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# Aerotropolis: If You Build It, Will They Come?

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***"'Build it and they will come' may work for baseball, but not airports"***
**Greg Lindsay, co-author of the "Aerotropolis" concept, referring to proposals regarding Lambert-St. Louis Airport.** [1]

## Summary

The Missouri Legislature will likely be called to a special state legislative session in September. One of the objectives of the special session is consideration of a significant tax credit package that includes a number of changes to existing state tax credits and creation of several new business tax credit incentives. The largest of the new tax credit programs is commonly referred to as "Aerotropolis." The proposed "Aerotropolis Tax Credit" would provide an estimated $360 million in state funding over ten years to promote the region surrounding Lambert-St. Louis International Airport as an international trade zone.

However, mounting evidence casts serious doubt on Lambert-St. Louis International Airport's ability to become a sustainable international trade cargo zone as intended by the proposal. Excess existing capacity throughout the nation, declining air cargo transportation and the lack of other critical environmental characteristics that define successful cargo hubs raise serious questions about the viability of the "Aerotropolis" proposal.

Before committing hundreds of millions of dollars of scarce public funds, Missouri's lawmakers could consider requiring a wholly-independent study by qualified consultants beyond the influence of the project's proponents. In addition, as has occurred elsewhere when public funds were sought for such efforts,[2] enforceable commitments by major international freight forwarders should be pledged to Lambert-St. Louis prior to committing tax-payer dollars.

## Missouri's "Aerotropolis Proposal"

Under the most current draft of the proposal, a total of $60 million in tax credits would be provided to freight forwarders (those corporations that manage cargo movement) based on the weight of air exports. To take advantage of the tax credits, these forwarders must be housed within an eligible facility located in a "gateway zone."

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1 "'Aerotropolis' author: Won't work in St. Louis," Kelsey Volkmann, *St. Louis Business Journal,* July 13, 2011.

2 "Study Urges Cargo Airport Tenant", *Hazelton Times*, Jerry Lynott, June 12,2008, http://www.timesleader.com/hazletontimes/news/Study_urges_cargo_airport_tenant_06-11-2008.html; "Proposed Louisiana Cargo Airport Gets Further Study", New Orleans City Business, Jan 12, 2011, http://www.airportbusiness.com/web/online/Top-News-Headlines/Proposed-Louisiana-Cargo-Airport-Gets-Further-Study/1$11826

An additional $300 million in tax credits would be allocated to the "eligible costs" of "eligible facilities." Eligible costs include the construction and equipping of cargo, or manufacturing and assembly facilities operating within designated "gateway zones." Only owners of newly constructed warehouses are eligible for these credits. Facility owners would be able to take tax credits equal to between four to six percent of eligible costs for each year it either imports **and/or** exports between 10 and 20 percent of its goods. All cargo managed by the facility operators are counted, including inbound cargo that is never stored for any time within the facility. Each facility owner would be able to take tax credits up to the amount of 30 percent of total construction and equipping costs between enactment and the year 2027. **The current proposal does not require that a facility export a single piece of cargo**.

The "Aerotropolis" proposal seeks to lure Chinese cargo carriers to locate at Lambert-St. Louis International Airport. Proponents believe this may eventually result in the creation of a Chinese air cargo hub in St. Louis.[3] However, several critical factors raise considerable concern about the ability of the proposal to achieve the desired effect.

Most notably, the consolidation of large freight forwarders and integrators to fewer airports, numerous airport expansions, and this decade's overall shrinking air-cargo volume[4] has created excessive unused existing capacity for international cargo movement throughout the entire Midwest and beyond.

In addition, data indicate that successful international gateway airports are able to create "network connectivity" by having a combination of passenger carrier and freight carrier hubs. Both serve the freight forwarders who then– in a somewhat self-perpetuating cycle - attract more cargo to their facilities for transfer. Integrators are uniquely able to create their own economies of scale somewhat independently of the rest of the industry. At Lambert St. Louis, the scarcity of large international flights[5], and absence of a major freight forwarding hub or integrators significantly decrease the cargo "network connectivity" that is required to become a competitive cargo airport.

