

## 1. AIR CARGO NEEDS ANALYSIS

This needs analysis is based upon a physical asset inventory and strategic planning exercise conducted by sub-consultant Landrum & Brown, focusing upon Wilmington Regional Airport (ILN), Toledo Express Airport (TOL), Columbus-Rickenbacker Regional Airport (LCK), and Cincinnati-Northern Kentucky International Airport (CVG). The group of airports was selected for study by the Ohio Department of Transportation. As in the other modal synopses of the needs analysis, assessments and plans are grouped according to the goals established by Access 2040:

- Preservation: Maintain transportation assets so that they remain in state-of-good repair and meet or exceed acceptable service levels
- Safety: Reduce transportation-related fatalities and injuries
- Mobility and efficiency: Increase travel time reliability for passengers and freight
- Accessibility and connectivity: Improve the access to the Ohio multimodal system, as well as network connectivity within and between transportation modes
- Stewardship: Optimize usage of public funds by partnering with private sector and local funding partners. Minimize environmental impact of transportation system
- Economic development: Identify and deliver economic development projects

### 1.1 Introduction and Context

- Present levels of on-airport build-out are adequate for meeting current demand volumes
- Facilities are now consolidating near larger origin-destination markets for high value goods
- National trends of ‘truck substitution’ a means of remaining cost competitive for carriers
- Opportunities for remunerative public investment in Ohio air freight facilities are limited

The four airports studied in this analysis currently exhibit a surplus of capacity in which little public benefit can be derived from increased public investment, aside from increasing truck access to air cargo facilities through roadway improvements to nearby thoroughfares. National and statewide trends of declining air freight tonnage represent both a diminishing demand for this expensive service and the growing trend of ‘truck substitution’ by air carriers. Facility consolidation has become the industry norm, with hubbing activities focusing upon Cincinnati-Northern Kentucky (CVG) and Columbus-Rickenbacker (LCK). Behind these trends, an economic context of declining air cargo volumes has prompted a succession of mergers in the commercial airline industry, with Ohio’s less robust air cargo operations facing competition with regional hubs of Chicago, Detroit, and Minneapolis. From a market perspective, air cargo assets in Ohio, particularly outside of Cincinnati and Columbus, are overbuilt at present. Facing transportation policy-makers now is the decision to either consolidate public resources where they may attain the largest returns upon public investment or to continue within a paradigm in which declining freight volumes are fragmented between several small facilities unable to achieve the economies of scale that are necessary to mature. In the interim, short term uses of these properties may include non-aviation applications such as hosting vocational

training, military technology research and development (R&D) activity, business incubation, or truck transshipment facilities for freight carriers.

CVG is buoyed by the presence of commercial passenger traffic and a reinvigorated DHL hub (in addition to FedEx and other, smaller carriers). There, DHL has optioned land for future expansion of business activities should demand necessitate facility growth. Additionally, the sustained presence of a stable or growing DHL has spurred discussion of new construction of logistics parks near CVG. Given the right conditions, some of these may locate in Ohio. Such changes should prompt more concrete traffic analysis of existing access road patterns at CVG and other aviation facilities. Finally, additional access routes, used by trucks serving air carriers on-airport, may be necessary in the future.

LCK is now pursuing a clustering strategy for manufacturing and distribution that will leverage its real estate holdings to support the goal of financial self-sustenance within ten years, while also strengthening its product base to attract inbound and outbound cargo movements.

TOL facilities are adequate for present levels of user demand, but the airport faces difficulty competing with the larger production bases of Detroit and Chicago. TOL's best path forward may be to retain its present carriers that are geographically bound to the facility and to encourage an increase of truck transshipment activities with the long term goal of creating a larger product base that can attract more flights in the future. TOL also could benefit from the potential development of an Intermodal Logistics Center nearby at North Baltimore. While shippers locating at such a facility would be seeking the benefit of rail carriage, the availability of backup service by air as well as by highway could influence the site decision.

ILN has analyzed re-use proposals through a recent real estate study. Cargo facilities transferred to Clinton County from former owner DHL are configured for a single user, rather than the more optimal mix of smaller users, and it is less likely that regional market factors will attract a single user large enough to support the costs of operating the facility in the manner undertaken by DHL. A lack of passenger service at this airport also limits options for growth. Additionally, while FAA funding is not available for this non-NPIAS airport, its existence outside of traditional funding structures creates the possibility for more flexible and innovative structures of business partnership and financing.

