2023 AIR CARGO ELEMENT UPDATE

Progress Report

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Aviation Technical Subcommittee
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National Capital Region
Transportation Planning Board

Presentation Outline

- Introduction
  - Air Cargo Study Background
  - Current Project Phase
  - Tentative Outline of the Report
- Data Progress
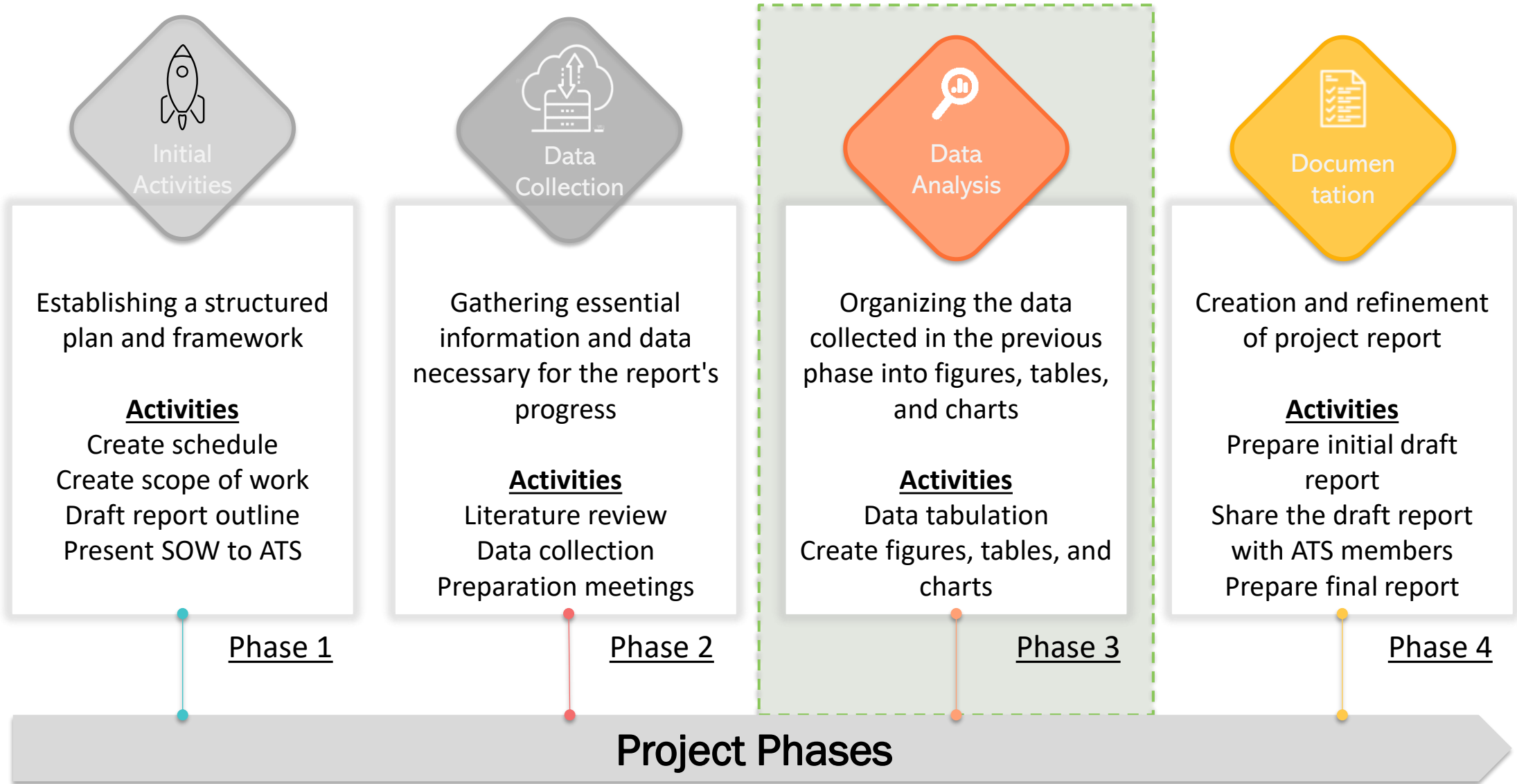 - Database and Stakeholder by Data
- Next Steps

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Introduction

WASHINGTON BALTIMORE REGIONAL AIR CARGO STUDY 2015

- The air cargo component was last examined in 2015

- The study in 2015 focused on evaluating the suitability of current air cargo facilities to accommodate future air cargo demand.

