May 1, 2020

Clerk of the Board
California Air Resources Board
1001 I Street
Sacramento, California 95812
cotb@arb.ca.gov
https://www.arb.ca.gov/lispub/comm/bcsubform.php?listname=ogvatberth2019&comm_period=A

Subject: **Industry Coalition Comments on the Supplemental 15-Day Notice, including the Initial Statement of Reasons, Environmental Assessment, Standardized Regulatory Impact Analysis, and Supporting Regulatory Documents**

Thank you for the opportunity to comment on the proposed At Berth Regulation. This coalition of industry stakeholders appreciates the opportunity to work with California Air Resources Board (CARB) staff during the course of this regulatory development on behalf of our ocean carrier, marine terminal operator, and other maritime industry member companies.

However, we are concerned that this rulemaking process is proceeding in the midst of a global crisis as our member companies are engaged in responding to the COVID-19 crisis by developing and *implementing* emergency procedures to address active coronavirus cases and prevent further infections, ensuring that their staff and communities are safe, and maintaining the supply chains that allow the U.S. and international response efforts to be executed and our communities to successfully shelter-in-place. As a result, their ability to review, understand, and comment on proposed regulations is severely constrained. CARB's indifference to meaningful stakeholder engagement is disappointing, particularly in the midst of a crisis. This coalition previously reached out to California Air Resources Board (CARB) and Cal/EPA outlining the impacts of the crisis on our industries (Attachment A) and the need for a pause in rulemaking during this crisis. Unfortunately, no response was ever received.

Vastly Different Economic Circumstances

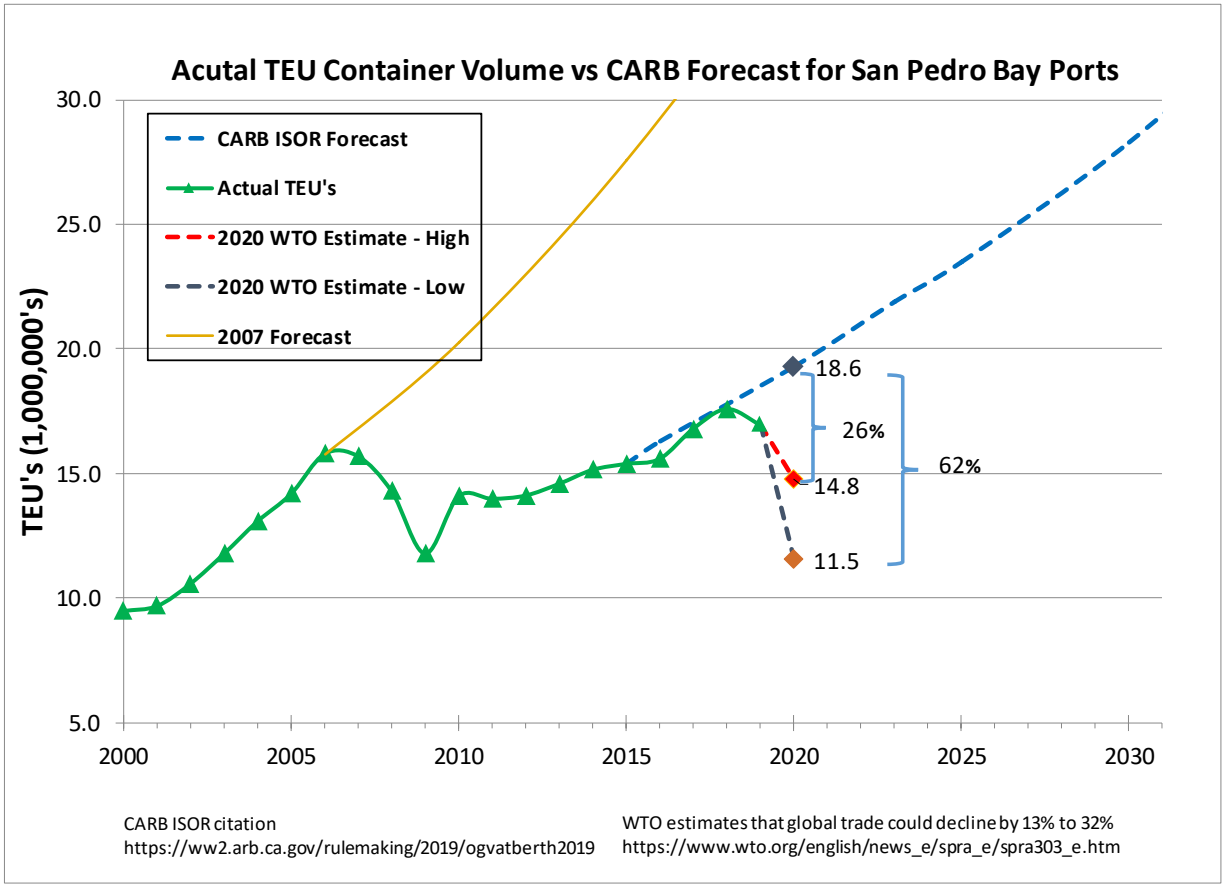
The scale of the current crisis is unprecedented. As discussed in the analysis from Capitol Matrix (Attachment B), every key economic assumption in the CARB estimate of the proposed regulation has been dramatically affected by COVID-19 and the ensuing shelter-in-place orders. IHS Markit economists over the course of one week in March lowered their projection for 2020 US real GDP growth from a decline of 1.7 percent to a decline of 5.4 percent.[1] The impact to the maritime industry is even larger.

[1] https://www.joc.com/maritime-news/container-lines/container-industry-fallout-coronavirus-linger-2021_20200407.html

The World Trade Organization (WTO) has estimated that global trade could decline up to 32% this year.[2] As a result of this crisis, the analyses on which this rule is based are out of date and no longer valid.

Containerships

According to SeaIntelligence, 435 sailings have been eliminated globally due to the COVID-19 crisis, with around 20% of trans-Pacific sailings blanked for much of the second quarter.[3] The ISOR analysis is predicated on strong growth assumptions based on a number of forecasts. Questions about those assumptions were raised prior to the current crisis. For example, the ISOR analysis assumes that from 2016 (the inventory base year) through 2020 cargo at the ports of Long Beach and Los Angeles would grow 4.5% per year. Last year (before the current crisis), the two ports declined 3.3%. Since the crisis, the decline has accelerated, with year-over-year declines in January (-5.1%), February (-16.9%), and March (-19.7%). Before even considering the rest of the year, the current crisis means the emissions inventory contained in the ISOR is wrong. That gap only grows if the rest of 2020 is forecast based on WTO projections as shown in the figure below.