## 1.2 Preservation

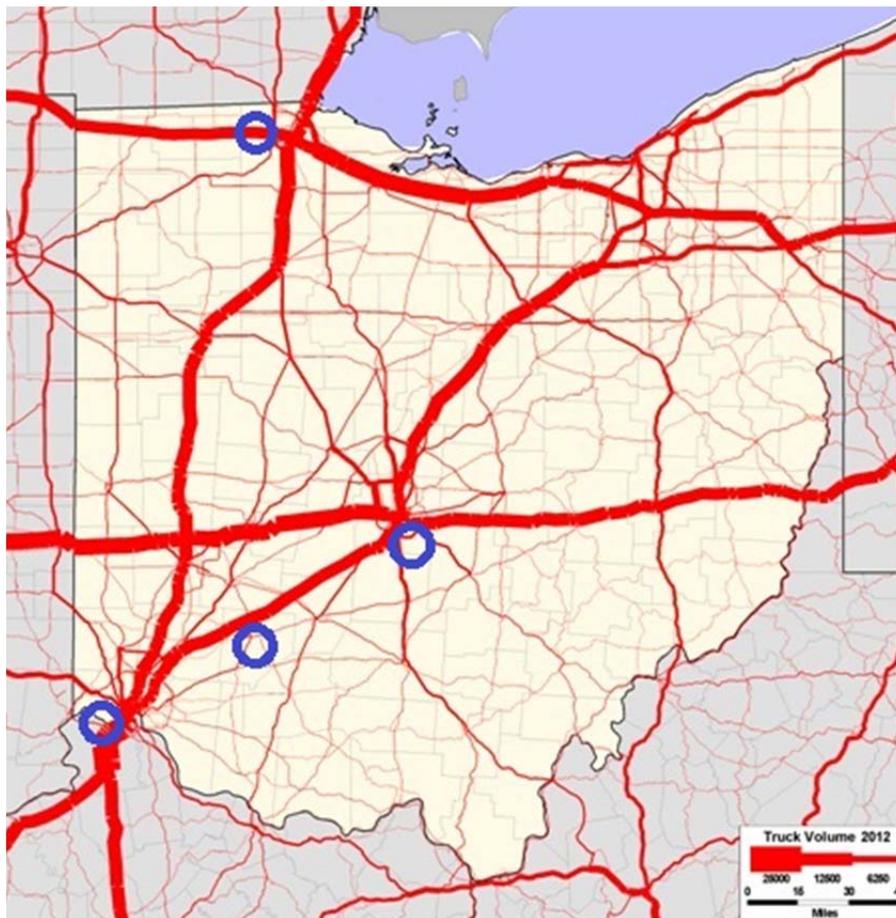
- Air freight facilities are now capitalized to the extent that present demand is now met
- Improvements to the regional roadway network would improve the efficiency of trucking collector operations that serve each air cargo hub
- Generally, sorting facilities in good or new condition, while some underutilized storage spaces are in poor condition
- High labor content of industry compels preservation of parking space for employees

In an industry-wide context of declining air cargo volumes, capacity expansion at present would portend substantial risk with uncertain possibility of reward. Instead, funding decisions may focus on capacity preservation and selected recapitalization of key assets serving geographically captive

markets. The consistent presence of major carriers FedEx, UPS, and DHL at Columbus-Rickenbacker and Cincinnati-Northern Kentucky (with Cincinnati also hosting DHL) suggests that routing is clustering in these two facilities and that public investment may achieve the largest gains there.

Both Columbus and Cincinnati-Northern Kentucky airports are designated as ‘Primary’ on the Federal Aviation Administration’s (FAA) National Plan of Integrated Airport Systems (NPIAS) list. This designation entails a funding minimum of \$1 million per year in Airport Improvement Program (AIP) support—when funding levels meet or exceed \$3.2 billion—with the amount at each airport being determined by the volume of annual enplaned passengers.

### Exhibit 1: Airport Locations in Relationship to Total Truck Volumes (2012)



#### *Columbus-Rickenbacker Regional Airport (LCK)*

LCK is located 15 miles south of the Columbus city center. At 4,340 acres in area, the airport hosts a comparatively long runway, at 12,102 feet, surpassing the minimum requirements of 8,000 feet necessary for serving the larger aircraft now in use for both passenger and cargo operations. The airport’s operational focus is cargo, with some passenger charters also serving LCK. The primary means of surface road access are provided by Alum Creek Drive, Rickenbacker Parkway, and State

Route 317-London Groveport Road. Exits from Interstate 270 and U.S. Highway 33 lead to the airport. U.S. Highway 23 is also a means of reaching LCK.

