ECONOMIC IMPACT OF A PORT IN RURAL MIDDLE TENNESSEE



Kelsey Dansby

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TCED Staff Advisor: Dr. David Kolzow

Capstone Project Mentor: R. Chad Davis

Capstone Project Coordinator: Kathy Barber

INTRODUCTION

What kind of impact would a port have in rural middle Tennessee? Is it feasible in all aspects? To investigate this potential, Tennessee Central Economic Authority (TCEA) published a comprehensive Port Feasibility Study in August 2014 that evaluated the viability of a terminal/port facility at the site. The study concluded:

"With a river terminal development at the PowerCom site on the Cumberland River, TCEA has significant potential to complement its legislatively authorized purposes of economic development, improving employment opportunities, and developing the resources of the five-county service area.... this potential is deemed feasible through the subject study and can be achieved by way of a targeted plan for future river terminal development... a strategic planning process is suggested to implement the recommendations."

BACKGROUND

The PowerCom Industrial Center is on the banks of the Cumberland River. The dock structure was initially constructed in the1970s to facilitate the construction of what would have been the world's largest nuclear power plant by the Tennessee Valley Authority (TVA), in 1982. The Four Lake entity (now the TCEA) was created four years later, in 1986, to foster economic development and improve employment opportunities in the region. In 2002, TCEA began purchasing over 550 acres of the site from TVA, and the ownership transfer was finalized in 2007. The feasibility study that was completed in 2014 helped to determine the viability of a river terminal operation/port facility at the PowerCom site to complement other economic development initiatives and service options, both at the site and the surrounding region. Objectives of the feasibility study included assessing the existing site conditions, including

infrastructure, conducting a market evaluation to determine regional market trends and potential target commodities, and developing land use and operations scenarios. In addition, the study created a foundation to support future PowerCom site marketing initiatives. It also completed an important first step toward applying for grant funding to support site development initiatives. TCEA has identified a port terminal as a critical need for the transport of dry bulk materials and general cargo, including agricultural products, logging and wood products, steel supplies for the auto industry, and natural resource materials. The port facility will be in Trousdale County, Tennessee, a historically disadvantaged community.

ECONOMIC OVERVIEW OF THE REGION



The Northern Middle Tennessee region where PowerCom is located has a civilian labor force of 196,594 with a participation rate of 64.8%. Of individuals 25 to 64 in the region, 30.5% have a bachelor's degree or higher which compares with 34.3% in the nation. The employment trends as of 2022Q4 show the total employment for the TCEA region was 148,520 (based on a fourquarter moving average). Over the year ending 2022Q4, employment increased by 2.8% in the region. Middle Tennessee is driving the state's growth and Tennessee is more diverse than a decade ago. As the Volunteer State attracts newcomers, more than half a million people moved to Tennessee over the past decade, bringing the total population to 6.9 million. Tennessee grew at a slower pace in the past 10 years than in previous decades — a trend mirroring the pattern nationwide, according to Marc Perry, senior demographer at the Census Bureau's Population Division.

Target markets have been determined from regular analysis of the labor shed, training programs, wages, growth, and the facility needs of the industry. Data specialists from Younger and Associates, TVA, Tennessee's Center for Economic Research, Middle TN Industrial Development Association (MTIDA), Upper Cumberland Development District, and Greater Nashville Regional Council have provided considerable content for analysis. The opinions of TVA Executives, TN ECD Business Developers, site selectors, and the local utilities during annual familiarization tours also contribute to determining targets. Additionally, the relationships with the companies in the park and community help determine target markets with their input. The automotive industry is a prevalent advanced manufacturing cluster in the TCEA region; with over 200 suppliers within a 100-mile radius. There is an automotive supplier that manufactures airbag inflator technology in the PowerCom Industrial Center. In bordering counties multi-tiered suppliers are manufacturing just about every component of automobiles such as fuel systems, brake lines, drive trains, door regulators, chassis, and engine gaskets. GM, Nissan, and Mitsubishi (HQ) are here in Middle Tennessee and the PowerCom Industrial Center in Hartsville is right between two major facilities. The TCEA region has a wide base of sophisticated manufacturers, including chemicals (Weldon/Christy's), and plastics (Tennplasco, Iris Plastics),

and TCEA has been successful in recruiting companies in the metals industry which serves as an additional target market.

