moffatt & nichol

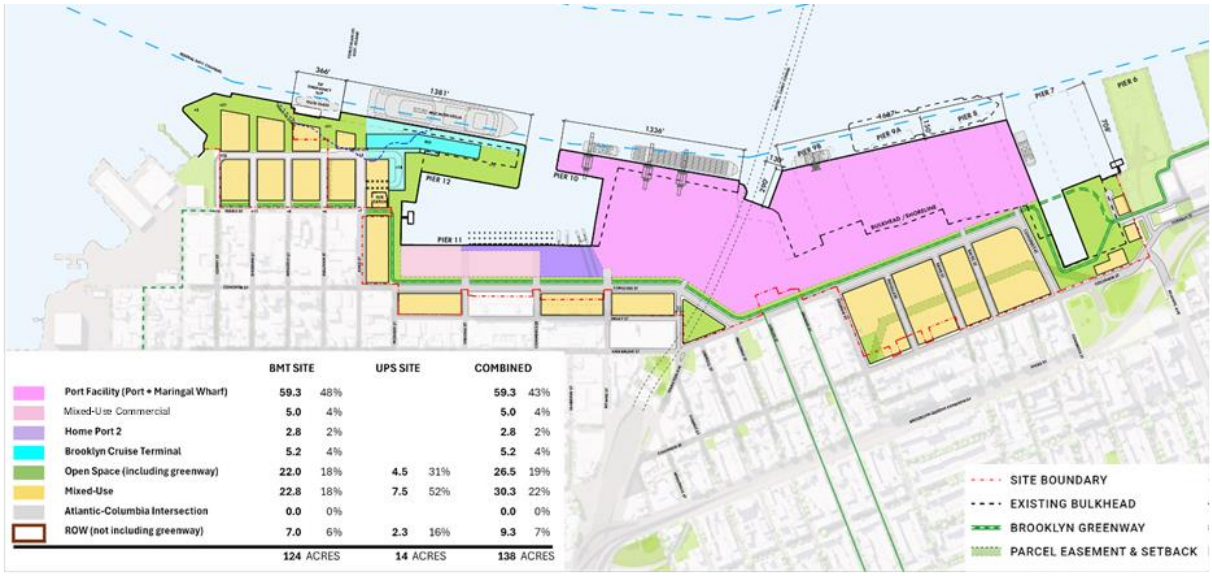
529 5th Avenue, 14th Floor
New York, NY 10017

(212) 768-7454 Fax (212) 768-7936
www.moffattnichol.com

MEMORANDUM

To: **NYCEDC**
From: **M&N**
CC: **Buro Happold**
Date: **January 24, 2025**
Subject: **BMT Collective Market Assessment and Planning Implications Brief**
M&N Job No.: **241265**

The intent of this document is to provide M&N's assessment of the market dynamics which have framed the outlook for freight and passenger activity at BMT, and to provide a summary of the associated planning implications. The document covers containers, construction staging, general cargo and cruise and is based on the site configuration shown in the figure below.



Containers

Overall Assessment

Opportunity – There is no doubt BMT has an opportunity to increase its throughput / volume in the future. Such volume growth will primarily come from capturing an increased share of the handling of the imported perishable products and foodstuffs ultimately destined for New York City that today use ports in New Jersey, Pennsylvania and Delaware. Long-term vision to establish logistics routing through BMT to Hunts Point, largest location of food distribution for New York City.

Challenges – There are, however, notable limitations and competitive factors which must be considered in the upside potential of the terminal. The challenges primarily relate to the existing layout of piers, poor condition of the maritime infrastructure including draft limitations and lack of a developed last mile sustainable delivery network primarily to the Fish, Meat and Wholesale Produce Market.