- Past Air Cargo Element studies were conducted periodically, with previous assessments completed in 2008 and 1997.

- Analysis focused on the air cargo demand at Baltimore Washington International Thurgood Marshall Airport (BWI) in Maryland and Washington Dulles International Airport (IAD) in Virginia.

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Initial Activities

Establishing a structured plan and framework

Activities
Create schedule
Create scope of work
Draft report outline
Present SOW to ATS

Phase 1

Data Collection

Gathering essential information and data necessary for the report's progress

Activities
Literature review
Data collection
Preparation meetings

Phase 2

Data Analysis

Organizing the data collected in the previous phase into figures, tables, and charts

Activities
Data tabulation
Create figures, tables, and charts

Phase 3

Documentation

Creation and refinement of project report

Activities
Prepare initial draft report
Share the draft report with ATS members
Prepare final report

Phase 4

Project Phases

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Data Analysis

To effectively present the collected data, we begin by organizing and tabulating it into a concise format that meets the report needs. Following this process is the creation of visuals. Our data analysis aims to clearly communicate information on changes over time, including population dynamics, air cargo volumes, airport facilities, and more. Additionally, it serves as the foundation for the recommendations provided at the conclusion of the document.

LIST OF TASKS

- Data tabulation
- Create figures, tables, and charts
- Coordinate with COG/TPB GIS team with the creation of maps

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Tentative Report Outline

- Introduction
  - Regional Air System Planning, Washington-Baltimore Air System Planning Region
  - Air Cargo characteristics and regional air cargo market
  - Washington-Baltimore Region Industrial and Demographic Profile (population, labor force and unemployment, at-place employment, and income)
- Air cargo demand analysis
  - Residential and commercial demand
  - Job, commodities, and the growth the air cargo industry both nationally and within the Washington-Baltimore region
- Regional airport cargo facilities
  - For BWI and IAD
- Ecommerce analysis
  - For BWI and IAD
- Accessibility analysis
  - For BWI and IAD
- Recommendation

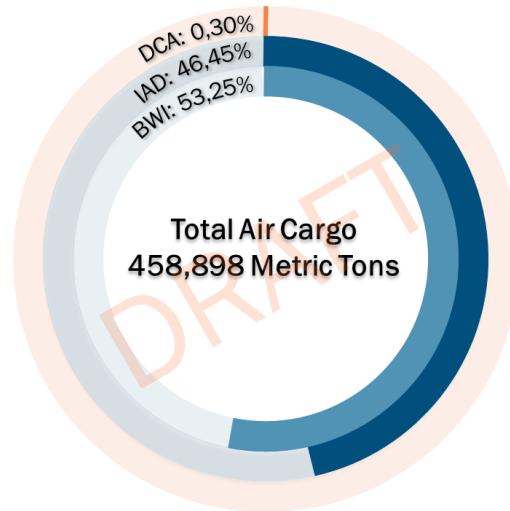National Capital Region
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Data Progress

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Current (and Historic) Air Cargo in the Region

