VIRGINIA INLAND PORT STUDY

Q4 2023 GENERAL ASSEMBLY UPDATE

Submitted by:

VIRGINIA PORT AUTHORITY

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SUPPORTING DOCUMENTATION

Report of the Virginia Economic Development Partnership Authority and Virginia Port Authority. (2023). *Inland Port Study: Feasibility Analysis of Locating an Inland Port in the Commonwealth (2022 Appropriation Act, Item 125.Q.)*

I. EXECUTIVE SUMMARY

This is the initial update the Virginia Port Authority (VPA) will submit in accordance with the 2022-2024 Biennial Budget (HB 6001 from the 2023 Special Session I), Item 113 T.1 and T.4, and provides a brief background on the study identifying an opportunity for a new inland port facility and next steps, for which the Commonwealth has allocated additional funds in the 2022-2024 budget to pursue further development.

In 2023 the Virginia Economic Development Partnership (VEDP) and VPA completed a study called the "Inland Port Study: Feasibility Analysis of Locating an Inland Port in the Commonwealth", hereinafter referred to as "Inland Port Study" which documented the evaluation of two regions within Virginia for their potential to support an inland port facility. The study then further identified a preferred site within the Oak Park Center for Business and Industry in the Mount Rogers/Bristol region.

The 2022-2024 Biennial Budget provides funding to further validate the opportunity and position the project for subsequent development. As outlined in this document, the funding will be used over the next year to perform the necessary field investigations of the site, confirm the cargo demand remains present and willing to engage, and develop a preliminary design in collaboration with key project stakeholders.

At the conclusion of the 2024 efforts, sufficient information will be available for the Virginia Port Authority and its Commonwealth partners to decide whether to move forward with the project and understand the costs and projected schedule associated with constructing the facility and initiating operations.

This first update:

- Summarizes the study efforts and findings leading to identification of the Oak Park Center for Business and Industry in the Mount Rogers/Bristol region as the preferred site (pages 2-9).
- Describes the efforts and their associated objectives for the upcoming year (through the end of calendar year 2024) (pages 10-11).
- Establishes expected progress and milestones that will be achieved in each of the quarterly updates through calendar year 2024 (pages 10-11).

II. INTRODUCTION

This is the initial update pursuant to Items 113 T.1 and T.4 of the 2022-2024 Biennial Budget (HB6001 from the 2023 Special Session I) regarding the development of an inland port in the Mt. Rogers Planning District. Budget Items T.1 and T.4 are as follows

Item 113 T.1. *Out of this appropriation, $10,000,000 the second year from the general fund is provided for the development of an inland port in the Mount Rogers Planning District. The Virginia Port Authority shall acquire, plan, design, and develop a site for the establishment of an inland port in the Mount Rogers Planning District. The Virginia Port Authority and the Virginia Economic Development Partnership Authority shall develop a business recruitment strategy for the inland port and the surrounding area to provide for rapid development and utilization of the facility. The Virginia Port Authority, in consultation with the Virginia Economic Development Partnership Authority, shall provide recommendations to the Governor, the Secretary of Transportation, and the Secretary of Commerce and Trade and the Chairs of the House Appropriations and Senate Finance and Appropriations Committees on any additional infrastructure improvements needed to maximize the economic benefit of the inland port by December 1, 2023.*

The additional infrastructure improvements needed to maximize the economic benefit of the inland port are sensitive to the facility concept that gets developed in collaboration with project stakeholders over the course of the coming year. Such improvements, if necessary, would likely consist of transportation and/or utility improvements outside the inland port facility to establish efficient access and provide capacity (power, water, etc.) to the site and developable adjacent sites, such as a grade-separated crossing, intersection improvements, or larger utility connections. Other improvements may be identified and recommended to help mitigate impacts to the surrounding community or enhance the utility/marketability of the property.

Specific recommendations will be provided in conjunction with the preliminary design that is to be submitted at the end of the third calendar quarter of 2024.

