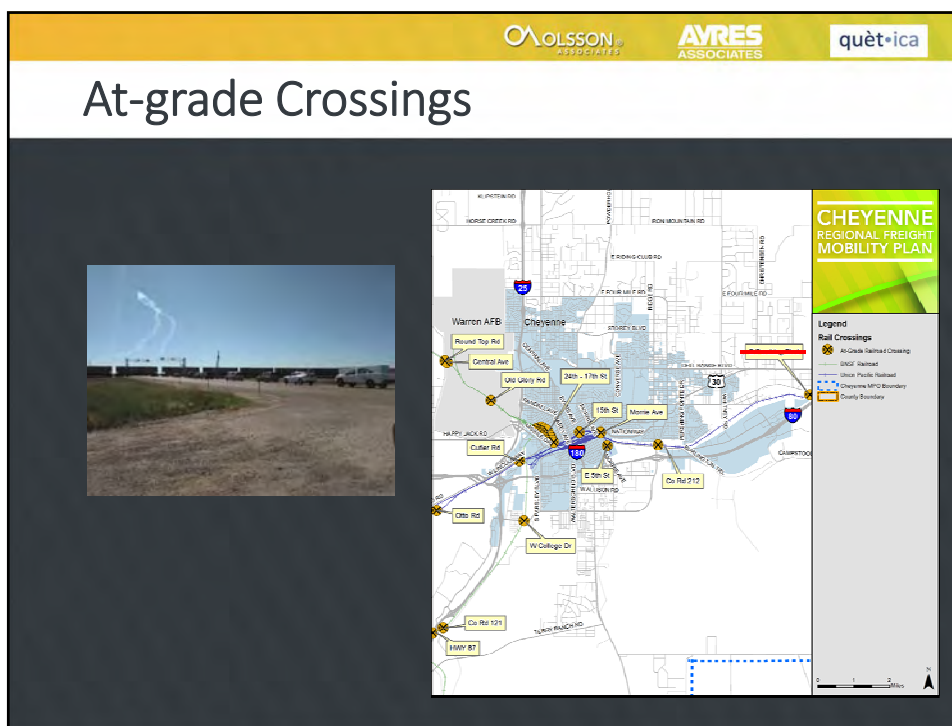
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Railroads

- Swan Ranch Railroad Company
 - Switches the Cheyenne Logistics Hub
 - Five + miles of track
 - Interchanges traffic with BNSF and UP



Source: Google Earth








- Growth of oil industry and effects on rail transportation;
- Lack of truck parking to accommodate trucks during bad weather;
- Traffic congestion at at-grade rail crossings;
- Concerns from the trucking industry regarding truck routes; and
- Roadways in residential areas that do not accommodate the delivery of goods.



