WORKSHEET FOR STD.399

TITLE 2. ADMINISTRATION
DIVISION 3. STATE PROPERTY OPERATIONS
CHAPTER 1. STATE LANDS COMMISSION
ARTICLE 4.7

ECONOMIC IMPACT STATEMENT

A. ESTIMATED PRIVATE SECTOR COST IMPACTS

	Value	Assumptions
1a. Impacts business and/or employees	Likely $0	It is expected that the regulations will not pose a significant additional financial burden on the regulated community, the maritime shipping industry. The regulated community is already required by federal law and regulations to comply with the performance standards and to operate approved treatment systems in accordance with their conditions of approval or acceptance. Additionally, the recordkeeping requirements are not expected to pose a financial burden.
1b. Impacts small businesses	Likely $0	The primary type of business that will be affected by the proposed regulations is the maritime shipping industry. These businesses are already required by federal law and regulation to comply with the federal performance standards for ballast water discharge, and federal law already requires them to operate treatment systems according to their terms of approval or acceptance. While some of these businesses may be small businesses, the proposed regulations are not expected to result in additional costs to these businesses.

		The proposed regulations may indirectly result in an increased need for scientific laboratories, which may be small businesses, to perform analysis of ballast water samples. It is uncertain how many samples will need to be processed, but the number, at least in the near future, is expected to be relatively low due to the high cost of analysis (see Fiscal Impacts B.1.a.). Additionally, staff plans to acquire between two and four rapid assessment tools, also known as compliance monitoring devices (CMDs) (ranging between $5,000 and $20,000 per unit) to perform rapid indicative sampling during onboard inspections before sending samples for detailed analysis to an external laboratory, which would result in a small increased demand for CMDs from scientific instrument manufacturers, which may also be small businesses. However, due to the relatively small expected market contribution that would result from the proposed regulations, it seems unlikely that new small businesses would be created or new positions would be created to meet the modest increase in demand for services and products. Therefore, staff does not anticipate that the proposed regulations will have significant impacts to small businesses.
1c. Impacts jobs or occupations		See 6, Number of jobs created/eliminated
2. Economic impact of these regulations	Below $10 million	• Adoption of the federal performance standards would not impose increased costs to the regulated community, because they are already required by federal law to comply with these standards. Requiring adherence to the manufacturer's specifications and terms of treatment system approval also should not impose an additional cost because federal law already requires vessel operators to operate treatment systems according to the specifications. Therefore, there is not expected to be a need for the maritime shipping industry to invest in new equipment or crew

		training. The recordkeeping requirements are not expected to impose additional costs, because they require only maintenance of some documents on board the vessels. This is a very low burden and something vessels should already be equipped to do, since they are already responsible for maintaining other documentation on board. • In addition, there should not be a cost associated with delaying the implementation of California performance standards. Since these dates are so far out, forecasting the economic conditions at the time the California standards may become effective would be inaccurate. There may be savings to the maritime industry due to delaying the implementation of these standards, which are currently infeasible for vessels to meet. • Scientific laboratories may see increased revenues due to the Commission's need to send ballast water samples for detailed analysis (See details in Fiscal Impacts B.1.a.). Staff does not anticipate sending more than 12 samples to labs annually for detailed analysis, with an estimated maximum cost of $10,000 per sample. Therefore, the additional revenue to labs would likely not exceed $120,000 annually. • Staff does not anticipate acquiring more than four CMDs, to perform rapid indicative sampling during onboard inspections before sending samples for detailed analysis to an external laboratory (See details in Fiscal Impacts B.1.a.). It would be speculative to guess how much revenue instrument manufacturer might receive due to the small increase in demand that the proposed regulations would create, but staff assumes that the total revenue to instrument manufacturers would be less than $80,000 (based on acquiring four CMDs at a maximum cost of $20,000[1] per unit), which is unlikely to significantly impact California-based businesses.