[2] https://www.wto.org/english/news_e/spra_e/spra303_e.htm
[3] https://www.seatrade-maritime.com/containers/container-line-blank-sailings-increase-435

By the end of this year, the baseline forecast used in the ISOR will overestimate cargo volumes by between 26% and 62%. While it would be nice to claim that this cargo disruption is unprecedented and that cargo volumes will quickly return to normal, there is historic precedent that we are facing a long climb out. Prior to the Financial Crisis, the 2007 Forecast estimated that cargo volumes would grow to 65 million TEU by 2030. Following the decline from the last recession, cargo volumes never recovered to their pre-recession levels of growth (see chart above). Similarly, the impact of the crisis is also not likely to be short-lived. A new McKinsey study estimates that recovery in the USA could take until 2023.[4] With each year, the gap between the ISOR forecast and reality will grow larger, further distorting the analyses predicated on the forecast. Whatever the next decade holds for cargo growth, the only thing that is certain is that it is not represented by the strong growth forecast contained in the ISOR.

The estimates of benefits, emissions estimates, costs, cost-effectiveness, and health impacts, which presume the rate of growth contained in the ISOR, are now no longer valid. Even if growth were to immediately resume at levels assumed in the ISOR, cargo volumes and resulting activity will likely be millions of containers off from the cargo volume estimate.

Cruise Ships
The economic impact of COVID-19 on the cruise industry is substantial. The suspension of operations will have a pronounced detrimental impact on families and communities globally. Of the 421,000 industry supported jobs in the United States, 12% are in California, yielding 49,369 jobs in The Golden State and generating $3.26 billion in total wages and salaries.

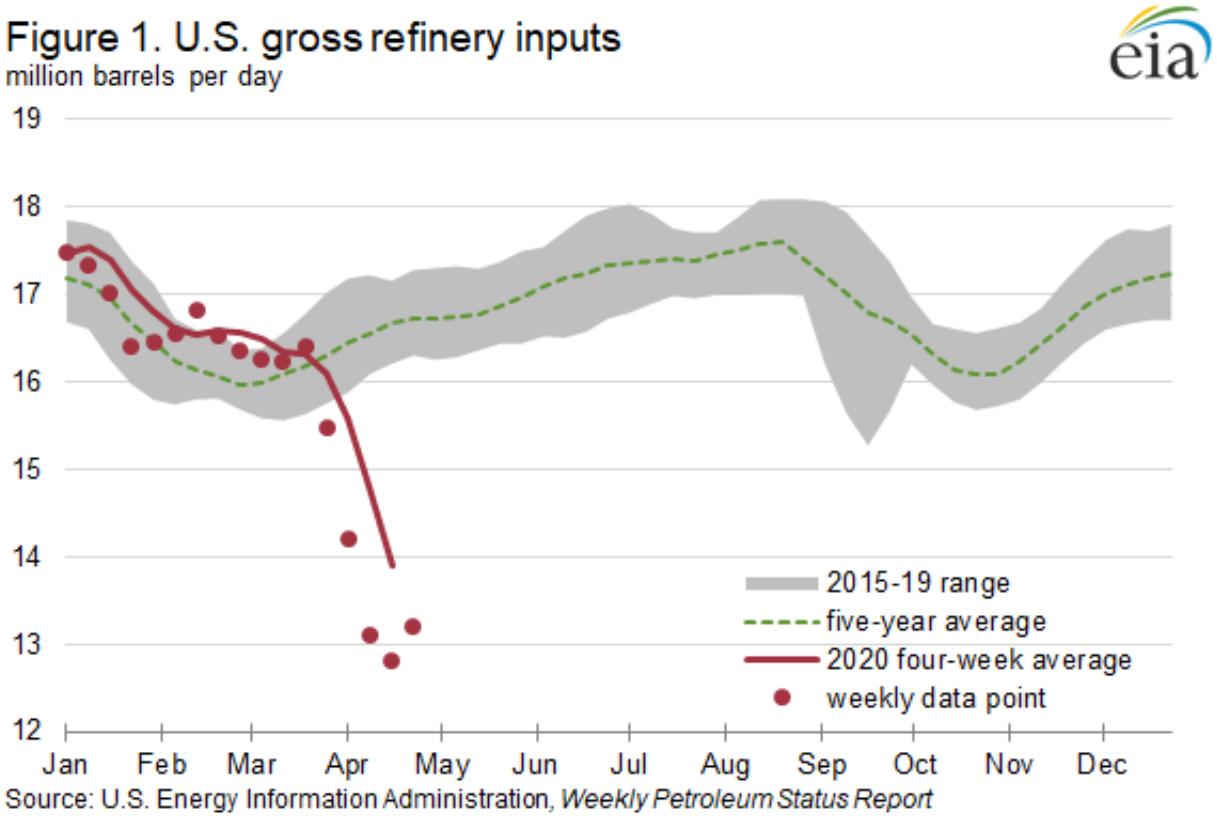
The cruise industry is vital to California's economy. The major ports of Los Angeles, Long Beach, San Diego, and San Francisco host millions of passengers and crew, producing direct onshore spending and contributing $2.5 billion annually to the state of California.

While suspending operations is critical for the health and safety of passengers and crew amid the COVID-19 pandemic, the impact on the economy is extensive. When the voluntary suspension was announced in mid-March to cease operations until mid - April, the jobs of 3,159 Californians were lost, amounting to $163 million in wages and $185 million in direct spending. Nearly 70 jobs in California are lost each day the cruise industry remains in suspension of operations. If the suspension continues through June, the loss of direct spending will be $427 million and a stifling loss of 7,557 jobs, amounting to a $391 million loss in wages.

