Strategic Plan 2015

Maryland Port Administration

September 2015

Contents

Introduction

The Maryland Port Administration (MPA) is the State agency responsible for increasing waterborne commerce through Maryland ports for the benefit of the citizens of the State. In order to fulfill this mission, the MPA must manage, develop, innovate and collaborate with multiple agencies and entities that make the Port of Baltimore work.

The MPA routinely prepares and updates its strategic goals and objectives for cargo in order to remain competitive among East Coast ports. The most recent prior Strategic Plan was published in 2008 and planned for the period of 2008-2018. There have been several major changes since the 2008 plan, including major economic upheaval of the Great Recession, shifts in global supply chains, changes in cargo demand, and an increase in the containerization of cargo. The Port of Baltimore is also changing, with several key investments such as the Public Private Partnership (P3) at Seagirt Marine Terminal that resulted in the construction of a 50-foot deep berth capable of servicing the largest container vessels that call on the East Coast.

Recognizing these changes and the resulting need to redefine a future path for the agency, MPA management and staff analyzed the 2008 plan and identified several areas to be updated. As part of the update, cargo goals were revised to reflect the current and expected market conditions. MPA programs and facilities that are not cargo specific but support the activities of the MPA, such as maintaining navigation channels and enhancing inland transportation, were also updated. The resulting analysis was synthesized to identify constraints to achieving the new goals, and strategic actions were developed to aid the MPA in overcoming those constraints. Strategic Plan 2015 charts a new course for the MPA through 2020.

This Plan is intended to identify actions that the MPA could reasonably undertake during this period. Since the Port of Baltimore is comprised of both MPA and private terminals, the State cannot develop a comprehensive plan for the entire Port. However, there are several actions recommended that, if instituted, would benefit both the public and private sector.

Included in this Plan is an overview of each of the cargo and non-cargo goals, a definition of the goals and metrics, a summary of existing market or sector conditions, anticipated constraints and other factors that could impact the goal, and recommended actions. For each recommended action, MPA departmental responsibilities for implementation are identified. The anticipated schedule for each recommended action is shown as continuous, short-term (2016-2018), and long-term (2019 and beyond).

The importance of maintaining consistency in operations, communications, labor, and efficiency is paramount to the success of the Port of Baltimore. Natural constraints cannot be easily overcome. However, any constraints that exist within a reasonable level of control or influence of the MPA or its partners should be considered and addressed. The primary elements that the MPA has control over include MPA tariff rates, operation of the terminals, terminal improvements, and the land and waterside infrastructure. The MPA influences but does not control many other elements of the Port, such as decisions made by other government agencies, private investment by rail companies, Port labor issues, or community concerns. The MPA should first focus on areas that it has direct control over without losing sight of the need to continue to exert positive influence with partners and stakeholders to ensure the long-term viability of the Port.

The implementation of actions identified in Strategic Plan 2015 will require long-term capital investment and allocation of agency resources to ensure proper coordination with the many stakeholders in the Port community. Many of the recommended actions will provide additional data and information necessary to better inform future decisions. Strategic Plan 2015 will also assist in prioritizing future projects and actions.

Mission, Vision, and Strategic Goals

Mission:

The mission of the Maryland Port Administration is to increase the flow of waterborne commerce through the State of Maryland in a manner that benefits the citizens of the State.

Vision:

The Maryland Port Administration will:

- Capitalize on Port business opportunities,
- Provide, manage, and promote competitive, secure, state-of-the-art terminals capable of efficiently handling diverse cargoes,
- Ensure that the Port's navigational channel system is competitive and efficient,
- Leverage mutually supporting public and private sectors, and
- Act as a good steward of Maryland's natural environment.

Strategic Goals:

The MPA will focus on the following strategic areas:

Containers: Grow container volume at an average annual rate greater than 3% per year.

Automobiles & Roll-On/Roll-Off: Grow volumes to maintain standing as the largest East Coast port.

Breakbulk: Pursue and grow cargoes with special handling and storage requirements, and remain the largest imported forest products port on the East Coast.

Cruise: Increase the number of international cruises and port-calls to and from the Cruise Maryland Terminal.

Inland Transportation Networks: Advocate for excellent inland access from all Port terminals to the national Interstate highway and freight rail networks.

Navigation: Ensure safe, competitive and efficient navigation channels and adequate dredged material placement capacity.

Terminals: Preserve and enhance the landside infrastructure necessary to increase cargo capacities.

Environment: Be a local and national leader in environmental stewardship and sustainability.

Social Responsibility: Be recognized as a "good neighbor" to adjacent communities and the region.

Organizational Values

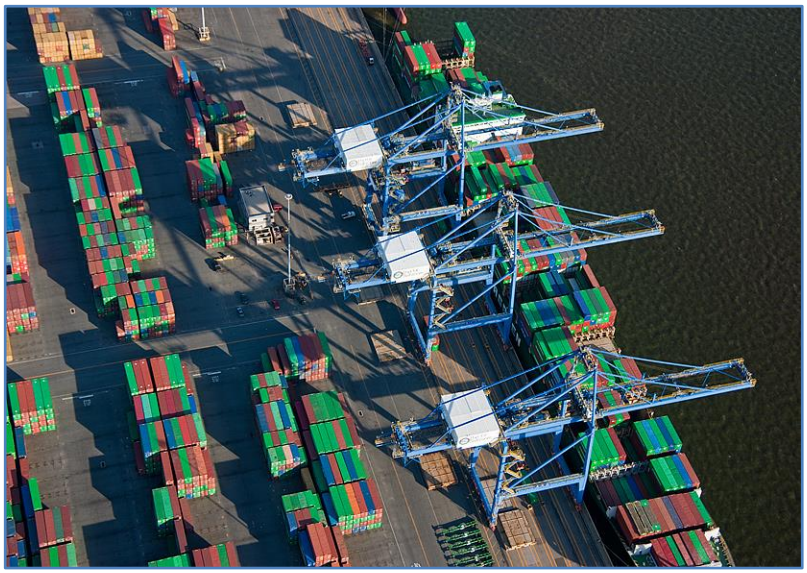
The leadership and staff of the Maryland Port Administration are committed to achieving the MPA's mission and vision while providing our customers and each other with superior services, through innovative thinking and operations and by demonstrating the following values:

- We will service our customers in the spirit of partnership in order to understand and satisfy their needs.
- We will maintain the highest standards of honesty, integrity, trust and respect in our relationships with our customers and each other.
- We will provide the leadership and vision to continuously improve and promote the services of the Port of Baltimore.
- We will take responsibility for creating an environment in which teamwork, individual initiative, and innovation are encouraged and recognized at all levels.
- We will support and provide career growth and development opportunities within the MPA.
- We will support one another, take pride in our accomplishments, and be empowered to successfully perform our responsibilities.
- We will value and recognize associates for contributing their skills, knowledge, and creativity in continuously improving customer satisfaction and work processes.
- We will provide a safe working environment for all of our associates and customers.
- We will practice fair and consistent personnel policies and procedures.
- We will practice and promote open communication, constructive feedback, and involvement enabling all associates to actively participate in the achievement and realization of our shared mission and vision.
- We will operate in a cost effective and environmentally sensitive manner that maintains compliance with applicable rules and regulations.

Containers

Goal: Grow container volume at an annual rate greater than 3% per year.

Overview



Containerized cargo imports and exports at the Port of Baltimore continue to increase each year. The long-term public-private partnership (P3) with Ports America Chesapeake to redevelop and operate Seagirt Marine Terminal resulted in construction of one of only a handful of berths capable of accommodating the largest and deepest container ships calling on the East Coast. In 2014, container cargo increased 9.2% as the Port moved over 770,000 TEUs. This growth is expected to continue for the foreseeable future. Most of the containerized cargo that is imported through Baltimore remains within the region. The Port is well positioned to service a regional truck market.