## Ample Unused Existing Capacity in St. Louis

A portion of the Aerotropolis proposal would commit tax credit incentives to stimulate the development of new international cargo warehousing or storage infrastructure within a St. Louis "gateway zone" with a 50 mile radius surrounding Lambert-St. Louis. However,

### Background on the Air Cargo Industry

The air cargo business has two major participants: **air cargo carriers and freight forwarders.** While some carriers integrate both components thereby functioning as **air freight "integrators"**, specifically FedEx, UPS and DHL, most businesses concentrate on one component.

**"Air cargo carriers"** are airline companies that move the physical commodities. Apart from the integrated carriers, most carriers concentrate on airport-to-airport movements, relying on freight forwarders and customs brokers to arrange for fulfillment of goods in terms of both reservation of space and documentation.

**"Freight forwarders"** manage cargo movement through all modes of transportation. In terms of air cargo, they arrange for the convergence of goods at specific airports to be picked up by cargo carriers.

**"Integrators"** are full-service operators that both manage movement and own/operate the modes of transportation. They are multimodal using both air and land, as well self-sufficient, though often reserve space with other carriers for over-flow cargo volume.

**A "gateway"** is a high-volume airport (usually housing at least carrier hub) servicing multiple international destinations and feeding smaller airports throughout the country. Gateways tend to be located in population, commercial, and manufacturing centers associated with both high levels of production and huge consumer markets.

**A "hub"** refers to the location where an integrator, freight forwarder or carrier (an airline) houses their regional, national, or international center of operations and movement.

[3] "Prospective Chinese hub at Lambert inches closer", Steve Giegerich, *St. Louis Post-Dispatch,* 10/28/2010, http://www.stltoday.com/business/article_913ecae6-e2e7-11df-9cb4-00127992bc8b.html
[4] Airports Council International-North America (ACI-NA), "North American Airports Traffic", 2000 and 2010. Decreased from 31.5 million to 25.5 million tons nationally.
[5] Lambert-St. Louis Website, "non-stop service", http://www.lambert-stlouis.com/flystl/airlines/non-stop/

data indicate that substantial unused capacity at and around Lambert-St. Louis already exists to meet current and future demands.

The Show-Me Institute points to the fact that 18 million square feet of existing warehouse space remains unused in the region.[6] Moreover, freight movement at Lambert-St. Louis has dropped 20 percent this decade.[7] In other words, with existing infrastructure, Lambert-St. Louis handled 20 percent more cargo a decade ago indicating that at a minimum Lambert-St. Louis already possesses room to grow back to year 2000 levels. In addition, since 2000, when Lambert-St. Louis was handling a much higher volume, the airport has completed a major expansion[8] and adjacent industrial parks have developed.[9] In fact, existing state tax credits contributed to the development of the surrounding industrial parks and a large portion of those credits remain available. [10]

## Holding Capacity for International Air Cargo Movement Does Not Equal Success.

Over the last decade, the buy-outs, consolidations, and retrenchments of a number of integrators including Airborne Express, Emery Worldwide, UPS, BAX Global, and DHL, accounted for a significant portion of St. Louis' cargo transport decline.[11] In addition to Lambert-St. Louis, several historically high-volume cargo airports throughout the Midwest have also lost tenants that operated cargo transportation. Much of this loss results from consolidation of integrators and freight forwarders to fewer airports, creating a greater supply of runway and warehouse capacity.

The following examples illustrate the importance of major integrator hubs in sustaining a successful air cargo airport, as well as the excessive amount of air cargo capacity that exists in the Midwest:

In 2009 Wilmington, OH's Airborne Airpark lost 700 jobs along with their integrator hub status as DHL pulled back to the Cincinnati/Northern Kentucky International Airport. DHL has since vigorously reduced service and abandoned competition for the U.S. domestic market altogether. Nearby, Dayton International Airport lost massive amounts of cargo traffic when UPS acquired Emery Worldwide and dropped its proprietary air operations.[12] Dayton, OH has since fallen from the 13th busiest North American cargo airport in 2000 (832,246 tons) to 116th in 2010 (just 8,092 tons).[13]

The former integrator "Kitty Hawk" filed for bankruptcy in 2007 and promptly shut down its Fort Wayne, Indiana hub,[14] plummeting airport traffic. Fort Wayne International Airport has since fallen from 37th busiest cargo airport in 2000 (170,476 tons) to 106th in 2010 (10,831).[15] Freight forwarder giant DB

