

Freight

National Perspective

According to the Federal Highway Administration (FHWA) *Freight Facts and Figures 2013* document, the nation's transportation system moved a daily average of about 54 million tons of freight valued at nearly \$48 billion in 2012. After declines in 2008 and 2009, the tonnage and value of freight moved in 2012 surpassed the previous highs reached in 2007, by just over 4 percent each. FHWA's Freight Analysis Framework (FAF) website includes the following map (Figure 28), which illustrates national freight flows in 2010.

Figure 28 Freight Flows by Highway, Railroad, and Waterway: 2010



Sources: Highways: U.S. Department of Transportation, Federal Highway Administration, *Freight Analysis Framework* Version 3.4, 2013; Rail: Based on Surface Transportation Board, *Annual Carload Waybill Sample* and rail freight flow assignments done by Oak Ridge National Laboratory; Inland Waterways: U.S. Army Corps of Engineers, Institute of Water Resources, *Annual Vessel Operating Activity and Lock Performance Monitoring System* data, 2013.

FHWA's report states that the nation's 118.7 million households, 7.4 million business establishments, and 89,004 governmental units are part of an economy that demands the efficient movement of freight. While the US economy was affected by an economic downturn, it is recovering and will continue to grow. Long-term economic growth will result in even greater demand for freight transportation. FHWA estimates that over the next 30 years, there will be 60 percent more freight to be moved across the country.

Pennsylvania Perspective

As described in PennDOT's Draft Pennsylvania Comprehensive Freight Movement Plan (CFMP), Pennsylvania is truly the Keystone State for freight. Linking the Commonwealth's multimodal freight transportation system to consumers across the state, across the nation, and throughout the world is critical both for bringing materials and components to companies that create the final product, and for transporting finished goods.

The Draft CFMP lists the following statistics for Pennsylvania's transportation system:

- Fifth-largest state-owned roadway network with over 41,000 linear miles of roads
- Fourth-highest number of Interstate highway miles
- Third largest number of bridges with approximately 25,000 state-owned bridges

In addition, the Draft CFMP noted that relative to rail service, in 2011 Pennsylvania ranked...

- First among states in the number of railroads (60)
- Fifth in railroad mileage (5,095 miles of track)
- Seventh in tons that originate and terminate within the state
- Tenth in carloads that originate and terminate within the state

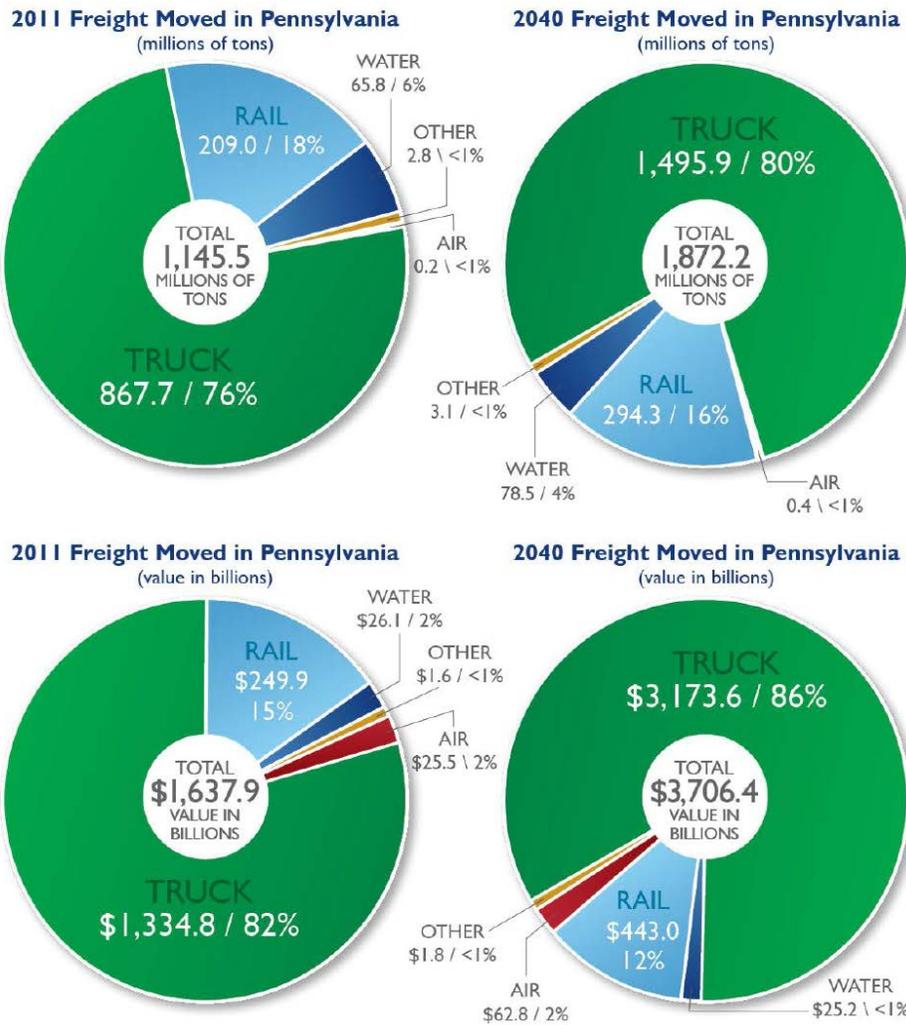
Pennsylvania is also the only state that has all three types of waterway ports: deep water, inland waterway, and Great Lakes. Inland waterways, including the Ohio River system, connect to ports on the Gulf of Mexico, and provide an efficient, cost-effective means of transporting goods to domestic and international markets.