The MPA's goal is to increase the amount of container imports and exports at a rate higher than the average annual growth for Mid-Atlantic ports overall. These ports include New York, Philadelphia, Wilmington, and Norfolk which represent the most immediate competition for containerized cargo imports and exports within Baltimore's market area.

Market Conditions

The Port of Baltimore has experienced steady growth in containers since the establishment of the P3 with Ports America Chesapeake. The development of the new 50-foot berth, coupled with improvements to on-terminal gate access and egress have improved operational efficiencies without raising costs to the customer. Baltimore's containerized cargo market is strong within 400 miles of the Port, particularly with the major population centers of metropolitan Baltimore and Washington D.C.

Vessel sizes continue to increase as the market shifts to more of an all-water strategy for containers coming to the East Coast via the Suez Canal, and eventually the expanded Panama Canal. Baltimore is well positioned to accommodate these larger vessels.

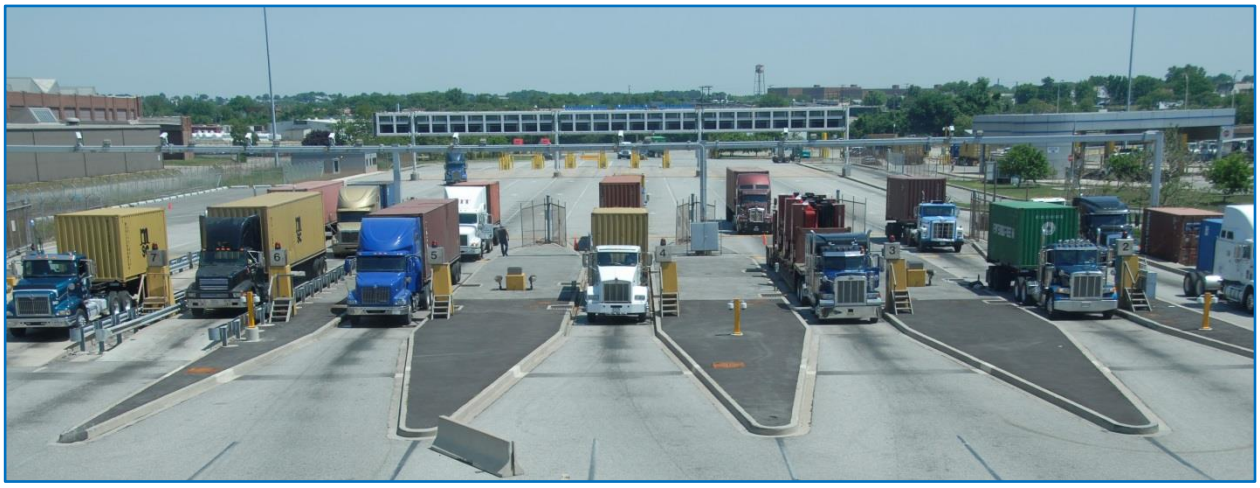
Influencing Factors

Expansion for discretionary cargo movement farther into the Mid-West is limited by a lack of available high-cube double stack rail capabilities to and from the Port. High cube double stack intermodal movement is constrained by antiquated rail tunnel heights at the Howard Street and other rail tunnels privately owned by CSX, as well as along the Northeast Corridor owned primarily by Amtrak and shared by Norfolk Southern. All of the options investigated to address these constraints have extremely high costs that make it unlikely to be resolved within the timeframe of this planning effort. The inability to provide double stack rail capability for containers will directly affect both the number of vessel calls and the amount of containers loaded and unloaded at the Port. Any opportunity or strategy to increase containerized intermodal rail volumes, such as through the use of incentives or development of additional intermodal rail capabilities, will benefit the Port in the long term.

As the furthest inland East Coast Port, Baltimore's geographic location can be seen as both an advantage, and a natural constraint. To call at Baltimore, a container ship generally sails an additional 10 hours with increased fuel and other expenses. Vessels calling on Baltimore also pass the Port of Norfolk on their way into the Chesapeake Bay, a direct competitor which has enhanced double-stack rail capabilities.

A pending shortage of licensed and qualified trucks drivers is a future constraint to the Port. According to national reports, the number of dray and long-haul truck drivers has been decreasing over the past decade. Further decline is projected in the next several years as increased regulation, rising fuel costs, tolls, and return on investment for many small trucking companies impact their economic outlook. The Port of Baltimore depends heavily on a qualified and affordable trucking model with efficient drivers and clean, safe operations. Future declines may have a significant impact on Port activities.

Another pending constraint to increased container growth may be the method of maintaining and allocating truck chassis near the terminal, and an expected shortage of available chassis.



Gate improvements have been made at the Seagirt Marine Terminal, resulting in enhanced truck turn-times and greater operational efficiency. Improvements to Broening Highway, the major access point to the Terminal, will also increase productivity. Potential impediments caused by TWIC review and other security activities at the gate should be examined to ensure that any remaining congestion pinch points are removed.

The available vessel capacity allocated for Baltimore import cargo is limited. Seeking an additional service or greater allocation on larger vessels, especially direct service for the Asian market, is expected to increase the total volume of containers.

Recommended Actions

Grow container volumes at an annual rate greater than 3% per year.	**Responsibility**	**Schedule**
Aggressively market the POB's strengths to attract additional container ship services and larger shipper volumes on existing services.	Marketing / Intermodal	Continuous
Identify and encourage all options for double-stack rail capabilities.	Intermodal / Planning	Continuous
Identify and address security gate constraints and maintain a high level of terminal efficiency.	Operations / Security	Continuous
Coordinate with State agencies to seek improved container truck toll rate for accessing Interstate highways.	Intermodal / Operations	Short-Term
Encourage the development of a grey pool for chassis serving the Port of Baltimore.	Operations	Short-Term
Implementation of a suite of economic incentives to increase container volumes.	Intermodal / Marketing	Short-Term
Investigate opportunities for terminal expansion at the adjacent ICTF.	Operations / Engineering	Short-Term
Increase the number of intermodal containers moving through the Port of Baltimore to 100,000 by 2020.	Intermodal	Long-Term

Automobiles and Roll-On/Roll-Off (RoRo)

Goal: Grow volumes to maintain standing as the largest East Coast port.

Overview

More than 792,000 units of automobiles were imported and exported through the Port of Baltimore in 2014, including over 591,000 units through MPA terminals. These figures were another new record for auto and light truck imports and exports. The Port of Baltimore remains first in the nation in the import and export of automobiles and light trucks.

Roll-On/Roll-Off (RoRo) cargo has seen a modest decline in recent years for several reasons mainly associated with changes in global markets. Despite overall market declines, the Port of Baltimore remains first in the nation in the import and export of Roll-On/Roll-Off cargo. Nearly 862,000 tons of RoRo cargo was imported and exported through MPA terminals in 2014.

For automobiles and light trucks, the most informative metric is the volume of vehicle units imported and exported. The goal for autos is to continue to increase the number of units moved through Baltimore in comparison to the number of units moved at competing East Coast ports. For automobiles, the goal is to maintain existing customers and grow the business to exceed 800,000 units per year by 2020.

Due to the fact that Roll-On/Roll-Off cargo widely varies in tonnage, size and value, the best measurement of growth is the percent of market share among competing East Coast ports.

Market Conditions

Autos continue to be a growth market for Baltimore. However, this success also could signal a looming constraint that could cause over capacity and a lack of acreage available for additional growth. Baltimore is an important local market for automobile sales and the capabilities of the Port in terms of quality, efficiency and value is critical. Other East Coast Ports have begun reassessing their operations to try to divert some of the autos imported and exported at Baltimore, and there may be increased competition by 2020.

