KENTUCKY RIVERPORTS, HIGHWAY & RAIL FREIGHT STUDY

CHAPTER 4

WHAT ARE THE BENEFITS OF INVESTING IN RIVERPORTS AND RESULTING POLICY RECOMMENDATIONS?

Based on the current role of riverports in Kentucky's economy (as given in **Chapter 1**), the future market and economic needs of Kentucky's waterborne economy (as given in **Chapter 2**), and the strategic position of Kentucky's public riverport system (as given in **Chapter 3**), this chapter points the way forward for the public riverport system. This chapter (1) describes the economic benefits and wider economic impacts of investing in sustaining, modernizing, and improving Kentucky's riverport system and (2) offers a host of statewide and port-specific policy and investment recommendations to realize these benefits.

The analysis in this chapter expands on **Technical Memorandum 4**, which offers a high-level understanding of the basis for riverport needs, opportunities, and prioritization. **Table 4-1** provides the annual riverport investment needs by port[1] (The analysis is limited by the fact that some riverports did not offer information on capital programming. For this reason, some riverports do not have improvements or benefits listed in **Technical Memorandum 4** but have some programmatic needs shown in this final report that are consistent with general port characteristics derived from the port visits.) The current chapter describes how the investments made at each port relate to larger state and national benefits. This discussion is helpful both for framing grant applications and new funding opportunities and for creating an apparatus to secure funding, market share, and infrastructure opportunities for the public riverports.

[1] All investment needs and benefits are in 2021 dollars.

Table 4-1: Annual Port Investment Needs (2021 $'s)[2&3]

Riverport Authority	2021/2022	2022/2023	2023/2024	2024/2025	2025/2026	5-Year Total Port Needs
Eddyville	$5,000,000	$980,000	$7,500,000	$2,000,000	n/a	$15,480,000
Greenup-Boyd County	$20,000	$1,500,000	n/a	$6,000	n/a	$1,526,000
Henderson County	$600,000	$750,000	$1,500,000	$3,000,000	$15,300,000	$21,150,000
Hickman County	$2,500,000	$3,500,000	$2,100,000	n/a	$10,000,000	$18,100,000
Louisville	$500,000	$11,500,000	$12,000,000	n/a	n/a	$24,000,000
Maysville Mason	n/a	n/a	n/a	n/a	$5,000,000	$5,000,000
Meade County	n/a	$12,000,000	n/a	n/a	n/a	$12,000,000
Owensboro	$10,489,029	$4,284,175	$3,660,250	$3,737,000	$2,815,100	$24,985,554
Paducah McCracken County	$13,243,000	$400,000	$51,000,000	n/a	$17,000,000	$81,643,000
West Kentucky Regional	$234,000	$15,354,000	$1,950,000	$350,000	$350,000	$18,238,000
Grand Total	**$32,586,029**	**$50,268,175**	**$79,710,250**	**$9,093,000**	**$50,465,100**	**$222,122,554**

4.1 RIVERPORT CAPITAL IMPROVEMENT PROGRAMS

The *Kentucky Riverports, Highway, and Rail Freight Study* includes a review of capital needs for each of Kentucky's eleven public riverports. Eight of the eleven participated in the review, with the other three not offering suggested new capital needs. To understand how the investment needs can improve port operations, the process of developing capital needs has entailed (1) two site visits to each port property, (2) multiple interviews with senior riverport staff, and (3) a review of findings in relation to the prevailing costs of riverport improvements and market conditions as described in **Chapter 2**. The 177 Capital Improvement Program (CIP) line items were grouped into relevant programs based on cargo type. **Chapter 2** provides the capital improvement program needs for each port by cargo type (dry bulk or general cargo).[4] **Appendix 2.4** in **Chapter 2** includes a complete listing of each improvement project comprising the totals in **Table 4-2**.

[2] Some ports did not provide the data for a particular year.
[3] From **Technical Memorandum 4.**
[4] Capital needs are described in terms of the cargo type served (dry bulk vs. general cargo), and it is a summary of the detailed projects described in **Appendix 2.4.**

Table 4-2: Annual Port Investment Needs by Cargo Type[5]

Riverport	Cargo Type	2021/2022	2022/2023	2023/2024	2024/2025	2025/2026	Total
Eddyville	Dry Bulk	$5,000,000	$980,000	$7,500,000	$2,000,000	n/a	$15,480,000
Greenup-Boyd	Dry Bulk	$20,000	$1,500,000	n/a	$6,000	n/a	$1,526,000
Henderson County	General Cargo	$600,000	$750,000	$1,500,000	$3,000,000	$15,300,000	$21,150,000
Hickman	Dry Bulk	$2,500,000	$3,500,000	$2,100,000	n/a	$10,000,000	$18,100,000
Louisville	Dry Bulk	$500,000	$11,500,000	$12,000,000	n/a	n/a	$24,000,000
Maysville Mason	Dry Bulk	n/a	n/a	n/a	n/a	$4,000,000	$4,000,000
	General Cargo	n/a	n/a	n/a	n/a	$1,000,000	$1,000,000
Meade	Dry Bulk	n/a	$12,000,000	n/a	n/a	n/a	$12,000,000
Owensboro	Dry Bulk	$6,060,573	$245,000	$1,335,000	$840,000	$1,872,900	$10,353,473
	General Cargo	$844,456	$2,907,500	$2,325,250	$1,397,000	$892,200	$8,366,406
	N/A	$3,584,000	$1,131,675	n/a	$1,500,000	$50,000	$6,265,675
Paducah McCracken	Dry Bulk	$2,608,000	$400,000	$50,000,000	n/a	$12,000,000	$65,008,000
	General Cargo	$10,635,000	n/a	$1,000,000	n/a	$5,000,000	$16,635,000
West Kentucky Regional	Dry Bulk	$234,000	$15,354,000	$1,950,000	$350,000	$350,000	$18,238,000
Total		**$32,586,029**	**$50,268,175**	**$79,710,250**	**$9,093,000**	**$50,465,100**	**$222,122,554**

For each of the improvements identified in **Table 4-2**, the analysis herein quantifies transportation user benefits, including savings derived from vehicle miles traveled (VMT) and vehicle hours traveled (VHT) as well as savings associated with more efficient port operations and streamlined maintenance outlays resulting from timely attention to existing facility needs.

4.2 BENEFITS AND IMPACTS OF INVESTING IN RIVERPORTS

Maintain Competitive Transportation Costs for Kentucky Businesses: For every dollar invested in Kentucky's public riverports, the Commonwealth can anticipate between $2.40 and $5.30 in return to the national economy. Approximately 58% of this return can be expected to occur in Kentucky. The return will depend on the degree to which investment can extend beyond preserving existing capacity and toward enabling more efficient or expanded service to growing new markets. **Table 4-3** shows the costs and benefits of investing at different levels in Kentucky's public riverport system. **Appendix 4.1** provides a detailed description of investment benefits and impacts and the methods by which they are computed.

