



**International Air Cargo Development Project**  
**Global Transportation and Industrial Park**  
**Ardmore, Oklahoma**

**Ardmore Development Authority**  
**2022 RAISE Grant Application**  
**April 2022**

## Project Overview

|  |  |
|--|--|
| Project Name   | International Air Cargo Development, Global Transportation & Industrial Park of Oklahoma   |
| Applicant:   | Ardmore Development Authority (ADA)  |
| Applicant Address:   | 410 Main St., Ardmore, OK 73401  |
| Project Address:   | Ardmore Municipal Airport, 620 General Drive, Ardmore, OK 73401  |
| Project Components:  | Build out of an 50,000 square foot air cargo warehouse, a parking lot (landside), a US Customs building for international shipments, a fire suppression system, water, sewer, storm sewer, grading, roadway changes, electric vehicle charging stations, an 80,000 square yard parking apron for aircraft just north of the proposed air cargo buildings, ground handling equipment and drainage improvements. |
| Project Readiness:   | ADA are prepared to begin work immediately upon approval of the Categorical Exclusion, FAA approval of the apron and completed Grant Agreement.  |
| Grant Request:   | \$24,992,281   |
| Benefit Cost Ratio:  | 2.11:1   |
| Rural Area:  | Project is 100% in a Rural Area  |
| Eligible Project Category:                                 | This project is eligible as in multi-modal project described in the RAISE NOFO.  |
| Supporting Documentation:                                  | Attached and online at: <a href="https://www.knbltd.com/fy22raise">https://www.knbltd.com/fy22raise</a>  |
| Persistent Poverty Opportunity Zone Overburdened Community | Ardmore is an Overburdened Community and Opportunity Zone with areas of Native American Poverty above 20%.   |

## The Problem

Congestion in the I-35 corridor and the Dallas Fort Worth area generally makes getting air freight into and out of Dallas Fort Worth (DFW) and Alliance Fort Worth (AFW) Airports more time consuming and expensive than it should be. Once on the airport, freight handling operations and aircraft congestion add additional costs to air cargo. Oklahoma City Airport (OKC) is 100 miles north of Ardmore and 200 miles north of Dallas on I-35 and has a small air cargo operation. For Dallas area air cargo OKC is too far away and too small of an operation to be a realistic option. Ardmore offers:

- A shorter truck haul for some shippers whose destination is Oklahoma or the DFW area and north.
- Faster travel time into and out of the airport.
- Faster loading/unloading of truck and air freight on airport.
- Lower landing costs for aircraft.
- No aircraft congestion.
- Lower fees for loading/unloading the aircraft and lower storage fees.

### Project Elements

- Cargo Building
- Parking Lot
- Street Access Improvements
- EV Charging Stations
- Utility Infrastructure Improvements
- Cargo Building/Apron Reconstruction



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## Project Description

The purpose of this project is to construct a new international air cargo facility at the Ardmore Municipal Airport (ADM) near Ardmore, Oklahoma. The ADM was built as an Army Airfield and operated as such from 1942 to 1946. The airfield reopened in 1953 to 1959 as the Ardmore Airforce Base. The ADM is currently owned by the City of Ardmore and leased to the Ardmore Development Authority, a political subdivision of the State of Oklahoma.

The overall goal of the project is to develop the current ADM and its industrial park, now called the Global Transportation and Industrial Park of Oklahoma (GTIP), into more of an integrated freight-handling gateway with global connections. A global gateway is simply a location where modes of transportation are shifted – in this case from air to ground or ground to air. The further goal is to bring business, economic development, and jobs to rural Oklahoma in the heart of Chickasaw territory. Rural areas often do not benefit from general economic expansion in the United States at the same level that urban areas do. The transportation infrastructure that will be built by this project will help the greater Ardmore community and all of southern Oklahoma as an important asset to compete with urban facilities and do so in a manner that is more efficient and reduces environmental impacts.

While much work has been done as outlined below, there is still a need to improve the infrastructure at the GTIP so global air cargo carriers can operate out of Ardmore, a centrally located facility. The individual items that need to be constructed are an 80,000 square foot air cargo warehouse, a parking lot (landside), a US Customs building for international shipments, a fire suppression system, water, sewer, storm sewer, grading, roadway changes, electric vehicle charging stations, an 80,000 square yard parking apron for aircraft just north of the proposed air cargo buildings, ground handling equipment and drainage improvements.

The project will provide a competitive cost alternative for many shippers and offer efficiencies compared to Dallas/Fort Worth International Airport (DFW), such as less congestion on the roadways serving the airport and faster cargo processing once at the airport. Efficiencies in air cargo are defined around the notion of a predictable outcome which is critical for users who utilize air cargo. Premium prices are paid to the carrier or forwarder who can overcome congestion at the airport and have cargo arrive as predicted. For the e-commerce and automotive industries, this level of service is critical.

The air cargo warehouse will be owned and operated by ADA and WP Global Holdings (WPG). WPG is a joint venture of Watco, a transportation services and logistics company, Sovereign Properties Holdings, which is the Chickasaw Nation, and Cowboy Holdco, an Oklahoma based development company with each partner having an equal share

Watco successfully delivered a federal TIGER II project and has two open federal CRISI grants in partnership with two state departments of transportation: Kansas Department of Transportation and Idaho Transportation Department. As a transportation company, Watco owns and operates 47 short line railroads and more than 80 ports and terminals. For its nearly 3,000 customers, Watco handles freight in many forms and on any mode. Watco Logistics is an indirect air carrier and non-vessel operating common carrier.

A concurrent project to more fully develop the rail transportation opportunities is also underway with these same partners. The current yard tracks located on the west side of the industrial park will be updated and expanded. The purpose of the rail and air cargo projects are to develop GTIP into a complete multimodal facility – truck, rail, and air transportation. Supporting the surface transportation system is critical to building the air cargo solution; without surface volumes, air cargo will always shift to another gateway for service. The ground system that supports rail, truck and intermodal cargo volumes are an important cornerstone to the development of air cargo at Ardmore.

A MOU has just been signed with a Fortune 100 company to develop a utility scale solar power generation facility at GTIP. This project will be developed concurrently with the RAISE project. Multiple parcels exist within the grounds of the GTIP, adjacent land owned by the Ardmore Development Authority, and adjacent land owned by the Chickasaw Nation, that would support large scale solar power generation installations. Taken together, the parcels could support the annual generation of nearly 202,000 MWh or electricity.

## Transportation Challenges

The DFW area is one of most congested in the country in terms of highway traffic. It also one of the deadliest for users – the April 25, 2019 issue of the *Dallas Tribune* headline reads “Texas Leads the Nation in Traffic Deaths.”<sup>1</sup> A local NBC News report on October 3, 2019 in the Dallas Fort Worth area said that “Dallas Ranks in the Top in US for Fatal Crashes.”<sup>2</sup> While a reduction in truck traffic in the DFW and the nearby Fort Worth Alliance Airport region is an incremental improvement to crashes and congestion, it will help make the roads in the DFW area safer. The June 20, 2021, *Dallas Morning News* published an article<sup>3</sup> on truck congestion on I-20 in Dallas near an Amazon Fulfillment facility – the article quoted truck drivers who waited 12 hours to reach the facility to unload. While this is a single facility – the article is an example of the congestion issues in the Dallas area.

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<sup>1</sup> <https://www.texastribune.org/2019/04/25/texas-traffic-deaths-bills-safety/> (last visited 03/30/22)

<sup>2</sup> <https://www.nbcdfw.com/news/local/dallas-ranks-among-top-in-us-for-fatal-crashes-report/273443/> (last visited 07/01/21)

<sup>3</sup> <https://www.dallasnews.com/business/retail/2021/06/20/its-like-this-every-day-amazon-fulfillment-center-in-dallas-forces-truck-drivers-to-wait-for-hours-to-unload/> (last visited 07/01/21)

In March 2016, the North Central Texas Council of Local Governments released the “Freight Congestion and Delay Study Final Report,”<sup>4</sup> showing that truck delays averaged more than five hours per day on major roadways in the Dallas Fort Worth area. Figure 2-3 from that report is shown as Figure 1.

According to the report, “truck-involved crashes are focused on the limited access roads. IH 35W through downtown Ft. Worth and IH 35E in downtown Dallas have the highest concentration of crashes. Other high crash areas include SH 114 near the DFW Airport, IH 35E and IH 635 on the north side of Dallas, and IH 20 on the south side of Dallas.”

In 2010 in Dallas County, there were 2605 crashes involving commercial vehicles and 24 fatalities in those crashes. In 2010, Tarrant County had 1,694 crashes involving commercial vehicles and 19 fatalities.<sup>5</sup>

In 2020 in Dallas County, there were 3,735 crashes involving commercial vehicles and 31 fatalities in those crashes. In 2020, Tarrant County had 1,781 crashes involving commercial vehicles and 14 fatalities.<sup>6</sup>

In the September 2021 “Transportation Systems Management and Operations (TSMO) Dallas and Fort Worth District Program Plan<sup>7</sup> on page 12 a table shows that in 2019 Dallas County had 19,536,000 hours of congestion related delay with a cost of \$2,421,157,000. In 2018, Fort Worth

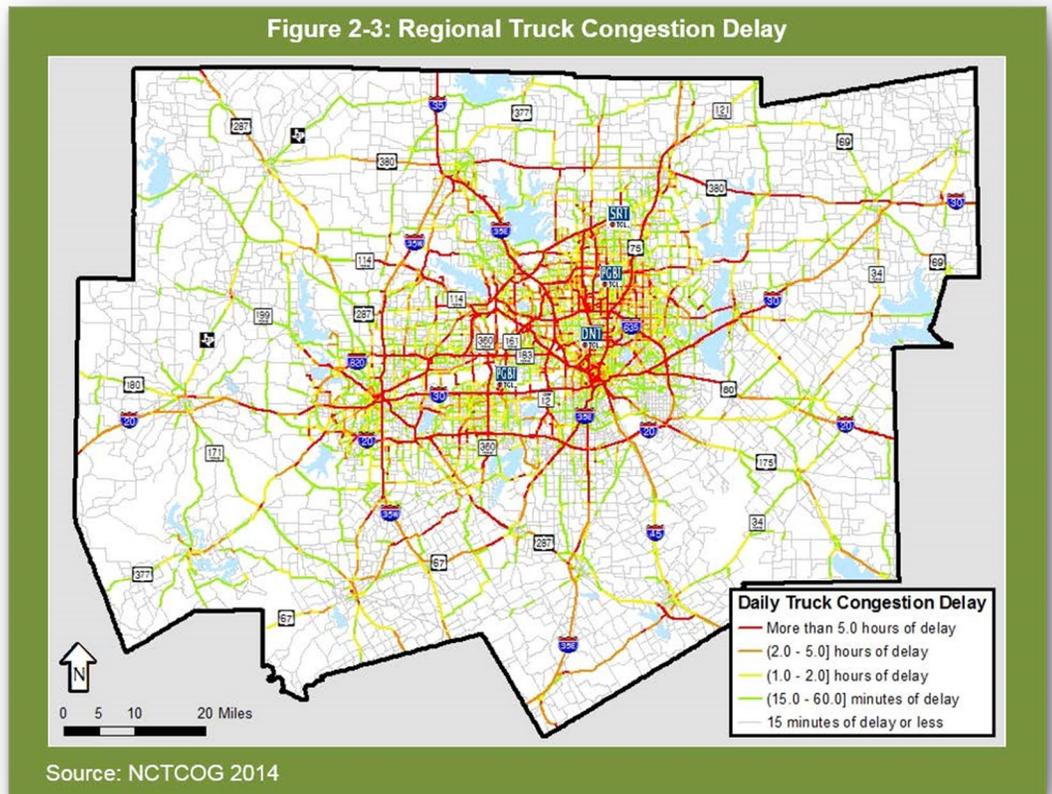


Fig 1. Freight Congestion and Delay Study Final Report March 2016

<sup>4</sup> [https://www.nctcog.org/nctcg/media/Transportation/DocsMaps/Plan/Freight/fcds20150507MJ\\_3-14-16.pdf](https://www.nctcog.org/nctcg/media/Transportation/DocsMaps/Plan/Freight/fcds20150507MJ_3-14-16.pdf) (last visited 07/01/21)