Item 113 T.4: *The Virginia Port Authority shall report quarterly to the Governor, the Secretary of Transportation, the Secretary of Commerce and Trade, and the Virginia Economic Development Partnership Authority, and the Chairs of the House Appropriations and Senate Finance and Appropriations Committees on the timeline, progress to date, and overall cost for the construction of the inland port. The first of these reports shall be due December 1, 2023.*

This first update:

- Summarizes the study efforts and findings leading to identification of the Oak Park Center for Business and Industry in the Mount Rogers/Bristol region as the preferred site.
- Describes the efforts and their associated objectives for the upcoming year (through the end of calendar year 2024).
- Establishes expected progress and milestones that will be achieved in each of the quarterly updates through calendar year 2024.

III. BACKGROUND

The following is a summary of the study findings that identified the Oak Park Center for Business and Industry in the Mount Rogers/Bristol region as the preferred site for the development of an inland port facility.

A. LAUNCH OF THE INLAND PORT STUDY

The 2022 Acts of Assembly, Special Session I (the 2022-24 Biennial Budget) directed VEDP and VPA to assess the feasibility of locating an inland port in the Central Virginia Planning District (formerly known as Region 2000), the Mount Rogers Planning District, and the City of Bristol (which falls within the Mount Rogers region). VEDP and VPA contracted with Moffatt & Nichol, a global infrastructure and engineering advisory firm with extensive experience in the economics of inland ports and intermodal freight to conduct the feasibility assessment. The study relied heavily on professional analyses and both public and confidential data garnered from businesses in the regions. The study was completed and released to the General Assembly early in January 2023.

The goal of the study was to identify the criteria necessary to make an inland port viable, the potential economic impact of an inland port, and locate a potential site or sites on which to develop an inland port.

The study team held community meetings in the three statutorily-defined study areas to engage stakeholders on the assets, challenges, and opportunities within each region for intermodal development.

B. WHAT DEFINES RAIL INTERMODAL AND AN INLAND PORT?

As explained in the Inland Port Study, “intermodal” in railroad parlance exclusively means the movement of containers and/or truck trailers on trains. Intermodal service provided by the major railroads is intended to move such truck freight via rail, generally at lower cost than truck service, and with a substantially gentler environmental impact.

The major North American railroads operate separate intermodal networks on their systems: one focused on international freight and the other on domestic freight. Importantly, the dimensions of the containers used for domestic service (generally 53 foot containers) and international service (20 or 40 foot containers) differ as do the railcars which are used for each container type.

An “inland port” is a rail-served intermodal facility which focuses exclusively on containerized international freight. An inland port connects to a marine/maritime port, in this instance to The Port of Virginia, and functions as a satellite truck gate for its companion marine terminal(s) (Figure 1). Within the facility, the port transfers containerized cargo to/from rail which provides for more efficient movement of the cargo between the inland port and marine terminal(s) as compared to truck. When executed properly, an inland port can attract businesses and drive fairly broad regional economic growth by offering convenient short-haul truck access to international trade, which is made financially feasible through the port’s efficient use of rail for the long-haul connection to the coast.