Data Completed
Tabulated
Analysis in progress

Total Air Cargo
458,898 Metric Tons

DCA: 0,30%
IAD: 46,45%
BWI: 53,25%

DRAFT

BWI STATISTICS
Baltimore/Washington International Thurgood Marshall Airport
link

DULESS AIR TRAFFIC STATISTICS
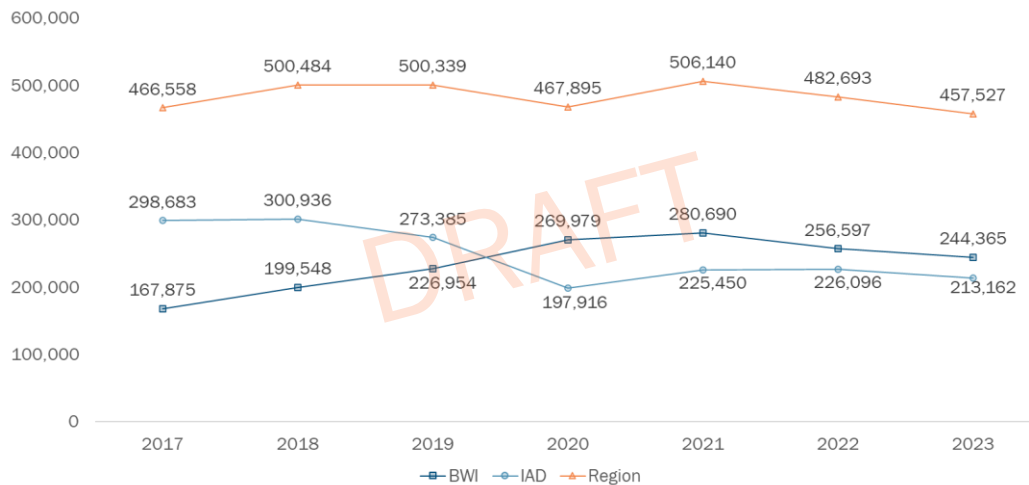Metropolitan Washington Airports Authority
link

- **Capacity and Infrastructure Planning:** Understanding the existing air cargo activity at each airport helps assess their capacity and infrastructure.

- **Regional Distribution Patterns:** Gathering data by airport reveals how cargo flows are distributed across the region.

- **Competitive Landscape and Market Trends:** Analyzing the air cargo performance of each airport provides a clearer picture of the competitive landscape.

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Current (and Historic) Air Cargo in the Region

Data Completed
Tabulated
Analysis in progress

BWI STATISTICS
Baltimore/Washington International Thurgood Marshall Airport
link

DULESS AIR TRAFFIC STATISTICS
Metropolitan Washington Airports Authority
link

NATIONAL CAPITAL REGION FREIGHT PLAN 2023 Update
The National Capital Region Transportation Planning Board (TPB)
Metropolitan Washington Council of Governments (COG)

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Current Commodities Demand

Washington-Baltimore Air System Planning Region Commodity Types Handled by Air Value and Weight, 2020			
Top Tonnage Commodities	Thousands of Tons	Top Value Commodities	Millions of Dollars
Plastic and rubber	44	Electronic and Electrical equipment	2404
Basic Chemicals	39	Pharmaceutical products	1170
Pharmaceutical products	24	Transportation equipment	977
Base metal	22	Precision instruments and apparatus	951
Electronic and Electrical equipment	20	Machinery	633
Machinery	17	Miscellaneous manufactured products	497
Other chemical products	15	Other chemical products	399
Motorized and other vehicles	14	Motorized and other vehicles	382
mixed freight	13	Plastic and rubber	344
Other chemical products	13	Articles of base metal	282

Help Needed!

NATIONAL CAPITAL REGION FREIGHT PLAN 2023 Update

The National Capital Region Transportation Planning Board (TPB)

Metropolitan Washington Council of Governments (COG)

- **Understanding Shipping Needs:** Identifies what customers require from air cargo services.

- **Improving Service Offerings:** Highlights gaps in the market for better-targeted services.