<sup>5</sup> [https://ftp.txdot.gov/pub/txdot-info/trf/crash\\_statistics/2010/30.pdf](https://ftp.txdot.gov/pub/txdot-info/trf/crash_statistics/2010/30.pdf) (last visited 04/03/22)

<sup>6</sup> [https://ftp.txdot.gov/pub/txdot-info/trf/crash\\_statistics/2020/30.pdf](https://ftp.txdot.gov/pub/txdot-info/trf/crash_statistics/2020/30.pdf) (last visited 04/03/22)

<sup>7</sup> <https://ftp.txdot.gov/pub/txdot-info/trf/tsmo/dfw-its-master-plan.pdf> (last visited 04/03/22)

County had 8,641,000 hours of congestion related delay with a cost of \$1,109,283,000. As shown in the 2021 TSMO, congestion is not only a safety issue – it is a time and efficiency issue. The cost of being delayed in traffic is directly borne by shippers and, ultimately, by consumers and producers of the products being shipped via air freight. Roadways around the Ardmore Airport are not congested, allowing for a drive in, unload/load and drive out delivery to the air cargo facility. Moving 172,900 truckloads out of the Dallas Fort Worth area will help alleviate some of the congestion issues around Dallas Fort Worth.

Ardmore is equal distance from DFW Airport and Will Rogers Airport in Oklahoma City (OKC) at approximately 100 miles from each. Both OKC and DFW provide facilities for air cargo with OKC moving a little over 100,000 tons via air cargo per year and DFW moving just under one million tons per year. DFW volumes are increasing – 911,000 tons in 2018, 952,000 tons in 2019 and 987,000 tons in 2020. Fort Worth Alliance Airport (AFW) is another air cargo airport in the Dallas Fort Worth area. In 2018, AFW had an air cargo volume of 162,000 tons.

### Global and Regional Air Cargo Context

According to the Boeing World Air Cargo Forecast 2020-2039, air cargo is growing all over the world year after year, including the United States and the Texas region, creating trade opportunities on a global scale and job creation in the region.

**World Air Cargo Traffic Will Grow 4.0% Per Year Over the Next 20 Years**

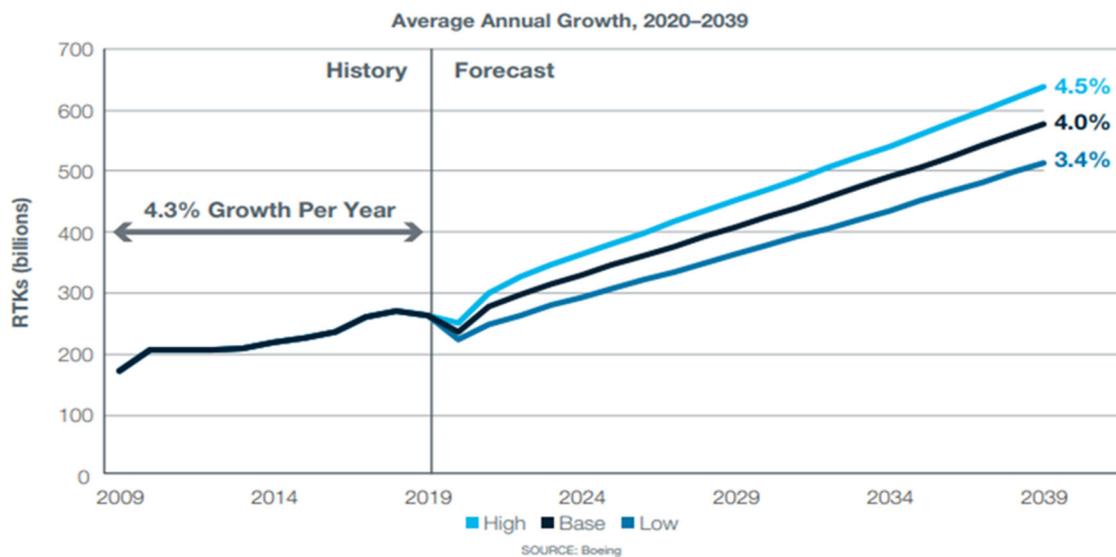


Fig 2 [2020\\_WACF\\_PDF\\_Download.pdf\(boeing.com\)](#)

Some of the drivers of air cargo volumes in the past years and the years to come are perishables, pharmaceuticals (especially during the pandemic), and e-commerce. E-commerce grew significantly during the pandemic.

**Strong Global E-Commerce Revenue Growth Nearly Doubles Every Four Years**

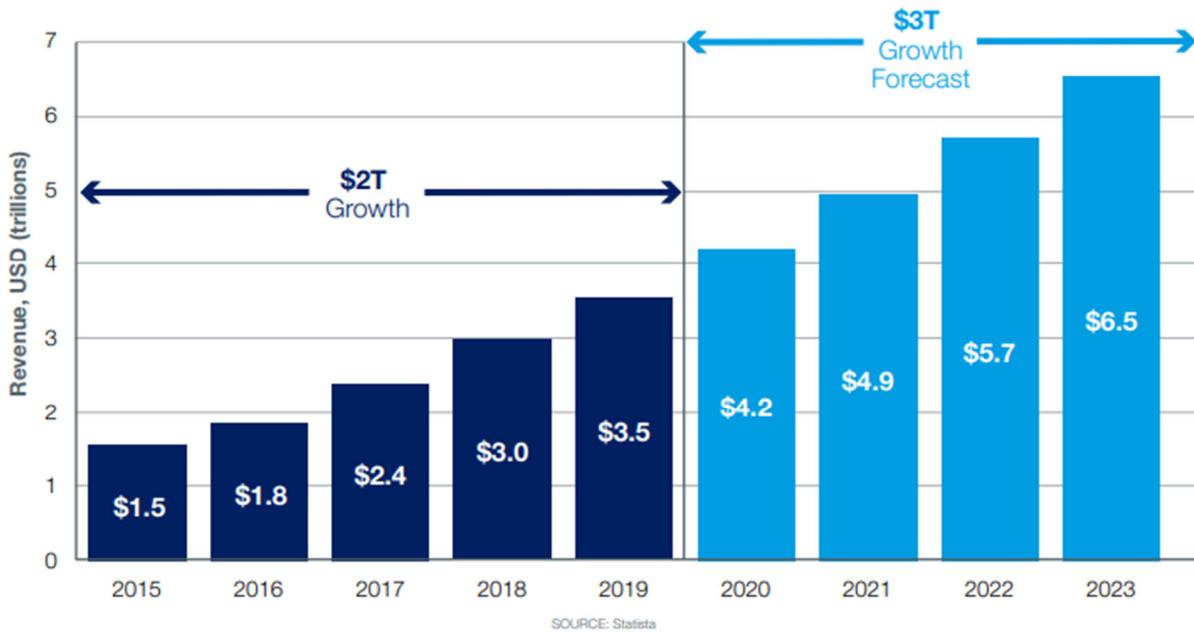


Fig 3. [2020\\_WACF\\_PDF\\_Download.pdf \(boeing.com\)](#)

The air industry has seen that there is a need for more dedicated freighters as opposed to relying on the bellies of passenger aircraft for cargo movements. In North, Central, and South America, carriers are adding freighters by converting B757 and B767 aircraft.

**Freighter Fleet Will Grow More Than 60%**

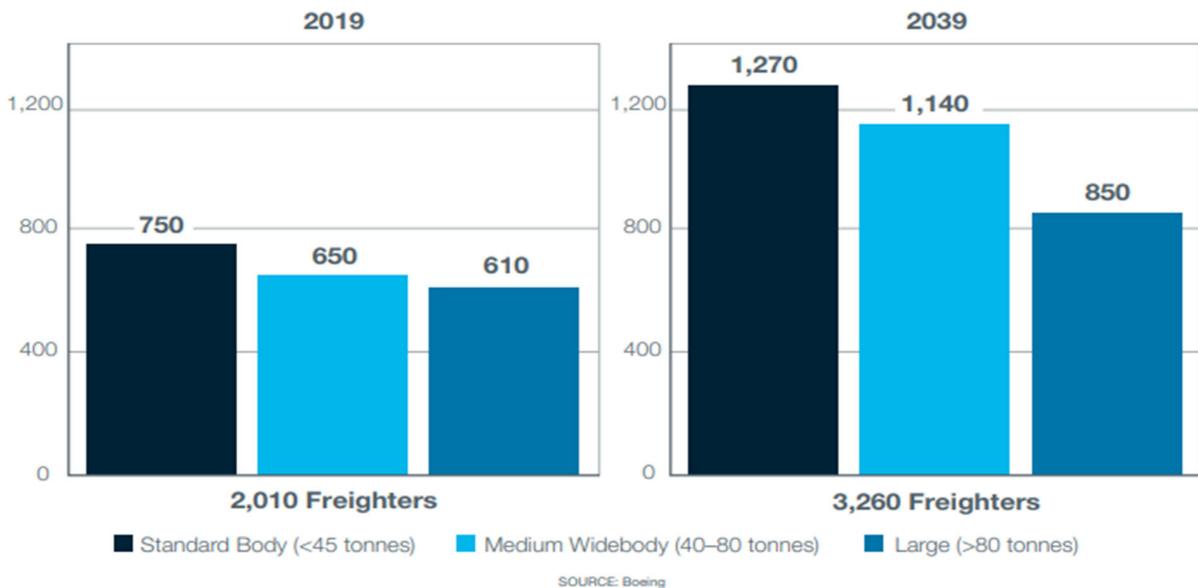


Fig 4. [2020\\_WACF\\_PDF\\_Download.pdf \(boeing.com\)](#)