[5] Some ports did not provide the data for a particular year.

Table 4-3: Benefit-Cost Ratio of Investing in Kentucky Riverports

Investment Category	Present Value: Five-Year Capital Costs	Present Value: Benefits to 2045	Benefit–Cost Ratio
Preserve: Business as Usual	$12.3 million	$29.1 million	2.4
Modernize: Optimize Port Efficiency	$51.6 million	$153.4 million	3.0
Expand: New Market Positioning	$158.2 million	$834.3 million	5.3
Combined Total	**$222.1 million**	**$1.02 billion**	**4.6**

Support Jobs, Business Sales, and GDP: The benefits of investing in Kentucky's riverports enable Kentucky businesses to produce more output at more competitive prices, hire more workers, pay better wages, and retain more profits for the state's GDP. Kentucky can anticipate over **$660 million** in business sales, over **$400 million** in GDP gain, and over **$200 million** in household earnings in a 25-year period by fully investing in the public riverports. **Table 4-4** below shows how each level of port investment can contribute to Kentucky's long-term economic performance.

Table 4-4 - Gross Domestic Product Increase Projection

Scenario	Undiscounted Outlays	Business Sales	GDP	Household Earnings
Preserve: Business as Usual	$12.3	$36.9	$16.8	$11.2
Modernize: Optimize Port Efficiency	$51.6	$154.4	$70.5	$46.8
Expand: New Market Positioning	$158.2	$473.1	$216.2	$143.5
Combined Total	**$222.1**	**$664.3**	**$303.6**	**$201.4**

Attract Business to Kentucky: The riverports can play a constructive role in attracting new business to the Commonwealth. Riverports increasingly rely on new clients in key growth industries such as textiles, machinery, and chemical manufacturing (which includes plastics and compounds used in automotive supply chains as well as fabrics used in medical devices), making riverports have a business interest in actively attracting new firms to the state. Because the supply chains of these new waterborne commerce markets are more complex than the legacy markets like coal, fuels, and raw minerals, riverports can potentially enable Kentucky to offer a competitively priced location for higher-paying firms than riverports have supported in the past. However, leveraging riverports to attract industries with complex supply chains will require a better understanding of which products can move by water and pro-actively engaging riverports in the economic development conversation. A multi-state and multi-regional Riverport Hinterland Compact can provide an entity to do this type of research, marketing, and economic development customized to new riverport clients.

4.3 POLICY RECOMMENDATIONS TO IMPROVE RIVERPORTS' MARKET POSITIONS

Policy recommendations are based on the riverport system and individual port SWOT analyses addressed in **Chapter 3** and the benefits of investing highlighted above. Recommendations are also grouped by type, including on-site improvements, off-site improvements, funding, human resources, and those policy issues that should be addressed by other organizations, including the Kentucky Association of Riverports. Further, **Chapter 5** includes policy recommendations for economic development. The recommendations addressed here focus on the sustainable provision of riverport transportation in and supporting the Commonwealth's freight system. There are 20 policy recommendations outlined below:

4.3.1. On-Site Improvements

On-site improvements include those on riverport properties and may be eligible for state or federal funding (e.g., federal discretionary grants and other sources). In addition, on-site improvements likely require permitting as well as commitments from private carriers/shippers, such as the current arrangement between Pine Bluff Materials and the Paducah Riverport. Therefore, on-site improvements vary by port depending on which component of the port needs operational or capacity improvements. Policy recommendations include the following:

1. Undertake a capacity assessment of each riverport by on-site operational component (mooring/berthing, apron-to-storage transfer capability, covered and uncovered storage) for the respective current and targeted commodities.
2. Target improvements based on the capacity assessment of each riverport to ensure the current and foreseeable throughput is addressed; in other words, there is a need to ensure the ability to unload barges equates to the ability to move goods to storage, which is unimpeded by the ability to move goods through storage (contingent on static storage) and then to move goods from the port.
3. Leverage return-on-investment analyses for more significant improvements, such as rail facilities, to ensure the funding yields achievable benefits for the riverport.

4. Review applicable terminal operating systems (TOS) to help Kentucky riverports keep track of commodities traversing wharves, docks, storage yards, and warehouses to consider for the riverports. Moreover, a TOS would help attract new business to any of the Kentucky riverports depending on the shipper, commodity origin/destination, and port location.
5. Explore the use of business intelligence databases to assess waterborne markets and pinpoint customers on an ongoing basis.

4.3.2. Off-Site Improvements

Off-site improvements include those beyond riverport property supported by the riverport. Off-site improvements can be led by the Commonwealth, county government, metropolitan planning organization (MPO), and/or a private sector sponsor through a public–private partnership (P3). Off-site improvements also support on-site improvements and include roadway maintenance, rail improvements, new intermodal facilities, and other infrastructure or operational enhancements. Off-site improvements also vary by port, depending on which port needs improved access. Policy recommendations include the following:

1. Leverage MPO projects such as those outlined in their Unified Planning Work Programs to support riverport access, given the greater weight load requirements associated with trucks, including those requiring oversize/overweight permits.
2. Review the freight (truck and rail) bottlenecks assessed by the Federal Highway Administration with the help of the Kentucky Transportation Cabinet to determine targeted improvements in support of one or more riverports.[6]
3. Review the Kentucky traffic demand models, notably for those small urban areas, to support riverport access critical issues.[7]

4.3.3. Funding

Funding entails public and private sector monies from the federal, state, and local levels. Federal and state dollars include discretionary and formula monies, whereby some state money and most local money can flow down from the higher level, e.g., federal formula funding is administered by the Kentucky Transportation Cabinet and the respective MPO.

[6] Current freight bottlenecks can be found at https://ops.fhwa.dot.gov/freight/freight_analysis/mobility_trends/national_list_2019.pdf.
[7] More information for Kentucky's traffic demand models can be found at https://transportation.ky.gov/Planning/pages/traffic-demand-modeling.aspx.

