



Air Cargo From an Airport Planning Perspective

BMC Freight Movement Task Force

DECEMBER 13, 2023

Agenda / Topics

- About MAA & BWI Marshall
- Air cargo demand factors & trends
- Regional and BWI Marshall air cargo
- Airport facility planning & development
- Community factors
- Q&A closing

Thurgood Marshall

Thurgood Marshall was instrumental in ending legal segregation and became the first African American justice of the Supreme Court.

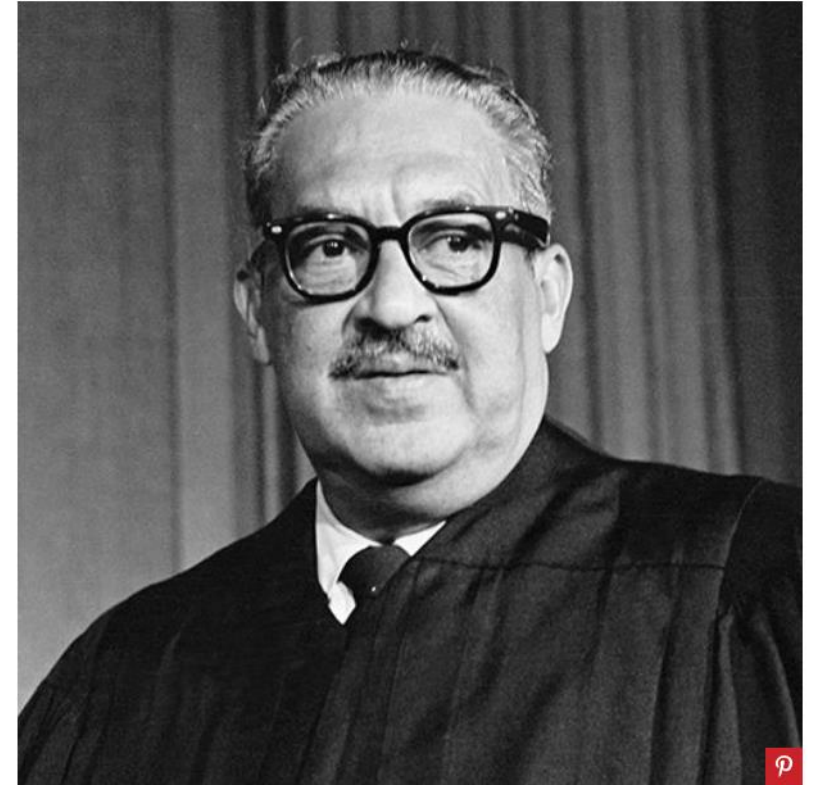


Photo: Getty Images

Source: <https://www.biography.com/legal-figures/thurgood-marshall>, accessed 12/10/23

About the Maryland Aviation Administration (MAA)

MAA fosters the vitality of aviation statewide and promotes safe and efficient operations, economic viability and environmental stewardship.

MAA operates Baltimore/Washington International Thurgood Marshall Airport and Martin State Airport.



Connecting People to Life's Opportunities
Easy Come – Easy Go

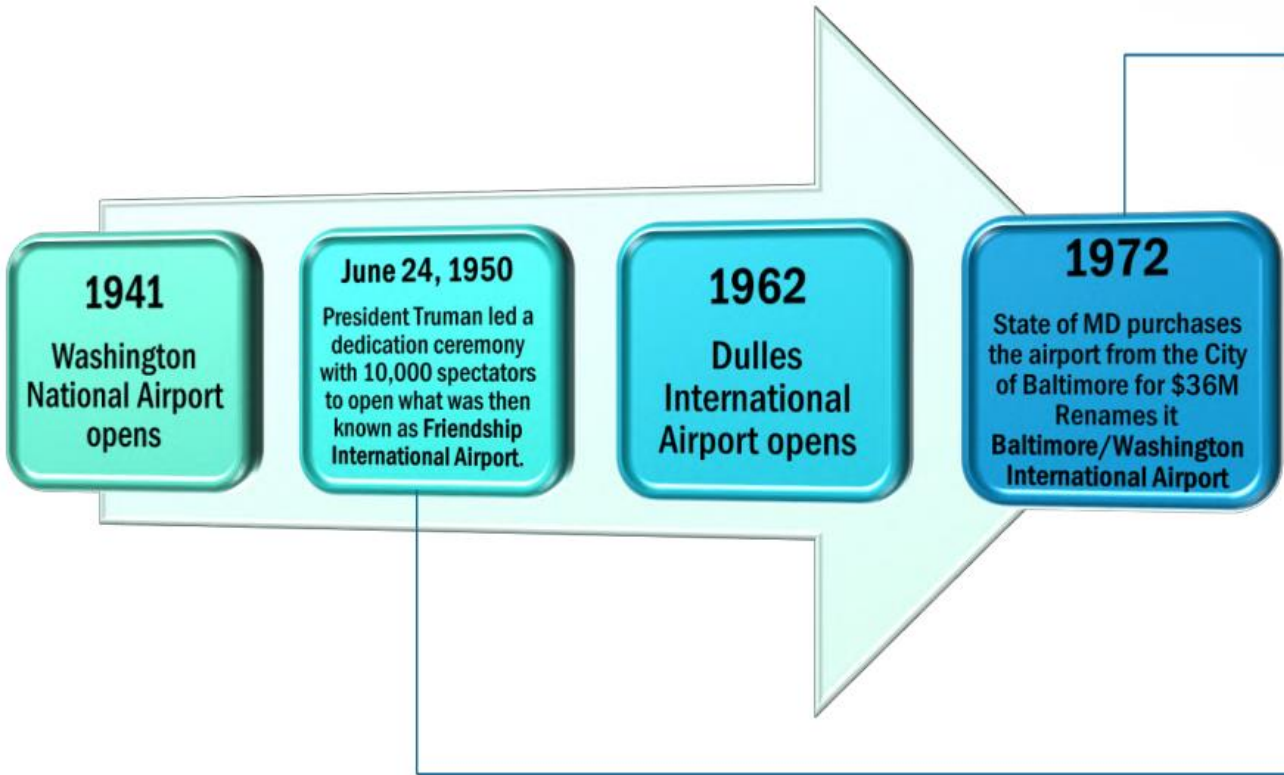


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The Beginning of BWI Marshall

The “middle child” of the region



Source: MAA



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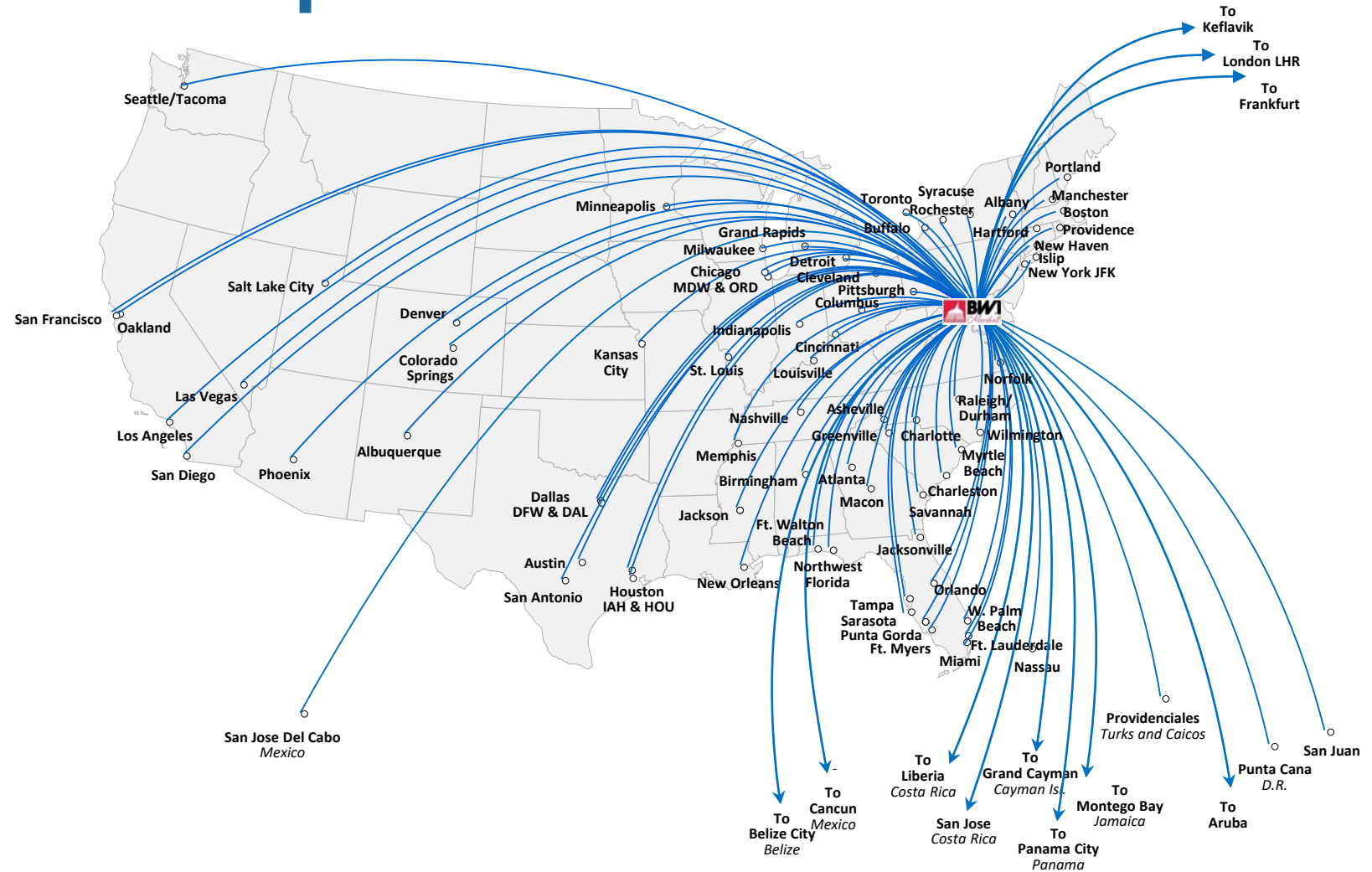
Fast Facts About BWI Marshall