Tankers
In a similar fashion, fuel consumption has precipitously declined as a result of the crisis. With an unprecedented number of people filing jobless claims that need and demand for fuel has plummeted. The U.S. Energy Information Agency showed a significant drop in demand in gross refinery inputs in its latest Weekly Petroleum Status Report[5], as presented in the graph below. Refinery demand will directly impact demand for liquid bulk vessels calling California ports. How fuel demand will recover following

[4] https://www.mckinsey.com/~/media/mckinsey/business%20functions/risk/our%20insights/covid%2019%20implications%20for%20business/covid%2019%20march%2025/covid-19-facts-and-insights-march-25-v3.ashx
[5] https://www.eia.gov/petroleum/weekly/archive/2020/200429/includes/analysis_print.php

the crisis and whether there will be fundamental shifts in transportation and fuel consumption is unknown at this time. Again, it is clear that the forecasts contained in the ISOR no longer represent a reasonable expectation of future activity of tankers in California. New analysis is necessary to determine how future demand for liquid bulk imports will change as a result of the COVID-19 crisis.

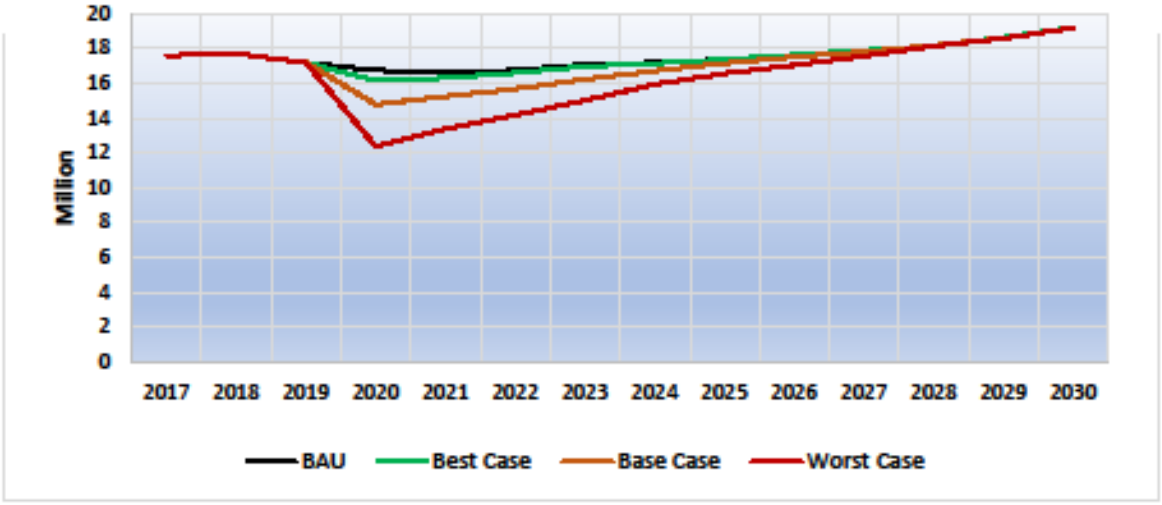


Ro/Ros

The crisis is also forecast to impact auto sales in this country and globally. Decreased auto sales will translate into reduced Ro/Ro activity. A forecast by Automotive from Ultima Media[6] indicates that it will take most of this decade for auto sales to return to their pre-crisis levels. The base case scenario has volumes declining from 2019 by 14%. In a worst-case scenario, volume declines would plunge 28% from 2019 levels.

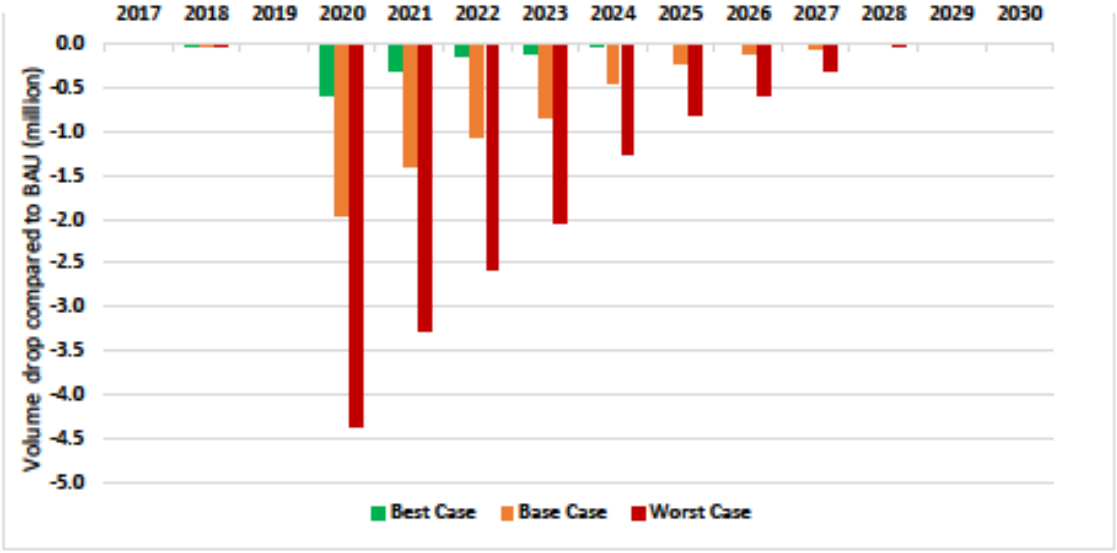
[6] https://www.automotivemanufacturingsolutions.com/insight/global-vehicle-demand-forecast-2020-2030-the-drastic-impact-of-the-coronavirus-crisis/40396.article

US Automotive Sales Volume Forecast Under 3 Scenarios 2017-2030 (units)



Source: Automotive from Ultima Media

US Automotive Sales Volume Drop Compared to BAU Under 3 Scenarios 2017-2030 (units)



Source: Automotive from Ultima Media

As was the case for other vessel categories, the forecast upon which the Ro/Ro analysis was conducted is no longer valid. While the Automotive from Ultima Media forecast slightly growing by the end of the decade, the proposed rule is based on a growth rate that would see Ro/Ro activity 83.5% higher than

2016 levels in the ports Los Angeles and Long Beach by 2030 and 31.9% higher at the Port of Hueneme[7]. These numbers are not realistic or a reasonably foreseeable outcome of the current economic climate.