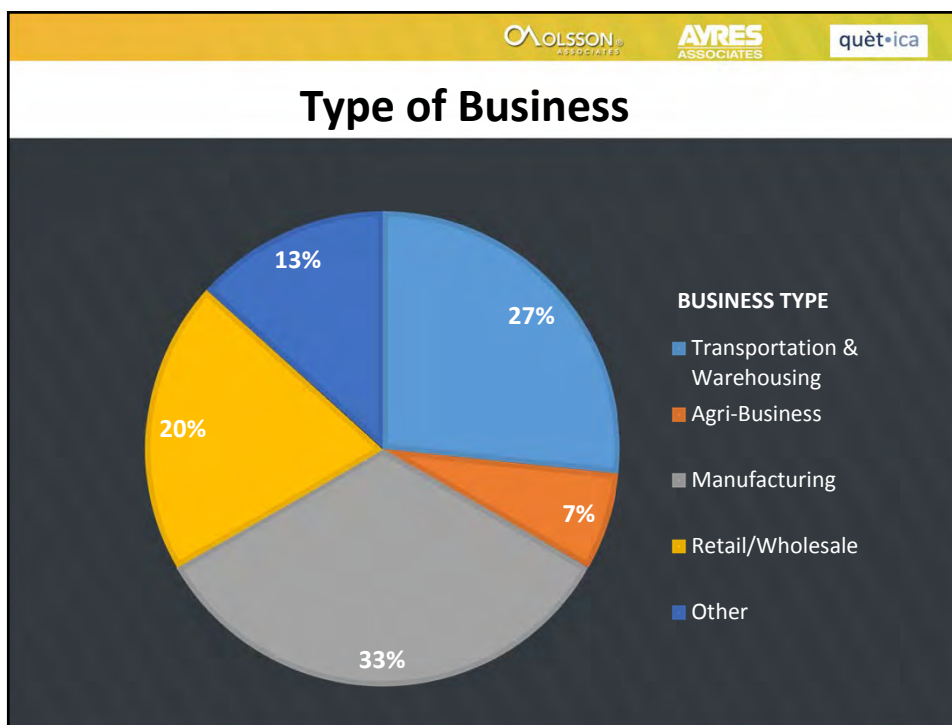
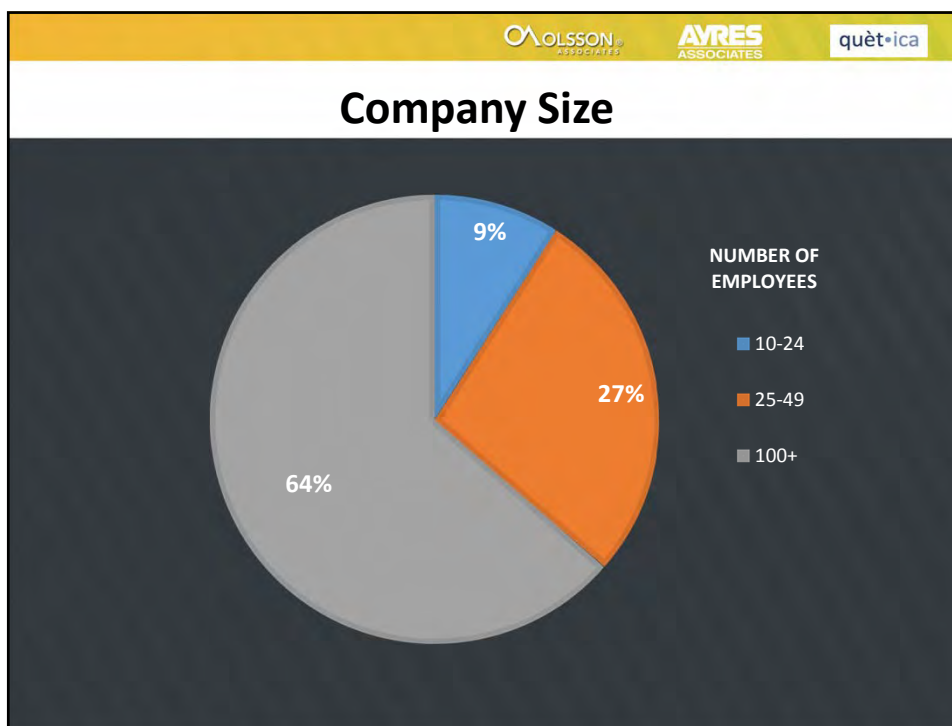
Private Sector Stakeholder Outreach

Shipper / Receiver Interviews
Carrier Interviews
Truck Driver Map Surveys



Shipper/Receiver Interviews

- Purpose: to collect information about how key supply chains in the Cheyenne Region work
 - Identify specific commodities moving to and from the region
 - Major Market Destinations of outbound products
 - Major Market Originations of processes or production inputs
- 23 companies were contacted, 15 responded and were interviewed



