



WEST VIRGINIA 2023 STATE FREIGHT PLAN

EXECUTIVE SUMMARY



JANUARY 2024

The freight and goods transported across West Virginia's multimodal transportation system support nearly every aspect of everyday life. This ranges from the construction materials and energy sources used to build and power homes and businesses, to the food consumed at restaurants, and everyday goods sold across the State.

As the birthplace of petrochemicals, which play a role in nearly every consumer product, West Virginia remains a strong and growing hub for production. The State remains in a strong position to capitalize on key industries such as building materials, and growing industries such as electric vehicles and renewable energy, as highlighted by recent investments across the State.

The State is served by 38,850 miles of public roadway (90 percent is state-maintained), the 6th largest state-maintained highway system in the Nation, inland waterways and ports, two Class I railroads and various regional and short line railroads with multiple rail terminals, a robust pipeline network, and small commercial service airports which can provides cargo services. The State's multimodal freight network connects businesses, and consumers in all parts of the State, across the U.S., and with international markets. That infrastructure is spread out across a large, mostly rural State with topography, geology, and weather that — while beautiful — present safety, infrastructure, and mobility challenges.

At West Virginia Department of Transportation (WVDOT), it is our mission to responsibly provide a safe, efficient and reliable transportation system that supports economic opportunity and quality of life for all our customers. We look forward to working with our regional and local planning partners, municipalities, private sector stakeholders, and policymakers to pursue progress that will enhance freight mobility for the future.



INTRODUCTION

West Virginia's economic vitality and quality of life depend greatly on how well the State's freight transportation network moves goods and materials. The State's freight network plays a critical role in the daily life of West Virginia's residents and businesses—delivering goods to the State's businesses and residents, keeping manufacturing facilities operating, the store shelves stocked, the medicine flowing at healthcare facilities, and food on the table. The State's multimodal freight network connects businesses, and consumers in all parts of the State, across the U.S., and with international markets.

WVDOT in partnership with Federal agencies, port authorities, municipalities, and other state and local agencies, plays a critical role in supporting West Virginia freight. The Freight Plan serves as a roadmap for West Virginia's freight program, identifying both policies and investments that will enhance freight in the State. It builds upon WVDOT's library of recent transportation plans and programs, incorporates national freight planning best practices for data analytics, and synthesizes input from key public- and private-sector freight stakeholders throughout West Virginia.

38,850
PUBLIC ROADWAY MILES

90%
STATE-MAINTAINED

6TH LARGEST
STATE-MAINTAINED HIGHWAY
SYSTEM IN THE NATION



WVDOT OWNS
7,019 OUT OF
7,317 BRIDGES



11 RAILROADS AND
2,123 ROUTE MILES
184.5 MILES OWNED BY WVDOT

2 CLASS I RAILROADS
9 SHORTLINE AND
REGIONAL RAILROADS



18 RAILYARDS



24 PUBLIC & **36** PRIVATE
TRUCK PARKING FACILITIES



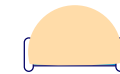
7 COMMERCIAL AIRPORTS
WITH CARGO SERVICES



3 COMMERCIALLY
NAVIGABLE WATERWAYS
(INCLUDING 1 MARINE HIGHWAY)



182 MARINE TERMINALS



3,288 PIPELINE MILES

326 MILLION TONS
OF FREIGHT ANNUALLY



\$127 BILLION
OF FREIGHT ANNUALLY

VISION, GOALS & OBJECTIVES

Development of the Freight Plan is shaped by a vision, goals, and objectives. These statements help shape the needs assessment and development of strategies, while also establishing a system to monitor plan implementation and system performance over time. The 2023 West Virginia State Freight Plan Vision, Goals and Objectives were created through a collaborative and robust process involving numerous stakeholders. They align with U.S. Department of Transportation (DOT) National Freight Program goals, National Highway Freight Program goals, and WVDOT's previous planning efforts, including the 2018 West Virginia State Freight Plan and WVDOT's 2050 Long-Range Transportation Plan (LRTP).