3. Total Number of businesses impacted	Unknown but likely minimal	See 4, Number of businesses created/eliminated.
4. Number of business created/eliminated	Created: Likely 0 Eliminated: 0	• There may be a need for more scientific laboratories in and around California's port zones to analyze ballast water samples. Staff estimates the need to send a maximum of 12 samples annually to laboratories for detailed analysis (See Fiscal Impacts B.1.a. below). Consequently, there is potential for market expansion as demand for scientific laboratory service increases. However, Commission staff does not expect that significant market expansion would result due to the relatively small number of samples staff expects to submit for analysis. • It is not expected that the regulations will cause the elimination of any existing businesses within California, as the proposed regulations do not pose significant additional financial burdens on the regulated community because the regulated community is already required to comply with the federal performance standards.
6. Number of jobs created/eliminated	Created: Likely 0 Eliminated: 0	• As discussed in A.4. above, federal law already requires compliance with the performance standards for ballast water discharge in the proposed regulations, so the Commission's adoption of these standards is not expected to result in an economic hardship that would force the maritime shipping industry to eliminate jobs. Therefore, the Commission does not anticipate the elimination of jobs due to the proposed regulations.

		• As discussed in A.4. above, there may be a need for scientific laboratories in and around California's port zones to hire additional staff to meet the increased demand for processing of ballast water samples for compliance purposes. However, due to the relatively low number of tests that the Commission anticipates requiring, it is unlikely that new jobs would be created.
7. Will the regulations affect the ability of California businesses to compete with other states	No	Adoption of the federal standards will not affect California's ability to compete because the federal ballast water discharge standards are existing standards that the maritime shipping industry already has to comply with pursuant to federal law.

B. ESTIMATED COSTS

	Value	Assumptions
1d. Statewide costs that businesses and individuals may incur to comply	$0	Businesses (small businesses and typical businesses) and individuals will not incur any cost to comply with the proposed regulations because the proposed regulations implement existing federal standards and delay the required compliance dates for the State's interim and final performance standards to January 1, 2030, and January 1, 2040, respectively. It is premature to speculate about the costs that may be incurred to comply with those standards in the future. Delaying these standards provides relief by avoiding holding the regulated community accountable to standards which are currently unachievable.
5. Comparable Federal Regulations		Federal regulation sets performance standards for ballast water discharge and the implementation schedule for meeting these (33 C.F.R §§ 151.2030 and 151.2035(b)). The need for State regulations, given the existence of these federal regulations, is the legislative mandate in Public Resources Code section 71205.3, which requires the Commission to incorporate these standards and implementation schedule into its regulations. Since implementation of the California-specific standards will not happen until at least 2030, it is premature to estimate any costs to businesses or individuals due to differences in the State and Federal regulations. Before these standards can be implemented, the Commission is required to present a report to the Legislature to demonstrate that there is technology available to meet the performance standards; any costs to the regulated community due to implementation of these standards would be more appropriately analyzed at the time of such report.

		There are federal regulations that are comparable to the recordkeeping requirements in proposed Section 2297, such as 33 CFR 1151.2070(d), which requires that certain records be kept available for Coast Guard inspectors for two years, and includes records taken by the control and monitoring equipment showing proper functioning, failures, calibration and repair events; while not identical, the proposed regulations are not expected to conflict with these comparable federal regulations. Both the Coast Guard's regulations and the Commission's regulations require these records to be kept on board the vessel and readily viewable during inspections. While the Commission's proposed regulations provide more specificity about what kind of monitoring information must be included, vessels can comply with both the Coast Guard's and the Commission's regulations without unreasonably impacting operations.

C. ESTIMATED BENEFITS

	Value	Assumptions	Calculations
1. Total Statewide Benefits	Not quantifiable	The impacts of nonindigenous species on the coastal economy, ecosystems, native species, and human health are very difficult to quantify economically but are known to be significant. These are some examples: • **Impacts on human health:** Vessels and port areas have been connected to the spread of epidemic human cholera in a number of instances (Ruiz et al. 2000, Takahashi et al. 2008), including the transport of the toxicogenic *Vibrio cholerae* serotype O1 from Latin America to Mobile Bay, Alabama, in 1991. In addition to cholera, other micro-organisms harmful to humans are introduced via discharged ballast water including: – Human intestinal parasites (*Giardia lamblia, Cryptosporidium parvum, Enterocytozoon bieneusi*) (Johengen *et al*. 2005). – *Vibrio parahaemolyticus*, which infects shellfish and causes gastrointestinal illness in humans when ingested (Revilla-Castellanos *et al*. 2015).	In total, invasive species are believed to account for up to $120 billion per year in losses across the United States (Pimentel *et al.* 2005). Prevention of nonindigenous species introductions will benefit the state as a result of millions of dollars saved on eradication efforts, management, and prevention of potential human health impacts.