FEASIBILITY ANALYSIS

The PowerCom Industrial Center site is generally in good condition. Terms of the property ownership transfer from TVA required TCEA to invest \$1.5 million in infrastructure improvements over five years, beginning in 2002. To fulfill this obligation, TCEA initiated many improvements to the site including general site clean-up and existing building renovations, paving and other roadway improvements, dual-feed power, and waterline extensions, a 750,000gallon water storage tank, natural gas lines, fiber, security fencing, cameras, and sewer lines. The PowerCom Industrial Center is located at mile 284.1 of the Cumberland River. A full environmental site assessment was completed in 2002, finding no impact. A road improvement was required to serve the port and industrial center and required more than two years from design, environmental studies to completion. The road meets all Tennessee Department of Transportation standards.



Aerial View of the Proposed Location for the Port

The river terminal area dock was constructed and previously used to support the construction of the TVA nuclear power plant. However, the dock has been dormant since plant construction halted in 1982. The dock structure consists of a concrete mat, which appears to be approximately 4 ft thick. The dock is approximately 100 feet long by 100 feet wide. The north and west sides, as well as a majority of the east side of the dock structure are bordered by soil. The west half of the south side of the dock consists of a concrete face on the top of interlocking "Z" shaped steel sheet piles.

Truck access to the PowerCom Site is primarily through State Road (SR) 25, locally referred to as Dixon Springs Highway. SR-25 is a two-lane rural highway generally consisting of lanes that are 12' wide or greater and shoulders that are 4' wide or greater. The closest interstate in proximity to the PowerCom Site is I-40, approximately 18 miles along SR-25 through Carthage to the southeast or 25 miles along SR-141 through Hartsville and Lebanon to the southwest. Among the counties within the Dale Hollow Regional Planning Organization, Trousdale County's road system experienced large traffic increases in the years 2005 to 2015 with SR-10 and SR-141 carrying some of the highest average annual daily traffic (AADT) volumes and a high percentage of truck volumes in the county.

The closest rail lines to the PowerCom Site are in Carthage and Lebanon, Tennessee, which are owned by the RJ Corman Railroad Group (NERR Line). An additional rail line is in Gallatin, Tennessee located approximately 22 miles to the west. This rail line is owned by CSX Transportation. Currently, there are no public transfer stations located on these rail lines. Several roadway investments in the area would improve mobility between the PowerCom Site and I-40 to the southwest. A new bridge crossing over the Cumberland connecting SR-25 and SR-141 would provide a more direct route for trucks to and from the port and allow Port traffic to bypass downtown Hartsville, one of the more congested roadway segments in the county. The estimated cost of the bridge is approximately \$100 million and is programmed in the Statewide Transportation Improvement Program (STIP). In addition, an investment in the southern segment of SR-141 that approaches Lebanon will add capacity to accommodate future traffic volumes. The estimated cost of the road widening is approximately \$25 million, and it is also programmed in the STIP. The following map depicts the location and proximity of other regional ports to the proposed port site at PowerCom.



The Cumberland River consists of a series of locks and dams to control flow and facilitate navigation; therefore, the river stage is typically well-controlled with minimal variation. The PowerCom site is between the Old Hickory Lock and the Cordell Hull Lock, with the Old Hickory Lock being the only lock between the site and Nashville.

River	Mile	Description	Chamber Dimensions (Ft)	
	Marker		Length	Width
Cumberland	313.5	Cordell Hull Lock	400	84
Cumberland	284.1	TCEA Old Hickory		
		Lake		
Cumberland	216.2	Old Hickory Lock	400	84
Cumberland	175-194	City Of Nashville		
Cumberland	148.7	Cheatham Lock	800	110
Cumberland	30.6	Barkley Lock	800	110
Tennessee	22.4	Kentucky Lock	600	110

Summary of Locks within Functional Relationship to the Proposed Port

According to data by the US Army Corps of Engineers, the Old Hickory Lake portion of the Cumberland River maintains a minimum pool elevation of 442 feet above sea level and a normal pool elevation of 444 feet. Cumberland River depths in the vicinity of the PowerCom site range from 36 feet adjacent to the south bank to 26 feet closer to the north bank. Within the slack water river terminal, depths range from about 5 feet to 12 feet. The existing shallower depths in the river terminal harbor are not currently conducive to barge loading/unloading operations; however, this issue has been recognized by TCEA and they are in the process of obtaining a dredging permit. The navigation channel width varies within the river, which ranges from 300 to 500 feet in the vicinity of the PowerCom Site compared to 262 feet wide at the Port of Cates Landing in northwestern Tennessee.