- 24.7 million passengers in FY23
- 24th busiest U.S. airport
- 1,255,005 international passengers
- 279 daily flights to 87 destinations by 18 airlines
- Largest Carrier – Southwest 70.4% of passengers



BWI Marshall Non-Stop Destinations

**ROUTE MAP
INCLUDES 87 NON-STOP
DESTINATIONS**



Source: Cirium Schedules Data



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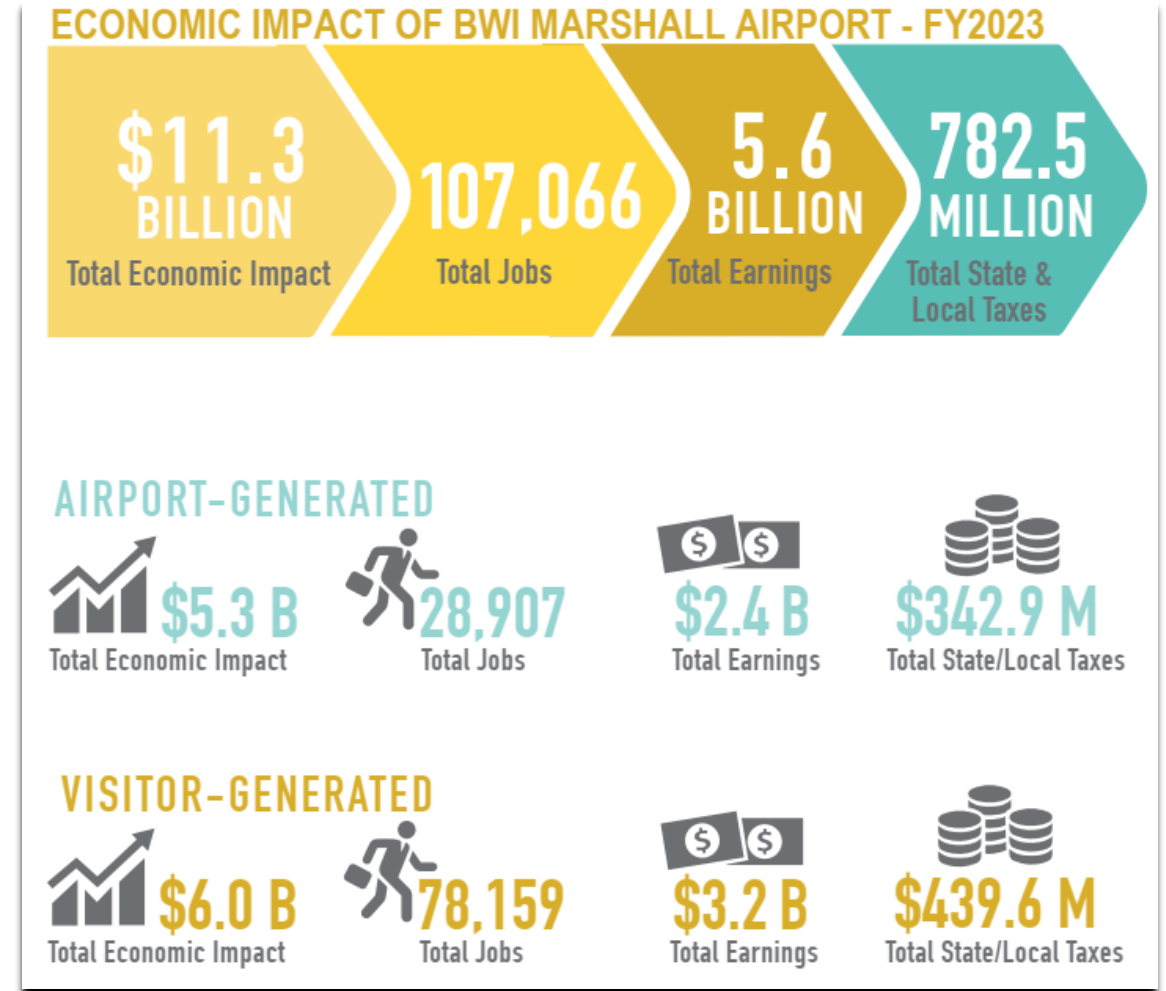
Economic Impact

An airport is a diverse economic system. The businesses and employees at Maryland airports cover a spectrum of trade and service sectors.

- Airline/airport service
- Freight transportation
- Passenger ground transportation
- Contract construction/consulting services
- Visitor industry services

Types of Economic Impacts:

- Revenue Impact
- Employment Impact
- Personal Income Impact
- Tax Impact



Air Cargo Demand

What makes an airport attractive to cargo operators?

- Location, location, location
- Airfield access & reliability
- Intermodal access
- Airport facilities & capacity
- Local logistics network
- Low operating cost
- Development agility & flexibility

Easy Come – Easy Go

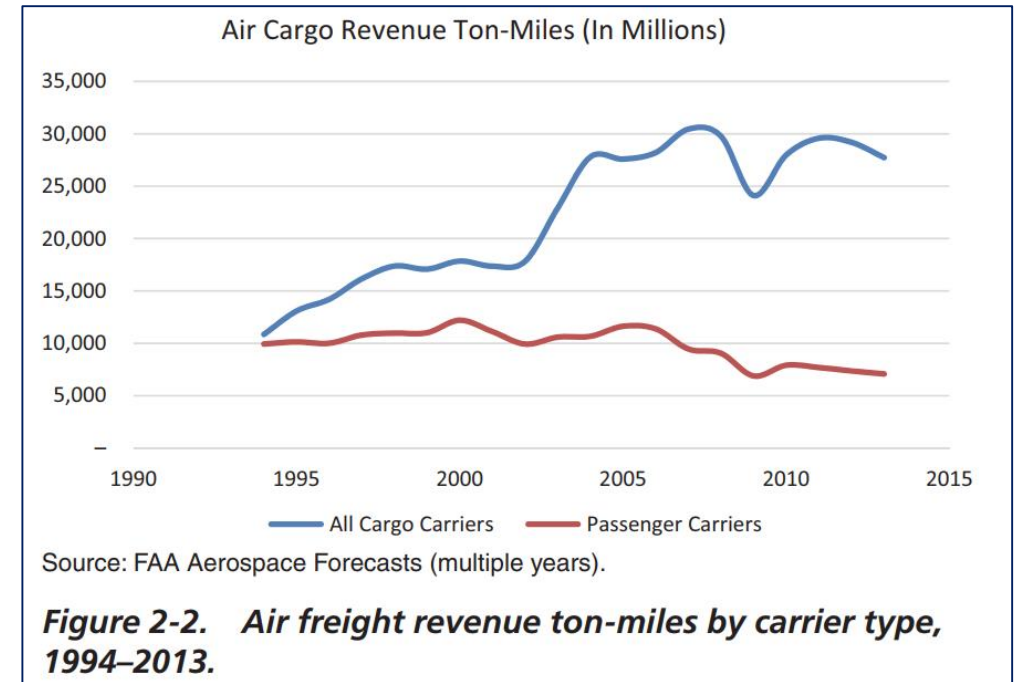
Products benefiting from air freight:

- Low weight & high value
- Aerospace & automotive equipment & parts
- Documents & banking materials
- Pharmaceuticals
- Healthcare
- Jewelry
- Medical equipment
- Textiles
- Electronics
- Perishables
- Fast moving consumer goods (FMCG)
- Emergency Response

Air Cargo Trends

What's changed?