The global supply chain is also changing, as several foreign auto manufacturers relocate their operations to the United States for domestic production in a condition known as transplanting. Quality and

efficiency remain important hallmarks for successful auto terminals, and maintaining Baltimore's reputation will be increasingly important.

The Port is well-situated geographically to accommodate heavy cargo manufactured in the Mid-West and Mid-Atlantic due to a high quality labor force, easy access to the Interstate highway system, and rail service that can handle most pieces of equipment. Global economic conditions are one of the largest driving forces in heavy equipment import and export. Economic instability in key market areas for agriculture, heavy construction and mining has created a lag in major new orders for equipment. As global economic conditions normalize, Baltimore is well-positioned to capitalize on additional cargo growth, due to the terminal, labor and inland transportation infrastructure at the Port. Improvements to truck and rail clearances around Baltimore may increase the use of Baltimore for high and heavy cargo moves in the future.

Influencing Factors

The auto industry has mostly rebounded from the Great Recession, and several companies have transplanted their previously export production operations to the United States. This has altered the global supply chains for auto imports and exports, as several previously imported vehicles are now produced domestically.

Terminal space and processing capacity are key factors for growth of the auto market at the Port of Baltimore. Additional capacity is important for three reasons: to grow volume and add customers, to accommodate overflow when needed, and to allow for vehicle processing by Original Equipment Manufacturers (OEM).

Many auto importers and exporters desire large, dedicated acreages on or adjacent to the marine terminals. The Port of Baltimore would be even better positioned if an additional 100 acres near at least one public marine terminal could be acquired. The Port routinely receives automobiles in very large volumes simultaneously. This overflow of units requires flexible and adaptive management by MPA Operations staff to ensure the routine efficiency of the terminals.

Acquiring additional land that could be used to store vehicles temporarily during such overflow events would be beneficial. Also, identifying nearby acreage that could be used by OEMs to process vehicles near the terminal would aid in regaining additional capacity at the terminals. Any available options for acquiring additional acreage for autos, including land swaps, land banking, dedicated funding, or public-private partnerships should be considered.

Due to its location in the Mid-Atlantic, the Port is sometimes viewed as a “cold-weather port”, meaning that de-icing salt is routinely used and could have an impact on some import or export vehicles. Options to reduce or modify the application of salt may help to encourage some additional cargo movement.

The existing options for moving autos to and from the Port by rail are limited. Any improvements to the rail system should be coordinated so that they enhance options for auto imports and exports.

Encouraging the co-location of smaller parts manufacturers in Maryland may help to increase the amount of vehicles that are imported and exported through Baltimore due to nearby services and supply chain advantages.

Quality controls for autos and RoRo, and stable labor force availability have been two of the most important factors in auto manufacturers choosing the Port of Baltimore. The Port must continue to excel in quality for autos in order to maintain this strong reputation.

The Far East is an important sector of the auto and RoRo market not directly served from Baltimore. Incentivizing and marketing to encourage a new Far East direct call for RoRo and Autos would therefore benefit the Port.

Recommended Actions

Grow volumes to maintain standing as the largest East Coast port.	**Responsibility**	**Schedule**
Reinforce a strong commitment to quality for imports and exports, via a comprehensive QCHAT program.	Operations	Continuous
Encourage greater throughput from existing tenants	Operations	Continuous
Work to improve rail clearances for all cargoes.	Intermodal / Planning	Continuous
Improve drainage on auto storage lots	Engineering	Short-Term
Explore opportunities for increasing rail use for auto imports and exports.	Intermodal / Marketing / Planning	Short Term
Increase terminal infrastructure and land available for autos, through property acquisition.	Real Estate	Long-Term

Breakbulk

Goal: Pursue and grow cargoes with special handling and storage requirements, and remain the largest imported forest products port on the East Coast.

Overview

Breakbulk cargoes are those that are packaged or bundled together, but not put into containers. Several examples of breakbulk and special cargo moved through Baltimore include metal rebar, windmill blades, electrical transformers, and lumber. East Coast ports have become more interested in the diversity of breakbulk cargo, and have made competitive investments in infrastructure, operations and incentives to attempt to grow this sector. The Port of Baltimore remains the first in the nation in the handling of imported forest products, including imported finished paper and wood pulp. However the markets for these commodities continue to shift and Baltimore must remain vigilant to achieve its goals.

The MPA is focused on attracting new cargo types and volumes to the Port, particularly those that require special handling or storage, such as wood pellets, cocoa or coffee beans. The primary goal is to ensure the Port's first place ranking each year by maintaining and increasing forest product volumes.

Market Conditions

The market for imported finished paper has been trending down over the past several years. However, Baltimore continues to be well-suited for the movement of this commodity due to infrastructure, quality and labor availability at the marine terminals. Other sectors of the imported paper market have been showing increases over time and could be investigated for relocation to Baltimore.

Breakbulk includes many different commodities, including some that have shown moderate to strong growth in other markets nationally. Some of these commodities would be well-suited for the infrastructure at the Port of Baltimore; however some capital investment would likely be needed.

Influencing Factors

The imported forest product market is evolving and has become even more competitive in recent years. Demand for imported paper has been on the decline while wood pulp has been maintaining or increasing slightly. Cargo that until recently was handled as breakbulk is now commonly being shipped in containers. These fluctuations make planning for the future of break bulk cargo challenging, and growth unpredictable.

There is considerable competition from other East Coast ports targeting Baltimore's imported forest product market. Other ports have reduced their rates, provided incentives to shippers, and made

terminal and transportation infrastructure improvements to entice the relocation or increase of clients. Baltimore's record of quality, efficiency and low-cost has been effective at countering some of these advances to date but additional efforts may be necessary in the short-term.

Many of the MPA's breakbulk terminals are well-suited for use by various commodities. Ensuring that many different commodities could be handled at all of the breakbulk terminals, such as at South Locust Point, may require dredging and possible improvements to bulkheads and aprons, and would need to be carefully considered prior to making major investment.

Much of the Port's breakbulk cargoes are shipped by truck to and from the terminals. Opportunities to increase efficiency and reduce toll impacts for trucks would improve the competitiveness of the Port for these cargoes.

Many of the MPA's breakbulk facilities are located near communities that have been experiencing significant conversion from historically industrial land uses, to more commercial and residential mixed uses. The City of Baltimore has been actively working to reduce the potential encroachment of these non-water dependent uses into areas adjacent to marine terminals, which would potentially impede terminal growth and development. The MPA should develop long-term strategies for the development of each of the breakbulk terminals to be able to articulate the importance of these terminals to the community.

Recommended Actions

Pursue and grow cargoes with special handling and storage requirements, and maintain standing as the largest imported forest products port on the East Coast.	**Responsibility**	**Schedule**
Identify new break bulk cargo that can be imported or exported through Baltimore.	Marketing	Continuous
Aggressively market the capabilities of the MPA's breakbulk terminals to attract new cargoes and volumes.	Marketing	Continuous
Offer aggressive rates and/or incentives to retain and recapture imported pulp business	Executive	Continuous
Determine capital improvements at existing MPA breakbulk terminals that would benefit multiple commodity types.	Engineering / Marketing / Operations	Short-Term
Develop terminal development plans for each of the MPA breakbulk facilities that would optimize the terminal breakbulk utilization.	Planning / Engineering / Marketing / Operations	Short-Term

Cruise

Goal: Increase the number of international cruises and port-calls to and from the Cruise Maryland Terminal.