Existing Conditions for Red Hook Container Terminal Operations

- BMT's existing position is that it serves as a niche terminal inside the larger NYNJ port complex. It has historically accounted for 1-2% of NYNJs total throughput, serving small vessels whether that be of the larger carriers (e.g. MSC, CMACGM) or the smaller / specialized carriers (e.g. Seaboard, Grimaldi).
- BMT's access channel is limited to 40' compared to the other terminals in NYNJ which are accessible to 50'. BMT is not presently part of deepening project for the Port of New York and New Jersey.
- Furthermore, pier infrastructure has deteriorated (Pier 9a & 9b are condemned, Pier 10 fenders are in need of replacement) and there has been little to no investment in new handling equipment (all Ship to Shore ("STS") cranes are over 20-years old and approaching the end of their lifecycles, 2-of-4 of the 4 cranes at Pier 10 are not operational).Finger pier configuration is obsolete and will no longer be useful for modern port operations
- Since the transfer of management control of BMT from the Port Authority to EDC, much of the infrastructure and equipment is owned by the City (pier infrastructure and container handling equipment) and the existing lease agreement with Red Hook Container Terminals (RHCT), inherited by EDC from the Port Authority, does not incentivize RHCT to make investments due to their relatively short terms.
- The container terminal operates with a generally low densified reach stacker operation, using only a portion of the site for container operations, which is suitable for the low volume currently handled at the terminal, but may become increasingly inefficient if volumes were to increase. The operation today uses more land compared to proposed densified operations.

Overall, the terminal has been put into a disadvantaged position because of the lack of public and private investments in pier infrastructure and handling equipment. The finger pier configuration no longer meets the needs of modern-day vessels. Irrespective of the challenges and limitations posed by other physical attributes (discussed below), RHCT's lack of proper/functioning/modern equipment and infrastructure has clearly impacted its ability to compete for market share.

Existing Physical Limitations

- Access channel and berth pocket are 40'-depth, limiting vessels to roughly 4,000 TEU vessels.
    - Though still present in the fleet which calls NYNJ, the larger trade routes (North Asia, Europe, Southeast Asia) generally deploy larger vessels to take advantage of economies of scale.
    - This suggests that BMT's opportunity to serve/attract services is on the smaller routes, namely select South American services, Caribbean and Central America, Africa and even the Mediterranean

- BMT's Pier 10 is a single berth and can serve one container ship at a time (along with a barge simultaneously). This single berth is capable of serving additional throughput from the addition of a third service (and up to a fourth service should demand exceed expectation).
- Total maritime and non-maritime operations at BMT are today conducted on roughly 60-acres, compared to 200 – 350+ acre terminals in NYNJ.
- Access to the regional road network is through the BQE. Congestion on the BQE and surrounding local streets is a limiting factor for moving a higher volume of containers through BMT that are picked up and delivered by trucks.
- There is no on-dock / near-dock rail to support high volume / frequency of container movement.
- Even if water depth, crane count, yard area were not limitations, the resulting truck traffic associated with higher container volumes would negatively impact the neighborhood and run counter to one of the core goals of the redevelopment effort at BMT.
- BMT does not sit in close proximity to the large dry and refrigerated warehouse clusters (found in NJ & PA) that support the transloading activities associated with high volumes of consumer goods. These facilities rely heavily on trucks, and a sharp increase in truck traffic on local roads would be problematic in the adjacent residential neighborhoods of Red Hook

Overall, BMT is limited to smaller vessels by its navigation access and transportation connectivity. This suggests its potential lies with smaller trade routes and niche carriers.

Existing Market at BMT

- The existing shipping profile consists of two "regular" scheduled services:

  1) a weekly Seaboard service (2,600 TEU vessels upgraded to 3,600 TEU vessels in Q4 2024) that serves the Caribbean and Central America trade route. It has a high exposure to refrigerated cargos (particularly bananas)

  2) a bi-weekly Grimaldi service (specialized Container-RoRo [ConRo] 1,750 TEU vessels) that serves the West Africa trade route. Again, some exposure to perishable items but also handles dry cargo as well