- Globalization
- Emerging markets
- Lean supply chain – just in time production & final assembly at destination
- Lower product shelf life (electronics)
- Electronic media, documents & banking
- Integrators focusing on airport hubs and expanded trucking to secondary markets
- Carrier consolidation



- 1994 passenger and cargo carriers handled equal amounts of air freight.
- Since then, freight on cargo aircraft has grown 64%, while freight on passenger carriers has declined.
- Increased passenger load factors and reduced domestic widebody aircraft resulted in less capacity for freight.
- Freight and mail shifted to the integrated express carriers, and U.S. Postal Service demand declined.

Top U.S. Cargo Airports (2022)

- Half of top 20 are integrator hubs
 - Prefer alternatives to congested gateways
- 4 FedEx hubs
- 5 UPS hubs
- Dallas, Newark & Philly are both pax and cargo hubs



ACI rank	City (Airport Code)	2022	Function
1	Memphis (MEM)	4,040,278	FedEx Hub
2	Anchorage (ANC)	3,461,604	TransPac tech stop
3	Louisville (SDF)	3,067,672	UPS Hub
4	Miami (MIA)	2,499,837	Intl. Gateway
5	Los Angeles (LAX)	2,498,627	Intl. Gateway
6	Chicago (ORD)	2,181,248	Intl. Gateway
7	Cincinnati (CVG)	1,794,451	Amazon/DHL Hub
8	New York (JFK)	1,408,493	Intl. Gateway
9	Indianapolis (IND)	1,251,533	FedEx Bypass Hub
10	Dallas/Ft. Worth (DFW)	813,730	Intl. Gateway/UPS Regional Hub
11	Ontario (ONT)	779,443	UPS Regional Hub
12	Newark (EWR)	729,527	Intl. Gateway/FedEx Regional Hub
13	Atlanta (ATL)	685,592	Intl. Gateway
14	Oakland (OAK)	580,365	FedEx Regional Hub
15	Philadelphia (PHL)	567,232	Intl. Gateway/UPS Regional Hub
16	Houston (IAH)	541,935	Intl. Gateway
17	Honolulu (HNL)	533,954	Intl. Gateway
18	San Francisco (SFO)	502,978	Intl. Gateway
19	Rockford (RFD)	485,971	UPS/Amazon Regional Hub
20	Seattle (SEA)	456,288	Intl. Gateway
26	Baltimore (BWI)	256,652	Amazon Regional Hub

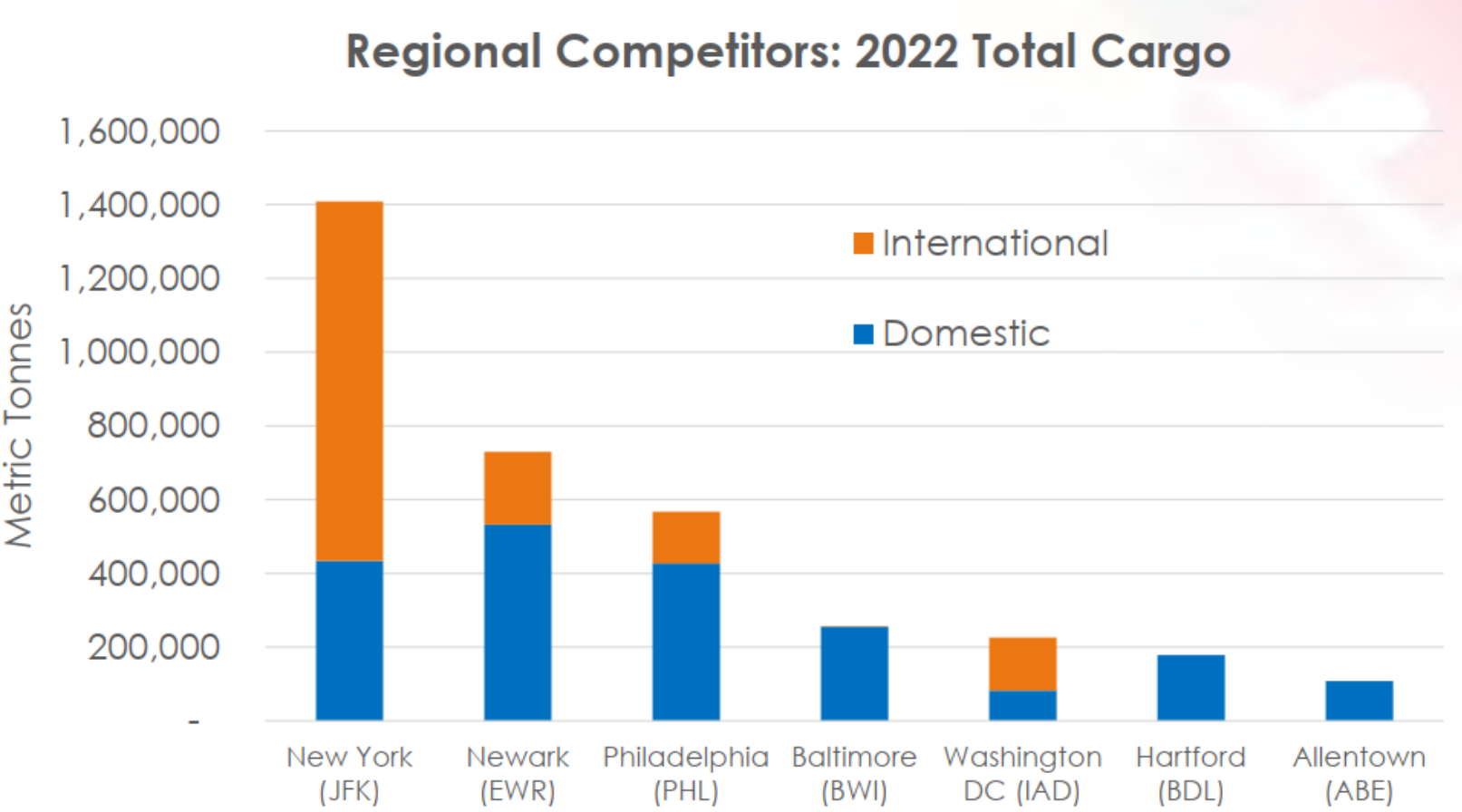
Data Source: Airports Council International with analysis by Webber Air Cargo



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Top U.S. Northeastern Airports (2022)

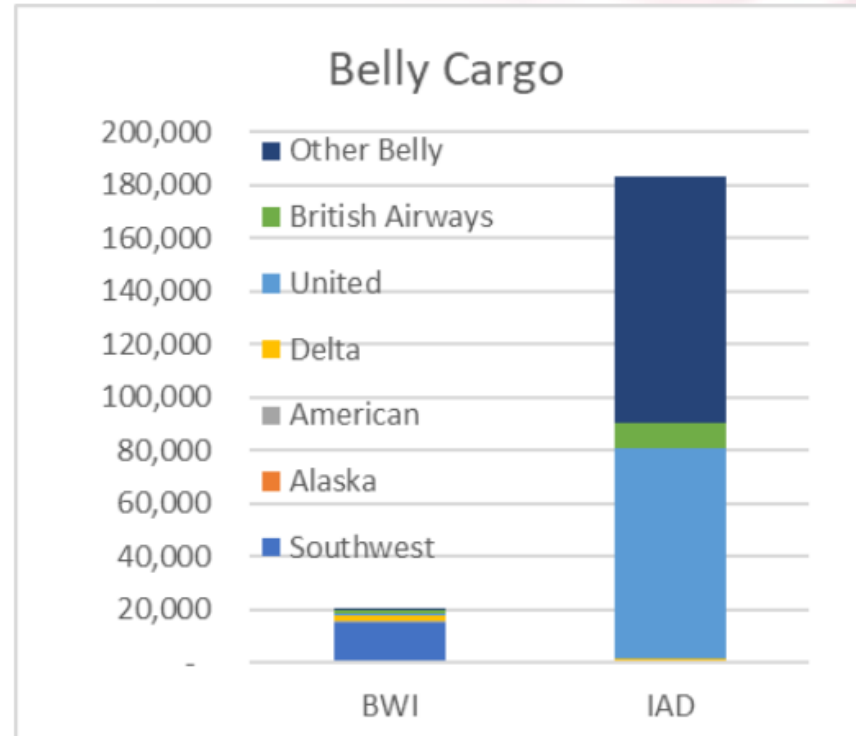
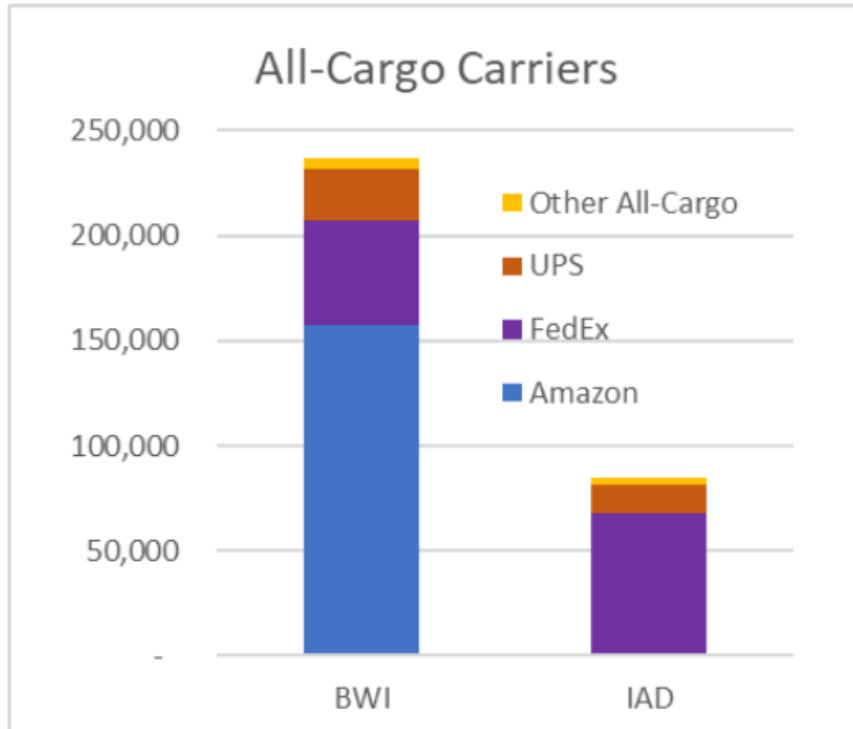


