



**Economic Impact Analysis of
Public Port Authority Operations in Owensboro, KY**

Submitted To:

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I. EXECUTIVE SUMMARY

Commonwealth Economics, LLC (“CE”) was contracted by the Owensboro Riverport Authority (“Authority”) to perform an economic impact analysis related to public port authority operations in Owensboro, KY.

The objective of this study is to provide an overview of the Owensboro Riverport and illustrate the riverport’s impact on employment and income to the local community based upon an assessment of current market conditions, including the transport of different commodities within the region, as well as the quantification of direct impacts or “economic effects” generated as a result of Authority operations.

Highlights

- **Operational Impact** – It is estimated that the total economic impact of Authority riverport operations in 2018 included \$16.1 million of total output, \$8.6 million of labor income, and support for 197 jobs annually. When analyzing the last six years, it is estimated that the annual impact of Authority riverport operations to the City of Owensboro is, on average, \$13.8 million of total output, \$7.0 million of labor income, and support for 161 jobs annually throughout the region.
- **Capital Investment** - The Authority, with support from grant contributions and private sector funding, has invested more than \$46.1 million in construction projects at the riverport between 2013 and 2018. The impacts associated with these initial injections into the local economy are estimated to have contributed \$67.7 million in total economic impact, including total employment for 590 people and \$20.3 million in total wages during construction. Since 2013, the riverport has seen a 52.51% increase in product tonnage with a total of 1.2 million tons of cargo being moved over the Authority’s riverport facilities in 2018.
- **Transportation Infrastructure** - Between 2013 and 2018, the riverport facilitated the transport of close to 5.9 million tons of various cargo utilizing multiple modes of transportation. Over the six-year period, 51.73% of all tons were transported by barge, 20.20% were transported by rail, and 28.07% were transported by truck.

- **Industry Impact** - In 2016, out of an estimated \$10.7 billion in output, 57,898 jobs, and \$2.6 billion in labor income within Daviess County, \$1.6 billion (15.2%) in output, 3,225 (5.6%) jobs, and \$155.3 million (5.9%) in income was supported by commodity-driven industries. In addition, out of an estimated \$23.3 billion in output, 114,589 jobs, and \$5.3 billion in labor income within the Green River Area Development District, \$3.5 billion (14.9%) in output, 8,020 (7.0%) jobs, and \$385.7 million (7.3%) in income was supported by commodity-driven industries. The Authority is an integral supporter of these commodity-driven industries.

II. BACKGROUND

Located on Ohio River mile 759, the Owensboro Riverport Authority (“Authority”), provides multiple services to its regional clients, including: commodity handling (truck, barge, & rail), ground storage, tank storage, warehouse storage, and assistance with special projects. In doing so, over its 52-year history, the riverport has become a premier gateway to global trade that supports a variety of primary business segments, including: Metals, Agribusiness, Bulk Transports, Cargo, and Warehousing.

It is important to understand that the Authority, as a public entity, operates to serve the region on the whole with the provision of necessary infrastructure to support jobs and grow the economy, without influence to drive profit that might otherwise strain the regional economy. This is evidenced in the Authority’s mission statement, “Our mission is to establish the Owensboro Riverport as the premier inland port in the Ohio River Valley by providing a dynamic, efficient, customer oriented, and market focused intermodal facility that contributes to commerce and economic growth for Owensboro and the region.” It is necessary to view the findings of this analysis from that lens.

Riverport History

Established in 1966, the Owensboro Riverport opened its public river terminal in 1976 and has since transformed into a centralized location relied upon by businesses that need cost-effective and convenient methods to ship materials and warehouse products.

In December 2003, the riverport acquired Foreign Trade Zone (“FTZ”) status for the majority of its’ facility from the FTZ Board and the Department of Homeland Security – U.S. Customs and Border Protection agency. Utilizing the riverport’s FTZ can significantly reduce the business costs from customs duties, taxes, and tariffs, and improve global market competitiveness through the minimization of regulations. The riverport is also designated as a U.S. Port of Entry.

In March 2005, the riverport received designation as a Licensed Warehouse for North American A-380.1 Aluminum Alloy on the London Metal Exchange’s North American Special Aluminum Alloy Contract (NASAAC). This designation affirmed the strategic location of the riverport for inbound and outbound aluminum traffic flow. In 2014, Owensboro Riverport Authority received designation for primary aluminum on the London Metal Exchange and the Chicago Mercantile Exchange

In September 2013, Brian Wright, an Owensboro native, took over as president of the Owensboro Riverport Authority. At the time of Brian's hire, he stated, "Based on the numbers that we see across the state, we are still the highest-volume public authority of the eight active ports that exist in Kentucky."

In 2014, the Authority announced a 10-year partnership with Solvay Chemicals and agreed to build a 40,000-square foot milling facility which would allow Solvay to toll sodium bicarbonate, a commonly used laboratory chemical. However, the facility was built primarily for the energy business sector given that several power (coal) plants in the area are required to treat for emissions, sodium bicarbonate being one option to control air pollution. The cost of the project was funded via the issuance of bonds through the City of Owensboro, Kentucky in the amount of \$24 million.

In 2015, the Authority added a new mobile harbor crane to a \$7.5 million, 210-foot cargo dock which was constructed in 2014. The primary purpose of the dock/crane is to help support the flow of multiple commodities, primarily the aluminum and steel sector.

In 2018, the Authority decided to move forward with a \$1.5 million rail expansion project which will add space for a Mexico-based automobile frame manufacturer as it steps up production. The riverport was awarded the majority of funding from a Federal Congestion Mitigation and Air Quality grant because shipping by rail will eliminate the need for the manufacturer to deliver its products in 5,000 trucks every year.

Currently, the riverport uses 285 acres of its 340-acre Harbor Road Terminal comprised of 8 pile cells, 6 mooring dolphins, a 102-acre rail site featuring a 5,700-linear foot rail loop which can handle up to 84 railcars, 500,000 square feet of on-site indoor warehouse space, and over 100 acres of paved or rock-based limestone gravel outdoor storage yards. In addition, bulk storage is provided via multiple domed and building facilities, which total 24,200 tons, chemical fertilizer tanks storing 33,100 tons, and a grain handling facility with a storage capacity of 800,000 bushels of grain. The movement of these commodities are supported by 3 cranes of 110-ton capacity, one being a crawler model the other being placed on a floating barge, the newest 2016 mobile harbor crane with 84-ton capacity, and an entire fleet of loaders, lift trucks, and specialty equipment.

Community Impact

The Owensboro Riverport serves the region as a transportation asset that provides crucial support to many businesses, both directly and indirectly, within at least a 100-mile radius of the Port. In a region that relies heavily on agricultural production, commodity trade, and various forms of processing and manufacturing, the ability to efficiently export and import products and the materials necessary for production can be the deciding factor in whether a business locates in the region or looks elsewhere. Additionally, providing the regional agriculture community with efficient transportation methods keeps production costs low, allowing them to remain in business in an increasingly competitive market.

While these positive impacts are realized by all the businesses that rely on the Owensboro Riverport as a key component of their operational supply chain, it may be useful to highlight two recent examples that illustrate these impacts.

Example #1

In 2017, a national business announced it would add 113 jobs at its Owensboro facility with a \$36.5 million expansion to produce a new line of stamped and welded components. The \$36.5 million includes investment in robotic welding cells, assembly line robots, infrastructure and building expansions to increase the facility's square footage to accommodate the new production line, and additional warehouse space. The expansion began last summer, and hiring is planned for September 2018 through June 2019. Company leaders expect production to begin in March 2019.