The identification of a potential market for a PowerCom river terminal operation required a study area to be defined. Primary factors considered when defining the study area were approximate drive time to the PowerCom site and proximity to other transportation options. The study area is shown below.



The area consists of 11 Tennessee counties and five Kentucky counties. Kentucky counties further north were excluded due to their excessive drive time to the PowerCom site and proximity to waterborne transportation options on the Ohio River. The major commodities transported by barge through Old Hickory Lock are coal, sand, and petroleum. PowerCom Industrial Center alone contains three fabricators, a wire spring manufacturer, as well as a metal forming company. Sixty miles to the north of PowerCom is a major radial tire steel cordmanufacturing affiliate of Bridgestone. The metals industry employs over 1,500 workers within the five-county TCEA region and is growing. Tennessee has a significant presence in the ceramic tile industry, with several manufacturers located in the state, six of which are located within the project impact area. One of the most significant producers of feldspar has also provided TCEA with a letter of support indicating their intent to pursue barge shipping through the PowerCom site if a port comes to fruition. According to the Tile Council of North America, Tennessee is one of the top five producers of ceramic tile in the United States. Most estimates suggest that the industry contributes several billion dollars to Tennessee's GDP each year. The industry employs thousands of workers directly in manufacturing and indirectly through transportation and logistics around the shipment and export of finished products. In addition to its economic impact, the ceramic tile industry is also important for Tennessee's infrastructure and construction sectors, with many of the state's buildings and homes featuring ceramic tile in various applications. The industry is a major player in the global market, and this industry alone makes a significant argument for the construction of a port facility at the PowerCom site. A summary of USACE data shows Old Hickory Lake's average annual tonnage of all commodities (the three major commodities include coal, sand, and petroleum) transported thru Old Hickory Lock is 4.5 million tons per year.

The assessment of the agricultural products market consisted of field crops, specifically corn, hay, soybeans, tobacco, and wheat, as well as an estimate of fertilizer demand for each crop. Anecdotal information indicates the majority of these crops are grown to the northwest of the PowerCom study area, in relatively small volumes, and are ultimately consumed within close proximity to the area of production.

ECONOMIC IMPACT ANALYSIS

Improving the economic advantage of a port facility can be achieved through a range of strategies. By adopting the following strategies, the port can become a vital economic engine for the region, generating jobs and driving economic growth. The development of the PowerCom Port could have several positive impacts on the economy and community:

1. Land value: The PowerCom Port's development could increase the land value in the surrounding area, particularly for properties near the port or along the river. This could provide an economic boost to landowners and potentially increase property tax revenue for the county.

2. Economic development: The construction and operation of the PowerCom Port would create jobs and stimulate economic development in the region. This could lead to the growth of related industries such as warehousing, logistics, and manufacturing, and boost local businesses that serve the needs of port workers and visitors.

3. Tourism: The Cumberland River is a popular destination for recreational activities such as fishing, boating, kayaking, and paddleboarding. Developing the PowerCom Port could enhance the recreational opportunities available to visitors and attract more tourism to the region. The development of the PowerCom Port will have positive impacts on other areas of the local economy, such as agriculture, by providing a cost-effective means of transporting crops to market. Additionally, the port could provide access to new markets for local businesses by connecting them to other waterways and transportation networks.

Ports also generate jobs indirectly and are more important to logistics. Shipping, cargo, and industrial activities and services in port areas generate direct employment effects. The logistics and industrial clusters in ports employ a vast labor force linked to cargo ship loading and unloading operations, ship operations and services (agencies, pilotage, towage, and bunkering), land transport, logistics activities, cargo services (freight forwarding and customs broking), industrial production facilities and government agencies.

CONCLUSION

In conclusion, with the river terminal development at the PowerCom site, TCEA has significant potential to complement its legislatively authorized purpose of economic development, improving employment opportunities, and developing the resources of the five-county region included in the legislation. This potential appears to be very feasible and can be achieved by a targeted plan for future river terminal area development. What will be the economic impact of a port in rural middle Tennessee? This port development can have significant social and economic benefits for all the local communities. It can also enable the diversification of export products, the attraction of foreign direct investment, and the integration into regional and global value chains. These factors can boost the income, productivity, and innovation of local businesses and industries, creating a multiplier effect on the economy. References:

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