# RESPONSE TO COMMENTS

**on the**

**DRAFT ENVIRONMENTAL ANALYSIS**

**Prepared for the**

**Proposed Amendments to the Commercial Harbor Craft Regulation**

**California Air Resources Board**
**1001 I Street**
**Sacramento, California, 95814**

**Released March 14, 2022**

**to be considered at the**

**March 24, 2022 Board Hearing**

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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AIS | Automatic Information System |
| ALDS | Automated License Data System |
| ATB | articulated tug barge |
| CARB or Board | California Air Resources Board |
| CCR | California Code of Regulations |
| CEQA | California Environmental Quality Act |
| CFR | Code of Federal Regulations |
| CHC | Commercial Harbor Craft |
| CMA | California Maritime Academy |
| CPFV | commercial passenger fishing vessels |
| DECS | Diesel Emission Control Strategies |
| DEF | diesel exhaust fluid |
| DPF | Diesel Particulate Filters |
| DPM | diesel particulate matter |
| Draft EA | Draft Environmental Analysis |
| EIR | environmental impact report |
| EPA | U.S. Environmental Protection Agency |
| GHG | greenhouse gas |
| ISOR | Initial Statement of Reason |
| kW | kilowatts |
| MTY | metric tons per year |
| $NO_x$ | nitrogen oxide |
| NTSB | National Traffic Safety Board |

| | |
|---|---|
| OEM | Original Equipment Manufacturer |
| PM | particulate matter |
| $PM_{2.5}$ | particulate matter less than or equal to 2.5 micrometers |
| RCW | Regulated California Waters |
| ROG | reactive organic gases |
| SAC | Sportfishing Association of California |
| SCR | selective catalytic reduction |
| $SO_x$ | oxides of sulfur |
| SRIA | Standardized Regulatory Impact Assessment |
| USCG | U.S. Coast Guard |
| ZE | zero-emission |
| ZEAT | zero emission and advanced technology |

# 1.0 INTRODUCTION

The California Air Resources Board (CARB) released a Draft Environmental Analysis (Draft EA) for the proposed Amendments to the Commercial Harbor Craft (CHC) Regulation, herein referred to as the Proposed Amendments (i.e., the proposed project under the California Environmental Quality Act [CEQA]) on September 21, 2021, for a 45-day public review and comment period that was originally scheduled to close at the end of November 8, 2021. On October 1, 2021, CARB incorporated an Errata for the Proposed Amendments into the public record, which reflect corrections to the methodology for implementing existing cost inputs and assumptions, and references to subsection numbers of the Proposed Regulation Order associated with three documents, including the Draft EA. With the addition of the Errata document to the rulemaking record, CARB extended the comment period until November 15, 2021. In addition, verbal and written comments were accepted at a public hearing on November 19, 2021, and a public workshop on January 12, 2022. CARB received thousands of comment letters through the comment docket opened for the Proposed Amendments during that time. All written comment letters received are provided on CARB's website at https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=chc2021.

CARB staff carefully reviewed all comment letters received into the rulemaking record and at the public workshop on January 12, 2022. No conforming modifications to the Regulation Order were necessary and CARB staff will be returning to the Board on March 24, 2022 for a final vote on the Proposed Amendments. In addition, CARB staff reviewed all comment letters received to determine which ones raised significant environmental issues related to the analysis in the Draft EA and require a written response under CARB's certified regulatory program implementing CEQA. This document includes CARB staff's written responses to that subset of comments and will be provided to the Board for consideration prior to it taking final action on the Proposed Amendments, as amended through public input.

Although this document includes written responses only to those comments related to the Draft EA, all other comments received will be responded to in the Final Statement of Reasons for the Proposed Amendments. The public hearing notice and related rulemaking materials (i.e., Staff Report, Statement of Reason, and EA) for the Proposed Amendments are provided on CARB's website at https://ww2.arb.ca.gov/rulemaking/2021/chc2021.

