



New Intermodal Facility

North Carolina State Ports Authority

Port of Wilmington

2022 INFRA Grant Application

April 11, 2022



| Basic Project Information | |
|--|--|
| What is the Project Name? | New Intermodal Facility |
| Who is the Project Sponsor? | North Carolina State Ports Authority |
| Was an application for USDOT discretionary grant funding for this project submitted previously? | Yes, RAISE 2022 and PID 2020 |
| A project will be evaluated for eligibility for consideration for all three programs, unless the applicant wishes to opt-out of being evaluated for one or more of the grant programs. | <u>YES</u> Opt-out of Mega? <u>NO</u> Opt-out of INFRA? <u>YES</u> Opt-out of Rural? |
| Project Costs | |
| INFRA: Amount of Future Eligible Costs by Project Type | 1) A highway freight project on the National Highway Freight Network: \$ _____ 2) A highway or bridge project on the National Highway System: \$ _____ 3) A freight intermodal, freight rail, or freight project within the boundaries of a public or private freight rail, water (including ports), or intermodal facility and that is a surface transportation infrastructure project necessary to facilitate direct intermodal interchange, transfer, or access into or out of the facility: \$22,567,500 4) A highway-railway grade crossing or grade separation project: \$ _____ 5) A wildlife crossing project: \$ _____ 6) A surface transportation project within the boundaries or functionally connected to an international border crossing that improves a facility owned by fed/state/local government and increases throughput efficiency: \$ _____ 7) A project for a marine highway corridor that is functionally connected to the NHFN and is likely to reduce road mobile source emissions: \$ _____ 8) A highway, bridge, or freight project on the National Multimodal Freight Network: \$ _____ |
| Estimated Other Federal funding (excl. MPDG) | N/A |
| Project Location | |
| State(s) in which project is located | North Carolina |
| INFRA: Small or Large project | Small |
| Urbanized Area in which | Wilmington, North Carolina |

| | |
|--|---|
| project is located, if applicable | |
| Population of Urbanized Area (According to 2010 Census) | 106,476 |
| Is the project located (entirely or partially) in Area of Persistent Poverty or Historically Disadvantaged Community? | Yes, the project is located entirely in a Historically Disadvantaged Community and is adjacent to two Areas of Persistent Poverty. |
| Is the project located (entirely or partially) in Federal or USDOT designated areas | Yes, the Port-owned railroad used to move container boxes in and out of the Port goes through two Opportunity Zones (37129011000 and 37129011100) as it enters and exits the Port and the Port terminal is adjacent to Opportunity Zone (37129011000). The Port of Wilmington is in a Disadvantaged Community with four or more Transportation Disadvantage indicators (Disadvantaged Community with Resilience Indicator, Environmental Indicator, Economy Indicator, Health Indicator, and Transportation Indicator). The project area is not in an Empowerment Zone, or a Choice Neighborhood. |
| Is the project currently programmed in the: TIP STIP MPO Long Range Transportation Plan State Long Range Transportation Plan State Freight Plan | Yes, the project is in the MPO Long Range Transportation Plan, the State Long Range Transportation Plan, and the State Freight Plan. The project is not eligible for funding in the TIP or STIP (by law, port projects are not funded through NCDOT STIP process). |

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LIST OF ATTACHMENTS

- Cost Commitment Letter
- Letters of Support
 - NC Secretary of Transportation
 - Wilmington MPO
 - Cape Fear RPO
- Form SF-424
- Form SF-424C
- 2022 INFRA Statutory Selection Requirements Form

PROJECT DESCRIPTION

The North Carolina State Ports Authority (“NC Ports”) requests INFRA funding to construct a dedicated area for loading and discharging intermodal container trains at the Port of Wilmington. The *New Intermodal Facility* would help to divert nearly 250,000 container boxes from trucks to rail over the next decade.

The proposed project will construct a state of the art, dedicated, and safe area for loading and discharging containers on and off the rail at the port to reduce vehicle miles traveled and support efficient transportation design. The project will construct four dedicated rail sidings, each 1,250 feet in length, to allow the Port to form and service the container trains. Paving of approximately 9.7 acres around the rail sidings will provide storage and transfer areas on both sides of the new rail tracks. Three specialized and dedicated reach stackers will be deployed to load/unload rail cars with extra reach for the inner rail track. A secured area near the US Customs & Border Protection (CBP) required Radiation Portals will provide for secondary inspections to allow for safe and secure loading and discharge of container boxes (to and from trains) in the container yard. Technology system enhancements that would allow the port to convert to electric port vehicles and equipment, improved yard lighting, removal of a small and unusable section rail track, and specialized paving for future Rail Mounted Gantry (RMG) installation will future ready the site for fully automated container rail activities.

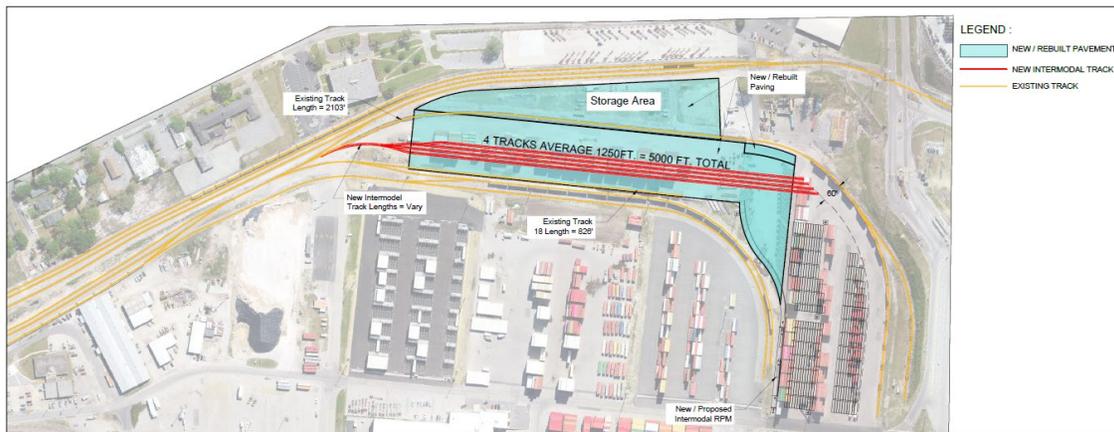


Figure 1. New Intermodal Facility

Without this investment, the Port’s intermodal activity is capped at approximately 14,000 intermodal rail movements annually. With the investment, the capacity increases to 50,000 intermodal rail movements annually. In 2023, the Port is forecasted to move 330,300 twenty-foot equivalent units (TEU), with rail accounting for just 10,328 of those moves, or 5.4% of the total moves. With the implementation of the project, by 2032 the percentage of moves is projected to triple that amount, growing to 32,590 rail container moves annually, allowing NC Ports to better support the regional need to move freight from the coast to the hinterlands.

By diverting such a large number of trucks to rail, the project reduces greenhouse gas emissions and is designed to address climate change impacts. The *New Intermodal Facility* aligns with the

President's greenhouse gas reduction goals, promotes energy efficiency, supports fiscally responsible land use and transportation efficient design, increases use of lower-carbon travel modes, incorporates a framework for future electrification and equipment infrastructure, increases climate resilience, incorporates lower-carbon pavement and construction materials, and reduces pollution.

The ***New Intermodal Facility*** project supports the INFRA program goals, providing \$86.5 million in monetized benefits over 30 years by shifting container movements from truck to rail. In addition, the project supports both regional and national economic vitality, supporting safe and cost-effective freight movement options for Port customers in both urban and rural communities. This project improves infrastructure condition, promotes regional connectivity and facilitates economic growth and competitiveness. The project will promote the competitiveness of manufacturers, suppliers, and distributors of the region by improving freight mobility and efficiencies and increased visibility into the supply chain. Significant benefit to NC exporters including lumber/food/agriculture industries, benefiting NC's rural industries and communities.

The total INFRA request for this application is \$18,054,000 million (80 percent) of a \$22,567,500 Urban project. NC Ports is prepared to provide the remaining \$4,513,500 (20 percent) of funding to complete the ***New Intermodal Facility*** project.

TRANSPORTATION CHALLENGE

Today the Port of Wilmington's intermodal – or moving containers by rail – delivery is limited by the positioning and length of rail tracks available for loading intermodal flat cars and lack of storage for cars awaiting loads. At present, the service, operating in proof-of-concept mode, is capped at about 14,000 containers per year. While the rail service has been enthusiastically received by customers, it is presently only a small fraction of Port throughput. Without investment, it is unlikely the intermodal service would be sustained.