Funding is vital to the on-site and off-site improvements to maintain facilities, improve efficiency, and add capacity to each of the seven operating riverports as well as help any of the four developing riverport facilities. New riverport facilities can add capacity to the Commonwealth's complete marine capabilities. In addition, new inland transfer (intermodal) facilities for existing commodities and new services (such as container-on-barge) can add capacity. Policy recommendations include the following:

1. Provide a one-time $12.3 million state-funded riverport preservation program to allow for an unmatched pool of funding for improvements of the type described in **Chapter 2** of this report for preserving Kentucky's existing public riverport infrastructure. This program is envisioned not to require local matches, and to support qualified preservation needs occurring in a five-year period (unlike the KRI grant program which provides annual program with a required local match).
2. Make the Kentucky Riverport Improvement (KRI) Grant Program an annual $6.7 million program, without the need for annual reauthorization, dedicated to modernization and expansion investments that can both qualify for federal funding and equip the public River Ports to competitively handle emerging commodities in the post-coal economy. (If the $12.3 million preservation funding is provided, then the KRI grant funding can be used exclusively for those projects that enhance and upgrade the market capacity of Kentucky's public riverports).
3. Redevelop the KRI Program criteria to channel KRI grants into investments with the greatest likelihood for federal matches, and with the greatest impact for enabling public riverports to play an active role in emerging commodities (such as chemicals, plastics, advanced manufacturing products and others described in **Chapter 2**). Such criteria would include recognizing projects with social equity, carbon reduction/sustainability benefits, and technology investments consistent with a host of federal funding programs. New KRI grant criteria are also recommended to consider whether the riverport is an operating or developing facility.
4. Establish a 20% cap on the local match requirement that can be imposed on local contributions for the new modernization/ expansion oriented KRI program. Capping the local match at 20% will ensure that smaller riverports can reach the match threshold for the higher investment amounts enabled by this program.
5. Leverage the resources of multi-state and multi-regional economic and infrastructure groups (as described later in **Table 4-12**) as partners in riverport funding and infrastructure priorities.
6. Explore the development of a Waterways Caucus in the Kentucky General Assembly similar to the Aeronautics/Aviation Caucus developed in 2021.

Table 4-5 assesses funding available through the *2021 Kentucky Riverport Highway & Rail Freight Study* and represents a starting point for the identification of future funding opportunities. Specific programs, criteria, and levels associated with the Bipartisan Infrastructure Law (BIL) will be defined through and beyond the 2022 release of the current study, and they represent emerging opportunities that may be addressed through the means described in **Section 4.6** of this study.

Table 4-5: Representative Funding Sources for Riverports

Type	Program
Infrastructure	ATCMDTP
	BUILD
	Farm Storage
	INFRA
	Marine Highway
	PIDP
	RRIF
	Transp Alts Set Aside
	WIFIA
Economic Development	Econ Dev Assistance
	Planning Grant
	APRA-E

Type	Program
Resiliency	Disaster Loan Assistance
	Emergency Relief
	HSGP
	PSGP
	SaTC
	TSGP
Environment	Clean Diesel
	CMAQ
	Endangered Species
	Marine Debris
	Pollution Prevention
	SRA
	Targeted Airshed
	Wetland Program Development Grants

In 2022 More than $41.7 Billion in federal funds were available

Additional funds are expected to be programmed in 2022 through the Bipartisan Infrastructure Law (BIL)

Kentucky's $222 Million Riverport Need is less than 1% of available federal funding if KRI grants are fully leveraged for available programs

Source: Federal Funding Handbook for Marine Transportation System Infrastructure 4th Edition, US Committee on the Marine Transportation System, November 2019 (Corrected 2020)

4.3.4. Commonwealth Focus

The Commonwealth should continue to support the eleven public riverport authorities based on the various agencies' mission statements and resources. Agencies and supporting entities include the Cabinet for Economic Development, the Kentucky Association of Riverports, the Water Transportation Advisory Board, and the Kentucky Transportation Cabinet. In addition, local resources, including county transportation departments, MPOs, municipal agencies, and local economic development agencies (chambers of commerce) should be leveraged. Policy recommendations include the following:

1. Maintain the Kentucky Riverports, Highway, and Rail Freight Study and Kentucky Association of Riverports (KAR) websites.
2. Update the descriptions and contact information for each riverport on the Kentucky Association of Riverports website with relevant information from this study. Also, connect the Kentucky Association of Riverports website to the Kentucky Cabinet for Economic Development's (CED) website, citing the connection between cargo movements, Kentucky commercial/industrial development, and jobs.
3. Consider the riverports strategically within the Commonwealth for hinterland markets served, current and potential commodities handled, and potential external domestic and international markets that could be served.

4. Leverage the Water Transportation Advisory Board and Governor's Office of Agricultural Policy for new or expanded sources of funding, including those from the Kentucky Agricultural Development Fund, Environmental Protection Agency, and other sources highlighted in the US Committee on the Marine Transportation System's MTS Federal Funding Handbook, the American Association of Port Authorities, and the US Environmental Protection Agency.[8]
5. Seek a MARAD Marine Highway project designation for the Ohio River in Kentucky and submit new Marine Highway Project applications for funding eligibility.
6. Designate Critical Rural Freight Corridors (CRFCs) in the Commonwealth based on an accepted methodology that includes riverport access. Similarly, reconsider Critical Urban Freight Corridors (CUFCs) based on riverport access. This would, in turn, help increase federal funding for transportation.[9]
7. Leverage the resources available from the Kentucky Transportation Center to develop feasibility studies in considering new projects, funding, and benefits.

"X's" in bold show the organization suggested to take lead on the recommendation.

Table 4-6 provides a matrix of the policy recommendations for the suggested responsible organizations within or pertaining to the Commonwealth. "X's" in bold show the organization suggested to take lead on the recommendation.

[8] For more information on the MTS Federal Funding Handbook, see https://www.cmts.gov/topics/infrastructure. The latter respective sources can be found at https://www.aapa-ports.org/files/PDFs/Federal%20Funding%20for%20Ports.pdf.n.

[9] For more information how CUFCs and CRFCs can increase funding, see https://ops.fhwa.dot.gov/fastact/crfc/sec_1116_gdnce.htm.

Table 4-6: Policy Recommendations - Stakeholder Involvement

Rec #	Description	Kentucky General Assembly	KYTC	KCED	KAR	WTAB	DRA	KY Office of Ag Policy	Kentucky Transportation Center	USDOT	EPA	Riverports	Counties/ MPOs
1	Capacity assessment	**X**			X							X	
2	Target improvements	**X**			X							X	
3	Return on Investment analyses			**X**	X							X	
4	Review TOS				**X**							X	
5	Metropolitan Planning Organization Unified Planning Work Programs											X	**X**
6	Review Freight Bottlenecks		**X**							X		X	
7	KY Travel Demand Model		**X**									X	
8	Establish dedicated $12.3 million preservation program to clear Kentucky's public riverport preservation backlog												
9	Make Kentucky Riverport Improvement (KRI) annual and fund at $6.7 million annually	**X**			X							X	
10	Dedicate KRI Grant funding to expansion and modernization needs to expand and upgrade riverports and maximize federal matches	**X**			X							X	
11	Maximize allowable cap for local KRI grant matches to 20% of total project	**X**			X							X	
12	Leverage the resources of the Delta Regional Authority				**X**		X						
13	Explore the development of a Waterways Caucus and Riverport Hinterland Compact (RHC)	**X**			X								
14	Prioritize foci including economic impacts			X	**X**							X	
15	Maintain KY Riverport System & Kentucky Association of Riverport (KAR) websites				**X**							X	
16	Update KAR website with study info and hyperlink to Kentucky Cabinet for Economic Development				**X**							X	
17	Consider riverports strategically in the Commonwealth and internationally				**X**							X	
18	Leverage funding information provided by other organizations					X		X			X	**X**	
19	Submit new Marine Highway Project applications		X							X		**X**	
20	Update Critical Urban/Rural Freight Corridors (CUFC/CRFCs)		**X**									X	
21	Leverage resources from the Kentucky Transportation Center to develop feasibility studies								**X**			X	

The goal of the recommendations is to increase demand for Kentucky Riverports, which in turn will improve the Commonwealth's economy. This is intended to be through collaboration, initiative, reprioritization of criteria for funding, new federal designations for freight, and funding itself. The goal is to improve infrastructure on- and off-site that connects to markets beyond Kentucky in the Midwest and along the Gulf Coast. **Figure 4-1** shows a tug and barge departing Greenup-Boyd County Riverport.