Overview

The MPA's Cruise Maryland Terminal accommodated 88 international cruises and seven port-calls in 2014. Carnival Cruise Lines and Royal Caribbean offer year-round cruising from the Port. The Terminal and adjacent roads experience only minor traffic congestion during cruise days, and cruises from Baltimore are at capacity for every voyage.

The goal is to grow the annual number of cruises departing the Port of Baltimore to international destinations to over 91 each year before 2020. The second goal is to attract more port-calls to the Cruise Maryland terminal, to consistently attract more than five port-calls per year by 2020.

Market Conditions

Baltimore is well positioned for the drive-to cruise market from the Mid-Atlantic region, which has a large and affluent population. Baltimore is also well-situated for day trips to Washington D.C. and other regional attractions. Growth in U.S. cruise passengers since 2010 has been consistent and is expected to continue to over the next five years at a reasonable rate. There are currently no air draft or water depth limitations for the current class of cruise ship calling at Baltimore.

Cruising is expected to continue to maintain a market of approximately 10 million U.S. passengers embarking from U.S. ports, with some potential for additional growth in the Mid-Atlantic markets according to cruise industry reports. Cruising with niche-market boutique cruise lines using smaller vessels has also been increasing, and appears to be well-suited for Baltimore.

Influencing Factors

Increases in fuel costs remain the most likely cause for market changes. The introduction of the full Emission Control Area (ECA) in 2015 will likely increase fuel costs for cruise lines, which may result in a reassessment of their fleet placement. More cruise lines have been considering relocating vessels to ports outside the United States because of the fuel cost impacts of the ECA.

The Port of Baltimore is currently not able to accommodate two vessels regularly calling at the Cruise Maryland terminal on the same day. Development of an additional cruise terminal in the harbor has been investigated, as has expansion of the cruise area near the existing terminal, in order to accommodate double ship calls. Cruise lines generally plan for cruise itineraries approximately two years in advance and enter into contracts with ports for two year increments. This short duration of contracts makes major capital investment, such as the development of a second cruise terminal, difficult to finance. Longer period contracts with the cruise lines home ported in Baltimore would enable greater flexibility in funding major cruise enhancement projects.

Year-round cruising from a single terminal requires constant upkeep and maintenance to ensure the best passenger experience. Upgrades are also needed at year-round terminals to accommodate waiting passengers, and Baltimore is no exception.

Future ship sizes are expected to increase as current vessels are phased out. By 2030, it is possible that few vessels of the current size will remain in operation. Future cruise vessel size is a long-term consideration for the Port of Baltimore, due to possible air draft restrictions from the Chesapeake Bay and Francis Scott Key Bridges.

Recommended Actions

Increase the number of international cruises and port-calls to and from the Cruise Maryland Terminal.	**Responsibility**	**Schedule**
Aggressively market the cruise Maryland terminal's strengths to existing and potential cruise lines to maintain homeport status and increase port calls.	Marketing	Continuous
Attempt to secure long-term contracts or agreements with cruise lines.	Marketing	Continuous
Investigate incentives that would attract new cruise lines or encourage long-term contracts with existing cruise lines, including options such as revenue-sharing.	Planning / Marketing	Short-Term
Upgrade terminal to make facilities more accommodating for year-round cruising.	Engineering	Short-Term
Investigate niche cruise lines and markets that could potentially make port-calls at Baltimore.	Planning / Marketing	Short-Term
Establish a regular working group with MPA, Visit Maryland (DBED), and regional tourism boards to collaborate on day-trip packages that could be marketed to potential port call cruise lines.	Marketing	Short-Term
Ensure that MPA is involved in providing input to any future Bay bridge designs to encourage an appropriate clearance height.	Planning	Long-Term

Inland Transportation Networks

Goal: Advocate for excellent inland access from all Port terminals to the Interstate highway and freight rail networks.

Overview

Moving regional cargo to and from marine terminals for import or export is a vital component of the operation of each port. The Port of Baltimore is well suited to service this regional market because of its location near major metropolitan centers, including Washington D.C. and Baltimore. As a predominantly truck-based port, Baltimore needs to ensure that an efficient and cost-effective system of Interstate highways remains easily accessible, and that trucks can move to and from the Port safely. The Port would also benefit from increased rail capabilities; however rail access can only be improved through the coordination of multiple public and private partners.

The goal is to ensure that the MPA acts on behalf of the entire Port of Baltimore, as a leading advocate for rail and truck freight networks in Maryland, and especially for roads and rails that bring cargo to and from the marine terminals. Achieving this goal means that the MPA will contribute its resources and knowledge to advising, engaging, and encouraging transportation decisions that will benefit the Port, local communities, and the State as a whole.

Existing Conditions

The MPA has become increasingly involved in discussions of State-wide freight and cargo movement by rail, particularly since the adoption of MAP-21, the Surface Transportation Bill that requires statewide freight planning. The Port stands to benefit from any enhancement to the State's freight rail infrastructure.

A consistent issue for all ports is the "last mile" of cargo movement. If access from the terminals to the Interstate transportation system cannot accommodate current levels of growth, then the port could become less competitive. Neighborhoods that are near terminals may experience port-related congestion, concerns about air emissions, and issues with truck parking or turning on local streets. Any opportunity to reduce the number of trucks driving through communities should be strongly supported by the Port.

The MPA is a strong voice for freight rail improvements in Maryland, as the port would receive significant benefits from improved rail functionality for high-cube double stack rail capabilities (even for domestic freight). MPA may be best suited to explain what rail capabilities would mean for Maryland freight.

Several constraints have been identified near the Seagirt and Dundalk Marine Terminals that should be addressed in the near term: exploring options for reduced tolls rates for Port-related trucks, especially those that do not use the nearby bridges or tunnels; improving MPA's TWIC security checkpoints for truckers entering Seagirt; adding additional truck queuing space into the terminals from Broening

Highway; completing the connection between Broening Highway and I-95; and creating greater involvement with the short line railroads around Baltimore and on the Eastern Shore.

Rail constraints exist along the main freight line that negatively impact the movement of very large RoRo cargo to Dundalk Marine Terminal – particularly for high and heavy loads and large mining equipment, although the actual location of the constraint in the system is not known. This information would be useful in advocating for improvements to the Northeast Corridor. The lack of an adequate number of Broening highway turning lanes into the terminal to accommodate future cargo growth may be a competitive disadvantage. A new back gate for high and heavy moves from Dundalk Marine Terminal is necessary and would improve truck movement.

North Locust Point presents several challenges to expanded truck access, despite being on a designated truck route. Encroachment by non-industrial land uses and related challenges to protecting train and truck use in the area, make NLP less attractive to expansion. Similar issues exist at SLP, where pending redevelopment of the Port Covington area may impact rail reliability. SLP is a closed terminal, meaning that only one rail service can operate, thereby limiting its use. In addition, the terminal is limited to 14 working railcars at any one time, which precludes the ability to develop large unit trains.

At the Fairfield/Masonville Terminal, access to I-95 from Child Street has been identified as a possible constraint. As the terminal grows, in part due to the TIGER project, the highway and roadway access may not be capable of supporting future levels of intensity. This was identified as an area for future study.

Data gaps identified included the actual truck routes from the terminals to the highway, especially to and from the Seagirt, Dundalk and Masonville terminals. A study of the true impact of highway tolls on truck routing to and from the terminals would be important information. Finally, a daily count of the trucks that call at Seagirt and Dundalk would be helpful for outreach and planning.

Influencing Factors

Several aspects of truck access to and from the Interstate system affect Port operations. First, the access to the Interstate system is convoluted, encouraging some trucks to transit through neighborhoods, because there is no dedicated, direct freight truck route. Tolls along portions of the truck routes, even for trucks that do not cross over bridges or tunnels, also encourages some trucks to transit through neighborhoods. The turning lanes into the Seagirt and Dundalk Marine Terminals from Broening Highway have the potential to cause backups during peak hours, reducing terminal efficiency.

