



## CHAPTER 3

# ARE WE PREPARED FOR CHANGES IN THE WATERBORNE ECONOMY?

Given the role that waterborne transportation plays in Kentucky's economy (as documented in **Chapter 1**) and the projected market changes anticipated for Kentucky's public riverports (as documented in **Chapter 2**), **Chapter 3** provides a detailed assessment of the strengths, weaknesses, opportunities, and threats (SWOT) analysis of Kentucky's 11 public riverports. With a potential decline of between 20 and 30 million tons of coal in Kentucky's waterborne economy through 2045, Kentucky's riverports will be challenged by (1) a more competitive market environment and (2) a growing need to cater to a more diverse mix of commodities. **Appendix 2.4** outlines a program of capital improvements to support the outset of this evolution. However, before offering specific policy recommendations in **Chapter 4**, it is helpful to consider the current status of Kentucky's riverports and their competitive position with respect to their economic role and the market changes discussed in the current study. The following analysis highlights specific factors driving the need for port investment and provides vital context for recommendations and implementation steps for acting on the findings of this study.

## 3.1 WHAT ARE THE SYSTEM AND EACH PORT'S STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS?

The SWOT of Kentucky's overall waterborne economy and public riverport network is holistically presented in **Technical Memorandum 3**, which provides context for this more detailed consideration of each riverport's position in 2021. This chapter also defines specific infrastructure needs that can enhance the efficiency and competitiveness of each of the 11 public riverports and that can be implemented through the policy recommendations in **Chapter 4**.

## 3.2 RIVERPORT SYSTEM STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS

The Kentucky Riverport System SWOT analysis identifies factors supporting, hindering, providing greater potential for, and potentially risking the system’s ability to sustain, adapt, and/or grow. **Table 3-1** shows the SWOT summary from **Technical Memorandum 3**, followed by the SWOT for each riverport given the unique operating conditions of each port. Based on the system and individual port SWOTs, key policy recommendations are provided.

Table 3-1: Kentucky Riverport System SWOT Analysis

Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Multimodal System with Strategic Location</li> <li>2. Federal Designations for Freight Routes</li> <li>3. Foreign Trade Zone designations</li> <li>4. New Port Development</li> <li>5. Local Support from Development Advocates</li> </ol>	<ol style="list-style-type: none"> <li>1. State Funding (\$500K is Less Than Many Other States)</li> <li>2. Limited Port Personnel</li> <li>3. Aging Federal Lock and Dam Infrastructure</li> <li>4. Port Space and Budget Limitations</li> <li>5. Need for Rail Infrastructure Improvement</li> <li>6. Public Understanding/Perception</li> <li>7. Lack of Human Resources to Pursue Funding and Other Opportunities on Behalf of All the Riverports</li> </ol>
Opportunities	Threats
<ol style="list-style-type: none"> <li>1. Lock and Dam Maintenance/Improvement</li> <li>2. New Development along Licking River</li> <li>3. Availability of Federal Funding</li> <li>4. Expansion via Kentucky Legislation<sup>1</sup></li> <li>5. Available Land</li> <li>6. New Tenants Interested in Leasing</li> <li>7. Existing and New Markets</li> <li>8. Need for More Berth Space</li> <li>9. Container-on-Barge (COB) Services</li> <li>10. Kentucky Strategic Highway Investment Formula for Tomorrow (SHIFT)</li> </ol>	<ol style="list-style-type: none"> <li>1. Limited U.S. Army Corps of Engineers Lock &amp; Dam Infrastructure Budget</li> <li>2. Riverport Competition Within/Between States</li> <li>3. Reliability of Short Line Rail Service</li> <li>4. Port Equipment Needs</li> <li>5. Rail Competition with Kansas City Southern’s Acquisition</li> <li>6. Seasonal/Nonseasonal River Conditions</li> <li>7. Supply Chain Disruptions</li> </ol>

\*See **Technical Memorandum 3** for a more robust discussion of statewide SWOT analysis.

Synonymous with the first strength identified in **Table 3-1**, Kentucky is in an ideal location in the United States. This location highlights service by major interstates (not including municipal beltways), highway routes, and rail lines. See **Table 3-2** for interstates providing service to and beyond the Commonwealth.<sup>2</sup>

<sup>1</sup> According to law, any governmental unit in Kentucky may establish a riverport authority with the KYTC Secretary’s approval. Riverport authorities provide oversight on riverport development activities as well as conduct normal business.

<sup>2</sup> For a more complete list of interstates, highways, and parkways, see <https://transportation.ky.gov/MultimodalFreight/Documents/Kentucky%20Highway%20Freight%20Network.pdf>.

Table 3-2: Major Interstate Corridors in Kentucky

Designation	Origin	Destination	KY Ports Directly/Indirectly Served*
I-24	Marion, IL	Chattanooga, TN	Eddyville Paducah-McCracken County
I-69	Port Huron, MI	Memphis, TN	Eddyville Henderson County Hickman-Fulton County Louisville-Jefferson County Meade County Northern Kentucky Owensboro Paducah-McCracken County Western Kentucky
I-165	Owensboro, KY	Bowling Green, KY	Owensboro
I-65	Mobile, AL	Chicago, IL	Louisville-Jefferson County Meade County
I-64	St. Louis, MO	Lexington, VA	Greenup-Boyd Louisville-Jefferson County Maysville-Mason County Meade County Owensboro
I-75	Naples, FL	Sault St. Marie, CN	Greenup-Boyd Louisville-Jefferson County Maysville-Mason County Northern Kentucky
I-71	Louisville, KY	Cleveland, OH	Louisville-Jefferson County Northern Kentucky

\* "Indirectly served" includes corridors that are near and that likely handle truck traffic for the relative riverport(s) in lieu of a full TRANSEARCH analysis.

Further, the Commonwealth has four tiers of classification for its highway freight network. These routes provide service from riverports to and between respective inland destinations for goods that the port handles or could handle (Figure 3-1).

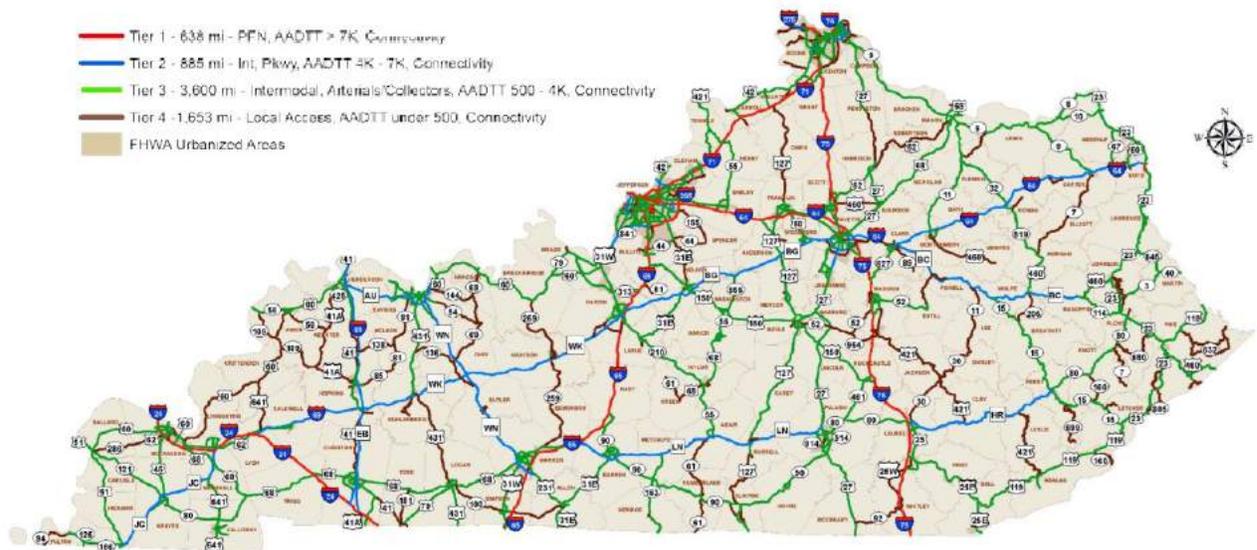


Figure 3-1: Kentucky Highway Freight Network

**Table 3-3** shows the Class I, II, and III railroads and the ports they serve or could serve. Given the extensive network each railroad can have, aside from sharing agreements, the extent of each network beyond Kentucky is less relevant here compared to the ports served.

Table 3-3: Kentucky Railroads

Railroad	Class	Ports Served
CSX	I	Greenup-Boyd Henderson Louisville-Jefferson County Maysville-Mason County Meade Northern Kentucky Owensboro Paducah-McCracken County*
Canadian National	I	Hickman-Fulton County Western Kentucky
Norfolk Southern	I	Louisville-Jefferson County Northern Kentucky Paducah-McCracken County*
Paducah & Louisville	II	Eddyville Industrial Park Louisville-Jefferson County Paducah-McCracken County*
TennKen	III	Hickman-Fulton County

\* Discussed in an interview with the port director on August 16, 2021.

**Table 3-2** and **Table 3-3** show the locations served beyond Kentucky in many cases, highlighting the Commonwealth’s key location as well as its connectivity to the rest of the United States between the Gulf Coast and Great Lakes as well as the Mississippi River and East Coast. There are also nine Class III railroads in the Commonwealth:

1. Fredonia Valley
2. Kentucky West Tennessee
3. Kentucky and Tennessee
4. Louisville and Indiana
5. Paducah and Illinois
6. RJ Corman<sup>3</sup>
7. TennKen
8. Transkentucky Transportation
9. West Tennessee

**Figure 3-2** shows a complete map of the riverports, railroads, interstates, and parkways.

<sup>3</sup> RJ Corman operates 3 separate railroads in Kentucky. RJ Corman/Central Line, RJ Corman/Memphis Line, and RJ Corman/Bardstown Line.