Figure 4-1: Tug and Barge Leaving the Greenup-Boyd County Riverport

4.4 RECOMMENDATIONS FOR THE IMPLEMENTATION OF RIVERPORT HINTERLAND COMPACT (RHC)

The above recommendations can be greatly enhanced through a dedicated quasi or intergovernmental entity responsible for undertaking the findings of this study as a top priority. For this reason, a Riverport Hinterland Compact or RHC is recommended as an implementation entity.

4.4.1. Designating a Riverport Hinterland Compact (RHC)

Key findings of this study indicate that in the absence of a concerted effort to enhance and protect its waterborne commerce markets, Kentucky is expected to lose between 20 and 30 million tons of waterborne commerce by 2045 (as shown in **Chapter 2**). The shift in Kentucky's waterborne commerce market away from coal, petroleum, and fossil fuels to agricultural commodities, manufacturing inputs, and chemical/allied products (including rubber and plastics) is expected to transform the capital requirements on Kentucky's riverports (as also shown in **Chapter 2**). Federal programs are available to support a new role for riverports and associated capital needs (as shown in **Chapter 3**). However, Kentucky currently secures only a small portion of the federal funding available and relies heavily on Kentucky's $500,000 Kentucky Riverport Improvement (KRI) grant program.

Unique Challenges of Hinterland Market Development: The above findings point to unique challenges that the restructuring of the Ohio River poses to the riverport "hinterland," which is defined in the Technical Memoranda of this study as a 90-**minute** drive time/delivery radius of Kentucky's public riverports (shown in green below). In this report, a riverport's hinterland is defined as a 90-**mile** drive radius of the ports (shown in green and blue below in **Figure 4-2**).

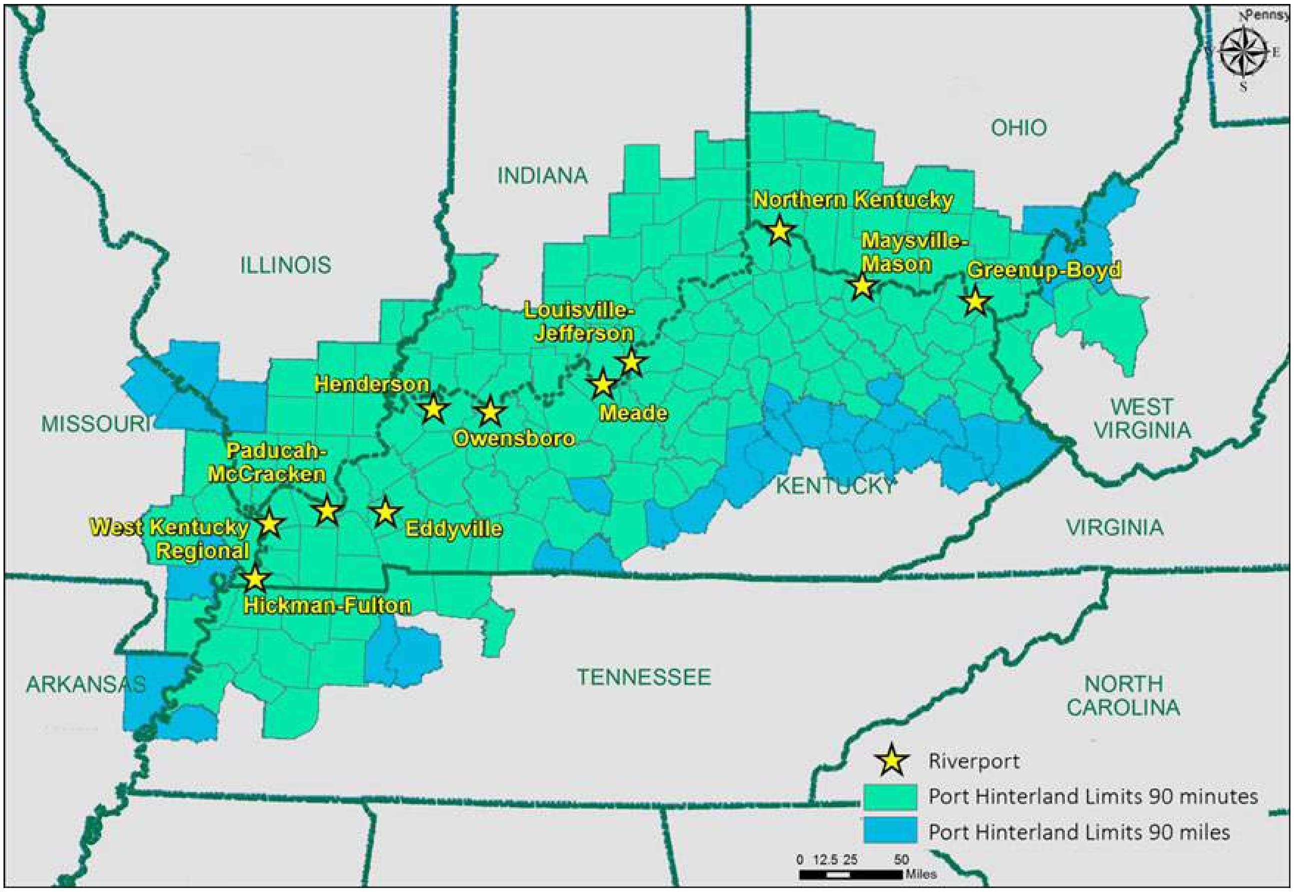

Figure 4-2: Kentucky Riverport Hinterlands

Kentucky's riverport hinterland market includes not only Kentucky but also significant portions of West Virginia, Ohio, Indiana, Illinois, Missouri, and Tennessee. For this reason, the development and use of Kentucky's riverports are tied in many ways to the competitiveness, supporting infrastructure, and overall conditions in neighboring states in terms of the attraction and retention of riverport clients and readiness to accommodate the overall restructuring of the Ohio River's waterborne commerce markets.