The proposed INFRA grant for the ***New Intermodal Facility*** at the Port of Wilmington would allow the intermodal service to expand to more than 50,000 rail movements annually, helping to divert nearly 250,000 container boxes from trucks to rail at the Port over the next decade. Shifting the mode of freight transportation to rail will reduce congestion and bottlenecks on the National Highway Freight Network, providing significant public benefit, including more than \$40 million in trucking transportation freight cost saving and customer savings and an additional \$6.6 million in accident reduction. The ***New Intermodal Facility*** project will provide transformational impacts, these benefits can be monetized to more than \$86.5 million over 30 years.

The ***New Intermodal Facility*** project will have impacts on businesses and residents across the region; a reliable, healthy freight transportation system is an important component of the region's overall economy. NC Ports provides an optimal trade gateway that is closer to source and closer to demand, enhancing business competitiveness for cargo owners and transportation and logistics providers and providing technology that allows customers visibility into the supply chain. NC Ports and North Carolina governmental leadership are aligned and focused on expanding the Port's ability to deliver value to customers and supply chain stakeholders and in turn, deliver increasing positive economic and transportation benefits for the state and the nation.

BROADER CONTEXT AND OTHER INVESTMENTS

In 2018, NC Ports undertook a Container Terminal Yard Improvement Planning Study¹ with the key objective of expanding the current terminal throughput capacity to accommodate a minimum 750,000 (TEUs) annually. Recent investments in infrastructure improvement projects including the procurement of new neo-Panamax cranes, a new automated container gate, berth renovations and vessel navigation improvements has increased the container berth's capacity to well over 1,000,000 TEUs annually. In total, the five-year infrastructure investment plan required \$250 million in support of the expansion plan at NC Ports. Most of the needed funds have been secured via dedicated funding to NC Ports from the North Carolina General Assembly. Of the four core needs identified in the Container Terminal Yard Improvement Plan, the *New Intermodal Facility* is the final needed investment that requires funding.

WHY NOW FOR INTERMODAL?

NC Ports intermodal rail service, the Queen City Express (QCE) between the Port and Charlotte, North Carolina started in July 2017 and it was so successful that in 2019 NC Ports and CSX finalized an agreement to offer a new, expanded intermodal product. The new QCE expands the market available to customers and the presence of a viable intermodal service has acted as a catalyst to attract new shippers to North Carolina. QCE is one of the fastest and most direct rail services into and out of the Greater Charlotte region from a port in the southeast U.S. This regularly scheduled service offers the availability of containers at NC Ports' Charlotte Inland Port. Additionally, the new CCX facility in Rocky Mount opened in 2021 and now provides another mode of entry into the CSX network to the northwest.

Given current and forecasted demand for bulk and breakbulk shipments, the QCE and CCX intermodal services will significantly increase inbound-outbound rail shipments at the Port. Overall, the QCE and CCX rail services will lower transportation costs for businesses while taking trucks off the road, thus reducing emissions, improving road safety, and minimizing wear and tear on the State's highways. To improve the efficiency of freight transport and minimize the impact of projected volume increases on roadways, NC Ports has established a strategic goal to increase container traffic by rail.

Intermodal rail volume has been growing rapidly for many years, with exports and imports accounting for around half of U.S. rail intermodal traffic. Railroads have invested billions of dollars on new intermodal terminals, track upgrades, and other infrastructure projects that have made intermodal rail more reliable and cost effective. U.S. intermodal traffic totaled 14.1 million intermodal units in 2021, which was 4.9% higher than 2020, according to American Association of Railroads (AAR). For intermodal, a record-setting first half gave way to a lower second half as supply chain challenges persisted. Still, 2021 was the second-best U.S. intermodal year ever, behind only 2018.

Intermodal rail enables ports to reach further into the hinterland compared to the limited reach of transportation via trucks. According to the Journal of Commerce, rail lift shares at neighboring ports are up with major investment plans in place to continue to grow rail volumes. In addition,

¹<https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

major east coast ports such as Charleston, Savannah and Virginia have successfully leveraged the inland port concept, which was originally envisioned as means to expand market reach to hinterland customers. Today, inland ports help to reduce congestion around urban port facilities and provide truckers a variety of locations to pick up and drop off containers, thereby minimizing truck driving miles at a time of Electronic Logging Device (ELD) mandate, truck driver shortages, and supply chain disruptions. Improved intermodal facilities in North Carolina provide similar benefits, in addition to the reduction in greenhouse gas emissions and climate benefits of taking trucks off the road.



Figure 2. Loading an Intermodal Train at the Port of Wilmington

As initial services and connections to high-density areas (for example, Charlotte, Triad, and the Midwest) are developed, further connectivity to major railroad networks expands NC Ports reach and potential to service the interior beyond North Carolina. As demonstrated by carrier activities across south Atlantic ports, full connectivity to Class 1 railroad systems represents 20 to 30 percent of overall port throughput basis historical inland delivery demand. NC Ports also must continue to establish and expand rail connectivity as an alternative to trucking and to access and deliver across the broader inland market.

NC Ports and its partners have been planning for and making investments in intermodal rail activity. In 2017, NC Ports and NCDOT commissioned a rail study by Mott MacDonald “Wilmington Rail Improvements: Landside Rail Improvements Serving the Port and Moving Trains Safely Through the Community”². The rail study identified projects that were needed to transition container boxes from truck to rail at the port and get those container boxes to their destinations. The rail study identified the need for the *New Intermodal Facility*, a dedicated container intermodal area at the Port.

Nine projects in support of intermodal rail activity have been funded and are either completed or underway and total nearly \$60 million in investment.

² <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

| Project Title | Year | Location | Program | Partner Match | NC/Port Match | Other Partner | Total Program | Current Status |
|---|-------------|------------|-------------------------|---------------|---------------|---------------|---------------|----------------|
| Interchange Track | 2014 | Wilmington | NCDOT Rail Division | \$711,047 | \$804,953 | | \$1,516,000 | Completed |
| Rehabilitate Track 1 and 18 | 2017 | Wilmington | NCDOT Rail Division | \$625,272 | \$312,636 | \$312,636 | \$1,250,544 | Completed |
| Queen City Express Subsidy | 2017 | Wilmington | FHWA CMAQ | \$1,203,996 | \$300,998 | | \$1,504,994 | Completed |
| Studies: Wilmington Rail , Grade Separated & North Gate | 2018 | Wilmington | NCDOT Rail Division | \$500,000 | | | \$500,000 | Completed |
| Charlotte Inland Port Paving | 2019 | Wilmington | NCDOT Rail Division | \$1,630,000 | \$1,620,000 | | \$3,250,000 | Completed |
| Queen City Express Subsidy | 2019 | Wilmington | FHWA CMAQ | \$7,569,554 | \$1,892,389 | | \$9,461,943 | Underway |
| Radiation Portals, Intermodal Rail | 2021 | Wilmington | NCDOT Rail Division | \$480,500 | \$480,500 | | \$961,000 | Underway |
| North Gate (design, NEPA, Feasibility) | 2021 | Wilmington | FHWA STBDA | \$250,000 | \$62,500 | | \$312,500 | Underway |
| Wilmington Beltline improvements | 2022 - 2025 | Wilmington | FRA CRISI and NCDOT STI | \$27,300,000 | | \$18,200,000 | \$45,500,000 | Underway |
| | | | | | | | \$64,256,981 | |

Table 1. Funded Projects that support intermodal rail activity

INTERMODAL YARD LAYOUT



Figure 3. Current Intermodal Facility at the Port of Wilmington

The ***New Intermodal Facility*** project will construct a state of the art, dedicated and safe area for loading and discharging intermodal rail trains on the Port. The current layout of the rail tracks is not suitable for future intermodal use due to the location of the container track, the length of certain tracks and the lack of storage and working area.

Currently, what is called the Intermodal Yard is in the center of the container yard without any kind of perimeter or dedicated track. For container boxes to be loaded onto a train from the yard, a yard truck must drive the container through the container yard exit gate to pass through required US Coast Guard radiation portal, creating congestion and inefficiency in the yard. The area is lacking a defined perimeter, does not have adequate paving or storage, and is lacking appropriate lighting to work at night. Without a defined perimeter, traffic moves freely in and out of the area, creating safety concerns.