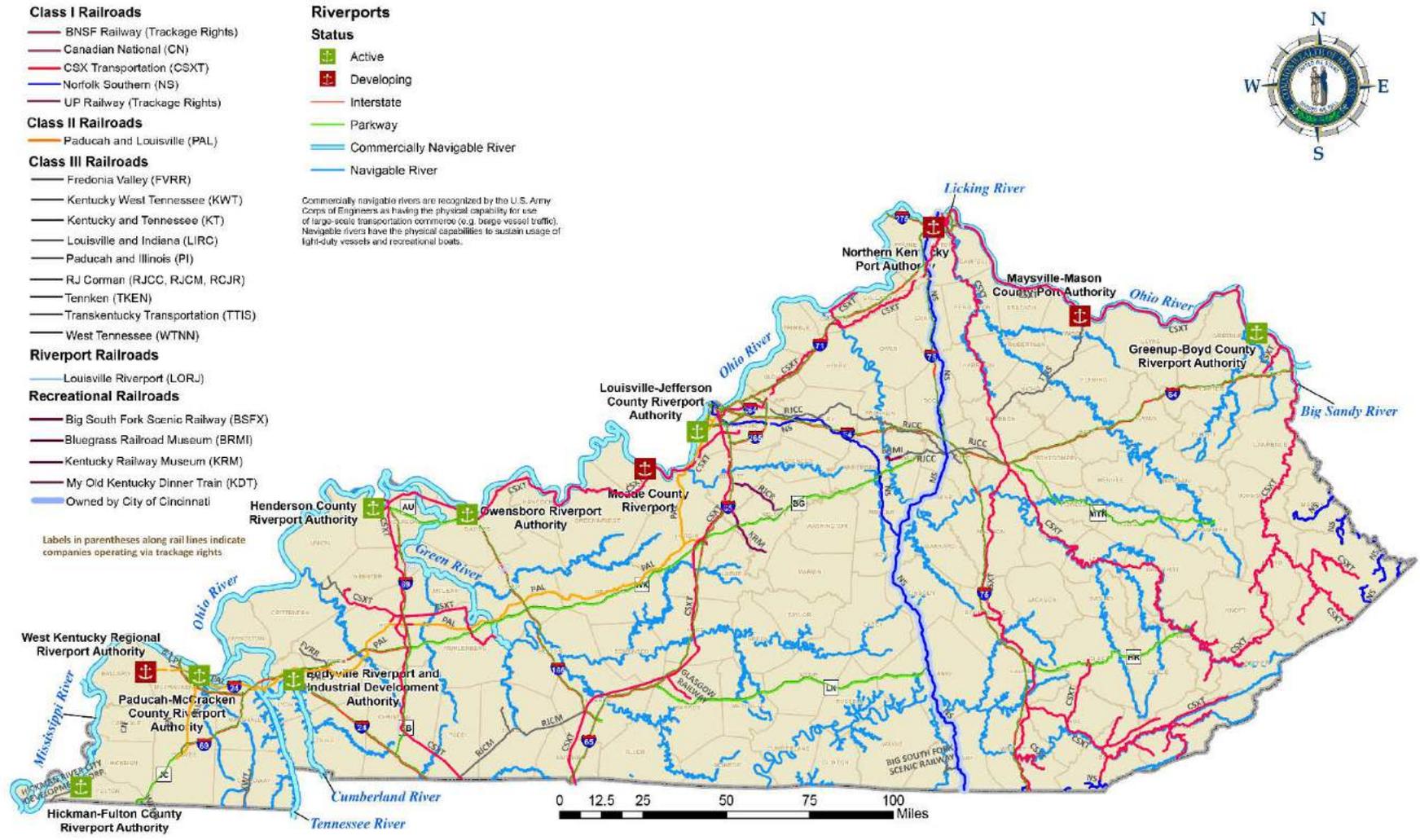


Figure 3-2: Kentucky Intermodal Map

### 3.2.1. Individual Port SWOT Assessments

As they develop, some ports can benefit from improved truck access, for which the Kentucky SHIFT program can be leveraged.<sup>4</sup> Additionally, although some ports have rail access, it can still be improved to provide greater capacity to move more goods through the respective port’s hinterland to markets beyond.

Most ports need additional covered storage, expanding their storage capability and variety of products handled. Further, many ports need additional berthing/mooring space, allowing them to save time by removing the need to shuffle barges during loading/unloading. This improvement would complement some ports’ need to replace riverfront equipment to achieve greater reach and weight capacity, or merely to improve loading/unloading time. The following subsections present the 2021 SWOT analyses for each riverport, which supplement the 2008 SWOT analyses for each riverport.

### 3.2.2. Eddyville Riverport

The Eddyville Riverport Authority’s capital improvement needs through fiscal year 2026 total \$15.480 million, comprised of the breakdown in **Table 3-4**. These needs were identified based on the 2020 Master Plan.

*Table 3-4: Eddyville Riverport Needs*

Type	Cost
Equipment	\$400,000.00
Highway Access	\$5,000,000.00
Land Acquisition & Development	\$2,500,000.00
Rail Access	\$7,500,000.00
Warehousing	\$80,000.00

Forty-eight percent (48%) of the riverport’s needs are rail access. Thirty-two percent (32%) entail improved highway access, while seven percent (7%) are based on an expansion of the port through land acquisition and development. To consider the riverport’s goals, the 2008 SWOT analysis was reviewed. **Figure 3-3** shows truck operations for existing bulk operations. The riverport can benefit from additional laydown area (open storage), truck access, and rail access.

**Table 3-5** shows the 2008 and 2021 SWOT analyses.



*Figure 3-3: Eddyville Riverport Bulk Truck Operations*

<sup>4</sup> “The Strategic Highway Investment Formula for Tomorrow (SHIFT) is KYTC’s data-driven, objective approach to compare capital improvement projects and prioritize limited transportation funds.” See <https://transportation.ky.gov/SHIFT/Pages/default.aspx> for more information.

Table 3-5: Eddyville Riverport SWOT Analysis

	2008 Study SWOT	2021 Updated SWOT
Strengths	<ul style="list-style-type: none"> <li>Port facilities offer nearby access to U.S. highways and interstates.</li> <li>This is the only operating Kentucky public riverport on the Cumberland River/Barkley Lake.</li> <li>Additional acreage is available for development at the port facility; similarly, acreage is available in the area's industrial parks for industries to efficiently use port operations.</li> <li>Area government and community leaders are verbally supportive of the port to attract new and expanded industries.</li> </ul>	<ul style="list-style-type: none"> <li>In 2020, the port developed its first master plan to help guide its future development. Strengths included waterfront and highway access, developable acreage, rail-served sites at its industrial park, and financial stability and access to capital.</li> <li>One of its major tenants handles grain, a growth market for Eddyville.</li> <li>The port is located on Lake Barkley, which provides a more placid water environment so that the port does not have to contend with wide river gauge variations.</li> </ul>
Weaknesses	<ul style="list-style-type: none"> <li>There is no existing crane to efficiently handle general cargo commodities.</li> <li>There is no rail at the port facility.</li> <li>There is no improved hardstand storage area for storage/handling of general cargo commodities.</li> <li>There is no marketing program, including website.</li> </ul>	<ul style="list-style-type: none"> <li>The 2020 Master Plan cited lack of storage, lack of public awareness/visibility (combined with no marketing plan), lack of direct rail access and need to expand it at the nearby industrial park, and lack of key utilities.</li> <li>To handle grain and soybeans, the port needs new investment to protect truck traffic delivering grain to the riverport while supporting other commodity flow activity and industrial development of the riverport.</li> </ul>
Opportunities	<ul style="list-style-type: none"> <li>The Caldwell-Lyon Partnership is active in attracting new industry to the area with the potential to use port facilities and services.</li> <li>Aggressive marketing programs could generate additional commodity handling opportunities to more populated areas south of the port.</li> <li>There could be future marketing emphasis for handling import commodities moving through the deep-water port of Mobile.</li> </ul>	<ul style="list-style-type: none"> <li>The 2020 Master Plan addressed infrastructure and partnerships as potential opportunities for the riverport.</li> <li>ERIDA applied for a grant through the Kentucky CED and Kentucky Association for Economic Development Product Development Initiative for the Eddyville Industrial Park.</li> <li>The former weakness for rail is now an opportunity, given investment by Cargill.</li> <li>Grain and soybeans within Eddyville's hinterland will support its growth prospects.</li> <li>There is available waterfront land near the Cumberland River and within an established agricultural footprint that supports inbound grains and outbound fertilizer movements.</li> </ul>
Threats	<ul style="list-style-type: none"> <li>The primary threat appears to be a lack of funding to allow quick responses to opportunities for handling general cargo commodities for existing or future industries.</li> <li>Consumption of corn by proposed ethanol plants could dramatically reduce the available corn for movement through the port.</li> </ul>	<ul style="list-style-type: none"> <li>The 2020 Master Plan cited limited workforce, population, and industry diversity; industry risks including consumption and trade wars; and economic uncertainty.</li> <li>The consumption of corn by proposed ethanol plants has continued to increase, thereby remaining a means of competition to the port.</li> </ul>

The infrastructure needs survey conducted in early 2021 identified highway access needs, including the following:

- KY 93 improvements are needed from U.S. 62 to the riverport because there are currently narrow lanes and geometric deficiencies.
- KY 730 is not currently on the Kentucky Highway Freight Network and needs to be upgraded to support heavy truck traffic associated with the expansion of the port and a secondary entrance to the facility.
- Turn lanes are needed from KY 93 onto KY 730.