For this reason, the strategic objectives for sustaining and leveraging Kentucky's public (and private) riverports do not easily fall within the mission and jurisdiction of any single Kentucky state or local agency. For example, the Kentucky Cabinet for Economic Development provides a strong focus on developing Kentucky's statewide economic position, just as county and local entities provide a strong focus on local development opportunities. However, the attraction of firms into home markets leveraging Kentucky's riverports may, in many cases, not represent a statewide priority. For example, a major top prospect for leveraging a riverport may not represent the best and highest use of the Kentucky Cabinet for Economic Development staff when weighing priorities against the entirety of Kentucky's business attraction, creation, retention, and expansion (ACRE) opportunities. Furthermore, because the hinterland includes counties both within and outside of Kentucky, there are cases in which a riverport client (or prospective client) may be located in a neighboring state. In such cases, the attraction or retention of such a client would naturally not fall within the mission of the Kentucky Cabinet for Economic Development. Similarly, needed activities like the development of complementary ports, ground infrastructure, or amenities in other states can support the attraction and expansion of Kentucky riverport clients are all activities squarely outside the purview of the Kentucky Transportation Cabinet or any other local entity within Kentucky.

When considering overall statewide economic development or multimodal freight priorities in West Virginia, Ohio, Indiana, Illinois, Missouri, and Tennessee—no single state has an entity explicitly focused on the unique economic restructuring of the Ohio River market. However, the findings of the current study clearly indicate that if concerted actions are not taken in the areas of (1) securing funding to develop capital projects for new market sectors; (2) attracting, creating, retaining, and expanding riverport clients in the hinterland; and (3) actively marketing the riverports to strategic markets in the long-term, then Kentucky will be unable to competitively sustain its riverport market. Even if Kentucky is unable to sustain its current public and private riverport markets, there is no entity with a clear mission that would facilitate decisions about channeling investment to consolidate, privatize, or otherwise adapt the riverport infrastructure in the face of declining markets. For all of these reasons, it is recommended that an implementation agent for the findings of the current study be created that will be referred to herein as a Riverport Hinterland Compact (RHC).

The RHC is envisioned to have from one to three FTE staff with expertise in economic development, marketing, and marine planning explicitly dedicated to these functions in support of the development of the Ohio River and the larger Ohio/Mississippi trade market in and around Kentucky. It is recommended that in the formation of the RHC, an initiatory study is undertaken to determine the specific governance, funding, and detailed operations of the compact. Kentucky's experience with the Tennessee-Tombigbee Waterway Development Authority provides a useful precedent for the type of collaboration which a RHC may enable.

DEFINITION OF A RIVERPORT HINTERLAND COMPACT

The proposed *Riverport Hinterland Compact* (RHC) is defined as a new quasi-public entity with a stated mission of supporting the economic transition of the Ohio River Hinterland and its port infrastructure from the coal-centered market of today to new and more competitive future markets.

While the recommendations in the remainder of this section have value even without a compact, the compact is recommended for a number of reasons. First, a compact can offer a coordinated response to the market changes described in **Chapter 2.** Second, without collaborative focus there is a risk that the riverports will simply be competing for diminishing shares of a declining long-term market. Finally, a compact can make the strongest possible case for funding and new business by framing the riverports as national assets as opposed to local concerns.

4.4.2. Mission and Strategic Objectives for a Riverport Hinterland Compact

The overall mission of an RHC would be to create a vibrant, sustainable, and economically prosperous waterborne commerce market for the Ohio River and the community it serves by attracting and channeling investment into a new generation of riverport clients, port facilities, and carriers through the economic transitions of the Ohio River market.

This mission is envisioned to overlap with a host of allied organizations both in Kentucky and in neighboring states and at the national level. **Table 4-7** suggests a host of state, multistate, and national collaborators that may have missions that in some way overlap with and support an RHC for the Ohio River. The table includes all potentially interested states with the understanding that in the formation of the RHC, some states (such as Missouri and Tennessee) may participate with less investment than states with higher frontage and commerce on the Ohio River – such as Kentucky, Ohio, Indiana, and Illinois). It is recommended that the Kentucky Association of Riverports use **Table 4-7** as a starting point for recruiting potential cosponsors and members that would have a specific interest in the modernization of port infrastructure and transition of the riverport commerce market in the long term. The RHC would differ from each of the existing organizations listed in **Table 4-7** concerning the following:

1. A detailed focus on the waterborne commerce market of the Ohio River as it relates to the demand for riverport facilities and infrastructure
2. The availability and competitiveness of riverports on the Ohio River for funding of riverport as well as lock and dam infrastructure to maximize the value and impact of the river as an economic resource
3. The concentration on specific business attraction, creation, retention, and expansion (ACRE) activities to draw together businesses, clusters, and supply chains using the Ohio River as a resource in the long term.

Table 4-7: Potential Collaborating Partners for RHC

Local Entities	State Entities		Multistate/National Entities
• **All regional economic development organizations serving counties in the hinterlands** • **All Metropolitan Planning Organizations (MPOs) in the hinterland**	• Kentucky Association of Riverports • Kentucky Cabinet for Economic Development • Kentucky Transportation Cabinet • Tennessee Department of Economic & Community Development • Tennessee Department of Transportation • Ohio Department of Development • Ohio Department of Transportation	• Indiana Economic Development Corporation • Indiana Department of Transportation • Illinois Department of Commerce and Economic Opportunity • Illinois Department of Transportation • Missouri Department of Transportation • Missouri Department of Economic Development • West Virginia Department of Economic Development • West Virginia Department of Transportation	• American Waterway Operators • Delta Regional Authority • Appalachian Regional Commission • Mid-America Freight Coalition • Mississippi Ohio River Confluence Economic Alliance • Army Corps of Engineers • Institute for Trade and Transportation Studies

4.4.3. Riverport Hinterland Compact: Concept of Operations

The concept of operations for the RHC is envisioned to cover four strategic areas: (1) developing and advocating for a program of infrastructure improvement/modernization needs; (2) identifying and executing a series of site development and business attraction, creation, retention, and expansion (ACRE initiatives to develop sites, support business, and otherwise support shippers and carriers using the Ohio River and its ports; (3) advocating and acquiring funding for both the infrastructure and the ACRE needs of the riverport hinterland through competitive grants, state, and MPO funding processes, and public–private partnerships; and (4) actively marketing the system of Ohio River ports to shippers and carriers using the Marketing Toolkit provided in the current study as well as sourcing databases and other resources as described in **Chapter 5.**

Initiation: It is recommended that an RHC is initiated through the action steps given in the section below. Because the Kentucky riverports are shown by the current study to have a significant interest in the restructuring of the Ohio River commerce market, it is recommended that the Kentucky Association of Riverports use the current study and its findings to work with Kentucky legislators representing hinterland market areas to form a legislative caucus and pursue appropriate grant funding to support the action steps given in the following section.

