NATIONAL CAPITAL REGION FREIGHT PLAN

2023 Update

Andrew Meese
TPB Systems Performance Planning Program Director

Transportation Planning Board
July 19, 2023

Item #10

Importance of Regional Freight Planning

- Freight is vital to commerce and quality-of-life, including in metropolitan areas which have unique freight complexities
  - 23 U.S. Code § 134 calls for MPOs to consider strategies that "support economic vitality" of their planning areas and that "increase accessibility and mobility…for freight"
- Significance of freight is also anticipated to grow
  - Regional economic drivers indicate an increased demand for freight transportation services in the future
- TPB addresses Freight Planning as part of its ongoing Unified Planning Work Program
  - Advised by the TPB Freight Subcommittee, plus occasional forums
  - Input to Visualize 2045 plus this stand-alone Freight Plan

Plan Structure

- **The Draft Freight Plan was included in today's meeting materials.**
  - **Chapter 1** - Introduction
  - **Chapter 2** - Multimodal Freight Transportation System
  - **Chapter 3** - Freight Demand
  - **Chapter 4** - Key Trends Influencing Freight in the Region
  - **Chapter 5** - Regional Freight Issues, Challenges, and Opportunities
  - **Chapter 6** - Regional Freight Policies
  - **Chapter 7** - National Capital Region Projects Important to Freight
  - **Chapter 8** - Recommendations and Next Steps
  - **Appendices**

Ch. 1: Introduction

Goals of Regional Freight Plan

- Highlights freight's significance to the regional economy
- Serves as a technical reference on the region's freight system
- Provides policies and recommendations to guide regional freight planning activities
    - Recommendations incorporate planning factors and goals identified in Visualize 2045
- Aligns with federal freight policies and regulations
- Sets the stage for freight to be considered in the Visualize 2050 and all other regional planning activities

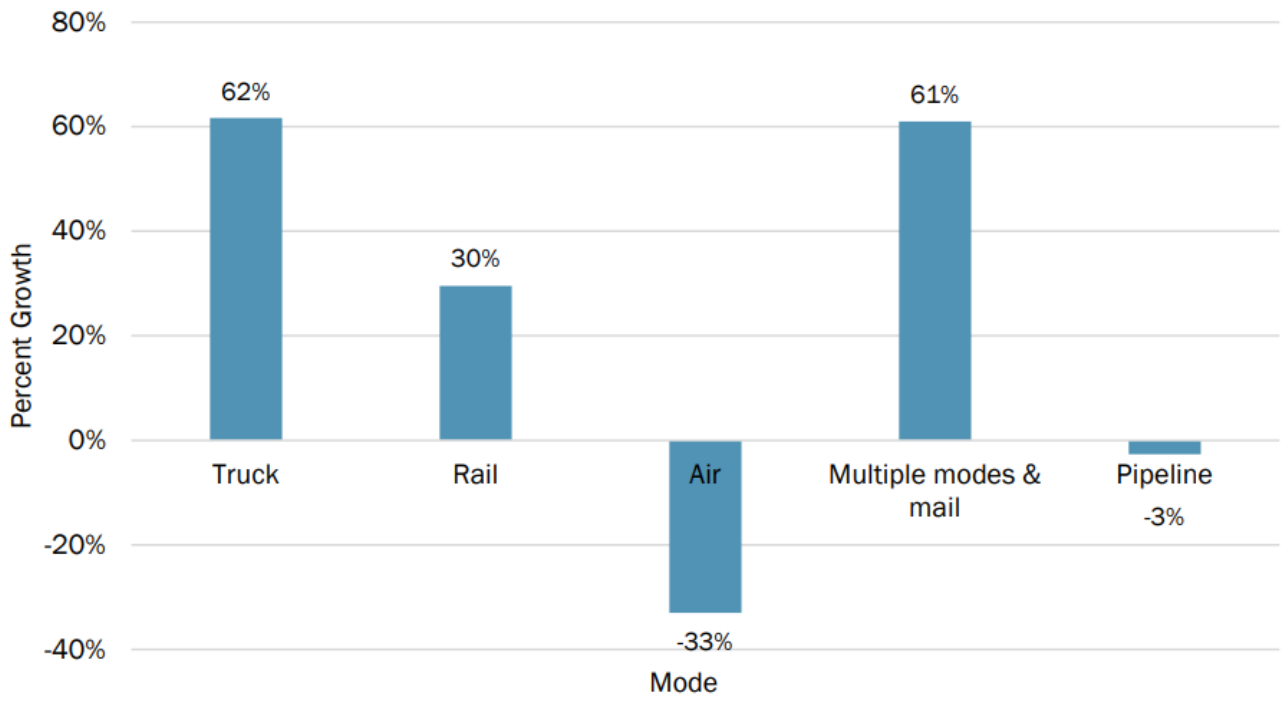
Ch. 2-3: Multimodal Freight Transportation System