## Asia-Pacific Region Expected to Receive Majority of Deliveries

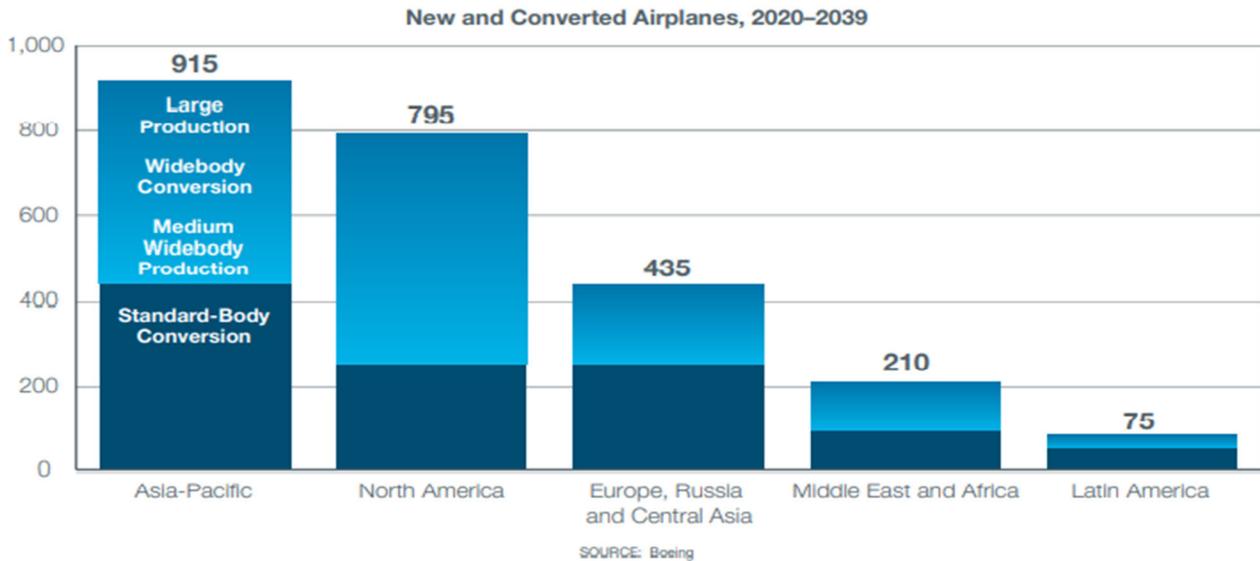


Fig 5. [2020\\_WACF\\_PDF\\_Download.pdf \(boeing.com\)](#)

According to International Air Transport Association, air cargo represents less than one percent of global trade by volume but 35% by value with over six trillion dollars of goods carried by air. This shows how the aviation industry is a key enabler for economic links and trade. Air transport is an essential factor in connecting individual countries to the global economy, helping to improve productivity levels to benefit the national economy. Aviation connects businesses to a wide range of global markets, providing a significantly larger customer base for their products than would be accessible otherwise.

### ***The Problem***

Many hub airports (in the world and especially in the United States) focus on passenger aircraft, resulting in a reduced focus on air cargo activities with less investments, higher congestion at these airports, higher costs for shippers and forwarders and longer wait times. DFW is one of these congested airports, no longer able to efficiently cater to the requirements and needs of the shippers. This is a potential risk for the growth of air cargo transportation overall and a loss in trade and business for companies and jobs for the people in the region.

### ***The Opportunity***

Ardmore is ideally located in the region to take part of this growth avoiding further congestion in the Dallas – Fort Worth area. With a dedicated focus on cargo, Ardmore will be able to attract opportunities that global (passenger) hubs, even with a cargo operation, cannot. Many airports in Europe and the United States with the same profile as Ardmore have shown that they can attract business that neighboring hubs could not do anymore. These airports include Huntsville, Columbus/Rickenbacker, Rockford, and Greenville. Other airport operators see this trend toward cargo as a revenue and infrastructure generator with direct economic impacts and are

moving to position airports to become participants in the explosion of demand for global goods movement.

Having a dedicated air cargo airport close to a major passenger and cargo airport has been successful at airports in the United States and Europe as seen in Figure 6 below.

In 2020, Atlanta was considered by the FAA to be the busiest airport in the United States, Dallas Fort Worth was second busiest, and Chicago O’Hare was fourth busiest. The three airports in Ohio (if added together) would match Tampa, Florida in 23<sup>rd</sup>.

| <b>Cargo Airport Name</b> | <b>Type</b>                             | <b>Miles to Major Airport/Market</b> | <b>Alternate Cargo Option For</b>                             |
|---------------------------|---|--------------------------------------|---|
| Ardmore, OK               | Former Military, Multimodal Center, FTZ | 100                                  | Dallas (DFW), Fort Worth Alliance (AFW), Oklahoma City (OKC)  |
| Rockford, IL              | Former Military, FTZ                    | 90                                   | Chicago (ORD)   |
| Rickenbacker, OH          | Former Military, Intermodal Center, FTZ | 20 to 150                            | Columbus (CMH), Cincinnati (CVG), Cleveland (CLE)             |
| Huntsville, AL            | Intermodal Center                       | 200                                  | Atlanta (ATL)   |
| Hahn, Germany             | Intermodal Center                       | 70                                   | Frankfurt (FRA)   |
| Paris Vatry, France       | Intermodal Center                       | 100                                  | Paris (CDG)   |
| Liege, Belgium            | Intermodal Center                       | 50 to 200                            | Brussels (BRU), Amsterdam (AMS), Frankfurt (FRA), Paris (CDG) |

Figure 6

The FAA “Terminal Area Forecast Summary Fiscal Years 2016 to 2045” publication predicts significant traffic growth at Atlanta, Dallas Fort Worth, and Chicago. See Figure 7.

Air Cargo shippers in the Atlanta and Chicago areas can choose an air cargo airport that is nearby. The large airports are getting busier and busier as time goes on. There are only so many slots available for landings and take offs – as the traditional large hub airports get busier it will become more costly and difficult for air cargo only operations to effectively do business at a passenger airport.

Passenger flights will take priority at the traditional airports because passenger enplanements are the main business and the major source of revenue for those airports.

Shippers in Dallas can utilize an airport such as AFW, but still must contend with the roadway congestion issues in the DFW area.

**Table S-1 Enplanements at Large Hub Airports (in thousands)**

| Loc ID        | Region | Airport Name                                | 2015    |          |         |         |           | Rate**    |      | Airport ranking |  |
|---------------|--------|---|---------|----------|---------|---------|-----------|-----------|------|-----------------|--|
|               |        |   | 2015    | Percent* | 2016    | 2020    | 2045      | 2015-2045 | 2015 | 2045            |  |
| ATL           | ASO    | HARTSFIELD - JACKSON ATLANTA INTL           | 48,435  | 6.15     | 50,387  | 55,154  | 86,043    | 1.93      | 1    | 1               |  |
| ORD           | AGL    | CHICAGO O'HARE INTL                         | 35,727  | 4.54     | 37,405  | 40,864  | 60,134    | 1.75      | 2    | 3               |  |
| LAX           | AWP    | LOS ANGELES INTL                            | 35,714  | 4.54     | 38,699  | 44,067  | 66,133    | 2.07      | 3    | 2               |  |
| DFW           | ASW    | DALLAS/FORT WORTH INTL                      | 31,356  | 3.98     | 31,451  | 33,604  | 54,028    | 1.83      | 4    | 4               |  |
| JFK           | AEA    | JOHN F KENNEDY INTL                         | 27,406  | 3.48     | 28,901  | 31,630  | 52,463    | 2.18      | 5    | 5               |  |
| DEN           | ANM    | DENVER INTL                                 | 25,907  | 3.29     | 27,909  | 32,459  | 50,168    | 2.22      | 6    | 6               |  |
| SFO           | AWP    | SAN FRANCISCO INTL                          | 23,732  | 3.01     | 25,460  | 29,279  | 46,355    | 2.25      | 7    | 7               |  |
| CLT           | ASO    | CHARLOTTE/DOUGLAS INTL                      | 21,766  | 2.76     | 21,837  | 23,664  | 37,016    | 1.78      | 8    | 11              |  |
| LAS           | AWP    | MC CARRAN INTL                              | 21,257  | 2.70     | 22,509  | 26,913  | 44,167    | 2.46      | 9    | 8               |  |
| PHX           | AWP    | PHOENIX SKY HARBOR INTL                     | 21,209  | 2.69     | 21,021  | 22,929  | 36,636    | 1.83      | 10   | 12              |  |
| MIA           | ASO    | MIAMI INTL                                  | 20,494  | 2.60     | 21,059  | 22,253  | 35,018    | 1.80      | 11   | 15              |  |
| IAH           | ASW    | GEORGE BUSH INTERCONTINENTAL/HOUSTON        | 20,346  | 2.58     | 20,399  | 21,182  | 35,693    | 1.89      | 12   | 14              |  |
| SEA           | ANM    | SEATTLE-TACOMA INTL                         | 19,632  | 2.49     | 21,465  | 24,646  | 40,065    | 2.40      | 13   | 9               |  |
| EWR           | AEA    | NEWARK LIBERTY INTL                         | 18,391  | 2.33     | 19,595  | 22,632  | 35,858    | 2.25      | 14   | 13              |  |
| MCO           | ASO    | ORLANDO INTL                                | 18,217  | 2.31     | 19,901  | 22,392  | 37,159    | 2.40      | 15   | 10              |  |
| MSP           | AGL    | MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN   | 17,376  | 2.20     | 18,062  | 19,782  | 29,260    | 1.75      | 16   | 17              |  |
| BOS           | ANE    | GENERAL EDWARD LAWRENCE LOGAN INTL          | 16,079  | 2.04     | 17,333  | 19,926  | 31,376    | 2.25      | 17   | 16              |  |
| DTW           | AGL    | DETROIT METROPOLITAN WAYNE COUNTY           | 16,010  | 2.03     | 16,793  | 18,035  | 25,572    | 1.57      | 18   | 19              |  |
| PHL           | AEA    | PHILADELPHIA INTL                           | 14,909  | 1.89     | 14,834  | 14,866  | 21,709    | 1.26      | 19   | 21              |  |
| LGA           | AEA    | LAGUARDIA                                   | 14,068  | 1.78     | 14,796  | 16,699  | 19,707    | 1.12      | 20   | 23              |  |
| FLL           | ASO    | FORT LAUDERDALE/HOLLYWOOD INTL              | 12,750  | 1.62     | 13,803  | 16,377  | 27,016    | 2.53      | 21   | 18              |  |
| BWI           | AEA    | BALTIMORE/WASHINGTON INTL THURGOOD MARSHALL | 11,389  | 1.44     | 12,183  | 14,323  | 22,225    | 2.25      | 22   | 20              |  |
| DCA           | AEA    | RONALD REAGAN WASHINGTON NATIONAL           | 10,998  | 1.39     | 11,472  | 13,814  | 17,195    | 1.50      | 23   | 27              |  |
| MDW           | AGL    | CHICAGO MIDWAY INTL                         | 10,746  | 1.36     | 11,022  | 12,534  | 19,122    | 1.93      | 24   | 24              |  |
| SLC           | ANM    | SALT LAKE CITY INTL                         | 10,509  | 1.33     | 11,005  | 12,684  | 20,990    | 2.33      | 25   | 22              |  |
| IAD           | AEA    | WASHINGTON DULLES INTL                      | 10,384  | 1.32     | 10,513  | 11,731  | 18,733    | 1.98      | 26   | 25              |  |
| SAN           | AWP    | SAN DIEGO INTL                              | 9,801   | 1.24     | 10,272  | 11,577  | 17,812    | 2.01      | 27   | 26              |  |
| HNL           | AWP    | HONOLULU INTL                               | 9,483   | 1.20     | 9,654   | 10,387  | 14,797    | 1.49      | 28   | 30              |  |
| TPA           | ASO    | TAMPA INTL                                  | 8,989   | 1.14     | 9,198   | 10,032  | 15,535    | 1.84      | 29   | 29              |  |
| PDX           | ANM    | PORTLAND INTL                               | 8,154   | 1.03     | 8,904   | 10,411  | 16,230    | 2.32      | 30   | 28              |  |
| <b>Totals</b> |        |   | 571,234 | 72.46    | 597,842 | 666,846 | 1,034,215 | 1.99      |      |                 |  |

\*Percent of total US enplanements.