### 3.2.3. Greenup-Boyd County Riverport

Greenup-Boyd County Riverport’s capital improvement needs through fiscal year 2026 total \$1.526 million, as the breakdown in **Table 3-6** shows. These needs were identified based on an interview with port leadership.

*Table 3-6: Greenup-Boyd Riverport Needs*

Type	Cost
Equipment	\$20,000.00
Land Acquisition & Development	\$100,000.00
Rail Access	\$6,000.00
Warehousing	\$800,000.00
Waterfront Infrastructure	\$600,000.00

Fifty-two percent (52%) of the riverport’s needs are additional/new warehousing, thirty-nine percent (39%) entail additional berth/mooring space to facilitate unloading, and seven percent (7%) are based on an expansion of the port through land acquisition and development—specifically, repaving on-site roadways. To consider the riverport’s goals, the 2008 SWOT analysis was reviewed.



*Figure 3-4: Warehouse at Greenup-Boyd County Riverport*

**Table 3-7** compares the 2008 SWOT analysis to the 2021 one.

Table 3-7: Greenup-Boyd SWOT Analyses (2008 & 2021)

	2008 Study SWOT	2021 Updated SWOT
Strengths	<ul style="list-style-type: none"> <li>The port location offers good highway connections, especially east-west.</li> <li>Four counties verbally support further development of port facilities on a regional basis.</li> <li>Rail service appears good in the area, with the port facilities having adequate internal rail tracks.</li> </ul>	<ul style="list-style-type: none"> <li>There is good rail access.</li> <li>The port has a new truck scale.</li> </ul>
Weaknesses	<ul style="list-style-type: none"> <li>The existing dock facility could be inefficient for handling general cargo commodities.</li> <li>Roads from U.S. 23 to the port site are challenging for trucks to travel.</li> <li>Additional acreage in the immediate dock facility is currently not available.</li> <li>Greenup-Boyd has no marketing program, and the operating stevedore appears to have no marketing for port services.</li> </ul>	<ul style="list-style-type: none"> <li>The port needs more covered storage (warehouse space).</li> <li>Despite adequate berth space, the port layout hinders the ability to offer multiple loading and unloading opportunities to/from water.</li> <li>There is a need for additional berth space.</li> </ul>
Opportunities	<ul style="list-style-type: none"> <li>A regional industrial park is located near the port, offering opportunities for the location of industries that could use port services.</li> <li>Existing industries in the general area are potential customers representing marketing opportunities.</li> <li>There is awareness of increasing imports/containers for handling in the tristate area; marketing opportunity</li> </ul>	<ul style="list-style-type: none"> <li>Nearby farmland supports the handling of additional grains, which is an expected growth market.</li> <li>The ability to export aggregate via New Orleans provides significant opportunities.</li> <li>Proximity to a wastewater treatment facility may offer a new market opportunity.</li> <li>There is available space to offer intermodal connectivity to Columbus, Ohio (via CSX Rail)</li> </ul>
Threats	<ul style="list-style-type: none"> <li>One threat is the potential development of adjacent acreage into a private terminal facility.</li> <li>Another threat is the development of terminal facilities in Southern Ohio before further development of Greenup-Boyd facilities.</li> </ul>	<ul style="list-style-type: none"> <li>There is and will be continued competition from nearby Cargill, the Canadian minerals market, and companies like Vesuvius U.S.A.</li> </ul>

The infrastructure needs survey conducted in early 2021 showed that the Greenup-Boyd Riverport’s access includes dedicated truck access. An existing CSX rail right of way constrains highway access. There are only two crossing options viable for trucks. Neither collector route is included in the Kentucky Highway Freight Network. KY 503 provides the most direct link to U.S. 23, but this short segment has nine-foot-wide lanes and transits through a residential community. Further, KY 3105 is a residential route and is signed for “no trucks.”

### 3.2.4. Henderson County Riverport

Henderson County Riverport’s five-year capital improvement needs total \$21.15 million, as the breakdown in **Table 3-8** shows.

*Table 3-8: Henderson County Riverport Needs*

Type	Cost
Equipment	\$3,750,000.00
Land Acquisition & Development	\$600,000.00
Rail Access	\$3,000,000.00
Warehousing	\$1,800,000.00
Waterfront Infrastructure	\$12,000,000.00

Fifty-seven percent (57%) of the riverport’s needs are for waterfront infrastructure that would expand the dock, eighteen percent (18%) are for equipment replacement, and fourteen percent (14%) are for rail access improvements. To consider the riverport’s goals, the 2008 SWOT analysis was reviewed.



*Figure 3-5: Henderson County Riverport Waterfront*

**Table 3-9** compares the 2008 and 2021 SWOT analyses.

Table 3-9: Henderson County Riverport SWOT Analyses (2008 & 2021)

	2008 Study SWOT	2021 Updated SWOT
Strengths	<ul style="list-style-type: none"> <li>• Geographic location is near major highway transportation routes.</li> <li>• The riverport has a reputation for successfully attracting river-related industries, with ample acreage for future industry locations.</li> <li>• The riverport has the heavy lift capacity of the existing crane, with highway and rail for transport of heavy equipment.</li> <li>• Population, industries, and agricultural activities generate inbound and outbound commodities for handling at the port facility.</li> <li>• Area government, regulatory, and community leaders are verbally supportive of the port operations and their importance to the region.</li> </ul>	<ul style="list-style-type: none"> <li>• The 2021 strengths were cited as consistent with the 2008 ones.</li> </ul>
Weaknesses	<ul style="list-style-type: none"> <li>• Current debt load restricts additional borrowing for needed capital expansions.</li> <li>• There is lack of management time to explore potential new markets.</li> <li>• There are no funding sources for needed capital expansions.</li> </ul>	<ul style="list-style-type: none"> <li>• There is a need for more management resources to explore potential new markets.</li> <li>• There is a need for improved utilities for customers.</li> <li>• There is a need to upgrade the covered storage.</li> </ul>
Opportunities	<ul style="list-style-type: none"> <li>• Henderson has 279 acres available for development, offering opportunities for future expansion of facilities and services.</li> <li>• The port is strategically located to become a regional port operation, serving developing industrial parks in the geographical area.</li> <li>• Additional marketing efforts offer the opportunity to expand the customer base at the facility.</li> </ul>	<ul style="list-style-type: none"> <li>• Henderson has 50 acres available for development, offering opportunities for future expansion of facilities and services.</li> <li>• The port is strategically located to become a regional port operation, serving developing industrial parks in the geographic area.</li> <li>• Additional marketing efforts offer the opportunity to expand the customer base at the facility, for example, as a closed-loop service of goods for manufacturing, consolidation, and export.</li> <li>• Grain and soybean markets show growth potential.</li> </ul>
Threats	<ul style="list-style-type: none"> <li>• The aging of equipment, primarily the 125-ton crane, is a threat to future business.</li> <li>• Inbound rail track to the port facilities and tenants is in danger of diminishing, which is a potential threat to the future viability of the rail service.</li> <li>• The abundance of existing general cargo terminals in the geographic region, plus the announced plans for new terminals, could dilute the potential terminal business.</li> </ul>	<ul style="list-style-type: none"> <li>• If current rail lines are not preserved, there is a potential threat to the future viability of the rail service.</li> <li>• The abundance of existing general cargo terminals in the geographic region, plus the announced plans for new terminals, could dilute the potential terminal business.</li> </ul>

The infrastructure needs survey conducted in early 2021 showed that the Henderson County Riverport’s needs include resurfacing of KY 425 to improve truck access. Providing a link from the port to the KY 425 Henderson Bypass, KY 136 has two 11-foot lanes with one-foot paved shoulders that can be too narrow for truck traffic. Further, KY 425 is only two lanes despite the right of way accommodating four lanes. Increased traffic volumes may warrant widening the roadway to a four-lane facility, maintaining the current 12-foot lanes with 10-foot shoulders.

### 3.2.5. Hickman-Fulton County Riverport

The Hickman-Fulton County Riverport five-year capital improvement needs total \$18.1 million, as the breakdown in **Table 3-10** shows.

*Table 3-10: Hickman-Fulton County Riverport Needs*

Type	Cost
Equipment	\$4,500,000.00
Land Acquisition & Development	\$2,100,000.00
Rail Access	\$11,300,000.00
Waterfront Infrastructure	\$200,000.00

Sixty-two percent (62%) of the riverport’s needs are for improving rail access with \$10 million to establish a new rail terminal, twenty-five (25%) are for equipment replacement, and 12 percent (12%) are for land acquisition and development. To consider the riverport’s goals, the 2008 SWOT analysis was reviewed.