## A. Requirements for Responses to Comments

These written responses to public comments on the Draft EA are prepared in accordance with CARB's certified regulatory program to comply with CEQA. CARB's certified regulations states:

> *California Code of Regulations, title 17, Section 60007. Response to Environmental Assessment*

> *(a) If comments are received during the evaluation process which raise significant environmental issues associated with the proposed action, the staff shall summarize and respond to the comments either orally or in a supplemental written report. Prior to taking final action on any proposal for which significant environmental issues have been raised, the decision maker shall approve a written response to each such issue.*

Public Resources Code (PRC) Section 21091 also provides guidance on reviewing and responding to public comments in compliance with CEQA. While this section refers to environmental impact reports, proposed negative declarations, and mitigated negative declarations, rather than an EA, it contains useful guidance for preparing a thorough and meaningful response to comments.

PRC Section 21091, subdivision (d) states:

> *(1) The lead agency shall consider comments it receives if those comments are received within the public review period.*
>
> *(2) (A) With respect to the consideration of comments received, the lead agency shall evaluate any comments on environmental issues that are received from persons who have reviewed the draft and shall prepare a written response pursuant to subparagraph (B). The lead agency may also respond to comments that are received after the close of the public review period.*
>
> *(B) The written response shall describe the disposition of each significant environmental issue that is raised by commenters. The responses shall be prepared consistent with section 15088 of Title 14 of the California Code of Regulations.*

Title 14 CCR Section 15088 (CEQA Guidelines) also includes useful information and guidance for preparing a thorough and meaningful response to comments. It states, in relevant part, that specific comments and suggestions about the environmental analysis that are at variance from the lead agency's position must be addressed in detail with reasons why specific comments and suggestions were not accepted. Responses must reflect a good faith, reasoned analysis of the comments.

Title 14 CCR Section 15088 (a–c) states:

> *(a) The lead agency shall evaluate comments on environmental issues received from persons who reviewed the draft EIR and shall prepare a written response. The Lead Agency shall respond to comments received during the noticed comment period and any extensions and may respond to late comments.*
>
> *(b) The lead agency shall provide a written proposed response to a public agency on comments made by that public agency at least 10 days prior to certifying an environmental impact report.*

*(c) The written response shall describe the disposition of significant environmental issues raised (e.g., revisions to the proposed project to mitigate anticipated impacts or objections). In particular, the major environmental issues raised when the Lead Agency's position is at variance with recommendations and objections raised in the comments must be addressed in detail giving reasons why specific comments and suggestions were not accepted. There must be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice.*

### B. Comments Requiring Substantive Responses

In compliance with CEQA, CARB is required to prepare written responses to those comments that raise "significant environmental issues" associated with the proposed action, as outlined in Title 17 CCR Section 60007(a). A total of 3,264 comments were submitted electronically on or before November 15, 2021, to the comment docket set up for the Proposed Amendments and its appendices, including the Draft EA. In addition, a total of 15 electronically-submitted comment letters were submitted at the November 19, 2021 public hearing and verbal comments were presented at the public workshop on January 12, 2022. Out of the 3,279 total comments received, 263 comment letters were determined to include comments raising significant environmental issues related to the Draft EA and requiring a written response under CARB's certified regulatory program and CEQA. CARB staff was conservative and inclusive in determining which comments warranted a written response and even included comments that did not mention the analysis included in the Draft EA but did raise an issue related to potential adverse impacts related to the Proposed Amendments.

This document provides responses to the comments that CARB staff determined raise significant environmental issues related to the Draft EA and require a response under CARB's certified regulatory program and CEQA. All other comments received will be responded to in the Final Statement of Reasons for the Proposed Amendments and all comments were taken into consideration when CARB staff returned to the Board for their final consideration at the March 24, 2022, Board hearing. All comment letters received, including those not responded to in this document are located at: https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=chc2021.

CARB acknowledges that a majority of the comments received were related to the economic impact the Proposed Amendment would have on CHC vessel owners. The Draft EA is not meant to address economic, social, or financial issues associated with the Proposed Amendments. Rather, the purpose of CEQA and the Draft EA is to fully analyze and mitigate the Proposed Amendment's potentially significant physical impacts on the environment. As such, comments related to economic or financial concerns are outside of the scope of the Draft EA and not addressed in this response to comments document. However, these comments are acknowledged for the record and have been reviewed by CARB staff prior to returning to the Board for final consideration CARB staff will be responding to all comments received to date, including those received at the second Board Hearing, in the Final Statement of Reasons.