Data Source: Airports Council International with analysis by Webber Air Cargo



BWI Marshall vs. Dulles (2022)

IAD is the main local competition, but BWI and IAD are virtual opposites in terms of cargo market share distribution between all-cargo carriers and belly cargo carriers.



- International gateways tend to have more carriers with smaller market shares that justify 3rd party (outsourced) cargo handlers and multi-tenant facilities.
- Amazon accounts for more tonnage at BWI than FedEx and UPS at both BWI & Dulles.

Sources: Webber Air Cargo

Types of Cargo at BWI Marshall



Integrators



International Freight



Heavy Air Freight



Integrator Feeders



Next Day



Live Cargo



Belly

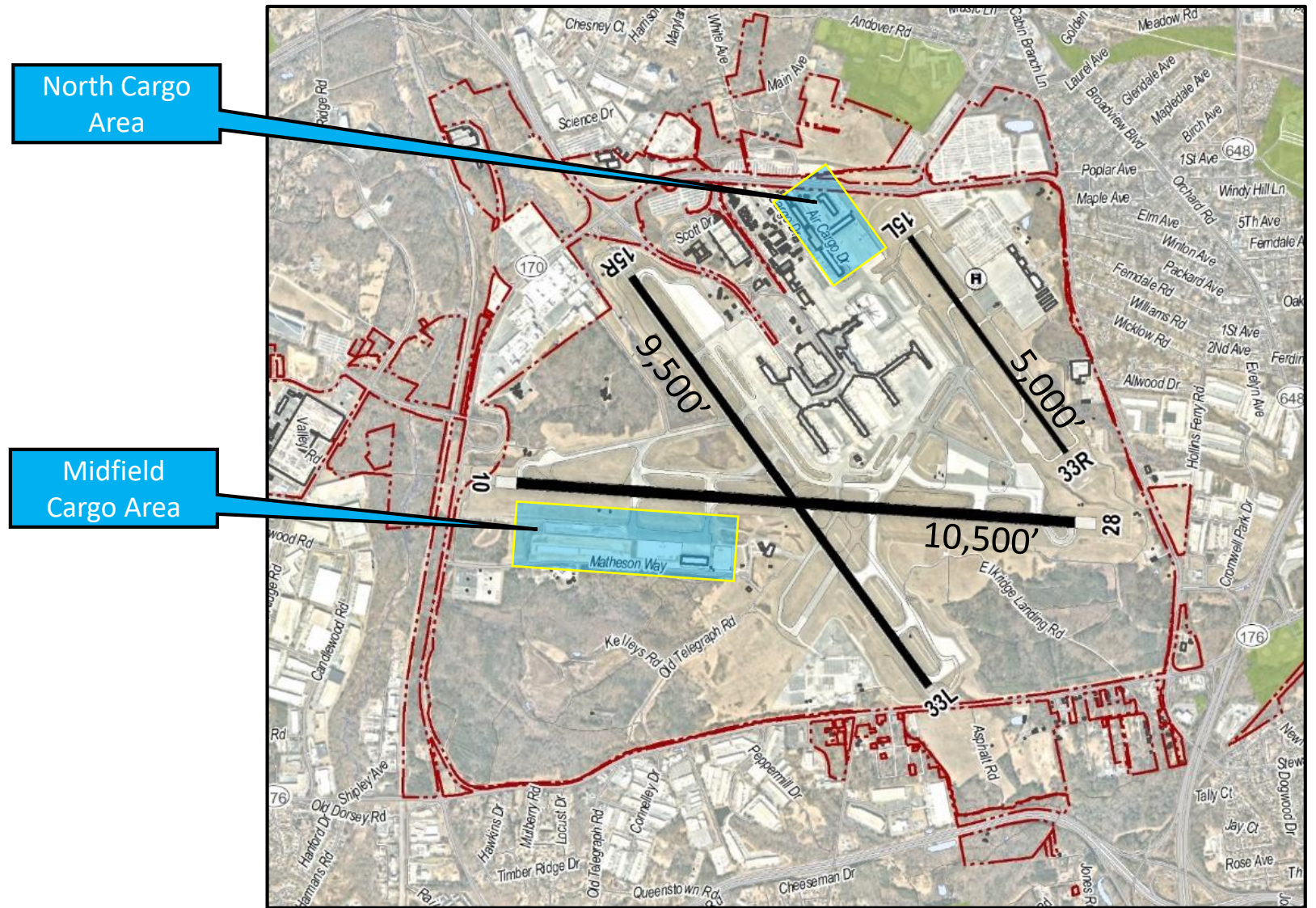
BWI Marshall is equipped to handle all types of cargo

Cargo Airlines Serving BWI Marshall



BWI Marshall Cargo Facilities

- 395,000 sq.ft. air cargo center
- 17-acre air cargo ramp
- Ramp parking for 17 aircraft
- Foreign Trade Zone
- Certified for all inspection requirements (i.e. customs)
- Designed for supply chain efficiency



Midfield Cargo Expansion



- Fast-track development, opened October 2019
- New 200,000 square foot Cargo Building
- Rehabilitated taxiways and new runway connector
- Mathison Way improvements
- Expanded local bus service to site
- Approximately 1,500 new jobs to the region



“Amazon’s Baltimore location is one of the top 5 busiest Amazon Air facilities in the world.”

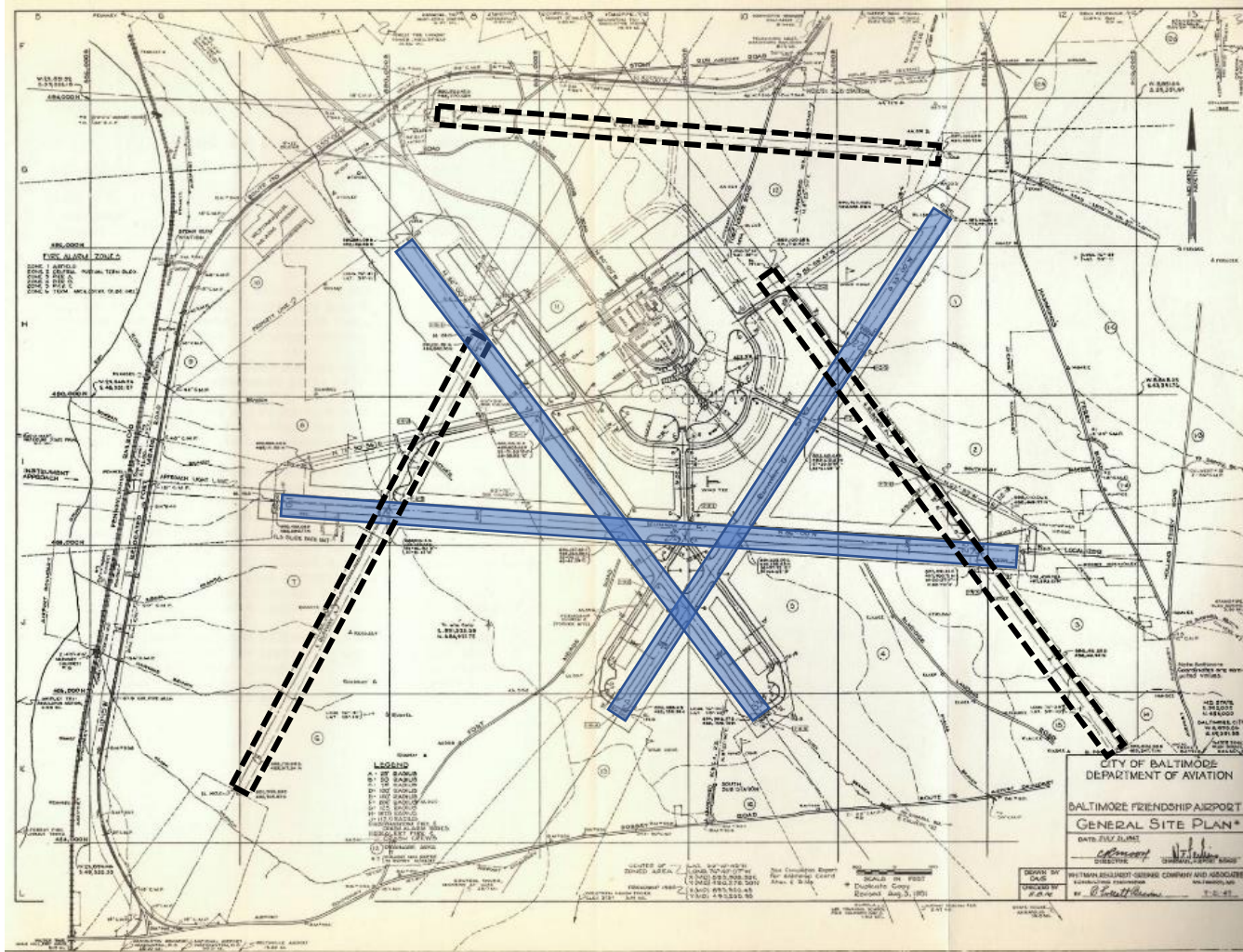
(WJZ-13, 6/8/21)