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[6] Show-Me Institute, "Aerotropolis: A Raw Deal for Missouri", Audrey Spalding & Patrick Ishmael, July 2011
[7] See note 4
[8] "The Edifice Complex - 'Silver bullet' projects miss the mark. - CAN ST. LOUIS COMPETE? THE EDIFICE COMPLEX", David Nicklaus, *St. Louis Post Dispatch,* November 14, 2010, A1
[9] "Foes join forces for business park Developers find success as NorthPark Partners, winning the rights to build the $460 million project east of Lambert Field", Heisler, Eric, *St. Louis Post-Dispatch*, May 15, 2005, E1.
[10] See note 6
[11] See note Lambert-St. Louis International Airport, "Summary of Enplaned and Deplaned Freight by Airline", FAA Preliminary All-Cargo Landed Weight Calendar Year 2010, comparison of Calendar Year-to-date 00 vs. 99, and 10 vs. 09, loss of integrator movement cut volume by nearly half.
[12] "Rickenbacker might face new rival in Wilmington", Marla Matzer Rose, *The Columbus Dispatch,* January 12, 2011, http://www.airportbusiness.com/web/online/Top-News-Headlines/Rickenbacker-might-face-new-rival-in-Wilmington-DHLs-shift-to-using-UPS-could-ravage-a-town--raise-competition-for-air-service/1$20868
[13] Airports Council International-North America (ACI-NA), "North American Airports Traffic", years 2000 and 2010.
[14] "Kitty Hawk Shuts Down Fort Wayne Operation" Kimberly Peterson. The Journal Gazette.
[15] See note 13

Schenker plans to close its hub at Toledo Express Airport, (currently ranked 22nd)[16] in September of 2011 resulting in even more unused existing capacity throughout the Midwest.[17]

In addition, the entire cargo transportation business has declined in the last decade. Air cargo transport at Rickenbacker International Airport in Ohio decreased by 12 percent during the last year, and "other airports in the region have gone begging for added cargo business."[18] In an interview, Chuck Henderson, Columbia Metropolitan Airport director uses the term "survival mode" to describe the current position of cargo airports across the country. Henderson said that the trends have created "the highest level of competition between airports in his 20 years of experience with Columbia International."[19] In fact, even though Columbia, SC still houses UPS' southeast regional hub, UPS has reduced its volume at that location significantly. UPS dropped from twelve daily flights in 2000 (and 139,839 tons of cargo moved) to only four daily flights, moving just 62,592 tons of cargo in 2010.[20]

**Surprisingly, Chicago O'Hare has existing unused capacity as well.** Although total cargo through Chicago O'Hare has dropped slightly since 2000 (a decrease of nearly 100,000 tons),[21] the airport's expansion of infrastructure capacity has continued. Chicago O'Hare is currently undergoing the second phase of the largest airport modernization program in U.S. history,[22] expanding capacity by another 25 percent.[23] China-based Yangze River Express introduced three cargo flights a week into Chicago O'Hare during the last year.[24] **Yangze River Express located at Chicago O'Hare without the benefit of financial incentives.**

## Critical Environmental Components for Success

The data consistently indicate that housing either a dominant integrator as an anchor tenant (particularly FedEx or UPS) or the convergence of several large freight forwarders (often found at gateways) **creates an overpowering competitive advantage** referred to as "network connectivity" within the logistics industry. Network connectivity provides an economy of scale allowing higher frequencies of movement of larger amounts of goods to more destinations by more means all at a one-stop-shop. Ultimately this offers more choice at a lower price. The table displayed on the next page demonstrates the importance of these factors. Each of the top ten U.S. airports for cargo movement either houses a major integrator hub or functions as a gateway, maintaining a high number of international flights. By comparison, Lambert-St. Louis has neither of these advantages.