- Additionally, the terminal handles other ad-hoc and seasonal sailings from Seaboard
- Both the Seaboard and Grimaldi services call other Northeast ports (Philadelphia and Wilmington, DE). These two ports, with Philadelphia in particular – which includes Philadelphia, Glouster and PSA Penn – are BMTs strongest competition for the small vessel, perishable product market.
  - M&N estimates that roughly 20-25% of the volume handled in Philadelphia is destined to the NYNJ MSA (target market for BMT) – this is trucked in (roughly 40,000 inbound moves annually)
- BMT sends a barge to NJ twice a week loaded with international import containers that have arrived on the international vessels. These barges are returned to BMT with full or empty containers which will be loaded onto the international vessels for export. This barge service is valuable to BMT as it

allows the customers of Seaboard and Grimaldi to access the NJ market, creating a larger, more diversified end-user base. This service is currently subsidized.

- Within NYNJ there is a strong affiliation between the container terminals and the carriers, where the terminal operator and carrier are owned by the same parent company. This means that the carriers (CMA CGM, Maersk, MSC) will call their affiliated terminals (Port Liberty Bayonne/NY, Port Elizabeth, PNCT respectively). The likelihood of shaking one of these carriers' services loose from their affiliated terminal is low.
    - There are however, two ways to have one of those carriers call BMT 1) Have the cargo owner rather than shipping line prioritize the use of BMT due to a superior last mile logistics set up there compared with New Jersey, Pennsylvania or Delaware or 2) provide lower costs than New Jersey. Option 2 is very challenging to do as the terminal business is primarily scale driven and the New Jersey ports are much more efficient on a unit basis for the large carriers than BMT will ever be.
- In general, long-term concession agreements incentivize terminal operators to invest in modern handling equipment and operations. Additionally, terms are now being renegotiated where infrastructure investments (traditionally the responsibility of Port Authority) are now falling to the terminal operators (which is contrary to what is being proposed at BMT and could make the terminal attractive to an operator). The cost of pier redevelopment is substantial, in the $100s of millions, and the Port Authority simply does not have the revenue to support these necessary improvements.

Overall, there is significant competition coming from the local NYNJ terminals, but even more so from Philadelphia and Wilmington. Capturing additional volume / services at BMT will mean altering the existing supply chains of cargo owners which is not easily done.

Hunts Point

- A separate work stream (not M&N) has been taking place with regards to a potential Blue Highway landing at Hunts Point. This project involves removing the existing unoccupied Prison Barge and transforming the associated land into a marine terminal that can accommodate Ro/Ro and Container barges as well as smaller last mile vessels. The goal of this project is to move as many trucks destined to/fr. Hunts Point from the roadways to waterways improving the overall condition for residents and businesses within the Bronx.
- Moving cargo by barge compared with truck is economically challenging due to the additional lift on and lift off charges (4 more compared with trucking) and the efficiencies and flexibilities of over the road trucking.

Overall, water delivery of cargo to Hunts Point, if successful would provide a significant opportunity to grow cargo volumes at BMT and launch a large-scale Blue Highway container on barge system within New York City.

Container Market Outlook

- BMT currently handles 90,000 moves annually

  - 60,000 international moves (import and export trade carried by international-bound vessels) – Seaboard & Grimaldi
  - 30,000 barge moves to / from NJ