It is important to note that these jobs are dependent on the needed infrastructure to support expanded operations. The Authority was able to accommodate needed infrastructure through a \$1.5 million rail expansion project. Starting in March 2019, the business's facility will produce a new frame which will come to the riverport and be transloaded, inventory managed, and shipped to the end user. The business advised the Authority that the expansion was a major factor in allowing the deal to work. Without the Owensboro Riverport facilities, the business would have been forced to use semi-trucks to deliver the frames to Toledo, OH, driving up production costs, and making the expansion project in Owensboro, KY unfeasible. Instead, they would have built a new facility closer to the end user. In the negotiation process, the Authority was able to utilize its status as a public authority to acquire Federal grant funding for necessary infrastructure improvements, negotiate over-wide load permitting adjustments with state regulators, and work with the business to develop terms that a private riverport owner/operator would likely not been able to justify. However, the public Authority's

rail expansion project and the ability to operate in this manner allowed the region to add 113 jobs.

Example #2

The grain market, in a simplified way, is a series of decisions starting from price discovery and strategy through sales and execution of the grain. There are decisions to be made throughout the production and sales process which result in actions along the way, from deciding to sell, to then selling, and then acting to execute by transferring or trucking grain to a delivery point. The ability to get product to market at a fair price determines the extent to which grain producers and sellers operate and compete within the region.

An interesting example of this dynamic relates to agribusiness's operations in Owensboro with the Authority. Prior to 2016, the business simply operated as an outbound grain tenant of the Owensboro Riverport, with the Authority managing the inbound/outbound operations. However, running all operations through the Authority made it difficult for them to control their ultimate destiny and to achieve their goals. In 2016, the Authority and the business agreed to a 15-year lease in which the business runs the facility, the Authority owns it, and the business invested significant capital in order to increase capacity. It is important to note that there were multiple bidders on the right to operate the grain facilities within the Owensboro Riverport property. However, they were not willing to match the business's proposed terms, allowing the grain market to remain competitive.

The Authority's ability to negotiate with the private sector in order to improve overall efficiencies, while providing the infrastructure necessary for the operations to succeed, illustrates a great benefit that the Authority provides to the region. Facilitating efficiencies and allowing competition along the river allows farmers to realize better margins as the Authority makes decisions that are in the best interest of the overall community.

III. OVERVIEW OF MARKET AND OPERATIONS

This section examines the market in which the Owensboro Riverport Authority (“Authority”) operates, providing an overview of the riverport’s location and market demographics. This includes analyzing the methods of transportation utilized by businesses at the riverport to transport a variety of products, as well as a breakdown of revenue generated by the Authority from the handling and storage of these products at its terminal and warehousing facilities.

Riverport Location

The Authority is strategically located off River Road alongside the Ohio River in Daviess County. The location allows the Authority to conveniently facilitate commerce activity which flows in and out of the Owensboro Riverport to and from other states along the Ohio. This convenience, paired with an array of comprehensive services, enables the Authority to support industrial sectors such as agriculture, aluminum, chemical, and steel, among others.

Figure 1



Market Demographics

The Owensboro Riverport is located in the northern part of western Kentucky inside the Green River Area Development District (“District”) which is comprised of Daviess, Hancock, Henderson, McLean, Ohio, Union, and Webster Counties. Figure 2, below, displays historical population estimates for these Counties, which make up the riverport’s proximate market area, as well as projected population levels in 2020.¹

Figure 2

Owensboro Riverport Area Population Estimates by County								
	Historical Estimates					% Change (2012-2016)	Projected	% Change (2016-2020)
	2012	2013	2014	2015	2016		2020	
Green River Area Development District								
Daviess	97,886	98,311	98,416	99,333	99,674	1.83%	102,033	2.37%
Hancock	8,666	8,672	8,722	8,710	8,810	1.66%	8,786	-0.27%
Ohio	24,056	24,047	24,064	24,216	24,378	1.34%	24,235	-0.59%
Henderson	46,445	46,339	46,387	46,388	46,253	-0.41%	46,358	0.23%
McLean	9,526	9,499	9,466	9,496	9,475	-0.54%	9,274	-2.12%
Webster	13,476	13,392	13,234	13,239	13,316	-1.19%	12,600	-5.38%
Union	15,114	15,111	15,168	15,053	14,880	-1.55%	14,906	0.17%
Total	215,169	215,371	215,457	216,435	216,786	0.75%	218,192	0.65%

Figure 2 shows that the market area population in which the riverport operates has slightly increased over the last 5 years with the 2016 population estimate totaling approximately 216,786 individuals. Additionally, the overall market area population is projected to increase by 0.65% in 2020, or an influx of over 2,000 people. However, Daviess County is projected to see a 2.37% increase in its population by 2020 which equates to over 2,300 people, illustrating the overall assumption that the more rural populations will decline as people migrate to urban centers.

Figure 3 displays county population estimates for 2016 broken out by age group, revealing that 57.23% of all individuals within the riverport’s market area are working-age adults.

¹ Source: U.S. Census Bureau annual estimates of the resident population.

Figure 3

Owensboro Riverport Area 2016 Population Estimates by County & Age Group										
	19 & Under	% of Total	20 - 39	% of Total	40 - 64	% of Total	65 & Older	% of Total	Total	% of Total
Green River Area Development District										
Daviess	26,556	12.25%	24,664	11.38%	32,089	14.80%	16,365	7.55%	99,674	45.98%
Henderson	11,713	5.40%	11,338	5.23%	15,583	7.19%	7,619	3.51%	46,253	21.34%
Ohio	6,410	2.96%	5,920	2.73%	7,840	3.62%	4,208	1.94%	24,378	11.25%
Union	3,643	1.68%	4,205	1.94%	4,684	2.16%	2,348	1.08%	14,880	6.86%
Webster	3,384	1.56%	3,186	1.47%	4,487	2.07%	2,259	1.04%	13,316	6.14%
McLean	2,440	1.13%	1,983	0.91%	3,212	1.48%	1,840	0.85%	9,475	4.37%
Hancock	2,442	1.13%	1,960	0.90%	2,904	1.34%	1,504	0.69%	8,810	4.06%
Total	56,588	26.10%	53,256	24.57%	70,799	32.66%	36,143	16.67%	216,786	100%

It is also important to consider the area and any changes to median household income which may have occurred. Figure 4, below, shows median household incomes for Counties located within the riverports market area from 2012 to 2016.²

Figure 4

Owensboro Riverport Area Median Household Income						
	2012	2013	2014	2015	2016	% Change 2012-2016
Green River Area Development District						
Union	\$37,445	\$39,125	\$38,367	\$40,120	\$41,255	10.17%
McLean	\$40,563	\$38,833	\$40,851	\$40,770	\$43,005	6.02%
Ohio	\$38,286	\$40,830	\$39,574	\$40,189	\$39,479	3.12%
Daviess	\$45,507	\$46,555	\$45,760	\$45,989	\$46,765	2.76%
Hancock	\$48,867	\$51,189	\$50,311	\$50,476	\$49,375	1.04%
Henderson	\$42,266	\$41,940	\$41,006	\$41,036	\$41,630	-1.50%
Webster	\$41,138	\$41,415	\$40,852	\$38,917	\$38,374	-6.72%
Average	\$42,010	\$42,841	\$42,389	\$42,500	\$42,840	1.98%

Overall, the area's median household income has increased by 1.98% since 2012.

Industry Overview

In understanding the market and regional economy, it is important to identify top employers and top producers. Top employers in the Green River Area Development District by category include: restaurants (6,425), government (5,344), hospitals (4,873), wholesale trade (3,275), and real estate (3,062).³ While these industries may not directly

² Source: 2012-2016 American Community Survey 5-year estimates (US Census).