\*\*Annual compound growth rate.

*Fig. 7 FAA Projected Airport Growth – Terminal Area Forecast*

[https://www.faa.gov/data\\_research/aviation/taf/media/taf\\_summary\\_fy\\_2016-2045.pdf](https://www.faa.gov/data_research/aviation/taf/media/taf_summary_fy_2016-2045.pdf)

## Project History

The City of Ardmore owns the Ardmore Municipal Airport and Industrial Airpark and the Ardmore Development Authority (ADA), a Public Trust, leases and operates the facility. Since 2010, the airport has **undergone \$55.5 million in upgrades and maintenance including control tower improvements and a runway extension to more than 9,000 ft.**, enough space to land larger aircraft like the Boeing 767-200 cargo aircraft.

The Ardmore Industrial Airpark is the only independent airpark in the U.S. with a Federal Aviation Administration (FAA) Contract Control Tower (costs of which are underwritten by the ADA). The airpark is located within Foreign Trade Zone #227 and a State Enterprise Zone and is

a U.S. Customs & Border Protection port of entry. Zoned heavy industrial, the airpark facility features multiple lot sizes and available pad-ready sites and approximately 1,000 acres of developable land.

Recently completed and soon-to-be completed projects are shown in the table below (Fig. 8)

These projects speak to the commitment of the ADA and its partners to maintain and improve the airport and the industrial park. Since 2010 (including 2022 scheduled projects), the ADA has spent \$13,978,700, out of the total of \$55,583,000 spent to maintain and improve the airport and industrial park. Much of this funding has been airside development funded by the FAA Airport Improvement Program. There have been no previous projects to establish or develop air cargo capabilities at the airport.

| ARDMORE MUNICIPAL AIRPORT<br>CONSTRUCTION AND IMPROVEMENTS |                         |                 |                         |                    |
|--|-------------------------|-----------------|-------------------------|--------------------|
| Project Name   | Amount                  | Year Completed  | ADA - Amt Funded        | One Time or Annual |
| Runway 13-31 Rehabilitation                                | \$ 2,300,000.00         | Q1 CY2022       | \$ 115,000.00           | One Time           |
| RAIL Lighting Replacement                                  | \$ 1,500,000.00         | Proposed FY2022 | \$ 1,500,000.00         | CY2022 Proposed    |
| Fire Protection Services                                   | \$ 680,000.00           | On-going        | \$ 680,000.00           | Annual             |
| Airpark Improvements - Engineering                         | \$ 267,000.00           | 2018-2019       | \$ 267,000.00           | On-going           |
| Campus-Wide Fire Suppression System                        | \$ 1,400,000.00         | 2021            | \$ 1,400,000.00         | One Time           |
| Taxiway E Extension/Parallel Taxiway Construction Phase I  | \$ 3,600,000.00         | 2020            | \$ 180,000.00           | One-Time           |
| Box Hangar Complex Construction                            | \$ 1,200,000.00         | 2020            | \$ 1,200,000.00         | One Time           |
| AWOS Modernization and Relocation                          | \$ 190,000.00           | 2020            | \$ 190,000.00           | One Time           |
| Channel Liner  | \$ 900,000.00           | 2019            | \$ 900,000.00           | One Time           |
| Crack and Seal Project                                     | \$ 178,000.00           | 2019            | \$ 178,000.00           | One Time           |
| Hardstand Reconstruction                                   | \$ 430,000.00           | 2018            | \$ 5,000.00             | One Time           |
| Control Tower Modernization                                | \$ 2,500,000.00         | 2017            | \$ 2,500,000.00         | One Time           |
| Infrastructure Plan - Lochner                              | \$ 100,000.00           | 2017            | \$ 100,000.00           | One Time           |
| Taxiway Alpha - Partial Reconstruction                     | \$ 6,054,000.00         | 2017            | \$ 302,700.00           | One Time           |
| Wildlife Fence - Perimeter                                 | \$ 650,000.00           | 2015            | \$ 650,000.00           | One Time           |
| Runway 1735 Rehab Work                                     | \$ 45,000.00            | 2015            | \$ 45,000.00            | One Time           |
| Taxiway E Extension/Parallel Taxiway Construction          | \$ 12,000,000.00        | 2022            | Scheduled FY2022        | One Time           |
| Runway 13-31 Extension                                     | \$ 19,991,000.00        | 2010            | \$ 3,671,000.00         | One Time           |
| <b>ADA PROJECTS FUNDED TO 4-30-2021</b>                    | <b>\$ 53,985,000.00</b> |                 | <b>\$ 13,768,700.00</b> |                    |

Fig. 8 ADA-led investments and improvements at Ardmore



## Area of Persistent Poverty – Overburdened Communities

While the project is not in an Area of Persistent Poverty, the percentage of Native Americans in the area living in poverty is well above 20 percent. The EPA EJSCREEN below depicts the poverty level of Native Americans in the area. The area is considered a Historically Disadvantaged Community as it is within the Chickasaw Nation.

In the City of Ardmore, the larger lighter shading on the EJSCREEN corresponds with 24 to 53 percent of Native American living in poverty, the smaller darker corresponds to 53 to 99.45 percent living in poverty (Fig. 10) Carter County has an overall poverty rate of about 17 percent.

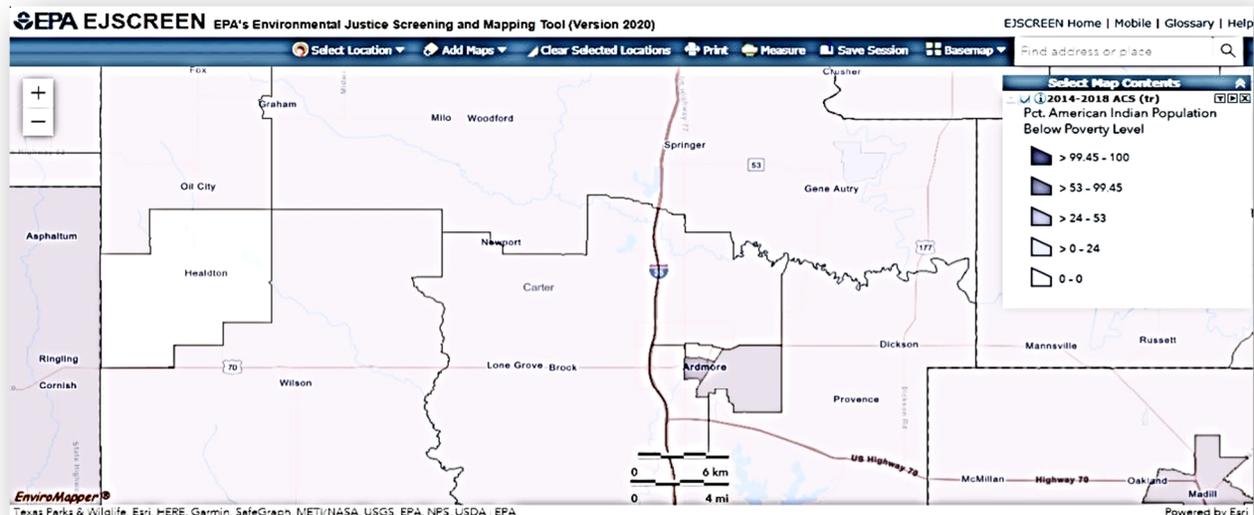


Fig. 10: EJSCREEN Percentage of Native Americans Living in Poverty

The lighter shaded block corresponds to Opportunity Zone #40019892800 and is also Census Tract 8928.

Dr. Russell Evans, Professor of Economics at Oklahoma City University and Executive Director of the Steven C Agee Economic Research and Policy Institute was consulted regarding the job creation related to the construction of the project. He found that in Carter County \$113,000 in construction output accounts for one job. Using a construction cost of \$45 million results in 398 direct jobs with total jobs. Including indirect and induced jobs as a multiplier of 1.6 of the direct jobs, resulting in an additional 239 indirect and induced jobs. The total jobs created during construction will be about 637. Census data shows that about 10 % of the local population is Native American. Employment data shows that Native Americans make up about 10 percent of the labor force. We can expect that about 40 Native Americans will be employed directly by the project, and another 24 will be employed in indirect and induced positions.

Dr. Evans estimates once the project is fully operational up to 4,580 jobs could be created. We expect that with the current ratio of population and employment statistics that approximately 458 Native Americans would be employed.

## Grant Funds, Sources and Uses of all Project Funding

| ADA FY22 RAISE Air Cargo Development Project                            |  |                |                |             |               |                |           |
|---|--|----------------|----------------|-------------|---------------|----------------|-----------|
| Ardmore Development Authority (ADA)                                     |  |                |                |             |               |                |           |
| Global Transportation & Industrial Park of Oklahoma (GTIP)              |  |                |                |             |               |                |           |
| Project Funding Plan  |  |                |                |             |               |                |           |
|   | PROJECT COMPONENTS   | COMPONENT COST | FUNDING SOURCE |             |               |                |           |
|   |  |                | USDOT          |             |               | LOCAL MATCHING |           |
|   |  |                | FY22 RAISE     | % Fed Share | % Local Share | WPG            | ADA       |
| Landside Improvements   | Utility Improvements, Street Lights (Low E, LED?)              | 100,000        | 100,000        | 0.24%       |               |                |           |
|   | Utility Improvements, Water Line System                        | 650,000        | 650,000        | 1.54%       |               |                |           |
|   | Utility Improvements, Fire System                              | 3,350,000      | 3,350,000      | 7.91%       |               |                |           |
|   | Utility Improvements, Sanitary Sewer                           | 1,700,000      | 1,700,000      | 4.02%       |               |                |           |
|   | Street Improvements (Landside)                                 | 2,750,000      | 2,750,000      | 6.50%       |               |                |           |
|   | Parking Lot, Auto & Truck                                      | 3,520,100      | 3,520,100      | 8.31%       |               |                |           |
|   | Lighting (Low E)   | 125,000        | 125,000        | 0.30%       |               |                |           |
|   | Security Fencing   | 200,000        | 200,000        | 0.47%       |               |                |           |
|   | EV Charging Stations   | 500,000        | 500,000        | 1.18%       |               |                |           |
|   | Landscaping (Eff Water Use)                                    | 125,000        | 125,000        | 0.30%       |               |                |           |
| Airside Improvements  | Reconstruct Cargo Aprons                                       | 3,913,492      | 3,913,492      | 9.24%       |               |                |           |
|   | Taxiway D Reconstruction - West Connector (700' x 75')         | 978,373        | 978,373        | 2.31%       |               |                |           |
|   | Reconstruct Cargo Aprons Cost Increases                        | 1,228,508      |                |             | 2.90%         |                | 1,228,508 |
| Vertical Assets   | Cargo Building (500' x 100') (50,000 sf) (LEED v4.1 Certified) | 10,200,000     |                |             | 24.09%        | 10,200,000     |           |
|   | U.S. Customs, Inspection Building & Equipment (~10,000 sf)     | 2,500,000      | 539,331        | 1.27%       | 4.63%         |                | 1,960,669 |
| Project Construction SubTotal   |  | 31,840,473     |                |             |               |                |           |
| Construction SubTotals by Funding Source                                |  |                | 18,451,296     | 43.58%      | 31.63%        | 10,200,000     | 3,189,177 |
| Contingency (8% of Const. SubT)   |  |                | 1,568,360      | 3.70%       | 1.90%         | 612,000        | 191,351   |
| Engineering and Architectural Design (15% of Const. SubT + Cont.)       |  |                | 2,306,412      | 5.45%       | 2.37%         | 765,000        | 239,188   |
| Construction Inspection & Materials Testing (5% of Const. SubT + Cont.) |  |                | 922,565        | 2.18%       | 2.21%         | 714,000        | 223,242   |
| SubTotal  |  |                | 23,248,633     | 54.91%      | 38.11%        | 12,291,000     | 3,842,958 |
| Construction & Project Management (5% of Subtotal)                      |  |                | 1,162,432      | 2.75%       | 1.91%         | 614,550        | 192,148   |
| Administration (2.5% of Subtotal)                                       |  |                | 581,216        | 1.37%       | 0.95%         | 307,275        | 96,074    |
| Project Totals by Funding Source  |  |                | 24,992,281     |             |               | 13,212,825     | 4,131,180 |
| Project Funding %   |  |                | 59.03%         |             |               | 31.21%         | 9.76%     |
| Total Project Cost  |  |                |                |             |               | 42,336,286     |           |

Note: All FY22 funded infrastructure results in leasehold improvements to ADA as lessor.