The additional working track length of the *New Intermodal Facility* design (of approximately 5000 linear feet) will reduce the number of daily switch-outs to accommodate increased intermodal volume through the Port with design allowing for expansion as needed with easy addition of tracks as volumes grow. The port is currently working with approximately 2,900 linear feet of working track; more than 90 containers departing via rail daily requires a full switch-out of the intermodal area, blocking gate traffic and creating port and road congestion. This will become a daily occurrence as intermodal volume grows.

PROJECT LOCATION

Wilmington is a port city in New Hanover County in coastal southeastern North Carolina. According to the 2010 Census, Wilmington is an Urbanized Area, the city is the largest in southeastern North Carolina, and for this INFRA grant program is considered an Urban Area. The project is a freight project that is an intermodal rail project and within the boundaries of a public port and is a surface transportation project necessary to facilitate direct intermodal interchange, transfer and access into and out of the facility and significantly improves freight movement on the National Highway Freight Network (NHFN) by shifting truck traffic to rail, thereby reducing congestion and bottlenecks on the NHFN, providing significant public benefits.

The Port-owned railroad used to move container boxes in and out of the Port goes through two Opportunity Zones (37129011000 and 37129011100) as it enters and exits the Port³. The Port terminal is adjacent to Opportunity Zone (37129011000) in New Hanover County, North Carolina. There are additional Opportunity Zones in Wilmington and adjacent Pender and Brunswick Counties, the port draws employees from these other zones, and port activities provide direct benefits to these zones.

| New Hanover County | Pender County | Brunswick County |
|--------------------|---------------|------------------|
| 37129011000 | 37141920602 | 37019020104 |
| 37129011100 | 37141920601 | 37019020101 |
| 37129011200 | | 37019020602 |
| 37129011903 | | |

Figure 4. Opportunity Zones in the tri-County Area

The Port of Wilmington is in North Carolina Census tract 109⁴; according to the Transportation Disadvantaged Census mapping tool⁵, the Port of Wilmington is in a Disadvantaged Community with four or more Transportation Disadvantage indicators (Disadvantaged Community with Resilience Indicator, Environmental Indicator, Economy Indicator, Health Indicator, and Transportation Indicator)⁶.

³ <https://public.nccommerce.com/oz/#section-overview>

⁴ <https://data.elpasotimes.com/census/total-population/total-population-change/census-tract-101-new-hanover-county-north-carolina/140-37129010100/>

⁵ <https://usdot.maps.arcgis.com/apps/dashboards/d6f90dfcc8b44525b04c7ce748a3674a>

⁶ <https://usdot.maps.arcgis.com/apps/dashboards/d6f90dfcc8b44525b04c7ce748a3674a>

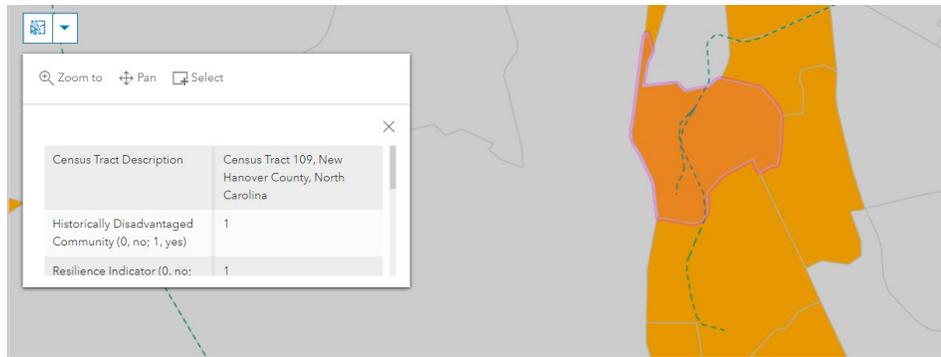


Figure 5. Census Tract 109, Historically Disadvantaged Community

The project area is not in an Area of Persistent Poverty however it is adjacent to two Areas of Persistent Poverty. The project area is not in an Empowerment Zone, or a Choice Neighborhood.

The Port of Wilmington is located on the Cape Fear River approximately two miles south of the Wilmington’s downtown area and approximately 26 miles from the open sea. It has nine berths with approximately 6,800 linear feet of wharf. The Port’s container operations encompass approximately 94 acres (83 acres of backlands and 11 acres of wharf) and 2,650 linear feet of berth along the Cape Fear River.

CSX Transportation provides daily service for container, boxcar, tanker, and general cargo services via a short line, Wilmington Terminal Railroad (WTR). CSX now owns and operates the largest intermodal rail network in the eastern United States. The City of Wilmington Beltline is located within the city limits of Wilmington.

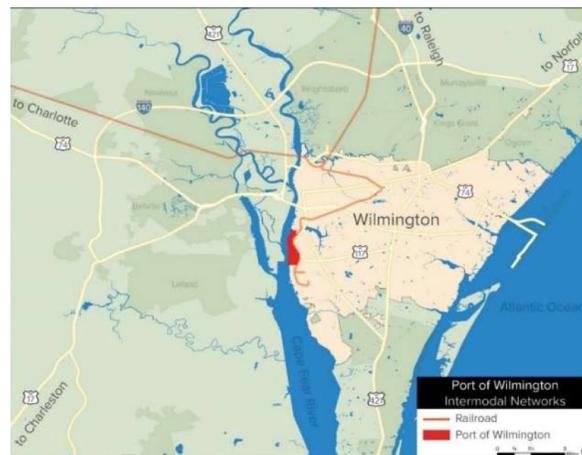


Figure 6. Port of Wilmington and Intermodal Networks within the City of Wilmington

The ***New Intermodal Facility*** project would reduce bottlenecks and address congestion challenges in the major urban area, while providing benefits to rural communities. While the project is in Wilmington, it also benefits urban and rural areas along the path of the QCE to Charlotte, North Carolina and along the path to CCX facility in Rocky Mount, North Carolina. The project

facilitates direct intermodal transfer and movement of freight from the National Highway Freight network to rail, significantly benefiting these areas. The project is a Small INFRA project.



Figure 7. Map of Project Location

PROJECT PARTIES

The North Carolina State Ports Authority is an enterprise economic development agency for the State of North Carolina that was established by the North Carolina General Assembly in 1945 and is now considered an independent agency of the North Carolina Department of Transportation (NCDOT). NC Ports owns and maintains the Port of Wilmington, the Port of Morehead City, as well as the Charlotte Inland Port. NC Ports is governed by an eleven-member Board of Directors.

NC Ports will be the sole recipient of the INFRA award. NC Ports can manage the construction bid process, sign contracts, and sign any agreement with U.S. Department of Transportation associated with any INFRA award with the approval of the State Division of Purchasing and Contracting. This application is supported by the N.C. Department of Transportation (NCDOT) as evidenced by the letter of support signed by North Carolina Department of Transportation Secretary Eric Boyette⁷. A letter from Robert Wicker, Chairman of the NC Port's Board of Directors demonstrates support for the project, as well as certification of matching funds⁸. NC Ports will work closely with NCDOT, CSX, WTR, U.S. Customs & Border Control (CBP), the City of Wilmington and other relevant partners to successfully complete the project.

⁷ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

⁸ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

GRANT FUNDS & SOURCES/USES OF PROJECT FUNDS

The INFRA grant application requests \$18,054,000 to fund the *New Intermodal Facility*. The Port has matching funds set aside to match an award for this project.

| Project Title | RAISE Award | NC Ports Match |
|------------------------------|--------------|----------------|
| Intermodal Yard Improvements | \$18,054,000 | \$4,513,500 |
| Total | 80% | 20% |

Table 2. High Level Matching Costs

NC Ports is well positioned to immediately obligate and encumber funds to complement a INFRA award. As established by the General Assembly, NC Ports enjoys financial independence. A detailed project budget is below in Table 4. If awarded, all FY2022 INFRA funds would be obligated in advance of September 2025 as required; in fact, it is expected that the construction would take place well in advance of that date.

| Project Component | Cost | % Total |
|-------------------------------|---------------------|-------------|
| Utility work | \$750,000 | 3% |
| Construction | \$14,300,000 | 63% |
| Technology system enhancement | \$1,000,000 | 4% |
| Future Ready | \$375,000 | 2% |
| Equipment | \$4,500,000 | 20% |
| Contingency | \$1,642,500 | 7% |
| Total | \$22,567,500 | 100% |