³ Estimated using IMPLAN data for Daviess, Hancock, Ohio, Henderson, McLean, Webster, and Union Counties.

benefit from the Owensboro Riverport operations (with the exception of wholesale trade, which likely does to some extent), they almost certainly benefit from the secondary impacts from businesses and employees that utilize the Riverport.

In order to generate a better understanding regarding the extent to which the Riverport supports the regional economy, CE utilized data from IMPLAN to estimate the total industry output, employment, and labor income for Daviess County and the Green River Area Development District for specific industries that would depend upon Riverport import and export activity.

Figures 5, 6, 7, 8, 9, and 10, on the following pages, summarize the previous five years of available data regarding economic activity within Daviess County and the Green River Area Development District, focusing on these select commodity-driven industries. It is important to understand that the Authority serves these industries each day through its riverport operations, as will be illustrated later in this analysis, and it is informative to look at these industries as a percentage of the overall economy.

Figure 5

Daviess County Output by Industry Category											
	2012	% of Total	2013	% of Total	2014	% of Total	2015	% of Total	2016	% of Total	5-Year % Change
Iron and steel mills and ferroalloy manufacturing	\$1,052,002	0.01%	\$2,849,671	0.03%	\$25,466,871	0.25%	\$30,110,319	0.29%	\$29,334,629	0.28%	2688.46%
Sheet metal work manufacturing	\$2,508,629	0.03%	\$3,790,936	0.04%	\$2,736,262	0.03%	\$2,432,183	0.02%	\$4,592,273	0.04%	83.06%
Paper mills	\$203,121,399	2.29%	\$422,240,875	4.32%	\$271,941,071	2.66%	\$318,974,487	3.07%	\$304,738,068	2.86%	50.03%
Motor vehicle metal stamping	\$157,701,111	1.78%	\$164,201,614	1.68%	\$116,572,479	1.14%	\$150,614,807	1.45%	\$231,851,440	2.18%	47.02%
Other plastics product manufacturing	\$37,725,796	0.43%	\$40,705,441	0.42%	\$40,109,104	0.39%	\$57,011,318	0.55%	\$55,316,273	0.52%	46.63%
Metal tank (heavy gauge) manufacturing	\$20,811,588	0.23%	\$17,621,183	0.18%	\$22,662,767	0.22%	\$25,220,594	0.24%	\$23,366,024	0.22%	12.27%
Electroplating, anodizing, and coloring metal	\$11,709,797	0.13%	\$18,610,479	0.19%	\$14,182,579	0.14%	\$15,944,125	0.15%	\$10,987,443	0.10%	-6.17%
Support activities for agriculture and forestry	\$6,576,267	0.07%	\$4,448,572	0.05%	\$5,208,087	0.05%	\$6,580,218	0.06%	\$5,861,642	0.06%	-10.87%
Fabricated structural metal manufacturing	\$13,530,008	0.15%	\$13,115,924	0.13%	\$14,716,234	0.14%	\$13,258,028	0.13%	\$11,198,738	0.11%	-17.23%
Crown and closure manufacturing and metal stamping	\$39,916,340	0.45%	\$51,133,904	0.52%	\$35,056,274	0.34%	\$35,470,783	0.34%	\$32,721,138	0.31%	-18.03%
Grain farming	\$87,728,127	0.99%	\$89,030,907	0.91%	\$61,568,176	0.60%	\$67,705,650	0.65%	\$64,689,621	0.61%	-26.26%
Coal mining	\$62,910,618	0.71%	\$25,746,683	0.26%	\$93,155,647	0.91%	\$84,360,077	0.81%	\$45,647,457	0.43%	-27.44%
Plastics material and resin manufacturing	\$499,375,031	5.63%	\$499,183,838	5.11%	\$530,268,738	5.18%	\$379,598,694	3.65%	\$311,790,192	2.93%	-37.56%
Extraction of natural gas and crude petroleum	\$31,856,533	0.36%	\$11,389,235	0.12%	\$49,927,914	0.49%	\$21,388,493	0.21%	\$19,322,243	0.18%	-39.35%
Soybean and other oilseed processing	\$706,005,371	7.95%	\$730,354,187	7.48%	\$612,461,975	5.98%	\$559,323,608	5.37%	\$426,593,903	4.01%	-39.58%
All other crop farming	\$3,574,753	0.04%	\$4,080,566	0.04%	\$1,828,901	0.02%	\$5,078,330	0.05%	\$1,934,980	0.02%	-45.87%
Steel wire drawing	\$24,916,290	0.28%	\$11,339,696	0.12%	\$18,648,161	0.18%	\$14,207,870	0.14%	\$11,272,431	0.11%	-54.76%
Stone mining and quarrying	\$26,881,966	0.30%	\$26,698,668	0.27%	\$25,949,013	0.25%	\$11,687,721	0.11%	\$11,550,027	0.11%	-57.03%
Metal barrels, drums and pails manufacturing	\$3,076,416	0.03%	\$4,422,976	0.05%	\$4,861,866	0.05%	\$1,103,281	0.01%	\$1,223,063	0.01%	-60.24%
Sub-TOTAL	\$1,940,978,041	21.87%	\$2,140,965,353	21.92%	\$1,947,322,121	19.01%	\$1,800,070,587	17.30%	\$1,603,991,586	15.07%	-17.36%
TOTAL AREA OUTPUT	\$8,876,348,206	100%	\$9,769,364,328	100%	\$10,242,356,505	100%	\$10,406,059,021	100%	\$10,646,574,341	100%	19.94%

Figure 5 shows the estimated amount of output generated within Daviess County in total and for commodity-driven industries. In 2016, out of an estimated \$10.6 billion in economic output within the County, \$1.6 billion (15.1%) was output supported by commodity-driven industries. Top businesses by category within the commodity industries include: soybean and other oilseed processing (\$426.6 million), plastics material and resin manufacturing (\$311.8 million), and paper mills (\$304.7 million).