Figure 11 Grant Sources and Funds

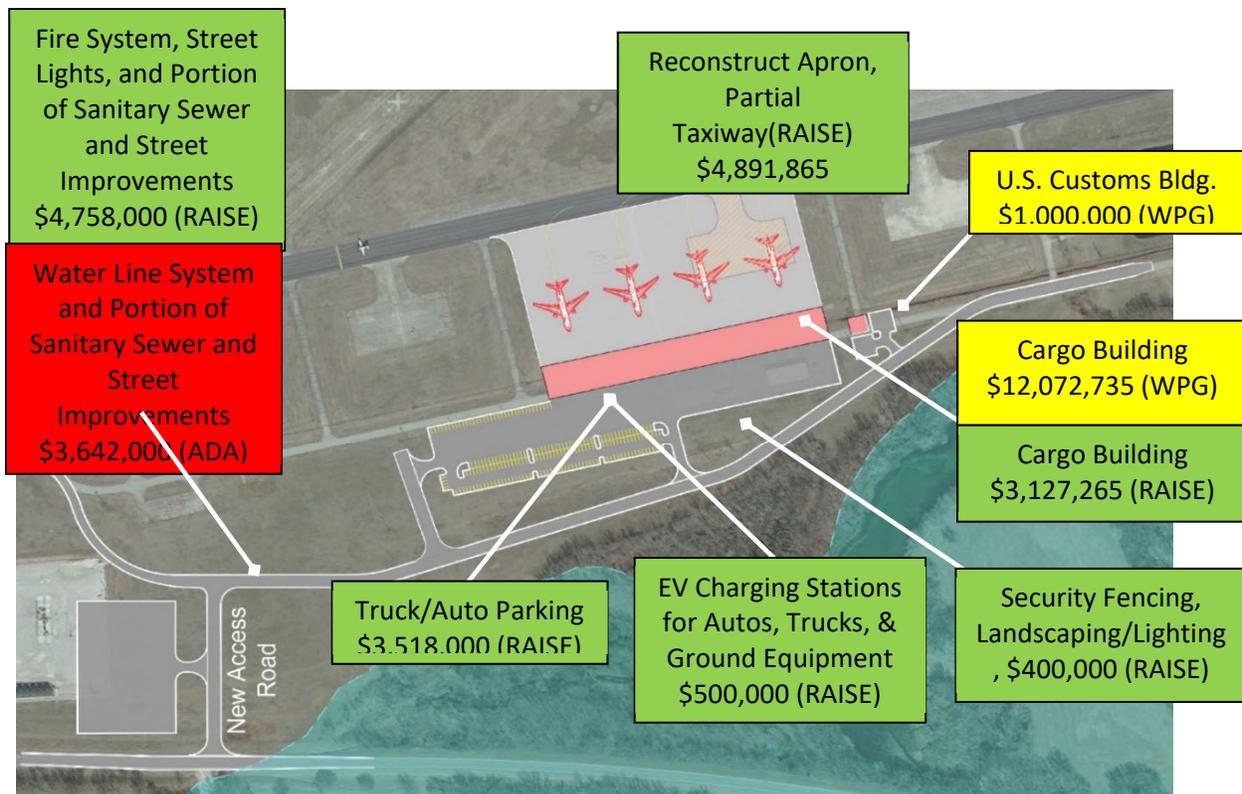


Figure 12 Project Location and Cost

Any costs more than the grant amount will be paid by the ADA and WPG. Any costs that are not grant eligible such as preliminary engineering and any additional environmental work needed to support the Environmental Determination will also be paid by the ADA and WPG. Statement of Work

The project is as shown in the Grant Funds, Sources and Uses Table and represented in Figure 11. Much of the design has been completed as part of the cost estimating. The final design and bid specifications will begin after award notice.

The project construction will be supervised by an engineering firm experienced with airport, roadway, utility and buildings construction projects and federally funded projects. Bid specifications will include all state and federally required clauses and requirements. Ardmore Development Authority will have overall responsibility for project and grant management, as they do with FAA AIP projects. ADA will be assisted in project management and inspection by the selected engineering firm. The project will be constructed on property currently owned by ADA; no additional property will be needed.

Contractor payments, reimbursement through the grant system, match billing, financial record retention, and all aspects of project documentation will be performed by the Ardmore Development Authority. This project management is similar to what is required with FAA Grants.

## Local Match

The grant request is for \$25,000,000. The remainder of the funds needed will be provided by ADA and WPG. Total project cost is \$45,141,255, local match is \$20,141,255 or 44.6% The financial commitment letters are attached and located at <http://www.knbltd.com/fy22raise>

## Merit Criteria

### Safety

The project safety benefits are primarily related to truck cargo diversions from the congestion in the DFW area and a shorter truck haul for cargo currently being shipped out of Oklahoma City. The value of the safety benefits for the cargo diversion from OKC are detailed in the BCA. We were unable to quantify the safety benefits of diverting some cargo from the more congested DFW area to the less congested Ardmore area

While a reduction in truck traffic in the DFW and AFW region is likely an incremental improvement to crashes and congestion, it will certainly help make the roads in the DFW area safer. The truck miles saved by a diversion of cargo that would have gone to Oklahoma City provides a direct safety benefit as there is a reduction of 1.2 million truck miles over the analysis period.

### Environmental Sustainability

The benefits of the project related to reductions in cost due to less fuel usage and time delays for truck movements are significant and detailed in the BCA. The cost savings for truck moves (and more efficient on airport movements) are what help make the business case for the GTIP air cargo facility. The reduction in fuel use has a direct and immediate impact of engine emissions. The project will reduce transportation related air pollution and greenhouse gas emissions, it will reduce truck VMT. The project includes charging stations for electric vehicles, which will help with emissions. While not within the project scope, WP Global has a memorandum of understanding with a large-scale solar developer to build out a 202,000 MWh solar array northeast of airfield for “behind the meter” use of current and future tenants of the airpark and the sale of excess capacity to the grid

Slower moving trucks produce more emissions per mile than faster moving trucks, because the engine speed is similar, but the distance travelled is less. The BCA posits some of the cargo traffic currently moving into and out of DFW and FWA Airports will choose to ship out of Ardmore. This shift to a different airport for air cargo shipments will result in less emissions. The emissions difference is due to the slower speed in congested traffic. The difference in actual truck miles to DFW airport or Ardmore Airport we assumed to be similar as DFW has a large draw area. On any given truck move Ardmore may be closer or further away than DFW. We do not believe there will be a significant mileage savings for DFW diverted air cargo.

Aircraft at larger airports like DFW are subject to delays, both in the air and on the ground. These delays add to operating costs and emissions. An aircraft may be directed to stay on the hold line for a period of time, or directed into a holding pattern, or given a shorter than normal take off window requiring more throttle. The amount and value of the emissions from aircraft was not estimated due to the wide variety of aircraft, delay times and types.

The air cargo volumes diverted from Oklahoma City that would have gone to DFW will result in a shorter truck move and thus there will be less fuel used and less vehicle emissions for that traffic.

The Ardmore Development Authority is committed to planning for environmental sustainability through a holistic vision of reducing aerial pollution (e.g., NOx and particles) and greenhouse emissions (e.g., carbon dioxide). The ADA recognizes that existing and interested tenants of the industrial airpark have a want and need for the airpark to offer sustainable energy sources and greener alternatives as part of their corporate ESG planning. Therefore, to meet this need, the ADA's plan will address the emissions of aircraft, ground handling services, terminals and support facilities, landside facilities, and the emissions of its supply chain as well as the direct emissions of industrial park tenants. While some items below are not part of the project – they show the commitment and effort from ADA to transition into a much more environmentally responsible facility.

The plan is to include:

- 1) Electric Vehicle Charging Stations – The project includes the installation of electric vehicle charging stations as needed to accommodate the needs of airside ground handling and support vehicles as well as private and commercial landside automobiles.
- 2) Use of Electric Vehicles – Electric ground handling equipment will be required at the new air cargo handling facilities. Additionally, the ADA has committed to convert to an all-electric fleet of ground handling and support vehicles, replacing combustion engine equipment with electric equipment as soon as practicable and as replacement needs arise.
- 3) Aircraft Towing Systems – A company called Aircraft Towing Systems is currently testing its technology at the airpark. The technology allows aircraft to shut down engines after landing and be towed into parking spaces by an in-ground system, reducing aircraft and ground handling emissions and improving safety. The ADA intends to incorporate this technology into new construction as it becomes available for commercial use.
- 4) LEED Certification – New cargo facilities (including project facilities) will be required to comply with LEED sustainable construction criteria and must pursue LEED certification. This must include low energy, efficient indoor and outdoor lighting systems and efficient water use systems for indoor clean water, and low water use landscaping. Designers are currently exploring the use of storm water run-off for landscaping and other non-potable water uses, such as ground handling equipment cleaning.
- 5) Stakeholder Participation – Although existing and future tenants already express the desire to participate in sustainability planning and projects, the ADA will continue to encourage the inclusion and mutual dialogue through regular engagement of businesses and partners and will actively pursue future users of the cargo facilities who have plans in

place to utilize sustainable business practices.

- 6) A MOU has just been signed with a Fortune 100 company to develop a utility scale solar power generation facility within GTIP. Multiple parcels exist within the grounds of the GTIP, adjacent land owned by the Ardmore Development Authority, and adjacent land owned by the Chickasaw Nation, that would support large scale solar power generation installations. Taken together, the parcels could support the annual generation of nearly 202,000 MWh or electricity.
- 7) Truck Platoon ramps – The national driver shortage is accelerating the demand for more efficient truck networks. One emerging technology is the development of truck platoons with a single driver in a car and electronically “tethered” driverless trucks in tandem or in a platoon. This technology is emerging as a way to leverage drivers, but these systems require space to “off ramp” the platoon of vehicles. This system is very much like the rail networks where one train is on a siding while another train passes on the main tracks. Sidings on the roadways will allow the platoon of trucks to access and egress industrial parks in the future, and this technology and infrastructure will be evaluated and tested in Ardmore.