*Figure 3-6: Hickman-Fulton County Riverport along the Mississippi*

**Table 3-11** compares the 2008 SWOT analysis to the 2021 one.

Table 3-11: Hickman-Fulton County Riverport SWOT Analyses (2008 & 2021)

	2008 Study SWOT	2021 Updated SWOT
Strengths	<ul style="list-style-type: none"> <li>The port maximizes operations to achieve the tonnage and revenue generated through limited acreage.</li> <li>This is the only operating Kentucky public riverport located on the Mississippi River, thus offering growth opportunities.</li> <li>Additional acreage is available in the immediate area of the port for operational and industrial development opportunities.</li> <li>Area government and community leaders are verbally supportive of the port as a means to attract new and expanded industries.</li> </ul>	<ul style="list-style-type: none"> <li>The riverport continues to maximize operations in achieving additional tonnage and revenue with the capacity to expand.</li> <li>This is the only operating Kentucky public riverport located on the Mississippi River, thus offering growth opportunities.</li> <li>Additional acreage is available in the immediate area of the port for possible development of new land for operational and industrial development opportunities.</li> <li>Area government and community leaders are verbally supportive of the port to attract new and expanded industries.</li> <li>The riverport added a new crane in 2017, replacing the 1974 model crane.</li> </ul>
Weaknesses	<ul style="list-style-type: none"> <li>None of the highways in the immediate vicinity of the port are designated as National Highway System roadways, thus limiting access to the port.</li> <li>There is no bridge across the Mississippi River near the port, thus limiting marketing opportunities to neighboring states to the west.</li> <li>The port lacks additional property to allow for expansion opportunities.</li> <li>The proximity of the two barge positions creates congestion of barges, thus affecting productivity.</li> <li>The declining population and limited industries in the county negatively affect growth opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>Highways in the immediate vicinity of the port are not designated as National Highway System roadways and are limited in the amount of truck traffic they can handle.</li> <li>There is no bridge across the Mississippi River near the port, thus limiting marketing opportunities to neighboring states to the west.</li> <li>The port is limited in expansion opportunities because of the lack of development-ready property available for expansion.</li> <li>The proximity of the two barge positions still creates congestion of barges, thus affecting productivity.</li> <li>Declining population and limited industries in the county negatively affect growth opportunities.</li> <li>Railroad access available by short line rail is not reliable and limited to seven or eight railcars at a time.</li> <li>Aging infrastructure is becoming a big problem for the riverport.</li> </ul>
Opportunities	<ul style="list-style-type: none"> <li>The port staff has generated numerous opportunities for expansion of services. These include the publicized proposed Hickman Energy Island to attract a renewable energy system operation.</li> <li>Other proposed projects not publicized to date are dependent on the port's ability to expand services.</li> <li>County-wide industrial development efforts are active to attract new industry with the potential to use port facilities.</li> </ul>	<ul style="list-style-type: none"> <li>The riverport continues to competitively serve agriculture and local industry.</li> <li>The port is working to replace and upgrade its aging infrastructure.</li> <li>The Fulton County Economic Development Partnership is working to take advantage of the county's transportation resources. In Fulton, the county has Class I rail and I-69 Interstate access. In Hickman, Fulton County has the riverport.</li> <li>The Fulton County Fiscal Court has been exploring ways of improving rail to the riverport and, at the same time, developing better roads into the riverport. One of the projects being explored is the development of a bulk terminal in Fulton to load bulk materials from the river into railcars directly on the Class I rail. This would require trucking to the Class I rail, but it would be an alternative to the 40-mile short line railroad connection currently available to the riverport.</li> </ul>
Threats	<ul style="list-style-type: none"> <li>The primary threat for the future viability of Hickman-Fulton is the proposed new port facility of Cates Landing in Tennessee, only 18 river miles south of Hickman. This proposed port has already received \$5.5 million in federal and local funding to commence dredging of the waterway and construction of a harbor. The State of Tennessee, in collaboration with the federal government, is planning the construction of roadways for better access to this new port site.</li> </ul>	<ul style="list-style-type: none"> <li>The biggest threats to the riverport are the aging docks and conveyors and the need to expand the loading and unloading areas for handling barges. The maintenance of the harbor is always a threat if dredging does not occur. The United States Army Corps of Engineers has been able to get funding to maintain the harbor. If this changes and the harbor does not get dredged, then commerce in the harbor and riverport will come to a halt.</li> </ul>

The access needs that were identified through the infrastructure survey conducted in early 2021 are as follows:

- KY 125/KY 166 corridor has narrow lane widths and geometric deficiencies.
- The KY 1099/KY 1354 loop has issues with lane widths and intersection geometries that create difficulties for truck traffic.
- A rail/highway upgrade project is needed that would link Hickman to I-69 via KY 125 and TN 5 to Union City. This would provide a shorter route to the interstate via KY 125/KY 166 to Fulton.

### 3.2.6. Louisville Riverport

Over the next five years, the Louisville Riverport capital improvement needs total \$24 million, as the breakdown in **Table 3-12** shows.

*Table 3-12: Louisville Riverport Needs*

Type	Cost
Equipment	\$2,000,000.00
Rail Access	\$1,000,000.00
Warehousing	\$12,000,000.00
Waterfront Infrastructure	\$9,000,000.00

Fifty percent (50%) of the riverport’s needs are for warehousing (**Figure 3-7** shows the currently available open storage), thirty-eight (38%) are for waterfront infrastructure, and eight percent (8%) are for equipment. To consider the riverport’s goals, the 2008 SWOT analysis was reviewed. **Table 3-13** compares the 2008 SWOT analysis to the 2021 one.



*Figure 3-7: Louisville Riverport Open Storage*

Table 3-13: Louisville Riverport SWOT Analyses (2008 & 2021)

	2008 Study SWOT	2021 Updated SWOT
Strengths	<ul style="list-style-type: none"> <li>• Geographic location with excellent transportation connections via highways, rail, river, and air.</li> <li>• Variety of industries within the industrial park.</li> <li>• Louisville-Jefferson County is financially sound, which is important for operations, capital expansion, and development.</li> <li>• The Metro government and economic development organizations are verbally supportive of the port.</li> <li>• The population base of the area offers an educated workforce, promoting further expansion of industry.</li> <li>• The facility has additional acreage to expand general cargo operations and industrial park facilities.</li> </ul>	<ul style="list-style-type: none"> <li>• Most, if not all, the regional rail services move through Louisville. The riverport has three rail delivery locations through the port property.</li> </ul>
Weaknesses	<ul style="list-style-type: none"> <li>• The general cargo facility located on the river side of the floodwall/levee is subject to closure during high pool stages of the Ohio River.</li> <li>• The existing bridge crane offers challenges for handling some general cargo commodities.</li> </ul>	<ul style="list-style-type: none"> <li>• The 2021 weaknesses were cited as consistent with the 2008 ones.</li> </ul>
Opportunities	<ul style="list-style-type: none"> <li>• Construction of a second dock, with a crawler-type crane, could create opportunities to handle more general cargo that is currently being handled at a nearby Indiana State Port.</li> <li>• The geographic location is a major distribution area for the Midwest. It has the potential for becoming a major COB handling facility in the future.</li> <li>• There is potential for marketing efforts to be increased with the assistance of Kentucky transportation and economic development organizations. There is also potential for additional acreage to be obtained for the continued expansion of the industrial park.</li> </ul>	<ul style="list-style-type: none"> <li>• The Louisville Riverport Authority has undertaken an engineering study to determine design features and related permitting required to completely rebuild the Marine Terminal with the expectation that substantial parts of the operation will be above the 100-year flood mark. Any expansion would also include the addition of a heavier lift and more flexible cranes to accommodate the high-velocity, high-volume movement of diverse commodities. It is also desired but yet to be determined as feasible that any new dock construction include direct rail access to the terminal area and crane system. The addition of strategic warehouse facilities at the port facility would potentially increase multimodal volumes of freight.</li> </ul>
Threats	<ul style="list-style-type: none"> <li>• Continued capital expansion of the Indiana State Port, with no expansion of river facilities at the Louisville port, remains a threat to general cargo handling success.</li> <li>• Developing the available acreage without purchasing additional acreage will inhibit further expansion of the industrial park.</li> </ul>	<ul style="list-style-type: none"> <li>• Louisville port expansion has commenced since 2008.</li> <li>• The other 2021 threats were cited as consistent with the 2008 ones.</li> </ul>

The infrastructure needs survey conducted in early 2021 identified a few infrastructure needs in order to improve port access: traffic signals at all the roads to Louisville Riverport from the Green Belt Highway (KY 1934) and substandard bridge clearance at the I-264/U.S. 31 W interchange.

### 3.2.7. Maysville-Mason County Riverport

The Maysville-Mason County Riverport (**Figure 3-8**) five-year capital improvement needs total \$5 million, comprised solely of land acquisition and development and covering an estimated 1,350 acres in two locations. To consider the riverport’s goals, the 2008 SWOT analysis was reviewed.



Figure 3-8: Example of Potential Riverport Waterfront Site

Table 3-14 compares the 2008 and 2021 SWOT analyses.