The ISOR must be revised to take these significant effects into account. California is already responding to the economic reality in other arms of the government. On April 10, the California Department of Finance (DOF) sent a budget letter to the Legislature alerting them to the dramatic impact that the COVID-19 pandemic is having on the California economy and state budget[8]. In the letter, DOF indicated that the effects of the downturn will be felt immediately, that the California unemployment rate could peak at a rate higher than the Great Recession of 2008, and that economic softness could persist into 2020-21 and additional years depending on the pace of recovery to local, state, and national economies. It referenced a multi-year recession alternative included in its January budget, and indicated that actual increases in unemployment would be much larger.

California's Legislative Analyst's Office (LAO) acknowledged the scope of the economic change that the State is witnessing[9]. In a document titled "Preliminary Assessment of the Economic Impact of COVID-19" released on April 16, 2020, the LAO declared that "Job Loss and Abrupt Halting of Economic Activity Make It Clear That We Have Entered a Recession". This assessment was initially confirmed with news reports of 1st Quarter GDP results[10].

Correct the Projections and Analyses

First, CARB should pause the rulemaking and begin working with the port authorities to develop new cargo volume and cruise visits projections that will serve as the basis for re-analysis of the proposed rule. Second, CARB should revise its assumptions based on the comments previously submitted by stakeholders that demonstrate costs have been underestimated and emission reductions and health benefits have been overestimated. Finally, CARB should re-evaluate baseline emissions, proposed emission reductions, health benefits, costs, and cost-effectiveness based on a revised forecast and assumptions.

Previous Comments Unaddressed

The industry coalition is concerned that our comments on the ISOR were not addressed or considered. Extensive technical comments on cost, infrastructure, and feasibility were submitted with supporting information. In fact, some of the proposed "15-Day Changes" are diametrically opposed to the evidence submitted to CARB. As an example, substantial evidence, in the form of engineering analysis and previous comparable examples, was submitted by both industry and port authorities demonstrating that more time was needed to ensure successful compliance with the rule. Those concerns and that evidence appears to have been dismissed, with CARB staff proposing to accelerate already unachievable timelines. Accordingly, we request that CARB staff review and respond to all industry comments prior to Board consideration of the proposed regulation.

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[7] https://ww3.arb.ca.gov/regact/2019/ogvatberth2019/apph.pdf
[8] http://dof.ca.gov/budget/COVID-19/documents/4-10-20_COVID-19_Interim_Fiscal_Update_JLBC_Letter.pdf
[9] https://lao.ca.gov/handouts/FO/2020/Preliminary-Assessment-of-the-Economic-Impact-of-COVID-19-041620.pdf
[10] https://www.latimes.com/politics/story/2020-04-29/u-s-economy-in-clear-sign-of-recession-shrinks-4-8-in-first-quarter-due-to-coronavirus

Proposed Changes Are Not Consistent with "15-Day Change" Requirements

Accelerating deadlines in the rule by 33% for tankers and 25% for Ro/Ros with no evidence to support the feasibility of the proposal is not a reasonably foreseeable change to the proposed regulation. As a result, these changes are not appropriate for a "15-Day Change" notice. The changes substantially alter the impact and implementation of the proposed rule. CARB staff should recirculate the proposed changes as a "30-Day Change" notice.

The purpose of the "15-Day Change" notice is to provide flexibility for *de minimis* changes that do not require substantial new analysis. The proposed changes have required concurrent changes to every element of the analysis: costs, emissions inventory, and health benefits. Even worse, the impact of an accelerated schedule on costs are not disclosed, eliminating the opportunity for stakeholders to provide comment on the change.

Increased Costs Not Disclosed

Accelerating the schedule increases costs in multiple ways. However, the "15-Day Change" notice provides no detail on how costs increased. There is only a vague statement that total program costs have increased by $210 million. It attributes increased costs to the accelerated schedule and to the inclusion of the Innovative Concept section but does not identify what those costs are or how they arise. The nature and mix of costs are important to understanding the economic impact. As the Department of Finance (DOF) pointed out in its comment of the Standardized Regulatory Impact Assessment (SRIA):

> "the SRIA must include non-annualized capital costs. Capital costs are almost half of the direct costs of the package. However, because new facilities are required for compliance, these capital costs may not be spread evenly across the effective period of the regulation as ARB assumes, but will depend on the ability of parties to finance up-front costs. The SRIA should disclose the cost of capital construction to the year the money will actually be spent, as well as the assumed amortization."

The proposed acceleration of the deadline compounds the issue that DOF identified. Without detailed information on the increased costs, it is impossible to assess and provide impacts for those increased costs.

Innovative Concepts

Another major proposed change would allow the use of certain "Innovative Concepts" (IC) to meet compliance obligations. CARB staff present the "Innovative Concepts" provisions as an alternative compliance pathway but the proposal would fail to serve that purpose as currently written. A number of changes are necessary in order for the IC section to be workable.

- A fleet averaging concept should be a defined path within the IC section. Fleet averaging, as a program whose parameters are known, should not be subject to the unnecessary restrictions for new concepts. Given the known success of fleet averaging to reduce emissions, it is not

necessary to create uncertainty by having a three-year term with extension subject to uncertain approval.

- There should not be a set term for IC plans. As written, the IC section requires regulated parties to repeatedly apply for and receive CARB approval to use an "Innovative Concept" for limited three-year terms. Different concepts may require different terms in order to recoup any necessary investment. A one-size-fits-all approach is unwarranted and unnecessary. The term for any IC can be determined individually.

- While IC must be "surplus" at the time of creation, CARB could revoke or decline to renew approval if the emission reduction became subject to regulation at a future date or by any CARB-approved AB 617 Community Emission Reduction Plan. The IC section should be modified to recognize IC reductions without this limitation.

- Limiting the location of IC emissions reductions only to "adjacent" communities and distances no greater than 3 nautical miles may have unintended consequences. Neither "adjacent" nor "community" are defined in the Proposed Regulation, so it is unclear how close an area would need to be in order to be deemed "adjacent," and where the boundaries of that area would end. The IC section should be modified to encourage any project (adjacent or not) that would benefit the port and terminal communities.

- The IC section sets a deadline for submitting a proposal. This implies that IC will not be considered after 2021. We do not believe it was the intention of staff to limit development of IC to the first six to twelve months of the proposed rule's implementation. The deadline should be removed and replaced with the process for IC plan review at any date such plans are submitted in the future.