## Quality of Life

In much of rural America the traditional quality of life infrastructure such as connectivity (rural public transit for example) or expanding access to health care, bike paths and bike lanes simply do not exist. Quality of life for rural and Native American citizens more often is related to jobs. Can a person find a job? Will it allow them to stay in the area they prefer, or will they have to move to an urban area? Carter County and the surrounding counties have all experienced times of growth and decline.

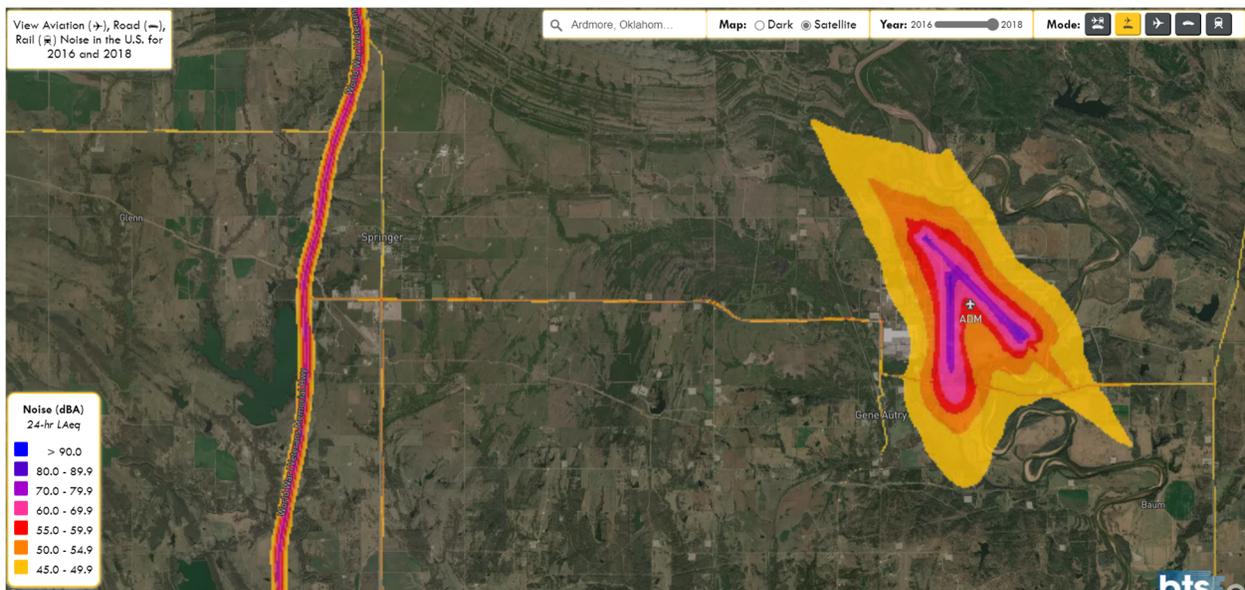
In recent years most of the area counties are showing modest levels of population growth. Dr. Evans projects an additional 4,580 jobs to be available in this area once the project is built and fully operational. The project itself will provide 637 construction jobs Carter County construction output numbers of one job per every \$113,000 in construction cost. Native Americans constitute about 10 percent of the labor force in Carter County, so we expect roughly 64 jobs to be held by Native Americans.

The project will increase truck traffic into the Ardmore Airport area. The GTIP air cargo facility is located on the southwest side of the airport. Truck traffic will come from I35 (less than 6 miles west) along highway 53 to the airport. The 2018 Bureau of Transportation Statistics National Noise Map (see below) shows the 24-hour noise level of I35 in the range of 60 – 69.9 dB (for a receptor within 98 feet). The noise level for highway 53 is 45 to 49.9 dB for a receptor within 98 ft. 2018 ADT levels for I-35 is 34,400, for highway 53 the 2018 ADT is 3800. The closest receptors along I-35 are in a housing development near Springer (highway 53 and 77) with the closest two houses being 170’ from the highway. The first few years after construction will see minimal truck impact because of low volumes. The first year of projected 25,000 tons of freight is an additional 1,136 trucks per year or three additional trucks per day. Assuming a natural growth of 1% per year of traffic in 2025 the ADT will be 3752 – the additional 3 trucks per day is a .08% increase. Projecting out to 2054 the natural ADT growth predicts an ADT of 5000 and

an increase in trucks to the air cargo facility of 33 per day or an increase of .66%. The noise level currently measured on highway 53 (40 to 49.9 dB) is far below the level of concern of 67dB. States consider a 10 to 15 dB increase in noise levels a significant impact. Given the distance to receptors, the current low noise levels, and small increase in traffic levels it is very unlikely this project will cause any impact in highway noise levels, much less a significant noise impact.

Given the ADT on I35 of over 34,000 an increase of 33 trucks per day is not a significant addition.

The 2020 airport operations at Ardmore were reported as 18,000. Ardmore anticipates an annual growth rate of 1.5% (without this project) for a projected number of operations in 2054 of 29,600. An operation is a take-off or a landing – so to get total airplanes that landed the operations number is divided in half. In 2020 Ardmore had 9000 aircraft use the airport. Current traffic levels are 24 per day. Our design aircraft can carry 46.25 tons. At a starting volume of 25,000 tons that is 540 additional aircraft a year or 1.5 aircraft per day. At the 2054 projected volume 253,314 tons that results in 5,477 additional aircraft per year or an additional 15 per day compared to a projected baseline of 14,800 aircraft. The airport is in a rural area with very few receptors off the main or crosswind runways. Based up the BTS noise map (below) it appears the off-airport noise levels are in the 60 to 69.9 dB range on the south approach to the crosswind runway. There are no receptors in this area and just two homes within two miles south of the airport. Given that most of the aircraft will be using the main runway, the lack of receptors and the relatively low levels of current off airport noise, it is unlikely this project will cause any significant noise impact.



The Chickasaw Nation (Fig.12) encompasses 13 counties in south central Oklahoma including the town of Ardmore and the Ardmore Airport. The Chickasaw Nation Department of Commerce letter of support says, “This project will help facilitate economic development and job creation in a rural area of persistent poverty, which is precisely the sort of project the RAISE program was

designed to support.” The letter from the Chickasaw Nation Department of Commerce is attached and can be viewed at <https://www.knbld.com/fy22raise>.



Fig. 12 Geographic Boundaries of the Chickasaw Nation

### Mobility and Community Connectivity

The project is designed to increase multimodal freight movement (truck to air) and help to ensure fluidity to those goods that need to be moved by air. In addition, this project is part of a larger vision for GTIP – concurrently with this project GTIP is working on establishing a rail served industrial park on airport property north of the air cargo project. Once these projects are completed the GTIP will have the ability to load and move goods by truck, train, or air.

The air cargo at GTIP is intended to be a global cargo facility. This facility will link Oklahoma to international commerce in a new way.

## Economic Competitiveness and Opportunity

Having an air cargo facility at Ardmore will provide additional jobs in the community. In the July 2019 “Oklahoma Air Cargo Expansion Feasibility Study” developed in conjunction with the US Department of Commerce, Dr. Russell Evans projected 1,572 direct jobs created and another 3,008 because of the multiplier effect of the facility.

### **Cargo Port Operations Low: 300 M Pounds Enplaned @ \$1.75 Revenue per Pound**

|                     | <b>Employment</b> | <b>Labor Income</b>  | <b>Output</b>          |
|---------------------|-------------------|----------------------|------------------------|
| Direct Impact       | 1,572             | \$159,509,541        | \$525,000,000          |
| Multiplier Impact   | 3,008             | \$158,018,645        | \$513,957,179          |
| <b>Total Impact</b> | <b>4,580</b>      | <b>\$317,528,186</b> | <b>\$1,038,957,179</b> |

*Fig. 13 Job Creation after project completion*

The project will lower the cost of movement of goods by shortening the trucking distance for cargo, eliminating roadway delays resulting from congestion, eliminating at airport delays for loading and unloading trucks, lower cost landing fees compared to DFW, and eliminating aircraft delays due to congestion at the airport.

Air cargo tends to be time sensitive high value cargo. Companies ship by air to meet deadlines, or the destination is an overseas supplier or customer whose products cannot be transported by ship. Air cargo is often international in nature. Global Agribusiness Ventures (GAV) plans on developing cocoa and cashew processing facilities to the US. They mention in their letter of support that despite the US being the largest consumer of cashews, there no US processing facilities. GAV also states that, “We anticipate locating in Ardmore post project completion.” GAV’s letter is attached or can be viewed at <https://www.knbltd.com/fy22raise>.

| Rank  | Industry                           | Export Value 2018 | Share of Total |
|-------|------------------------------------|-------------------|----------------|
| 1     | 333 Machinery, Except Electrical   | \$1,085,660,696   | 17.80%         |
| 2     | 336 Transportation Equipment       | \$1,059,637,617   | 17.40%         |
| 3     | 334 Computer & Electronic Products | \$894,190,633     | 14.70%         |
| 4     | 325 Chemicals                      | \$655,332,778     | 10.70%         |
| 5     | 332 Fabricated Metal Products      | \$512,520,268     | 8.40%          |
| 6     | 335 Electrical Equip, Appliances & | \$370,681,466     | 6.10%          |
| 7     | 311 Food & Kindred Products        | \$353,611,068     | 5.80%          |
| 8     | 111 Agricultural Products          | \$289,015,679     | 4.70%          |
| 9     | 331 Primary Metal Mfg.             | \$236,218,644     | 3.90%          |
| 10    | 326 Plastics & Rubber Products     | \$147,518,243     | 2.40%          |
| 11    | Other                              | \$498,037,967     | 8.20%          |
| Total |                                    | \$6,102,425,059   | 100.00%        |

Source: U.S. Census; usatrade.census.gov

Fig 14. Oklahoma Exports

The destination for Oklahoma exports is primarily North America and Europe, with these two regions combining to account for 64 percent of all Oklahoma exports in 2018. Europe accounted for nearly \$1.5 billion or 24 percent of total exports.

| Rank  | Industry                      | Export Value 2018 | Share of Total |
|-------|-------------------------------|-------------------|----------------|
| 1     | North America                 | \$2,422,267,599   | 39.70%         |
| 2     | Europe                        | \$1,478,833,217   | 24.20%         |
| 3     | Asia - Other                  | \$1,160,363,568   | 19.00%         |
| 4     | Asia - Near East              | \$336,646,738     | 5.50%          |
| 5     | South America                 | \$279,341,449     | 4.60%          |
| 6     | Africa                        | \$139,195,312     | 2.30%          |
| 7     | Australia and Oceania         | \$113,636,771     | 1.90%          |
| 8     | Asia - South                  | \$94,569,549      | 1.50%          |
| 9     | Central America and Caribbean | \$77,570,856      | 1.30%          |
| Total |                               | \$6,102,425,059   | 100.00%        |

Source: U.S. Census; usatrade.census.gov

Fig. 15 Oklahoma Export Destinations

This project will provide the option of faster, more efficient, and less costly shipping to overseas destinations. This additional capacity at Ardmore, including the railroad access, will complement existing facilities by offering shippers additional choices.