Figure 6

Green River Area Development District Output by Industry Category											
	2012	% of Total	2013	% of Total	2014	% of Total	2015	% of Total	2016	% of Total	5-Year % Change
Iron and steel mills and ferroalloy manufacturing	\$1,052,002	0.01%	\$2,849,671	0.01%	\$78,934,166	0.33%	\$73,727,158	0.32%	\$70,522,240	0.30%	6603.62%
Metal tank (heavy gauge) manufacturing	\$20,811,588	0.10%	\$17,621,183	0.08%	\$22,662,767	0.10%	\$25,220,594	0.11%	\$26,853,931	0.12%	29.03%
Paper mills	\$546,321,167	2.72%	\$771,154,053	3.54%	\$701,688,110	2.95%	\$785,702,820	3.37%	\$692,501,282	2.98%	26.76%
Other plastics product manufacturing	\$67,573,868	0.34%	\$65,710,953	0.30%	\$75,451,736	0.32%	\$79,533,676	0.34%	\$85,105,644	0.37%	25.94%
Motor vehicle metal stamping	\$284,327,271	1.42%	\$267,879,181	1.23%	\$233,026,611	0.98%	\$284,759,247	1.22%	\$352,592,529	1.52%	24.01%
Extraction of natural gas and crude petroleum	\$59,294,300	0.30%	\$27,624,746	0.13%	\$112,805,054	0.47%	\$53,830,055	0.23%	\$71,943,169	0.31%	21.33%
Sheet metal work manufacturing	\$9,768,999	0.05%	\$5,984,754	0.03%	\$10,194,916	0.04%	\$9,202,726	0.04%	\$11,028,746	0.05%	12.90%
Support activities for agriculture and forestry	\$11,264,171	0.06%	\$10,350,946	0.05%	\$6,376,140	0.03%	\$8,081,256	0.03%	\$11,732,652	0.05%	4.16%
Fabricated structural metal manufacturing	\$23,302,805	0.12%	\$24,258,961	0.11%	\$28,000,063	0.12%	\$22,407,639	0.10%	\$23,075,779	0.10%	-0.97%
Electroplating, anodizing, and coloring metal	\$14,344,484	0.07%	\$23,050,451	0.11%	\$16,717,382	0.07%	\$19,277,016	0.08%	\$13,889,594	0.06%	-3.17%
Crown and closure manufacturing and metal stamping	\$41,056,797	0.20%	\$52,079,090	0.24%	\$36,330,685	0.15%	\$37,327,271	0.16%	\$33,983,925	0.15%	-17.23%
Steel wire drawing	\$50,914,055	0.25%	\$28,019,329	0.13%	\$40,454,407	0.17%	\$29,071,346	0.12%	\$38,894,375	0.17%	-23.61%
Grain farming	\$355,930,145	1.77%	\$361,215,759	1.66%	\$249,637,589	1.05%	\$274,382,874	1.18%	\$261,896,851	1.13%	-26.42%
Plastics material and resin manufacturing	\$680,093,445	3.39%	\$718,766,663	3.30%	\$772,295,105	3.24%	\$608,603,516	2.61%	\$490,758,301	2.11%	-27.84%
Coal mining	\$1,281,656,006	6.38%	\$1,231,654,175	5.65%	\$1,485,453,003	6.24%	\$1,035,157,837	4.44%	\$829,173,889	3.56%	-35.30%
Soybean and other oilseed processing	\$706,005,371	3.52%	\$730,354,187	3.35%	\$612,461,975	2.57%	\$559,323,608	2.40%	\$426,593,903	1.83%	-39.58%
All other crop farming	\$16,278,126	0.08%	\$18,581,415	0.09%	\$8,577,574	0.04%	\$21,965,736	0.09%	\$7,755,792	0.03%	-52.35%
Stone mining and quarrying	\$32,005,932	0.16%	\$29,894,512	0.14%	\$35,237,244	0.15%	\$22,150,242	0.10%	\$13,887,125	0.06%	-56.61%
Metal barrels, drums and pails manufacturing	\$3,076,416	0.02%	\$4,422,976	0.02%	\$4,861,866	0.02%	\$1,103,281	0.00%	\$1,223,063	0.01%	-60.24%
Sub-TOTAL	\$4,205,076,948	20.94%	\$4,391,473,006	20.15%	\$4,531,166,393	19.03%	\$3,950,827,897	16.96%	\$3,463,412,788	14.88%	-17.64%
TOTAL AREA OUTPUT	\$20,079,901,286	100%	\$21,791,290,691	100%	\$23,812,616,954	100%	\$23,297,883,685	100%	\$23,268,463,860	100%	15.88%

Figure 6 shows the estimated amount of output generated within the Green River Area Development District in total and for commodity-driven industries. In 2016, out of an estimated \$23.3 billion in economic output within the district, \$3.5 billion (14.9%) was output supported by commodity-driven industries. Top businesses by category within the commodity industries include: coal mining (\$829.2 million), paper mills (\$692.5 million), and plastics material and resin manufacturing (\$490.8 million).

Figure 7

Daviness County Jobs by Industry Category											
	2012	% of Total	2013	% of Total	2014	% of Total	2015	% of Total	2016	% of Total	5-Year % Change
Iron and steel mills and ferroalloy manufacturing	1	0.00%	3	0.00%	25	0.04%	29	0.05%	34	0.06%	3309.31%
Support activities for agriculture and forestry	143	0.25%	126	0.22%	101	0.18%	106	0.19%	304	0.53%	112.94%
Sheet metal work manufacturing	13	0.02%	18	0.03%	13	0.02%	11	0.02%	23	0.04%	75.03%
Other plastics product manufacturing	137	0.24%	160	0.28%	159	0.28%	213	0.38%	202	0.35%	48.01%
Motor vehicle metal stamping	434	0.76%	467	0.82%	336	0.59%	400	0.71%	634	1.09%	45.91%
Paper mills	319	0.56%	536	0.94%	355	0.62%	376	0.67%	371	0.64%	16.25%
Metal tank (heavy gauge) manufacturing	84	0.15%	70	0.12%	88	0.15%	98	0.17%	97	0.17%	15.53%
Crown and closure manufacturing and metal stamping	196	0.34%	238	0.42%	166	0.29%	165	0.29%	160	0.28%	-18.32%
Extraction of natural gas and crude petroleum	285	0.50%	117	0.20%	288	0.51%	247	0.44%	225	0.39%	-21.23%
Fabricated structural metal manufacturing	48	0.08%	47	0.08%	52	0.09%	43	0.08%	37	0.06%	-23.82%
Grain farming	632	1.11%	537	0.94%	375	0.66%	353	0.63%	465	0.80%	-26.51%
Plastics material and resin manufacturing	357	0.63%	345	0.61%	328	0.57%	233	0.41%	253	0.44%	-29.03%
Electroplating, anodizing, and coloring metal	106	0.19%	125	0.22%	99	0.17%	110	0.19%	74	0.13%	-30.29%
Steel wire drawing	47	0.08%	29	0.05%	48	0.08%	35	0.06%	31	0.05%	-33.33%
Soybean and other oilseed processing	159	0.28%	141	0.25%	115	0.20%	108	0.19%	96	0.17%	-39.36%
Coal mining	150	0.26%	42	0.07%	174	0.30%	154	0.27%	90	0.16%	-39.79%
All other crop farming	106	0.19%	110	0.19%	48	0.08%	126	0.22%	58	0.10%	-44.70%
Stone mining and quarrying	138	0.24%	94	0.16%	127	0.22%	66	0.12%	66	0.11%	-51.96%
Metal barrels, drums and pails manufacturing	16	0.03%	16	0.03%	16	0.03%	3	0.01%	4	0.01%	-74.38%
Sub-TOTAL	3,371	5.92%	3,223	5.65%	2,912	5.10%	2,876	5.10%	3,225	5.57%	-4.32%
TOTAL AREA JOBS	56,991	100%	57,037	100%	57,113	100%	56,365	100%	57,898	100%	1.59%

Figure 7 shows the estimated number of jobs located within Daviness County in total and for commodity-driven industries. In 2016, out of an estimated 57,898 jobs within the County, 3,225 (5.6%) were jobs supported by commodity-driven industries. Top employers by category within the commodity industries include: motor vehicle metal stamping (634), grain farming (465), and paper mills (371).