- The prohibition on public funding for ICs is too broad. Funding may come from different sources, including federal, other states, or other nations. In addition, such a prohibition would exclude demonstration projects. Fleets that are likely to engage in ICs, including fleet averaging, are also likely to participate in demonstration projects sought by CARB or other air quality agencies. Being innovative should not prohibit technology advancement.

- The requirement that "if no environmental review is determined to be required by a local lead agency, the applicant must submit documentation from the local lead agency explaining environmental review is not required" does not make sense in the context of the California Environmental Quality Act (CEQA). It is not normal for an agency to affirmatively state it is not taking action under CEQA; it simply does not act. The environmental review provision should be limited to the review of CARB's action, if any. If CARB determines environmental review is necessary, it must conduct that review unless another lead agency is identified. CEQA already contains provisions for addressing conflicts between multiple lead agencies. If CARB determines that its action does not require environmental review, it is not necessary to determine if other lead agencies may exist.

- Revocation of the IC plan provides for a 30-day notice. This is likely to be inadequate for an ocean carrier to transition to original provisions of the rule. The risk of a 30-day transition at the uncertain end of a three-year program is enough to prevent an ocean carrier opting to implement an IC. The IC section should include a nine-month transition period upon revocation of an IC plan.

Accelerated Deadlines are Unachievable

As was demonstrated in multiple industry comment letters, the original deadlines were unachievable. The rule demonstrated this absurdity by requiring facility plans to ensure compliance six months after compliance is required. The only engineering analysis in the record was submitted by the ports of Long Beach and Los Angeles that demonstrated, based on actual past experience, that more time was necessary to implement the proposed rule. No engineering analysis was conducted by CARB and no information has been made part of the record to support the accelerated deadlines. The accelerated deadlines for tanker and Ro/Ro vessels cannot be achieved.

LCFS Considerations

The economic analysis presented by CARB shows Low Carbon Fuel Standard (LCFS) credit-derived revenue offsetting electricity, labor, and infrastructure costs without restriction. At the time of this letter, CARB LCFS staff is still preparing guidance on the "Use of Proceeds" under the LCFS regulation. As a result, it has not been clear what costs are eligible for offsets on the LCFS "Use of Proceeds" requirements. Please confirm that shore power-related electricity, labor, and infrastructure costs are eligible offsets for shore power-generated LCFS credit revenue.

Summary of Proposed 15-Day Changes and Impacts on Costs Inconsistent with Proposed Regulation

The summary of the impacts on costs states that emission reductions can be achieved for $30,000 per weighted ton and the cost analysis for the proposed regulation has been updated to reflect that cost assumption based on information from PMSA and WSPA. The referenced PMSA email concerned the appropriate value of the remediation fund since the purpose of the remediation fund is to replace unmitigated auxiliary engine emissions. If CARB staff believes that number accurately reflects the costs to offset uncontrolled emissions, the hourly remediation fund rate should be adjusted to reflect that. If CARB does not believe that the $30,000 per weighted ton estimates of cost reflect the cost of replacement emission reductions, then the cost estimate prepared by CARB should reflect the higher value used to establish the remediation fund rate. CARB should not select higher and lower costs in order to achieve a preferred outcome depending on each situation.

Fundamental Problems with Emissions Inventory Unresolved

Even before addressing the changes brought about by the COVID-19 crisis, the emissions inventory has not addressed known problems as described in previous industry stakeholder comment letters. The inventory overestimates growth, resulting in a significant overestimation of the proposed rule's emissions benefit. The inventory does not consider the emission reductions associated with Proposition 1B funding requiring emission reductions of 90% under the existing rule – 10% more than the proposed

rule. This results in the inappropriate attribution of emission reductions from existing requirements to the proposed rule. The emissions inventory also inappropriately caps emission reductions under the existing rule at 80%. Every vessel with a call greater than 15 hours will result in emission reductions greater than 80%. In San Pedro Bay, where calls greater than 100 hours are typical, emission reductions can exceed 97%. Yet, no reason is given in the emissions inventory for capping emission reductions. The inventory must be updated to reflect these issues.

CARB inventory staff have acknowledged these issues in a variety of phone calls and emails with stakeholders and have indicated that these issues will be resolved sometime this summer. That does a disservice to both the public and decisionmakers in understanding the benefits of the proposed rule changes.

Additional CEQA/EA Considerations

In addition to the previous issues described in this letter that require additional evaluation under the California Environmental Quality Act (CEQA), the changes to the proposed regulation will result in the need for revised environmental assessments. Among the proposed changes, the lead time for tankers will be reduced by 33% and for Ro/Ros by 25%. These changes represent significant new information and a substantial change to the project description that triggers the recirculation of the environmental assessment under CEQA. In addition, by accelerating the deadlines, more infrastructure work will be required over a shorter period of time. A foreseeable consequence is that overlapping construction will lead to higher peak emissions. The California Environmental Quality Act (CEQA) requires that these changes be evaluated.

The COVID-19 crisis and its impact on future cargo volumes, emissions, and benefits of the proposed regulation also represents significant new information requiring review, analysis, and recirculation of the environmental assessment. As described earlier, forecasts used in the analysis of the proposed regulation may overestimate activity by 62% by the end of this year alone! The environmental assessment must be revised to reflect this new reality.

Timed Connection Requirement

CARB staff has revised the one-hour limit on the connect and disconnect times for shore power to a two-hour connect time limit and one-hour disconnect time limit. While it is appreciated that the infeasibility of the one-hour requirement was acknowledged, a two-hour requirement is still arbitrary and capricious and not based on any evidence that it is safe or feasible. As we have said in previous letters, the existing rule permits multiple connection strategies, some of which will require more than one hour. More importantly, the shore power connection process requires individual people to manhandle heavy, high-voltage equipment and energize that equipment – sometimes in adverse weather conditions. Under no circumstances should that work be performed under a stopwatch. The two-hour requirement would likely be ineffective because any exceedance of the one-hour requirement would likely result in a safety exemption being sought, as having labor move faster handling high voltage equipment would be fundamentally unsafe.

CARB staff has still provided no basis on which it can be assumed that connection times can be consistently and safely accelerated. In fact, no data is available from CARB justifying the previous one-hour connection window or the new two-hour connection window.