West Virginia State Freight Plan Vision Mission of WVDOT

**THE WEST VIRGINIA DEPARTMENT OF
TRANSPORTATION'S MISSION IS TO RESPONSIBLY
PROVIDE A SAFE, EFFICIENT AND RELIABLE
TRANSPORTATION SYSTEM THAT SUPPORTS
ECONOMIC OPPORTUNITY AND QUALITY OF LIFE.**



WEST VIRGINIA STATE FREIGHT PLAN GOALS AND OBJECTIVES

GOALS	OBJECTIVES
System Condition, Efficiency, and Fiscal Sustainability Maintain multimodal and intermodal freight transportation infrastructure in a state of good repair and manage life-cycle costs; efficiently deliver projects, programs and services supporting goods movement; and work to maintain existing funding mechanisms while exploring new alternative and sustainable funding mechanisms.	Maintain the existing freight transportation system and freight assets in a state of good repair. Invest in innovative technologies and program delivery strategies supporting freight movement. Explore new and sustainable revenue options which fund freight investments.
Safety and Security for All Users Reduce transportation fatalities and serious injuries involving freight vehicles, improve the safety and security of drivers, cargo, and intermodal facilities, and improve the resilience of the freight system — particularly to severe weather events and other disruptions.	Reduce fatalities and serious injuries on the multimodal transportation system. Enhance the safety and security of freight operators and cargo. Manage a resilient and redundant freight transportation network.
Economic Vitality Strengthen the ability of communities and industries to access national and international trade markets, retain and grow existing West Virginia statewide and regional economic focus sectors, and support regional economic development that will diversify West Virginia's economy.	Improve intermodal freight connections, and expand direct freight access to economic activity centers and emerging industries/clusters. Address highway freight bottlenecks and improve first-mile/last-mile access. Partner with universities, community colleges, and workforce training programs to educate and train new freight operators and supporting workforces.
Multimodal Mobility, Reliability, and Accessibility Facilitate freight mobility and connections for on-demand and reliable goods delivery across all West Virginia communities, including critical services such as health care and emergency management.	Improve freight network reliability, reduce incident clearance time and recovery, and enhance management of operational disruptions on freight corridors. Improve access and availability of designated and safe truck parking facilities. Create new opportunity for access to key destinations and jobs for underserved or disadvantaged populations.
Livable and Healthy Communities Create freight transportation systems that operate efficiently and cleanly, protect the natural environment and maintain access for residents and visitors to experience West Virginia's natural and cultural destinations.	Reduce emissions from freight movement. Mitigate environmental and community impacts from freight movement. Coordinate freight land use and transportation decisions.

STAKEHOLDER OUTREACH & ENGAGEMENT

This Freight Plan was developed with input from a diverse group of public- and private-sector stakeholders, including the West Virginia Freight Advisory Committee (FAC), WVDOT agencies and leadership, Federal planning partners, and local planning organizations. Additionally, engagement was used to foster partnerships and collaboration between WVDOT and stakeholders who will have a strong role in implementation.

WEST VIRGINIA (FAC) MEETINGS

March 23, 2023 | July 19, 2023

FEDERAL HIGHWAY ADMINISTRATION (FHWA) TRUCK PARKING WORKSHOP SESSIONS

April 11, 2023 | April 19, 2023 | May 3, 2023

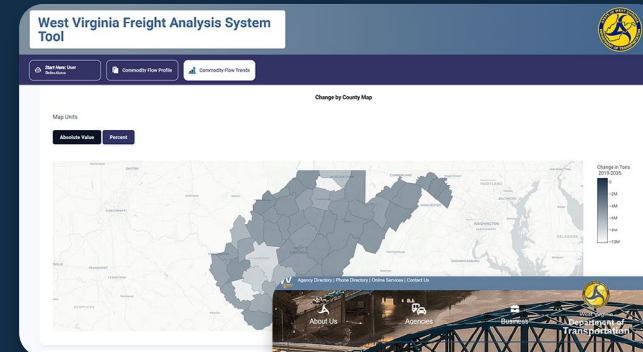
METROPOLITAN PLANNING ORGANIZATIONS (MPO) OUTREACH

WVAMPO Briefing (December 13, 2022)
HEPMPO Freight Summit (February 1, 2023)
WVAMPO Briefing (April 27, 2023)

Statewide Stakeholder Online Survey
Statewide Stakeholder Online Map Tool

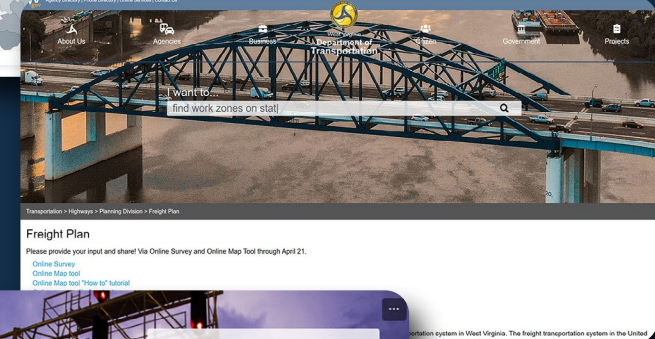
West Virginia Coal Association
West Virginia Department of Economic Development
Bel-O-Mar Regional Council
Brooke-Hancock-Jefferson (BHJ) Metropolitan Planning Commission
Fayetteville-Raleigh MPO
Hagerstown/Eastern Panhandle (HEP) MPO
KYOVA MPO
Morgantown/Monongalia MPO
Regional Intergovernmental Council (RIC)
Wood-Washington-Wirt (WWW) MPO