Pennsylvania is home to two of the top 100 cargo airports in the US in terms of total tonnage in 2013: Philadelphia (#18) and Pittsburgh (#56).

Combined, these modal assets create a multimodal freight transportation system that carries 7.5 percent of the goods and materials produced, used, or exported in the nation.

The charts (Figure 29) on the following page illustrate the amount and value of goods that were moved by the transportation system into, within, out of, and through the state in 2011, and provides projections of the amount and value of goods anticipated to be moved in 2040. The largest portion of the freight moved in Pennsylvania now and in the future will be done by truck and rail.

Figure 29



Source: CDM Smith analysis of 2011 PA Transearch data

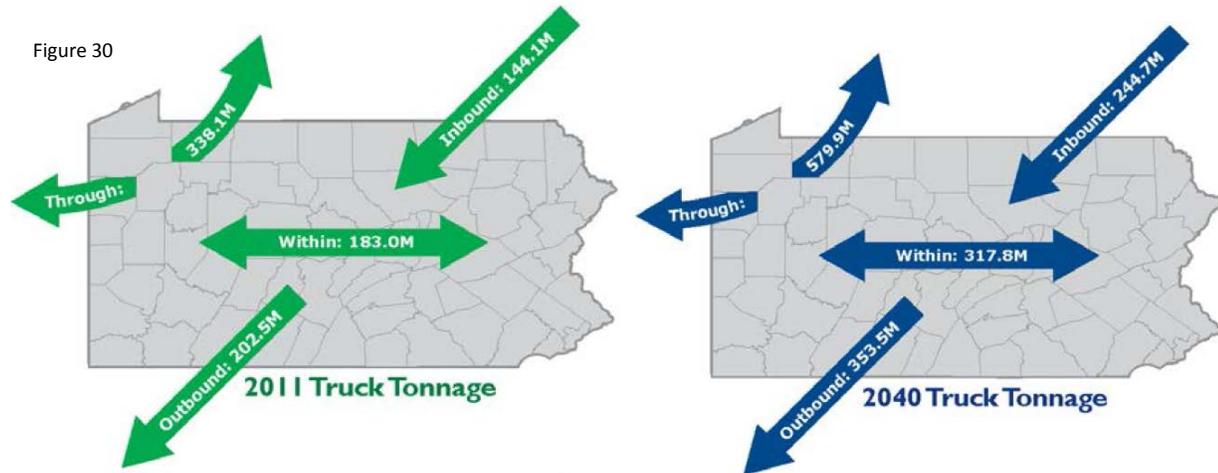
Centre County Perspective

Centre County is primarily a service based economy and therefore is not a major consumer of raw materials or a major producer of manufactured goods. Two key industry segments, agriculture and mineral/aggregates, account for the majority of the freight movements originating in the county. The emerging Marcellus gas industry has the potential to increase freight flows, primarily in the northern tier of the county, but the development of this industry is currently focused elsewhere in the Commonwealth.

Being located in the geographic center of the state, without any major waterway ports, the majority of freight movements within Centre County are completed by truck. A smaller percentage of freight is moved via rail on the Nittany and Bald Eagle Railroad, a Class III short line. There is also a portion of tonnage of higher value goods that is moved as air cargo through the Federal Express facility located at the University Park Airport.

Truck Freight

Based on information from FHWA's FAF website and other sources, "through" truck volumes are anticipated to grow steadily over time within the Commonwealth. Truck volumes within Centre County are also anticipated to grow at a steady and relatively low rate. Figure 30 illustrates the inbound, outbound, through and within state truck tonnage movements and shows that each movement is anticipated to grow significantly over the next 20-30 years. Located at the crossroads of two Interstates and Route 322, Centre County can expect some of the impacts from this projected growth.