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Air Cargo Growth in the Region

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**Data Completed
Tabulated
Analysis in progress**

World Ranking	NAM Ranking	Airport Name	Airport Code	Total Cargo	% Chg 2022 - 2021	NAM Ranking 2020	Total Cargo 2020	NAM Ranking 2017	Total Cargo 2017
91	28	Baltimore/Washington International Thurgood Marshall Airport	BWI	256,598	-8.6%	26	269,976	34	167,845
97	31	Washington Dulles International Airport	IAD	226,096	0.3%	33	197,917	24	299,455

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AIRPORT COUNCILS INTERNATIONAL
Link

NATIONAL CAPITAL REGION FREIGHT PLAN 2023 Update
The National Capital Region Transportation Planning Board
(TPB)
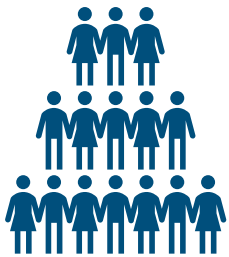Metropolitan Washington Council of Governments
(COG)

- **Trend Analysis:** Including data from the 2020 and 2022 North American Airport Traffic Summary (Cargo) provides insights into recent air cargo trends, helping to understand current dynamics at BWI and IAD.

- **Market Adaptation:** The summaries offer insights into how airports have responded to shifts in market demand, particularly in light of recent challenges such as the pandemic.

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Industrial and Demographic Profile

Data Completed
Tabulated
Analysis in progress

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POPULATION

Data Completed
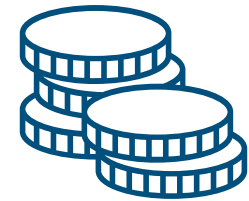Tabulated
Analysis in progress

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UNEMPLOYMENT

Data Completed
Tabulated
Analysis in progress

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AT PLACE
EMPLOYMENT

Data Completed
Tabulated
Analysis in progress

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INCOME

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BLS
Bureau Of Labor Statistics
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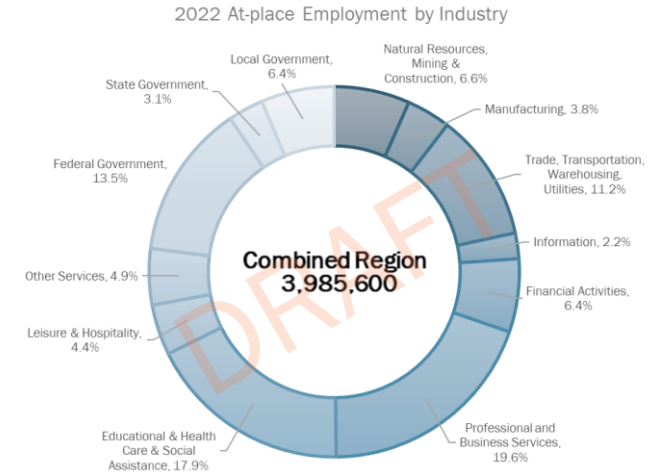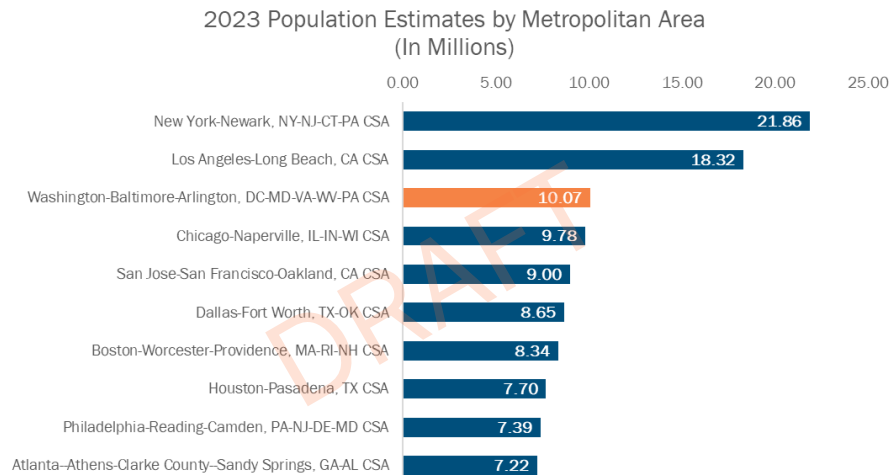**U.S. CENSUS BUREAU**