- The freight system and freight movement are vital to the region's economy, quality of life, and resiliency (e.g. emergencies, military) even though we do not have an industry-heavy regional economy
- The region's freight transportation system consists of several multimodal, integrated elements
- Commercial trucking is the dominant freight transportation mode
  - Accounts for 73% of freight transported by value and 72% of freight transported by weight (2020)
  - Growth of e-commerce, reliance on "just-in-time" inventory model, and expansion of expedited small package shipping suggests growth of trucking into the future

Ch. 2-3: Multimodal Freight Transportation System

- Nearby Port of Baltimore and Port of Virginia (Hampton Roads) important to our region's freight
- Freight rail and pipelines important for longer-distance and intercity freight movement
- Interstate highways and other major roadways are vital
- The plan defines and updates the "Regionally Significant Freight Network" that staff uses for Congestion Management Process analyses
    - Does not impact or supersede official designations of truck routes by states or by FHWA

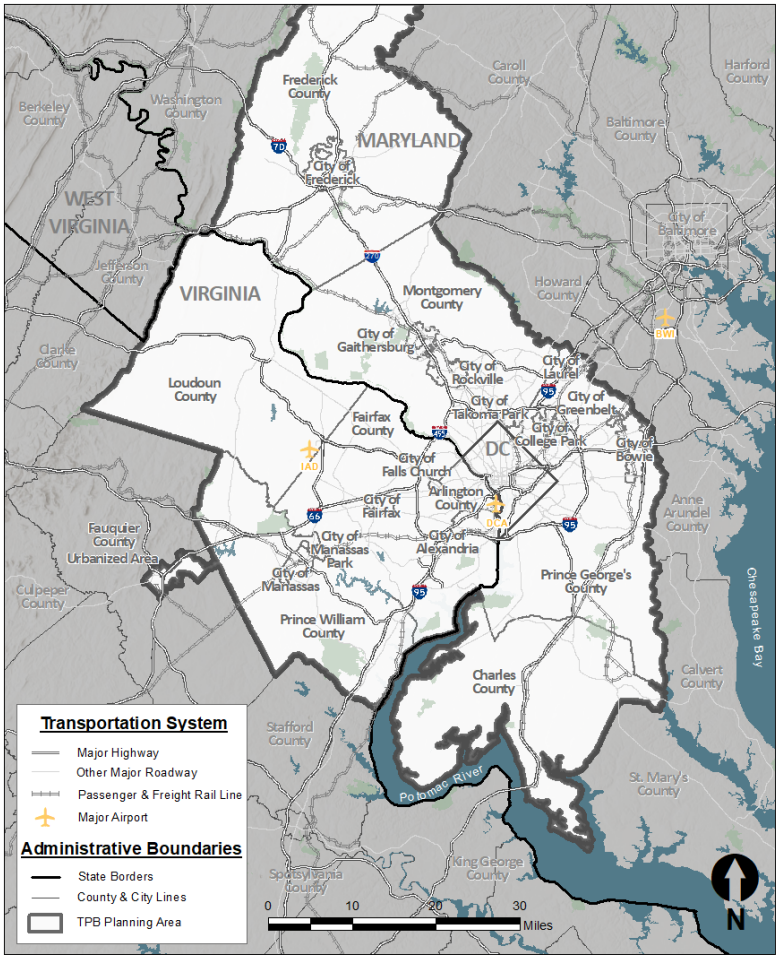
Forecasted Growth in Tonnage by Mode (2020-2050)