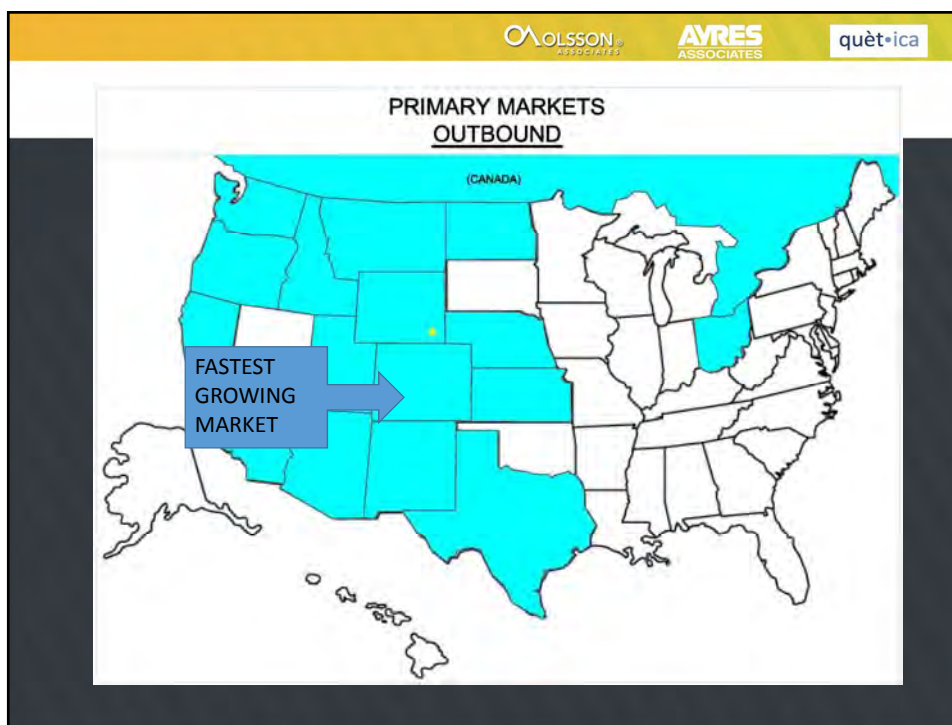
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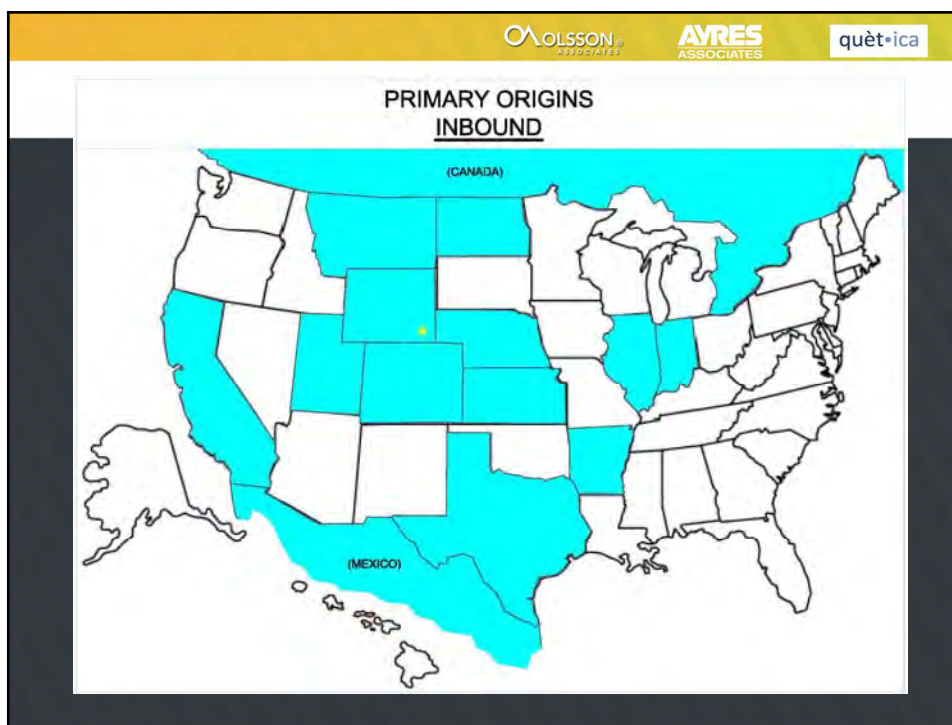
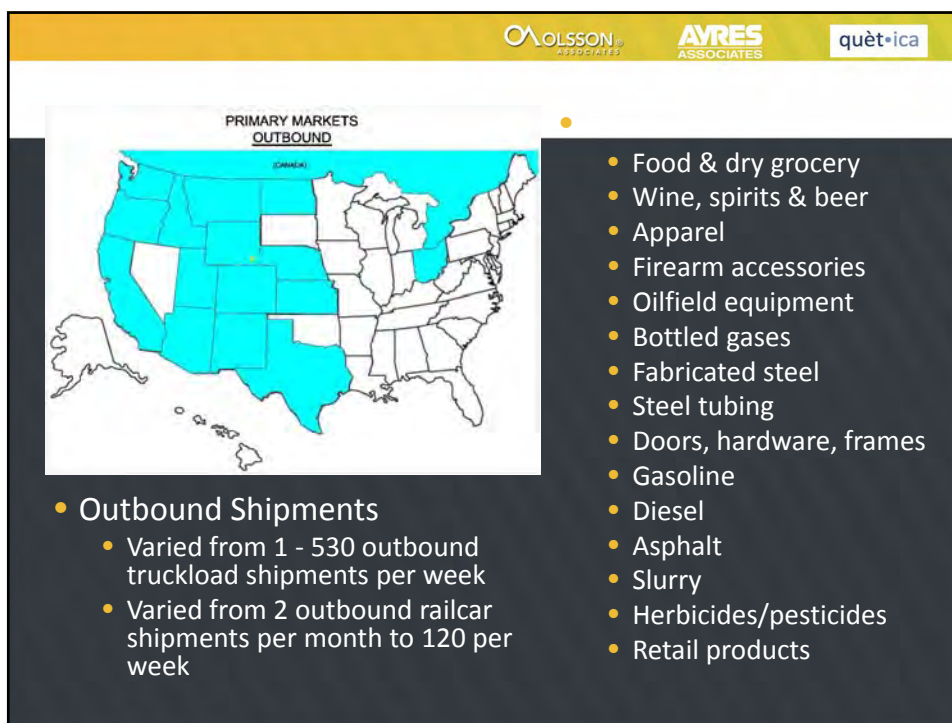
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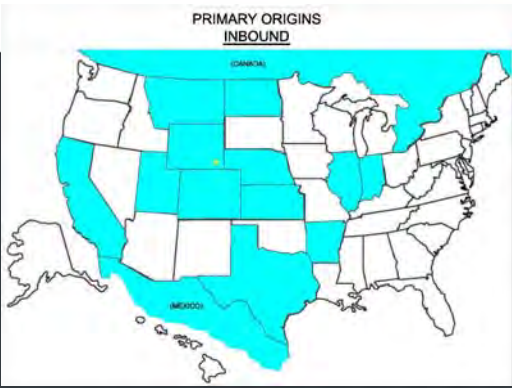
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Company Owned Transportation Assets