Table 3 Project Budget

| Activity | | Cost Per Unit | Quantity | TOTAL | Federal Share | Federal % | Port Share | Port % |
|---|---------|---------------|----------|---------------------|---------------------|------------|--------------------|------------|
| Removal of Existing Rail Tracks, Container Track 1 (tail only) | lin.ft. | 1,000 | 50 | \$50,000 | \$40,000 | 80% | \$10,000.00 | 20% |
| Container Stacking Yard Lighting (masts, luminaries, conduit, foundations) | Ea | 150,000 | 5 | \$750,000 | \$600,000 | 80% | \$150,000.00 | 20% |
| Line/corner Marking and Signage | Ea | 50,000 | 1 | \$50,000 | \$40,000 | 80% | \$10,000.00 | 20% |
| Roadway jersey barriers | Ea | 1,500 | 120 | \$180,000 | \$144,000 | 80% | \$36,000.00 | 20% |
| 5,000 feet of working track on 4 sidings (1250 each), transfer areas both the east and west side of the intermodal yard | lin.ft. | 6,000 | 500 | \$3,000,000 | \$2,400,000 | 80% | \$600,000.00 | 20% |
| Paving Intermodal area | acre | 1,100,000 | 9.7 | \$10,670,000 | \$8,536,000 | 80% | \$2,134,000.00 | 20% |
| Technology system enhancement (OCR, RFID, connectivity, etc.) | Ea | 1,000,000 | 1.0 | \$1,000,000 | \$800,000 | 80% | \$200,000.00 | 20% |
| Improved paving for future RMG | lin.ft. | 750 | 500 | \$375,000 | \$300,000 | 80% | \$75,000.00 | 20% |
| Secondary inspection area | Ea | 350,000 | 1 | \$350,000 | \$280,000 | 80% | \$70,000.00 | 20% |
| SUBTOTAL | | | | \$16,425,000 | \$13,140,000 | 80% | \$3,285,000 | 20% |
| Reach stackers | Ea | 1,500,000 | 3 | \$4,500,000 | \$3,600,000 | 80% | \$900,000.00 | 20% |
| Contingency | | | | \$1,642,500 | \$1,314,000 | 80% | \$328,500.00 | 20% |
| TOTAL | | | | \$22,567,500 | \$18,054,000 | 80% | \$4,513,500 | 20% |

Table 4. Project Breakdown of Costs

MERIT CRITERIA #1: SAFETY

The project fosters a safe transportation system for the movement of goods, but also reduces the number of trucks on the road, improving safety for freight movers and ordinary citizens. Overall, improved intermodal rail services at the Port will lower transportation costs for businesses while taking trucks off the road, thus reducing emissions, improving road safety, and minimizing wear and tear on the State’s highways. A key element in the safety of the on Port improvements will be improving track standards, reducing the likelihood of accidents.

| | Value |
|--------------------|-------------|
| Accident Reduction | \$6,606,246 |

Table 5. Monetized Value of Accidents Avoided

The Port of Wilmington is a formally designated Strategic Seaport. Nine Federal agencies and organizations - Maritime Administration, U.S. Army Corps of Engineers, Surface Deployment and Distribution Command, U.S. Coast Guard, Military Sealift Command, U.S. Army Forces Command, Transportation Security Administration, U.S. Northern Command, and U.S. Transportation Command have responsibilities for support of the secure movement of military forces through the U.S. Strategic Seaports. Together, these organizations developed a National Port Readiness Network Steering and Working Group to provide coordination and cooperation to ensure readiness of commercial ports to support force deployment during contingencies and other defense emergencies. Out of the nation’s more than 300 seaports, only 17 have been identified as strategic commercial ports and the Port of Wilmington has been provided with Port Planning Orders to fulfill these defense requirements. The Port of Wilmington must be capable of simultaneously handling commercial and military requirements, including rail activity. North Carolina is uniquely positioned to help solve the challenge of readiness in an environment of significant projected commercial trade growth. Improvements to the container terminal, including the *New Intermodal Facility*, will provide pivotal opportunities to help meet national military critical requirements.

CRITERION #2: STATE OF GOOD REPAIR

The project contributes to a state of good repair by improving the condition or resilience of the existing transportation facilities and systems. Without question, implementation of the project ensures the good condition of transportation infrastructure. This is true even for inland rural transportation infrastructure, by diverting cargo from truck to rail, the project supports infrastructure longevity and enhancement, as well as commerce and economic growth.

The project is consistent with relevant plans to maintain transportation facilities or systems in a state of good repair and addresses current and projected vulnerabilities. The project is appropriately capitalized up front and uses asset management approaches that optimize its long-term cost structure. A sustainable source of revenue is available for operations and maintenance of the project and the project will reduce overall life-cycle costs. The project will maintain or improve transportation infrastructure that supports border security functions; and the project includes a plan to maintain the transportation infrastructure in a state of good repair.

The existing intermodal yard area is insufficient to support the level of activity needed. The project will construct a state of the art and secure intermodal yard facility at the Port of Wilmington with a 25 plus year life. This project does not seek funding to redress deferred maintenance, nor will it rely on subsequent funding for recurring maintenance. The Port has a credible plan to address full lifecycle costs. Once design is underway, NC Ports will partner with the designer to develop a life cycle cost analysis. The life cycle analysis will assess pavement surface (i.e., asphalt, concrete, interlocking pavers) and type of rail construction (i.e., steel ties or wood ties). Based on a recent study⁹ any cement/concrete pavement alternatives (standard concrete pavement, roller-compacted concrete, interlocking pavers) have a much higher carbon footprint than asphalt pavement. NC Ports typically selects asphalt for cost and performance reasons, in addition to the benefit of the lower carbon alternative.

NC Ports generates sufficient revenues to pay for the operation and maintenance of the facility. As the operator and responsible entity of maintenance for the entire Port facility, NC Ports has its own asset management and follows protocols established by the North Carolina State Construction Office (NCOSC) and NCDOT. There is no right of way acquisition required for this project.

CRITERION #3: ECONOMIC IMPACTS, FREIGHT MOVEMENT, AND JOB CREATION

The *New Intermodal Facility* project will be transformational to the region and nation. The project promotes the competitiveness of manufacturers, suppliers and distributors of the region by improving freight mobility and efficiencies, while addressing bottlenecks in the freight supply chain, increasing safety and removing trucks from the National Highway Freight System. The attached economic contribution study details the recorded historical and projected total output contributions of NC Ports¹⁰.

By container volume growth percentage, North Carolina's Ports are among the fastest growing on the U.S. East Coast. In 2019, the Journal of Commerce named the Port of Wilmington the most productive port and Wilmington's container terminal was named the most productive terminal¹¹. In the container segment, there are many underserved customers that would be better served with lower cost through the Port versus other regional ports. It is generally conceded that rail is more economical for the shipper than truck transport if rail can be employed for the same purposes.

The project has impacts on businesses and residents across the region; a reliable, healthy freight transportation system is an important component of the region's overall economy. Industries that would be impacted by improved access to global markets via a dedicated intermodal facility at the Port are varied and span the entire east coast. NC Ports contributed \$15.4 billion to the state's economy in 2018, accounting for approximately three percent of the North Carolina's GDP¹². The Port's Strategic Plan projects container business to grow more than 50 percent in the next five years, partially a result of the ongoing infrastructure investments. Supported by planned

⁹ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

¹⁰ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

¹¹ <https://ncports.com/about-the-ports/news/north-carolina-ports-receives-top-honors-for-port-productivity/>

¹² <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

improvements in the 2021 Strategic Plan, the proposed project and market growth, the throughput is projected to increase to more than 666,667 TEU by 2040¹³. With the implementation of the project, by 2040 the percentage of container moves by rail is projected to grow to 7.5 percent or 50,016 rail container moves.

In keeping with the U.S. Department of Transportation's ROUTES initiative, this project also benefits the rural areas of North Carolina. According to Patrick Woodie, President of the NC Rural Center, 17 of the 25 most economically distressed counties in North Carolina are along the Port's truck and rail corridors to Charlotte and Rocky Mount. Four of the five largest Port of Wilmington export items by tonnage (forest products, wood pellets, woodchips, and food) originate outside of an urban area. The project strengthens the competitive advantage for existing and new businesses in these communities and improves the region's logistics network by providing resilient, clean, and safe transportation solutions. The project significantly improves the economic strength of the region and rural communities by increasing the economic productivity of linkages between rural and urban areas.

This project is part of a larger national solution to provide continued viability of cost competitive trade for US companies in the region; the Port is one of several in the southeast US that will be required to help the nation maintain global competitiveness, particularly considering growing import and export trade volumes. The project demonstrates strong leadership and vision and is part of a larger strategy that will significantly increase economic competitiveness and opportunities for the region and nation in addition to improving system operations to increase travel time reliability and manage travel demand for goods movement, especially for supply chain bottlenecks, thereby reducing the cost of doing business and improving local and regional freight connectivity to the national and global economy. Customer cost savings translates to more than \$86.5 million in user benefit over a 30-year period¹⁴.