Table 3-14: Maysville-Mason County Riverport SWOT Analyses (2008 & 2021)

	2008 Study SWOT	2021 Updated SWOT
Strengths	<ul style="list-style-type: none"> <li>Multiple sites are reportedly available for development.</li> <li>Area government and community leaders, plus the Maysville-Mason board of directors, are verbally supportive of the development of a public riverport.</li> <li>There are no operating general cargo terminals in the immediate area, offering opportunities for development of river facilities to support new industries.</li> <li>Rail and barge service appears excellent in the geographic area.</li> <li>A modern bridge connects Kentucky to Ohio, offering an opportunity for highway modernization in both states.</li> </ul>	<ul style="list-style-type: none"> <li>Local area government and community leaders continue to support the development of a public riverport in Maysville and Mason County.</li> <li>Maysville and Mason County are advantageously positioned between Charleston WV, Cincinnati/Northern Kentucky, Lexington, Columbus, and other urban areas as well as within a day's drive of over three-fourths of the total U.S. population.</li> <li>Rail and barge service is excellent, with CSX Class I rail running along the river and prospects for new leadership with the Trans-Kentucky rail line growing. This can provide a north/south option into southern Kentucky and Tennessee.</li> <li>The Meldahl Pool of the Ohio River is optimal for river transport and an overall public riverport with deep waters and a slower current. Working in concert with the Meldahl Pool qualities, identified developable sites in Mason County, for the most part, sit up and are elevated out of the floodplain.</li> <li>Maysville and Mason County have two bridges offering some of the only options spanning the Ohio River and accessing Southern Ohio.</li> </ul>
Weaknesses	<ul style="list-style-type: none"> <li>Interstate highway connections are 50–60 miles from proposed port sites.</li> <li>There are no known industries currently in the general area that are would-be clients for a port facility.</li> </ul>	<ul style="list-style-type: none"> <li>Interstate highway access is 40–60 minutes from the proposed site, represented in I-275 in Northern Kentucky and I-64 at Morehead.</li> <li>Additional investments in road infrastructure will be needed for access to KY 8; however, all engineering and geotechnical site work has been completed.</li> </ul>
Opportunities	<ul style="list-style-type: none"> <li>New industries can be attracted to justify the development of a public riverport.</li> <li>Maysville-Mason warehousing facilities can be built to support existing and future industries.</li> <li>Marketing services by area organizations and the Commonwealth of Kentucky can be expanded.</li> </ul>	<ul style="list-style-type: none"> <li>With growing development interest in the Mason County and Northeastern Kentucky Region, opportunities exist to attract additional investment in the area. These opportunities will grow exponentially with the addition of infrastructure and the overall development of a public port in Mason County.</li> <li>Mason County has a growing number of warehousing and logistics opportunities that would be complementary to an active public port.</li> <li>Given Mason County's optimal geographic location equidistant to several urban markets, investments in a public port can offer new economic opportunities.</li> </ul>
Threats	<ul style="list-style-type: none"> <li>There are no current operations to be threatened.</li> </ul>	<ul style="list-style-type: none"> <li>With no public port or infrastructure, no current operations would be threatened.</li> </ul>

The infrastructure needs survey conducted in early 2021 noted that geotechnical issues are common, particularly along KY 8, given its proximity to the Ohio River.

### 3.2.8. Meade County Riverport

In the future, the Meade County Riverport capital improvement needs will total \$12 million, comprised solely of equipment. To consider the riverport’s goals, the 2008 SWOT analysis did not address Meade County’s riverport. **Table 3-15** compares the 2008 SWOT analysis to the 2021 one.

Table 3-15: Meade County Riverport SWOT Analyses (2008 & 2021)

	2008 Study SWOT	2021 Updated SWOT
Strengths	Not available	<ul style="list-style-type: none"> <li>U.S. 60 to the south of Brandenburg is two lanes to Owensboro, giving the port proximity to a stream of truck traffic via KY-79.</li> <li>There is consistent local demand by about 60 regional farmers.</li> </ul>
Weaknesses	Not available	<ul style="list-style-type: none"> <li>There is a need for a new grain elevator and a loading facility for local farmers.</li> <li>The configuration of the mooring dolphins only allows two barges to be unloaded at any given time.</li> <li>Riverport Authority does not own a riverport site.</li> </ul>
Opportunities	Not available	<ul style="list-style-type: none"> <li>There are new tenant opportunities</li> <li>A new grain elevator for hinterland farmers means a demand for riverport services.</li> <li>Barge service to the Port of New Orleans for bulk or general cargo means a good connection to international import and export liner services.</li> <li>The acquisition of new waterfront land and implementation of new infrastructure including equipment would mean better leveraging resources for the growing grain market.</li> </ul>
Threats	Not available	<ul style="list-style-type: none"> <li>No threats were cited for the Meade County Riverport.</li> </ul>

The infrastructure needs survey conducted in early 2021 showed that the Meade County Riverport can benefit from enhanced access routes and designated truck routes, especially in light of the Nucor plant’s development.

### 3.2.9. Northern Kentucky Port

The Northern Kentucky Port Authority coordinates with CORBA to serve 226.5 miles of the Ohio River and seven miles of the Licking River without any dedicated port infrastructure. **Table 3-16** contains a SWOT analysis for this prospective and developing riverport.

Table 3-16: Northern Kentucky Port SWOT Analyses (2008 & 2021)

	2008 Study SWOT	2021 Updated SWOT
Strengths	Not available	<ul style="list-style-type: none"> <li>Northern Kentucky has exceptional planning and economic development support, including the following:</li> <li>The Ohio-Kentucky-Indiana Regional Council of Governments serves as NKY’s leading public agency in freight transportation planning. <a href="https://www.oki.org/transportation-planning/">https://www.oki.org/transportation-planning/</a></li> <li>CORBA serves as NKY’s leading private organization for inland waterway freight commerce. <a href="https://centralohioriverbusinessassociation.com/">https://centralohioriverbusinessassociation.com/</a></li> <li>Designation of the expanded port with the Port of Cincinnati allows the Northern Kentucky Port to leverage the above-mentioned planning capabilities to support funding and client development.</li> </ul>
Weaknesses	Not available	<ul style="list-style-type: none"> <li>There can be a general lack of interest and understanding of the inland waterway freight network among the public and decision-makers.</li> <li>Congested roadways due to high volume and density of logistics businesses hinders hinterland and market access beyond.</li> </ul>
Opportunities	Not available	<ul style="list-style-type: none"> <li>Given NKY’s heavy dependence on truck traffic, container-on-barge pilot projects may provide opportunities for increasing safety and mobility.</li> <li>Given KY and Ohio’s high number of aerospace and automobile-related industries, opportunities may be available for transport of oversized/heavy components on the Ohio River for short-haul to other Ohio River marine terminals.</li> <li>There is land along the Licking River with industrial opportunities that could support river traffic and economic activity in Northern Kentucky.</li> </ul>
Threats	Not available	<ul style="list-style-type: none"> <li>No threats were cited for the NKY.</li> </ul>

Further study of specific clients and port design specifications is needed before particular infrastructure needs can be defined for this port.

### 3.2.10. Owensboro Riverport

Over the next five years, the Owensboro Riverport capital improvement needs total nearly \$25 million, as the breakdown in **Table 3-17** shows.

*Table 3-17: Owensboro Riverport Needs*

Type	Cost
Equipment	\$7,581,660.00
Highway Access	\$1,497,500.00
Land Acquisition & Development	\$4,160,000.00
Other (Planning, Engineering, Economic Studies, etc.)	\$500,000.00
Rail Access	\$355,000.00
Security & Technology	\$30,000.00
Warehousing	\$6,124,000.00
Waterfront Infrastructure	\$4,737,395.00

Thirty percent (30%) of the riverport’s needs are for equipment replacement, twenty-five percent (25%) are for warehousing, and nineteen percent (19%) are for waterfront infrastructure and seventeen percent (17%) for land acquisition and development. The 2008 SWOT analysis was reviewed.

**Table 3-18** compares the 2008 SWOT analysis to the 2021 one.

Table 3-18: Owensboro Riverport SWOT Analyses (2008 & 2021)

	2008 Study SWOT	2021 Updated SWOT
Strengths	<ul style="list-style-type: none"> <li>• There is an abundance of area industries to consume/produce commodities for handling at port.</li> <li>• Premier facilities and equipment for commodity handling and storage are available.</li> <li>• Expertise of personnel in terminal and warehousing operations is available.</li> <li>• There is diversification of commodities handled.</li> <li>• Successful marketing programs exist.</li> </ul>	<ul style="list-style-type: none"> <li>• CSX serves the riverport from East Owensboro Rail Yard five days/week.</li> <li>• Expertise of personnel in terminal and warehousing operations is available.</li> <li>• Successful marketing programs exist.</li> </ul>
Weaknesses	<ul style="list-style-type: none"> <li>• There is no interstate highway in the greater Owensboro area.</li> <li>• Dock facilities restrict operations during periods of high water.</li> <li>• Dock facilities do not allow heavy lift capability.</li> </ul>	<ul style="list-style-type: none"> <li>• Based on new COB services, there could be a need for a container stacker (assuming CSX provides the ability to load/unload railcars.)</li> <li>• There is a need for an additional 300 acres, including a lighted railcar load area.</li> </ul>
Opportunities	<ul style="list-style-type: none"> <li>• Port facilities can be further promoted as regional port facilities to support regional industries parks and industrial sites in surrounding counties.</li> <li>• New facilities can be constructed to provide equipment and infrastructure for heavy lift capacity.</li> <li>• There is potential for container-on-barge movements and the development of a container handling facility in Owensboro.</li> <li>• The Coleman Terminal can be developed for industries or future terminal and warehousing operations.</li> </ul>	<ul style="list-style-type: none"> <li>• The potential exists for creating bulk storage capacity with river unloading capability.</li> <li>• Plastic products are forecasted to see substantial growth.</li> </ul>
Threats	<ul style="list-style-type: none"> <li>• Changes in the international economic trade of specific commodities currently handled at the port could present a threat.</li> <li>• Further dilution of the general cargo handling in the area can occur if additional facilities are constructed.</li> <li>• The aging of major equipment is a threat unless replaced prior to lengthy downtime.</li> </ul>	<ul style="list-style-type: none"> <li>• The port faces rising competition from other states’ public port authorities as well as private terminals in Kentucky and other states.</li> <li>• Seasonal and nonseasonal flood stages can occur.</li> </ul>

The infrastructure needs survey conducted in early 2021 identified improved interstate connectivity across the river as an access need for the Owensboro Riverport. An improvement to I-69 serving Evansville is anticipated to address this need. Although KY 331 historically limited mobility, it is currently being reconstructed with federal grant funding.

### 3.2.11. Paducah-McCracken County Riverport

Paducah-McCracken County Riverport capital improvement needs total \$81.64 million, as the breakdown in **Table 3-19** shows.