- Private Truck Fleet
 - Varied from 1 unit to 30 units
- Private Rail Cars
 - 1 company reported having 2000 private rail cars available across all of their facilities

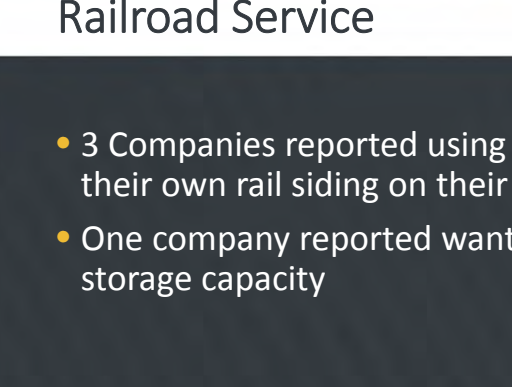






PRIMARY ORIGINS
INBOUND




- Inbound Products
 - Food & dry grocery
 - Wine, spirits & beer
 - Apparel
 - Paper goods
 - Oilfield equipment
 - Bottled gases
 - Steel
 - Doors, hardware, frames
 - Crude Oil
 - Herbicides/pesticides
 - Raw materials
 - Retail products
- Inbound Shipments
 - Varied from 1 - 1050 inbound truckload shipments per week
 - 15 inbound railcar shipments per week



PRIMARY ORIGINS
INBOUND




Railroad Service

- 3 Companies reported using rail service, each with their own rail siding on their site
- One company reported wanting more railcar storage capacity






Air Cargo Service

- 1 Company reported using air cargo
 - Domestic air cargo using an express carrier
 - International air cargo out of DIA






Greatest Challenges

- On-Time Delivery: Weather
- Workforce/labor access
- Truck parking (during road closures)
- Lack of Manufacturing outside of oil and gas companies
- Access to Markets
 - I-25/I-80 corridors
 - Access to freight carriers
- WYDOT working to keep roads open and public informed




Motor Carrier Interviews

- Purpose: to develop a better understanding about highway freight movements in the Cheyenne region
- 5 companies were contacted, 4 responded and were interviewed
 - 2 For Hire Companies, 2 Private Companies
 - 1 LTL, 2 Express Package, and 1 Construction
- Geographic Area:
 - Local
 - Wyoming
 - Nebraska, Colorado