The project will result in high result in high-quality job creation by supporting good-paying jobs and apprenticeship programs, and other training programs and provides workforce opportunities for historically underrepresented groups, such as through the use of workforce strategies targeted at or jointly developed with historically underrepresented groups, to support project development, and fosters economic growth and development while creating long-term high-quality jobs, while addressing acute challenges, such as climate change (see Criterion #5: Equity, Multimodal Options, and Quality of Life, as well as the NC Ports 2020 Strategic Plan¹⁵). By definition, the project supports integrated land use, economic development and transportation planning to improve the movement of goods and local fiscal and environmental health - facilitating greater public and private investments and strategies in land-use productivity. The project helps the United States compete in a global economy by encouraging the location of important industries and future innovations and technology in the U.S., and facilitates efficient and reliable freight movement.

CRITERION #4: CLIMATE CHANGE, RESILIENCY, AND THE

¹³ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

¹⁴ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

¹⁵ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

ENVIRONMENT

The project will achieve measurable benefits to the local community and the environment. These benefits include reduction of air emissions and fuel consumption as presented in Table 6. By removing trucks from state and area roadways due to increased shipments via rail an estimated annual reduction of fuel use ranging from 123,000 gallons in 2025 to 1,124,000 gallons per year in 2040 when fully implemented.

| | Fuel consumption (gallons) | Carbon tons | NOx tons | PM tons | SOX tons |
|---|-------------------------------|------------------|-----------------|------------------|--------------|
| Total savings over 20 years | 16,540,545 | 104,721 | 255.4 | 4 | 0.228 |
| Average annual savings | 8,270,275 | 5,236 | 4.3 | 0.03 | 0.011 |
| Average Annual Value of Fuel Consumption / Emissions | \$13,968,122 | \$353,390 | \$89,740 | \$276,361 | \$540 |

Table 6. Environmental Sustainability

By diverting such a large number of trucks to rail, the project aligns with the President’s greenhouse gas reduction goals, promotes energy efficiency, supports fiscally responsible land use and transportation efficient design, increases use of lower-carbon travel modes, incorporates electrification or zero emission vehicle infrastructure, increases climate resilience, and reduces pollution. The project will be constructed consistent with the Federal Flood Risk Management Standard.

The project promotes energy efficiencies through the reduction of greenhouse gas emissions, improves public health, and increases use of lower-carbon travel modes (i.e., intermodal freight movement), with a future proof design to incorporate electrification or zero emission vehicle infrastructure in a community that disproportionately experience climate-change-related consequences. In 2018, a Category 4 storm known as Hurricane Florence brought historic flooding throughout North Carolina, with Wilmington being one of the many communities that was most negatively impacted. Completion of the project that will divert truck trips to rail would improve the resiliency of freight movement during future disasters or emergency events. Additional environmental benefits of the project include reduced greenhouse gas emissions for traffic idling at the port, improved quality of life for residents in the neighborhood adjacent to the port resulting from the reduction in vehicular traffic and congestion, emissions, and noise and improved efficiency and reliability of freight shipments through the Port of Wilmington, benefiting U.S. exporters and importers throughout the Southeast region.

Unlike many industrial terminals, the Port is surrounded by high urban population densities with access to good public transportation. Nearly 50 percent of Port of Wilmington employees (as of February 2022) live within New Hanover County, the same county as the Port. A recent effort to fund and construct a sidewalk, shelter and bus pull-out near the Port entrance along Shipyard Boulevard between Vance Street and Rutledge Drive was a partnership between the Port, the City of Wilmington, Cape Fear Public Transportation Authority and the Wilmington Metropolitan Planning Organization to provide transit opportunities for the community surrounding the Port and create a safer environment for the community.

According to the Environmental Protection Agency’s EJSCREEN tool, the Environmental Justice Index for Traffic Proximity in the project footprint is in the 93rd percentile when compared to the rest of the state of North Carolina (Figure 8)¹⁶. Redirection of port vehicle and truck traffic to rail will help alleviate traffic on these City streets, alleviating congestion for residents.

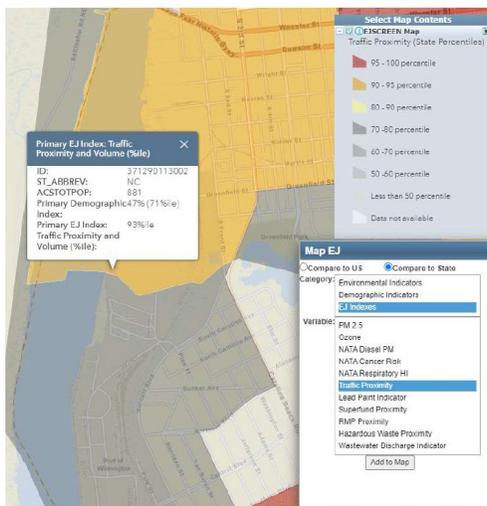


Figure 9. Environmental Justice Index for Traffic Proximity in Project Area

NC Ports has meaningfully sought community input through public involvement, particularly engaging environmental justice communities and disadvantaged communities that may be affected by the project as part of the Wilmington MPO Long Range 2050 planning process and through the many NCDOT partnerships and planning activities, including participation in the Lower Cape Fear Sustainable Communities Consortium (See Criterion #5: Equity, Multimodal Options, and Quality of Life for more details).

CRITERION #5: EQUITY, MULTIMODAL OPTIONS, AND QUALITY OF LIFE

The *New Intermodal Facility* will anchor transformative, positive, and long-lasting quality of life changes at the regional and local level. Economic vitality of the community is an integral part of high quality of life for its citizens. Increased employment opportunities and increases in real incomes can improve the overall quality of life of the region. The Port is an active player in shaping the region’s future through economically sustainable jobs and equitable opportunities. There are many low and moderate wage earners in the Port vicinity that would benefit from low-skill, high-wage jobs like those created by the project.

The Wilmington area’s growing population is a major economic asset that will help the region compete in the global economy. The project will help ensure all the region’s residents can connect to good jobs and contribute their talent and creativity to build a strong economy. In the City of

¹⁶ http://www.climatechange.nc.gov/Part_1_Cover_TOC_Preface_ExSum_Chapters.pdf

Wilmington, over 22 percent of residents live below the poverty level¹⁷, compared to 13.6 percent for the state of North Carolina. Thirteen percent of Port of Wilmington employees reside in what the NC Department of Commerce designates to be economically distressed counties¹⁸.

NC Ports partnered with the Lower Cape Fear Sustainable Communities Consortium to develop a regional growth and sustainability program for the Southeastern North Carolina area called FOCUS. FOCUS was established through a three-year U.S. Department of Housing and Urban Development (HUD) grant and the initiative represents all aspects of the community, across diverse populations, commerce, and culture. The FOCUS program promotes equality in communities across the Cape Fear Region through economics, environment, health, housing, opportunity, and transportation for the many diverse groups of residents in the region.

According to the FOCUS Equitable Growth Profile Summary of the Cape Fear Region and the U.S. Census Bureau, the region is experiencing rapid population growth¹⁹. Since 1980, the region's population has almost tripled from 160,000 to over 431,000. But the dynamics of growth differ in the Wilmington region compared with most growing regions. While in most growing regions, communities of color are driving growth as the aging White population shrinks as a share of the population, this is not the case in the Wilmington region. Non-Hispanic Whites represented 75 percent of Cape Fear's population in 1980 and are expected to represent 77 percent of the population in 2040.

The FOCUS study found that the Wilmington region is experiencing a demographic transformation characterized by a diversifying younger population and a rapidly growing senior population that is predominantly White. As the region's labor force grows increasingly diverse, closing wide and persistent racial gaps in economic opportunity and outcomes will be key to the region's future growth and prosperity. By creating pathways to good jobs, connecting younger generations with older ones, building communities of opportunity throughout the region, and ensuring educational and career pathways for all youth, the region's leaders can put all residents on the path toward reaching their full potential, and secure a bright economic future for all.

While the region's share of people of color population is projected to remain constant over the next 30 years, their racial and ethnic mix is changing. In 1980, the region's people-of-color population was nearly entirely African American. Today, Latinos, people with mixed race backgrounds, and Asians represent over a third of the region's communities of color. The Latinos population, in particular, has grown at the fastest rate, expanding by 189 percent in just ten years. Growth of the African American population has slowed significantly over time, and as a result, the African American population as a share of the total Cape Fear population shrunk from 24 percent in 1980 to 14 percent in 2010.