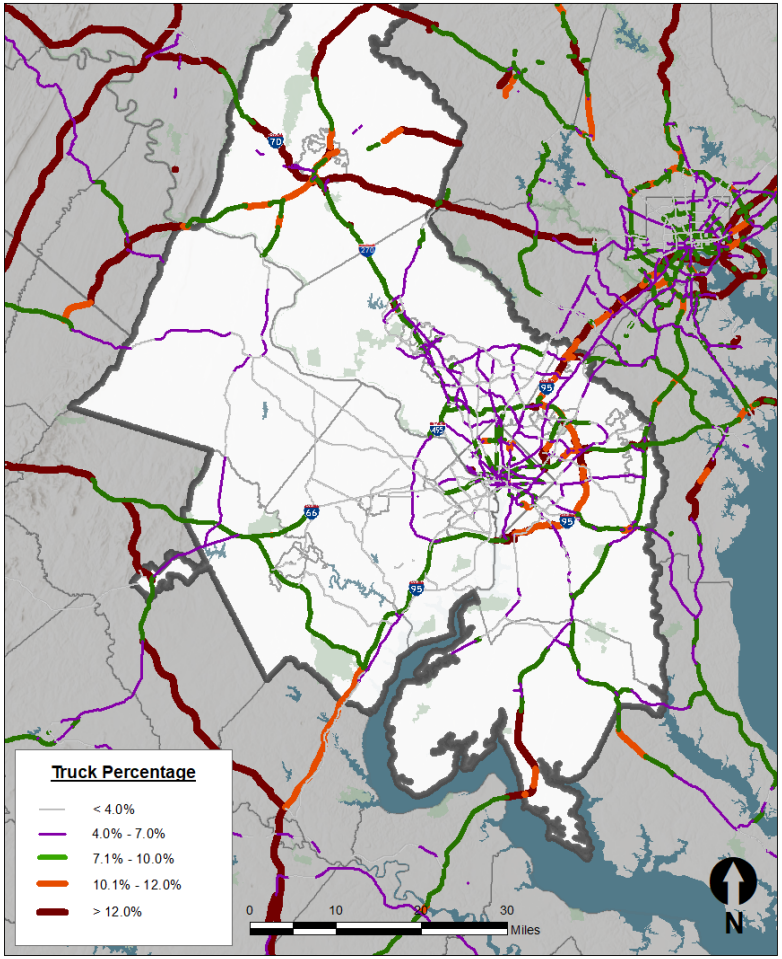


Source: Freight Analysis Framework, FHWA

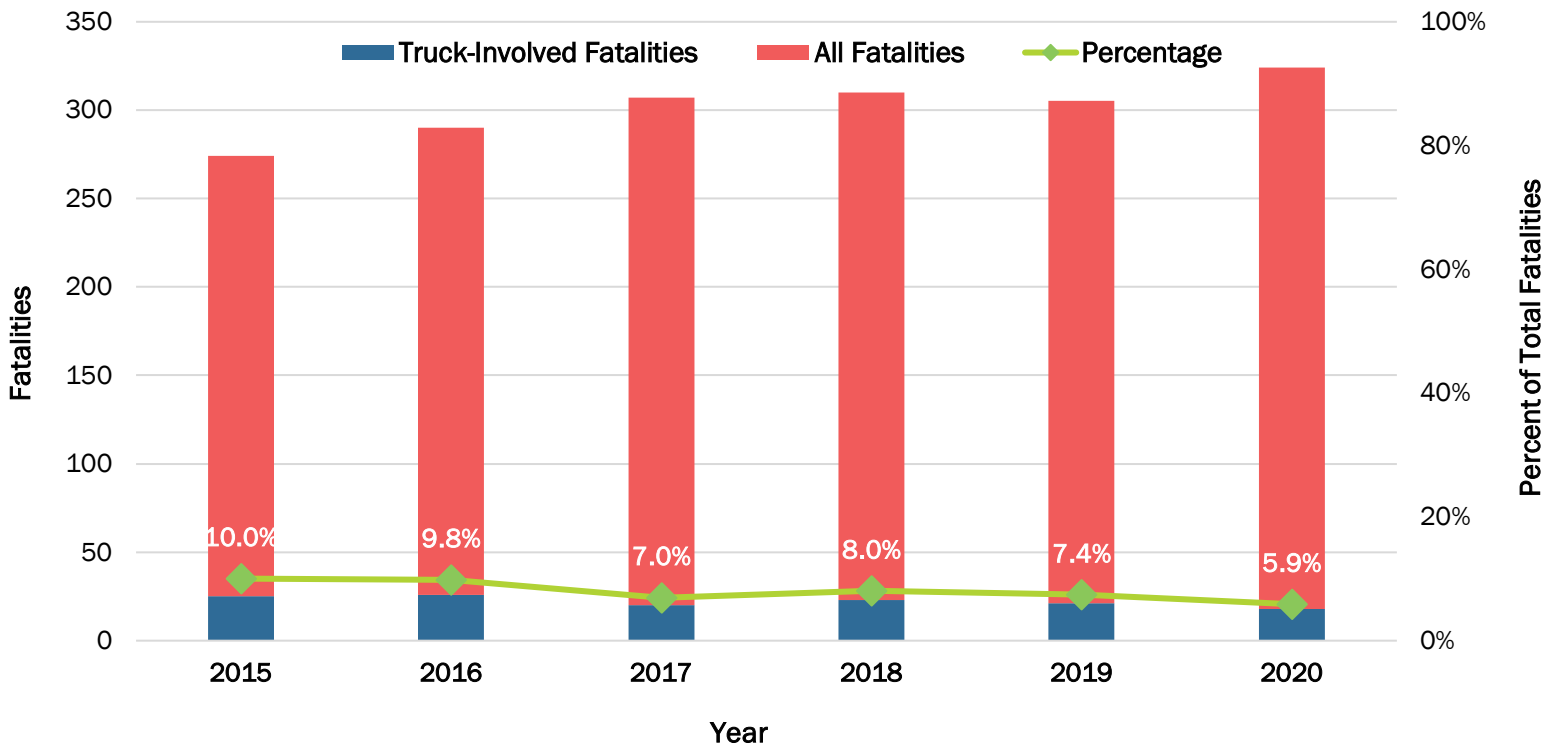
Federal forecasts reflect increasing deliveries to consumers/businesses ("multiple modes") and decreasing reliance on (expensive) air cargo for perishables