Identifying Traffic/Infrastructure Issues





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Small Group Instructions

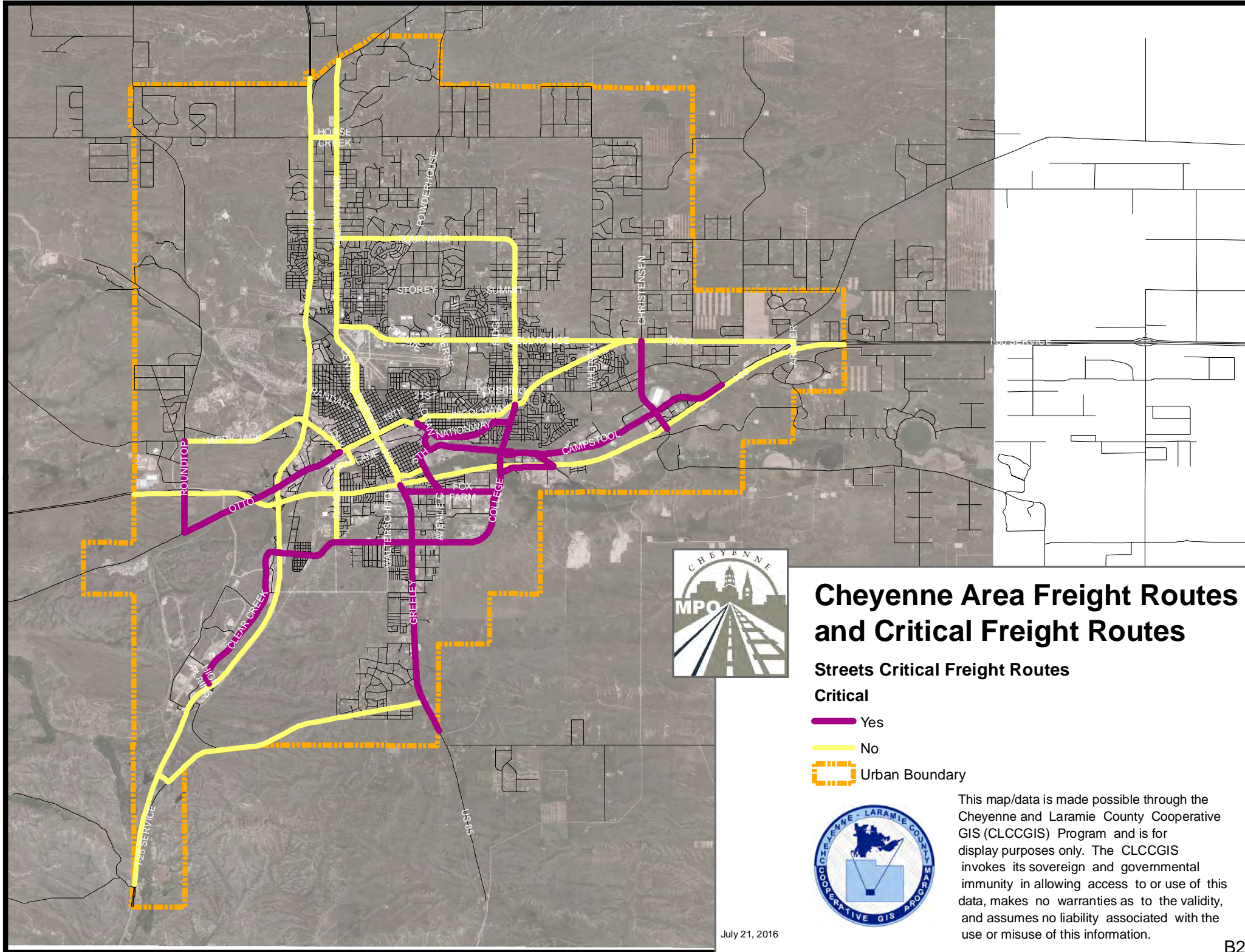
After our break....Self select one of two small group discussions:

1. Modal Network Constraints
 - a) Street and road network issues
 - b) Rail service, capacity issues
 - c) Other operations and traffic issues
2. Economic Development / Policy
 - a) Workforce development
 - b) Land use & zoning policy
 - c) Regulations and ordinances



APPENDIX B CRITICAL FREIGHT ROUTES

- **Critical Freight Routes Map**
- **Critical Freight Routes**



Cheyenne Area Freight Routes and Critical Freight Routes

Streets Critical Freight Routes

Critical

— Yes

— No

Urban Boundary



This map/data is made possible through the Cheyenne and Laramie County Cooperative GIS (CLCCGIS) Program and is for display purposes only. The CLCCGIS invokes its sovereign and governmental immunity in allowing access to or use of this data, makes no warranties as to the validity, and assumes no liability associated with the use or misuse of this information.