STAKEHOLDER ONLINE TOOLS AND SURVEY INSTRUMENTS



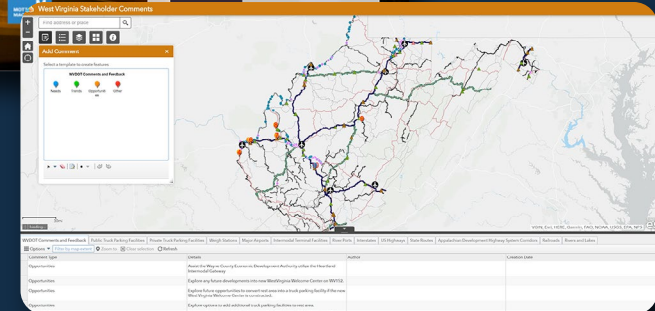
*Online Commodity Flow Tool
(Freight Analysis System Tool)*

Freight Plan Website

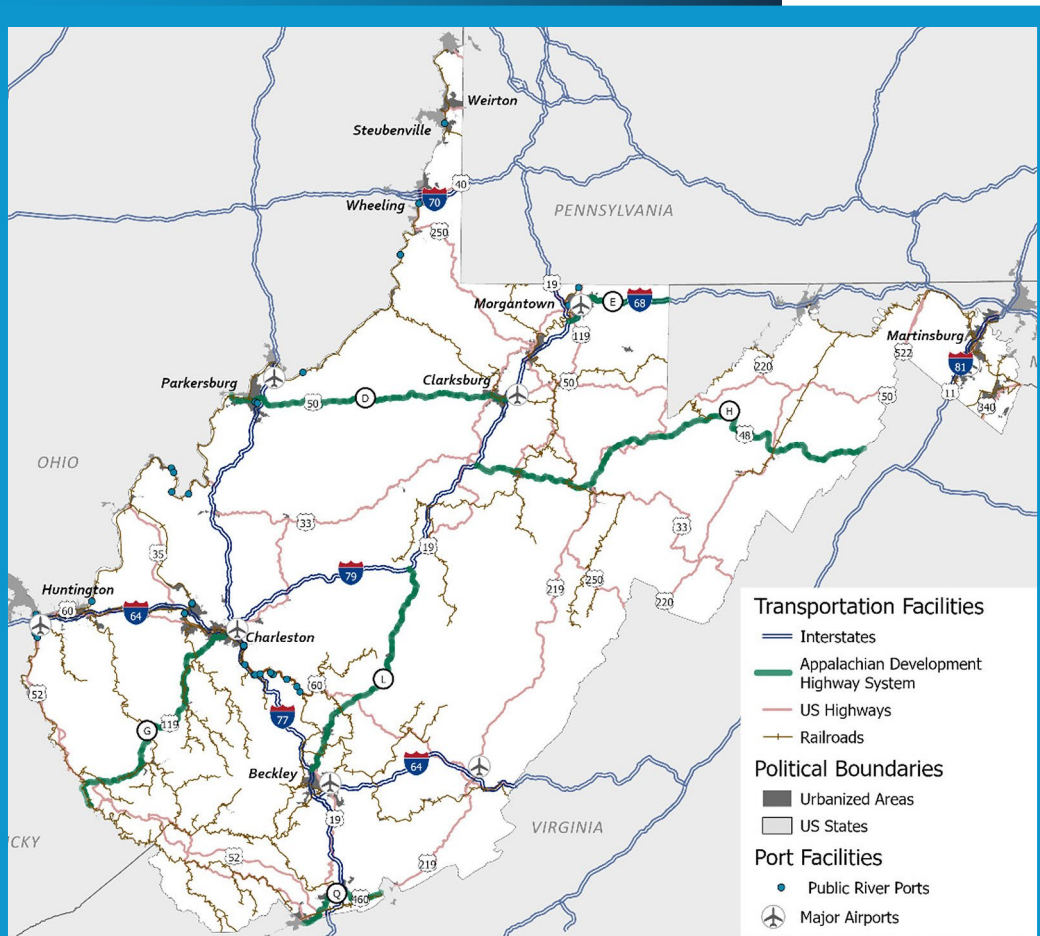


Statewide Stakeholder Online Survey

Statewide Stakeholder Online Map Tool



WEST VIRGINIA'S FREIGHT TRANSPORTATION SYSTEM ASSETS



The movement of goods is the backbone of West Virginia's economy and West Virginians' way of life. West Virginia's freight infrastructure connects the State's freight producing industries to distributors, retailers, and consumers. The State engages in a variety of resource harvesting, manufacturing, retailing, and warehousing, all of which require an interconnected, well-maintained, safe, and efficient network.