		The overall costs associated with impacts to human health can be extremely high however not easy to predict or quantify due to the specific details of each case. • **Impacts on the environment:** In aquatic environments, nonindigenous species threaten aquaculture operations, recreational boating, agriculture, water conveyance, commercial and recreational fishing, marine transportation, and tourism, among other industries, all of which are essential to California's economy. For example: – The overbite clam (*Potamocorbula amurensis*) spread throughout the San Francisco Bay within two years following its detection in 1986. The clam consumes 80 to 90 percent of zooplankton from the water column playing a significant role in the decline of several pelagic fishes in the Sacramento-San Joaquin River Delta, including the threatened delta smelt (Mac Nally *et al*. 2010, Kimmerer and Thompson 2014). – The zebra mussel (*Dreissena polymorpha*) has caused significant economic impacts attaching to hard surfaces and forming dense populations (as many as 700,000 per square meter) that clog municipal	

		water systems and electric generating plants. Zebra mussels are also responsible for reducing sportfishing revenues by as much as $800 million annually in the states surrounding the Great Lakes (Rothlisberger *et al*. 2012). Thus far, over $29 million has been spent by the California Department of Fish and Wildlife to control the spread of quagga and zebra mussels in California (Volkoff, M., pers. comm. 2020). • **Eradication and control efforts:** Attempts to eradicate nonindigenous species after they have become widely distributed are often unsuccessful and costly (Carlton 2001). Control or management efforts are extremely expensive and labor-intensive. Accordingly, Commission staff assumes that improving compliance and reducing the risk of nonindigenous species introduction will achieve benefits of millions of dollars by minimizing invasive species impacts over a long period of time. Prevention of species introductions through vector management is considered the most desirable and cost-effective way to address the nonindigenous species issue.	

FISCAL IMPACTS

B. FISCAL EFFECT ON STATE GOVERNMENT

	Value	Assumptions	Calculations
1a. Additional expenditures reimbursable by the State	The annual cost could range between $10,000 and $140,000	The Commission can collect ballast water samples to determine the composition and concentration of organisms present in ballast water using two approaches: (1) Detailed analysis of the sample (analyzed by specialized scientific laboratory) or (2) Indicative analysis using a rapid assessment tool (performed by Commission staff): (1) A detailed analysis of the organisms present in a ballast water sample is performed by specialized scientific laboratories. Based on previous research and collaboration with these laboratories, staff estimates that the cost of detailed analysis for each vessel sampled could vary between $5,000-$10,000 depending on the parameters to be analyzed, such as the different organism size classes included in the analysis. The Commission estimates to send between 1 and 12 samples per year for detailed analysis. (2) A rapid indicative analysis to assess the concentration of select organisms in ballast water	<u>Cost of detailed analyses per year</u>: Could range from $5,000 (if only 1 vessel is sampled at an approximated cost of $5,000) to $120,000 (if 12 vessels were analyzed at the maximum estimated cost, $10,000, expected per vessel). <u>Rapid assessment tools costs:</u>

			can be performed during inspections on board the vessels with specialized CMDs. The Commission could use these CMDs to determine if vessels are potentially noncompliant and further investigation is needed. The Commission needs to acquire at least two (with different detection capabilities) commercially available CMDs. The price of these tools varies between $5,000 to $20,000 per unit depending on their specific capabilities [1].	Between $5,000 and $20,000 (one-time cost)

[1] MEPC 74-INF.18, 2019. Marine Environmental Protection Committee. 74th session, Agenda item 4. International Maritime Organization.