The buildings housing the main cargo sorting facilities at LCK are less than 15 years old and are in good condition. Three buildings now used by FedEx facilities are former military hangars, each 28,000 square feet in area. While this project has reported these buildings as being in poor condition, they are currently used by the tenant for low value activities, such as storage of vehicles and parts and changing vehicle batteries. One of the three buildings is vacant. These assets are located on land owned by the Columbus Regional Airport Authority (CRAA), while the main FedEx hub assets are not located on land owned or managed by the CRAA. The sole UPS facility on land owned by the CRAA was built by the military in 1953, and this 28,300 square foot building is also in poor condition. The remaining air cargo buildings owned by the CRAA are in good condition, and range from three to fourteen years in age. Landing fees are regionally competitive and LCK has attracted tenants to nearby off-airport properties for activities related to distribution of durable goods (Whirlpool) and refrigerated food (Kraft).

#### *Cincinnati-Northern Kentucky International Airport (CVG)*

CVG has a 12,000 foot runway and the airport's 8,000 acre property is located 13 miles from Cincinnati's downtown core. The airport is located in Kentucky. Cargo buildings in use by Delta are three decades old, but assessed as being in fair condition by a sub-consultant site visit. Oppositely, a 27,000 square foot building leased by FedEx and a smaller aviation services firm is 54 years old and in poor condition. DHL facilities located at the South Airfield are new, and recently expanded in November 2011, while the former DHL location at the North Airfield has been demolished completely. The expansion of DHL facilities was accompanied by improvements to Wendell H. Ford Boulevard, a means of accessing the terminal and the relocation of Airport Perimeter Road. Current access to CVG is facilitated by KY 236-Donaldson Highway and Interstates 71/75 and 275.

#### *Toledo Express Airport (TOL)*

TOL, also designated as a Primary airport on the NPIAS list, features a 10,600 foot runway and 78 acres of parking apron for aircraft. However, regional competition with Detroit, Chicago, and Minneapolis as consolidation points for regional cargo distribution has had a negative effect upon cargo volumes. For the present level of demand, TOL's 280,000 square feet of cargo sorting facilities are underutilized. Buildings serving air cargo functions are less than twenty years old and in good condition. Current access to TOL is provided by Interstate 80 (the Ohio Turnpike) and U.S. Highway 20A.

#### *Wilmington Regional Airport (ILN)*

ILN has a 10,071 foot runway. Sited upon a former Air Force base, the Airpark was acquired by DHL in 2003, and DHL operations there ceased in 2009. Wilmington has a strong regional industrial base in the trucking industry, and the airport is accessible by Interstate 71, Ohio State Routes 73 and 134, and U.S. Highways 22 and 68. A bypass on State Route 73 has recently been added to allow access to the Airpark without passing through downtown Wilmington. The administrative buildings on-airport are

relatively new and in good condition, having been built in 2006. Maintenance, Repair, and Overhaul (MRO) facilities built in the 1990's are also in good condition, with the exception of one small hangar built in the 1950's. With the loss of DHL hub activity at ILN, there is currently a surplus of operations space and hangar coverage available for use.

### 1.3 Safety

- No present issues, but opportunities to lessen security costs through aggregation of cargo screening function

As a mode, the aviation industry can provide a safe working environment, substantiated by comparison of occupational deaths associated with each mode of transportation. Transportation-related deaths constituted 34.1 percent of all occupational fatalities in 2010—the lowest since 1992—marking a decline from the 1998 high of 43.7 percent.<sup>1</sup>

#### Exhibit 2: Annual Occupational Deaths Related to Transportation (2010)

Cause of Work-related Death	Percentage
Transportation (all modes)	34.1
Highway	18.6
Pedestrians Struck by Vehicles	5.3
Non-highway Road	5.2
Air	2.9
Waterborne Vessels	1.0
Railways	0.8

USDOT, *National Transportation Statistics*, 2012.

While these statistics reflect modal totals for passenger and freight service, fatality data associated with the conveyance of hazardous materials by rail, truck, water carrier, and air from 1975 to 2010 indicate that air and water are the safest means of moving this freight, with air only recording fatalities in 1996 (belly cargo in a passenger carrier). Interpreting data points related to property damage<sup>2</sup> suggests recognition of the current excellent safety performance of the aviation industry, and the implication that limited public resources may achieve greater gains elsewhere.

<sup>1</sup> USDOT: Research and Innovative Technology Administration – Bureau of Transportation Statistics, 2012. 'Transportation-Related Occupational Fatalities' (Table 2-7) in *National Transportation Statistics*.

