



Chapter 7: Freight Element



Freight transportation is critical to the region's – and the nation's – economy. Truck traffic is a significant component, and the highway element of Metro Mobility 2040 considers freight needs in the discussion and prioritization of highway recommendations. However, freight is a highly multi-modal sector, with longer and less time-sensitive freight trips made by rail and barge, while the most time-sensitive freight is shipped by air.

Chapter 7 examines the regional freight network in the context of truck, rail (freight and passenger), water, and air freight movement. The chapter reviews the **West Virginia State Rail Plan**, highlights anticipated changes, and concludes with a series of recommendations. While most of the discussion focuses on goods movement, trends in recreation and tourism that will affect these transportation modes are also presented. As with goods movement, tourism trips are governed in many cases by trends originating outside the Kanawha-Putnam region, but affect transportation needs within the region.

Truck

The FHWA's Freight Analysis Framework (FAF3) provides estimates for tonnage, value and domestic-ton miles by region of origin, destination, commodity type, and mode. According to the 2007 FAF3 data (the most recent survey year), the region's interstates (I-64, I-77, I-79) handled the bulk of truck traffic in Kanawha and Putnam counties. While the 2007 FAF3 data does not account for the new US 35 in Putnam County, *WVDOT data indicate that trucks account for as much as 30.0% of the daily AADT along US 35.* Given US 35's connections to major metropolitan areas of Ohio (Dayton and Columbus), it is likely that truck traffic will increase in the future, particularly upon the potential completion of the highway's four-lane expansion project in Putnam and Mason counties.



Trucks play an important role in the region's freight network.

The interstates carried approximately 82.5% of the region’s total truck freight tonnage in 2007. For example, trucks carried approximately 155,000 kilotons of cargo in 2007 on the stretch of I-64 between Dunbar and Charleston. This amount is expected to increase by approximately 60.0%, to 250,000 kilotons, by 2040.

Meanwhile, WV 34 handled 12.8% of the regional truck cargo weight in 2007 and it is anticipated that the stretch north of I-64 will accommodate a 67.7% increase by 2040. However, much of this traffic (as well as some interstate truck traffic) will continue to shift over to US 35.

Rail

Freight Rail

Freight rail also plays an important role in the movement of goods throughout the region and the state. CSX Transportation (CSXT) and Norfolk Southern Corporation (NS), the state’s two Class I railroads, operate over 2,100 miles of West Virginia’s rail infrastructure. CSXT operates a primary route through the region, connecting Charleston to Cincinnati, OH and Richmond, VA. Meanwhile, NS operates a secondary route that connects Charleston, WV to Columbus, OH. These railroads also capitalize on the region’s intermodal facilities. CSXT serves the TRANSFLO facility in South Charleston, while NS serves the Allied Warehousing facility in Nitro.

In 2001, a study team explored the possibility of enabling double-stacking (containers stacked two high on railroad cars) along the secondary route as well as the primary NS route, which runs in the southern part of the state. After evaluation, the study concluded that double-stacking was not feasible along the secondary route due to several factors, including:

- A general lack of signals;
- A lack of passing sidings;
- Challenging grades that would significantly impact the horse power necessary to move intermodal trains at sufficient speed; and
- Track alignment obstacles.

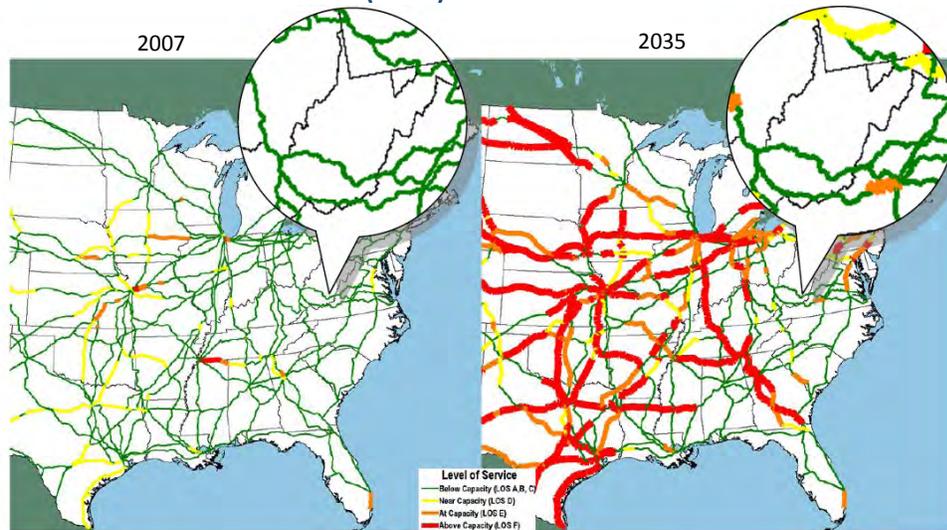
Despite double-stacking limitations in the state, West Virginia’s primary routes are operating below capacity, equivalent to Level of Service of A, B or C. In addition, FHWA projections indicate that the routes will continue to operate under capacity in the year 2035 (Figure 33). This