FREIGHT, EQUITY, AND THE ENVIRONMENT

While the movement of goods is critical to West Virginia's economy, it also can impact the State's natural habitats and ecosystems, watersheds and water quality, and air quality.

In order to help the State achieve its environmental and community goals, it is also critical for WVDOT to understand where freight movements pose the most risk to communities and the environment.

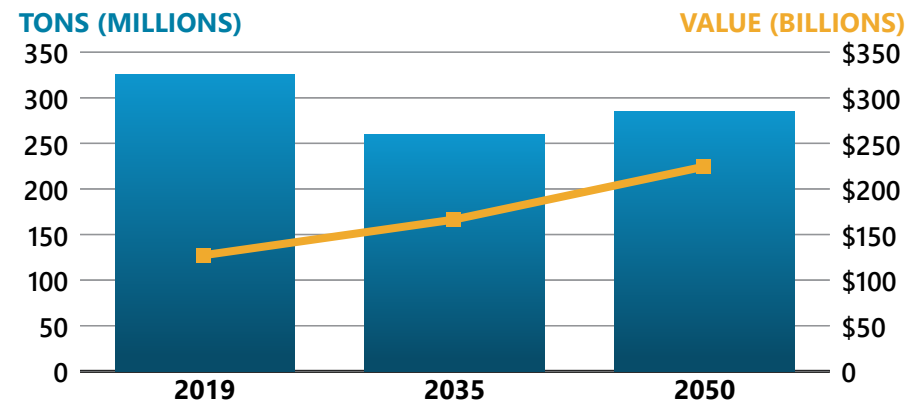
The impacts of freight have historically been disproportionately felt by underserved communities throughout West Virginia and the Nation. Improving equity and reducing the environmental impacts of freight are a priority for both WVDOT and U.S. DOT.

BIG PICTURE: FREIGHT DEMAND IN WEST VIRGINIA

Freight and the multimodal freight network are closely linked to West Virginia's economy. Vast amounts of freight move to, from, and within West Virginia each year. A well performing and connected freight network is critical to support both the businesses and residents of West Virginia.

In 2019, 326 million tons of freight, valued at \$127 billion, was transported on West Virginia's network of highways, railways, waterways, pipelines, and airports. By 2050, this volume of goods is projected to decrease slightly to 285 million tons, valued at \$224 billion, a decrease of 13% by tonnage and increase of 76% by value.

WEST VIRGINIA TOTAL FREIGHT FLOWS, ALL MODES (2019–2050)



WEST VIRGINIA TOP 5 COMMODITIES (2019)

BY TONNAGE

COAL	43%	1
NATURAL GAS & FOSSIL PROD.	23%	2
GRAVEL	7%	3
GASOLINE	4%	4
FUEL OIL	3%	5

BY VALUE

1	11%	NATURAL GAS & FOSSIL PROD.
2	9%	PHARMACEUTICALS
3	7%	MACHINERY
4	7%	PLASTICS/RUBBER
5	7%	MIXED FREIGHT

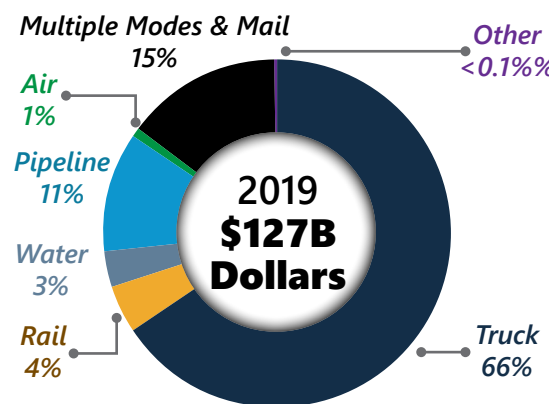
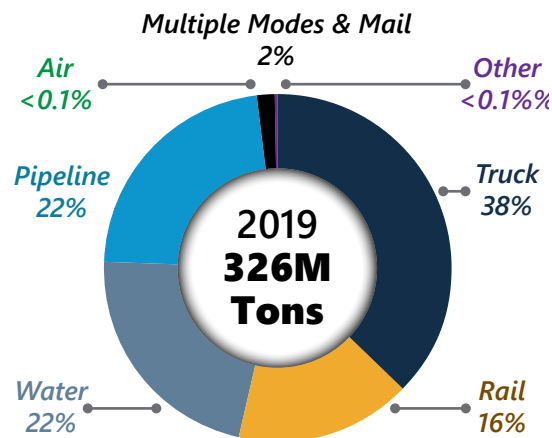
KEY TAKEAWAYS FROM WEST VIRGINIA COMMODITY FLOW ANALYSIS