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[16] See note 13
[17] "BAX Global to close hub at Toledo Express: 700 jobs lost", Larry Vellequette, *Toledo Blade,* July 22, 2011, quoting director of Rickenbacker Airport.
[18] See footnote 12
[19] Interview with Columbia, SC Airport Director, Chuck Henderson on August 1, 2011.
[20] See note 13
[21] See note 13
[22] "Compromise allows Chicago O'Hare expansion to proceed", Ben Mutzbaugh, *USA Today,* March 14, 2011, http://travel.usatoday.com/flights/post/2011/03/ohare-expansion-deal/147616/1
[23] Phone conversation with Acting Deputy Commisioner, Chicago Dept of Aviation, Adam Rod on July 18, 2011.
[24] City of Chicago, "Yangtze River Express Airlines Begins New Cargo Service from O'Hare International Airport, June 22, 2011, http://www.cityofchicago.org/city/en/depts/doa/provdrs/flight/news/2011/jun/yangtze_river_expressairlinesbeginsnewcargoservicefromohareinter.html

| North American Airport Cargo Traffic in Metric Tons - 2010[25] | | | |
|---|---|---|---|
| Rank | Airport | Integrator Hub | Gateway |
| 1 | Memphis (MEM) | FedEx | |
| 2 | Anchorage (ANC) | FedEx | |
| 3 | Louisville (SDF) | UPS | |
| 4 | Miami (MIA) | | Yes |
| 5 | Los Angeles (LAX) | | Yes |
| 6 | Chicago (ORD) | | Yes |
| 7 | New York (JFK) | | Yes |
| 8 | Indianapolis (IND) | FedEx | |
| 9 | Newark (EWR) | FedEx | Yes |
| 10 | Atlanta (ATL) | | Yes |
| 39 | St. Louis (STL) | No | No |

A recent economic assessment of the "Aerotropolis" proposal released by the St. Louis Regional Chamber and Growth Association (RCGA) highlights several cargo airports as comparable to Lambert-St. Louis.[26] However, each of the highlighted examples differs greatly from Lambert-St. Louis in terms of housing integrators or serving as a gateway.

In fact, some of the examples provided in the report are actually struggling to maintain their air cargo business. Louisville International Airport holds the UPS Worldport international air hub, while Memphis International Airport and Indianapolis International Airport house FedEx's largest hubs in the continental U.S. In addition, Alliance Fort Worth's close proximity to Dallas arguably makes it a gateway, but more importantly, it also houses FedEx's southwest sorting hub.[27] Even with this advantage, Alliance Forth Worth hasn't succeeded in attracting a single international carrier from Dallas-Fort Worth International Airport. Huntsville, one of the large aerospace centers of the U.S., contains the hub of dominant Swiss-German freight forwarder Panalpina.[28] Yet Huntsville has remained a relatively small operation, ranking 53rd for cargo movement in North America.[29]

Even those airports with a long history of air cargo transportation that are neither a gateway nor house an integrator hub continue to struggle. Rickenbacker Columbus Inland Ports previously housed "Flying Tigers Cargo", which was later acquired by FedEx. Rickenbacker remains the world headquarters of AirNet and continues to host such operators as Evergreen and Atlas.[30] Notably, Rickenbacker is also surrounded by nearby manufacturers and distributors that create demand for its flight operations. **Nevertheless, Rickenbacker has received $115 million in taxpayer subsidies since 1981, continues to**

[25] See note 13
[26] "Estimate of Potential Economic Impact Associated with 'Aerotropolis' Legislation," St. Louis Regional Chamber and Growth Association, http://www.stlrcga.org/documents/Aerotropolis%20Impact.pdf, April 2011.
[27] "Hubs of Major Air Freight Integrators", Jean-Paul Rodrigue, Hoftra University, http://people.hofstra.edu/geotrans/eng/ch5en/appl5en/upshubs.html
[28] "Sweet Home Alabama", Michael Webber, *Air Cargo Management,* December 2005, pg. 40-42.
[29] See note 13
[30] See Rickenbacker website, http://rickenbackerinlandport.com/en/

**operate at a deficit, and still has the capacity for 10 times the volume of current cargo shipments.** According to David Whitaker, vice president of business development and communications at Rickenbacker, “if Rickenbacker isn't breaking even by 2012, airport authority officials don't know whether they're going to ask Franklin County taxpayers for more money.”[31]