Organization and Staffing: It is recommended that an RHC be organized to have two to three FTE staff with expertise in economic development, marketing, and transportation planning in a combination of positions with roles as shown in **Table 4-8**.

Table 4-8: RHC Staffing Roles, Qualifications, and Responsibilities

Staff Role & Qualifications	Key Qualifications and Responsibilities
Marketing & Promotion Principal (1 FTE): **Proven background in economic development and marketing with a strong track record in (1) business location strategy and attracting targeted businesses to sites in a region; (2) marketing infrastructure and service assets leveraging price of services or location, amenity mix and promotional channels (social media, networking, direct outreach, and other avenues); and (3) a successful track record in competitive federal and state grant applications for transportation infrastructure.**	Develops and executes a detailed marketing and outreach plan for attracting new clients to riverport communities in growth sectors found in this *2021 Kentucky Riverport, Highway, and Rail Freight Study* and other similar market studies. This includes maintaining an active list of prospective sites, new riverport customers to locate to the region, and modal capture opportunities for riverports to serve more volume from customers currently in the region. Develops and executes a detailed annual funding plan to include identifying and securing competitive grants, state or local matches, and capital programming for on-port and grand transportation improvements supportive of riverport competitiveness.
Infrastructure & Planning Principal (1 FTE): **Planner or engineer with proven experience identifying physical on-site requirements for port expansion or adaptation, evaluating on-port and supporting ground transportation needs associated with changing market and business objectives, developing projects meeting DOT and MPO capital programming requirements, and demonstrating engineering/performance case for port and related infrastructure improvements.**	Develops and executes a program of specific on-port investments in modernizing riverports each year, building from the initial capital program list given in **Chapter 2** of this *2021 Kentucky Riverport, Highway, and Rail Freight Study.* Identifies new/additional modernization and investment needs each year, which may include either expansion, consolidation, or repurposing of port properties based on market conditions.
Technical and Administrative Support: **Experience with document production, meeting and event coordination, schedule/calendar management, and maintaining databases/contact lists for public or quasi-public entities.**	Technical/administrative support staff to assist with the production of documents, coordination of meetings and outreach activities, and other functions enabling two principals to succeed.

Business Planning: It is recommended that an RHC carry out an annual business planning process to include the following:

1. Reporting on funds expended and results achieved in relation to the prior year's business plan.
2. Updating a specific prioritized list of prospective sites and related new riverport customers growth industry/market segments within the hinterlands, with specific marketing services, infrastructure investments, and other needs to capture sites in the year and funding sources to be pursued for each.

Updating a specific list of prioritized on-port or client-site development infrastructure projects needed to acquire business at the indicated sites (or in the indicated segments) with cost estimates and recommended funding sources to be pursued for each.

3. Creating an estimate of the annual costs for the above FTEs to execute the annual RHC development program and the sources of operating funds sought, including contributions/subscription fees from the riverports themselves as well as sponsoring/collaborating agencies derived from **Table 4-7**. It should be noted that if each entity shown in **Table 4-7** contributed $10,000 per year, it would fund the FTEs given in **Table 4-8** at a total staff budget of $230,000/year (assuming $100,000 for an infrastructure planning principal, $80,000 for a marketing & promotion principal, and $50,000 for administrative support and other overhead).

Accountability: It is recommended that an RHC board be appointed each year to consist of representatives of both (1) entities that fund the RHC annual operations and (2) entities identified as potential sponsors of RHC infrastructure projects or with enough overlap in RHC's mission to provide meaningful input in its direction and support for allied organizations. The board is recommended to be drawn from the entities shown in **Table 4-7** as a starting point.

The board would meet at designated intervals during each year to do the following:

1. Review quarterly progress toward business plan objectives and offer adjustments to the program or business plan based on developments during the year.
2. Review and approve each year's business plan.
3. Identify and pass resolutions directing the staff to specific actions and opportunities in collaboration with allied entities.
4. Perform an annual closed-door review of RHC performance and assessment of ongoing staffing requirements and sufficiency.

4.4.4. Action Steps for Initiating a Riverport Hinterland Compact

As the entity presently charged with advocating for the Kentucky riverports and their overall investment needs and market position, it is recommended that the Kentucky Association of Riverports leverage the findings of the current study to initiate the steps for the creation of an RHC as described in this section.

Action #1: Develop Kentucky Waterways Legislative Caucus

It is recommended that the Kentucky Association of Riverports share the executive summary of this *2021 Kentucky Riverport, Highway, and Rail Freight Study* with legislators from districts covering the Kentucky counties in the hinterland region as shown in **Figure 4-2** to explore the creation of a waterway's caucus in the Kentucky General Assembly. Although a waterway's caucus is not necessary to implement the findings of the current study, a legislative caucus can be helpful in articulating the strategic objectives of an RHC within the context of Kentucky's overall legislative environment. For example, a caucus can be helpful in securing funding if such is deemed in the Commonwealth's interest as well as in advising the governor and other state entities regarding the collaboration of an RHC with both Kentucky governmental entities and others identified in **Table 4-7**. A legislative caucus could then draft or propose appropriate legislation for acting on these recommendations that would consequently shape how actions are taken within the larger policy context that may extend beyond the scope of the current study. The caucus could also support the passage of resolutions and otherwise provide guidance for the RHC in keeping with the interests of stakeholders as expressed through elected representatives. The caucus can be formed in the same way as other Kentucky legislative transportation-related caucuses, such as the Aerospace/Aviation Caucus and the Bourbon Trail Caucus.[10]

Action #2: Call Governor's Summit on Ohio River Economy

The governor of Kentucky can reach out to governors of other states sharing in the Ohio River waterborne economy to develop business attraction, technology, workforce, and infrastructure initiatives to support the overall transition of the Ohio river economy. This initiative may lead to legislation in areas of both infrastructure investment and economic development to enable the states' shared interest in continuing to enjoy the efficiencies of waterborne transportation as commodity markets shift from coal to other goods.

Action #3: Develop Riverport Hinterland Compact

Task 1: Pursue Funding for Initiatory Study: The US Department of Commerce, through the Economic Development Administration (EDA), provides grants for which nonprofit, governmental, and nongovernmental entities are eligible to apply. EDA makes planning and local technical assistance investments to support economic development, foster job creation, and attract private investment in economically distressed areas of the United States. The grant funding ranges from $500,000 to $5 million. There is an 80 percent federal allocation that requires a 20 percent local match. The match can be in-kind but must be carefully documented by person, percent of time, and tracking of hours. The top priority for receiving funds is equity. Each application must also state that the strategic economic plan ensures that fair labor practices are followed. The best source of EDA funding for an Ohio River RHC is likely Public Works and Economic Adjustment Assistance funding, which includes the Assistance to Coal Communities funding.