Regional Freight Network





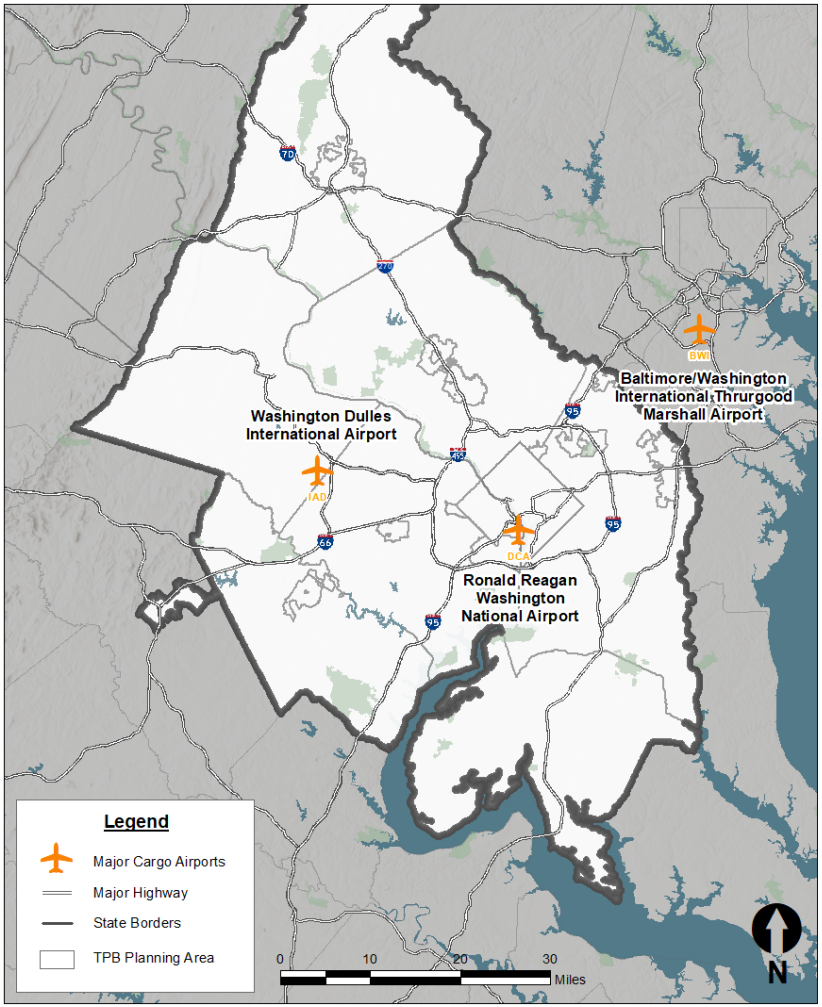
Regional Truck-Involved Fatalities



Source: Fatality Analysis Reporting System, Fatality and Injury Reporting System Tool (via NHTSA)

Recent trends show truck-involved fatalities to be a decreasing proportion of the region's roadway crash fatalities

Air Cargo



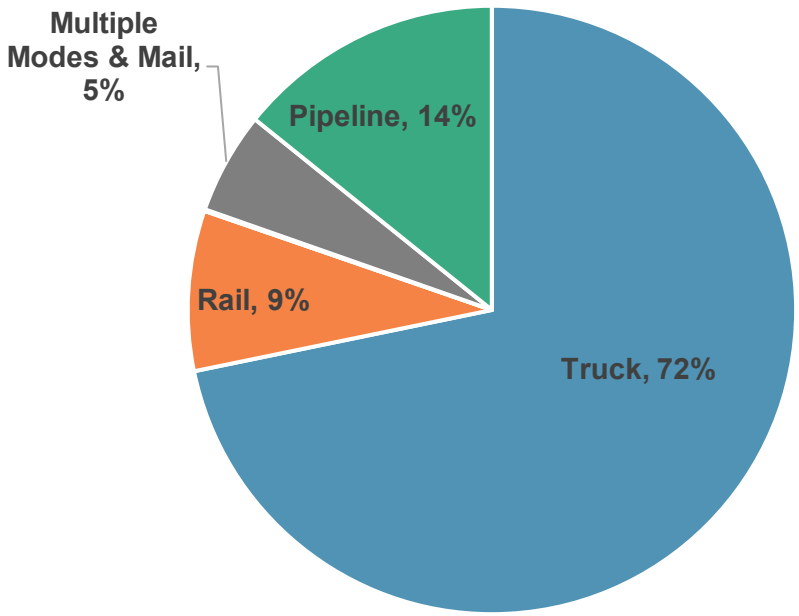
Rank	City (Airport Code)	Total Cargo (metric tons)
1	Memphis TN (MEM)	4,613,431