Chicago O'Hare air cargo is so congested that Ardmore has been contacted by shippers using the project facilities when a shipment is time sensitive – the shipper would dray the cargo to Chicago from Ardmore to get it to the customer on time.

The project bid specifications will include a requirement to advertise for local labor through the

Chickasaw Nations employment department for project construction. WPG has committed advertising job opportunities through Chickasaw Nations for the air cargo facility and any other jobs that may come available one the project is operational.

WPGH is currently coordinating with Murray State College to establish a training program for the air cargo facility. In addition, Southern Tech, the local technology center, has broken ground on a new Aviation Training Program that will provide certification programs designed to meet the needs of the GTIP Air Cargo facility. The Chickasaw Nation will encourage tribal members to utilize this training and will be involved in the hiring of employees. It is the goal of all WPG and the ADA to hire the well trained and skilled employees.

Southern Tech in Ardmore, Oklahoma has a variety of training programs that supply the local area with trained employees, including an aviation program that works with the Ardmore Airport to train people.

### **State of Good Repair**

The project will relocate the existing road, build a truck parking apron, add water, sewer and power to the site, add electric charging for trucks and ground handling equipment, build a cargo warehouse, extend fire suppression to the area and replace a small concrete aircraft apron with a larger one designed to handle the weight of a large, loaded aircraft and repair a section of taxiway. The current apron area needs expansion and rehabilitation.

Asphalt pavement and air cargo facility periodic maintenance costs are detailed in the BCA and will be the responsibility for the ADA. The maintenance of the air cargo building will be the responsibility of the ADA and WPGH.

### **Partnership and Collaboration**

This project is a partnership between the Ardmore Development Authority, the Ardmore Airport, the City of Ardmore, Watco, Knightsbridge Partners, the Chickasaw Nation, and Cowboy Holdings. ADA is the applicant and will be handling the grant management aspects of the project, as well as general project oversight and inspection. ADA is experienced in federal grant and project management due to their history of effectively managing FAA AIP projects. In addition, ADA has received and is currently administering a US Department of Commerce EDA project. Additional partners, both domestic and international are expected to become involved once the project is completed.

Support letters have been received from Oklahoma's Congressional Delegation (Sen. J. Inhofe, Sen. J. Lankford, & Rep. T. Cole), the Chickasaw Nation, Oklahoma Aeronautics Commission, The City of Ardmore, Ardmore Chamber of Commerce, WATCO Companies, Global Agribusiness Ventures, First National Bank & Trust Company of Ardmore, & BancFirst (Ardmore).

## Innovation

The project is well understood from a design, bid letting and construction standpoint and will be utilizing conventional methods for project delivery.

This project supports the U.S. and Oklahoma Commerce and Agricultural Departments' missions to develop trade with countries in Central and South America, as well as Canada. The supply chain challenges have resulted in significant interests by multiple cargo carriers of the potential afforded by a facility in Ardmore. Additionally, several Asian countries are exploring their options with delivering cargo to the mid-America region.

The ADA is committed to incorporating new technologies that streamline cargo operations and have the potential to make a positive environmental impact. The ADA and its private partners have consulted Physical 2 Digital Limited ([www.p2dl.com](http://www.p2dl.com)) to provide the technology solution for the aforementioned "customs superhighway". Using a platform such as that offered by P2DL, cargo operators at ADM will benefit from simpler customs procedures when importing and exporting goods to and from ADM by enabling them to forward declare all relevant documentation to the appropriate Government competent authorities. Everyone involved in the supply chain will be able to visualize movements and understand the full end-to-end provenance of goods and can further calculate carbon and sustainability metrics. Integration of this type of innovative technology will be required by the U.K. government to do business with them. In fact, it was they who introduced ADA and its partners to P2DL because they are already engaging them to streamline movements of goods from the mainland U.K. to Northern Ireland across the Irish Sea.

The variety of project partners and the mix of funding makes this project innovative as does the involvement as a project owner of the Chickasaw Nation.

## Environmental Risk Review

Because the project is located on airport property, a Documented Categorical Exclusion (Catex) written by Lochner Engineering and dated February 2021 was submitted to Dean McMath at the FAA on March 8, 2021. To date, there has not been a response from FAA. The CatEx can be viewed at <https://www.knbltd.com/fy22raise> and is also attached to the grant application.

## Project Schedule

Based on November 2022 Notice of Award date, we anticipate the following schedule:

CatEx Approval (submitted 6/21): January 15, 2023

Preliminary Design Completed: January 15, 2023

STIP Revision: February 15, 2023

Grant Agreement: April 15, 2023

Final Design/Bid Package Completed: May 15, 2023

Award Bid: June 15, 2023

Construction Begins: July 15, 2023

Construction Complete: December 30, 2024

Project Closeout Complete: June 1, 2025

## **Required Approvals**

Prior to construction, a Notice of Intent must be filed with the ODEQ. A Stormwater Pollution Prevention Plan (SWPPP) will be developed prior to filing the Notice of Intent. The SWPPP shall describe the project area and its outfalls in detail and describe BMPs to be utilized to minimize erosion and sedimentation of nearby waterbodies. The SWPPP will include all land disturbance being completed with the project. No additional approvals are required.

## **Assessment of Project Risks and Mitigation Strategies**

### **Procurement Delays**

No procurement delays are anticipated. This is a normal construction project with commonly available materials. We believe the current high prices and current shortages of construction materials and labor will have returned to normal by the time the project is bid.

### **Environmental Uncertainties**

The primary uncertainties relate to weather during the construction season causing delays. Appropriate time was built into the schedule to accommodate weather issues.

### **Real Estate Acquisition**

Real estate acquisition is not required for this project.

## **Benefit Cost Analysis**

This grant application includes a benefit cost analysis conducted for the Global Transportation Industrial Park 2022 Raise Grant application. This project, located at the Ardmore Airport, would develop a portion of the airport to be able to ship large quantities of air cargo through a dedicated air cargo apron and air cargo warehouse. The Ardmore Municipal Airport and Industrial Park is owned by the City of Ardmore, OK and leased to the Ardmore Development Authority. The Industrial Park is contained within the boundaries of the airport.

Under existing condition (the No-Build Scenario) the airport and industrial park will continue as is – there will be no cargo flights out of Ardmore. Any economic benefits this project would have accrued will not happen. Air freight will continue to be shipped at increasing volumes from DFW, AFW and OKC. Any possible relief for time sensitive shipments that would normally go through O’Hare will not be available at Ardmore.

## Summary of BCA

The discounted benefits of \$69,662,256 was added to the discounted residual value (\$837,327) for a total of \$70,599,583 the benefits include the periodic maintenance costs of the Air Cargo Building, Cargo Facility Parking and Street and the Air Cargo Apron (\$8,153,782) added as per the March 2022 BCA Guidance document. That value was divided by the discounted construction cost (\$33,419,758) for a benefit cost ration of 2.11:1. The net present value is \$20,034,935.

## Benefit Cost Analysis Assumptions and Explanation

The BCA assumes two separate areas of benefit. First is a destination shift from the Dallas Fort Worth airport for a small percentage of their current air cargo volumes. This shift is possible because shippers that can use Ardmore will choose to do so because of lower costs and faster throughput times. The cost savings come from reduced expenses related to congestion, delays in truck movements, aircraft delays and reductions in airport costs such as reduced landing fees. We estimated a starting volume of 25,000 tons for the first year at Ardmore – that represents 2.5 percent of the freight volume of DFW. We anticipate the second year will be 35,000 tons, then an annual growth of 12 percent for the next 10 years. For years 2035 to 2044, we think that growth will slow to five percent - still slightly above the FAA forecast of 3.5 percent growth for domestic shipments and 4.2 percent growth for international air cargo. Beyond 2044, we anticipate growth at about GDP growth of three percent.

The truck delay costs are calculated assuming that a truck coming into DFW or AFW is traveling (or stopped in traffic with the engine running) for four additional hours due to congestion and is moving at a slow speed – being very inefficient for the distance moved. Once the truck is in the airport, delays will likely be with the truck shut off - such as waiting to get loaded or unloaded. We assumed the truck gets six miles per gallon. The emissions values are as described in the BCA Guidance. CO<sub>2</sub> emissions are based upon the gallons burned. We do not know the fuel economy of the truck at slow highway speeds - but potentially similar engine speeds so we assumed the fuel burn is similar to normal fuel economy. Assuming the miles traveled to Ardmore or DFW are the same the emissions would be similar – however traffic moves slower during congestion in the DFW area, so the truck is running for the equivalent of 33.4 more miles. Emissions rates are calculated on a per mile basis, to account for the slower speeds we assumed 33.4 additional miles to calculate emissions.

Landing fee avoided. This assumes that the cargo would be going to DFW or FWA if Ardmore is not developed into an air cargo airport. Ardmore more will be less expensive to fly into and out of because the airport does not have the infrastructure to maintain and because congestion issues at DFW and FWA increase costs. Ardmore is more efficient because of the decrease in congestion and the increase in efficiency. The tons of cargo forecasted to come into Ardmore are divided by the payload of the 767-200 (46.2 tons). The number of aircraft landings is likely calculated to be lower than actual because the volume max of the shipment may well be reached before the payload limit. The maximum landing weight of a fully loaded 767-200 is 283,000 lbs., the landing fee is calculated on a dollar figure less than DFW (to calculate savings) - the landing

fee at DFW varies but is approximately \$10 per ton of landed weight. We used a value of \$5 per ton less than DFW.

Delay costs for the aircraft are calculated from the overall delay time at DFW - from a FAA document "Calculating Delay Propagation Multipliers for Cost - Benefit Analysis" table 4-1 pg. 4-3 divided by the total number of flights from DFW. Document can be found at [http://www.faa.gov/regulations\\_policies/policy\\_guidance/benefit\\_cost/media/faabca.pdf](http://www.faa.gov/regulations_policies/policy_guidance/benefit_cost/media/faabca.pdf). Operating costs for the 767-200 are provided from the FAA at [https://www.FAA.gov/regulations\\_policies/policy\\_guidance/media/econ-value-section-4-op-costs.pdf](https://www.FAA.gov/regulations_policies/policy_guidance/media/econ-value-section-4-op-costs.pdf) for a twin engine wide body aircraft. Table 4-7 2018 Part 121 Pg. 4-8 costs were inflated to 2020 values.

The operating costs are assumed to be during a time when the aircraft is either in flight or moving under its own power on the ground - the delay may be as a holding pattern above the airport or waiting on a hold line. To account for non-flight operating time, essentially using less fuel, we reduced the operating costs by 25 percent.

The emissions rates for a 2013 model truck are as described in a report entitled "Updated Emission Factors of Air Pollution from Vehicle Operations in GREET using MOVES" done by Argonne National Labs is September 2013. CO2 emissions are based upon the excess fuel used by trucks in congested traffic assuming 10,180 grams of CO2 in each gallon of fuel.