<sup>2</sup> Idem, Table 2-6.

### Exhibit 3: Annual Property Damage Related to Transportation (2010)

Cause of Property Damage	USD
Highway	\$63,841,000
Rail	\$7,358,000
Waterborne	\$574,000
Air	\$20,000

USDOT, *National Transportation Statistics*, 2012.

As a means to counter terrorism, security costs associated with screening of cargo are key driving variables in cost increases in the air freight industry. While U.S. Customs inspection of air cargo at the Ohio air cargo facilities in this study presented no operational bottlenecks at the time of analysis, this project's asset inventory noted that consolidating screening efforts (both government and contractor performed) on-airport in facilities that do not currently centralize this function would likely provide opportunities to decrease total system costs. Additionally, greater dedication of staffing resources by federal agencies responsible for the inspection and clearance of international flights would also contribute to speed gains.

#### 1.4 Mobility and Efficiency

- Minimizing delays: for highly peaked demand, key physical planning goals should include additional access roads for trucks to sorting facilities at Cincinnati and Columbus

In a freight context, the Access 2040 goals of Mobility and Efficiency emphasize increasing reliability, minimizing delays, and making improvements to efficiency and effectiveness. Physical planning at the airport level should address capacity within the terminal and on the aircraft apron, warehousing, ground service equipment, office space for airport administration and user companies, service roads, remote apron access and taxiways, building frontage, customer and employee parking (particularly for freight integrators, firms dependent upon a high labor content), and improved roadway access. The goal of minimizing delays using these tools is set against a backdrop of original equipment manufacturers (OEMs) expecting continuing need for air cargo services in the coming two decades, with shippers relying upon the air freight supply chain as a back-up to less costly truck-based flows. In its analysis of air market demand, the aircraft manufacturer Boeing predicts that passenger volumes may double in twenty years, further enlarging the belly cargo market. Expected increases in roadway congestion and limited availability of truck drivers in the long term may push more high value, time sensitive cargos to air from truck, although the trend through today has been the other way.

Cross-cutting the physical and strategic planning issues at the airports evaluated in this study are two salient factors that affect the efficiency of a successful air cargo facility: the ability of the airport to compete in the now shrinking market for consolidation of regional demand, and the capacity of the airport to respond to highly peaked daily demand for use of key access roads and to plan for redundancy in times of blockage.

Based on current long term outlooks provided in the asset inventory component of this analysis, air cargo operations at Wilmington, Toledo, and Dayton can expect little growth as larger cities in their regions are more able to consolidate and retain the presently shrinking air cargo volumes from their surrounding markets. While these forecasts could change based on a number of long term economic factors and the strategic decisions of large firms in the industry, the present state of facility competition in the region suggests little prospect for changing the trajectory of cargo volumes at these airports.

CVG is expected to see an 80 percent increase in air cargo volumes by 2030, while volumes at LCK are forecast to increase by 30 percent in the same time period. Addressing the issue of demand peaking at CVG and LCK, this analysis indicates that the most impactful planning improvements at these two airports can be obtained by moderate improvements to service roads and access routes immediately surrounding the two airports that would serve the dual purpose of allowing freer egress to trucks consolidating air freight immediately before aircraft departure while also providing an alternative means of facility access in times of temporary (vehicle accident) or medium term (construction) blockage or delay. The best example of this is the proposed extension of Wendell H. Ford Boulevard towards a future intersection with the new South Airfield Bypass Road at CVG. Associated improvements to highway geometry and its impacts on facility access also deserve further study. At present, this study has identified no pressing demands of this nature for roadways immediately accessing the airports in this study.

Other components of an air cargo facility impacted by peak demand pressures include aircraft parking, truck parking, and operations/sorting space within the facility. At this time, none of the airports studied are adversely affected by high levels of demand. However, future capacity planning efforts should extend stakeholder detailed outreach efforts to airlines and freight carriers in assessing forecasted demand, as the common practice of 'wet leasing' the more difficult to track 'aircraft, crew, maintenance, and insurance' (ACMI) packages might understate the facility demand attributed to each user company.