Figure 8

Green River Area Development District Jobs by Industry Category											
	2012	% of Total	2013	% of Total	2014	% of Total	2015	% of Total	2016	% of Total	5-Year % Change
Iron and steel mills and ferroalloy manufacturing	1	0.00%	3	0.00%	76	0.07%	70	0.06%	82	0.07%	8083.47%
Support activities for agriculture and forestry	226	0.20%	287	0.26%	133	0.12%	141	0.13%	477	0.42%	111.08%
Extraction of natural gas and crude petroleum	499	0.45%	234	0.21%	636	0.57%	544	0.50%	666	0.58%	33.50%
Metal tank (heavy gauge) manufacturing	84	0.08%	70	0.06%	88	0.08%	98	0.09%	108	0.09%	28.43%
Other plastics product manufacturing	259	0.23%	270	0.24%	316	0.28%	316	0.29%	322	0.28%	24.15%
Motor vehicle metal stamping	798	0.72%	772	0.69%	693	0.62%	785	0.72%	981	0.86%	22.86%
Steel wire drawing	97	0.09%	75	0.07%	107	0.10%	73	0.07%	107	0.09%	10.48%
Paper mills	794	0.71%	956	0.86%	874	0.78%	885	0.81%	815	0.71%	2.67%
Sheet metal work manufacturing	54	0.05%	30	0.03%	52	0.05%	44	0.04%	55	0.05%	2.15%
Grain farming	2,385	2.15%	1,949	1.75%	1,444	1.28%	1,424	1.30%	1,954	1.71%	-18.05%
Plastics material and resin manufacturing	488	0.44%	496	0.45%	480	0.43%	375	0.34%	400	0.35%	-18.08%
Fabricated structural metal manufacturing	84	0.08%	88	0.08%	100	0.09%	73	0.07%	69	0.06%	-18.18%
Crown and closure manufacturing and metal stamping	202	0.18%	242	0.22%	172	0.15%	173	0.16%	165	0.14%	-18.18%
Electroplating, anodizing, and coloring metal	131	0.12%	157	0.14%	116	0.10%	132	0.12%	94	0.08%	-28.01%
Coal mining	1,908	1.72%	2,019	1.81%	1,943	1.73%	1,294	1.18%	1,212	1.06%	-36.47%
Soybean and other oilseed processing	159	0.14%	141	0.13%	115	0.10%	108	0.10%	96	0.08%	-39.37%
All other crop farming	597	0.54%	563	0.51%	241	0.21%	673	0.61%	330	0.29%	-44.67%
Stone mining and quarrying	160	0.14%	105	0.09%	160	0.14%	98	0.09%	83	0.07%	-48.30%
Metal barrels, drums and pails manufacturing	16	0.01%	16	0.01%	16	0.01%	3	0.00%	4	0.00%	-74.38%
Sub-TOTAL	8,941	8.05%	8,472	7.61%	7,762	6.90%	7,308	6.66%	8,020	7.00%	-10.30%
TOTAL AREA JOBS	111,081	100%	111,356	100%	112,434	100%	109,725	100%	114,589	100%	3.16%

Figure 8 shows the estimated number of jobs located within the Green River Area Development District in total and for commodity-driven industries. In 2016, out of an estimated 114,589 jobs within the district, 8,020 (7.0%) were jobs supported by commodity-driven industries. Top employers by category within the commodity industries include: grain farming (1,954), coal mining (1,212), and motor vehicle metal stamping (981).

Figure 9

Daviess County Labor Income by Industry Category											
	2012	% of Total	2013	% of Total	2014	% of Total	2015	% of Total	2016	% of Total	5-Year % Change
Iron and steel mills and ferroalloy manufacturing	\$56,230	0.00%	\$217,396	0.01%	\$1,510,152	0.06%	\$1,718,357	0.06%	\$2,420,396	0.09%	4204.45%
Extraction of natural gas and crude petroleum	\$2,173,446	0.09%	\$2,781,948	0.11%	\$3,393,794	0.14%	\$5,054,104	0.19%	\$4,763,393	0.18%	119.16%
Other plastics product manufacturing	\$7,007,504	0.29%	\$8,800,182	0.36%	\$8,266,123	0.33%	\$12,489,551	0.47%	\$12,555,416	0.48%	79.17%
Sheet metal work manufacturing	\$789,269	0.03%	\$1,204,537	0.05%	\$922,401	0.04%	\$758,176	0.03%	\$1,377,958	0.05%	74.59%
Motor vehicle metal stamping	\$25,467,045	1.06%	\$26,594,721	1.10%	\$20,725,739	0.83%	\$31,141,186	1.18%	\$40,360,524	1.54%	58.48%
Paper mills	\$26,294,508	1.09%	\$38,528,581	1.59%	\$27,604,120	1.11%	\$31,348,324	1.18%	\$31,987,417	1.22%	21.65%
Metal tank (heavy gauge) manufacturing	\$5,019,160	0.21%	\$3,577,343	0.15%	\$4,899,748	0.20%	\$5,520,876	0.21%	\$5,415,288	0.21%	7.89%
Grain farming	\$6,213,151	0.26%	\$2,902,959	0.12%	\$5,885,222	0.24%	\$7,512,729	0.28%	\$5,454,623	0.21%	-12.21%
Electroplating, anodizing, and coloring metal	\$5,737,004	0.24%	\$7,929,203	0.33%	\$5,634,065	0.23%	\$6,514,330	0.25%	\$4,661,543	0.18%	-18.75%
Fabricated structural metal manufacturing	\$2,681,724	0.11%	\$2,578,429	0.11%	\$3,026,442	0.12%	\$2,333,232	0.09%	\$2,039,426	0.08%	-23.95%
Soybean and other oilseed processing	\$12,704,271	0.53%	\$16,168,190	0.67%	\$12,014,152	0.48%	\$11,325,980	0.43%	\$9,137,840	0.35%	-28.07%
Plastics material and resin manufacturing	\$28,699,645	1.19%	\$27,209,737	1.12%	\$27,293,498	1.09%	\$19,567,137	0.74%	\$20,171,797	0.77%	-29.71%
Crown and closure manufacturing and metal stamping	\$11,224,592	0.47%	\$14,192,222	0.59%	\$8,649,680	0.35%	\$8,490,247	0.32%	\$7,880,283	0.30%	-29.79%
Support activities for agriculture and forestry	\$2,968,875	0.12%	\$2,689,246	0.11%	\$2,541,839	0.10%	\$2,802,493	0.11%	\$2,032,395	0.08%	-31.54%
Steel wire drawing	\$2,731,227	0.11%	\$1,709,135	0.07%	\$2,579,502	0.10%	\$1,835,704	0.07%	\$1,659,934	0.06%	-39.22%
All other crop farming	\$2,558,356	0.11%	\$1,720,001	0.07%	\$1,059,170	0.04%	\$4,584,406	0.17%	\$1,225,364	0.05%	-52.10%
Coal mining	\$3,827,877	0.16%	\$3,748,409	0.15%	\$2,985,901	0.12%	\$4,382,807	0.17%	\$1,183,442	0.05%	-69.08%
Metal barrels, drums and pails manufacturing	\$757,490	0.03%	\$600,639	0.02%	\$909,059	0.04%	\$175,898	0.01%	\$211,640	0.01%	-72.06%
Stone mining and quarrying	\$7,532,669	0.31%	\$5,688,287	0.23%	\$6,642,208	0.27%	\$2,154,637	0.08%	\$740,857	0.03%	-90.16%
Sub-TOTAL	\$154,444,043	6.43%	\$168,841,164	6.96%	\$146,542,812	5.87%	\$159,710,173	6.03%	\$155,279,534	5.92%	0.54%
TOTAL AREA LABOR INCOME	\$2,402,409,533	100%	\$2,425,360,113	100%	\$2,497,273,058	100%	\$2,648,564,058	100%	\$2,620,906,196	100%	9.09%

Along with employment, Figure 9 shows the estimated amount of labor income generated within Daviess County in total and for commodity-driven industries. In 2016, out of an estimated \$2.6 billion in labor income within the County, \$155.3 million (5.9%) was income supported by commodity-driven industries. Top payrolls by category within the commodity industries include: motor vehicle metal stamping (\$40.4 million), paper mills (\$32.0 million), and plastics material and resin manufacturing (\$20.2 million).