2	Anchorage AK (ANC)	3,157,682
3	Louisville KY (SDF)	2,917,243
4	Los Angeles CA (LAX)	2,229,476
5	Miami FL (MIA)	2,137,699
6	Chicago IL (ORD)	2,002,671
7	Cincinnati OH (CVG)	1,300,758
8	New York NY (JFK)	1,104,480
9	Indianapolis IN (IND)	1,013,054
10	Ontario CA (ONT)	843,852
26	Baltimore MD (BWI)	269,976
33	Washington DC (IAD)	197,917

Source: Airports Council International, 2020

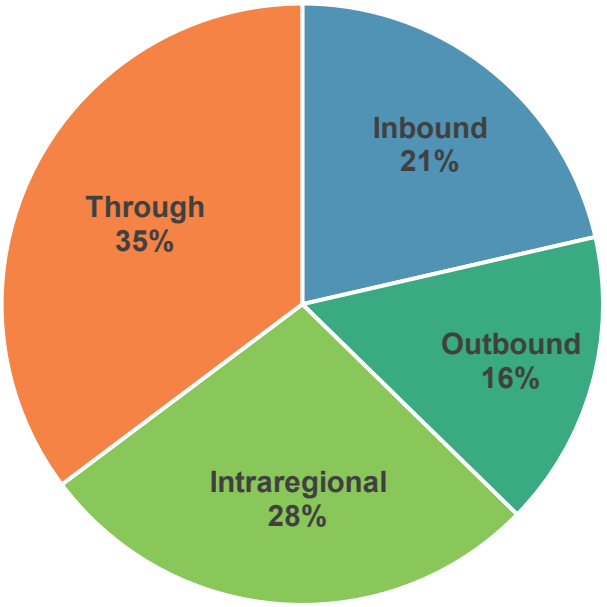
Freight activity at DCA not within the top 100 U.S. airports.