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BEA
U.S. Bureau of Economic
Analysis
link

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Industrial and Demographic Profile Cont'd

2023 Population Estimates by Metropolitan Area (In Millions)

Metropolitan Area	Population
New York-Newark, NY-NJ-CT-PA CSA	21.86
Los Angeles-Long Beach, CA CSA	18.32
Washington-Baltimore-Arlington, DC-MD-VA-WV-PA CSA	10.07
Chicago-Naperville, IL-IN-WI CSA	9.78
San Jose-San Francisco-Oakland, CA CSA	9.00
Dallas-Fort Worth, TX-OK CSA	8.65
Boston-Worcester-Providence, MA-RI-NH CSA	8.34
Houston-Pasadena, TX CSA	7.70
Philadelphia-Reading-Camden, PA-NJ-DE-MD CSA	7.39
Atlanta–Athens-Clarke County–Sandy Springs, GA-AL CSA	7.22

2022 At-place Employment by Industry

Combined Region 3,985,600

- Local Government, 6.4%
- State Government, 3.1%
- Federal Government, 13.5%
- Other Services, 4.9%
- Leisure & Hospitality, 4.4%
- Educational & Health Care & Social Assistance, 17.9%
- Professional and Business Services, 19.6%
- Financial Activities, 6.4%
- Information, 2.2%
- Trade, Transportation, Warehousing, Utilities, 11.2%
- Manufacturing, 3.8%
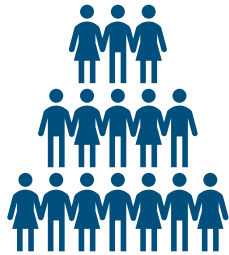- Natural Resources, Mining & Construction, 6.6%

- **Workforce Insights:** Understanding workforce and employment trends helps us measure how demand in the region might change over time.

- **Economic Overview:** Analyzing population and income data provides a clear picture of the region's economic health, which is essential for effective planning.

- **Identifying Opportunities:** Examining industry employment and unemployment rates reveals potential areas for growth, aiding in informed decision-making moving forward.

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Air Cargo Demand Analysis

Data Completed
Tabulated
Analysis in progress

Data Completed
Tabulated
Analysis in progress

Data Completed
Tabulated
Analysis in progress

POPULATION

HOUSEHOLD

EMPLOYMENT

Round 10.0 Cooperative Forecasting Summary Tables
Adopted by the COG Board of Directors June 14, 2023
Metropolitan Washington Council of Governments (COG)
link

Round 10 Cooperative Forecasts - Baltimore Region
Forecasts endorsed by the Baltimore Regional Transportation Board on July 15, 2022
Baltimore Metropolitan Council (BMC)
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Air Cargo Demand Analysis