Figure 10

Green River Area Development District Labor Income by Industry Category											
	2012	% of Total	2013	% of Total	2014	% of Total	2015	% of Total	2016	% of Total	5-Year % Change
Iron and steel mills and ferroalloy manufacturing	\$56,230	0.00%	\$217,396	0.00%	\$4,680,660	0.09%	\$4,246,696	0.08%	\$5,966,656	0.11%	10511.14%
Extraction of natural gas and crude petroleum	\$8,905,165	0.18%	\$10,364,703	0.21%	\$12,707,704	0.24%	\$18,642,559	0.35%	\$28,597,136	0.54%	221.13%
Other plastics product manufacturing	\$10,460,957	0.21%	\$12,084,084	0.25%	\$12,750,833	0.24%	\$14,621,904	0.27%	\$17,585,718	0.33%	68.11%
Metal tank (heavy gauge) manufacturing	\$5,019,160	0.10%	\$3,577,343	0.07%	\$4,899,748	0.09%	\$5,520,876	0.10%	\$6,838,777	0.13%	36.25%
Fabricated structural metal manufacturing	\$4,397,130	0.09%	\$4,490,944	0.09%	\$5,464,704	0.10%	\$3,887,592	0.07%	\$5,869,034	0.11%	33.47%
Motor vehicle metal stamping	\$43,822,360	0.89%	\$40,366,707	0.82%	\$37,108,966	0.71%	\$50,111,494	0.94%	\$58,061,032	1.10%	32.49%
Sheet metal work manufacturing	\$2,704,571	0.05%	\$1,726,527	0.04%	\$2,940,929	0.06%	\$2,649,983	0.05%	\$3,243,562	0.06%	19.93%
Steel wire drawing	\$5,379,311	0.11%	\$3,425,077	0.07%	\$5,136,755	0.10%	\$3,406,763	0.06%	\$5,916,256	0.11%	9.98%
Support activities for agriculture and forestry	\$5,373,401	0.11%	\$6,352,200	0.13%	\$3,093,252	0.06%	\$3,406,168	0.06%	\$5,672,851	0.11%	5.57%
Paper mills	\$82,765,672	1.68%	\$87,202,476	1.77%	\$85,266,792	1.64%	\$87,791,782	1.64%	\$79,193,655	1.50%	-4.32%
Electroplating, anodizing, and coloring metal	\$6,966,688	0.14%	\$9,666,370	0.20%	\$6,700,887	0.13%	\$7,927,405	0.15%	\$5,877,922	0.11%	-15.63%
Plastics material and resin manufacturing	\$37,980,258	0.77%	\$40,905,188	0.83%	\$38,787,450	0.75%	\$30,112,489	0.56%	\$31,066,409	0.59%	-18.20%
Crown and closure manufacturing and metal stamping	\$11,556,578	0.23%	\$14,423,771	0.29%	\$9,053,735	0.17%	\$9,077,432	0.17%	\$8,350,694	0.16%	-27.74%
Soybean and other oilseed processing	\$12,704,271	0.26%	\$16,168,190	0.33%	\$12,014,152	0.23%	\$11,325,980	0.21%	\$9,137,840	0.17%	-28.07%
Grain farming	\$35,641,482	0.72%	\$11,860,366	0.24%	\$25,240,204	0.48%	\$26,272,686	0.49%	\$19,840,827	0.38%	-44.33%
Coal mining	\$175,169,137	3.55%	\$182,382,696	3.71%	\$164,945,354	3.17%	\$127,851,047	2.39%	\$89,357,018	1.69%	-48.99%
All other crop farming	\$12,003,912	0.24%	\$6,490,233	0.13%	\$4,392,890	0.08%	\$16,834,698	0.31%	\$4,504,589	0.09%	-62.47%
Metal barrels, drums and pails manufacturing	\$757,490	0.02%	\$600,639	0.01%	\$909,059	0.02%	\$175,898	0.00%	\$211,640	0.00%	-72.06%
Stone mining and quarrying	\$8,984,583	0.18%	\$6,364,215	0.13%	\$9,417,885	0.18%	\$5,152,022	0.10%	\$400,621	0.01%	-95.54%
Sub-TOTAL	\$470,648,356	9.54%	\$458,669,126	9.33%	\$445,511,957	8.56%	\$429,015,475	8.03%	\$385,692,236	7.30%	-18.05%
TOTAL AREA LABOR INCOME	\$4,932,594,490	100%	\$4,917,034,379	100%	\$5,205,682,108	100%	\$5,345,443,961	100%	\$5,284,218,902	100%	7.13%

Figure 10 shows the estimated amount of labor income generated within the Green River Area Development District in total and for commodity-driven industries. In 2016, out of an estimated \$5.3 billion in labor income within the district, \$385.7 million (7.3%) was income supported by commodity-driven industries. Top payrolls by category within the commodity industries include: coal mining (\$89.4 million), paper mills (\$79.2 million), and motor vehicle metal stamping (\$58.1 million).

Industry Support

In order to understand the impact that the Owensboro Riverport might have on these industries, it is helpful to examine the annual commodity flow through the riverport. Fortunately, the Authority tracks this data in terms product tonnage and the method of transportation utilized by businesses in the area to transport certain commodities and products into and out of the region.

Riverport Product Transportation

The Owensboro Riverport is a major handler of various metals, grains, chemicals, paper products, and various other commodities. The manner in which these products enter and exit the Owensboro economy allows us to better understand the role that the Riverport plays in the local and regional economy.

For example, as shown in the following charts, the import of aluminum is vital to the Owensboro regional economy. The Riverport provides large scale aluminum storage and transportation, utilizing the riverport's barge loading and unloading terminal facilities, its indoor and outdoor warehouses, and its central location to key users of aluminum. A large stock pile of aluminum bars made in the US, Russia, Canada, Brazil, and/or South Africa are stored at the riverport and traded as a commodity, with the ultimate buyers representing auto manufacturing and construction companies, many of which are located within the region.

Additionally, the Owensboro Riverport's grain and chemical management facilities oversee the provision of necessary inputs to the farming industry, such as fertilizer, while also providing an efficient market for the outbound finished grain products.

Figure 11, on the following page, show the Riverport's annual historical flow of inbound and outbound product tonnage, by method of transportation, between Fiscal Year-End ("FYE") 2013 and FYE 2018. Import/export data contained in the following figure was provided by the Owensboro Riverport Authority.

