September 8, 2016

Mr. George Isaac
Delta Stewardship Council
980 Ninth Street, Suite 1500
Sacramento, CA 95814

Re: Public comment on the preliminary Feasibility Study of Shore-Based Ballast Water Reception and Treatment Facilities in California – work product to date.

[Transmitted via e-mail]

Mr. Isaac,

Thank you for the opportunity to provide written comments on behalf of the members of the Pacific Merchant Shipping Association (PMSA) to the preliminary Feasibility Study of Shore-Based Ballast Water Reception and Treatment Facilities in California (Study). These written comments are intended to expand on the oral comments I presented at the August 30 meeting in Long Beach. These comments are arranged to first focus broadly on the study's strategy, assumptions and direction, followed by comments on specific portions of the preliminary study, arranged by Task.

The PMSA is a regional maritime trade association representing ocean carriers and marine terminal operators servicing the trade demands in California and Washington State. Our member companies handle over 90 percent of the containerized cargo that moves through these states. Our ocean carrier members are obligated under international, federal and state requirements to manage ballast water discharges to reduce the risk of aquatic invasive species introduction, and the policies under review in the Study would impact their ships and operations. Although our marine terminal members are not currently regulated for aquatic invasive species, the implications of the policies under review in the Study would impact their operations as well.

- I would like to commend the Glosten Group and their partners in their efforts to identify the technical, logistical and economic implications of pursuing shore-based treatment of ballast water discharges. Although shore-based ballast water treatment has been studied before, those studies have largely looked at its feasibility for specific ports and specific trade routes. The maritime industry has viewed shore-based treatment as a potential option for such specific vessel/port pairs; ideally for vessels that are in a fixed trade route calling at a port or ports on a regular, dependably scheduled basis, with no deviation outside of those fixed parameters. Such

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vessel/port pairings are extremely rare in comparison to the array of vessels and trading routes that comprise shipping in California.

- This study appropriately expands that scope to assess shore-based treatment as the de facto strategy for the treatment of all ballast water discharged in California. The ballast water discharge standard that is established in statute in California cannot currently be met with the best available technology for on-board treatment and in fact cannot even be accurately measured to conventionally acceptable statistical significance. This has forced the Legislature to delay the implementation of the discharge standard. Based on current data available, it is doubtful that on-board treatment systems will meet the California discharge standard in the foreseeable future. Ships have installed, and will continue to install on-board ballast water treatment systems to meet the discharge standard adopted by the International Maritime Organization (IMO), the U.S. EPA and the U.S. Coast Guard; namely the D2 standard, and those systems will be used throughout the world. However, discharges complaint with the D2 standard would likely not meet the California discharge standard. Under the current legal framework in California that this study is being developed under, shore-based treatment would be the only acceptable treatment strategy for <u>every</u> ballast water discharge from <u>all discharging vessels</u> over 300 gross tons, calling at <u>every berth and at every port</u> in the state. This would no longer be an alternative option but instead a mandate for treatment of all such discharges. Consequently, we must agree with the position of the study that the only valid interpretation of the California standard requires the handling of ballast water in a manner similar to oil transfers with zero tolerance for fugitive discharges.

  This places an enormous burden in accommodating every possible vessel discharge at every possible discharge location within the framework of a workable state policy. Furthermore, all of the various components of such a system, the retrofitting of all vessels that may call and discharge, the retrofitting of every berth where such a discharge might occur, and shore-side transport, storage and treatment must all be fully functional on the same date in order to avoid turning ships away from ports in California or forcing them into non-compliant operation. In other words, the law does not provide for a phased implementation schedule.

  The interim discharge standard will enter into force on January 1, 2020. This is many years prior to the most optimistic scenario for the readiness of statewide, shore-based treatment infrastructure. Consequently, the study should provide guidance on how many years delay to the implementation of the California discharge standard would be required to facilitate the buildup of such infrastructure, as this will require action by the Legislature. It also further underscores the critical importance of accurately scaling up the study from a select few ports to a fully functional statewide system.