The second area of benefit is assuming a destination shift of air cargo from Oklahoma City to Ardmore. Oklahoma City is 100 miles north of Ardmore on I-35. Oklahoma City airport (OKC) is currently handling about 100,000 tons of air cargo a year. Tulsa is about 75 miles NE of Oklahoma City, Wichita, Kansas is 255 miles north of Oklahoma City. We assumed that of the volumes going into OKC half originate (or terminate) north of OKC and half south of OKC. Of the 50,000 tons coming from (or going to) destinations south of OKC we assumed Ardmore will initially attract twenty percent of that volume (10,000 tons) then grow for 10 years at a five percent rate (from 2024 to 2033) - slightly above the FAA domestic and international cargo forecast of 3.85 percent (average of domestic forecast of 3.5 percent and international forecast of 4.2 percent - FAA Aerospace Forecast Fiscal Years 2020 to 2040 pg. 23). From 2034 to 2043, we used the FAA forecast growth rate average of 3.85 percent. From 2044 to 2052 we used a growth rate matching an assumed GDP growth rate of three percent.

We assumed that the volume of cargo above was being trucked to (and from) Ardmore and saving 25 miles of trucking (one way) or 50 miles total on average. A shipper located near Ardmore would save many more miles, where as a shipper located 50 miles from Ardmore and 50 miles from OKC would not save any miles, regardless of which airport they choose to ship from. Since both airports are in uncongested areas there are not truck, airport, or aircraft congestion costs to be saved by choosing one airport over the other. Likewise, the landing fees at both OKC and Ardmore are similar enough to likely not be a factor. The benefit then is the shorter truck haul for those shippers closer to Ardmore. The crash rates are as presented by Oklahoma DOT for 2019 in three categories – fatalities, injury, and property damage only. The rate is calculated as a number per 100 million vehicle miles traveled. The costs per injury (since Oklahoma does not split them out in more than one category) was as presented in the March

2020 BCA guidance averaged from the KABCO Levels B and A (non-incapacitating and incapacitating respectively) to a 2020 monetized value of \$552,950. In addition to the cost savings related to less crashes, there is an emissions reduction that was calculated using the GREET data for a 2013 model truck as described above

A detailed explanation of each column of the BCA spreadsheet is available under the Explanation tab.

The most sensitive variable in the BCA is the projected volume of freight. We believe that we have been conservative with the projected volumes.

### **Operations and Maintenance Costs**

Maintenance costs for the asphalt and concrete pavements are shown below on page 31 and 32 as year of expenditure dollars and included in the BCA spreadsheet calculations. Maintenance costs for the Air Cargo Building were calculated at \$2.15 per square foot for the first year then increased by 4% per year, then discounted to 2020 dollars.

### **Residual Value**

Major capital projects create an initial value in the facility, which depreciates over time, but often has a life that results in a residual value beyond a standard benefit-cost analysis period. In this case, the analysis period is 30 years. The life of the project was assumed to be 40 years. We used a straight-line depreciation for 30 years to determine the residual value.

### **BCA Spreadsheet with Explanation**

The BCA and explanation are attached to the application as an Excel spreadsheet or may be viewed or downloaded from <https://www.knbltd.com/fy22raise>.

**ARDMORE MUNICIPAL AIRPORT**  
**ARDMORE, OKLAHOMA**  
**CARGO FACILITY PARKING AND STREET**

Life Cycle Cost Analysis  
Bituminous Pavement

(Costs Associated Only with Bituminous Pavement)

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| ITEM NO.   | ITEM DESCRIPTION  | QUANTITY | UNIT | UNIT COST          | TOTAL          |
|--|---|----------|------|--------------------|----------------|
| <b>NEW CONSTRUCTION</b>  |   |          |      |                    |                |
| 1  | Cement Treated Subgrade (12")                           | 94,000   | S.Y. | \$11.00            | \$1,034,000.00 |
| 2  | Asphalt Subbase Course (3")                             | 16,400   | Tons | \$80.00            | \$1,312,000.00 |
| 3  | Asphalt Base Course (6")                                | 30,400   | Tons | \$80.00            | \$2,432,000.00 |
| 4  | Bituminous Prime Coat                                   | 15,600   | Gal. | \$3.00             | \$46,800.00    |
| 5  | Bituminous Tack Coat                                    | 31,600   | Gal. | \$3.00             | \$94,800.00    |
| 6  | Asphalt Surface Course                                  | 12,250   | Tons | \$110.00           | \$1,347,500.00 |
|  |   |          |      |                    | \$0.00         |
|  |   |          |      | <b>TOTAL</b>       | \$6,267,100.00 |
|  |   |          |      | <b>\$ / S.Y. =</b> | \$150.41       |
| <b>CLEAN &amp; SEAL JOINTS AND CRACKS / SEAL COAT (Yr. 7)</b>  |   |          |      |                    |                |
| 1  | Mobilization  | 1        | L.S. | \$30,000.00        | \$30,000.00    |
| 2  | Temporary Marking, Lighting and Barricades              | 1        | L.S. | \$6,000.00         | \$6,000.00     |
| 3  | Pavement Marking Removal                                | 6,500    | S.F. | \$1.50             | \$9,750.00     |
| 4  | Clean and Seal Existing Joints & Cracks ( Less than 1") | 25,000   | L.F. | \$2.00             | \$50,000.00    |
| 5  | Clean and Seal Existing Joints & Cracks ( 1" to 2")     | 5,000    | L.F. | \$6.50             | \$32,500.00    |
| 6  | Pavement Friction Seal Coat Surface Treatment           | 94,000   | S.Y. | \$3.00             | \$282,000.00   |
| 7  | Reflectorized Pavement Marking                          | 6,500    | S.F. | \$2.00             | \$13,000.00    |
|  |   |          |      | <b>TOTAL</b>       | \$423,250.00   |
|  |   |          |      | <b>\$ / S.Y. =</b> | \$10.16        |
| <b>CLEAN &amp; SEAL JOINTS AND CRACKS / SEAL COAT (Yr. 15)</b> |   |          |      |                    |                |
| 1  | Mobilization  | 1        | L.S. | \$32,000.00        | \$32,000.00    |
| 2  | Temporary Marking, Lighting and Barricades              | 1        | L.S. | \$7,000.00         | \$7,000.00     |
| 3  | Pavement Marking Removal                                | 6,500    | S.F. | \$1.75             | \$11,375.00    |
| 4  | Clean and Seal Existing Joints & Cracks ( Less than 1") | 25,000   | L.F. | \$2.00             | \$50,000.00    |
| 5  | Clean and Seal Existing Joints & Cracks ( 1" to 2")     | 5,000    | L.F. | \$6.75             | \$33,750.00    |
| 6  | Pavement Friction Seal Coat Surface Treatment           | 94,000   | S.Y. | \$3.00             | \$282,000.00   |
| 7  | Reflectorized Pavement Marking                          | 6,500    | S.F. | \$2.50             | \$16,250.00    |
|  |   |          |      | <b>TOTAL</b>       | \$432,375.00   |
|  |   |          |      | <b>\$ / S.Y. =</b> | \$10.38        |
| <b>REHABILITATION OF BITUMINOUS SURFACE COURSE (Yr. 20)</b>    |   |          |      |                    |                |
| 1  | Mobilization  | 1        | L.S. | \$34,000.00        | \$34,000.00    |
| 2  | Temporary Marking, Lighting and Barricades              | 1        | L.S. | \$8,000.00         | \$8,000.00     |
| 3  | 2" Mill Existing Pavement Surface Course                | 94,000   | S.Y. | \$5.00             | \$470,000.00   |
| 4  | Clean and Seal Existing Joints & Cracks ( Less than 1") | 10,000   | L.F. | \$2.25             | \$22,500.00    |
| 5  | Clean and Seal Existing Joints & Cracks ( 1" to 2")     | 2,500    | L.F. | \$7.00             | \$17,500.00    |
| 6  | Bituminous Tack Coat                                    | 31,600   | Gal  | \$3.50             | \$110,600.00   |
| 7  | Bituminous Surface Course                               | 12,250   | Tons | \$150.00           | \$1,837,500.00 |
| 8  | Reflectorized Pavement Marking                          | 6,500    | S.F. | \$2.75             | \$17,875.00    |
|  |   |          |      | <b>TOTAL</b>       | \$2,517,975.00 |
|  |   |          |      | <b>\$ / S.Y. =</b> | \$60.43        |
| <b>CLEAN &amp; SEAL JOINTS AND CRACKS / SEAL COAT (Yr. 30)</b> |   |          |      |                    |                |
| 1  | Mobilization  | 1        | L.S. | \$34,000.00        | \$34,000.00    |
| 2  | Temporary Marking, Lighting and Barricades              | 1        | L.S. | \$8,000.00         | \$8,000.00     |
| 3  | Pavement Marking Removal                                | 6,500    | S.F. | \$2.00             | \$13,000.00    |
| 4  | Clean and Seal Existing Joints & Cracks ( Less than 1") | 25,000   | L.F. | \$2.25             | \$56,250.00    |
| 5  | Clean and Seal Existing Joints & Cracks ( 1" to 2")     | 5,000    | L.F. | \$7.00             | \$35,000.00    |
| 6  | Pavement Friction Seal Coat Surface Treatment           | 94,000   | S.Y. | \$3.50             | \$329,000.00   |
| 7  | Reflectorized Pavement Marking                          | 6,500    | S.F. | \$2.75             | \$17,875.00    |
|  |   |          |      | <b>TOTAL</b>       | \$493,125.00   |
|  |   |          |      | <b>\$ / S.Y. =</b> | \$11.83        |

**ARDMORE MUNICIPAL AIRPORT  
ARDMORE, OKLAHOMA**

Reconstruct Cargo Apron

Life Cycle Cost Analysis

Portland Cement Concrete Pavement

(Costs Associated Only with P.C.C. Pavement)

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| ITEM NO.  | ITEM DESCRIPTION                           | QUANTITY | UNIT | UNIT COST          | TOTAL                 |
|---|--|----------|------|--------------------|-----------------------|
| <b>NEW CONSTRUCTION</b>                                   |  |          |      |                    |                       |
| 1   | Cement Treated Subgrade (12")              | 25,000   | S.Y. | \$11.00            | \$275,000.00          |
| 2   | Aggregate Base Course (6")                 | 25,000   | S.Y. | \$9.00             | \$225,000.00          |
| 3   | Stabilized Base Course (5")                | 25,000   | S.Y. | \$20.00            | \$500,000.00          |
| 4   | PCC Pavement (13")                         | 24,000   | S.Y. | \$75.00            | \$1,800,000.00        |
|   |  |          |      | <b>TOTAL</b>       | <b>\$2,800,000.00</b> |
|   |  |          |      | <b>\$ / S.Y. =</b> | <b>\$67.20</b>        |
| <b>JOINT RE-SEAL, PANEL REPAIR AND MARKINGS (15 Year)</b> |  |          |      |                    |                       |
| 1   | Mobilization                               | 1        | L.S. | \$40,000.00        | \$40,000.00           |
| 2   | Temporary Marking, Lighting and Barricades | 1        | L.S. | \$5,000.00         | \$5,000.00            |
| 3   | Clean and Seal Joints                      | 45,000   | L.F. | \$2.00             | \$90,000.00           |
| 4   | Pavement Marking Removal                   | 3,000    | S.F. | \$1.25             | \$3,750.00            |
| 5   | Full Depth Panel Replacement               | 2,500    | S.Y. | \$150.00           | \$375,000.00          |
| 6   | Reflectorized Pavement Marking             | 3,000    | S.F. | \$1.50             | \$4,500.00            |
|   |  |          |      | <b>TOTAL</b>       | <b>\$518,250.00</b>   |
|   |  |          |      | <b>\$ / S.Y. =</b> | <b>\$12.44</b>        |