*Table 3-19 Paducah-McCracken County Riverport Needs*

Type	Cost
Equipment	\$19,597,000.00
Land Acquisition & Development	\$50,700,000.00
Other (Planning, Engineering, Economic Studies, etc.)	\$25,000.00
Warehousing	\$521,000.00
Waterfront Infrastructure	\$400,000.00

Seventy-one percent (71%) of the riverport’s needs are for land acquisition and development, twenty-seven percent (27%) are for equipment, and the remaining two percent (2%) are split between warehousing and waterfront infrastructure. To consider the riverport’s goals, the 2008 SWOT analysis was reviewed. **Table 3-20** compares the SWOT analyses.



*Figure 3-10: Paducah-McCracken County Riverport Waterfront*

Table 3-20: Paducah-McCracken County Riverport SWOT Analyses (2008 & 2021)

	2008 Study SWOT	2021 Updated SWOT
Strengths	<ul style="list-style-type: none"> <li>• Geographic location near the confluence of the Tennessee River and Ohio River.</li> <li>• The City of Paducah has become a major hub for barge line repair and operations facilities.</li> <li>• Through proper management of facilities and personnel, the port maximizes operations to handle tonnage and generate revenue through limited acreage at the port.</li> <li>• The port is located very near two U.S. highways and one major interstate.</li> <li>• Population, industries, and agricultural activities generate inbound and outbound commodities for handling at the port.</li> <li>• There is enhanced security at the facilities following the installation of fences, lighting, and cameras, meeting the requirements of the Transportation Security Administration (TSA) and the Coast Guard.</li> <li>• Area government, regulatory, and community leaders are verbally supportive of the port operations and their importance to the region.</li> <li>• The port is strong financially, which is important for operations, capital expansion, and borrowing leverage.</li> </ul>	<ul style="list-style-type: none"> <li>• The riverport is strategically located at the heart of the inland waterway system near the confluence of four major rivers (Mississippi, Ohio, Tennessee, and Cumberland).</li> <li>• Interstate 24 and major state roadways provide an excellent truck distribution network as the port services over 30 counties in Kentucky, Tennessee, Illinois, and Missouri.</li> <li>• Two berthing facilities offer cost-effective, reliable transshipment cargo solutions across multiple cargo and commodity sectors for regional supply chain requirements within the industrial, manufacturing, construction, and agricultural business sectors.</li> <li>• General cargo facility can accomplish up to 50-ton cargo lifts to an 80,000-square-foot hardened concrete yard with two adjacent warehouses. Further, the bulk facility uses a Sennebogen material handler with commodities conveyed overhead to a 20-acre storage facility with both dry and open storage solutions for multiple bulk commodities.</li> <li>• Port has secured Marine Highway Designation status via the Maritime Administration and is Grantee for Foreign Trade Zone (FTZ) #294 enhanced procedures, security features, lighting, and fencing at facilities to meet the requirements of the U.S. Coast Guard, Transportation Security Administration (TSA), and U.S. Customs.</li> </ul>
Weaknesses	<ul style="list-style-type: none"> <li>• The lack of available property at the port site could limit the ability to attract future tenants or expand services requiring substantial acreage.</li> <li>• The city street dissecting port properties creates a challenge to operations and is a potential safety hazard.</li> <li>• Rail track within the port needs major rehabilitation; it can hinder the ability to attract additional rail business.</li> </ul>	<ul style="list-style-type: none"> <li>• The port property consists of forty-eight acres, with only ten acres available for potential expansion or new tenants.</li> <li>• Current rail infrastructure is not operative and would require major rehabilitation.</li> <li>• A prior expansion site identified in the 2008 SWOT has since been sold, leaving the port without property to expand.</li> </ul>
Opportunities	<ul style="list-style-type: none"> <li>• Paducah-McCracken County obtained the 242 acres known as Riverport West, creating opportunities for future expansion of facilities and services.</li> <li>• A recently completed strategic market assessment addresses the potential for the port to be a major container-on-barge handling facility. The port is strategically located to qualify as a regional port operation, serving industry throughout the region.</li> </ul>	<ul style="list-style-type: none"> <li>• Current and planned bulk commodity facility infrastructure improvements and expansion will allow for continued cost-effective and reliable supply chain bulk commodity solutions, leading to continued annual growth. Current competition in this sector is limited within a 90-mile service area, with entry into the marketplace requiring \$10 million or more initial investment.</li> <li>• General cargo facility utilization capacity is currently less than five percent (5%) and therefore provides excellent upside potential in association with Marine Highway Designation and FTZ to secure new opportunities relating to container-on-barge cargo, metal products, general cargo, and project cargo.</li> </ul>
Threats	<ul style="list-style-type: none"> <li>• The developing public riverport in Marshall County, only 10 river miles from Paducah-McCracken County, could be a threat for future business if fully developed.</li> <li>• The developing public riverport of Cates Landing in Northwest Tennessee could be a future threat if fully developed.</li> </ul>	<ul style="list-style-type: none"> <li>• The port currently has four Kentucky Riverports within its 90-mile service radius. Proposed additional KY Ports within this area will further introduce direct competition while also creating additional competition for the limited KRI Grant Funding.</li> <li>• KRI funding was cited as “very limited,” so major funding must come via federal or other grant sources.</li> <li>• Surrounding states within a 90-mile delivery radius have increased their state port grant funding programs substantially. This could potentially introduce new or increased competition, thus reducing revenue/market share.</li> </ul>

The infrastructure survey conducted in early 2021 showed that the Paducah-McCracken County Riverport’s needs include improving truck access to the port.

### 3.2.12. Western Kentucky Regional Riverport

The Western Kentucky Regional Riverport’s needs total nearly \$18.238 million, as the breakdown in **Table 3-21** shows.

*Table 3-21: Western Kentucky Regional Riverport Needs*

Type	Cost
Equipment	\$4,600,000.00
Highway Access	\$162,000.00
Land Acquisition & Development	\$985,000.00
Other (Planning, Engineering, Economic Studies, etc.)	\$400,000.00
Rail Access	\$750,000.00
Security & Technology	\$630,000.00
Warehousing	\$9,300,000.00
Waterfront Infrastructure	\$1,411,000.00

Fifty-one percent (51%) of the riverport’s needs are for warehousing for the new/developing port, twenty-five percent (25%) are for equipment, and eight percent (8%) are for waterfront infrastructure at the site (depicted in **Figure 3-11**). To consider the riverport’s goals, the 2021 SWOT analysis was considered. **Table 3-22** contains a side-by-side comparison of the 2008 and 2021 SWOT findings.



*Figure 3-11: Western Kentucky Riverport Region – Developing Riverport Site*

Table 3-22: Western Kentucky Regional Riverport SWOT Analyses (2008 & 2021)

	2008 Study SWOT	2021 Updated SWOT
Strengths	<ul style="list-style-type: none"> <li>The proposed site has good highway access via U.S. highways and access to three interstates. It is near two bridges, one crossing the Mississippi River and one crossing the Ohio River.</li> <li>The county has an 80-acre industrial site with a spec building located approximately five miles from the proposed port site.</li> <li>Area government and community leaders are verbally supportive of developing a public riverport to attract new and expanded industries.</li> <li>The site is near the confluence of the Mississippi River and Ohio River, so significant barge traffic is present in the area.</li> </ul>	<ul style="list-style-type: none"> <li>The Western Kentucky Riverport is supported by West Kentucky Alliance for a Vibrant Economy (WAVE). The innovative leadership of the four county judge executives banded together to develop a cohesive strategy to expand regional assets, capitalize on joint resources, and promote the region.</li> <li>The proposed site is the largest available site (approx. 69 acres) in Kentucky on the Mississippi River. The site is centrally located near the confluence of the Mississippi and Ohio Rivers. Projected elevation of the site (340+ feet) is above the historic flood level of the 2011 floods.</li> <li>The site is being designed to employ the most up-to-date technology in the most environmentally friendly manner.</li> <li>Currently, over 300 public acres are available for economic development within a 10-mile radius of the site, with additional acres available from private owners. The authority has letters of intent to lease 15 acres, generating a private investment of over \$13 million for the project/region.</li> </ul>
Weaknesses	<ul style="list-style-type: none"> <li>The quantity of acreage available is relatively small for the development of a port facility.</li> <li>There is a question concerning the acreage permitted within existing site elevations for development.</li> <li>There are no known industries currently in the county that would be obvious clients for a port facility.</li> </ul>	<ul style="list-style-type: none"> <li>The current two-lane U.S. Highway system with high truck percentage is one weakness.</li> <li>The port believes that expanding the current Wickliffe Bridge crossing and U.S. highways in the region to a four-lane system would promote public safety, increase access, and foster economic development.<sup>5</sup></li> </ul>
Opportunities	<ul style="list-style-type: none"> <li>A potential use of port facility is for grain handling.</li> <li>Based on conversations, Economy Boat Store has expressed an interest to use the port facilities, ideally resulting in the growth of their operations.</li> </ul>	<ul style="list-style-type: none"> <li>The Western Kentucky Riverport can provide enhanced export opportunities to domestic and international markets for the agricultural community via the Gulf Coast (creating connectivity for diverse economic opportunities in the WAVE Region).</li> </ul>
Threats	<ul style="list-style-type: none"> <li>There are no current operations to be threatened.</li> </ul>	<ul style="list-style-type: none"> <li>Not addressing current highway connectivity weaknesses and access to available federal and state funding sources is one threat.</li> <li>Continuing development of the Port of Cairo across the Mississippi River means development ahead of the WKRRRA's completion.</li> </ul>

The infrastructure needs survey conducted in early 2021 showed that the Western Kentucky Regional Riverport has a development concept that is comprehensive with respect to its prospective market position. Because of the developing port's remote location to development, truck, and potentially rail access, as well as site surveying by the U.S. Army Corps of Engineers, permitting will be key.