#### Exhibit 4: Demand for Egress Both Within and Surrounding Air Cargo Facilities is Highly Peaked



### 1.5 Accessibility and Connectivity

- Truck substitution continuing to grow as component of industry and its physical requirements
- Rail and marine modes not crucial due to high air cargo value

In a freight context, the Access 2040 goals of Accessibility and Connectivity mean increasing intermodalism and opening up access to broader markets for goods and services. Ohio OEM shippers reported that air cargo is largely used as a safeguard mode to ensure the integrity of supply chains operating with low inventory. While many manufacturers attempt to minimize their use of air freight as much as possible due to its high costs, manufacturers and retailers find that it is more cost effective to apply a quick fix via air carrier in cases of inadequate inventory than to redesign their supply chains with more ‘slack’: retail inventory or work in progress. One example uncovered in interviews conducted for this study featured a durable goods manufacturer relating that the lost revenue risks from a plant shut down due to inadequate inputs could easily surpass \$1 million per hour. When compared with the \$20,000 to \$40,000 cost of chartering a freight flight (and much less for smaller scale air shipping), it becomes clear why many logistics operations call upon air freight service as a backstop against supply disruptions.

Currently enjoying prominence is an ‘aerotropolis’ concept promoted by John D. Kasarda in his book of the same name. Based upon trends observed in Asia and the American Midwest, the concept describes the basing of manufacturing and value adding distribution activities—such as kitting, sorting, and returns/fulfillment—around airports, recognizing the global nature of trade flows. At the same time, a decade of Open Skies agreements and increasing liberalization of the aviation market has created substantial opportunities for air cargo hubbing for previously marginalized regions beyond the ‘front line’ cities of the east and west coasts. Midwestern airports in geographically ‘contestable’ areas, with an existing base of flight traffic that can provide the necessary interlining diversity for belly

cargo, are now attempting to compete with mature gateways such as New York, Miami, and Atlanta. Both CVG and LCK (the airports that are most likely to feature an existing manufacturing and distribution base that would attract new flights) can now accommodate aircraft of the size necessary to bypass 'front line' hubs in routes to and from Asia and Europe.

Acknowledging the economies of scale possible through agglomeration, many of the buildings housing these facilities have programmatic demands for space that reach 500,000 square feet (roughly the size of the 'big box' retail stores). Further complicating the demand for space associated with these 20 acre facilities are the height restrictions encountered when building on or near an airport. Because of these difficulties, some facilities are choosing to locate directly adjacent to airport property, rather than on land directly managed by the airport or its jurisdictional entity. For these reasons, the availability of land that can be dedicated to these purposes is an essential factor of attracting and maintaining a high speed logistics component at an airport.

Planning objectives related to these themes include the possible consolidation of FedEx operations on-airport at CVG, which would require an expanded facility with up to 120,000 square feet in floor area, additional aircraft parking for three or four wide-body aircraft, additional storage, and dedicated space for large scale customers such as Amazon and Proctor & Gamble. Similar consolidation efforts might lead to similar efficiency benefits at TOL, with the proposed relocation of freight firm SITA and more integrated planning for truck connectivity as a key selling feature in attracting tenants. Future limitations on growth at CVG could be imposed by the limited presence of utilities at the South Airfield, increased tractor trailer traffic on-site, and reliance upon two-lane roads that can easily become blocked or congested. The new South Airfield Bypass Road near the DHL facility will connect KY 237-Burlington Pike to Turfway Road, and eventually Interstate 71/75.

Exhibit 5: Rickenbacker Global Logistics Park, a PPP, leverages its landholdings to accommodate regionally strong manufacturing and distribution activities