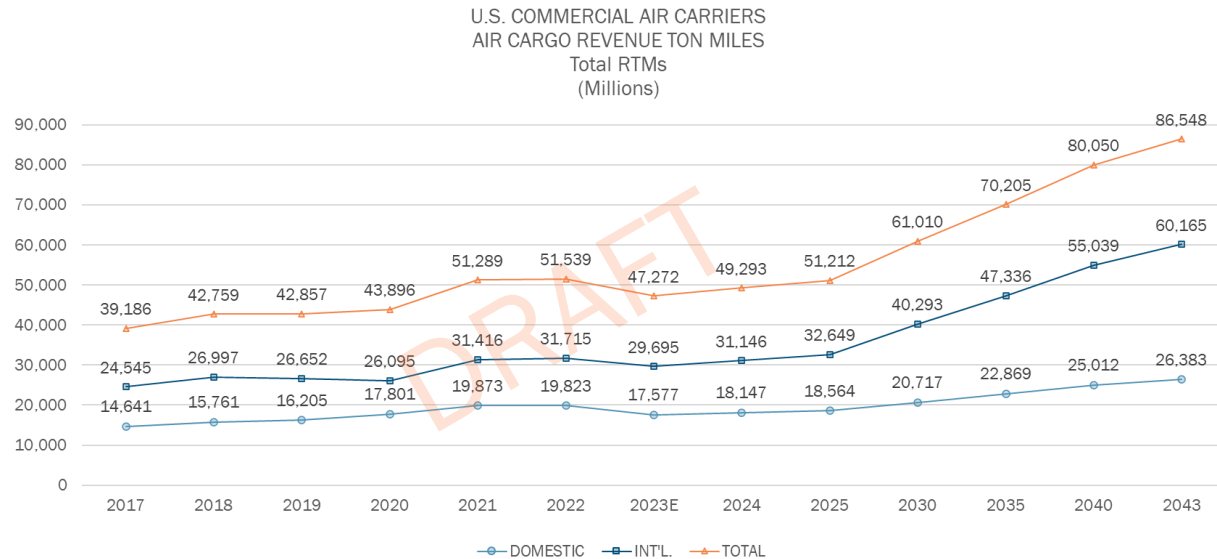|	Jurisdiction	2020	2030	2040	2050	Percentage Change in Relation to 2020		
						2030	2040	2050
Population	District of Columbia	689.545	728.606	787.144	844.411	5.7%	14.2%	22.5%
	Virginia Jurisdictions	2983.336	3322.009	3606.741	3879.671	11.4%	20.9%	30.0%
	Maryland Jurisdictions	5473.79	5828.308	6198.667	6527.332	6.5%	13.2%	19.2%
	West Virginia	57.701	67.332	75.282	82.12	16.7%	30.5%	42.3%
	Total	**9204.372**	**9946.255**	**10667.83**	**11333.53**	**8.1%**	**15.9%**	**23.1%**
Household	District of Columbia	312.448	366.783	407.616	441.413	17.4%	30.5%	41.3%
	Virginia Jurisdictions	1065.055	1211.321	1337.876	1463.567	13.7%	25.6%	37.4%
	Maryland Jurisdictions	2042.431	2193.48	2350.67	2486.241	7.4%	15.1%	21.7%
	West Virginia	21.902	25.919	29.291	32.207	18.3%	33.7%	47.1%
	Total	**3441.836**	**3797.503**	**4125.453**	**4423.428**	**10.3%**	**19.9%**	**28.5%**
Employment	District of Columbia	785.9	886.3	954.4	1,021.6	12.8%	21.4%	30.0%
	Virginia Jurisdictions	1,542.4	1,743.5	1,930.0	2,070.6	13.0%	25.1%	34.2%
	Maryland Jurisdictions	2,529.8	2,781.4	3,013.1	3,228.1	9.9%	19.1%	27.6%
	West Virginia	25.2	30.0	34.0	37.5	19.0%	34.9%	48.6%
	Total	**4883.353**	**5441.132**	**5931.552**	**6357.764**	**11.4%**	**21.5%**	**30.2%**

- **Long-Term Planning:** Forecasting population and employment trends helps in anticipating future demand for air cargo services.

- **Identifying Emerging Markets:** Analyzing projected household growth can reveal potential new markets and consumer bases.

- **Infrastructure Development:** Understanding future employment trends and population growth is crucial for planning infrastructure needs.

Air Cargo Demand Analysis

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**Data Completed
Tabulated
Analysis in progress**

**U.S. COMMERCIAL AIR CARRIERS
AIR CARGO REVENUE TON MILES
Total RTMs
(Millions)**

Gathering U.S. Commercial Carriers' Air Cargo Revenue Ton Miles provides insights into market performance and demand, allowing for comparisons with forecast data for each airport to identify trends and opportunities.

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Forecast by Airport

Help Needed!

- **Anticipating Demand:** Forecasting cargo volumes for both airports helps us understand future demand, allowing for better planning of operations and resources.