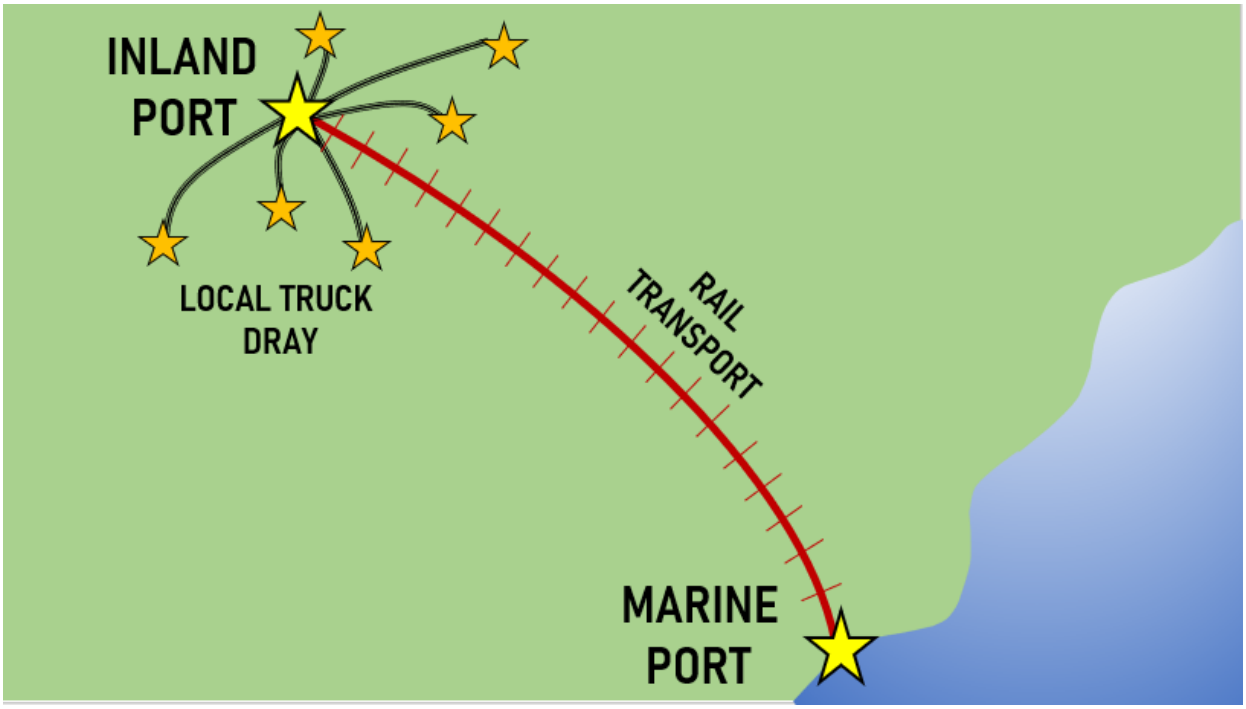

Figure 1: Inland Port Modal Concept

As described in the Inland Port Study, there are two overarching determinants of whether an inland port is feasible for initial launch: the adequacy of existing market demand and the availability of a site on which to develop the facility. Not every condition on the market or the physical side must be met exactly, but too many deviations from the requirements would prevent the successful development of an inland port.

As detailed in the study, the VPA already operates an inland port, the Virginia Inland Port (VIP), located in Front Royal, Virginia. VIP is regarded as the "original" inland port in the U.S. and has supported significant economic development in its region. It is described in the study among other examples of inland ports today in operation (the others located in neighboring states).

C. Market Definition and Assessment of the Regions

The study team individually assessed the Central Virginia Region and the Mount Rogers/Bristol Region on their potential market feasibility (Figure 2). The market feasibility assessment leveraged Freight Analysis Framework (FAF) data, jointly generated by the Federal Highway Administration (FHWA) and the U.S. Bureau of Transportation Statistics (BTS) and aligned with U.S. Bureau of Economic Analysis (BEA) population data. In addition to this data-based market feasibility, the study team conducted a manufacturing/industrial-derived demand analysis through confidential interviews to determine the viability of an inland port in each region. Exchanges were undertaken with individual businesses which ship freight today ("shippers") to understand current volumes and the nature of their freight.