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Early Airport Planning



1947 Site Plan



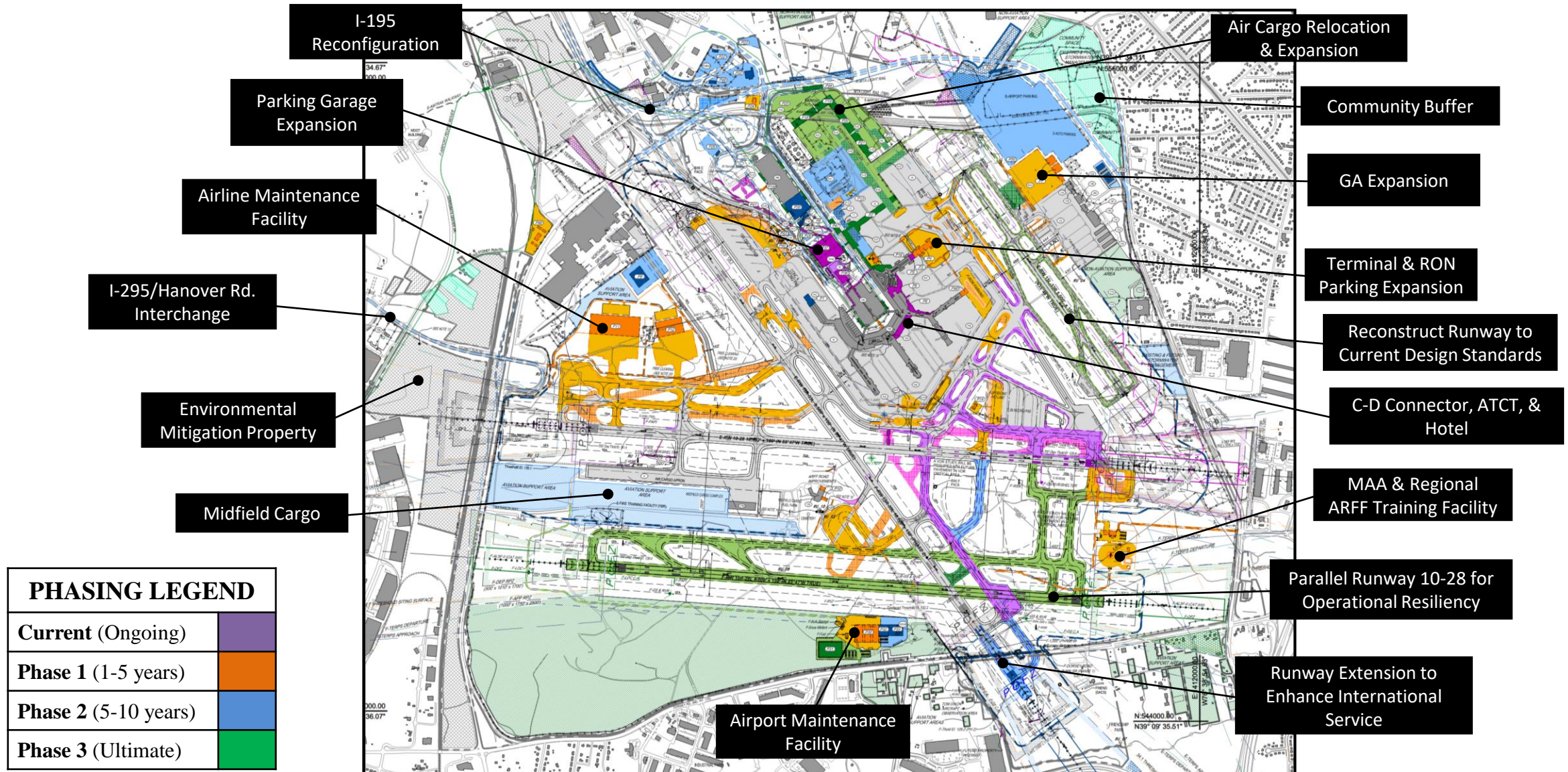
Friendship International 1950







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Current Airport Layout Plan

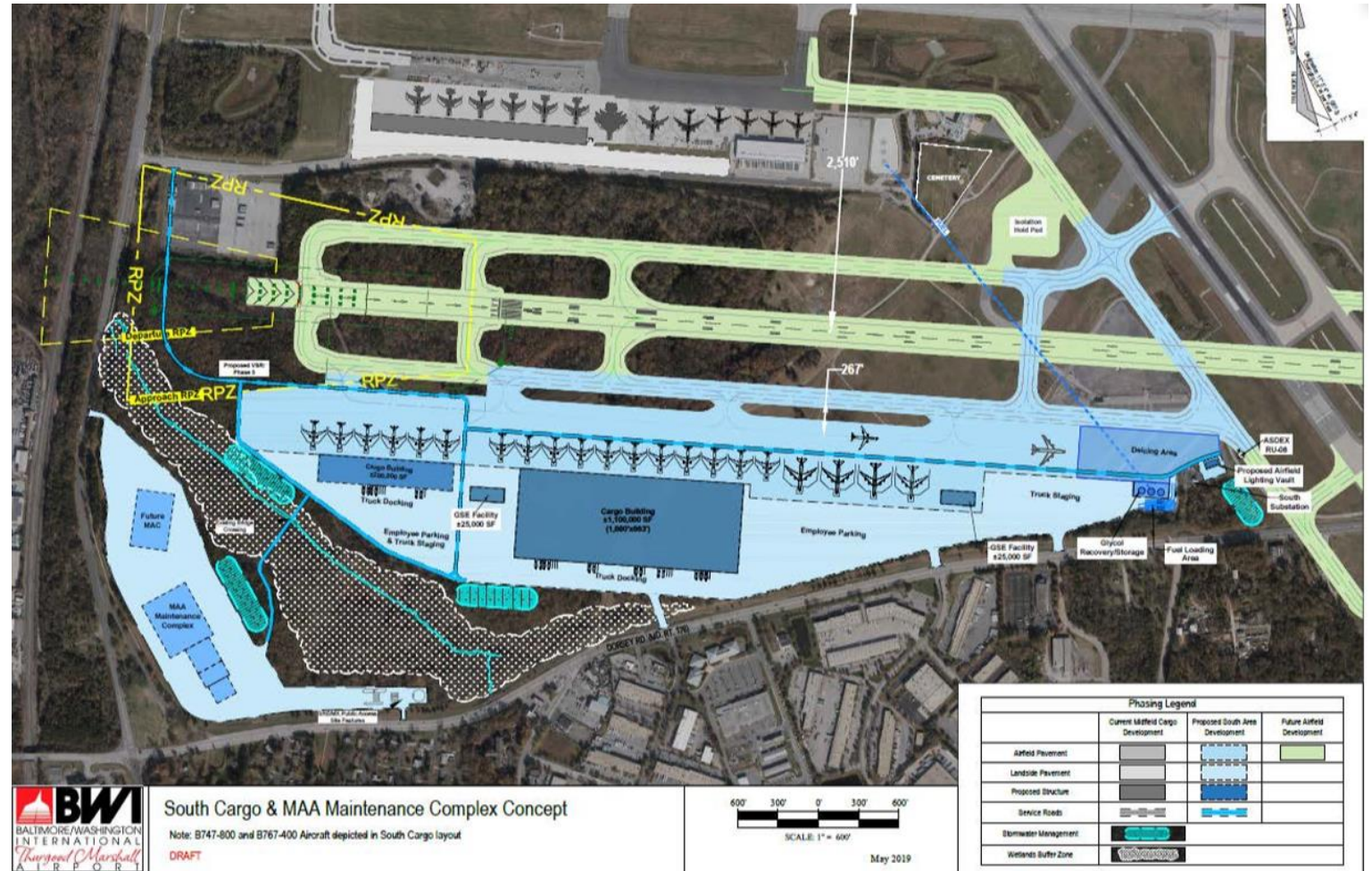


PHASING LEGEND	
Current (Ongoing)	
Phase 1 (1-5 years)	
Phase 2 (5-10 years)	
Phase 3 (Ultimate)	