Reporting for Bulk Vessels Should Be Eliminated

The reporting requirements for general cargo and bulk vessels add a real, quantifiable burden to bulk and general cargo vessel operators, but do not advance any emissions reduction program in California. The State should not impose costly reporting requirements for the sole sake of collecting more information, particularly when there is no planned use for that data. If CARB identifies a future need for such data, it is readily available through alternative sources such as marine exchanges or port authorities. There are even existing regulatory tools in place like the OGV fuel rule that CARB can use to obtain vessel information and ensure significant emission reductions. There is no reasonable basis to place a permanent, costly reporting burden for no measurable or identified benefit.

Sincerely,

California Association of Port Authorities
Cruise Lines International Association
Pacific Merchant Shipping Association
Western States Petroleum Association
World Shipping Council

Attachment A: Industry Coalition Letter "Impact of COVID-19 on At-Berth Regulatory Schedule", March 20, 2020
Attachment B: Capitol Matrix Consulting Report, April 27, 2020

Attachment A:
Industry Coalition Letter
Impact of COVID-19 on At-Berth Regulatory Schedule
March 20, 2020

March 20, 2020

Jared Blumenfeld, Secretary
California Environmental Protection Agency
1001 I Street
Sacramento, California 95812

Mary Nichols, Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95812

Subject: Impact of COVID-19 on At-Berth Regulatory Schedule

Dear Secretary Blumenfeld and Chair Nichols:

The spread of COVID-19 is disrupting the entire world. The impact has been particularly difficult to manage in an industry based upon the international movement of goods and people. Necessary precautions to address COVID-19 have already made compliance with the existing At-Berth Rule difficult and, at times, impossible. Travel bans and self-quarantines have already kept key personnel from reaching vessels and terminals. Many vessel sailings were cancelled from China and vessel schedule will take months to restabilize. Here in the United States, while we are still in the early stages of the spread of this disease, industry has already documented to your staff the many instances of our inability to conduct routine maintenance, repairs, or vessel commissioning as a result of COVID-19 restrictions.

In addition to the challenges that this public health crisis poses to industry compliance with the existing shorepower regulation, we will also be impacted with respect to promulgation of a new proposed rule. We appreciate that your staff has already delayed the release of the 15-Day package for the At Berth amendments and is considering extending deadlines for comments. Unfortunately, that is not enough. Based on the recent study from Imperial College London, this outbreak will not subside for months with the peak in the United States not reached until June 2020. As a result of the extraordinary disruptions to normal business operations associated with this crisis, it will be impossible for the regulated community, spread across the world, already dealing with limitations with respect to our ability to comply with the current regulation to also participate in the rulemaking process for months.

With respect to implementation, it is unclear when personnel and vendors will be able to travel again to begin making necessary improvements to comply with the requirements of any amended rule. The proposed rule compliance date was already very aggressive, and our Coalition has consistently and repeatedly raised concerns that compliance was infeasible even under the best of circumstances due to the operational and infrastructure changes to be implemented.

As a result of the COVID-19 circumstances described above and in anticipation of other extenuating factors arising from this crisis that may come to light in the coming months, we respectfully request that the regulatory schedule be paused until January 2021 when this crisis is over and its full impacts have been assessed.

We look forward to continuing our good working partnerships and positive relationships with the Agency and the Air Resources Board during these trying times.

Sincerely,

California Association of Port Authorities
Pacific Merchant Shipping Association
World Shipping Council
Cruise Lines International Association
Western States Petroleum Association

Attachment B:
Capital Matrix Consulting Report
April 27, 2020

Capitol Matrix Consulting
Analysis, Advice, Advocacy

April 27, 2020

Ms. Catherine Reheis-Boyd
President
Western States Petroleum Association
1415 L Street, Suite 900
Sacramento, CA 95814

Dear Ms. Reheis-Boyd:

This letter is in response to your request that our firm evaluate the effects of the COVID-19 pandemic on the estimates in the California Air Resources Board (CARB) Standardized Regulatory Impact Assessment (SRIA) of the *Ocean-Going Vessels at Berth* proposal, as modified by the "15-day changes" document released on March 26, 2020.

Background and Proposed Regulation

The proposed regulation would expand the type and number of ships that must use shore electrical power or an alternate recapturing method to reduce emissions while at berth. Existing rules require most container ships, refrigerated ships and cruise ships to use shore power when docked in ports rather than run their auxiliary engines to create electricity for lighting, air conditioning or operation of shipboard equipment. Alternatively, these ships can continue to use auxiliary engines but then must connect to an on-shore or barge-based capture and control system. The current regulations are in place at six ports: Los Angeles, Long Beach, Oakland, San Diego, San Francisco and Hueneme.

Key provisions of the proposed regulation (as modified by the 15-day changes) would:

- Make smaller container, reefer and cruise ships subject to the shore power regulation. Those requirements would phase-in beginning in 2021.
- Make roll-on/roll-off (ro-ro) ships subject to the shore power regulation starting in 2024.
- Expand the requirement to include tankers beginning in 2025 at the Los Angeles and Long Beach terminals, and elsewhere in 2027. In addition to auxiliary engines, the proposal would require large tankers to reduce emissions from boilers used to power steam-driven pumps involved in offloading crude oil, unless shore power is installed.

- Expand the ports and terminals covered in the regulations. Ports, including refinery docks, in Northern California in or near cities such as Stockton, Richmond, Rodeo, Benicia and Martinez, would now be covered.
- Allow vessel and terminal operators to meet berth emission reduction requirements through an approved "innovative concept." The concept, which according to CARB would most likely be used at smaller ports, allows vessel or terminal operators to achieve targeted emissions savings through an alternative project. These concepts would only qualify to the extent they are not required by regulation, including future regulations and AB617 Community Emission Reduction Plans.

CARB Estimates of the Proposal's Impact

CARB estimates that the proposed regulation would have the following impacts:

- A total net cost of $2.40 billion for the period 2021 to 2032 and avoided adverse health outcomes worth $2.44 billion for the same period.
- Unit costs of regulation in 2030 of $1.30 per Twenty-Foot Equivalent Unit (TEU) for container or reefer vessels, $5.25 per cruise passenger, $7.49 per automobile moved on a ro-ro ship, and less than a penny per gallon of finished product for products moved by tanker.
- Net decreases in economic activity over the 2021 to 2032 period due to added regulatory costs and reduced productivity, offset in a few years by new construction activity.
  - By the final year of the projection period (2032), *decreases* of:
    - $297 million in gross state product;
    - 2,385 jobs;
    - $234 million in personal income; and
    - $90 million in private investment.