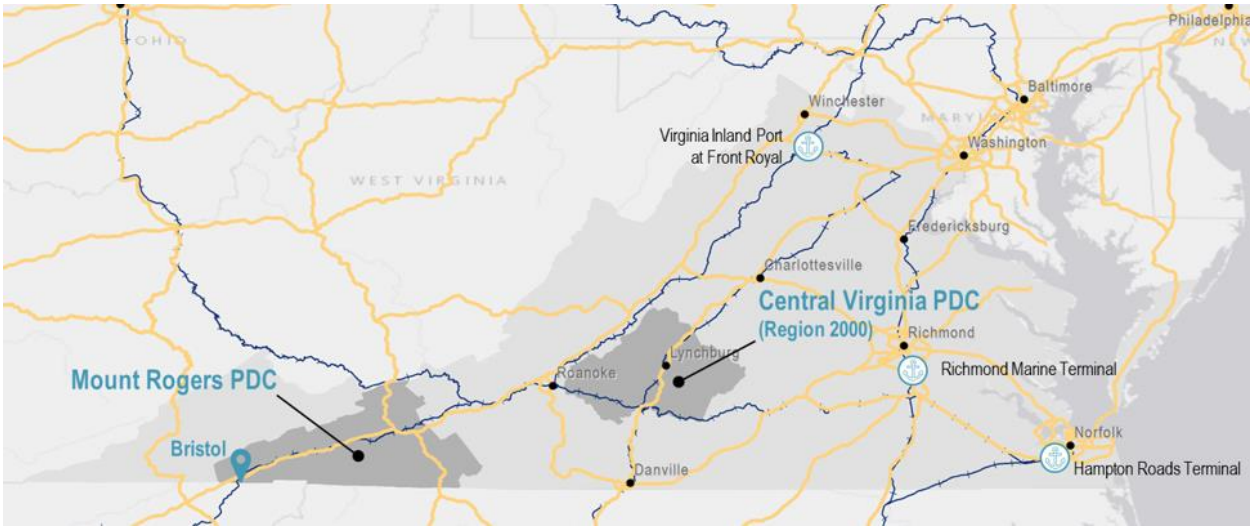

Figure 2: 2022 Study Areas

The study team determined that the logical catchment market reach of a potential future intermodal facility in each region (Central Virginia Region and Mt. Rogers/Bristol Region) should extend beyond the boundaries of the statutorily-defined regions. For purposes of assessing the adequacy of current freight demand, the Central Virginia Region (also referred to as Virginia 2000) planning district boundary surrounding Lynchburg was "embellished" by adding freight demand generated by Roanoke and Botetourt counties (along with the cities of Roanoke and Salem). The Mt. Rogers/Bristol region was expanded to include Pulaski and Giles counties, and northeastern Tennessee. Based on experience developing intermodal terminal projects, the study team determined that an absolute minimum threshold of twenty thousand annual container moves must be identified in a given region to justify intermodal service by a rail carrier. Absent at least 20,000 annual container moves, a railroad cannot justify its operating and associated expenses (along with other necessary conditions outlined in the study). Given the nature of this effort, development of a trade-dependent inland port, those 20,000 container moves could be either import or export cargo, but could not be domestic cargo.

Based on the analysis of both the data-based market demand and manufacturing /industrial-derived demand, the study determined that, at this time, the Central Virginia Region does not have adequate demand to justify the development of an inland port. While this assessment details current demand, the study acknowledged that the region could take steps to attract companies that would increase the freight demand in the region. The study recommended that the Central Virginia Region is best positioned to pursue other rail-centric development opportunities to attract industries dependent on rail and grow future freight demand.

In the Mt. Rogers/Bristol region, the Inland Port Study was able to identify just short of 35 thousand potential annual container moves to or from a maritime port. This specific freight demand was identified with discreet, specific shippers (the beneficial cargo owners of the freight) in the region and was "allocated" in the analysis to their specific origin or destination. The overall freight demand was associated with eleven shippers. The number of shippers is relevant in that the more concentrated the freight demand, the

higher the probability of aggregating adequate commitment to a future facility to support its economic viability. As normal in an assessment such as this one, all individual shipper input into the analysis was strictly confidential and not published. Shippers were assured of confidentiality when they were requested to provide their proprietary information. Accordingly, until committed, such data must be considered indicative, not guaranteed.

D. Key Factors for Rail Intermodal Success

i. Rail Haul Length

Length of haul for the railroad is a key factor. As detailed in the study, intermodal freight is highly competitive as every container moving via intermodal could easily move directly over-the-road on a highway. A rail intermodal move shorter than 250 miles is very difficult to be competitive unless there is a highly interested/motivated primary customer (or, very few, highly interested/motivated customers). A rail intermodal length of haul under 500 miles is still challenging for a railroad, but somewhat more feasible against pure over-the-road assuming certain market conditions. Any intermodal facility, including an inland port, will be more successful if not in near proximity to a competing intermodal facility.

ii. Local Drayage Distance

The trucking distance from the shipper's location to the ramp is another important factor. As described in the Inland Port Study, shippers are more willing to consider shifting their freight movement from pure highway to rail if the length of the local truck dray to a facility is reasonably short. The longer the distance the local truck pick-up (or final delivery) from the shipper's location to the intermodal ramp (the railhead), the less likely the shipper will utilize rail. The greater the geographic dispersion and distance from the intermodal ramp, the less likely that ramp will succeed in amassing adequate aggregation of freight to justify rail service. Therefore, within a target region, an intermodal facility's location is favored where demand is most densely concentrated.