Southwest Quadrant Development Concept

South Cargo & MAA Maintenance Complex

- 400-500 acre site
- Preserve capability for future parallel runway
- Utility spine for flexible pad site development
- Mixed commercial, aviation and support uses
- Environmental protection components
- Currently in planning phase



Breaking News

Transportation

Amazon begins using larger, Airbus A330 jets at CVG superhub

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Amazon's new Airbus A330 plane, named Momentum, launched from Cincinnati/Northern Kentucky International Airport carrying cargo for the first time on Monday, Oct. 2, 2023. It is the first Airbus A330 in Amazon's fleet.

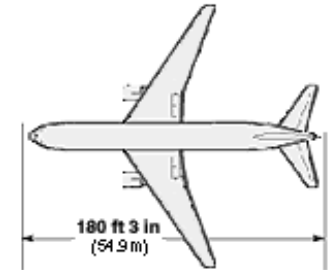


By Chris Wetterich - Staff reporter and columnist, Cincinnati Business Courier
Oct 2, 2023



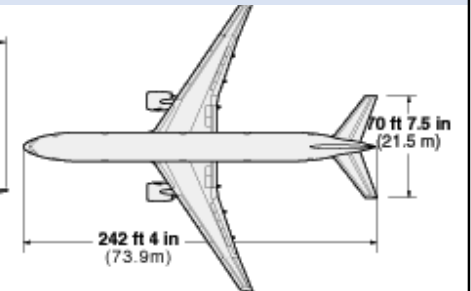
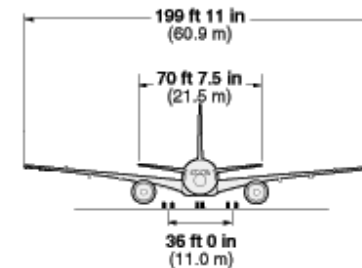
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B767-300ER



Design Group: D-IV
Taxiway Group: 5

B777-300



Design Group: D-V
Taxiway Group: 6

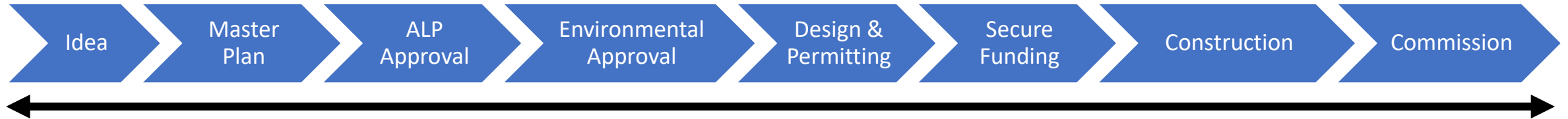
Source: Cincinnati Business Courier, accessed 12/8/23
<https://www.bizjournals.com/cincinnati/news/2023/10/02/amazon-begins-using-larger-airbus-a330-jets-at-cvg.html>



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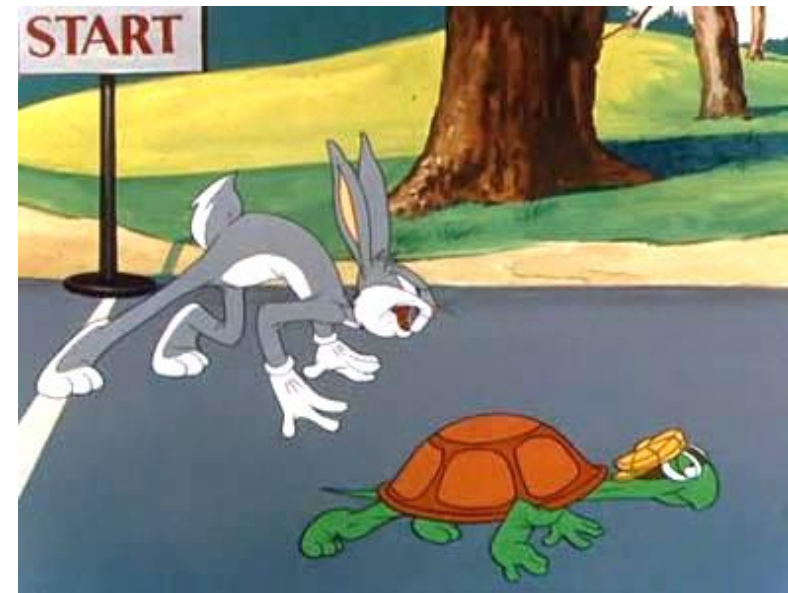
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General Airport Development Process



5-10 Year Process

- Airports have FAA Obligations & processes
- Political and community forces in play
- NEPA environmental approvals can be lengthy
- Environmental mitigation can be costly and hard to find
- Premium cost for construction in airport environment
- For MAA:
 - Numerous agencies and departments involved
 - Maryland Aviation Commission
 - MDOT Secretary of Transportation
 - MD Board of Public Works
 - State TRAIN Commission



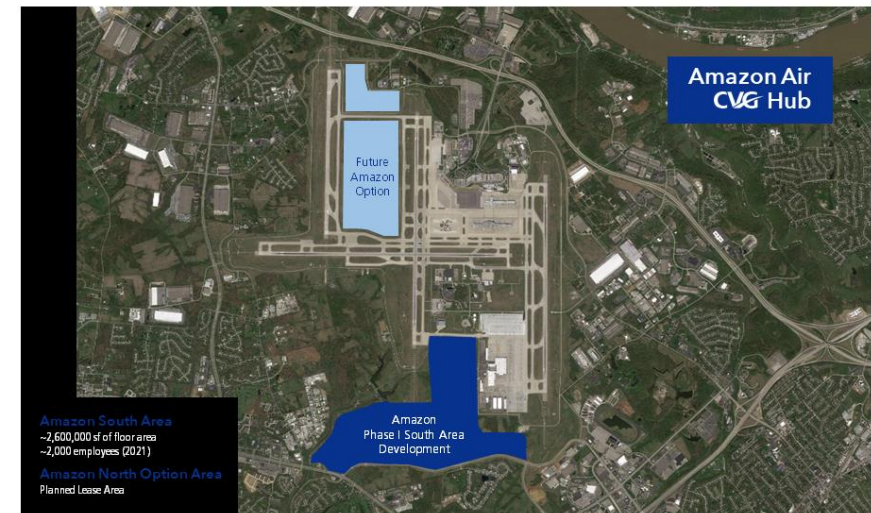
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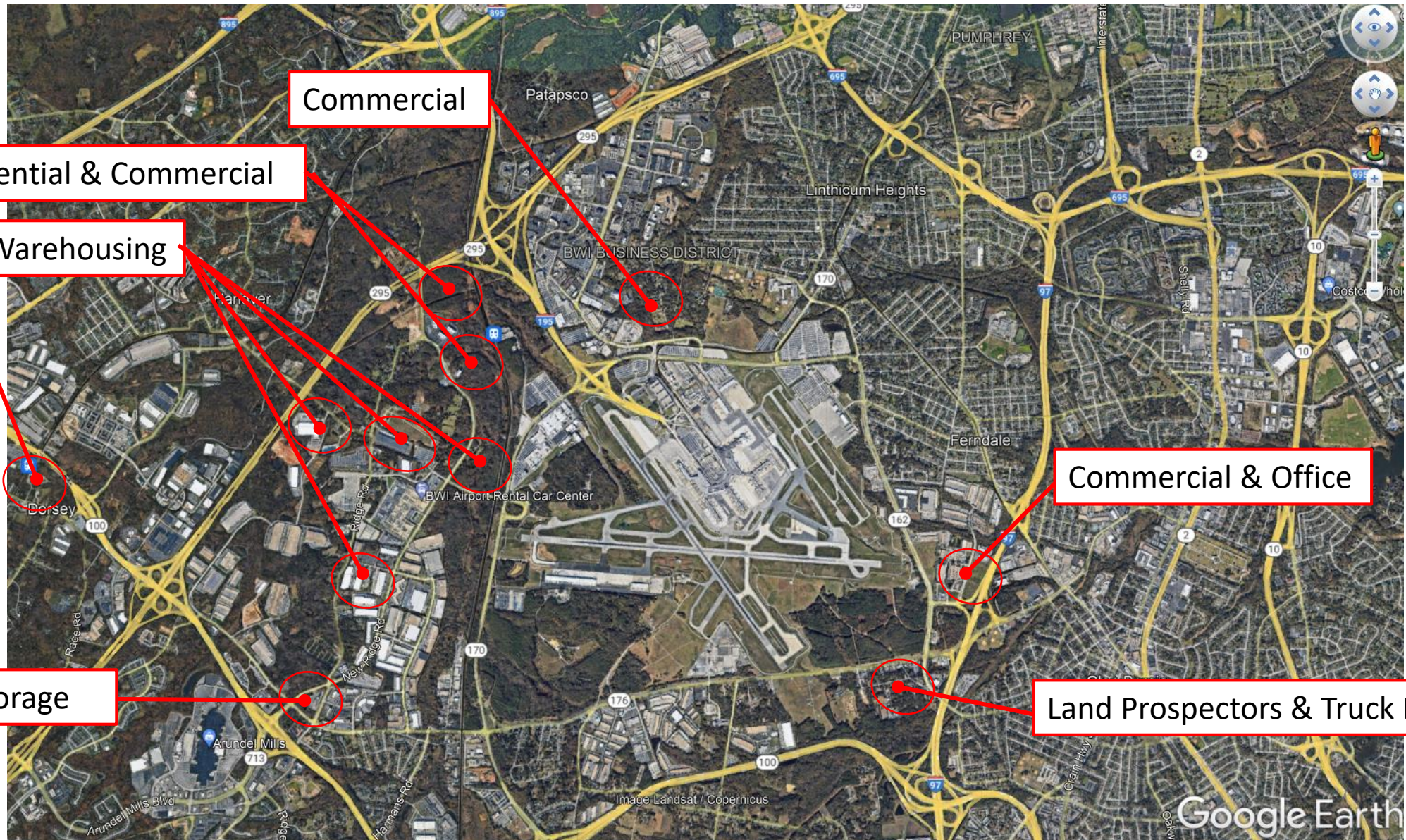
A Cautionary Success Story