Norfolk Southern (NS), along with CSX Transportation (CSXT) are the state’s two Class I railroad operators.

potentially suggests that West Virginia’s CSXT and NS lines will maintain efficiency advantages relative to many other routes.

FIGURE 33: FHWA’S PROJECTED (2035) RAIL LEVEL OF SERVICE



Source: FHWA FAF3

Passenger Rail

Two long-distance Amtrak lines currently serve West Virginia. The *Capitol Limited*, operating between Washington D.C. and Chicago, IL, stops in Harpers Ferry, WV and Martinsburg, WV. Meanwhile, the *Cardinal* route, providing service from Chicago, IL to New York, NY, stops in Charleston, Huntington and other West Virginia communities. The *Cardinal* route offers three trips per week.

The West Virginia State Rail Plan, provides a comprehensive overview of intercity passenger services throughout the state, is required for West Virginia to be eligible for existing and prospective federal rail financial assistance. As illustrated in Table 15, passenger volumes on the *Cardinal* increased by 7.0% from FY 2008 to FY 2012. As a basis for comparison, passenger volumes on the *Capitol Limited* increased by 5.0% over the same period. Meanwhile, the *Cardinal’s* passenger revenue only covers approximately 28.0% of its operating costs, compared to 44.0% for the *Capitol Limited*. The *Cardinal’s* lower fare box recovery (ratio of revenue to operating costs) reflects the less competitive nature of tri-weekly service.



The Charleston Amtrak station.

TABLE 15: AMTRAK RIDERSHIP TRENDS, REVENUES AND COSTS (FY 2008-FY 2012)

Fiscal Year	Capitol Limited			Cardinal		
	Ridership	Ticket Revenue (in millions of \$)	Costs (in millions of \$)	Ridership	Ticket Revenue (in millions of \$)	Costs (in millions of \$)
FY2008	216,350	\$17.40	\$36.80	109,195	\$6.50	\$20.00
FY2009	215,371	\$17.60	\$40.30	108,614	\$6.40	\$22.00
FY2010	218,596	\$18.60	\$45.80	107,053	\$6.40	\$25.70
FY2011	226,597	\$20.30	\$46.20	110,923	\$7.10	\$25.30
FY2012	226,884	\$20.50	TBD	116,373	\$7.50	TBD

Source: Amtrak Train Earnings/Monthly Performance Report and West Virginia State Rail Plan

According to the 2005 Amtrak Ridership Profile, most passengers on the *Cardinal* (approximately 90.0%) are traveling for leisure purposes. In the future, the *Cardinal* could see an increase in leisure and recreational passenger volumes due to the recently constructed (2012) Summit Bechtel Reserve (SBR) Boy Scout camp. The SBR, located in Fayette County, seven miles from the Amtrak station in Prince, is one of four Boy Scout high adventure camps and permanent home to the National Scout Jamboree (held every four years). In July 2013, the SBR hosted its first jamboree, drawing an estimated 40,000 scouts, venturers, and unit leaders. While 20.0% to 25.0% of scouts and staff typically arrive by train to the Philmont Scout Ranch in New Mexico, limited tri-weekly Amtrak service and poor roadway conditions discouraged scouts and staff from arriving to the SBR by train.

Specifically, the *Cardinal* only runs three times a week, meaning that scouts traveling by train would have to arrive either a day early or two days late to the jamboree. In addition, the Pugh Memorial Bridge, spanning the New River just outside of Prince, is one of the state’s most structurally deficient bridges. The bridge has a 3-ton weight limit, prohibiting scouts from traveling between the station and Bechtel by commercial bus. According to the *Jamboree 2013 Staff Guide*, “transportation to the Summit via train is discouraged at this time due to road conditions to and from the station.”

Assuming the bridge is replaced (plans are in the design stage), increased Scout traffic could also bring additional tourists to the Kanawha-Putnam region and encourage Amtrak to establish daily passenger service on the *Cardinal* – a proposal that Amtrak explored in its FY 2010 Performance Improvement Plan. According to the **West Virginia State Rail Plan**, the establishment of daily *Cardinal* service depends on ridership and revenue increases and improved connectivity to significant passenger generators, such as universities, hotels, and ski

resorts. Daily service, if implemented, could likely contribute to a 40.0% increase in service on West Virginia’s intercity network.