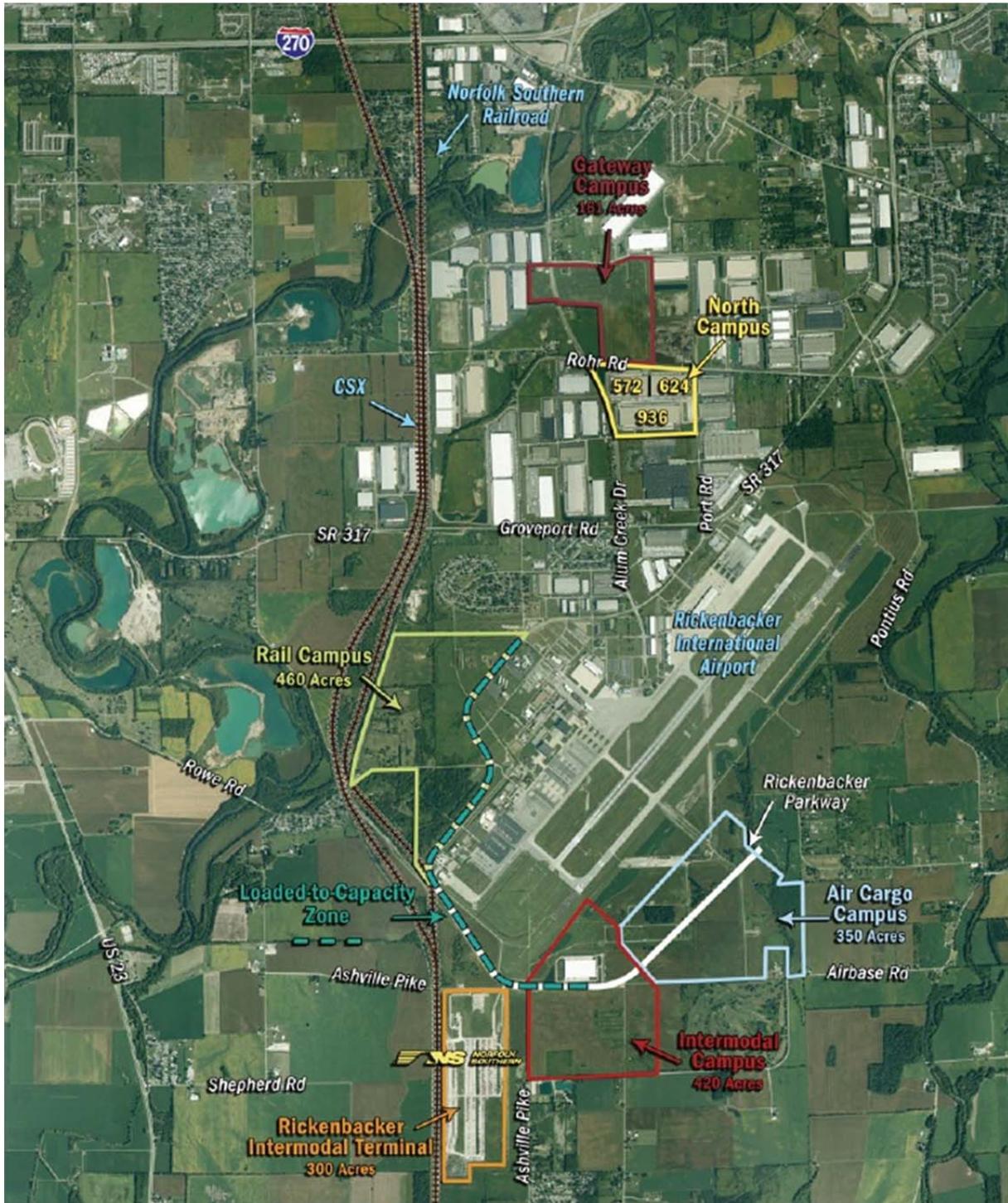


Photo credit: Rickenbacker Global Logistics Park and Duke Realty Corporation

### *Truck Connections*

Almost all air cargo will begin or end its journey on a truck, and based upon the structure of operations at integrated carrier and integrated forwarders, the two modes are closely intertwined. Accordingly, systemic improvements to a region's roadway network that result in time and efficiency gains for trucking constituencies will have spillover benefits for air freight providers as they are able to more quickly and effectively aggregate their flight loads. As air volumes have recently declined, some integrators and carriers have pursued strategies of 'truck substitution' as a means of reducing costs by moving some of their less time sensitive customers from air to expedited surface freight. Many of these operations continue to use the sorting and transshipment facilities on or near airports.

Physical planning for these operations at airports should address building frontage requirements, capacity of access (particularly at times of peak demand immediately prior to flight departure), and roadway geometry conducive to large trucks. This study identified only one bottleneck near TOL: U.S. Highway 20A can be congested depending upon the time of day and the direction traveled. A similar circumstance was found at U.S. Highway 23 near LCK.

### *Rail and Waterborne Connections*

LCK is located 17 miles from facilities operated by railroads CSX and Norfolk Southern at the Rickenbacker Inland Port, with NS owning an intermodal terminal with the capacity to handle 400,000 containers annually. The majority of the funding for this facility was supplied by the federal government. The inland location of Columbus precludes waterborne freight connectivity. CVG has no connectivity with rail or waterborne freight facilities. Neither does ILN. TOL is located 25 miles from the Port of Toledo, which is served by three Class I railroads, but has currently has no intermodal terminal.