Wilmington Sits Empty for 11 Years

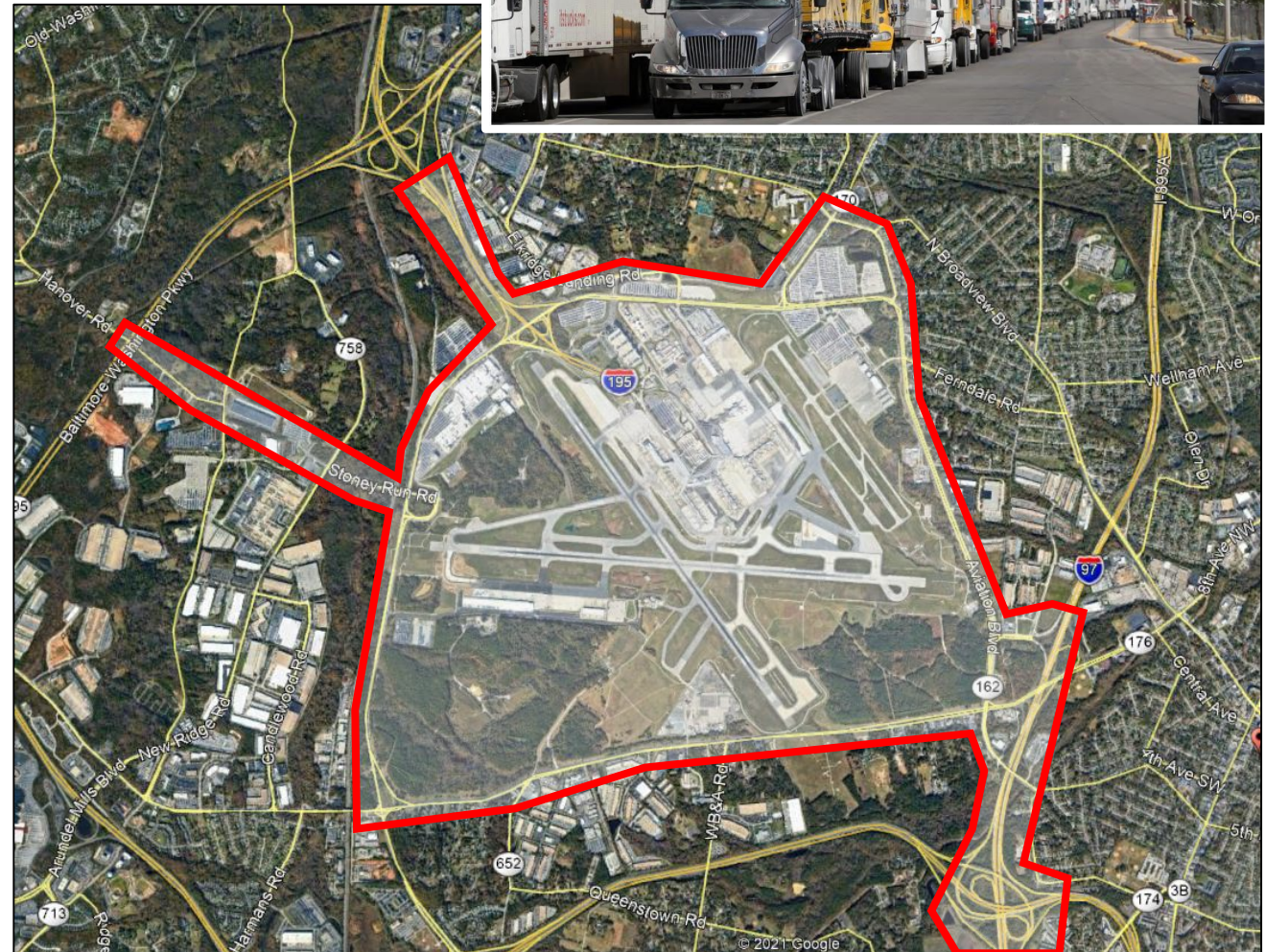
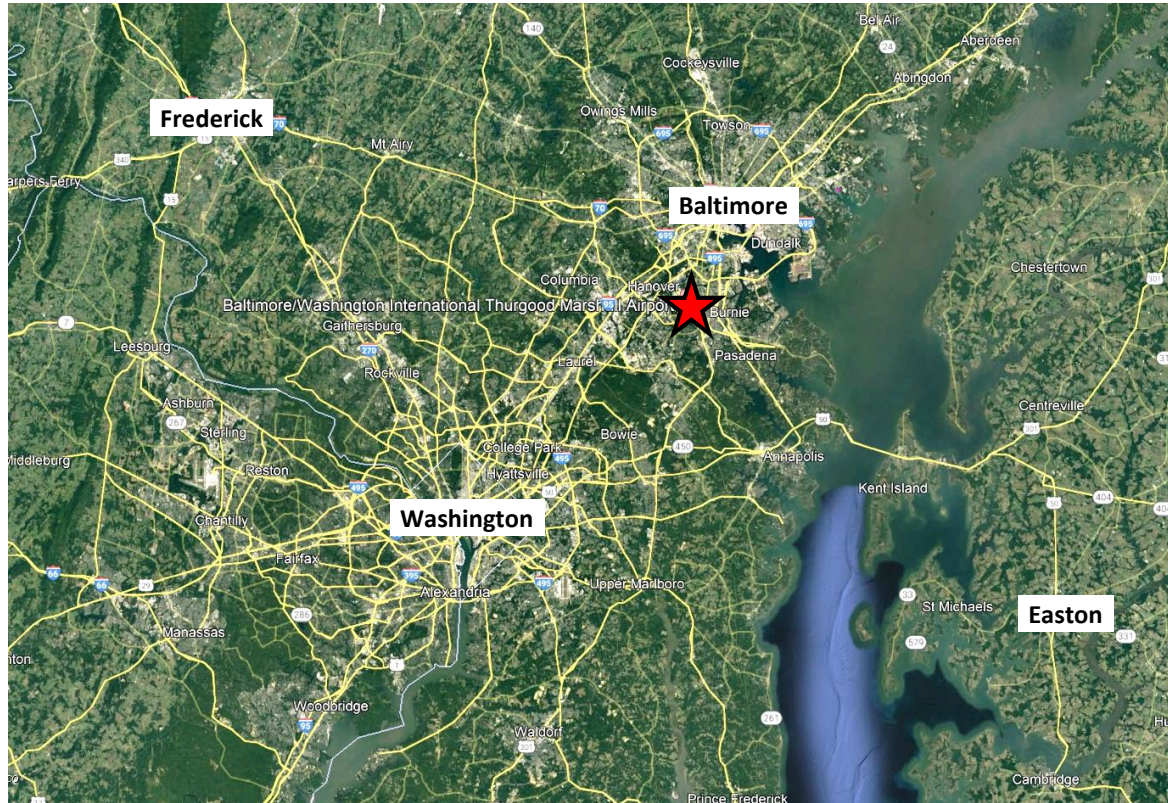
- 2003 DHL buys Airborne Express and expands hub at Wilmington Air Park, OH
- 2008 DHL sells domestic service to rival UPS
 - ±8,000 jobs lost at Wilmington
- 2009 DHL moves international service to Cincinnati/Northern Kentucky
 - To date invested \$280M, employs 3,000+ people
- 2017 Amazon starts operating at Cincinnati/Northern Kentucky
 - 2019 Amazon starts construction on 650-acre Phs-1 facility
 - 2,000 employees in 2022
- 2019 Amazon opens 1,900-acre facility at Wilmington Air Park (in previous DHL facility)
 - 1,100 employees in 2022