Source: CDM Smith analysis of 2011 PA Transearch Data

Relative to the movement of freight by truck, Interstates 80 and 99, and Routes 322 and 350 have the highest overall percentage of truck traffic on the Centre County roadway network.

Table 29 below provides information about traffic and truck volume in key sections of these routes:

Table 29

Route	Location	Traffic Volume	Truck Volume	Truck Percentage
80	Between Bellefonte & Lamar Interchanges	31,000	11,500	37%
99	Between PA Route 550 & I-80 Interchange	18,000	4,800	27%
322	Between Boalsburg & Potter Mills	11,000	2,300	21%
350	Between Bald Eagle & Sandy Ridge	6,300	1,100	17%

Rail Freight

In recent years, rail activity within Centre County has been increasing on the SEDA-COG Joint Rail Authority (JRA) system. Most of the rail freight movements are conducted by the Nittany & Bald Eagle Railroad and have focused on the natural gas and mineral/aggregates industries.

The SEDA COG rail lines within Centre County serve primarily local customers and provide connectivity to the national system via connections to the Norfolk Southern railroad in Tyrone and Lock Haven, and via trackage to the Canadian Pacific in Sunbury. Norfolk Southern also has trackage rights to operate on the SEDA COG JRA rail lines within Centre County.

Along with the rail service provided directly to local customers, there are also two trans-load facilities located within Centre County:

- Blazer Enterprises in Union Township near the Village of Wingate
- Glenn O. Hawbaker White Rock Quarry Rail Spur Yard and Bulk Transfer Facility in Spring Township near the Village of Pleasant Gap

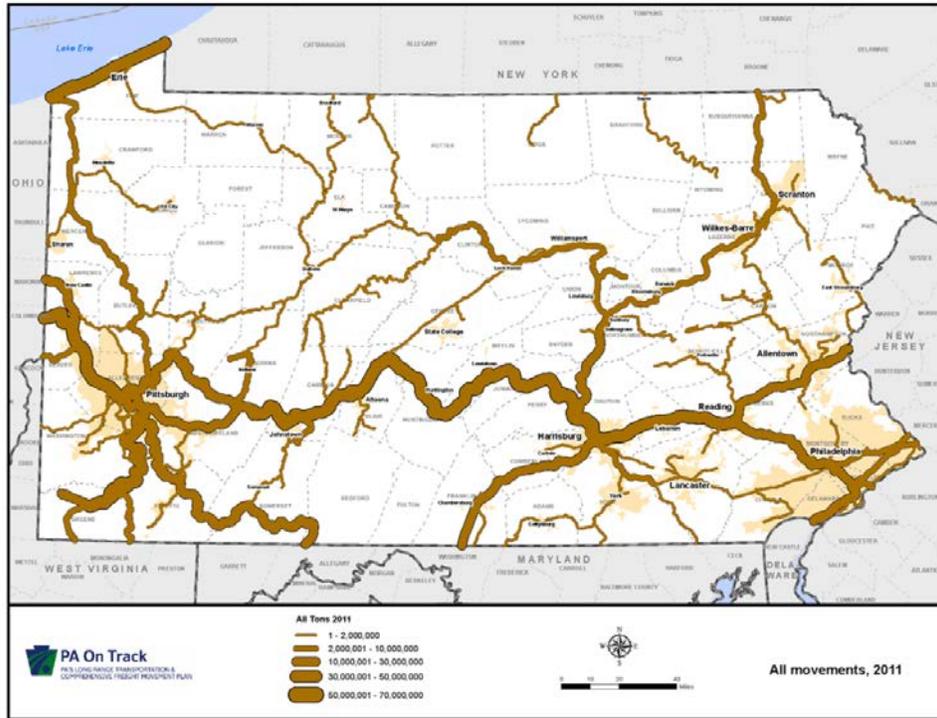
Information provided by the SEDA-COG JRA (Table 30) indicates that the number of carloads being shipped via the Nittany and Bald Eagle Railroad has been fairly steady for the past three years (2013-2015 estimated). However, new customer demand, such as Graymont, Inc. contracting to provide lime for a scrubber system at the Homer City electric generating plan in Indiana County, PA, and the anticipated increase in Marcellus Gas related freight traffic, result in the projections of carloads increasing over the next three years (2016-2018).

Table 30

Year	Nittany and Bald Eagle Railroad Carloads Shipped
2011	7751
2012	5432
2013	6748
2014	6684
2015	6800 (est.)
2016	7700
2017	9000
2018	9500

Maps provided in PennDOT's Draft CFMP (Figures 31-32) illustrate the SEDA COG JRA rail lines carrying between 1 and 2 million tons of freight on an annual basis.