There is little overlap between the low value, time insensitive commodity groups typically moved by rail and water and the high value, time sensitive goods that favor movement by air freight. While some local economic development initiatives have proposed coalescing around a strategy of moving agricultural goods to Asia via air, a substantial modal shift in the last decade has seen increasing volumes of perishables moving to refrigerated ocean-going containers, contrasted with their previous preference for air freight. This shift has been prompted by both lower costs and improved refrigeration technology in ocean containers ('reefers') that have reduced product damage in transit. Additionally, trends in cold chain logistics suggest that involvement in the design and management of these supply chains is gradually shifting from wholesaler to retailer, implying decreased volumes of perishable foodstuffs being moved. Newer 'pull' supply chain trends, where the volume moved is determined more by local demand, are replacing the wholesalers' 'push' supply chains, where the volume moved is determined more by the amount produced.<sup>3</sup> The implications drawn from these trends for struggling air cargo facilities imply that little public investment should be allocated to such a strategy without a thorough understanding of the associated risks.

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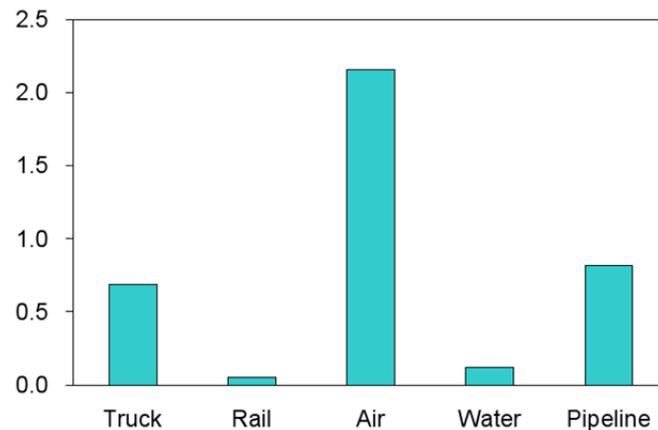
<sup>3</sup> Mathijs Slangen, Seabury LLC, Netherlands. 2012. 'Headline analysis: Global perishable transport flows -- who's moving what, where, when and how?' at *Cool Logistics 4<sup>th</sup> Global Conference*, Antwerp, September 24-26.

## 1.6 Stewardship

- Air carriers not a large contributor to NOx or PM-10, but GHG emissions may become an issue
- Carriers responding through recapitalization of aircraft and trucks

Research performed for the USDOT has documented that air freight is not a significant contributor to Nitrous oxide (NOx) or Particulate Matter (PM-10) emissions.<sup>4</sup> However, the mode is a notable contributor to Green House Gas (GHG) emissions, given its comparatively small portion of the modal split by ton in the United States. Air freight service has traditionally moved less than one percent of freight by volume in the United States<sup>5</sup>, but on an emissions per ton-mile basis, air freight produces more than four times the volume of GHG associated with trucking.<sup>6</sup>

**Exhibit 7: GHG Emissions per Unit of Freight Transported  
(Pounds of carbon dioxide equivalent per ton-mile)**



Source: Frey and Kuo, 2007

Environmental stewardship has taken the form of redesigned supply chains at integrated carriers, such as FedEx. This has been achieved by replacement of old ground vehicles with newer models that are more fuel efficient, while also substituting newer and more fuel efficient aircraft, such as Boeing 777 freighters, in place of older assets. The larger aircraft not only allow non-stop direct service from Asia, but also the elimination of the stop (and its associated emissions cost) allow customers two hours longer to drop off cargo prior to the flight's departure. Other strategies, such as the use of single engine taxiing while on airport runways, the reduction of auxiliary power units while in flight, and the implementation of continuous descent approaches designed for fuel efficiency have also contributed

<sup>4</sup> Corbett, James, et al. 2010. Emissions Analysis of Freight Transport Comparing Land-Side and Water-Side Short-Sea Routes: Development and Demonstration of a Decision Modeling Tool. Transportation Research Board (TRB): Transportation Research Information Service (TRIS). Report Number: DTRS56-05-BAA-0001.

<sup>5</sup> USDOT: Research and Innovative Technology Administration (RITA). 2006. *Freight in America*.

<sup>6</sup> Frey, H.C., and P.Y. Kuo, "Potential Best Practices for Reducing Greenhouse Gas (GHG) Emissions in Freight Transportation," Paper No. 2007-AWMA-443, *Proceedings, 100<sup>th</sup> Annual Meeting of the Air & Waste Management Association*, Pittsburgh, PA, June 26-28, 2007.

to emissions reductions. Airports that prioritize environmental sustainability goals may study the best practices in place at leading firms and then organize their own operations planning around such methods, once proven to be beneficial.