Figure 11

Owensboro Riverport Total Product Tonnage by Mode of Transportation														
June 30 Fiscal Year-End ("FYE")														
	FYE 2013	% of Total	FYE 2014	% of Total	FYE 2015	% of Total	FYE 2016	% of Total	FYE 2017	% of Total	FYE 2018	% of Total	6-Year TOTAL	% of Total
Truck														
Agribusiness Products*	115,918	15.27%	264,015	31.18%	235,794	23.37%	221,166	21.14%	221,829	20.70%	235,324	20.33%	1,294,045	21.97%
Paper**	0	0.00%	265	0.03%	2,122	0.21%	66,544	6.36%	64,401	6.01%	54,387	4.70%	187,719	3.19%
Aluminum	35,945	4.74%	30,423	3.59%	17,282	1.71%	14,288	1.37%	35,122	3.28%	11,052	0.95%	144,112	2.45%
Chemicals	0	0.00%	0	0.00%	0	0.00%	429	0.35%	383	0.35%	2,530	0.59%	3,342	0.06%
Misc. Breakbulk	0	0.00%	0	0.00%	1,445	0.14%	3,657	0.35%	39	0.00%	6,814	0.59%	11,954	0.20%
Other Metals	4	0.00%	0	0.00%	7,181	0.71%	0	0.00%	0	0.00%	2,399	0.21%	9,583	0.16%
Breakbulk	0	0.00%	0	0.00%	435	0.04%	557	0.05%	570	0.05%	766	0.07%	2,328	0.04%
Steel	0	0.00%	24	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	24	0.00%
Sub-Total	151,866	20.01%	294,728	34.81%	264,259	26.19%	306,641	29.30%	322,343	30.08%	313,272	27.07%	1,653,108	28.07%
Barge														
Agribusiness Products	115,212	15.18%	83,002	9.80%	242,493	24.03%	213,200	20.37%	239,036	22.31%	308,800	26.68%	1,201,743	20.40%
Chemicals	159,886	21.07%	159,706	18.86%	158,788	15.74%	156,215	14.93%	173,513	16.19%	156,283	13.50%	964,390	16.37%
Aluminum	52,551	6.92%	19,235	2.27%	34,973	3.47%	89,470	8.55%	234,092	21.85%	248,267	21.45%	678,588	11.52%
Steel***	12,547	1.65%	18,948	2.24%	14,154	1.40%	10,942	1.05%	16,898	1.58%	30,870	2.67%	104,359	1.77%
Misc. Breakbulk	0	0.00%	0	0.00%	31,038	3.08%	17,738	1.70%	10,944	1.02%	13,536	1.17%	73,255	1.24%
Other Metals	9,007	1.19%	0	0.00%	4,741	0.47%	8,071	0.77%	0	0.00%	2,817	0.24%	24,637	0.42%
Breakbulk	0	0.00%	220	0.03%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	220	0.00%
Sub-Total	349,203	46.01%	281,111	33.20%	486,186	48.18%	495,635	47.37%	674,483	62.95%	760,573	65.71%	3,047,192	51.73%
Rail														
Agribusiness Products	189,454	24.96%	196,690	23.23%	48,706	4.83%	20,667	1.98%	603	0.06%	11,220	0.97%	467,339	7.93%
Aluminum	66,147	8.72%	69,846	8.25%	204,002	20.22%	171,546	16.39%	18,449	1.72%	14,952	1.29%	544,942	9.25%
Paper****	0	0.00%	0	0.00%	0	0.00%	8,455	0.81%	4,717	0.44%	3,560	0.31%	16,732	0.28%
Chemicals	0	0.00%	0	0.00%	0	0.00%	37,888	3.62%	48,634	4.54%	50,881	4.40%	137,402	2.33%
Fuel	1,375	0.18%	2,778	0.33%	3,360	0.33%	3,744	0.36%	2,134	0.20%	2,861	0.25%	16,253	0.28%
Breakbulk	876	0.12%	1,141	0.13%	2,092	0.21%	1,812	0.17%	0	0.00%	88	0.01%	6,008	0.10%
Steel	0	0.00%	489	0.06%	464	0.05%	0	0.00%	0	0.00%	0	0.00%	953	0.02%
Misc. Breakbulk	0	0.00%	0	0.00%	0	0.00%	0	0.00%	99	0.01%	0	0.00%	99	0.00%
Sub-Total	257,853	33.98%	270,943	32.00%	258,624	25.63%	244,110	23.33%	74,637	6.97%	83,562	7.22%	1,189,728	20.20%
TOTAL*****	758,922	100%	846,782	100%	1,009,069	100%	1,046,387	100%	1,071,463	100%	1,157,407	100%	5,890,029	100%

*Agribusiness Products Outbound Tonnage By Truck (2013 = 115,891, 2014 = 252,505, 2015 = 235,368, 2016 = 221,166, 2017 = 221,829, 2018 = 235,324)

**Paper Outbound Tonnage By Truck (2013 = 0, 2014 = 0, 2015 = 0, 2016 = 66,544, 2017 = 64,401, 2018 = 54,387)

***Steel Outbound Tonnage By Barge (2013 = 8,107, 2014 = 12,822, 2015 = 9,489, 2016 = 4,817, 2017 = 8,094, 2018 = 21,608)

****Paper Outbound Tonnage By Rail (2013 = 0, 2014 = 0, 2015 = 0, 2016 = 8,455, 2017 = 4,717, 2018 = 3,560)

*****6-Year Total Inbound Product Tonnage = 4,340,946; 6-Year Total Outbound Product Tonnage = 1,549,083

Figure 11 estimates that the riverport has imported over 4.3 million tons of various cargo between FYE 2013 and FYE 2018 utilizing multiple modes of transportation. Over the six-year period, 68.70% of all inbound product tonnage were imported by barge, 27.02% were imported by rail, and 4.28% were imported by truck. Riverport products imported by barge with the highest amount of tonnage in FYE 2018 include: agribusiness products (308,800 tons), aluminum (248,267 tons), and chemicals (156,283 tons). Riverport products imported by rail with the highest amount of tonnage in FYE 2018 include: chemicals (50,881 tons), aluminum (14,952 tons), and agribusiness products (11,220 tons). Riverport products imported by truck with the highest amount of tonnage in FYE 2018 include: aluminum (11,052 tons), misc. breakbulk (6,814 tons), and chemicals (2,530 tons).

Figure 11 also estimates that the riverport has exported over 1.5 million tons of cargo between FYE 2013 and FYE 2018. Over the six-year period, 94.73% of all outbound product tonnage were exported by truck, 4.19% were exported by barge, and 1.08% were exported by rail. In FYE 2018, 235,324 tons of agribusiness products and 54,387 tons of paper were exported by truck, while 21,608 tons of steel were exported by barge and 3,560 tons of paper were exported by rail.

Overall, since FYE 2013, the riverport has seen a 52.51% increase in product tonnage. Figure 11 shows that a total of 1.2 million tons of cargo moved over the Authority's riverport facilities in FYE 2018. Products which accounted for the highest amount of tonnage include: agribusiness products (555,343 tons), aluminum (274,271 tons), and chemical products (209,694 tons). Break bulk and misc. bulk items, as well as other fuel, metal, and paper cargo accounted for another 118,099 tons.

V. ECONOMIC IMPACT

An input-output model was used to analyze the commodities and income that normally flow through the various sectors of the economy at the riverport, as well as Owensboro Riverport Authority operations, past construction projects, and employment impact of companies and facilities located at the riverport. Economy-wide impacts can be found by following inter-industry spending from purchaser to producer.

Methodology

Economic impact reflects the “ripple effect” or “multiplying effect” from initial transaction, or “direct spending,” that occurs as a direct result of an event or project being completed. In the case of the riverport, one example of an initial transaction is business expenditures. The “ripples” from these initial transactions include the following:

- **Indirect Impact** – consists of spending that occurs, typically by a business, to generate the initial or direct output. For example, a direct expenditure at the riverport requires the business to purchase goods, services, and other items from suppliers and/or the Authority (product material, storage, handling, etc). The portion of these purchases that are within the County economy is counted as an indirect economic impact.
- **Induced Impact** – represents changes to in-state consumption due to the personal spending by employees whose incomes are affected by the event. For example, a newly-employed warehouse worker at the Authority’s warehousing facility will spend money on clothes, food, gas, etc. The amount of the increased income the warehouse worker spends in the County economy is considered an induced impact.
- **Labor Income** – measures the change in total personal income, county-wide, that results from the initial spending activities occurring within the area.
- **Total Employment** – measures the change in number of jobs, county-wide, that result from the initial spending activities that occur within the area.

Indirect impact, induced impact, labor income, and total employment impacts are estimated using multiplier factors. IMPLAN is a nationally recognized model commonly used to estimate economic impact. CE used Owensboro area IMPLAN data in order to estimate the local economic impact of the Authority.

One-Time Construction Impact

In addition to the operational aspects of the Authority, initial construction project spending can generate a one-time impact to the local community and State. Using capital investment data from 2013 to 2018, the economic impact of the Authority’s construction projects at the riverport was modeled. Figure 12, below, shows the estimated economic impacts created solely from these construction investments and their ripple effects throughout the economy.