The rise in higher per-unit-price commodities such as pharmaceuticals, precision instruments, and electronics is anticipated to drive the increase in overall freight value.

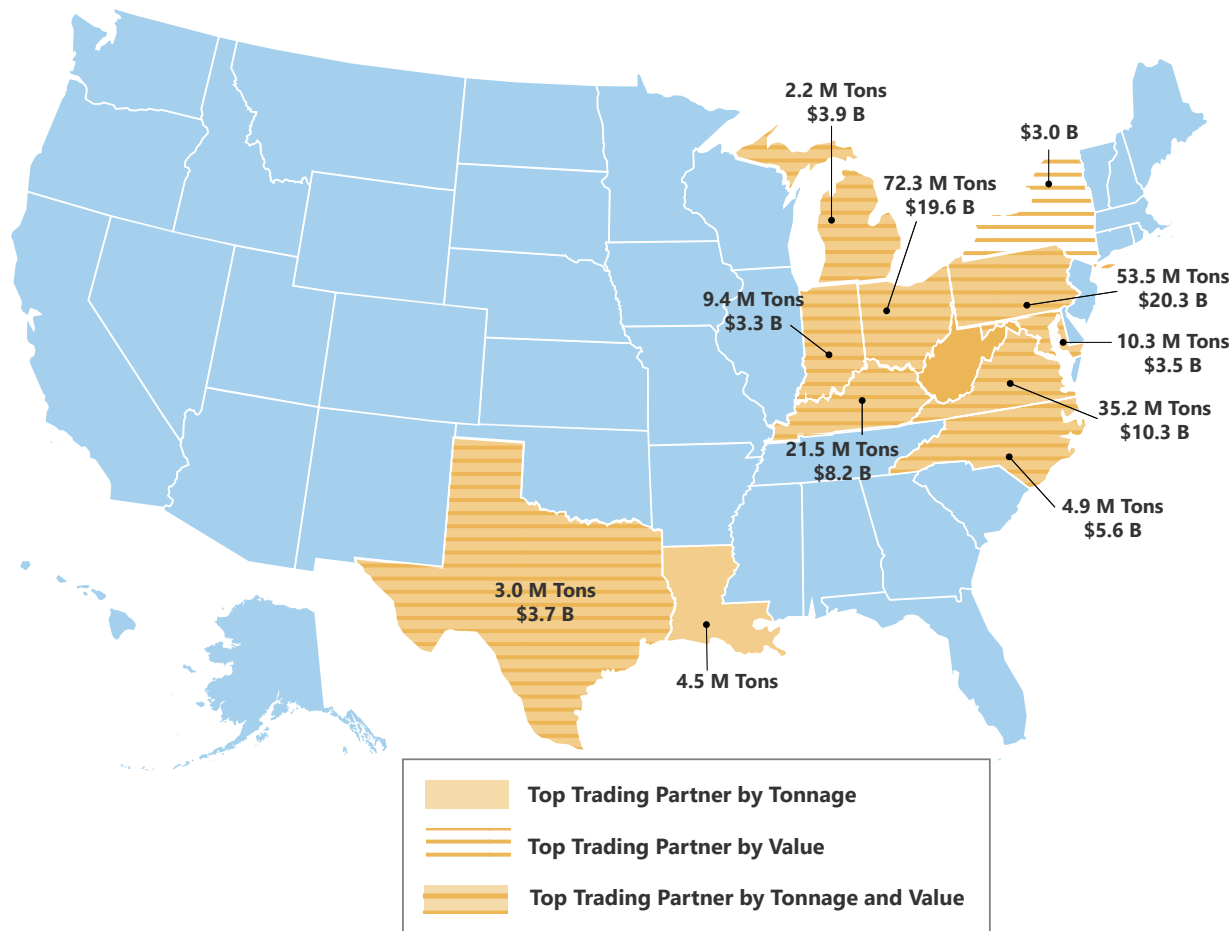
From 2019 to 2050, the entire freight system is projected to carry less tonnage yet higher values. Tonnage is expected to decline by 42 million tons, but increase in value by \$97 billion.