Figure 3 is illustrative only, and not unique to Virginia. It illustrates that the shorter the overall length of haul from an intermodal facility to its destination, in our instance from southwest Virginia to the Port of Virginia, the more important that the facility be located as close as possible to where freight is being generated (or is destined). If the given railroad's length of haul is less than 500 miles, the facility will have difficulty attracting freight which requires a local truck dray 100 miles to reach the facility. The facility therefore needs to be located where the target freight is most densely concentrated.

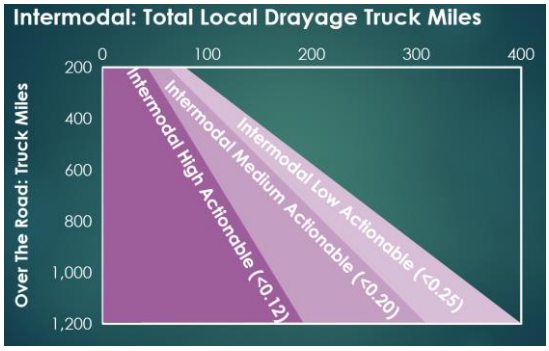

Figure 3: Total Local Drayage Truck Miles

iii. Other Factors

Several other factors contribute to the potential success of an inland port facility:

Highway Access: Given the truck-dependent nature of an intermodal ramp, the closer the access to an interstate highway, the stronger a facility's ability to compete for freight.

Intermodal Rail Network: Ideally, the facility should be located along a segment of rail mainline already carrying intermodal freight as that represents a lower cost of entry for the railroad to start a new service.

Development Opportunity: Having developable properties in the vicinity of the ramp allows for intermodal-dependent economic development subsequently to take place, bolstering freight demand and, of course, generating economic returns.

Facility Size, Geometry, and Orientation: For a modest 50 thousand annual lift facility target size (meaning, number of container units handled per year), acreage for the ramp footprint should be a minimum of 100 acres. A rectangular site that sits generally parallel to the serving railroad is preferred to a site which sits generally perpendicular to the railroad. The ideal location should not be "landlocked," meaning it should have some ability flexibly to adapt to development needs or to provide for future expansion when warranted.

Site Topography: Flat land is preferred. Railroads do not operate well with grades. The adjacent serving rail line should be level with the site.

Local Access: At-grade crossings that impact rail operations into and out of the ramp should be avoided. Ideally, the primary access road for truck freight access to the ramp should lie on the side opposite to where the serving railroad accesses the ramp.

Not every condition needs to be strictly met, but divergence from these conditions reduces the potential for success and/or necessitates higher development cost to establish an operationally efficient site. Given these constraints and due to the region's topography, there were exceedingly few locations in the Mount Rogers region that could adequately provide the necessary footprint.

E. The Preferred Site in Mt. Rogers

Based on the characteristics of what constitutes an attractive site described in the preceding sections, the study identified the Oak Park Center for Business and Industry as a preferred site for an inland port, pending further viability assessments. It is located in the densest concentration of existing freight demand and ownership by a single owner was a positive. An alternative site was explored near Wytheville which has close to ideal rail configuration, however it proved unfavorable in the analysis as the site was simply too distant from a significant majority of the existing freight demand. If the local truck dray distance is too great, customers will choose to move their cargo truck-direct to destination and not use rail intermodal. Other sites further south were also identified and considered, including in Smyth County, but each proved to have enough deficiencies to preclude further evaluation at this time.

During completion of the study, both the Washington County IDA, which directly manages the Oak Park Center, and the Washington County Board, endorsed resolutions confirming their willingness to donate the property needed for the intermodal footprint at Oak Park. This was not sought by the analysis but is a huge plus as it reflects willingness to collaborate locally to bring the project to fruition and reduces acquisition costs for the project.

Oak Park sits one mile from the existing interchange on 1-81 at exit 13, a key, essential attribute. Within the Oak Park Business Center, the ideal specific site for the intermodal footprint sits parallel to a high-capacity Norfolk Southern rail line moving substantial intermodal traffic today, including cargo generated by the Port of Virginia. All these were considered positives.

Topography is challenged throughout the Mt. Rogers region for a rail operation that favors low operating grades. Local topography at Oak Park is not ideal (Photo 1). Accommodating reasonable rail grades will require substantial site work, both excavation and fill.