¹⁷<https://www.census.gov/quickfacts/fact/map/wilmingtoncitynorthcarolina,newhanovercountynorthcarolina,NC/IPE120219>

¹⁸ <https://www.nccommerce.com/grants-incentives/county-distress-rankings-tiers#:~:text=The%2040%20most%20distressed%20counties,least%20distressed%20as%20Tier%203.&text=County%20Tiers%20are%20calculated%20using,Median%20household%20income>

¹⁹ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

At the same time, the region's population has aged quickly. Between 2000 and 2010, the 65+ year old population in the region has grown by 56 percent – a rate that is roughly 3.5 times faster than the U.S. and two times faster than in the state overall. This trend is particularly salient in Brunswick County where the senior population has grown by 89 percent, nearly doubling in size within a decade. Wilmington's growing popularity as a top retirement destination has likely been the driving force of growth in its White, senior population.

Because of these shifts and the growing presence of a younger Latino population, the region's youth are more diverse than its seniors. Latino residents in the Wilmington area have a median age of 25, compared with 36 for Blacks, and 43 for Whites. Accordingly, 33 percent of youth today are people of color, compared with 13 percent of seniors. The 20-percentage point racial generation gap between young and old represents an economic risk for the region because places that have larger racial gaps between their young and old tend to make smaller investments in the educational systems and community infrastructure that help youth contribute to the region's economic growth and vitality. With a rapidly growing aging population, the region will need to ensure future generations are equipped to enter the labor force and sustain the region's future economic growth.²⁰

According to the Environmental Protection Agency's EJSCREEN tool, the Environmental Justice Index for Traffic Proximity in the project footprint is in the 93rd percentile when compared to the rest of the state of North Carolina²¹. Redirection of port vehicle and truck traffic to rail will help alleviate traffic on these City streets, alleviating congestion for residents.

The type of skilled jobs targeted to Wilmington's growing population and created by the project include port workers, stevedores and longshoremen, river pilots, rail workers, federal agency workers, and much more. The region will need a skilled workforce to remain competitive in the future, but growing segments of the region's workforce lack the education needed for tomorrow's jobs. In the NC Ports 2021 Strategic Plan²², NC Ports identified *Developing the Talent Pipeline* as one of the four core pillars needed for future success. Among the strategies for success, NC Ports has formalized an apprentice/internship program by partnering with the local county school districts, particularly trade schools and high school dual enrollment programs, community colleges, and local and statewide universities; thereby targeting this younger demographic and providing hands on job training. These efforts will help enhance the talent pipeline to support the future staffing requirements of NC Ports and surrounding similar industries and businesses. NC Ports also actively recruits veterans and other qualified talent pools in the community.

The North Carolina State Ports Authority has for many years maintained a policy of equal opportunity hiring from the local population and, along with that, a policy of promoting from within on the basis on merit. Current demographics of the Port of Wilmington labor force demonstrate that commitment.

²⁰ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

²¹ http://www.climatechange.nc.gov/Part_1_Cover_TOC_Preface_ExSum_Chapters.pdf

²² <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

| Project Title | Number | Percent |
|---|------------|---------|
| Asian (Non-Hispanic/Latino) | 1 | 1% |
| Black or African American | 32 | 18% |
| Hispanic/Latino | 6 | 3% |
| Two or More Races (Non-Hispanic/Latino) | 1 | 1% |
| White (Non-Hispanic/Latino) | 138 | 78% |
| TOTAL | 178 | |

Table 7. Demographic Breakdown of Port of Wilmington Employees

The *Intermodal Rail Improvements* will also enhance the Wilmington area quality of life by reducing road wear and congestion on local and state streets, highways, and bridges. The intermodal rail improvements will significantly enhance the mobility of goods through the region and in the local area. When truck traffic is shifted to rail, roadway wear is eliminated and congestion from additional trucks on the road is reduced; these are public benefits.

| | Road Wear Savings \$'s | Congestion Savings \$'s | Consumer Transport Benefits \$'s | Inventory Carrying Costs \$'s | Net Consumer Col 3-4 Benefits |
|-----------------------------|------------------------|-------------------------|----------------------------------|-------------------------------|-------------------------------|
| Total savings over 20 years | 17,950,913 | 84,092,626 | 129,717,348 | -28,884,005 | 100,833,343 |
| Average annual savings | 897,546 | 4,204,631 | 6,485,867 | -1,444,200 | 5,041,667 |

Table 8. Quality of Life Benefits

The project will reduce the number of accidents, injuries, and fatalities on the roads, divert freight and reduce congestion on highways, reduce pavement deterioration on highways by taking trucks off the roads, reduce CO air emissions, particularly in Congestion Mitigation and Air Quality Improvement (CMAQ) priority counties where the containers are destined, like Charlotte and Rocky Mount, North Carolina and also final hinterland destinations.

CRITERION #6: INNOVATION AREAS: TECHNOLOGY, PROJECT DELIVERY, AND FINANCING

NC Ports is committed to utilizing new techniques and materials to extend the effective service life of the container and rail facilities and provide environmentally sustainable outcomes.

INNOVATIVE TECHNOLOGIES

Several innovative solutions will be incorporated into the *New Intermodal Facility* including Radio Frequency Identification (RFID) technology for terminal trucks entering/departing the new intermodal facility and Optical Character Recognition (OCR) and/or Geographic Positioning System (GPS) technology for both rail cars and containers. These technologies, by definition, enhance data collection and digital connectivity by incorporating container data automatically into the terminal operating and gate systems. In turn, this creates improved economic outcomes by providing visibility into the supply chain for Port customers.

NC Ports is looking to expand upon previous United States Department of Transportation (USDOT) Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) initiatives working with electric and autonomous vehicles at US Ports. NC Ports plans to apply for the Advanced Transportation Technologies and Innovative Mobility Deployment grant, PROTECT (Promoting, Resilient Operations for Transformative, Efficient, and Cost-saving Transportation) and the Reduction of Truck Emissions at Port Facilities Program to secure autonomous vehicles and electric charging stations.

Using information gained from ATCMTD activities at other ports that laid the groundwork for how to make US ports ready for autonomous trucks, NC Ports wants to create a two phased approach to introducing automated electric vehicles into the US logistics supply chain. NC Ports finds itself in a unique position to become a US leader in general cargo autonomous truck use, while expanding its footprint into the container business.

There is a general cargo business process at the Port of Wilmington that involves stripping and stuffing containers with raw materials. This process involves moving containers from the container yard to the general cargo yard within the port terminal and vice versa using diesel yard trucks. These dray activities utilize NC Port employees and have a repetitive route back and forth. Phase One would use electric yard trucks and outfit them with autonomous sensor arrays to allow them to travel between the two points at the Port. After this system is fully operational, NC Ports would implement Phase Two and deliver the stuffed and stripped containers to a warehouse located approximately one mile off terminal. NC Ports would partner with NCDOT and only use Level 4 Autonomous driving (the electric yard truck with the Autonomous Sensor arrays and a safety driver). NC Port employees would be the safety drivers in the autonomous vehicle. Semi-automated drays allow NC Ports to move slowly into automated vehicle space.

To achieve this, NC Ports would need to deploy a Vehicle to Vehicle (V2V) and Vehicle to Infrastructure (V2I) communication infrastructure. In addition, electric charging stations that work with automated vehicles will also need to be vetted. All these systems will need to work with the terminal operating system, and other port systems.

If NC Ports is successful with the automation grants and automated vehicle activities, the final goal would be a fully automated container yard and intermodal yard powered by fully automated Rail Mounted Gantry (RMG) equipment. This automated port equipment would be safe and reduce emissions, addressing climate concerns.

The ***New Intermodal Facility*** project needs to employ the needed technology and connectivity to systems to integrate future autonomous activity into the new intermodal yard. The project would also future ready the site by preparing the paving for future Rail Mounted Gantry (RMG) equipment to operate the ***New Intermodal Facility***.

PROJECT DELIVERY

To expedite the delivery of potential project permits, the Port may utilize NCDOT's innovative project, Advancing Transportation through Linkages Automation and Screening (ATLAS), a mapping program that reduces the data collection burden of the environmental review process.

Current data collection during project development requires extensive, time-consuming research across multiple platforms and agencies. Project ATLAS consolidates data from local, state, and federal agencies and adjacent projects to provide single-point access to GIS-based information and accelerate the environmental reviews of projects.