The most common mode of transportation for coal, the rail network, is projected to be the mode most affected by the decline in coal.

WEST VIRGINIA FREIGHT TONNAGE AND VALUE BY MODE (2019)



WEST VIRGINIA'S TOP 10 TRADING PARTNERS BY TONNAGE AND VALUE OF FREIGHT ACTIVITY (2019)



Data Source: FHWA's Freight Analysis Framework version 5.4.1 (FAF5), disaggregated by Cambridge Systematics, Inc. 2023.

KEY WEST VIRGINIA FREIGHT INTENSIVE INDUSTRIES

The five largest freight-related industries by Gross State Product (GSP) in West Virginia in 2021 were:

**Mining, Quarrying, and Oil & Gas (16%); Manufacturing (10%);
Retail Trade (7%), Wholesale Trade (5%); and Construction (3%).**

WEST VIRGINIA INDUSTRY SECTOR SPOTLIGHT

ENERGY

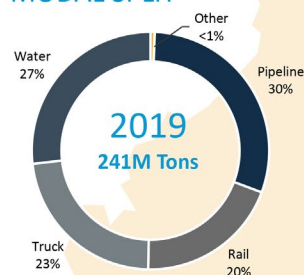


West Virginia ranked fourth in the U.S. for total energy production in 2020, producing 5 percent of the nation's total.¹ The state is the second largest coal producer in the U.S. and the seventh largest for natural gas.² Many natural gas processing plants and pipelines have been constructed or expanded in north-central West Virginia. Pipelines transport natural gas liquids from Appalachia to the Texas Gulf Coast, and to eastern refineries.³



Source: West Virginia Coal Mining | Delta Whiskey | Flickr

MODAL SPLIT⁴



AT A GLANCE



\$12.99B
Industry GDP
(2021)⁶



2019 Freight Flows⁴
241.4M tons
\$36.1B

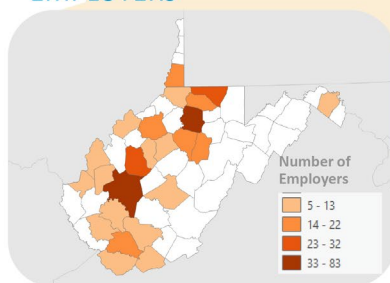


15.21%
West Virginia
GDP⁶

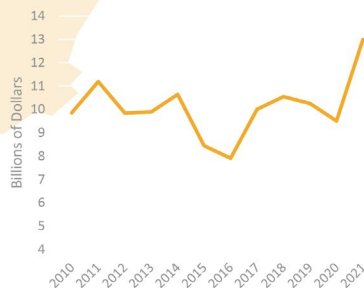


2050 Future Flows⁴
148.4M tons ↓ 39%
\$32.2B ↓ 11%

EMPLOYERS⁵



ANNUAL PRODUCTION⁶



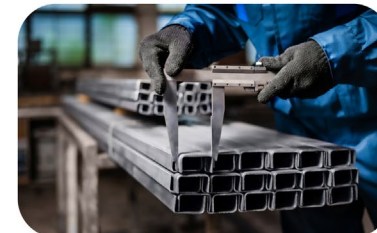
Sources:

¹ U.S. Energy Information Administration - EIA - Independent Statistics and Analysis | ² Energy | West Virginia Department of Economic Development Website | ³ WV Office of Energy | ⁴ FHWA FAF v5.4.1 (2019-2050). These freight volumes are estimates and include total volumes for Standard Classification of Transported Goods (SCTG) Codes 15-19 | ⁵ U.S. Census County Business Patterns (CBP) (2021) NAICS 211, 2121, 213111, 213112, 213113, 2211, 2212, 324, 486 | ⁶ U.S. Department of Commerce Bureau of Economic Analysis (2023)

BUILDING PRODUCTS

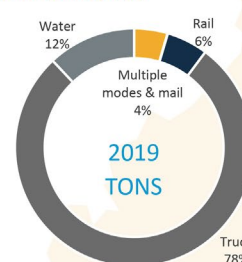


West Virginia is the third most forested state in the nation (11.9 million forested acres).¹ The abundant wood products make West Virginia a leading producer of hardwoods. The state also has abundant resources such as coal and limestone for making steel and cement. Additionally, a highly skilled workforce and robust training facilities support future growth.