Methodology and Assumptions Behind CARB's Estimate

Methodology: CARB's estimates were based on a multiple-step process:

- Information was developed by CARB staff regarding such factors as costs of permitting, planning, engineering, construction, equipment, installation, and operations, and maintenance.
- These assumptions were then entered into a proprietary economic forecasting and policy analysis model licensed by REMI. The REMI model integrates input-output, computable general equilibrium, econometric, and economic geography methodologies to estimate the impacts of cost changes and other factors on the

broader economy. A basic feature of computable general equilibrium models is that their outputs are highly sensitive to changes in economic assumptions.

Key assumptions. The REMI economic model starts with a baseline set of economic assumptions that tie to the California Department of Finance (DOF) forecasts made in the Spring of 2019. At the time, DOF projected that U.S. and California economies would experience moderate but sustained economic growth through 2022, as follows:

1) Employment increasing by an average of 1 percent per year,
2) Personal income increasing by 4 percent per year, and
3) U.S. real gross domestic product increasing by 2 percent per year.

The May 2019 population projection indicated that California would add about 2.4 million people between 2019 and 2032.

Other inputs into CARB's estimates included diesel price projections and "industry growth factors." The diesel price projections were based on U.S. Energy Information Administration's (EIA) October 2018 estimate, which assumed steady growth in diesel prices, from $2.80 per gallon in 2019 to $5.03 by 2032. The industry growth factors are intended to capture the impacts of expected growth in port volume over time. They are used by CARB for its baseline emissions estimates and most of its cost estimates. The growth factors are based on a combination of projections supplied by U.S. Federal Highway Administration's Freight Analysis Framework (FAF) 65 and, where available, from individual ports. Using these estimates, CARB assumes growth factors of 77 percent for container vessels, 79 percent for cruise ships, 52 percent for ro-ro vessels, and 14 percent for tankers.

Impact of COVID-19 On CARB's Assumptions

Every key economic assumption in the CARB estimate of the proposed regulation has been dramatically affected by the COVID-19 pandemic. Fuel prices, economic output, jobs, international trade and waterborne port activity will all be sharply lower than anticipated in any economic forecast made prior to March of this year. Given the emerging expectation that recovery from the historic COVID-19-related downturn will be slow (see discussion below), we expect the economic measures will remain below the levels assumed in the CARB projections for several years to come. This will, in turn, have impacts on CARB's estimates of (1) baseline emissions, (2) emissions reduction and health-related savings resulting from the proposal, (3) costs and savings to the ports, terminals, and vessel operators, and (4) broader economic impacts of the proposed regulation.

Recent economic developments. The COVID-19 pandemic has led to a global economic contraction that is more severe than the 2008-2010 Great Recession. Nationally, new claims for unemployment insurance totaled 26 million over the five weeks ending on April 23. Over the three weeks ending on the same date, California processed about 3.4 million unemployment claims. These claims represent about 17 percent of the U.S. and California

workforces, respectively. Turmoil in global oil markets have driven the price of West Texas Crude downward, to less than $17 per barrel as of April 23, 2020.[1]

Department of Finance comments. On April 10, the California Department of Finance (DOF) sent a budget letter to the Legislature alerting them to the dramatic impact that the COVID-19 pandemic is having on the California economy and state budget. In the letter, DOF indicated that the effects of the downturn will be felt immediately, that the California unemployment rate could peak at a rate higher than the Great Recession of 2008, and that economic softness could persist into 2020-21 and additional years depending on the pace of recovery to local, state, and national economies. It referenced a multi-year recession alternative included in its January budget, and indicated that actual increases in unemployment would be much larger.

Other recent forecasts. Recent national economic forecasts show a similarly dark picture for the U.S. economy. On April 23, the Congressional Budget Office released its first post COVID-19 forecast, which showed a 5.6 percent decline in inflation-adjusted gross domestic product in 2020, followed by a subdued increase of 2.8 percent in 2021.[2] (For context, real GDP fell by a cumulative total of 2.6 percent in the first two years of the 2008-2010 recession, which was considered to be the most severe since the 1930s.) CBO's projected level of unemployment is 11.4 percent for 2020 and 10.1 percent in 2021. The primary reason that CBO's forecast anticipates only a modest rebound in 2021 is its expectation that social distancing will continue (albeit at a lesser rate) through the first half of 2021.

Other forecasts show equally sharp declines in 2020, and, under some scenarios, an extended period of subdued economic activity.[3] Factors that could result in long-term declines include permanent downsizing of some sectors and occupations due to such factors as reduced travel, changes in consumer spending patterns, workplace practices (e.g., more home-based workers, more reliance on technology, less travel), and shifts in global supply chains.

Areas Where A Changing Economic Outlook Will Impact Estimates of the Proposed Regulation

Following are examples of areas where the weaker post COVID economic outlook will affect CARB's outdated estimates of the proposed regulation's impact.

Less port activity under the baseline. As noted earlier, the CARB estimates assume substantial growth in vessel visits through 2032. However, trade flows and port activity are

[1] Price accessed on Oilprice.com April 23, 2020. https://oilprice.com/oil-price-charts/45

[2] "CBO's Current Projections of Output, Employment, and Interest Rates and a Preliminary Look at Federal Deficits for 2020 and 2021." Congressional Budget Office, April 24, 2020. https://www.cbo.gov/publication/56335.

[3] See for example, S&P Global Ratings, Economic Research: COVID-19 Deals A Larger, Longer Hit to Global GDP. https://www.spglobal.com/ratings/en/research/articles/200416-economic-research-covid-19-deals-a-larger-longer-hit-to-global-gdp-11440500

highly sensitive to changes in the state, national, and global economic environments.[4] Based on current economic realities, vessel activity will grow by considerably less than what was assumed in the SRIA. Beyond the general impacts of an economic recession on port volume, we believe it is possible, potentially likely, that the COVID pandemic will have lasting impacts on growth in cruise ship totals, further reducing port activity in the state.