Figure 12

Owensboro Riverport Authority Capital Investment (2013-2018) Estimated Construction Impact Summary				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	424	\$13,536,566	\$23,408,265	\$46,098,454
Indirect Effect	65	\$2,922,662	\$5,063,081	\$9,356,086
Induced Effect	101	\$3,830,990	\$6,852,885	\$12,279,287
Total Effect	590	\$20,290,219	\$35,324,231	\$67,733,826

During this period, more than \$46.1 million was invested in construction projects at the riverport. The impacts associated with these initial injections into the local economy are estimated to have contributed \$67.7 million in total economic impact, including total employment for 590 people and \$20.3 million in total wages during construction.

Annual Impact from Operations

It is useful to first understand the historical breakdown of annual Authority revenue from handling and storage services which support the flow of the discussed commodity’s through the riverport. Figure 13 shows the Authority’s historical revenue and wages generated by its terminal and warehousing facilities, as well as revenue gained from business lease payments, capital recovery, and tolling/tank farm operations, as provided by the Authority.

Figure 13

Owensboro Riverport Authority Historical Support Service Revenue							
	June 30 Fiscal Year-End ("FYE")						6-Year % Change
	FYE 2013	FYE 2014	FYE 2015	FYE 2016	FYE 2017	FYE 2018	
Warehouse							
Handling	\$1,212,348	\$1,076,422	\$1,176,818	\$1,035,256	\$903,916	\$915,934	-24.45%
Storage	\$1,231,993	\$1,094,878	\$1,434,654	\$1,669,439	\$1,385,116	\$1,412,581	14.66%
Sub-Total	\$2,444,341	\$2,171,300	\$2,611,472	\$2,704,695	\$2,289,032	\$2,328,515	-4.74%
Terminal							
Handling	\$2,773,229	\$3,068,424	\$3,688,077	\$3,678,151	\$3,256,094	\$4,008,750	44.55%
Storage	\$746,761	\$696,825	\$1,117,378	\$2,099,636	\$1,277,116	\$2,114,563	183.16%
Sub-Total	\$3,519,990	\$3,765,249	\$4,805,455	\$5,777,787	\$4,533,210	\$6,123,313	73.96%
Tolling/ Tank Farm	\$0	\$0	\$1,580,944	\$3,249,818	\$2,357,803	\$2,694,421	2,694,421%
Capital Recovery	\$0	\$0	\$0	\$1,635,090	\$3,270,180	\$3,270,180	3,270,180%
Lease	\$620,079	\$632,701	\$625,336	\$655,562	\$877,316	\$460,368	-25.76%
TOTAL	\$6,584,410	\$6,569,250	\$9,623,207	\$14,022,952	\$13,327,541	\$14,876,797	125.94%
Total Authority Wages/Benefits	\$2,145,828	\$2,212,153	\$2,910,637	\$3,450,676	\$3,987,850	\$5,049,804	135.33%

These revenues allow us to better gauge the more direct impacts that the operations of the Owensboro Riverport have to the regional economy. The revenues, aside from the Capital Recovery line item, are used as inputs to the model shown in the following table. The Capital Recovery line item is excluded because it is simply a financing pass-through and does not directly represent output/economic impact.

Figure 14, on the next page, estimates the total historical annual impact of the Authority from 2013 - 2018 with a 6-year annual average, using the IMPLAN software multipliers as the basis for several impact calculations. Historical revenue and wage estimates were provided by the Authority as discussed in previous sections.

Figure 14

Owensboro Riverport Authority Operations Estimates of Annual Economic Impact									
	Rate / Assumption	June 30 Fiscal Year-End ("FYE")						6-Year Summary	
		FYE 2013	FYE 2014	FYE 2015	FYE 2016	FYE 2017	FYE* 2018	Total	Annual Average
Sources of Impact									
Direct Output	Actuals	\$6,584,410	\$6,569,250	\$9,623,207	\$12,387,860	\$10,057,359	\$11,606,616	\$56,828,702	\$9,471,450
Direct Employment	10.718	71	70	103	133	108	124	609	102
Average Salary		\$30,407	\$31,420	\$28,221	\$25,990	\$36,996	\$40,595		
Direct Labor Income	Actuals	\$2,145,828	\$2,212,153	\$2,910,637	\$3,450,676	\$3,987,850	\$5,049,804	\$19,756,948	\$3,292,825
Economic Impact (Multiplier Effects)									
Direct		\$6,584,410	\$6,569,250	\$9,623,207	\$12,387,860	\$10,057,359	\$11,606,616	\$56,828,702	\$9,471,450
Indirect	0.331	\$2,180,006	\$2,174,987	\$3,186,109	\$4,101,447	\$3,329,851	\$3,842,788	\$18,815,188	\$3,135,865
Induced	0.448	\$977,358	\$975,107	\$1,428,422	\$1,838,794	\$1,492,865	\$669,293	\$7,381,839	\$1,230,307
Total Output		\$9,741,774	\$9,719,344	\$14,237,738	\$18,328,101	\$14,880,075	\$16,118,697	\$83,025,729	\$13,837,621
Total Labor Income	0.740	\$4,872,483	\$4,861,265	\$7,121,202	\$9,167,054	\$7,442,476	\$8,588,930	\$42,053,410	\$7,008,902
Total Employment	16.993	112	112	164	211	171	197	966	161

*Unaudited June 30 Fiscal Year-End 2018

This analysis estimates that the total economic impact of Authority riverport operations in 2018 included \$16.1 million of total output, \$8.6 million of labor income, and support for 197 jobs annually.⁴ When analyzing the last 6-years, it is estimated that the annual impact of Authority riverport operations to the City of Owensboro amounts to, on average, \$13.8 million of total output, \$7.0 million of labor income, and support for 161 jobs annually throughout the region.

⁴ Estimated using IMPLAN multipliers which describe the given changes in the warehousing and storage industry which then induce changes to the overall economy.

VI. CONCLUSION

The Owensboro Riverport Authority provides significant benefits to the City of Owensboro, Daviess County, and the Commonwealth of Kentucky through its support services at the riverport which reinforce the impact of the region's commodity industry.

This analysis estimates that the total economic impact of Authority riverport operations in 2018 included \$16.1 million of total output, \$8.6 million of labor income, and support for 197 jobs annually. When analyzing the last six years, it is estimated that the annual impact of Authority riverport operations to the City of Owensboro is, on average, \$13.8 million of total output, \$7.0 million of labor income, and support for 161 jobs annually throughout the region.

The Authority also invested more than \$46.1 million in construction projects at the riverport between 2013 and 2018. Since 2013, the riverport has seen a 52.51% increase in product tonnage with a total of 1.2 million tons of cargo being moved over the Authority's riverport facilities in 2018. Products which accounted for the highest amount of tonnage include: agribusiness products (555,343 tons), aluminum (274,271 tons), and chemical products (209,694 tons).

Between 2013 and 2018, the riverport facilitated the transport of close to 5.9 million tons of various cargo utilizing multiple modes of transportation. Over the six-year period, 51.73% of all tons were transported by barge, 20.20% were transported by rail, and 28.07% were transported by truck.

In 2016, out of an estimated \$10.7 billion in output, 57,898 jobs, and \$2.6 billion in labor income within Daviess County, \$1.6 billion (15.2%) in output, 3,225 (5.6%) jobs, and \$155.3 million (5.9%) in income was supported by commodity-driven industries. In addition, out of an estimated \$23.3 billion in output, 114,589 jobs, and \$5.3 billion in labor income within the Green River Area Development District, \$3.5 billion (14.9%) in output, 8,020 (7.0%) jobs, and \$385.7 million (7.3%) in income was supported by commodity-driven industries.

In summary, the riverport's location allows it to be conveniently accessed by businesses, including multiple major Owensboro based companies which rely on the riverport, allowing for significant local and regional industry activity.