Several constraints regarding rail to and from the terminals also exist. The rail clearances at the Howard Street Tunnel and along the Northeast Corridor, and potentially near Masonville, negatively affect both containerized and high and heavy cargo movement; although the full impact of these clearance concerns have not been quantified. There has historically been limited dialogue with Maryland short-line railroads, which are directly associated with the State, and the potential utility of these short-lines for increased intermodal movement has not been explored.

The encroachment of residential uses near terminals and terminal truck/ train routes, such as near Locust Point and at Port Covington, may be a constraint to increased cargo movement by truck or rail in the long-term.

Recommended Actions

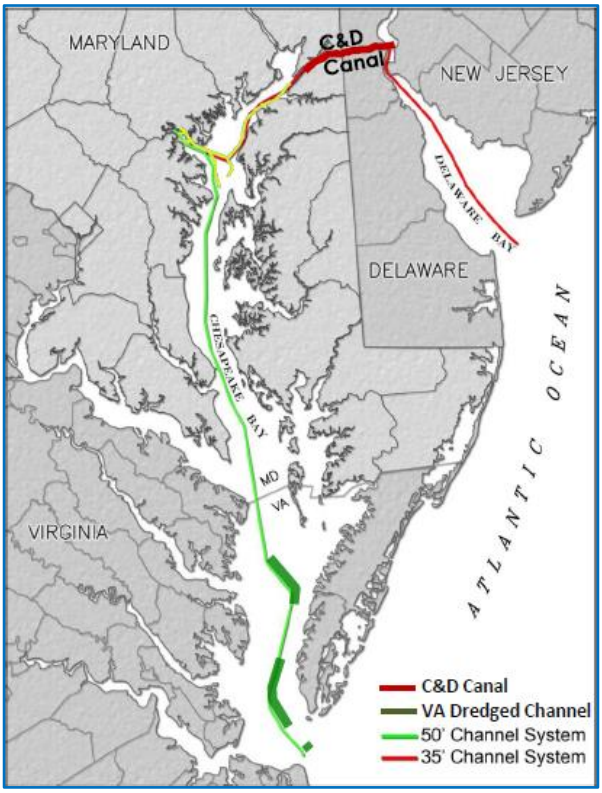
Advocate for excellent inland access from all of the Port's terminals to the national Interstate highway and freight rail networks.	**Responsibility**	**Schedule**
Protect existing designated truck routes to and from the Port.	Operations / Intermodal/ Planning	Continuous
Advocate for dedicated freight rail line to the Port of Baltimore.	Intermodal	Continuous
Act as an advocate for rail statewide.	Intermodal / Planning	Continuous
Remove as many trucks as possible from neighborhoods, and perform a routing study of where container trucks currently go.	Planning / Intermodal	Continuous
Participate in the Regional Freight Task Force with the BMC, MDOT, SHA, MDTA, MMTA, CSX and other inland transportation partners.	Planning / Operations / Intermodal	Short-Term
Investigate options for reduced tolls for "registered Port trucks."	Planning / Intermodal	Short-Term
Analyze Port-related rail impacts, including constraints for RoRo accessing Dundalk and Masonville Marine Terminals.	Planning / Intermodal	Short-Term
Plan for future expansion of road access into Masonville Marine Terminal to accommodate traffic from future cargo movements.	Planning / Intermodal	Long-Term
Create SMT back gate and improve Broening Highway turning lane into Seagirt Marine Terminal.	Operations	Long-term
Investigate options for better leveraging short line railroads.	Intermodal	Short-Term
Increase port district high and heavy permit area/routes.	Operations / Intermodal	Long-Term
Plan for an operational intermodal ramp/facility for high cube double stack rail that has access to both Class I railroads.	Intermodal	Long-Term

Navigation

Goal: Ensure safe, competitive and efficient navigation channels, and adequate dredged material placement capacity.

Overview

Ensuring safe navigation is vital to any port. The Port of Baltimore is located 150 nautical miles up the Chesapeake Bay from the Atlantic Ocean. Baltimore is one of only three ports on the East Coast with a 50-foot deep channel. As such, the MPA in conjunction with the US Army Corps of Engineers implement a Dredged Material Management Program (DMMP) to ensure a series of maintained navigation channels.



The DMMP contains two separate but intrinsically related aspects: the dredging activity to maintain safe and efficient navigation to the Port of Baltimore; and the placement and management of the subsequent dredged material from these channels. Overall, the MPA and its partners manage an average of 5 million cubic yards of sediment each year and operate several award winning containment facilities for the sustainable management of dredged material. Due to the cost and time required to create new dredged material containment facilities, ensuring that there is adequate capacity available to deposit dredged material is a continual challenge.

The navigation goal refers to the Port's ongoing need to continue maintaining the channels and dredged material placement facilities to ensure that ocean going vessels can continue to call at Baltimore without navigational interruption.

Existing Conditions

The DMMP requires considerable coordination with various partners, stakeholders and the general public. A significant source of the funding for dredging activities is from federal sources, which have been significantly constrained over the past several years. The placement and management of dredged material, especially from within Baltimore Harbor, is heavily regulated in accordance with the 2001 State Dredged Material Management Act. This law requires all sediment dredged from the Baltimore Harbor be placed in upland sites known as Dredged Material Containment Facilities (DMCFs).

The capacity within these facilities must be managed to ensure enough space for future placement, however, these sites will ultimately be filled and new placement options must be secured.

Influencing Factors

A single option within the DMMP that will meet all of the future dredging and dredged material management needs of the Port does not exist. Instead, the Port will need several overlapping options to ensure that adequate long-term capacity is available. In some years, this will mean that a suite of options may be implemented to manage short and long-term fluctuations in dredging needs, funding and capacity constraints. It also means a greater general understanding of the need for several dredged material management options must be continually conveyed to all Port stakeholders.

The long-term availability of dredged material placement capacity is the biggest constraint facing the Port of Baltimore. Annual available capacity, even with the potential options that are being considered, is limited in the mid-term. Any of the new facilities or proposed expansions could become stalled by limited funding, identification of additional information about the sites, and other reasons. Delays in these projects would ultimately impact overall operations at the Port. Several placement options will be necessary because no one option will address the entire long-term need for dredged material placement. Baltimore needs to be able to catch up to the dredged material placement needed in the short-term, while planning to address future demand.

The Port needs to evolve and strengthen its approach to communicating the importance of the DMMP to stakeholders. In order to do that additional data and information will need to be collected and synthesized, including an environmental risk assessment for the harbor and surrounding channels to better inform decision making. The Port would benefit from a consistent DMMP message that brings a greater understanding of the benefits of the DMMP with links to other state and federal goals, such as air quality improvements and the enhancement of the Chesapeake Bay.

Ultimately, the DMMP may require tailored community outreach to promote a better understanding of the benefits and impacts of the DMMP. Widening the base of supporters of the DMMP to include not only maritime businesses, but also the communities and industries that rely on the Port would help to support the DMMP in the long-term.

Several innovative approaches to generating new or preserving existing capacity within the DMCFs are being explored. Confined aquatic disposal (CAD), commonly used as a management technique elsewhere in the world, needs to be piloted in Maryland. Innovative and beneficial reuse of dredge material is also being further investigated, and may offer some options for capacity in the mid-term. Both of these management approaches are constrained by a lack of available, economical projects, and potentially by existing laws and regulations. The Port needs to explore all

available options, including new approaches to dredged material management, public-private partnerships, or even revised legislative initiatives to ensure adequate capacity to keep Baltimore channels safe and navigable.