- **Spotting Growth Opportunities:** Cargo forecasts can reveal areas for potential growth, helping us identify new markets or services that may be needed in the future.

- **E-commerce Analysis:** Incorporating an e-commerce analysis is crucial for understanding its impact on air cargo, as this sector continues to grow and influence shipping patterns.

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Ecommerce analysis

Help Needed!

- **Impact of E-commerce Growth:** Analyzing the influence of e-commerce on air cargo will provide insights into shifting shipping patterns and market demand.

Ecommerce analysis

Year		CARGO	E-commerce	Growth Cargo	Growth Ecommerce
		Tonns	millions of dollars		
2017	Q1	7,361,486	96,123	-9.0%	-20.2%
	Q2	7,865,385	102,938	6.8%	7.1%
	Q3	8,077,972	104,804	2.7%	1.8%
	Q4	8,884,879	139,994	10.0%	33.6%
2018	Q1	8,011,264	111,690	-9.8%	-20.2%
	Q2	8,427,124	119,597	5.2%	7.1%
	Q3	8,458,339	120,554	0.4%	0.8%
	Q4	8,970,930	155,545	6.1%	29.0%
2019	Q1	8,057,209	121,578	-10.2%	-21.8%
	Q2	8,469,772	132,399	5.1%	8.9%
	Q3	8,384,100	138,655	-1.0%	4.7%
	Q4	8,912,331	178,456	6.3%	28.7%
2020	Q1	7,967,127	146,491	-10.6%	-17.9%
	Q2	8,578,589	204,062	7.7%	39.3%
	Q3	9,194,302	204,806	7.2%	0.4%
	Q4	9,992,466	255,399	8.7%	24.7%
2021	Q1	9,077,185	213,993	-9.2%	-16.2%
	Q2	9,694,436	232,425	6.8%	8.6%
	Q3	9,809,114	224,757	1.2%	-3.3%
	Q4	10,403,637	279,852	6.1%	24.5%
2022	Q1	9,270,986	229,465	-10.9%	-18.0%
	Q2	9,359,312	244,065	1.0%	6.4%
	Q3	9,138,226	245,114	-2.4%	0.4%
	Q4	9,400,341	293,992	2.9%	19.9%
2023	Q1	8,115,454	247,176	-13.7%	-15.9%
	Q2	8,424,130	264,857	3.8%	7.2%
	Q3	8,508,351	268,745	1.0%	1.5%
	Q4	9,074,861	322,862	6.7%	20.1%

Help Needed!

U.S. CENSUS BUREAU
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United States Department of Transportation
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- **Impact of E-commerce Growth:** Analyzing the influence of e-commerce on air cargo will provide insights into shifting shipping patterns and market demand.

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Airport Facilities and Network Analysis

- **Understanding Capacity:** Analyzing cargo facilities helps us understand their capacity to handle current and future shipping demands.

- **Identifying Efficiency:** Examining cargo facilities can reveal areas where efficiency can be improved, ensuring smoother operations.

- **Evaluating Connectivity:** Analyzing airport networking allows us to assess how well these airports connect with major markets and distribution centers.

- **Data Sources:** The information on cargo facilities was provided by each airport, while the network analysis will be based on the GATT report.

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Next Steps

Phase 3

- **Organize and Tabulate Data:** Begin by systematically organizing and tabulating the collected data to ensure it aligns with the report's requirements.

- **Create Visuals:** Develop clear and effective visuals that represent key findings related to population dynamics, air cargo volumes, and airport facilities.

- **Data Analysis:** Conduct a thorough analysis to highlight changes over time, ensuring that the insights drawn from the data are easily understandable and impactful.

- **Foundation for Recommendations:** Use the analyzed data to build a strong foundation for the recommendations that will be presented in the report's conclusion.

PHASE 4

- Compile Project Information

- Draft Comprehensive Report

- Facilitate Stakeholder Review

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Summary - Information Requested

- Commodities by airport inbound and outbound.

- Forecast by airport.

- Percentage or tons of E-commerce data by airport.

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