APPLY FOR EDA GRANTS

US Economic Development Administration
401 W. Peachtree St. NW
Suite 1820
Atlanta, GA 30308
(404-987-2887)

[10] https://General Assembly.ky.gov/Committees/Caucuses

Kentucky's riverport hinterlands are eligible for such grant assistance, and it is recommended that the Kentucky Association of Riverports apply for such a grant to undertake an initiatory study leading to the creation of an Ohio RHC entity in 2022. Grant funds would be used to procure the services of a qualified vendor with experience in economic development initiatives to create a foundational study and policy framework for an RHC.

The application should identify (1) the potential for the RHC to facilitate sustainable and equitable economic growth, (2) the role of the RHC enabling the hinterland economy's transition from coal-fuel markets to more sustainable waterborne commodities, and (3) the contribution of the RHC in diversifying the hinterland economy and to reach new manufacturers and implement socially equitable development strategies, including poverty elimination and clean industry sectors. The strategic plan should document emerging or existing public–private partnerships and potential new sectors, help with recruitment, and outline the role of the statewide entity as an effective arrow in the quiver of Kentucky Economic Development. To the extent possible, the application should document the following:

- Loss of coal jobs
- Loss of pandemic income
- Diversification of different sectors
- Any new economic stability or resiliency

The Economic Development Administration (EDA) offers the Kentucky riverports substantial new funding opportunities to enable large transformative investments, such as those recommended in this document. Specific applications should be started early and in partnership. Planning and Technical Assistance Grants are a specific additional resource opportunity. This program grant is designed to build the capacity of a region. State organizations are eligible to undertake and promote innovative economic development programs by funding feasibility studies, plans, and impact analyses. The scope of the foundational study in the grant would include the following activities:

Task 2: Articulate Economic Stakes of Ohio River Waterborne Market Restructuring: Building from the analysis presented in **Chapters 2** and **4** of the *2021 Kentucky Riverport, Highway, and Rail Freight Study Final Report*, quantify economic and business impacts of the economic restructuring of the Ohio River on each affected state, including Kentucky, Tennessee, Missouri, Illinois, Indiana, Ohio, and West Virginia, to the year 2045. Expanding the analysis of the current study to demonstrate the potential losses to each of the respective states in terms of jobs, wage income, employment, and GDP provides a rationale for not only Kentucky's interest in the Ohio River economy but also for the business case for why the other states may be motivated to invest in and collaborate in an RHC. It is likely that marine and waterway transportation studies and freight plans in the other states have not isolated the unique impact of Ohio River economic change to the degree Kentucky has. This is because, unlike Kentucky, the other states have Great Lakes commerce and/or Mississippi River commerce that may make it difficult to see the strong business case for investing in the Ohio River hinterland as has been demonstrated for Kentucky by the present study. Because the mission of the RHC is to support Ohio River waterborne commerce through the economic restructuring described in **Chapter 2**, expanding the business case (and body of support) beyond Kentucky to federal and neighbor-state partners can help build consensus and resources for an RHC that would benefit the Commonwealth.

INFRASTRUCTURE INVESTMENT & JOBS ACT: SECTION 21106.

The IIJA authorizes states and certain other local governmental entities that are regionally linked with an interest in a specific multistate freight corridor to enter into multistate compacts to promote the improved mobility of goods. This section requires the Secretary to establish a grant program to provide financial assistance to compacts in amounts up to **$2 million** for a new multistate compact and **$1 million** for an existing multistate compact.

Task 3: Identify and Recruit RHC Partners and Roles: Identify and recruit interested entities for serving on the RHC board and to sponsor/subscribe to the RHC on an ongoing basis. Identify (1) specific RHC performance outcomes for each entity shown in **Table 4-7** and additional participating entities as appropriate and (2) convene a series of up to three initiatory workshops to present and take comments from prospective RHC collaborating entities on (a) the RHC concept of operations as given in the above section of this report, (b) potential funding requirements and appropriate levels of investment and models for subscription/sponsorship of compact members, and (c) potential timelines for creation of a compact. A key aspect of Task 2 in RHC development includes the assessment of potential funding under the 2021 *Infrastructure Investment and Jobs Act* (IIJA). The act provides for $1–2 million in federal funding (with a 25 percent cumulative local match) for interstate compacts or collaboratives that manage corridors. The Ohio River is recognized as a corridor under federal transportation law, and the RHC initiation study should entail (1) outreach to all of the entities shown in **Table 4-7,** (2) assessment and presentation of the business case for a matching contribution under IIJA, and (3) the administration of the application/request for IIJA funding of such a compact if found to be feasible and justifiable under the act.

Task 4: Draft First-Year RHC Business Plan: Based on the findings of the *2021 Kentucky Riverport, Highway, and Rail Freight Study* (including the guidance for RHC business planning given in the above *Concept of Operations*), draft a synopsis of a first-year business plan (including a one-page executive summary) to articulate the costs, objectives, actions, capabilities, and intended outcomes of the RHC for its first year. This draft business plan can then be used (together with the findings of Task 1) to establish buy-in and expectations for participating entities.

Task 5: Draft RHC Charter and Operating Agreement: Based on the results of Tasks 1 and 2, draft a formal charter for the RHC with a plan to have the RHC recognized as necessary by any legislative and executive authorities with a target date to commence operations and a strategy for proposing policy or legislation in each participating state or district to support both funding and ongoing participation in the compact.

Action #4: Implement First-Year Operations of the RHC

Task 6: Implement First-Year Operations of the RHC: In 2022 and 2023, the RHC can be expected to commence operations according to the charter created in Task 5. It is recommended that the RHC proactively pursue both the key infrastructure and funding recommendations presented in this chapter as well as recommendations in **Chapter 5** regarding strategic economic development.

If EDA Grants are not available, it is recommended that other assistance may be sought through collaboration among the entities shown in **Table 4-7**.

Action #5: Pass State Funding Package for Riverports

It is recommended that the Kentucky General Assembly pass a new funding bill to establish the preservation program and enhanced the KRI Grant Program. Enhanced state funding levels are *described in*

Table 4-9: The table shows that such a funding level has the potential to attract up to **$167.5 million** of new federal money to the Kentucky's Public Riverports predicated on the benefits and impacts that full investment can provide (as described subsequently in **Section 4.5** and **Table 4-9**). The legislation is recommended to create a dedicated one-time appropriation of $12.3 million to clear the public riverport preservation backlog (without requiring local match) over a five-year period. The legislation is also recommended to make additional funding available for an enhanced KRI Grant Program sufficient for Kentucky's public riverports to qualify for federal grants aimed at modernization and expansion needs. The enhanced KRI Grant Program is recommended to lower the required match from 50% to 20% as most Kentucky riverports and communities would be unable to raise dollar amounts at 50% of the recommended funding level. The RHC described in Action #4 could prioritize and leverage the enhanced KRI Grant Program with economic development funding, site support, and marketing resources to support maximum utilization of new riverport infrastructure supported by the new program.