Critical Freight Routes

As discussed in Chapter 7, Section 7.1 of this report, the Wyoming Department of Transportation (WYDOT) can designate 75 miles of additional Critical Urban Freight Corridors (CUFC's). These corridors would be eligible for FAST Act funding. WYDOT asked both Casper MPO and Cheyenne MPO to designate approximately 35 miles of CUFC's within their planning boundary. The Cheyenne MPO designated the following routes in 2016:

College Drive from Interstate-80 to Interstate-25	5.75 miles
College Drive from Interstate-80 to Lincolnway	1.19 miles
North and South Greeley Hwy from Interstate-80 to Urban Boundary	4.99 miles
Clear Creek Parkway from Interstate-25 to College Drive	3.19 miles
Campstool Way from College Drive to Campstool Road	0.27 miles
Campstool Road from Norris Viaduct to Campstool Interchange	4.77 miles
Venture Boulevard from Campstool Road to Pershing Boulevard	1.49 miles
Lincolnway from Interstate-80 to Missile Drive	2.12 miles
Nationway from Lincolnway to College Drive	2.00 miles
Logan/Norris Viaduct/5th St./Morrie from Nationway to Fox Farm Road	1.43 miles
Fox Farm Road from South Greeley Hwy to College Drive	1.85 miles
Otto Road from Interstate-80 to Roundtop Road	1.35 miles
Roundtop Road from Interstate-80 to Happy Jack Road	0.96 miles
Roundtop Road from Otto Road to Interstate-80	0.85 miles
Christensen Road from Interstate-80 to US 30	1.91 miles
South Industrial Road from College Drive to Burlington Trail Road	1.05 miles
Burlington Trail Road from South Industrial Road to Campstool Road	0.46 miles



APPENDIX C ADOPTING RESOLUTIONS

- **City of Cheyenne Resolution 5781**
- **Laramie County Resolution 160621-13**

Akh

Date: 6/1/16

RESOLUTION NO. 5781

ENTITLED: "A RESOLUTION ADOPTING THE "*CHEYENNE REGIONAL FREIGHT MOBILITY PLAN*."

WHEREAS, the Cheyenne Metropolitan Planning Organization (MPO) is responsible for planning all modes of transportation in the City of Cheyenne urbanized area; and

WHEREAS, the City of Cheyenne urbanized area has recently seen an increase of goods transported by truck, train and pipelines because it is at the crossroads of nationally significant freight corridors including Interstates 25 and 80 and the Union Pacific and Burlington Northern Santa Fe railroads; and

WHEREAS; two recent United States Department of Transportation Legislative Acts entitled "*Moving Ahead for Progress in the 21st Century*" and "*Fixing America's Surface Transportation Act*" place emphasis on freight planning and funding; and

WHEREAS, the MPO hired Olsson Associates to create the *Cheyenne Regional Freight Mobility Plan* ("*Plan*"); and

WHEREAS, Olson Associates conducted a comprehensive, multimodal examination of the regional freight system, using the strengths, weaknesses, opportunities and threats approach and developed a sound methodology to evaluate and prioritize freight related transportation needs in the region; and

WHEREAS, Olson Associates reached out to partner agencies and private businesses to gather opinions and ideas on how to improve and make the regional transportation system more efficient for freight movement; and

WHEREAS, the *Plan* presents an implementation plan which supports freight mobility, economic development and a compatible land use policy; and

WHEREAS, the *Plan* also presents a new Cheyenne Area Truck Route Map to identify the best streets and highways for freight to move throughout the community; and

WHEREAS, the *Plan* identifies continued coordination with freight stakeholders by supporting a freight advisory committee; and

WHEREAS, the *Plan* will function as the freight element of the Cheyenne Area Transportation Master Plan of *PlanCheyenne*; and

WHEREAS, the Cheyenne MPO Citizens' Advisory and Technical Committee reviewed the *Plan* and recommended adoption; and

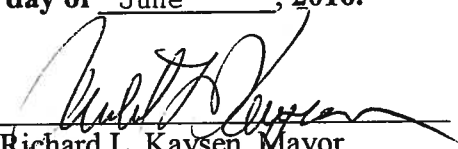
WHEREAS, on May 16, 2016, the City of Cheyenne Planning Commission held a Public Meeting which was advertised in the Wyoming Tribune Eagle; and

WHEREAS, the City Planning Commission accepted public comments and recommended that the *Plan* be adopted by the Governing Body as an amendment to the Transportation Master Plan of

PlanCheyenne.