Source: Huntington Steel

MODAL SPLIT²



AT A GLANCE



\$2.3B
Industry GDP
(2021)⁴



2019 Freight Flows²
57.6M tons
\$13.8B

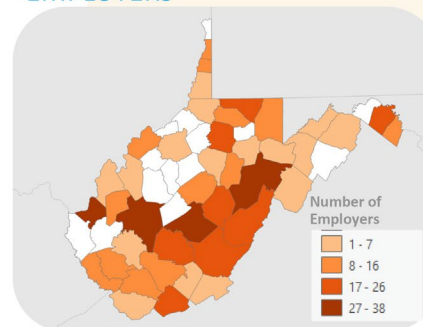


2.75%
West Virginia
GDP⁴



2050 Future Flows²
80.3M tons ↑ 39%
\$19.6B ↑ 43%

EMPLOYERS³



ANNUAL PRODUCTION⁴



Sources:

¹ Building Products | West Virginia Department of Economic Development Website | ² FHWA FAF v5.4.1 (2019-2050). These freight volumes are estimates and include total volumes for Standard Classification of Transported Goods (SCTG) Codes 10-12, 25, 26, 31, 32, 33 | ³ U.S. Census County Business Patterns (CBP) (2021) NAICS 113, 2123, 321, 3273, 3279, 331, 332 | ⁴ U.S. Department of Commerce Bureau of Economic Analysis (2023)

MULTIMODAL FREIGHT NEEDS

The needs of West Virginia's multimodal freight system are informed through the analysis of existing and future conditions, trends, stakeholder engagement, and insights from recent statewide, regional, and local plans and programs. These needs include the infrastructure, operations, policy, and funding for each transport mode.

HIGHWAY NEEDS



122 MILLION TONS
VALUED AT \$83.3 BILLION IN 2019
PROJECTED TO GROW TO 137 MILLION TONS
VALUED AT \$153.6 BILLION BY 2050

- Truck Parking
- Truck Safety
- System Capacity, Connectivity, and Mobility
- Asset Management
- Transportation Technology
- Industrial Access
- Resiliency/Flooding

PORTS & WATERWAYS NEEDS



72 MILLION TONS
VALUED AT \$4.1 BILLION IN 2019
PROJECTED TO DECLINE TO 20.4 MILLION TONS
VALUED AT \$2.8 BILLION BY 2050

- Flooding and Aging Infrastructure
- Multimodal Connectivity
- Container on Barge Facilities

FREIGHT RAIL NEEDS



52.7 MILLION TONS
VALUED AT \$5.7 BILLION IN 2019
PROJECTED TO DECLINE TO 29.2 MILLION TONS
VALUED AT \$7.9 BILLION BY 2050

- General Rail Safety
- Improved Safety at Grade Crossings
- Commodity Diversification
- Industrial Access
- Improved Service
- Aging Infrastructure (Tracks and Bridges)
- Capacity and Vertical Clearance
- Sustainability

AIR CARGO NEEDS



31 THOUSAND TONS
VALUED AT \$866M IN 2019
PROJECTED TO GROW TO 118 THOUSAND TONS
VALUED AT \$2.9 BILLION BY 2050

- Maintaining Service
- Maintaining Road Connectivity
- Processing Facilities
- Technology and the Future of Aviation

PIPELINE NEEDS



72.9 MILLION TONS
VALUED AT \$14.3 BILLION IN 2019
PROJECTED TO GROW TO 89 MILLION TONS
VALUED AT \$16.5 BILLION BY 2050

- Monitor New Pipeline Development and Last-Mile Terminal Connectors
- Monitor Pipeline Safety

MULTIMODAL POLICY NEEDS

- Ensure a Competitive State Workforce
- Truck Driver Retention and Attraction
- Leverage Federal Grant Funding Opportunities
- Project Selection Processes
- Integration of Freight Planning into WVDOT Activities
- Continued FAC Engagement

FREIGHT STRATEGIES AND INVESTMENTS

The 2023 State Freight Plan documents the multimodal freight transportation strengths, weaknesses, opportunities, and challenges, and provides a blueprint for addressing the State's current and future freight transportation needs. The Freight Plan presents 24 strategies to help WVDOT address these challenges and needs, including aging infrastructure, safety concerns, truck parking, rural and multimodal connectivity challenges, system capacity constraints, bottlenecks, system resiliency, and funding challenges.