- The study should also examine the level of system redundancy necessary to meet the California Standard. If ballast water handling will be treated like oil transfers per the zero tolerance level, back-up equipment may be necessary to ensure that system can be used in the event of equipment failure. Further, the potential for failure along the treatment train may also dictate that the treatment system have holding tanks sufficient to hold the vessel ballast discharge in the event that discharges are not able to treated as discharged. The costs for this level of redundancy need to be considered in the evaluation.

- The study has looked at historical data to estimate the number of vessel calls into California that discharge ballast water. That provides guidance in regards to the scale of infrastructure necessary to accommodate the volume of ballast water. However, from a ship perspective, it must be remembered that ships may call nine times and not discharge, only to require a discharge on the tenth call. Consequently any ship that might possibly discharge, even if infrequently, will need to be retrofitted for that eventuality.

- On a related note, the study has used ballast volumes based on the high side of historical data for discharged ballast. While that is a sound approach, the study must also consider estimated growth in shipping traffic and consequent increased berthing and discharges. State and Federal agencies have used growth projections for shipping volumes in developing various policies on the maritime industry. This study needs to accommodate growth projections, since adding additional capacity at a subsequent date may be technically or economically prohibitive.

- In regards to economic impacts, the study must consider the relative market conditions for the various ports, trade routes and commodities, as these can vary considerably. As an example, vessels loading bulk cargoes at smaller ports (such as Stockton) have the most critical deballasting needs and the greatest volumes of ballast water needing treatment. Paradoxically, the bulk loading market provides some of the smallest profit margins and is least able to competitively shoulder the cost of shore-based treatment. I realize that the study will be focusing on competitive aspects of shore-based treatment at a later date, but it is important to understand the multiple maritime markets and business models throughout the state and how each might react to economic, technical and logistical barriers to trade.

- Likewise, some ports have many ship calls, but very few discharges events, whereas others may have few calls but require substantial discharge treatment. How will the investment and operating costs be apportioned and amortized in these different scenarios?

- Several years ago California adopted a requirement for ships to plug into shore-based power (cold-ironing) to supplant their on-board diesel powered generators while berthed. One could argue that such a system is somewhat analogous to shore-based ballast water treatment, and there are no doubt lessons to be learned. Even at its most ambitious, the California Air

Resources Board (ARB), who administer and regulate the cold-ironing program, understood that it was infeasible to require that every vessel and every port and berth is compliant with this requirement. This is the case even though shore-based power does not entail the transfer of thousands of tons of liquid. They instead chose to narrow the requirement to certain vessels, certain ports, and then only require a percentage of the fleet be compliant. This is in contrast to the current legal regime regulating ballast waters discharges, where every discharge would need to be treated on-shore.

In spite of the massive investments in shore-side cold-ironing infrastructure and vessel retrofits in an effort to reach compliance minimums, situations arise where, due to changes in fleets or changes in terminals vessels find themselves unable to obtain a berthing suitable for plugging in; rendering the vessel call out of compliance. These examples demonstrate that even with the best planning and investment, there are scenarios that will arise that make compliance infeasible, in spite of the best efforts of all involved.

TASK 2 – Retrofitting and Outfitting of Vessels

- We agree with the study's assessment that because of needing a zero tolerance of ballast discharge entering state waters, any shore connections must be through secure hose and deck or interior located flanges. The use of hull connections will likely not be feasible or acceptable.
- We also agree with the concern voiced in needing to avoid or minimize situations where the chance of human error is exacerbated through increased workload or hours of duty placed on the ship's crew. This may also influence flag state requirements on watch keepers and may also impact crew complement needs.
- There were questions raised at the August 30 meeting concerning the ability of ship pumps to adequately raise the discharge to dockside and eventually to storage or treatment locations without the use of additional booster pumps. This needs to be further evaluated.
- The assumption that vessels will be able to complete their retrofits at Asian yards during their scheduled out-of-water inspections is overly optimistic. U.S. flagged carriers will need to perform modifications in U.S. shipyards and many other carriers may need to perform modifications at European yards. This will increase the costs of retrofits.