- Therefore, it is assumed that each of the two regularly scheduled service accounts for 45,000 moves (ignoring the ad-hoc and seasonal sailings) consisting of 30,000 international + 15,000 barges.
- Based on service profile in NYNJ, Philadelphia and Wilmington, M&N believes it reasonable to assume that with the investments made in equipment and pier infrastructure that BMT should be able capture at least one additional service – resulting in an incremental 45,000 moves for a total of 135,000 moves.
  - Within NYNJ there are three-to-four independent small services currently calling other terminals. These include Turkon, Hapag-Lloyd (Gemini Alliance w/ Maersk), Zim and another Grimaldi service which could be attracted.
  - Additionally, in NYNJ some of the large carriers (CMA CGM, MSC and Maersk) have smaller services (<4,000 TEU) which as capacity becomes limited in the NYNJ terminals may seek an outlet at BMT.
  - Within Philadelphia there are three Seaboard services (one of which also calls BMT now) which could be inclined to add a call to BMT.
- In general, it is very challenging to attract new carriers / services, because cargo owners (e.g. Dole, Chiquita) and shipping lines must both realize the benefits of changing terminals.
- One additional service means that berth utilization at the single berth facility, operating 5-days/week at two 8-hour shifts per day, would begin increasing above the 50% point, after which the risk of service disruption, queuing time increases significantly. This could add to wait times and costs for shipping lines / cargo owners which is problematic for a terminal operator. Additional topside equipment (including cranes) could be used to improve (i.e. decrease) the time vessels are at berth. As another options, should the port assume a 7-day, 24-hour operation, berth utilization would not exceed 50% even with a fourth service.
  - As part of the analysis, M&N joined EDC for a series of industry participants (terminal operators and port investors) engagements. This served as an opportunity for EDC to present to the conceptual BMT redevelopment project and to get their feedback as to the opportunities and risks associated with the project: Some of the key, shared themes were:
  - Recognition that BMT would continue to serve a niche role inside the larger port NYNJ basin, servicing the smaller vessels on the smaller trade routes
  - Strength in perishables is a plus, but this a specialized market which relies on certainty of vessel schedules and fluidity (speed) of movement through the port and transportation system
  - Competition against truck is difficult, and that the barge movement is a tricky business model, it can be done, but not easily. One operator pointed to the success of the barge operation between Vancouver and Vancouver Island as evidence that the system can work.
  - The Hunts Point barge operation being studied by EDC, is an interesting potential integration with BMT serving as a hub for Blue Highway. In such a scenario, this should be operated by the same operator of BMT to ensure as efficient and low cost and operation as possible.

- Long-term leases (30-year minimum) is needed to attract an operator

Overall, one additional service (bringing the total to 135,000) is a realistic planning scenario. If this were a private client, seeking to buy the terminal, this is level of activity we would advise them to base the valuation on. While there is upside potential to attract additional service(s), the realities of the market, traffic and connectivity issues, as well as the cost of adding additional infrastructure and equipment are considerable challenges.

Container Port Precedents

- The size and location of BMT is uncommon in world of container ports / terminals, but there are few precedents in North America.
  - Port of Montreal, QC
  - Port Hueneme, CA
  - Port of New Orleans, LA
  - Port of Fernandina, FL
- These ports / terminals operate on smaller footprints (roughly <50 acres) and / or are bordered by urban centers

Container: Operational and Planning Implications

- Given the guidance of 135,000 moves being the target M&N has presented an alternative to the existing reach stacker operation, one which will densify the terminal and allow it to increase capacity
- We would recommend to any client which is seeking to balance increasing port capacity and efficient use of land area (on a comparatively small footprint)
  - A 25–26-acre RTG operation
  - RTG operations are common practice at modern container terminals and are effective at increasing capacity through densification.
- This footprint can be easily expanded into the Flex zone handle up to 170,000 moves annually by the footprint by 2-3 acres. This additional acreage would sit within the Flex Maritime area, adjacent with container terminal, and which whose area is indented to accommodate multiple uses (Construction Staging and General Cargo discussions below)
- It maintains the 1,300 ft berth at Pier 10, which allows for the berthing of one international vessel and one barge simultaneously (allows for efficient transfer of cargo b/w international vessel and barge)
- It requires three functioning STS cranes on berth 10 (and should volume exceed expectations a 4th would be necessary)
- Modern gate infrastructure will allow the terminal to decrease truck processing time and reduce the number of lanes in operation
- The motivation for this design was to balance a number of considerations:
  - the desire to keep and build container activity on site