WEST VIRGINIA FREIGHT PLAN STRATEGIES AND ALIGNMENT WITH FREIGHT PLAN GOALS & OBJECTIVES



System Condition,
Efficiency, and
Fiscal Responsibility



Safety and
Security for
All Users



Economic
Vitality



Multimodal Mobility,
Reliability, and
Accessibility



Livable and
Healthy
Communities

STRATEGY	GOALS				
<i>Multimodal</i>					
Monitor and position for Federal grant opportunities (e.g., Bridge Investment Program, Rural Surface Transportation Program, INFRA, RAISE, CRISI, Rail Crossing Elimination Program, etc.), and submit and support applications that advance freight system performance and economic competitiveness.					
Incorporate freight/economic development related impacts and benefits in the project selection processes.					
Develop a statewide transportation and economic development plan, including identifying strategies to mitigate existing barriers to employment and ensure a competitive state workforce.					
Regularly convene the FAC to discuss Freight Plan implementation, emerging needs, lessons learned, and partnership and funding opportunities. Continue working with the freight-focused stakeholders to promote infrastructure improvements that are important to West Virginia's economic competitiveness at ports, airports, and railroad facilities.					
Improve coordination with railroads that own and operate the rail network within the multimodal freight system.					
Advance investments in resilient and energy-efficient infrastructure, and incorporate freight-specific needs in the State Resiliency Plan and its deployment strategy.					
Invest in building redundancy into the system, including transportation management and operations, real time information, incident management, and work zone management.					

Freight Highway					
Continue implementation of the Transportation Asset Management Plan (TAMP).					
Advance/accelerate delivery of projects that preserve bridges and pavement on truck routes.					
Periodically re-evaluate Primary Highway Freight System (PHFS), National Highway Freight System (NHFS), Critical Urban and Critical Rural Freight Corridors (CU/CRFCs), and National Highway System (NHS) intermodal connector designations.					
Conduct a truck parking and safety assessment and investment study to prioritize the list of truck-involved crashes safety hot spots, and truck parking locations that are most feasible for expansion, and develop near- and long-term implementation actions.					
Expand public truck parking facilities that are at or over capacity in accordance with truck parking investment study results.					
Freight Rail					
Maintain vitality of rail system and enhance utility to West Virginia's evolving economy.					
Conduct assessment of opportunities for traffic development and develop prioritized state policy for at-risk rail lines.					
Facilitate investment in freight rail infrastructure through state grants and/or loans, or a freight rail investment credit.					
Support improved access to intermodal service by West Virginia industry.					
Continue improving rail/highway safety by investing in at-grade crossings in accordance with the Highway Rail Crossing Safety Action Plan (SAP). Where conditions warrant, consider other options, including grade separations.					
Ports and Waterways					
Support national investment in state of good repair along the inland waterway system that serves West Virginia.					
Improve road and rail access to inland port facilities.					
Promote development opportunities at West Virginia port facilities and along the waterways.					
Air Cargo					
Develop a State Aviation System Plan to identify, prioritize, and track airport needs in the State.					
Maintain roadway connections between West Virginia's major markets and airport facilities.					
Pipeline					
Improve multimodal access to pipeline terminals.					
Support federal efforts to ensure pipeline safety.					

WEST VIRGINIA FREIGHT INVESTMENT PROGRAM

The Infrastructure Investment and Jobs Act (IIJA) continues the Fixing America's Surface Transportation (FAST) Act requirement that states adopt a fiscally constrained Freight Investment Plan (FIP) indicating how National Highway Freight Program (NHFP) formula funds will be used.

WEST VIRGINIA FREIGHT INVESTMENT PLAN, FY2023–FY2028

PROJECT AND DESCRIPTION	FUNDING SOURCE (\$MILLIONS)	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	TOTAL
Corridor H: Parsons-Davis	Total Project Cost	\$97.6	\$54.5	–	–	–	–	\$152.1
	NHFP	\$15.2	\$25.1	–	–	–	–	\$40.2
	Other Federal	\$82.4	\$44.6	–	–	–	–	\$111.8
	State Match	–	–	–	–	–	–	–
Corridor H: Hardy Co 23/12—VA State Line	Total Project Cost	–	–	\$144.9	\$144.9	\$144.9	\$144.9	\$579.6
	NHFP	–	–	\$15.2	\$30.3	\$45.4	\$60.6	\$151.5
	Other Federal	–	–	\$129.8	\$114.6	\$99.5	\$84.3	\$428.1
	State Match	–	–	–	–	–	–	–

Implementation of the Freight Plan will only be successful with the participation and collaboration of all public- and private-sector users and owners of the transportation system, including freight industry stakeholders, and federal, state, regional and local agencies. WVDOT will continue to leverage the relationships developed from the FAC in addition to engaging other stakeholders during the implementation of the Freight Plan.





WEST VIRGINIA 2023 STATE FREIGHT PLAN

EXECUTIVE SUMMARY

This Freight Plan and other Freight Plan materials are available on the Freight Plan website,
<https://transportation.wv.gov/highways/programplanning/Pages/Freight-Plan.aspx>