The Port will also endeavor to undertake an innovative contracting method to finalize the design and construct the project. The Port will evaluate using a Construction Manager at Risk (CMAR) project delivery method. This method is relatively new to North Carolina, having only been recognized as an acceptable delivery method by the General Assembly. Moreover, this project would be only the Port's third experience with CMAR. The Port intends to use the proposed project as a catalyst to deliver more Port work using the CMAR method in the future.

CMAR is unique in that the contractor is selected by qualifications and becomes an integrated member of the project development team, all the way through design. While other procurement methods tout the same benefit, CMAR differs in that the initial phase is not at all contractually tied to the construction phase. The contractor works for a (typically nominal) fixed fee in the design phase as an advisor in hopes of being retained for the construction phase. The construction phase transitions to a more traditional delivery method with all project elements being competitively lump sum bid. CMAR's unique mixture of initial selection by qualifications, acting as a trusted advisor to the owner, followed by a traditional competitive bid/build environment has yielded an interaction between owner and contractor built on relations, rather than purely about the bottom line.

INNOVATIVE FINANCING

There is no innovated financing associated with this project.

BENEFIT COST ANALYSIS

As shown in the Benefit-Cost Analysis, the *New Intermodal Facility* project will achieve measurable benefits to the local community and to the environment. These benefits include reduction of air emissions and fuel consumption, as well as reduction in highway congestion. In addition, the Port of Wilmington is one of a handful of the nation's strategic seaports, the completion of the *New Intermodal Facility* will help to ensure readiness of this commercial port to support force deployment during contingencies and other defense emergencies. The benefits significantly outweigh the costs of the project.

As demonstrated in the Benefit-Cost Analysis, the monetized benefits of the project are more than \$86.5 million over 30 years. By moving freight traffic off the highways and onto rail, the project will save more than \$6.6 million in accident costs over 30 years and provide more than \$26 million worth of benefits in highway congestion reduction. Fuel cost savings of more than \$8.2 million and transport cost reduction of more than \$40.3 million will make freight movement more efficient and cost-effective for companies in the region. These savings are offset by the cost to construct the projects and increased inventory holding costs to create a final 4.8 benefit cost ratio.

See the Benefit Cost Analysis Appendix²³ and calculations spreadsheet²⁴ attached.

| Benefit or Cost Category | |
|--|---------------|
| Tot. Capital Cost including Match @ 7% NPV | \$18,184,207 |
| Quantified Benefits @ 7% NPV: | |
| Accident Reduction | \$6,606,246 |
| Non-Carbon Emissions Reduction | \$3,075,711 |
| Fuel Cost Savings | \$8,235,014 |
| Social Cost of Carbon @ 3% | 5,296,877 |
| Additional Savings: | |
| Road Wear Savings | \$5,589,267 |
| Reduced Highway Congestion | \$26,183,412 |
| Consumer Transport Cost Reduction | \$40,389,306 |
| Increased Inventory Holding Cost | (\$8,834,992) |
| Total Quantified Benefits | \$86,540,843 |
| Benefit Cost Ratio (BCR) | 4.8 |

Table 10. Benefit Cost Analysis

PROJECT READINESS

ENVIRONMENTAL RISK

The project does not include any “show stopper” risks. There are no risks associated with real estate acquisition, procurement, environmental permitting, social or cultural impacts or engineering/technical feasibility of the project. There is no local opposition and no regulatory issues associated with the project as it is the reconstruction and improvement to an existing working wharf structure. The greatest risk associated with the project is delay in commencing construction and the potential impacts associated with not having the intermodal capability when needed. NC Ports believes this project will require a NEPA document, likely a Categorical Exclusion, see more in Required Approvals.

PROJECT SCHEDULE & TECHNICAL FEASIBILITY

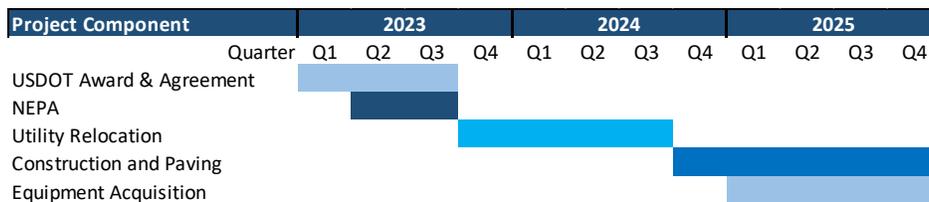


Table 9. High-level project schedule for the Port of Wilmington New Intermodal Facility

All necessary activities for the project will be complete to allow INFRA grant funds to be obligated sufficiently in advance of the statutory deadline and the project can begin construction upon

²³ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

²⁴ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

obligation of grant funds and that those funds will be spent expeditiously once construction starts, with construction expected to be complete in 2025. All property is owned by NC Ports so there is no right of way acquisition as part of the project.

NC Ports is soundly prepared to provide long-term operations and maintenance costs for the project. NC Ports’ financial statements provide evidence of stable and reliable capital and operating fund commitments sufficient to cover estimated costs and demonstrate the availability of contingency reserves. Financial statements are available as part of annual audits by the Office of the North Carolina State Auditor, providing evidence of the level of reasonableness of accounting estimates made by management, as well as the overall presentation of the financial statements. The audit stated that the financial statements (the financial position, the changes in financial position and cash flows) for the fiscal year ending June 30, 2021 were in accordance with generally accepted accounting principles²⁵.

NC Ports intends to start the design and environmental permitting process at this time; the design and permitting work is not included in this grant application project schedule and cost. All State Environmental Policy Act (SEPA) requirements will be completed as a part of the design and permitting process. National Environmental Policy Act (NEPA) would be a USDOT requirement and would take place after a grant award and would be part of the grant awarded schedule.

NC Ports is well positioned to immediately obligate and encumber funds to complement a INFRA award. NC Ports also has a history of competent management of federal funds and expedited and well-managed construction projects. The Port’s ability to manage construction projects has been tested and proven across multiple projects in recent years. Examples of successfully implemented capital projects by the Port are included in Figure 9 below.

| | |
|--------------------------------|--|
| On Time & On Budget | Refrigerated Container Yard |
| | Development of dedicated refrigerated container area with racks and plugs for 540 new refrigerated containers. Completed April 2020. <i>Total Cost: \$13.5M</i> |
| | Relocation of Liquid Bulk Pier |
| | Relocate the liquid bulk transfer facility serving Kinder Morgan to Berth 1 and dredge the turning basin to allow for larger ships. <i>Total Cost: \$23.2M</i> |
| | Berth 8 Replacement |
| | Replaces Berth 8 entirely to accommodate larger cranes and vessels. <i>Total Cost: \$47M</i> |
| | Automated Container Gate |
| | New fully automated container gate to increase capacity <i>Total Cost: \$25M</i> |

Figure 10. Recent Port Projects Completed On Time and On Budget

The port has recently rebuilt all its container berth facilities, completed a new expanded refrigerated container yard, constructed a new automated container gate, and commissioned seven post-Panamax container cranes. NC Ports has been awarded 27 federal Department of Homeland Security Port Security Grant Program (PSGP) grants between 2011 and 2021 and has demonstrated

²⁵ <https://files.nc.gov/nc-auditor/documents/2021-09/FIN-2021-4620.pdf>

competent management, administration, and execution of those federal grants.

NC Ports will ensure all necessary activities will be complete to allow INFRA grant funds to be obligated sufficiently in advance of the statutory deadline and that any unexpected delays will not put the funds at risk of expiring before they are obligated. NC Ports has consultants available under a Limited Services Contract and final design efforts can be contracted on short order. NC Ports can manage its' own contract bid process, with the final contract being approved by the NC Ports' Board of Directors and the North Carolina State Division of Purchasing and Contracting.

With a INFRA award, construction is expected to begin in 2024 with operations commencing in 2025. In the meantime, the intermodal business is confined to current levels of activity (capped at approximately 14,000 containers annually), based on the current footprint of the facility. Container Yard activity would not be interrupted due to construction activity.

The *New Intermodal Facility* project is technically feasible and has independent utility. The Wilmington Intermodal Rail Improvements study²⁶ that evaluated potential near-term rail and port infrastructure improvements was a comprehensive analysis of the demand for freight rail services at the Port, a thorough review of existing rail facilities at the Port and recommendations for accommodating the projected growth in freight rail traffic, a complete review of CSXT's Wilmington Beltline, including the Davis Yard facility in Leland, along with recommendations for upgrading the infrastructure needed to sustain the increased freight volumes and raise train operating speeds. Engineers determined the recommendations based on technical feasibility, constructability and utility of the *New Intermodal Facility*. The study finds the project technically feasible with independent utility.