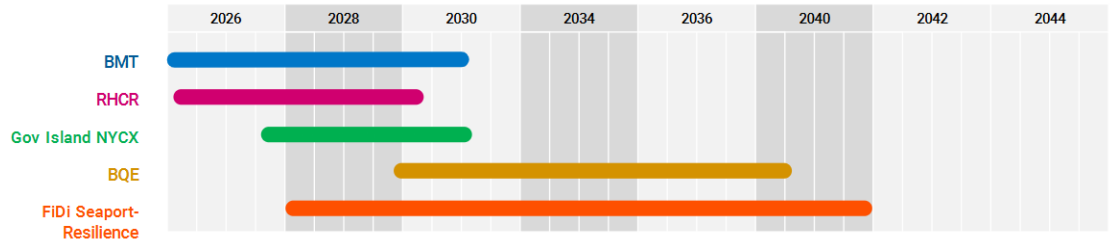
- the desire for BMT to ultimately serve as a hub for the Blue Highway in which case container handling / disaggregation would be needed
- the desire to have adjacency with the general cargo docks
- to make the most efficient use of BMT acreage and free up land for housing, open space etc.

Overall, densified operations are common practice at modern container terminals, and in BMT where efficient use of available land is a priority, the footprint designated for containers is sufficient to handle up to 135,000 moves with ability to scale to 170,000 moves easily (2x the volume terminal is currently handling).

Construction – Staging Activity

Market Rationale

- There are five identified large-scale construction projects in close proximity to BMT, which could benefit from utilizing a barge-fed staging area located at the terminal. These projects include:



- Based on the schedules there appears to be continuous planned activity between 2026 – 2040. These are capital intensive projects that will be moving a large volume of associated goods and equipment during their construction phases, some of which could be well handled by barge to avoid traffic on the local roads.
- The barge facility development by NYNJ Port Authority to support the redevelopment of JFK Airport is a good precedent.
- JFK is undergoing a $19 billion redevelopment program which includes the construction of two new terminals.
- To support this the Port Authority developed a six-acre barge facility to facilitate the movement of dry bulk and equipment cargo which is needed for construction.
- Operations began in 2023, almost two years following the initial EOI request. Construction and operation of the barge facility was awarded Modern Efficient Transport and Supply LLC (METS).

Overall, there appears to market demand and precedent for construction staging activity at a barge fed facility.

Construction Staging: Operational & Planning Implications at BMT

- M&N has recommended that the Flex Maritime area could support construction staging activity
- Given the scale of the some of the identified projects (BQE $8-10 billion; Governors Island $1 billion, RHCR $100 million) M&N estimates that this area may be able to accommodate two projects simultaneously. The contemplated design may allow this space to be increased for periods of time when extra laydown space is needed for these project
- Waterside capabilities should allow for barges and small general cargo vessels (Handysize ships 400'-to-500' long meters long and draft 30-to32')
- Cargo can be loaded and offloaded using mobile harbor cranes and / or ships gear (cranes on the vessels)
- Roll-on and Roll-off ramps should also be available to accommodate cargo if necessary

General Cargo – Bulk

Existing Operations and Uses

- RHCT currently utilizes roughly 20 acres located behind Piers 8, 9a and 9b for general cargo and non-maritime uses. These uses include:
    - DOT cement recycling operations
    - Private aggregate storage and transport
    - Equipment storage and parking (e.g. hotel modular components, autos, boats, garbage trucks etc.)
- These are non-maritime opportunistic lines of business for the terminal operator, meaning that there is a benefit to the terminal operator to keep acreage available for mixed uses should / when demand arises.
- M&N strongly recommends that in the future BMT prioritize and limit general cargo / mixed use to strictly maritime-related cargos / functions
- Given that bulk and general cargo is generally low value (e.g. salt, sand, rock, steel items) they are not typically strong sources of revenues for ports. However, given the demand for such products from a wide range sources, there will generally be a demand for port infrastructure needed to accommodate them.

General Cargo: Utilization & Planning Implications at BMT

- Given the opportunity and low-value nature of the cargo, M&N would not advise that BMT make the handling bulk cargo a priority at BMT.

- However, should there be acreage available at the Flex Maritime terminal, this can be utilized for the handling and storage of these goods (if there is no better identified use e.g. construction staging and / or Blue Highway operations).
- There is a limited number of locations in Brooklyn and Manhattan where dry bulk and miscellaneous breakbulk freight can be offloaded / loaded at the waterfront, suggesting any ability to handle this freight is valuable to city (from the perspective of mitigating truck traffic)
- Waterside infrastructure at BMT should be ready to receive barge and Handysize vessels
- The same mobile harbor cranes and roll-on and roll-off ramps identified should be sufficient for cargo handling needs.