Water

The Kanawha River is essential for the movement and exchange of commercial goods in the region and is the nation’s seventh largest inland port based on tonnage (Charleston Area Alliance). The Kanawha River is joined at Charleston by the Elk River, at St. Albans by the Coal River, and at Poca by the Pocatalico River.

The Army Corps of Engineers (USACE) estimates that there are 76 port facilities located throughout the two-county region, 16 of which connect to the region’s rail infrastructure. These ports are primarily responsible for the shipment of bulk commodities such as sand, gravel, coal, petroleum products, and chemicals. As fuel prices rise, barge traffic could potentially become a more attractive shipping mode, particularly since barges are approximately 39.0% more fuel-efficient than rail and 272.0% more fuel-efficient than truck (National Waterways Foundation). Barge transit is best suited for commodities that do not have time-sensitive delivery schedules.

The United States Department of Transportation (DOT) recently launched the America’s Marine Highways Program as a way to expand the use of waterborne transportation in order to relieve landside congestion and reduce carbon emissions. DOT designated the Ohio River, located 20 miles from the Putnam County line, as one of 11 national marine highway corridors. Additional investment along the Ohio River could also increase throughput tonnage along the Kanawha River.

Air

Yeager Airport in Kanawha County serves five commercial airlines (American, United, Delta, Spirit, and US Airways) and provides direct flights to Dallas, Houston, Chicago, Washington DC, Atlanta, Detroit, Fort Lauderdale, Myrtle Beach, and Charlotte. In 2011, there were 282,704 passenger boardings (enplanements) at the airport, a 6.7% increase from 2010. According to airport officials, the Boy Scout camp could contribute to a 10.0% annual increase in enplanements.

Meanwhile, air cargo service, although available through several parcel companies, remains extremely limited in the region. The Federal



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Yeager Airport. Source: Adam Fagen
<http://www.flickr.com/photos/afagen/48654>

Aviation Administration (FAA) did not publish 2011 cargo data for Yeager Airport, likely due to limited activity.

Recommendations

Several of the Metro Mobility 2040 recommended fiscally constrained projects address current and anticipated freight needs. In determining objective scores for projects, the prioritization process incorporated several freight elements, including current truck traffic, forecasted truck traffic, and proximity of projects to prominent industrial shipping/receiving centers. Based on this analysis, the projects shown below in Table 16 potentially provide the greatest impact to the regional freight network.

The existing conditions and current forecasts for rail, water, and air transportation modes do not call for additional or distinct transportation improvements at this time. As noted in the discussions above, demand for these modes may be affected by economic trends in commodities (particularly the energy sector) or tourism. These trends should be monitored to determine if distinct future needs arise for rail, water, or air transportation improvements.

TABLE 16: FREIGHT RECOMMENDATIONS – ROADWAY PROJECTS THAT PROVIDE BENEFIT TO KEY FREIGHT CORRIDORS

ID	Facility	Description
KC-4	US 119 (Corridor G)	From Cantley Drive to MacCorkle Avenue: Add third lane to US 119 northbound and improve operations
KC-5	US 119 (Corridor G)	From Lawndale Ln. to MacCorkle Ave: Add lane northbound and southbound; add lane to I-64 connector; install new Cantley Flyover; develop Lucado Road/Oakwood Road underpasses and; improve operations
KC-6	US 119 (Corridor G)	From WV 601 (Jefferson Road) to Emerald Road: Add third lane to US 119 northbound and improve operations
KC-7	WV 94 (Lens Creek Road)	From Six Mile Hollow Road to I-64: Widen to 3 lanes on steep grades to provide truck passing lanes
KC-8A	US 60 (Dupont Ave.)	From Chelyan Bridge (Admiral TJ Lopez Bridge) to CR 81 (Kelly's Creek Rd.): Widen US 60 to 4 lanes divided
KC-8B	US 60 (Dupont Ave.)	From CR 81 (Kellys Creek Road) to the west side of WV 6 (Montgomery Bridge): Implement spot improvements (center turn lanes and right turns) along key segments of the corridor
PC-1	New US 35	From Buffalo Bridge to the Mason County line: Construct 4-lane, median divided highway
PC-3	I-64	From Cow Creek Road to WV 34: Widen I-64 to 6 lanes
PC-7	WV 25 (1st Avenue)	From Interstate 64 to WV 62: Widen to 3-lanes with a two-way left-turn lane, and use access management to increase mobility and safety