REAL PROPERTY, RIGHT OF WAY AND ENVIRONMENTAL STUDIES

The *New Intermodal Facility* is a construction project that will be completed on the Port of Wilmington terminal to replace, upgrade or repair existing structures in the existing footprint(s) and will not significantly impact the natural, social environment. Additional permitting is not expected for the project construction, however, the Wilmington Rail Improvements study²⁷ included an environmental resource screening as an initial review focused on areas that would have potential construction impacts. Operational changes, or projects that do not require earth moving, were not reviewed during this environmental screening. See Appendix F of the report for the detailed environmental screening. The report also includes a list of potential agencies that may require coordination.

REQUIRED APPROVALS

The *New Intermodal Facility* is expected to require environmental permits and reviews. NC Ports would acquire those in advance of signing an agreement for the INFRA grant award. Expected permits include Stormwater Management, and Erosion and Sediment Control.

²⁶ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

²⁷ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

For the NEPA status of the project, NC Ports would work closely with USDOT in what is believed to likely be a Categorical Exclusion documents. The NC Ports project schedule outlines this process and it would be complete well in advance of the statutory obligation deadline.

See other sections of this application for details about public engagement including historically disadvantaged communities and compliance with environmental justice requirements. There is no Right-of-Way acquisition required for the *New Intermodal Facility* project.

STATE & LOCAL APPROVALS

NC Ports is an independent, enterprise agency of the State; therefore, legislative approval of the project by the General Assembly is not required. The details of the project were prepared with the direction and approval of the State of North Carolina Department of Administration State Construction Office (NCSCO) as will future design, contracting and construction, as required.

FEDERAL TRANSPORTATION REQUIREMENTS AFFECTING STATE & LOCAL PLANNING

There is a broad range of partnership and collaboration for the project. The project is included in statewide and local plans, demonstrating strong collaboration among a broad range of stakeholders, and is the product of a robust, inclusive planning process. The project is not included in the North Carolina Statewide Transportation Improvement Plan (STI) because port rail is operated by short lines which are not eligible to participate in the STI, but references to the need for improved Port intermodal capabilities are included in NCDOT statewide plans including the 2017 North Carolina Statewide Freight Plan²⁸ and the North Carolina Department of Transportation 2050 NC Moves Long Range Plan²⁹.

NC Ports participates in other freight planning activities and has a presence in a variety of critical statewide freight and transportation forums including the North Carolina Freight Advisory Committee, the NC Statewide Freight Planning Committee, NC Strategic Transportation Investments Planning Committee, NC Multimodal Investment Network and Strategic Highway Corridors planning group. NC Ports is a voting member of the Wilmington Metropolitan Planning Organization (MPO), Jacksonville MPO, Cape Fear RPO (Rural Planning Organization), and the Down East RPO. The project is acknowledged in the 2050 Wilmington MPO Long Range Plan. The Port also partners with rail providers (Class 1 and short line operators) and other transportation planning organizations around the state including those along the US74 truck and rail corridors and other major metropolitan areas.

The project also involves collaboration and partnership with the US Customs & Border Protection and the US Coast Guard. As shown in Table 2 of this application, over \$64 million has been invested by the Port and Port partners in support of intermodal rail at the Port of Wilmington. Of note, partnership between NC Ports and NCDOT Rail Division is funding the implementation of a dedicated Radiation Portal in the intermodal yard area, and a \$45.5 million investment in the

²⁸ https://connect.ncdot.gov/projects/planning/Statewide-Freight-Plan/Documents/NCDOT_SWFrtPln_FinalReport_210608.pdf

²⁹ <https://www.ncdot.gov/initiatives-policies/Transportation/nc-2050-plan/Documents/nc-moves-final-plan.pdf>

Wilmington Beltline has been funded via Federal Rail Administration’s (FRA) Consolidated Rail Infrastructure & Safety Improvements (CRISI) grant and the NCDOT Statewide Transportation Improvement Program (STIP).

Planning partners and public engagement includes NC Tomorrow, a regional economic development initiative, the Lower Cape Fear Sustainable Communities Consortium (FOCUS, a three-year U.S. Department of Housing and Urban Development grant to promote sustainable economic growth), and other statewide and local economic development partners like the NC Rural Center. Statewide planning documents that included public input and acknowledge the importance improved port intermodal capabilities and its impacts to the region include:

- North Carolina Statewide Freight Plan, 2021³⁰
- North Carolina Department of Transportation NC Moves 2050³¹
- North Carolina Maritime Strategy³²
- North Carolina State Ports NC Ports Strategic Plan³³
- North Carolina State Ports NC Ports Economic Contributions to the State³⁴

Also, please see Resolutions of Support from the Wilmington MPO³⁵, the Cape Fear RPO³⁶, and the NCDOT Secretary Boyette³⁷.

ASSESSMENT OF PROJECT RISKS & MITIGATION STRATEGIES

The *Intermodal Yard Improvements* is a construction project that will be completed on the Port of Wilmington terminal to replace, upgrade or repair existing structures in the existing footprint(s) and will not significantly impact the natural, social environment. Stormwater and Erosion and Sediment Control permitting is expected for the project construction. NEPA will be completed upon grant award. There are no risks associated with real estate acquisition, procurement, social or cultural impacts or engineering/technical feasibility of the project. There is no local opposition and no regulatory issues associated with the project as it is the reconstruction and improvement to an existing working port facility. The greatest risk associated with the project is delay in commencing construction and the potential impacts associated with not having the intermodal capability when needed. A risk register would be completed for this project, once awarded.

STATUTORY PROJECT REQUIREMENTS

Please see the Statutory Selection Requirements for 23 U.S.C.117 INFRA attached as an

³⁰ https://connect.ncdot.gov/projects/planning/Statewide-Freight-Plan/Documents/NCDOT_SWFrtn_FinalReport_210608.pdf

³¹ <https://www.ncdot.gov/initiatives-policies/Transportation/nc-2050-plan/Pages/default.aspx>

³² https://www.ncdot.gov/initiatives-policies/Transportation/freight/Documents/NC_Maritime_final_report_2012-06-26.pdf

³³ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

³⁴ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

³⁵ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

³⁶ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

³⁷ <https://connect.ncdot.gov/resources/PORTS-INFRA2022/Pages/default.aspx>

Appendix.

INFRA SMALL PROJECT SELECTION

The North Carolina State Ports Authority (“NC Ports”) requests INFRA funding to construct a dedicated area for loading and discharging intermodal container trains at the Port of Wilmington. The *New Intermodal Facility* would help to divert nearly 250,000 container boxes from trucks to rail over the next decade and provides a 4.8 BCA, including \$86.5 million in monetized benefits over 30 years. The *New Intermodal Facility* will be transformational in terms of the number of trucks it would take off congested local roadways and the positive effect the project will have on mobility of freight and people in the State and region; fuel cost savings of more than \$8.2 million and transport cost reduction of more than \$40.3 million will make freight movement more efficient and cost-effective for companies in the region.

FINAL SUMMARY

In summary, the *New Intermodal Facility* will construct a state of the art, dedicated and safe area for loading and discharging intermodal rail trains on the Port. Without this investment, the Port’s intermodal activity is capped at 14,000 intermodal rail movements annually. With the investment, the capacity increases to 50,000 intermodal rail movements annually; allowing NC Ports to better support the regional need to move freight from the coast to the hinterlands. In 2023, the Port are forecasted to move more than 343,113 twenty-foot equivalent units (TEU), with rail accounting for 5.4% of those moves. With the implementation of the project, by 2040 the percentage of moves is projected to grow to 7.5 percent, or more than 50,000 rail container moves annually. The project is aligned with INFRA program goals, providing more than \$86.5 million in monetized benefits with a 4.8 benefit cost ratio by shifting container movements from truck to rail.

The proposed INFRA grant for the *New Intermodal Facility* at the Port of Wilmington would help shift the mode of freight transportation to rail, thereby reducing congestion and bottlenecks on the National Highway Freight Network, providing significant public benefit. The *New Intermodal Facility* supports both regional and national economic vitality, supporting safe and cost-effective freight movement options for Port customers in both urban and rural communities. This project meets the administration’s goals: reducing greenhouse gas emissions with elements to address climate change impacts, promotes energy efficiency, supports efficient transportation design and systems, incorporates future electrification port vehicles, increases resilience, incorporates lower-carbon construction materials, and reduces pollution while creating sustainable economic opportunities and the creation of good jobs while addressing environmental justice and racial equity.