Other aspects of stewardship related to air freight are encompassed in the noise abatement program implemented at LCK to improve the compatibility between aircraft operations and land uses adjacent to airport facilities. In addition to monitoring noise levels, introducing noise abatement walls to airport facilities, and sound proofing local schools and residences near the airport, a comprehensive land use management component (inclusive of zoning and property acquisition) is also part of the noise abatement program. By reserving a buffer zone of land for uses compatible with typical levels of airport noise, such as freight and logistics operations, the airport authority is able to effectively land bank for space-hungry logistics facilities whose economies of scale compel large building footprints and redundant access routes.

### 1.7 Economic Development

- Freight attractive for government attention, due to high labor content and potential for quick wins in job count
- FTZs may be declining in efficacy, but remain a low cost tactic
- Military partnership at Columbus is successful, and plays to the strengths of airport authorities in general (land-rich, revenue-scarce)
- Adaptive re-use and non-aviation activities may fill the void left by declining air demand (military R&D, flight training, inland port, small business incubators)

Three strategies are highlighted by the assessment of operations at the Ohio airports in this study: Foreign Trade Zones, civilian-military partnership at LCK, and possible reuse of ILN through aviation and non-aviation uses.

Many firms that choose to cluster around port and airport assets enjoy the benefits of Foreign Trade Zones (FTZs) that are federally created and managed to retain production or value addition that might otherwise be moved off-shore. In many cases taking the form of an industrial park, tenants are able to remain cost competitive with foreign equivalents through the site's emulation of business conditions in the foreign locations of competitors. The FTZ is then theoretically able to incent production or value addition to take place within the U.S. that might otherwise take place abroad. Federal oversight agencies such as the International Trade Commission and the General Accounting Office have conducted studies measuring the efficacy of FTZs. Administrative costs attributed to the FTZ Board are largely offset by U.S. Customs fees collected upon goods moving from the FTZs into the American marketplace, as well as application fees for use of FTZ resources. While relatively low cost as policy tools, the efficacy of FTZs may be declining due to the decreasing level of benefit derived from the partial tariff reductions they offer in light of global market liberalization, WTO accession, and bilateral trade agreements. Additionally, the elimination of state level inventory taxes now reduces the comparative benefit of locating within an FTZ in Ohio. FTZ status is present at facilities on or near LCK, TOL, and ILN.

LCK continues a relationship with a military installation that hosts the U.S. Air National Guard, Army National Guard, U.S. Army Reserve and Navy and Marine Reserve units in a mutually beneficial arrangement between civilian and military interests. While the military occupies 312 acres on-airport, its presence at LCK has contributed to a decrease in operational costs in the expenditure categories of air traffic control tower services, airport rescue, and firefighting that the airport authority would otherwise cover in their entirety. In turn, the military users of the facility are repaid through waived rent. Given the land-rich, but cash-poor nature of public entities in general, the airports included in this study may benefit from exploring possibilities for more tenant arrangements of this nature.

Since the departure of the DHL freight hub at ILN in 2009, the airport authority there has carried a surplus of capacity and has undertaken efforts to attract tenants to the Airpark. Impeding efforts to find replacement tenant is the regional lack of demand in an air cargo consolidation market that has changed dramatically since the DHL acquisition in 2003. In its present configuration, the sorting facility and cargo areas are laid out for a single user. Additionally, the absence of an existing passenger hub (that would present opportunities for the interlining of belly cargo) and the comparative weakness of the regional production and distribution base also make tenant attraction more difficult for the airport authority. In the interim, the facility has now become the location of several non-airport activities, including serving as an aviation training center with lessons focused upon dispatch, flight operations, and flight simulation. A major defense contractor plans to lease a hangar at ILN, and the U.S. Air Force intends to use the site for future tests of Unmanned Aerial Systems (UAS) technology. Proposals to use the facility for the transshipment of cattle and wheat present risks with unclear reward if the carrier strategy includes aviation. These commodities do not typically travel by air.

#### Exhibit 8: Oblique Photograph of Wilmington Airpark



Source: Clinton County GIS

Outside of the aviation industry, ILN also offers office and operational space to firms such as Cargill, suggesting the possibility that the site could become a business incubator in the short and medium term planning periods. Other possibilities include using the facility as a trucking hub, just as many airparks now use their airport space as inland ports in a context of 'truck substitution'. ILN is a private facility, without NPIAS status, and does not automatically receive funding in the same manner as public airports. One important step necessary in order to proceed is the completion of an Airport Layout Plan (ALP) for ILN that will analyze these business opportunities and provide appropriate targets within reach of ILN's capabilities.