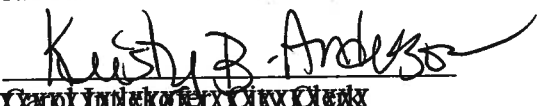
NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF CHEYENNE, WYOMING that the *Cheyenne Regional Freight Mobility Plan*, dated May 27, 2016, is hereby adopted as an amendment to the Transportation Master Plan of *PlanCheyenne* to guide the future design and reconstruction of freight facilities in the City of Cheyenne urbanized area.

PRESENTED, READ AND ADOPTED this 27th day of June, 2016.


Richard L. Kaysen, Mayor
City of Cheyenne

(Seal)

ATTEST:


~~Carol J. Anderson, City Clerk~~
Kristy B. Anderson, Deputy City Clerk

RESOLUTION NO. 16001-13

ENTITLED: "A RESOLUTION ADOPTING THE "*CHEYENNE REGIONAL FREIGHT MOBILITY PLAN*."

WHEREAS, the Cheyenne Metropolitan Planning Organization (MPO) is responsible for planning all modes of transportation in the Cheyenne urbanized area; and

WHEREAS, the Cheyenne urbanized area has recently seen an increase of goods transported by truck, train and pipelines because it is at the crossroads of nationally significant freight corridors including Interstates 25 and 80 and the Union Pacific and Burlington Northern Santa Fe railroads; and

WHEREAS; two recent United States Department of Transportation Legislative Acts entitled "*Moving Ahead for Progress in the 21st Century*" and "*Fixing America's Surface Transportation Act*" place emphasis on freight planning and funding; and

WHEREAS, the MPO hired Olsson Associates to create the *Cheyenne Regional Freight Mobility Plan* ("*Plan*"); and

WHEREAS, Olsson Associates conducted a comprehensive, multimodal examination of the regional freight system, using the strengths, weaknesses, opportunities and threats approach and developed a sound methodology to evaluate and prioritize freight related transportation needs in the region; and

WHEREAS, Olsson Associates reached out to partner agencies and private businesses to gather opinions and ideas on how to improve and make the regional transportation system more efficient for freight movement; and

WHEREAS, the *Plan* presents an implementation plan which supports freight mobility, economic development and a compatible land use policy; and

WHEREAS, the *Plan* also presents a new Cheyenne Area Truck Route Map to identify the best streets and highways for freight to move throughout the community; and

WHEREAS, the *Plan* identifies continued coordination with freight stakeholders by supporting a freight advisory committee; and

WHEREAS, the *Plan* will function as the freight element of the Cheyenne Area Transportation Master Plan of *PlanCheyenne*; and

WHEREAS, the Cheyenne MPO Citizens' Advisory and Technical Committee reviewed the *Plan* and recommended adoption; and

WHEREAS, on May 26, 2016, the County Planning Commission held a Public Meeting which was advertised in the Wyoming Tribune Eagle; and

WHEREAS, the County Planning Commission accepted public comments and recommended that the *Plan* be adopted by the Laramie County Board of Commissioners as an amendment to the Transportation Master Plan of *PlanCheyenne*.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COMMISSIONERS OF LARAMIE COUNTY, WYOMING, that the *Cheyenne Regional Freight Mobility Plan*, dated May 27, 2016, is hereby adopted as an amendment to the Transportation Master Plan of *PlanCheyenne* to guide the future design and reconstruction of freight facilities in the City of Cheyenne urbanized area.

PRESENTED, READ AND ADOPTED this 21st day of June, 2016.

BOARD OF LARAMIE COUNTY COMMISSIONERS

K. N. Buck Holmes
K. N. "Buck" Holmes, Chairman

ATTEST:

Debra K. Lee
Laramie County Clerk

6/24/16
Date

Approved as to form:

Mark T. Voss
Mark T. Voss,
Laramie County Attorney

6/8/16
Date