  Furthermore, there may be out-of-service costs to vessels that are unable to accommodate the retrofit needs within their scheduled out-of-water inspections window.

TASK 3 – Retrofitting of Ports and Wharves

- Based on discussions with Port Authorities, there is a concern that the cost estimates presented are low and do not include environmental and regulatory costs, including permitting, decontamination, seismic code requirements and other costs.

- Similar to the erroneous assumption made for ship retrofits, terminal and port retrofits and construction will likely impact ongoing operations, resulting in losses of production and efficiencies. Many container facilities and oil terminals operate day and night, including weekends and will incurs costs accordingly. These costs must be incorporated into the study's estimates.
- Likewise, because of the value and relative scarcity of marine terminal acreage, there will be loss of opportunity costs for using portions of the terminals and port lands for use in booster stations, transport, storage and treatment.
- The coupling and uncoupling of hoses to ships will likely fall under the jurisdiction of the ILWU at public ports in California. ILWU labor will also be required for operating any cranes or lifting devices needed to hook up vessels. Furthermore, cargo operations may need to be stopped during the coupling/uncoupling operation. There are significant direct and indirect costs to such operations that should be incorporated into the study.
- Trapac terminal in Oakland is shown as having three shore-power outlets along the dock. There are actually six outlets and thus there may be a need for six ballast stations.
- One of the lessons learned from shore-side power is that despite having multiple connection points, the diversity of vessel size and connection point has resulted in some ships being unable to connect because of the connection needs of an already docked vessel. That situation may well occur for ballast water and may require significantly more berth connection points than currently anticipated.
- There is also very little room between the side of the ship and the outer edge of the container crane at Trapac terminal. Many other container terminals have similar narrow distances. Because of this, the accommodation ladder must often sit over the bull rail. This is captured in the top left photo in Table 9 on page 26. If there are to be many ballast water wharf connections sitting two or three feet above the dock or bull rail, they may interfere with the positioning of the accommodation ladder, especially at low tide or when the vessel is low in the water and the angle of the ladder is small. This can impact the ability of shore labor to safely access the vessel and work cargo.
- The wastewater treatment plant location for the Trapac terminal is also currently used as a public park and not available.
- If barge based reception is considered, there are restrictions on having barges alongside vessels in narrow waterways sue to passing traffic. Such passing traffic can also impact the integrity of the ship/barge connection.

TASK 4 – Shore Based BWT and Storage

- The study considers a joint WWTP for the ports of Long Beach and Los Angeles. There is no reason to believe that the two ports would jointly operate such a facility. The ports are the Harbor Departments of their respective cities and would most likely find distinct solutions for this issue. The report should be revised to consider separate WWTP facilities for each port.

- There are still unanswered questions about what legal requirements will apply to the shore based treatment and eventual discharge back into state waters. Part of the study's mandate is to assess the ability to treat ballast water to the California discharge standard (both interim and final). But once the discharge is sent ashore, we must assume the treatment plant will require NPDES permits to discharge that effluent into regional water bodies. The study must evaluate the treatment necessary to meet possible NPDES standards.
- Further, where does the chain of custody and liability begin and end when the discharge leaves the ship, enters a barge or shore-based hose and finally leaves the treatment facility?
- Finally, a comment was made by a member of the Review Panel on August 30 that the permitting questions should be moved up in the timeline to better understand the requirements that such a ballast treatment strategy entails. PMSA agrees with that recommendation.

Thank you again for the opportunity to provide comment to the preliminary study. We look forward to continued dialogue as the study progresses. Please feel free to contact us if you have any questions or concerns.

Sincerely,

John Berge

John Berge
Vice President