Recommended Actions

Ensure safe, competitive and efficient navigation channels and adequate dredged material placement capacity.	**Responsibility**	**Schedule**
Acquire sites needed for DMCFs and other dredged material management options.	Harbor Development	Continuous
Continue outreach initiatives to establish and maintain relationships with state partners, neighboring communities, key constituencies, stakeholders and other organizations to garner support for the DMMP.	Harbor Development / Government Affairs	Continuous
Coordinate with OMB, USACE, and Congressional delegations to target joint federal funding priorities.	Harbor Development	Continuous
Demonstrate progress toward innovative and beneficial use projects to reclaim capacity within the DMCFs.	Harbor Development	Continuous
Participate in the long-term study of navigation channel system needs for the Port of Baltimore.	Harbor Development	Short-Term
Review existing dredged material policies, regulations and legislation to meet Port needs in concert with other State goals, including enhancement of the Chesapeake Bay.	Harbor Development	Short-Term
Work with the USACE and community to complete the project to reactivate the Pearse Creek DMCF	Harbor Development	Short Term
Work with the Maryland Environmental Service and USACE to begin expansion of Poplar Island	Harbor Development	Short-Term

Terminals

Goal: Preserve and enhance the landside infrastructure necessary to increase cargo capacities.

Overview

The MPA's marine terminals are the backbone of the Port of Baltimore, providing the space, infrastructure, cranes, and loading and unloading operations that move cargo through the Port. These facilities comprise the most commonly identified aspects of the Port. They also present some of the most complex challenges. Marine terminals by design are built in some of the most difficult environmental conditions of winds and waves, and have to be located adjacent to the water in order the function. These water-dependent uses require constant maintenance, upkeep, and flexibility to ensure that all types of cargo can be accommodated. The facility must also be secure to keep cargo on dock safe, and to keep out potential threats. Preserving and enhancing marine terminals is a major priority of the MPA.

The preservation and enhancement of existing MPA terminals means they will continue to be well maintained, and see improvements to efficiency, capability, and durability through the implementation of these actions. Terminal improvements will be viewed with the intention of increasing capacity for cargo.

The security of all MPA terminals reflects those personnel and physical security requirements of the Maritime Transportation Security Act of 2002. However, the MPA has incorporated policies, procedures and technology which exceed the Act's requirements. The MPA continuously assesses the potential threats and vulnerabilities of its terminals in order to maintain the highest level of security possible.

Existing Conditions

The MPA owns six marine terminals in Baltimore City and Baltimore County. Many of these facilities are older, and all require routine maintenance and upkeep, which is costly but necessary. Most marine terminals are designed to maintain a flexibility to accommodate several types of cargo. Additional terminal space would be beneficial in the short-term and will likely be necessary in the long-term.

Several marine terminals owned by the MPA are located in and around areas that are experiencing redevelopment from historically industrial uses to more residential and commercial mixed-use, which is a growing concern that increases the need for maintenance and investment.

Influencing Factors

System preservation for marine terminals and infrastructure remains one of the most important aspects of operating the MPA. Terminal preservation demands high capital investments for berth maintenance, construction, and reconstruction.

Climate change poses a growing risk to existing and future marine terminals due to their inherent location at the interface of the land and water. The MPA has prepared an assessment of terminal vulnerability to climate change, and developed guidance for new development and construction of terminals. For example, designing and installing stormwater management infrastructure for terminals that meet current and pending environmental regulations, as well as protect cargo from future flooding events. Doing so will be challenging without impacting terminal operations, but implementation of the recommendations of the study will be necessary over the long-term. The MPA will need to be innovative, and collaborate with state and local partners, to implement a flexible and cost-effective approach to managing stormwater over the long-term.

Constraints to full rail access to and from some MPA terminals, such as high cube double stack rail at Seagirt and train length restrictions at South Locust Point, pose a challenge to optimal cargo movement. As stated previously, all reasonable options to enhance rail access to MPA terminals will ultimately benefit the Port.

In addition, there is an overall need for additional marine terminal acreage in Baltimore, particularly for autos and RoRo in the near term, and also for containers in the long-term. Continuing to identify and pursue the acquisition of additional acreage will be beneficial to the Port.

Several MPA terminals are located in areas of Baltimore City that are experiencing redevelopment from industrial uses to more mixed use commercial and residential areas. The long-term viability of marine terminals is subject, in part, to decisions made by the local government on future land uses. The City of Baltimore has a strong record of establishing protective maritime zoning, and the MPA and Port of Baltimore should continue to support these efforts to minimize the potential for future land use conflicts.

The MPA needs a long-term terminal strategy that will help to prioritize acquisitions, needed capital expenditures, and necessary transportation linkages over the long-term. This study will provide valuable direction for future planning.

Ensuring the flexibility of terminals for various cargo uses may benefit the MPA, including ensuring open areas that have limited structures. Open space for autos and RoRo, as well as space that can easily be converted to open cargo areas, may prove to be the best long-term model for MPA terminal development.

In accordance with the Maritime Transportation Security Act, the MPA has developed and implemented several technological and operational initiatives to increase the safety and security of cargo, assets and personnel at MPA terminals. Continued funding for the implementation and maintenance of these projects is also critical over the long-term.

Recommended Actions

Preserve and enhance landside infrastructure necessary to increase cargo capacities.	**Responsibility**	**Schedule**
Ensure that systems preservation funding remains a priority in future budget cycles.	Executive / Planning / Finance	Continuous
Implement guidelines for MPA Climate Change Resiliency.	Planning / Engineering	Continuous
Support local land use decisions that protect terminals and maritime uses.	Planning / Government Affairs	Continuous
Ensure maximum flexibility in the design of new and redevelopment of existing MPA terminals.	Operations / Engineering	Continuous
Identify and obtain additional land, with a priority to property adjacent to existing terminals.	Real Estate	Continuous
Ensure continued funding for innovative and cutting edge safety and security programs and projects.	Security / Operations / Planning	Continuous
Continue to receive excellent reviews from US Coast Guard in meeting the requirements of the Maritime Transportation Security Act.	Security	Continuous

Environmental and Energy Sustainability

Goal: Be a local and national leader in environmental stewardship and sustainability.

Overview

Environmental stewardship and sustainability have become common themes in the maritime and global freight industries over the past decade. Several world-wide initiatives to reduce impacts to air and water quality from ocean-going vessels and cargo handling equipment have been introduced with positive results. Energy efficiency, and the implementation of alternative energy have become commonplace even for businesses, as they realize cost savings from their own energy generation sources such as wind and solar. The Port of Baltimore is already recognized as being environmentally conscious and maintaining a relatively small environmental footprint. Ports are being asked to be even more environmentally and energy conscious and Baltimore is well positioned to be a leader on this front.

Ports that go above and beyond what is required in order to maintain compliance with regulations are often cited as national leaders in the field of environmental and energy sustainability. Being a local and national leader means that MPA would be recognized by other agencies, organizations and stakeholders as being innovative, cost-effective, and setting the best local example for minimizing environmental impacts and conserving energy.

Existing Conditions

Environmental sustainability is no longer simply complying with regulations, and is permeating nearly all decision-making within government and business. Many environmental agencies and organizations have expressed interest in defining sustainability within the maritime industry; however, the implications for the Port of Baltimore are unclear.

Influencing Factors

The environmental and energy programs of the MPA are managed through several different departments due to the technical expertise housed within each. While departments routinely cooperate, there isn't an overarching environmental and energy strategy, or unified information sharing, throughout the MPA. Similarly, the funding sources for many of these efforts, including capital improvements, maintenance and monitoring, come from several sources.