Local Development



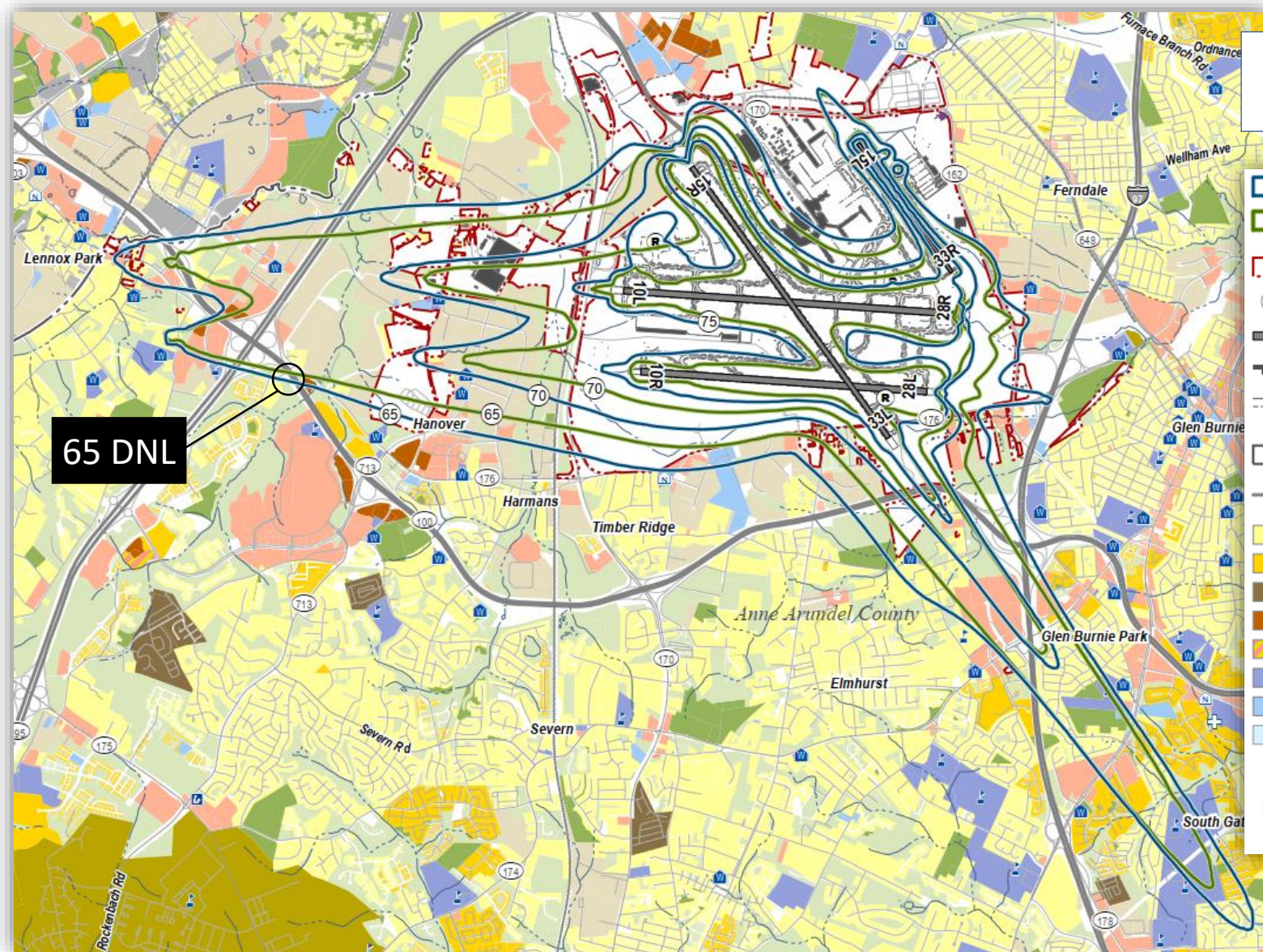
Ground Transportation & Roadways



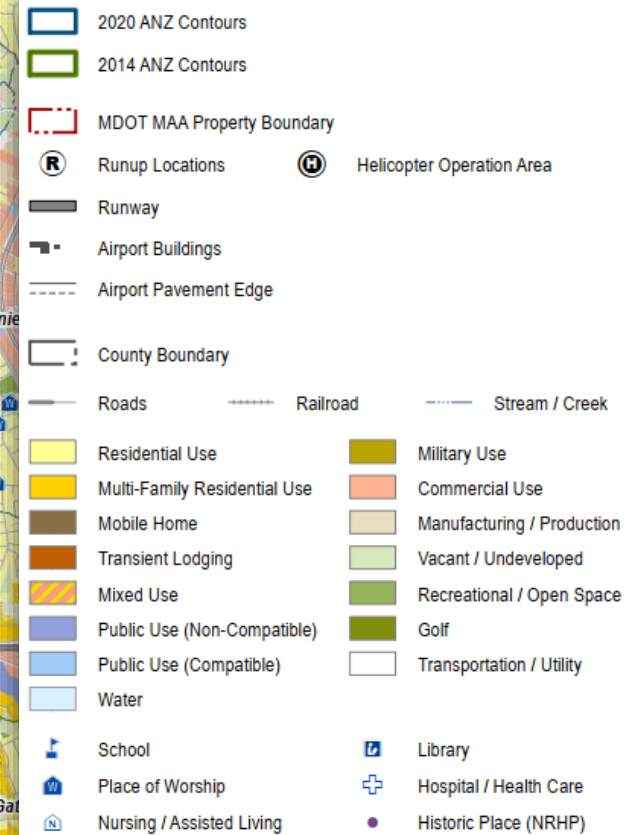
BWI Airport Noise Zone (ANZ) Update

2020 ANZ

- 5,543 acres
- 2020 ANZ is 23% larger than 2014 ANZ
- 53% on MAA property
- Changes attributable to:
 - Increasing aircraft operations
 - Increasing % of nighttime operations
 - Changes in the aircraft fleet mix
 - Anticipated increases in maintenance runups
 - Updated flight track planning for future Runway 10R/28L
 - Noise model updates



Comparison of 2020 ANZ to 2014 ANZ



Informing Policy Makers

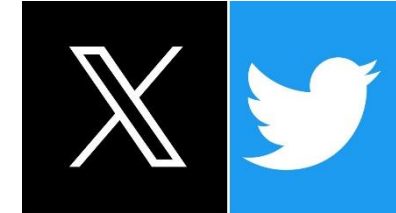
August 2023 Airport Tour for
Congressional Staffers



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About

Baltimore/Washington International Thurgood Marshall Airport is the 22nd busiest airport in the United States, and the busiest in the Washington-Baltimore region. BWI Marshall Airport was recognized as Best Airport in North America by Airports Council International World (ACI World) for 2020. In 2019, BWI Marshall Airport served approximately 27...

BWI Thurgood Marshall Airport

The official Instagram for Baltimore/Washington International Thurgood Marshall Airport (BWI).
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facebook.com/BWIAirport/
www.bwiairport.com
7050 Friendship Road, Glen Burnie, Maryland
Followed by dulles_airport and tsa

Following Message Call

#BitesAtBWI Baltimore's Official Southwest Airlines 2019 BWI Thurgood Marshall Summer Youth Initiative 2019

Foodie Event Trading Pla... #BWIyouth An-124 Tour Tomco

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Syracuse, NY

A brand new destination for BWI Marshall Airport travelers!

@SouthwestAir just announced daily nonstop service to @SyracuseAirport beginning November 14. More info at bit.ly/SouthwestBWito...
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