Regional Freight Weight

Weight (Mode)



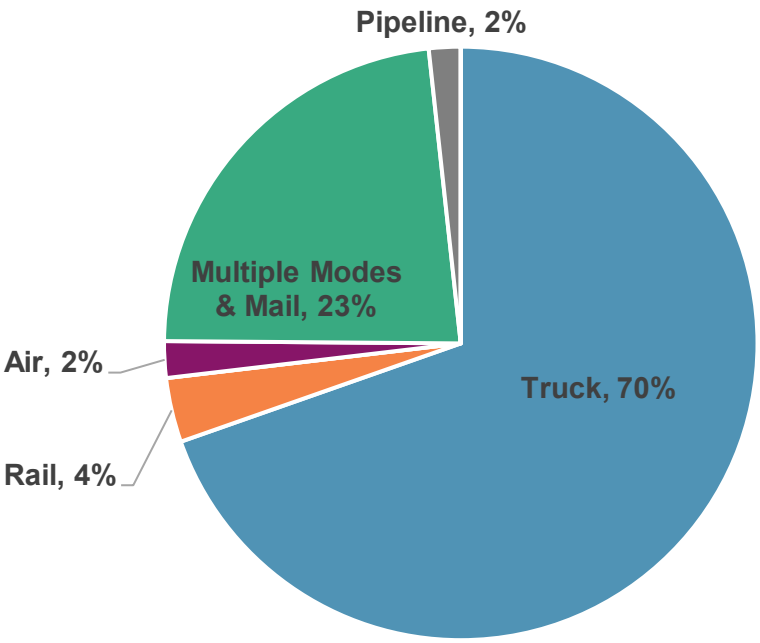
Weight (Direction)



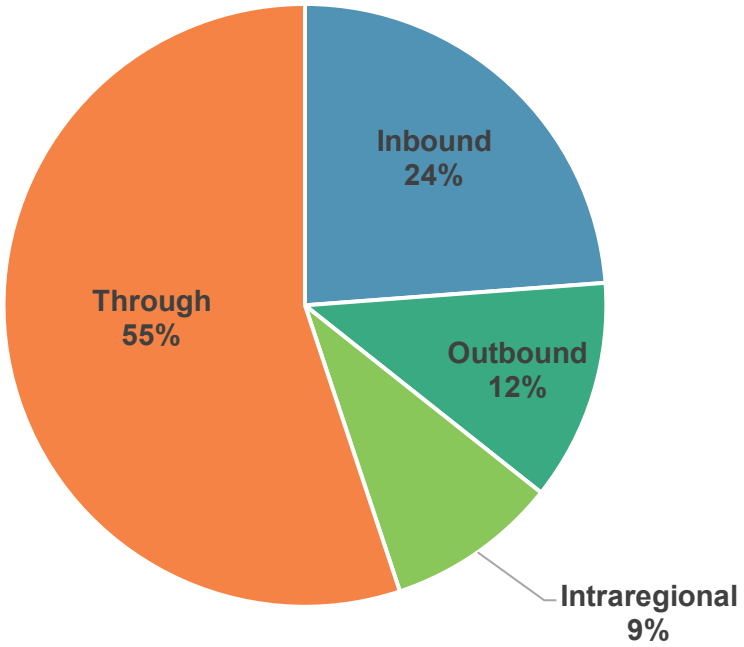
Source: Federal Highway Administration Freight Analysis Framework, 2020

Regional Freight Value

Value (Mode)



Value (Direction)



Source: Federal Highway Administration Freight Analysis Framework, 2020

Top Commodity Types by Weight & Value

Rank	Commodity Class by Weight	Total (thousands of tons)	Share
1	Other petroleum products	52,427	24%
2	Gravel and crushed stone	36,903	17%
3	Non-metallic mineral products	29,172	13%
4	Waste and scrap	13,965	6%
5	Mixed freight	10,125	5%