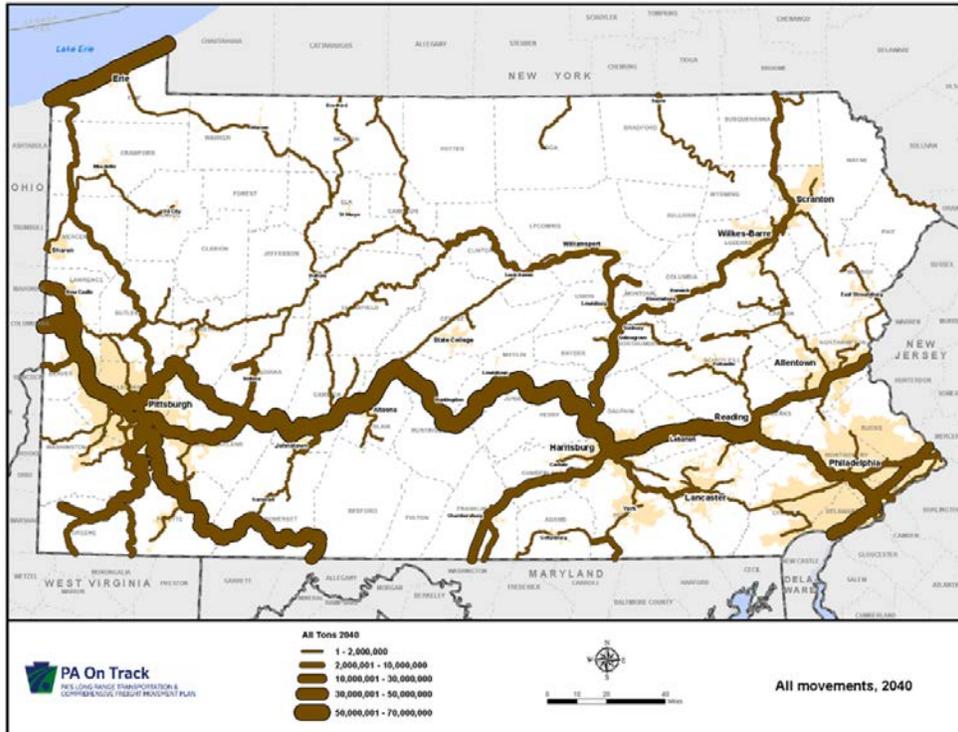
Figure 31



Source: STB 2011 Waybill Data Processed by IHS Global Insight

Another map in the Draft CFMP illustrates that freight tonnage moving on the SEDA-COG JRA rail lines is not anticipated to grow significantly by 2040.

Figure 32



Source: STB 2011 Waybill processed by IHS Global Insight

Air Freight

There are 15 commercial service airports in Pennsylvania and each provides passenger and air cargo/freight service. The top five freight cargo airports include: Philadelphia International Airport, Pittsburgh International Airport, Harrisburg International Airport, Lehigh Valley International Airport and University Park Airport.

In the Draft CMFP, the chart below (Table 31) indicates the tonnage and value of air freight moving in Pennsylvania is anticipated to more than double in the next 20-30 years.

Table 31

Direction	Tons	Percent	Value (Billions)	Percent	Average Value/Ton
2011					
Inbound	92,412	52%	\$12.90	50%	\$139,199
Internal	2,986	2%	\$0.14	1%	\$47,589
Outbound	77,595	43%	\$11.50	45%	\$148,830
Through*	6,038	3%	\$0.93	4%	\$154,457
Total	179,031	100%	\$25.50	100%	\$142,360
2040					
Inbound	203,683	56%	\$34.80	55%	\$171,029
Internal	6,998	2%	\$0.29	0%	\$41,623
Outbound	142,173	39%	\$25.20	40%	\$177,125
Through*	12,840	4%	\$2.50	4%	\$193,882
Total	365,694	100%	\$62.80	100%	\$171,741

**Through air cargo movements represents the tonnage of goods moved via air that landed at an airport in Pennsylvania, but were not unloaded in Pennsylvania.*

Source: CDM Smith analysis of Transearch Data

As noted, the University Park Airport is in the top five of freight cargo airports within the state. Most of the freight handling operations at this airport are completed at the Federal Express terminal and involve low tonnage, high value cargo. Currently, University Park Airport receives approximately 1.4 million tons of inbound air cargo annually. Based on the Draft University Park Airport Master Plan, inbound air cargo is expected to grow slowly over the next 20 years to approximately 1.7 million tons.

Freight movements are subject to continuously evolving influences such as changes in fuel costs, improvements in infrastructure (waterway port upgrades, removal of barriers, etc.), technology, business models and socioeconomic characteristics. The CCMPO will monitor these influences and freight movement trends in order to plan for future infrastructure improvements. The CCMPO intends to engage expertise within the transportation logistics community to help address freight planning activities in the future, to better respond to the changing needs relative to freight movement.