Environmental programs and initiatives are becoming more complex and multi-faceted. The overlap between energy use and environmental impacts is clear, and the effects that Port activities can have on the local environment is still being studied. Environmental stewardship for businesses and public agencies requires a careful balance to ensure that funds are not wasted on non-essential or

underperforming projects. That said environmental stewardship and opportunities to increase sustainability will be part of even more MPA decisions over the long-term.

Relationships are important for accomplishing environmental goals. No one entity can make all of the progress necessary to create a sustainable environmental outcome and the most successful programs are multi-party and multi-agency. The Port is the same and needs to be involved in other agency programs, while also maintaining strong relationships with current and future environmental partners to achieve its goals.

The MPA is staffed by many highly skilled and competent professionals who can bring their talents to bear on the environmental and energy issues of the Port. Identifying and assessing the internal strengths of the agency and its staff can help to advance the Port as a national leader in environmental and energy sustainability.

Unfortunately, the MPA does not have direct control over some of these issues. For example, there is a lack of unified metrics for environmental programs, varying regulations and legislation constrain innovative environmental management options, and limited funding is available to accomplish large scale projects. The MPA should identify the issues that it cannot control and be able to express these constraints to stakeholders in order to set an appropriate level of expectations.

With so many agencies and organizations attempting to do environmental projects, it is difficult to identify and implement the ones that are the most impactful and cost-effective. No easy method exists to determine which projects will do the most good for the most reasonable cost, therefore prioritizing projects is also challenging. Proactively identifying and addressing high profile issues, or those with high potential for controversy, requires significant planning and insight.

The MPA does not have to be the driver for all of its environmental projects. Helping to support environmental projects that are led by other Port stakeholders through multi-party collaboration could be a benefit to the entire Port, and help to partially fulfill other State goals and objectives, for example.

Maintaining compliance with environmental regulations is still an significant accomplishment, given the multiple overlapping policies and programs that the Port must implement. To do so, the Port has been maintaining an Environmental Management System (EMS) that is internationally recognized as an industry standard. The Port would never be permitted to do many of the innovative activities that it undertakes, were it not for an outstanding track record of meeting past rules and requirements. These programs, and our positive track record, must continue and be funded adequately for the Port to continue to maintain its reputation as a leader.

Recommended Actions

Be a local and national leader in environmental stewardship and sustainability.	**Responsibility**	**Schedule**
Develop an environmental strategy, with a consolidated environmental and energy sustainability message for the MPA.	Environment / Harbor Development / Planning	Short-Term
Develop a long-term strategy to efficiently and cost-effectively manage storm water from terminals for the protection of the environment and cargo	Engineering	Short Term
Use GIS to map current and future environmental mitigation and enhancement projects.	Engineering / Planning	Short-Term
Determine if a green port certification would benefit the MPA.	Environment/Planning	Short-Term
Develop a strategy to explain the economic benefit of environmental mitigation and sustainability activities to the Port of Baltimore.	Environment / Harbor Development / Planning	Short-Term
Continue and seek additional funding to support air quality programs.	Environment	Continuous
Increase regular communication of the Port's environmental message to regulators and legislators.	Communication / Government Affairs	Continuous
Maintain the MPA's Environmental Management System (EMS) ISO14001 certification.	Environmental	Continuous
Meet or exceed the requirements of all environmental regulations and policies.	Executive/All	Continuous
Explore the potential for implementing high profile local projects to stay ahead of environmental regulations and proactively advance MPA's standing as an environmental leader.	Environment / Planning	Continuous

Social Responsibility

Goal: Be recognized as a "good neighbor" to adjacent communities and the region.

Overview

Ports around the world operate within larger community contexts. On the East Coast, where cities grew up around their ports, terminals are often located immediately adjacent to neighborhoods where people live and work, and Baltimore is no different. Much of the Port of Baltimore is located within a quarter mile or less of one or more neighborhoods. Because marine terminals are industrial land uses, and operate at various hours using noisy equipment, bright lights, and moving a variety of cargo on trucks, trains and ships, ports can impact the quality of life in nearby communities. The Port of Baltimore has always sought to be a "good neighbor," while still accomplishing the mission of increasing waterborne cargo movement.

A "good neighbor" is one that takes into consideration its impact on those it needs to live and work with. Typically this means doing whatever is reasonable to ensure that disturbances or problems caused by the Port are avoided or limited as much as possible, and mitigated wherever avoidance is not possible. The MPA's goal is to be recognized as a good neighbor by both citizens and customers of the port - the local communities, elected officials, port leaders and port stakeholders, and even by external observers and shipping companies.

Existing Conditions

The MPA has a strong record of working to reduce the impact of its operation on the communities of the State. The impacts of any port are similar to those of any working industrial area – loud noises, vibration, smells, truck traffic, potential air and water quality impacts, and around the clock operations. However, these impacts are the result of valuable economic activities that benefit the State and ultimately the residents of nearby communities. The two neighbors, the Port and local communities, must find common ground to co-exist. The communities must be aware of and understand the limitations and challenges faced by the Port, while the Port must attempt to reduce its level of impact on the community wherever possible. In order to be good neighbors both parties must attempt to understand each other, which requires continual communication and collaboration toward a mutual best interest.

Influencing Factors

The land uses and communities of Baltimore have changed over time. Historically, much of the port-related land was adjacent to communities whose residents worked at the terminals. Today, redevelopment has led to a turnover of residents, and many communities are not as directly linked to the benefits of the marine terminals near their neighborhoods. Reinforcing the economic value and benefits generated by the terminals on nearby communities needs to be better understood and articulated. The Port and Port staff need to remain a vital part of the community.

To be recognized as a "good neighbor", the Port has to know the extent of its impacts on those who live and work nearby. Engaging the communities to learn their perceptions of the Port's impacts would provide both a foundation for the MPA to begin to address local concerns, and an opportunity to

increase the dialogue with local communities. Such a systematic approach to identifying problems caused by Port activities and an open line of communication is needed between the Port and its neighbors. Other State agencies have been very successful with regular public forums, and the MPA may wish to consider routinely hosting similar events to garner greater public input.

As cargo volumes increase over time at the Port of Baltimore, the potential for impacts on nearby communities may also increase. Truck traffic may increase in some areas, and anticipating and addressing the impacts of these additional cargo moves is part of the intent of this goal. However, the MPA is not able to control all possible impacts, even those that may originate at the marine terminals. The MPA should continue to be forthright about the Port-related activities and impacts that it simply cannot control. While the MPA cannot directly control these impacts, it can and should take reasonable steps to attempt to mitigate or ameliorate them.

The audience for the Port is diverse, and ensuring that the messages of the MPA and Port of Baltimore are received and understood by all members of the stakeholder community requires considerable diligence. Identifying the various ways that community members can interact with and receive the best information from the MPA would benefit everyone. Internally, the MPA staff that works and communicates with local communities should ensure that there is a single coordinated message. The MPA has limited resources and therefore must ensure that the most important and accurate information is available to address questions, concerns, and opportunities for each community.

The public marine terminals are a public asset, and presenting a clear link from the benefits of the marine terminal to the best interest of the public is crucial. Bringing stakeholders onto the terminals to increase local firsthand understanding about the operations and benefits of maritime industry could be effective and worthwhile. The benefits to the community must be evident, in the commonly reported economic benefits, but also in cleaner water, cleaner air, or improved quality of life.