Rank	Commodity Class by Value	Total (millions)	Share
1	Mixed freight	$43,596	17%
2	Electronic and electrical equipment	$36,846	14%
3	Pharmaceutical products	$23,286	9%
4	Motorized and other vehicles	$16,207	6%
5	Miscellaneous manufactured products	$14,877	6%

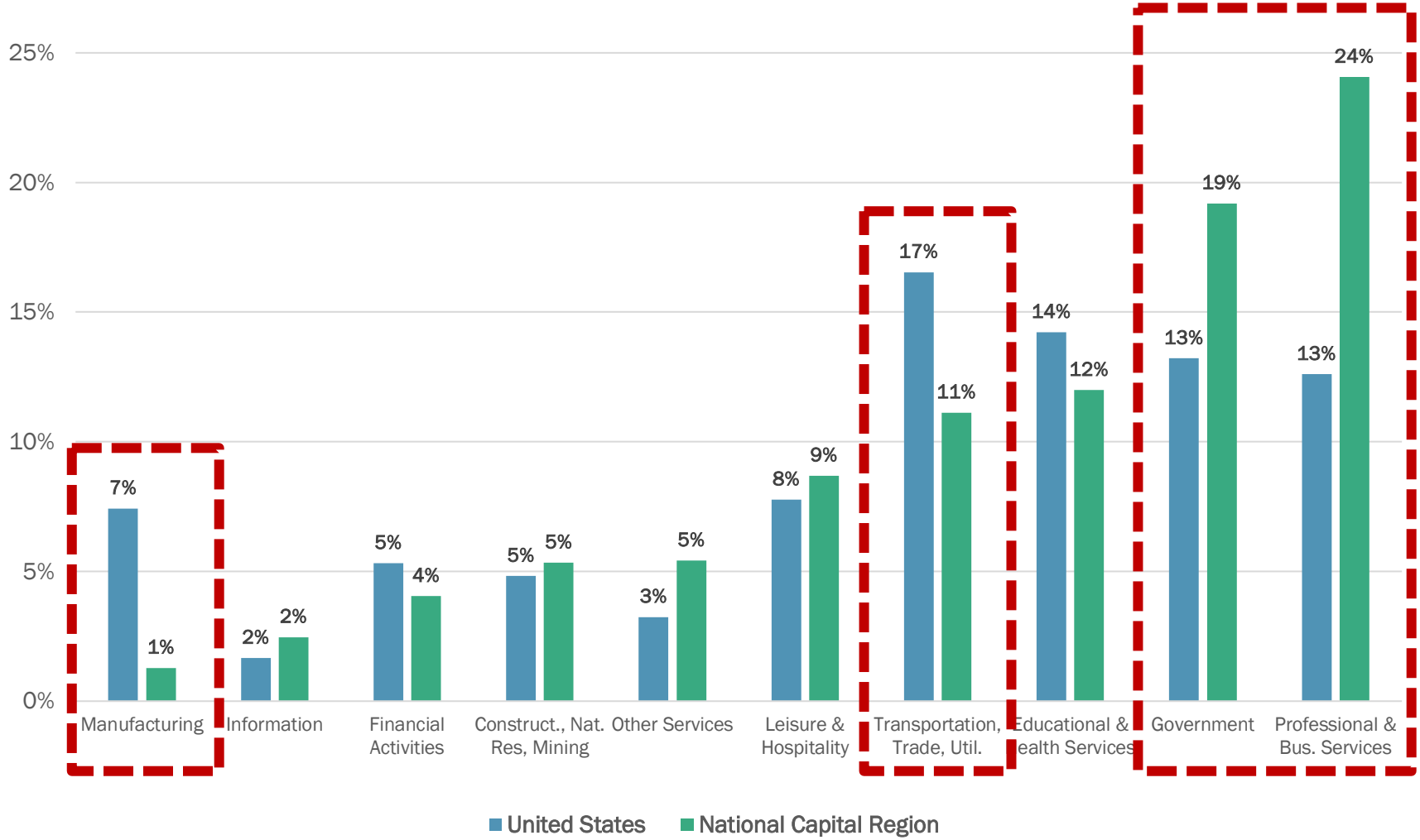
Ch. 4: Key Trends

- Key economic drivers indicate that demand for freight transportation services will continue to grow in the future
  - NCR population is expected to increase 22.5% by 2045
  - NCR employment is projected to increase by 22.9% by 2045
  - Median household income in NCR is second highest in nation and 58% above national average (2021)
  - Between 2001 and 2020, regional GDP grew by 46% compared to 40% nationally