## Recent Airport Expansions Throughout the U.S. Sit Vacant

Airport developments that have attempted to defy these market-driven preconditions of housing an integrator hub or serving as a gateway sit largely unused today, indicating that development should not occur without enforceable commitments from freight forwarders or integrators. For example, only 37 miles from St. Louis-Lambert, Mid-America airport, which was featured on NBC Nightly News’ “Fleecing of America,” transformed itself from exclusively a U.S. Air Force Base into an unused passenger and air cargo facility in 1997. Likewise, North Carolina’s Global TransPark (a project of Aerotropolis’ “visionary” John Kasarda[32]) was completed in 1996 but remains virtually unused by the air-cargo industry.[33]

Two examples included in the St. Louis RCGA’s report referenced above remain vacant, including the Port of San Antonio Airport and San Bernardino International Airport. Port of San Antonio’s cargo airport was completed in 2008. The airport continues to lack regular cargo flights and the runways are used only by the U.S. Air Force and flights chartered by the surrounding aerospace industry.[34]

Similarly, San Bernardino International Airport was originally projected by airport executives to serve 500,000 passengers by 2010 and one million by 2020 at a cost to taxpayers of just $38 million.[35] **However, the development has already cost $142.5 million, has no regularly scheduled flights, and is under grand jury investigation.[36]**

The experience of these airports is further evidence that for Lambert-St. Louis to become successful in the international cargo industry, it would need to secure at least one of the market-driven preconditions of luring an integrator or rising to gateway status. At minimum, as in the rare cases of success in Huntsville and Toledo, one of the top five international freight forwarders would need to commit to establish a hub at Lambert-St. Louis.[37]

A similar proposal considered for Hazelton, Pennsylvania closely resembles the measure currently under consideration by Missouri lawmakers. To ensure fiscal accountability, lawmakers in Pennsylvania required that an independent study of Hazelton’s potential for success be conducted by outside consultants. The study, conducted by Martin Associates and RS&H consultants, identified that without the presence of FedEx, UPS, or DHL, no all cargo airport has ever succeeded in the U.S. **The report recommended that Pennsylvania secure an enforceable commitment from an anchor tenant prior to**

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[31] “Rickenbacker aims to break even by 2012”, Alayna DeMartini, *The Columbus Dispatch* January 12, 2011, http://www.airportbusiness.com/online/article.jsp?siteSection=1&id=17867&pageNum=3
[32] “UNC-CH, N.C. Global TransPark receive $500,000 from U.S. Treasury to improve customs”, Carolina News Service, No. 756, Oct. 16, 1997, http://www.unc.edu/news/archives/oct97/transpk.html
[33] For full story see North Carolina News series, http://www.carolinajournal.com/exclusives/series.html?id=3
[34] Interview with Port of San Antonio Public Information Manager, Paco Felici on July 14, 2011.
[35] San Bernardino airport nearing commercial service, officials say, Josh Dulaney, *Redlands Daily Facts,* July 7, 2011, http://www.redlandsdailyfacts.com/food/ci_18437208
[36] Ad Hoc Committee- San Bernardino International Airport, San Bernardino Grand Jury Report, 2010-2011, http://www.pe.com/multimedia/pdf/2011/20110701_grandjury.pdf
[37] The top international freight forwarders in terms of tonnage are (in order): DHL, DB Schenker, Kuehne + Nagel, Panalpina, and Kintetsu. According to the “Top 25 Worldwide Freight Forwarders”, Air Cargo World, July 2011

**expenditure of state funds.**[38] These common sense requirements, which were designed to protect the taxpayers of the state, have never been met.[39]

## Summary and Recommendations

Unfortunately, no evidence exists that the demand for a major cargo movement exists in St. Louis. Although the St. Louis region contains a significant amount of exportable goods,[40] and Lambert-St. Louis has underutilized runways and ample capacity to move and warehouse goods,[41] Missouri does not have a commitment from an integrator or a major freight forwarder – without which the area will lack the network connectivity necessary for success in the air cargo industry.

Further, the "Aerotropolis" proposal is purported to attract Chinese cargo carriers into servicing Lambert-St. Louis International Airport, eventually resulting in the creation of a Chinese air cargo hub in St. Louis.[42] However, the group of Chinese carriers currently being courted by Lambert includes neither integrator nor freight forwarder, leaving absent an essential part of the equation. Absent a major freight forwarder or integrator, Lambert's feasibility remains doubtful.