<sup>5</sup> KYTC plans to reconstruct a parallel replacement structure as a two-lane facility. For more information, see <https://us51bridge.com/>

### 3.2.13. Summary of Needs

Port needs generally include additional warehouse space, waterfront improvements to accommodate additional barge mooring/berthing to unload cargo, and new equipment. Expansion of facilities means substantial improvements, for which riverports would benefit from additional state and federal funding. An additional less-noted consideration is the need for information technology comparable to deep-water coastal ports' operating systems technologies as the supply chain increasingly becomes based on e-commerce.

Critical needs for the Western Kentucky riverport market area are defined largely by dry-bulk tenants and their role in the existing Commonwealth economy. For example, the region has a significant need for improved access to auto parts in support of automotive manufacturers in Bowling Green. Container on barge has been considered on the entirety of the Mississippi River and its tributary rivers such as the Ohio River. Its development has been hindered on the Upper Mississippi River and tributary rivers such as the Ohio River by the need for lock and dam improvements by the U.S. Army Corps of Engineers. This also affects many of the riverports in Kentucky.

Today, there are two new port developments on the Lower Mississippi River that will improve cargo transfer from overseas markets to and from the inland waterway system. Plaquemines Parish is developing FuturePort, a 1,000-acre container terminal at Mile 50 Above Head of Pass (AHP). The Port of New Orleans is developing the Louisiana International Terminal, a 350-acre container terminal, in St. Bernard Parish at Mile 85 AHP. Both terminals will likely be able to handle cargo types other than containers, supporting inland riverport development and cargo throughput.

## 3.3 NEXT STEPS FOR PORTS

The ports' respective SWOT analyses describe their current capabilities and challenges. The view of current investments programmed and planned at each riverport is the most comprehensive to date, informed as it is by the summits and forecasts provided in the current study. However, in the long term, there is a need to continue to develop and enhance infrastructure concepts at each port associated with the market changes described in **Chapter 2**. The challenge to diversion is based on the value of the cargo, the time to move the goods (versus another mode), and the cost to move them, which are all market dynamics. Diversion could also be more likely based on improving the complete intermodal move, which considers modal transfer and route optimization (beyond riverport property). **Chapter 4** will further explore mechanisms for an ongoing program of modernization for Kentucky's riverports as a system. Therefore, the key issue for each port is to become a better part of the regional supply chain for the targeted commodities. Specific recommendations for each port are provided below.

### 3.3.1. Eddyville Riverport Authority

Eddyville's riverfront facilities currently lack direct rail access and require an expanded and relocated frontage road for improved truck access. In addition, while there is currently open uncovered storage, additional open space to store dry bulk or general cargo would improve the riverport's capabilities and coincide with the improved access. To complement the landside improvements, additional unloading capacity with a new crane would serve both the dry bulk and general cargo markets. These improvements will help the port grow given its ideal location on the Cumberland River, providing access to the Gulf of Mexico via New Orleans and Mobile (respectively via the Mississippi/Ohio and Tennessee Rivers).

### 3.3.2. Greenup-Boyd County Riverport Authority

Although a significant share of Greenup-Boyd's improvements relates to maintenance and efficiency improvements, principal investment needs entail adding berth capacity and covered storage (warehouse). These can improve current operations and attract new business. Current practices of moving barges add cost and time to unloading. Therefore, the perception of being unable to accommodate marine traffic for unloading operations means carriers (tug and barge operators) and shippers will go elsewhere to move their goods to or from market (the port's hinterland).<sup>6</sup>

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<sup>6</sup> **Technical Memorandum 2** shows that Kentucky riverport hinterlands overlap as well as have the factor of competition from ports in other nearby states.

### **3.3.3. Henderson County Riverport Authority**

Although twenty-three percent (23%) of Henderson County Riverport's improvements relate to maintenance and efficiency, principal investment needs entail adding berth capacity, unloading capabilities, covered storage (warehouse), and on-site rail improvements. Such items can improve current operations and attract new business. The addition of a second crane and associated dock space to supplement the 125-ton pedestal crane will enhance the port's capacity to unload more barges simultaneously, transfer goods or commodities from dock to storage, and then move off-site. The expected additional demand from the new Pratt paper facility and the planned growth of the Kentucky market, such as the market for automotive parts (for which Henderson handles steel coils) implies a need for investment. This is because carriers (tug and barge operators) and shippers could go elsewhere to move their goods to or from the port's hinterland without the planned investment.

### **3.3.4. Hickman-Fulton County Riverport Authority**

Although twenty-five percent (25%) of Hickman's Riverport's improvements relate to maintenance and efficiency, principal investment needs entail adding berth to storage or berth to train/truck loading capacity, allowing the port to potentially double capacity. The current needs assessment suggests a need for at least one new conveyor belt that is faster and wider for added capacity. However, this assumes improving docking facilities to increase berth utilization or to match its capabilities with improved conveyor systems. The port must currently relocate empty barges to unload additional barges, which means more time and cost. Ultimately, this could equate to carriers (tug and barge operators) and shippers going elsewhere, including outside Kentucky, to move their goods to or from the port's hinterland.

### **3.3.5. Louisville-Jefferson County Riverport Authority**

One hundred percent (100%) of the Louisville Riverport Authority's improvements pertain to market expansion; therefore, principal investment needs entail adding berth capacity, unloading capabilities, covered storage (warehouse), and on-site rail improvements. These can help improve current operations and attract new business. For example, the replacement of the existing 30-ton crane above the 100-year flood mark would provide new capacity and more resilience for high water events. Additionally, improvements to the rail loop would allow additional train movements so that another train can be loaded. According to estimates from riverport staff in a site visit, rail access improvements are expected to have the potential to increase capacity by fifty percent (50%).

### 3.3.6. Maysville-Mason County Riverport Authority

As a developing port, one hundred percent (100%) of the Maysville-Mason County Riverport Authority's improvements pertain to market expansion. The planned riverport can achieve a favorable position by acquiring land to create operational capacity leveraging nearby CSX freight rail access. The \$5 million needed investment (as described in **Appendix 2.4**) would provide for more than 1,350 acres, helping the port serve new customers such as those undertaking paper manufacturing, discount retail, and even industrial supply. The acreage is comprised of two sites, one of 350 acres and the other of 1,000 acres, in proximity to private waterway facilities and potential customers. Although two market studies were completed for the riverport in 1979 and 2015, these studies have not explicitly considered the investment relative to the use of the land acquisitions.<sup>7</sup>

### 3.3.7. Meade County Riverport Authority<sup>8</sup>

As a developing port, any investment in the port's capacity will present an opportunity for market expansion. Therefore, the emerging riverport's strategy can benefit from a focus on purchasing land, adding a grain elevator, installing dolphins for barge mooring and unloading, and making access road improvements. The board has not met as of the date of this publication to consider funding options and next steps.

### 3.3.8. Northern Kentucky Port Authority

Because of the unique structure of the Northern Kentucky Port Authority, its infrastructure needs cannot be assessed. The size of the Northern Kentucky market and the planning resources available from planning and economic development organizations serving the area provide resources for identifying future needs. However, the infrastructure needs for the Northern Kentucky Port Authority are not presently differentiated from those of the port of Cincinnati. A riverport compact of the type recommended in **Chapter 4** may provide opportunities to further assess opportunities as conditions change.

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<sup>7</sup> **Technical Memorandum 2** shows that Kentucky riverport hinterlands overlap as well as have the factor of competition from ports in other nearby states. (1) "Maysville-Mason County Port Authority Riverport Study, Phase One Feasibility, Maysville, Kentucky", 1979. Available at <https://trid.trb.org/view/155512>. (2) "Marketing and Economic Development Analysis for the Maysville-Mason County Port Authority," Kentucky Transportation Center, University of Kentucky, 2015. Available at <https://thinkmaysvilleky.com/wp-content/uploads/2020/07/Maysville-Mason-KTC-Feasibility-Study-Draft.pdf>.

<sup>8</sup> The riverport authority currently operates as the Brandenburg Industrial Development Authority in Meade County. It does not have marine facilities.<sup>9</sup> "Kentucky Needs Trade Agreements to Grow," Business Roundtable, 2020. Available at [https://s3.amazonaws.com/brt.org/BRT\\_General\\_Trade\\_KY\\_2020.pdf](https://s3.amazonaws.com/brt.org/BRT_General_Trade_KY_2020.pdf).

### **3.3.9. Owensboro Riverport Authority**

Although the majority of the Owensboro Riverport's improvements pertain to maintenance and efficiency improvements, the riverport can still benefit from capacity enhancements to increase market share. Such investments improve road and rail access (mostly to handle aluminum). Recommended capacity enhancements also include on-site improvements at the rail loop on the north side of the port while Industrial Drive is being redeveloped and the road access improvements can increase access to Rinaldo Road. These improvements can safeguard Owensboro's market capture potential.

### **3.3.10. Paducah-McCracken County Riverport Authority**

Thirty-eight percent (38%) of the Paducah-McCracken County Riverport's improvements pertain to maintenance and efficiency improvements. In order to increase market share, it is advisable for the riverport to focus on acquiring land and increasing static storage capacity. This would increase its throughput storage capacity. These improvements would complement existing facilities and support current customer needs supported by the riverport's tariff rates. Moreover, the port would keep its dock and storage facilities dedicated to containerized cargo, developed through its 2018 Marine Highway Grant Award. The port expects to at least maintain its market share; however, expansion of its facilities complementing its newer Sennebogen crane would mean more cargo and therefore more revenue.