Offshore Wind

- Analysis determined that this is not a competitive site for offshore wind due to both market and physical constraints.
- The infrastructure needed for OSW is more expensive and requires a higher loadbearing capacity than what is existing at the container terminal today or is being planned for the new marginal pier.
- OSW use would require 30 acres or more dedicated to OSW use, reducing the future flexibility of the port to be responsive to future market demands.
- Today, the establishing OSW at BMT would be competing with the existing OSW facilities at SBM, while the outlook for long-term demand of offshore wind is inconsistent.

Cruise:

Global Cruise Activity

- Global cruise passenger levels have rebounded and continue to grow from the Pandemic with 33.4 M global passengers in 2024. Top destinations include the Caribbean, Mediterranean, and Europe aboard the major operators like Carnival, Royal Caribbean, MSC, and Norwegian that control over 80% of the cruise market.
- The global growth forecast for the cruise market is expected to expand to an estimated 65 M passengers all attributed to current trends of the cruise orderbook expansion, older and smaller vessel replacements, steady growth, and full vessel occupancy rates.

Regional Cruise Activity: NYNJ Metro Market

- In the NYNJ metro area, cruise passenger movements have historically seen a stable growth trend with the MCT (Carnival, NCL, MSC, etc.), BCT (MSC, Cunard, Princess, etc.), and Cape Liberty (Royal Caribbean) terminals handling 2.27 M passenger moves in 2023.
- Most cruise destinations from NYNJ metro are destined for the Caribbean, followed by Bermuda, Canada/New England, and Transatlantic, among others.

- Between the MCT and BCT terminals, MCT accommodates 68% of total passengers while BCT handles the remaining share. In 2040—and assuming planned improvements to MCT and BCT facilities are advanced to accommodate larger ships—passenger volume at MCT and BCT is expected to hit just below 3 M, accompanied by a 4.0% CAGR. BCT is expected to handle around between 700k and 800k passenger moves in 2040, and growing to capture 25% of total MCT / BCT passenger moves.

Implications for BCT

- To accommodate growing demand, the new BCT terminal should be prepared to accommodate a navigation channel of 38 – 40 ft, at least a 1,300 ft berth length, and an apron width of 50 – 65 ft. A new terminal is recommended to be sized between 130k – 150k sq ft on a two-story footprint with at least 2 passenger boarding bridges (PBB).
- In terms of landside planning, the terminal should accommodate between 10 – 16 bus parking bays. As cruise guests today predominately arrive by car, significant guest loading / unloading curbside areas are also recommended. Parking is a major source of revenue for cruise terminals and should be provided in an amount considering user demand, available land, and total construction cost. Cruise provision operations, requiring approximately 20 tractor trailers and another 10-12 box trucks, are expected incoming for each large cruise vessel turn and must be accounted for when designing the traffic patterns to ease access.
- To design for environmental sustainability, a modern cruise terminal should incorporate shore power, which allows the ships to turn off their engines at berth, and zero carbon terminal construction methods such as LEED certification and considering building materials. Facility design should also seek ways to allow for mixed-use / multi-use of the terminal when not in use for cruise operations as well as seek approaches to incorporate public access within the context of port security requirements.
- Construction at MCT Piers 88 and 90 is currently estimated to last for roughly 10 years. It is expected that BMT facilities will accommodate MCT traffic during those years.
- BMT would benefit from a single operator assuming full operational controls for the container, cruise and flex maritime terminals together as a single commercial port area. This will allow for efficiencies across staffing, equipment use, fixed costs centers which will ultimately manifest itself in lower operating costs (margins for the operator) and lower prices for the terminal's customers (lower fees). There are several US-based terminal operators which have expertise in container, cruise and general cargo operations including Ports America and SSA.