Recommended Actions

Be recognized as a "good neighbor" to adjacent communities and the region.	**Responsibility**	**Schedule**
Conduct community outreach meetings and activities, including inviting more stakeholders and neighbors to tour the terminals and DMCFs.	Executive / Planning / Harbor Development	Continuous
Hold regular Port stakeholder forums to learn about their concerns and how the Port is impacting communities.	Planning / Harbor Development / Communications	Continuous
Identify and implement new ways of communicating quickly and efficiently with stakeholders.	Communications	Continuous
Investigate public perception of the Port, its economic impact and good neighbor policies through a quantitative perception survey.	Planning / Communications	Short-Term

Implementation

The Port of Baltimore is a thriving and complex economic engine for the State of Maryland, the benefits of which touch the lives of millions of residents. Cargo through the Port feeds the retail, social, environmental and economic demands of the entire Baltimore/Washington Capitol region. The Port receives many honors and accolades and yet there is still more that can be done to improve the Port community.

Implementation of Strategic Plan 2015 will require a high level of cooperation and focus, both internally within MPA and MDOT, and with external stakeholders. Many of the successes enjoyed by the Port of Baltimore in recent years were the result of very carefully crafted alliances and agreements among many stakeholders. These partnerships must be maintained and strengthened to cooperatively realize the vision and achieve the goals of Strategic Plan 2015.

- **Capital Projects** – The Consolidated Transportation Plan (CTP) is the MPA's main tool for pursuing harbor development and landside terminal projects. The Dredged Material Management Program (DMMP) identifies ways to increase placement capacity for dredged material, and the Facilities Development Plan identifies projects needed to improve terminal facilities and grow cargo volumes.

- **Public Policies** – In order to positively influence policies that impact the maritime industry, the MPA must be active with a large array of national, State and local organizations, such as: Committee on the Marine Transportation System, Association of American Port Authorities, Baltimore Port Alliance, Area Maritime Security Committees, Baltimore Industrial Group, Steamship Trade Association, Labor, environmental agencies, and a variety of community organizations.

The MPA remains well-positioned to meet its challenges between now and 2020. It is likely that new obstacles will present themselves, but the MPA is resolute in accomplishing its mission of increasing the flow of waterborne commerce through the State of Maryland and continue to provide maximum benefits to all of its citizens.

Appendix A.

SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats)

As part of the Strategic Planning process, the MPA identified the following challenges related to the long-term health of the Port:

- Maintaining the competitiveness of the Port in light of shifts in global logistics and competition from other ports;
- Ensuring the availability of funding and options for implementing the Port's dredged material management program;
- Addressing the competitive disadvantages faced due to a lack of double-stack rail capability;
- Maintaining adequate capital funding for needed landside terminal preservation and enhancement projects; and
- Operating MPA terminals and facilities as a "good neighbor" and in a manner that is environmentally friendly to nearby communities.

These challenges relate directly to the ongoing operation of the Port within a changing global context. To maintain our competitiveness, the MPA is working diligently to address and overcome these challenges.

In addition to the issues referenced in the Strategic Plan 2015 text, the following is a more detailed SWOT Analysis:

Strengths (Internal)

- Dedicated and skilled workforce.
- Ranked first in the US for container terminal berth productivity.
- Number one Port in the US for importing and exporting automobiles and roll on/roll off equipment due to an ongoing commitment to infrastructure, facilities, quality, efficiency and value.
- The Port is well positioned geographically to accommodate heavy cargo from Midwest manufacturers due to high quality labor, easy access to highways, and rail service that can handle most pieces of equipment.
- Partnering with private sector maritime operators and stakeholders to achieve positive results.
- Effective maintenance of public terminals and navigation channels.
- Outstanding performance in environmental compliance.
- Using a variety of media tools to communicate our message and promote our successes (Port of Baltimore Magazine, Facebook, Twitter, Instagram, etc).
- Baltimore is well positioned for the drive-to cruise market from its Mid-Atlantic market's large, growing and affluent population.
- One of only two ports currently with 50-ft. channel depth and berths capable of handling the larger container ships that come through the Suez Canal, and will be coming as a result of the Panama Canal expansion.
- The Port of Baltimore has a tremendous impact on the state and local economy by providing 13,650 direct jobs and supporting a total of 127,600 jobs in Maryland that are linked to port activities.

Weaknesses (Internal)

- The Cruise Maryland terminal is currently not able to accommodate two vessels regularly calling on the same day.
- Air draft limitations at the Chesapeake Bay and Key Bridges limit the size of ships calling on Baltimore, particularly the larger cruise ships.
- C&D Canal has air draft and channel depth limitations (131 ft. air draft and 35 ft. channel depth with required 3 ft. under-clearance).
- Dredge Material Management Act of 2001 made it more expensive to manage and/or place dredge materials.
- Length of time to complete procurement process for capital projects.
- Strategic staffing challenges (recruitment, aging workforce eligible to retire, loss of institutional and technical knowledge, succession planning, and retaining highly qualified employees).
- Shortage of land available for terminal expansion.
- Geographic location (150 miles up the Chesapeake Bay) makes Baltimore more expensive due to related fuel costs, time and Environmental Control Area (ECA) requirements.
- Shortage of dredge placement capacity.
- Many of the MPA's terminal berths are reaching an advanced age, and need to be rebuilt to remain useable terminal space.

Opportunities (External)

- Panama Canal expansion could greatly increase the number of containers moving to the east coast and through the Port of Baltimore.
- Opportunities to increase efficiency and reduce toll impacts for trucks, especially those that do not use the nearby bridges or tunnels, would improve the competitiveness of the Port.
- Incentives could encourage new Far East direct service calls for containers, roll on/roll off and autos.
- MPA's breakbulk terminals are well suited for use by a diverse range of commodities, but may require additional dredging and bulkhead improvements.
- Cruising with niche-market boutique cruise lines using smaller vessels is increasing, and appears well-suited for Baltimore.
- Maryland could take advantage of current federal policy focus on manufacturing and exports to increase business opportunities, while the emergence of niche manufacturing could enable the co-location of smaller parts manufacturers in Maryland. This could then increase vehicle imports and exports, with proximity to processing and support services.
- Advancements in connected vehicle technologies are resulting in innovative tools to increase efficiency.
- Potential development of distribution centers and manufacturing at Sparrows Point could attract waterborne commerce to the Port's private and public terminals.

Threats (External)

- Rail constraints exist along the main freight lines that negatively impact the port, particularly the competitiveness of Seagirt Marine Terminal given the lack of double stack container rail capability, and the movement of large RoRo and/or project cargo to Dundalk Marine Terminal.
- Competition for forest product commodities is increasing, with other ports reducing their rates, investing heavily in strategic infrastructure and providing incentives for shippers.

- Competing ports are reassessing operations to try to divert niche cargo imports and exports from Baltimore.
- Traditional cruise vessels continue to get larger as older vessels are phased out, which could raise future air-draft restrictions from the Chesapeake Bay and Francis Scott Key Bridges.
- Impact of the combination of delayed highway and bridge maintenance with rising freight and truck weights could impact access into the MPA's terminals and interstate highway systems (for example the Colgate Creek Bridge).
- Federal funding uncertainties and competition for USACE funding for dredging from other east coast ports.
- Increasingly congested highway networks are driving renewed complaints about truck traffic, and its impact on communities, public health, and quality of life – this negatively impacts public perceptions of the Port regardless of how many trucks are carrying port-related freight.
- Breakbulk terminals are located near communities that are experiencing significant redevelopment.
- Potential for future shortage of both truck drivers and available truck chassis to serve the terminal.
- Cyber and other security threats.
- Weakening global economies, uncertainty associated with unstable or belligerent governments, the value of the US dollar, labor issues here and abroad, domestic and international policies, continual mergers in the global logistics and maritime shipping sectors, and natural disasters can negatively impact international trade and waterborne commerce.
- Currently, several jurisdictions including SHA, MdTA, and Baltimore City all have varying permit fees, procedures and restrictions for heavy, over-dimensional cargo loads that make the permit process expensive and cumbersome to industry.

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