The reduction in vessel activity will lower the level of baseline emissions, which in turn affects the amount of potential emission reductions and health benefits that can be realized from the regulation.

On the cost side, the methodology used by CARB scales the great majority of regulatory costs upward and downward in proportion to the size of the projected industry growth factor. Hence, we would expect reduced vessel activity to lower its estimate of regulatory costs. However, we note that not all of the costs associated with the proposed regulation will rise or fall in line with the industry growth factor. We would expect, for example, infrastructure-related costs to the terminals themselves to have both fixed and variable components. Because these fixed costs would be spread over fewer visits, a reduction in activity would *raise* per-vessel regulatory costs.[5]

Cost shifting. The SRIA analysis assumes that a significant share of the major costs associated with the land-based shore-power and capture and control systems will be initially be borne primarily by ports. However, the impact on ports is assumed to lessened by two factors: (1) the major capital costs are annualized over a 20-year life for terminal equipment; and (2) some, perhaps most, of the costs will be shifted – from ports to terminal operators through lease increases, and from terminal operators to vessel owners and owners of discretionary cargo through rate increases. Thus, the ultimate incidence of the proposed regulation is assumed to be shared by entities around the world.

However, a couple of points are worth noting. First, the required infrastructure costs are not revenue-producing. Consequently, it is not possible to finance them through the traditional revenue-bonding mechanisms used by ports. While it may be reasonable to assume that some of the port authorities could handle the major expenses imposed by this proposal without reducing other expenditures during good economic times, the situation is markedly different when the economy is soft, even at the larger ports. Under such circumstances, regulatory costs are more likely to squeeze out other port projects that are potentially productivity-enhancing or emissions-reducing (at a more cost-effective rate).

Second, the impact on ports is magnified by the fact that it is more difficult to shift costs onto vessel owners and owners of discretionary cargo when these entities are facing their own financial hardships in a depressed economy. If a smaller portion of the regulation's

[4] As an example, cargo tonnage through the Port of Los Angeles grew by 50 percent between 2002 and 2007, but plunged 17 percent the following year, and did not return to the pre-recession level for a decade. Source: Tonnage Statistics/Port of Los Angeles. https://www.portoflosangeles.org/business/statistics/tonnage-statistics

[5] As noted in the on page 26 of SRIA report,"As terminal visit activity decreases, the cost effectiveness of installing emissions control equipment becomes worse, as there are fewer vessels calling at the terminal to use the equipment and to help recoup the costs of installing, operating, and maintaining the equipment."

costs are borne by discretionary cargoes and vessel visits, then a larger portion of those costs will necessarily be borne by Californians. In a growing market, it may be reasonable to assume that the cost-incidence of a proposed regulation will be shared broadly by cargo owners and consumers around the world. However, when markets are less robust, those costs will become more concentrated in this state.

Fuel-related savings estimate. CARB's estimate of net costs incurred by vessel operators using port power includes vessel equipment and maintenance costs. But these costs are partly offset by fuel savings, since the vessels would no longer have to run their auxiliary engines when in port. The estimated amount of fuel savings is based on the marine gas-oil price of $763/metric ton (actual cost in April 2019), adjusted using the U.S. Energy Information Administration's (EIA) price projections for transportation diesel fuel. The EIA projection, made in October 2018, assumed that diesel prices would rise from $2.80 per gallon in 2018 to $3.39 in 2020, $4.30 by 2025 and $5.03 by 2030. (The same forecast assumed that West Texas crude oil would rise from $50 per barrel in 2018 to $72 per barrel by 2020, $100 per barrel by 2025, and $120 per barrel by 2030. As noted earlier, the price as of April 24 of this year was $17 per barrel.) If lower crude-oil prices persist, the avoided costs will be substantially *less* than assumed in the CARB estimate, and net costs of the regulation will be *higher*.

Competitiveness. The SRIA indicates that the proposed regulation will increase costs to California ports and the vessels that visit them. It also indicates that it is not possible to determine the impact of the higher costs on cargo diversions. It asserts that studies exploring the relationship between general cost increases and cargo diversion have come to varying conclusions; and in cases where effects were found, they were the result of cost increases that were much larger than those that were estimated to result from the proposed regulation.

We recognize that shipping decisions are based on a variety of factors in addition to costs, including logistical considerations and access-to-markets. However, we also believe that cost considerations become more important when economic conditions deteriorate, and shipping margins become tighter. This may be particularly true for some of the Northern California ports, newly affected by this proposed regulation, that are closer to the port in Tacoma, Washington. For this reason, we believe it would make sense to revisit these potential cost impacts on California port competitiveness in light of the new economic realities.

Conclusion

The COVID-19 virus has fundamentally altered the economic landscape. The Department of Finance May 2019 economic forecast and the EIA fuel price projections, and other inputs used by CARB to develop the benefits, costs, and economic impacts of the proposed regulation, are no longer credible. For these reasons, CARB's existing SRIA would not accurately inform its Board and members of the public of the true economic impacts of the proposed regulation, and needs to be revised. It makes sense to delay action on the

proposed regulation at least until the economy emerges from the current crisis, and the post-COVID-19 outlook becomes clearer. At that point, CARB should re-estimate the proposal's impacts based on assumptions that more accurately reflect the economy in the post-COVID-19 world.

Please feel free to contact me if you have any questions about the information contained in this letter. I can be reached at (916) 761-2574.

Sincerely,

Brad Williams
Chief Economist
Capitol Matrix Consulting

Enclosure: Author Biography

Author Biography

Brad Williams joined Capitol Matrix Consulting (CMC) in 2011 after serving in various positions in California state government for nearly 33 years. During the past nine years at CMC, Mr. Williams has been involved in hundreds of projects covering energy and regulatory policy, economic forecasting, economic impact analysis, and state and local government taxation and finance. During his prior three decades in state government, Mr. Williams served in key positions in the State Treasurer's office, Assembly Appropriation Committee and the Legislative Analyst's Office, where he was chief economist and Director of Budget Overview and Fiscal Forecasting. During his government career, Mr. Williams was regarded one of the state's top economic and fiscal experts, and he was recognized by the Wall Street Journal as the most accurate forecaster of the California economy in the 1990s.