Photo 1 – View of Oak Park site (NW edge of site, looking SE; Paramont Manufacturing visible on left)

The majority of current freight demand in the overall Mt. Rogers/Bristol region is export oriented. This will generate equipment management challenges such as maintaining a supply of empty containers and railcars to the region along with readily available chassis for the railroad, the Port of Virginia and the given customers. It also represents potential opportunity for a sound business recruitment strategy to attract import-focused customers to foster an optimal import/export balance.

No location will ever perfectly meet all ideal conditions. The most challenging physical element of Oak Park is the grade differential for the railroad versus the property. Perhaps

the most prominent positive is the location of Oak Park within the highest density aggregation of potential freight demand and freight generation.

F. Checklist of Attributes for Intermodal of the Preferred Site

The Oak Park site potentially meets the basic requirements defined in the study process, namely:

- Adequacy of available acreage
- With significant site work, a flat footprint for the facility
- Flexibility to adjust the specific pad for the footprint (not landlocked)
- Extensive parallel juxtaposition relative to the railroad mainline (property sits parallel, contiguous to the mainline, not perpendicular to it)
- Depending on the configuration, very limited at-grade conflicts between the mainline access points to the site and the roadway access to the site (railroad runs parallel on one side; the roadway on the opposite side)
- Immediate interstate highway access (one mile distance)
- Immediate access to a railroad already running intermodal freight over the given line and already connected to the Port of Virginia
- At just over 400 miles distance, solid length of haul which will allow for greater railroad competitiveness relative to pure truck over-the-road movement
- Location within the region's existing freight density (demand), which means shorter local truck moves (drays) between customers and the future facility
- Freight demand is relatively concentrated among few shippers that could potentially represent a sustainable volume for the facility
- A single landowner of the property needed for the facility footprint itself, who subsequently expressed willingness to donate the property

IV. TIMELINE, OBJECTIVES AND DECISION POINTS

Pursuant to General Assembly direction, VPA and VEDP have and will collaborate with each other and numerous stakeholders to deliver an integrated economic development, port, rail, and community consensus on the viability of an inland port in Southwest Virginia. This outreach and analysis are ongoing.

A. Year 1 Objectives and Decision Points

The goal of the first-year efforts will be to provide the VPA and associated Commonwealth entities with likely costs, potential benefits, risks, and opportunities of an inland port facility located in in the Oak Park Center for Business and Industry. This detailed feasibility study will address a number issues, including:

- Basic facility layout and tie-in to the Norfolk Southern mainline
- Property, right-of-way, utility and permitting needs and requirements
- Estimated earthwork quantities
- Confirmation of cargo volumes that can be committed to using the facility
- Determination of cargo handling equipment
- Opinion of probable cost and independent value engineering study
- Overall potential benefits of the facility

B. Year 1 Development Timeline

In calendar year 2024, VPA anticipates following milestone updates to the designated legislative and executive oversight entities:

- Calendar Q1 (March 2024) update will provide preliminary concept design alternatives for the Oak Park site, developed in concert with relevant port, rail, economic development, and community stakeholders. Early survey, geotechnical, and topographic work will be initiated and used to develop a basic risk matrix that will be updated in future updates.

- Calendar Q2 (June 2024) update will identify a preferred concept alternative based on early survey, geotechnical, and topographic studies. Additional engineering of that preferred concept will help to identify earthwork, property, right-of-way, utility, and permitting needs. The risk matrix will be updated.

- Calendar Q3 (September 2024) update will present a 30% preliminary design and an opinion of probable cost. Port, rail, economic development, and community stakeholder involvement will be initiated and addressed. The risk matrix will be updated.

- Calendar Q4 (December 2024) update will update the preliminary design based on stakeholder involvement. Earthwork, property, right-of-way, utility, and permitting needs will be identified and confirmed in a separate update. An independent value engineering study will be conducted to ensure a cost-effective design and acceptable cost estimate. Potential shipper commitments should be in process with VPA and Norfolk Southern. A business recruitment strategy will be coordinated with VEDP.

C. Year 2 Development Expectations

Completion of the Year 1 efforts will allow the VPA and its Commonwealth partners to determine if the facility should be fully funded, brought to final design and constructed.

The most aggressive schedules could support a late 2026 completion date, with 2027 as the more likely completion date. Potential completion (in-service) dates are sensitive to permitting, community and stakeholder issues, funding availability, and funding sources.