Ch. 4: Key Trends

- Post-COVID environment remains uncertain
    - Supply chain issues associated with the pandemic has prompted consideration of adjustments to “just-in-time” model
- Rise of e-commerce has resulted in an increase in size of warehouses and siting of warehouses/distribution centers closer to urban areas
- There is increasing attention to truck electrification; Infrastructure and Investment Jobs Act (IIJA) and Inflation Reduction Act (IRA) include incentives for adoption of electric commercial vehicles
- Timeline for deployment of automated trucks, drone deliveries, and other disruptive technologies is undefined

Share of Employment by Industry Sector



Source: U.S. Bureau of Labor Statistics

Ch. 5: Issues, Challenges & Opportunities

- Roadway congestion in NCR is ranked as sixth worst in nation (2016), which has a significant cost to shippers and economy
  - TPB continues to monitor congestion on regional roadways via its Congestion Management Process (CMP)
- Truck and rail-involved roadway fatalities, though relatively low in number, remain important
  - TPB continues to monitor fatalities through its safety planning activities
- TPB encourages that freight transportation costs and benefits be distributed equitably
  - The plan's limited equity analysis found that freight does not have a disproportionate impact on regional Equity Emphasis Areas

Equity Emphasis Area Analysis

Roadway Classification	Major Roadway Miles within NCR	Major Roadway Miles within EEAs	Major Roadway % within EEAs
Interstate	234	52	22%
Principal Arterial-Freeway/Expressway	270	51	19%
Principal Arterial-Other	802	203	25%
Total/Average Percent	1,305	306	23%

Roadway Classification	NCR Roadway Truck %	EEA Roadway Truck %	Outside EEA Roadway Truck %
Interstate	6.5%	6%	6.7%
Principal Arterial-Freeway/Expressway	4.2%	5.3%	3.9%
Principal Arterial-Other	3.6%	3.7%	3.5%
Total/Average Percent	4.7%	4.9%	4.69%

Source: COG. EEAs represent approximately 26% of the region's population.

Ch.6: Regional Freight Policies

Topic Areas Addressed in Freight Policies

1. Encourage projects/programs that support TPB Visualize 2045 policies
2. Prioritization of freight projects
3. State of good repair
4. Environmental/resiliency objectives
5. Best practices
6. Bottlenecks
7. Rail options
8. Equity
9. Economic development
10. Livability
11. Security/cybersecurity
12. Safety education, enforcement, and engineering
13. Hazmats routing
14. Hazmats information sharing
15. First responder training/exercises
16. Collaboration regionally and with the private sector
17. Performance measurement
18. Sustainability
19. Land use/rail capacity collaboration
20. New technologies and emerging business practices

Ch. 8: Recommendations

Maintaining Freight Planning

- Support TPB Freight Subcommittee and periodic forums; include private sector participation
- Data collection/analysis
- Relationships with jurisdictions/ stakeholders/federal and state partners; discuss issues/trends
- Continuous Airport System Planning (CASP)

Strengthening Freight Planning

- Safety, equity, and environmental considerations
- Trends analysis
- Technological developments
- Follow up on IIJA
- Monitor progress on this plan's Regional Freight Policies

Context of Regional Freight Planning

- Safety considerations
  - Plan summarizes safety information, references to TPB's extensive Transportation Safety Planning activities
- Equity considerations
  - Plan includes a limited equity analysis, encourages further consideration in future regional equity analyses
- Air quality considerations
  - TPB has encouraged national action on emissions standards for trucks, plus decarbonization
- Economic considerations
  - Freight movement is important for a thriving regional economy, but in concert with our region's planning for land use/communities

Next Steps

- **July 19** – Present to TPB
- **July 19 through August 21** – Comments welcome
- **September 8** – Present revised draft based on comments to TPB Technical Committee
- **September 20** – On TPB agenda for approval

Andrew Meese

TPB Systems Performance Planning Program Director
(202) 962-3789
ameese@mwcog.org

mwcog.org/TPB

Metropolitan Washington Council of Governments
777 North Capitol Street NE, Suite 300
Washington, DC 20002