4.5 RECOMMENDED STATE FUNDING ENHANCEMENT

$12.3 Million Will Preserve Riverport Assets: Preserving Kentucky's riverport assets is the foundational investment for realizing the greatest benefits and impacts of waterborne commerce in Kentucky. Because preservation outlays often are associated with maintaining a baseline of condition and capacity, these investments may be more limited in their eligibility for federal programs than new enhancements aimed at sustainability, new technology, and social equity. Preservation needs are also essential in ways that cannot be contingent on the probability of an uncertain grant awards in any given cycle. For these reasons, basic riverport preservation is recommended as a top priority for state funded investment.

Enable Ports to Qualify for Larger Federal Matches: In addition to the $12.3 million for preserving Kentucky's private riverports, the $51.6 million for modernization and $158.2 million for riverport expansion are essential to enable the riverports to re-design, upgrade, and tailor their offerings to cater to a new and increasingly diverse clientele of shippers. These expansion enhancements may range from additional berth space and warehousing to new conveyance, loading, and technology systems to handle more chemicals, textiles, plastics, advanced manufacturing components, and health product components expected to account for a growing share of Kentucky's waterborne commerce in the next 25 years. These types of investments can be eligible for a host of federal grant programs because they are associated with the transition from the coal economy to more sustainable commodities and can create jobs and opportunities for many of Kentucky's rural and disadvantaged areas.

For this reason, if Kentucky's KRI Grant Program (state grants and local matches combined) can provide a 20% share for federal programs like RAISE and Port Infrastructure Development Program (PIDP), the five-year state and local contribution to reaching the $51.6 million modernization level would be $10.32 million (or $2.1 million per year). The five-year state and local contribution to reaching the combined modernization and expansion level of $209.8 million would be 54.5 million (or $10.9 million per year).

Proposed Structure of Kentucky Port Funding Enhancement: Because of the different investment objectives (preservation, modernization and enhancement) and the significant federal funding available through the Bipartisan Infrastructure Law (BIL), it is recommended that the Kentucky General Assembly consider (1) creating a dedicated state-funded one-time port preservation fund to cover the $12.3 million port preservation backlog in a five-year period and (2) expand the KRI Grant Program to an annual state funding level of **$6.7 million**, focusing primarily on enabling Kentucky's public riverports to obtain federal matches for modernization and expansion investments to support new and growing markets. It is also recommended that the local match for the KRI Grant Program is reduced from 50% to 20% to enable the riverports to reach the appropriate threshold to qualify for the larger state grant amounts.

By committing a pool of funds to address Kentucky riverports' preservation backlog independently of the KRI Grant Program, Kentucky can leverage the KRI grants to support the sustainability, social equity, and technology policy objectives to qualify for federal programs. **Table 4-9** below demonstrates how a dedicated five-year preservation program underlying an enhanced KRI Grant Program of between $1.6 million and $6.7 million can combine with local 20% matches and leverage federal contributions to bring Kentucky's **$222 million** investment level within reach.

Table 4-9: Leveraging Federal Contributions

Program	Investment Purpose	Period	Total Five-Year Outlay	State Funding	Local Matches	State + Local Combined	Federal Contribution (80%)
New KY Port Preservation Fund	Preservation Only	Dedicated funding pool to be used anytime during a five-year period	$12.3 million	$12.3 million	None	$12.3 million	Not Assumed
KRI Grant Program (Dedicated to Modernization & Expansion)	Modernization Only	Five-Year Program	$51.6 million	$8.3 million	$2.0 million	$10.3 million	$41.3 million
		Annual for Five Years	$10.3 million	$1.6 million	$0.4 million	$2.0 million	$8.3 million
	Modernization + Expansion	Five-Year Program	$209.8 million	$33.5 million	$8.5 million	$42.0 million	$167.5 million
		Annual for Five Years	$42.0 million	$6.7 million	$1.7 million	$8.4 million	$33.5 million

4.6 CONCLUSION

Kentucky's riverports are at a critical juncture in the development of Kentucky's economy and the use of the Ohio and Mississippi River. A $12.3 million investment in riverports over the next four years can preserve existing infrastructure to support the ongoing use of the ports for commodities currently moving by water. However, the restructuring of the economy from coal to other waterborne commodities represents both a challenge and an opportunity for the ports. Key policy recommendations pertain to (1) additional investment of up to $210 million to upgrade and modernize ports to make waterborne transportation competitive for additional post-coal commodities; (2) utilization of a range of federal funding programs to sponsor this investment; (3) implementation of an RHC to actively seek funding, support ports in assessing changes in specific infrastructure needs, and actively attract new anchor clients to riverport hinterlands. **Table 4-10** below summarizes key policy questions addressed in the current study and specific recommendations of the current study.

Table 4-10: Policy Summary of Questions Addressed and Recommendations

Key Policy Question	Answer	Recommendation
How is the role of Kentucky's riverports changing in the next 25 years?	The waterborne commerce market is shifting largely from a coal-based economy to a more competitive economy moving agricultural goods, plastics, and manufactured goods.	Preserve existing capacity while investing in additional capacity, new equipment, and ground access to enable ports to handle more manufactured goods.
What are the benefits of investing in new or updated riverport infrastructure?	If riverports can carry a different commodity mix in the future, they can continue to move Kentucky's goods at lower cost than other modes, enabling Kentucky businesses to invest in making and selling more products, employing more workers and paying better wages.	Target riverport promotion to agriculture, plastics/chemicals, secondary coal products, and other emerging sectors described in **Chapter 2**.
What types of improvements should be funded?	Improvements that upgrade equipment; redesign berth access; and ground access for chemicals, metals, and manufactured goods at developing and high-capacity ports are the most promising expansion investments.	Pinpoint infrastructure grant programs and public–private partnerships catering to specific manufactured goods movement supply chains and sectors.
Where will the market for Kentucky's waterborne transportation come from?	The market will rely heavily on pinpointing specific emerging sectors in agriculture and primary manufacturing (metals, plastics, agricultural commodities, and chemicals used in supply chains).	Implement an RHC to (1) identify emerging port-by-port opportunities to serve newly attracted and emerging firms trading in these targeted sectors, (2) acquire funding for infrastructure, and (3) actively promote both the ports and the hinterland region.
What are the next steps?	Promote Kentucky's riverports to target industry segments through the Kentucky Cabinet for Economic Development and local economic development initiatives, prioritize grant applications under the IIJA/BIL Act for riverport investments aimed at manufactured products, form a Waterways Caucus in the Kentucky General Assembly, and commission a multistate and multiregional Riverport Hinterland Compact.	