**Prior to committing $360 million in scarce resources, Missouri lawmakers could insist upon common sense protections for Missouri taxpayers by:**

- Preceding Missouri's "Aerotropolis" tax credit legislation with an independent analysis conducted by an uninvolved third party expert, and
- Include in the legislation the requirement that an enforceable commitment from a dominant freight forwarder[43] and/or integrator be enacted prior to the expenditures of taxpayer funds.

[38] See note 2
[39] IBID
[40] Missouri Budget Project analysis of Missouri's top export categories by HS Code; World Trade Center's analysis of "Catchment Area". Available upon request.
[41] See note 6; also see note 11.
[42] "Prospective Chinese hub at Lambert inches closer", Steve Giegerich, *St. Louis Post-Dispatch,* 10/28/2010, http://www.stltoday.com/business/article_913ecae6-e2e7-11df-9cb4-00127992bc8b.html
[43] For a list of top 25, including airfreight in tonnage see pg. 32 of: http://www.aircargoworld-digital.com/aircargoworld/201107

# Appendix

Throughout this paper, data on cargo volume from the Airports Council International-North America (ACI-NA), are used for consistency when comparing airports. Interestingly, ACI-NA data exhibit the most conservative decline in Lambert-St. Louis' cargo volume.  Volume numbers published in both the FAA's landed cargo and Lambert-St. Louis' own "Summary of Enplaned and Deplaned Freight" **show nearly a 50 percent cargo drop since** 2000. *See Lambert-St. Louis International Airport, "Summary of Enplaned and Deplaned Freight by Airline", FAA Preliminary All-Cargo Landed Weight Calendar Year 2010, comparison of Calendar Year-to-date 00 vs. 99, and 10 vs. 09.*

| Top Ten Worldwide Freight Forwarders 2010 | | |
|---|---|---|
| **Rank** | **Freight Forwarder** | **Tons of Airfreight** |
| **1** | DHL Supply Chain & Global Forwarding | 4,435,000 |
| **2** | DB Schenker Logistics | 1,225,000 |
| **3** | Kuehne + Nagel | 948,000 |
| **4** | Panalpina World Transport | 892,000 |
| **5** | Kintetsu World Express | 869,225 |
| **6** | UPS Supply Chain Solutions | 862,000 |
| **7** | Nippon Express Co. | 855,400 |
| **8** | Expeditors International of Washington | 807,211 |
| **9** | CEVA Logistics | 536,000 |
| **10** | Hellmann Worldwide Logistics GnbH & Co. | 513,278 |

*Source: "Top 25 Worldwide Freight Forwarders", Air Cargo World, July 2011*

| North American Airport Cargo Traffic in Metric Tons 2010 | | | |
|---|---|---|---|
| **Rank** | **Airport** | **Integrator Hub** | **Gateway** |
| **1** | Memphis (MEM) | FedEx | |
| **2** | Anchorage (ANC) | FedEx | |
| **3** | Louisville (SDF) | UPS | |
| **4** | Miami (MIA) | | Yes |
| **5** | Los Angeles (LAX) | | Yes |
| **6** | Chicago (ORD) | | Yes |
| **7** | New York (JFK) | | Yes |
| **8** | Indianapolis (IND) | FedEx | |
| **9** | Newark (EWR) | FedEx | Yes |
| **10** | Atlanta (ATL) | | Yes |
| **11** | Dallas/Fort Worth (DFW)* | | Yes |
| **12** | Oakland (OAK) | FedEx | |
| **13** | Toronto (YYZ) | FedEx | Yes |
| **14** | San Francisco (SFO) | | Yes |
| **15** | Houston (IAH) | | Yes |
| **16** | Philadelphia (PHL) | UPS | Yes |
| **17** | Cincinnati (CVG) | DHL/ABX | |
| **17** | Ontario, CA (ONT) | UPS | |
| **19** | Washington, DC (IAD) | | Yes |
| **20** | Seattle (SEA) | | Yes |
| **21** | Boston (BOS) | | Yes |
| **22** | Toledo OH (TOL) | DB Schenker | |
| **23** | Denver (DEN) | | Yes |
| **24** | Phoenix (PHX) | | Yes |
| **25** | Vancouver BC (YVR) | | Yes |

*Source: Airports Council International-North America (ACI-NA), "North American Airports Traffic"*