### **3.3.11. Western Kentucky Regional Riverport Authority**

Although the Western Kentucky Regional Riverport is currently a planned port, its capital improvement program (CIP) line items were still considered for maintenance, improved efficiency, and preservation or growth of market share. Sixty-nine percent (69%) of its CIP line items pertain to maintenance and efficiency improvements, which include a feasibility study, various professional services, new equipment, and security/technology. Therefore, thirty-one percent (31%) of its CIP line items pertain to market expansion.

Capital improvement items for market growth include waterfront amenities, new equipment, and landside access. Western Kentucky Regional Riverport's needs can be understood relative to other Kentucky riverports' handling capabilities and the continued development of the Port of Cairo across the Mississippi River in Illinois.

### 3.3.12. From SWOT to Policy: The Need for a Unified Strategy

#### KENTUCKY FOREIGN TRADE ZONES

Kentucky currently has three foreign trade zones (FTZs), including No. 47 in Cincinnati, No. 29 in Louisville at the Riverport Authority, and No. 294 in the Port of Paducah.

Number 47 has six subzones, No. 29 has 16 subzones, and No. 294 has one subzone.

Subzones include Toyota, United Parcel Service, and Mitsubishi Electric Automotive. Owensboro Riverport and Henderson Riverport are also subzones.

Source: "Just the Facts: U.S. Foreign Trade Zones – Kentucky Tax Advantages," Kentucky Cabinet for Economic Development. Available at <http://www.ced.ky.gov/kyed/c/pdfs/usftznky.pdf>.

Uniform funding priorities among the riverports include berth space, unloading ability, storage, and capacity to transfer to storage. Site visits in late 2020 and early 2021, as documented in **Appendix 2.3**, revealed the importance of further landside (road and rail) access. Because each riverport is unique, there are multiple possible solutions, depending on the facility, location, markets served, among other variables. Riverports can benefit from joint efforts between the Kentucky Riverport Association and the Economic Development and Transportation Cabinets (as described in **Chapter 4**). Such collaboration offers a path for the more equitable and successful pursuit of Federal Highway, Maritime Administration and Federal Railroad Administration formula and even discretionary (grant) funds. If each port continues to pursue discretionary funding individually, it is possible that competition for scarce funding may undermine collaborative opportunities for larger awards.

Currently, sixty-one percent (61%) of the five-year riverport capital investment needs involve improvements that extend beyond simple maintenance or modernization and entail expansion of facilities to support market growth. However, although each riverport has specific needs, there are benefits to considering the riverports as one system. These include marketing the Commonwealth as a single destination for the regional distribution of goods to nearby states such as Ohio and Indiana. Moreover, foreign trade zones could be leveraged better for the consolidation of imported goods; for example, in 2018, \$12.4 billion of Kentucky's goods exports (thirty-eight percent [38%]) went to Free Trade Agreement (FTA) partners.<sup>9</sup>

Peer states offer instructive examples regarding statewide collaborative riverport strategies. Coastal and inland ports are generally competitive, vying for market shares relative to overseas destinations and inland markets served. For example, port authorities such as the Virginia Port Authority will develop inland port facilities like the Virginia Inland Port more than 200 miles from the coast. In Virginia's case, the collaborative initiative offers the benefit of dedicated rail access from the coastline to inland markets. This collaboration enhanced access between the Port of Baltimore and points west at a lower cost to shippers with less highway congestion.

Ports and operators also often develop trade agreements with inland and overseas destinations. In July 2021, the Port of New Orleans began working with the Port of Caddo-Bossier in Shreveport to move steel coils from Taiwan. Further, American Patriot Holdings (APH) will begin providing marine services for the Port Plaquemine's new terminal 50 miles AHP for its inland partner network, which includes St. Louis,

<sup>9</sup> "Kentucky Needs Trade Agreements to Grow," Business Roundtable, 2020. Available at [https://s3.amazonaws.com/brt.org/BRT\\_General\\_Trade\\_KY\\_2020.pdf](https://s3.amazonaws.com/brt.org/BRT_General_Trade_KY_2020.pdf).

## TERMINAL OPERATING SYSTEMS

Terminal Operating Systems (TOS) were not specifically requested by riverport directors in the call for capital improvement needs but were noted during the late 2020 survey of infrastructure needs as well as by one riverport customer interviewed in Fall 2021. A TOS allows a port to operate its marine and multimodal facilities more efficiently as well as to track cargo operations for the benefit of its customers. Investment in such systems for ports lacking them would provide benefits to the entire Commonwealth via the region the port serves.

Memphis, Joliet, Kansas City, Cairo, and Western Arkansas.<sup>10</sup> Although none of these partners are in Kentucky, teaming arrangements with coastal ports and APH would prove beneficial for the Commonwealth for existing moves from Asia. In 2015, the Port of New Orleans and CORBA agreed to jointly promote waterborne commerce, providing benefits to the Commonwealth in regard to the U.S. Army Corps of Engineers' expanded boundaries for the Port of Cincinnati and Northern Kentucky.<sup>11</sup> Moreover, consolidating under one port authority like the Ports of Seattle and Tacoma in 2015 could have similar benefits such as more negotiating power. Today, one company (Northwest Seaport Alliance) manages facilities 32 miles apart. Other benefits include leveraging tariff rates in one location for improvements in another, even if they are for a different commodity or cargo.<sup>12</sup>

For Kentucky, a collaborative arrangement that transcends existing state agencies can offer distinct advantages. Such an arrangement allows for a regional focus on the riverport hinterland without distracting from other statewide priorities. An independent collaborative would also not entail direct oversight by a statewide port authority. Instead, an independent hinterland collaborative can provide a flexible structure based on voluntary cooperation. **Chapter 4** offers substantive recommendations for how such an entity can enable the joint funding of full-time staff support for pursuing federal funding, implementing market capture strategies, developing ongoing capital improvement recommendations, and advocating for waterborne business interests. Furthermore, initiatives like Terminal Operating System (TOS), if applied throughout the Commonwealth, can offer benefits that span across ports, with economies of scale not available from any singular port enacting such a system.

In addition to the previous example given for Virginia, Florida's experience is another instructive example of how a peer state benefits from collaboration among ports. Collaborative arrangements inform Florida's prioritization of the 15 ports along its 1,350 miles of coastline, the second-most extensive in the United States (compared to Kentucky's 664 miles on the Ohio River).<sup>13</sup> Florida's process originated with the engagement of the Florida Ports Council in 1989, the Florida Seaport Transportation and Economic Development (FSTED) Program in 1990, and the Florida Ports Financing Commission (FPFC) in 1996. The council exists to serve as the professional association for the ports, providing advocacy, leadership, and information on seaport-related issues before the governor, the Florida Legislature, and Congress. The FSTED Program finances port transportation projects on a 50-50 matching basis, and the FPFC provides a cost-effective means of financing various capital projects by issuing bonds and transferring the proceeds to the individual ports.

<sup>10</sup> "Plaquemines Port project finds a powerful potential partner," MarineLog, May 7, 2021. Available at <https://www.marinelog.com/inland-coastal/inland/plaquemines-port-project-finds-a-powerful-potential-partner/>.

<sup>11</sup> "Could New Orleans help us grow jobs?," The Enquirer, October 14, 2015. Available at <https://www.cincinnati.com/story/money/2015/10/14/could-new-orleans-help-us-grow-jobs/73904874/>.

<sup>12</sup> "Why Seattle and Tacoma, Maritime Rivals, Merged Their Ports," CityLab, January 19, 2017. Available at <https://www.bloomberg.com/news/articles/2017-01-19/why-seattle-and-tacoma-maritime-rivals-merged-their-ports>.

<sup>13</sup> The Commonwealth of Kentucky is bordered by the Mississippi, Big Sandy, and Ohio Rivers. More than 50 miles of the Mississippi River border the western end of the Commonwealth; and 664 miles of the Ohio River border the Commonwealth on the northwest and northern ends.

Under the Florida arrangement, the Florida Ports Council does not determine which port handles which cargo. Instead, each port remains individually competitive, serving its respective hinterland markets. For example, Port Everglades handles fuel for South Florida but specializes in bananas for Dole from South America. Port Miami is known for importing flowers from South America, and JAXPORT has been developing its Liquefied Natural Gas (LNG) market for the past 10 years. In contrast, these and other Florida ports all handle containers. The priority is the interaction and communication among the ports given the state's support and recognition of their importance to the state's economy. Maritime activities in Florida account for thirteen percent (13%) of its gross state product; in Kentucky, transportation and warehousing comprise about five percent (5%) of the Commonwealth's gross state product.<sup>14</sup>

The following chapter explores in more detail the type of collaborative arrangement that can work for Kentucky's riverports, in addition to specific policy recommendations for each riverport and for the Kentucky riverport system as a whole.

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<sup>14</sup> "PY2018 Kentucky Economic Analysis," Kentucky Center for Statistics, September 2019. Available at <https://kystats.ky.gov/Content/Reports/KYPY18EconomicAnalysisReport.pdf?v=20201228060347>.

**Action #5: Pursue Funding to Develop RHC as an Economic Development Entity**

By defining the RHC recommended in **Chapter 4** as not just an infrastructure planning entity but an economic development entity, riverport champions can more widely pursue grant funding through US EDA, MARAD PIDP grants, or other programs identified in this chapter (as well as **Chapter 4**) to develop a concept of operations for an RHC, as called for in **Chapter 4 (Section 4.4)**.