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# 2.0 RESPONSES TO COMMENTS

The comment letters responded to in this document were coded by the order in which they were received and consistent with the comment docket opened for the Proposed Amendments. As stated above, a list of all the comment letters received, including those not responded to in this document are located at: https://www.arb.ca.gov/lispub/comm2/iframe_bccommlog2.php?listname=chc2021. Table 2-1 provides the list of comment letters that contain substantive environmental comments. Responses are provided to the comments in this document that CARB staff determined raise significant environmental issues related to the Draft EA and require a response under CARB's certified regulatory program and CEQA. As previously explained, CARB staff was conservative and inclusive in determining which comments warranted a written response and even included comments that did not mention the analysis included in the Draft EA but did raise an issue related to potential adverse impacts related to the Proposed Amendments. Verbatim excerpts of the comments and responses to these comments are provided below.

In addition to the environmental comments addressed in this document, CARB staff will be responding to all other comments received to date, including those received at the second Board Hearing, in the Final Statement of Reasons. All comments received at the November 19, 2021 hearing and during the 45-day comment period are part of the rulemaking record, and were provided to Board members for their full consideration before acting on the Proposed Amendments, which will be considered during the March 24, 2022 Board hearing.

**Table 2-1: List of Comment Letters Receiving Responses for CEQA Purposes**

| Comment Number | Date | Name | Affiliation |
|---|---|---|---|
| 4 | 10/2/2021 | Craig Gilmore | none |
| 120 | 10/4/2021 | Warren Myers | none |
| 220 | 10/4/2021 | Michael Munn | none |
| 332 | 10/4/2021 | Brendan Ryan | none |
| 410 | 10/4/2021 | Chris Latorre | none |
| 536 | 10/4/2021 | D. Dargatz | none |
| 544 | 10/4/2021 | Michael Taix | none |
| 555 | 10/4/2021 | Daniel Lilly | none |
| 557 | 10/4/2021 | Fred A. Smith | none |
| 563 | 10/4/2021 | Steve Peterman | none |
| 574 | 10/5/2021 | Stephen Plummer | none |
| 595 | 10/5/2021 | John Davis | none |
| 618 | 10/5/2021 | Dennis Groat | none |
| 644 | 10/5/2021 | Dennis Baxter | none |
| 651 | 10/5/2021 | Todd Mitchell | none |
| 667 | 10/5/2021 | David Karlin | none |
| 679 | 10/5/2021 | Alan Pearson | none |

| Comment Number | Date | Name | Affiliation |
|---|---|---|---|
| 686 | 10/5/2021 | Gale Flores | none |
| 696 | 10/5/2021 | Jared Davis | none |
| 724 | 10/6/2021 | Janet Zaldua | none |
| 725 | 10/6/2021 | Brian Krawcykowski | none |
| 733 | 10/6/2021 | Kenneth Daer | none |
| 777 | 10/7/2021 | Luis Quinonez | none |
| 795 | 10/7/2021 | Glen Mauriello | none |
| 829 | 10/7/2021 | Erik Zemanek | none |
| 834 | 10/7/2021 | Steve Pazol | none |
| 849 | 10/8/2021 | Steven Hillyard | none |
| 855 | 10/8/2021 | Blythe Haney | none |
| 856 | 10/8/2021 | Steve Williams | none |
| 892 | 10/9/2021 | Ryan Sinn | none |
| 909 | 10/9/2021 | Martin Colling | none |
| 920 | 10/9/2021 | Gerald Maka | none |
| 948 | 10/9/2021 | Mark Sherred | none |
| 992 | 10/9/2021 | Michele Tracy | none |
| 1017 | 10/10/2021 | Chase Bourke | none |
| 1020 | 10/10/2021 | Janet Callow | none |
| 1039 | 10/11/2021 | JJ Andrecht | none |
| 1041 | 10/11/2021 | Charles Barnett | none |
| 1056 | 10/11/2021 | Lori Rafferty | none |
| 1060 | 10/11/2021 | Collin Jones | none |
| 1065 | 10/11/2021 | James McDaniels | none |
| 1071 | 10/12/2021 | Nadine Urciuoli | San Rafael Channel Association |
| 1080 | 10/12/2021 | Jonathan Conk | none |
| 1081 | 10/12/2021 | Patrick Gee | none |
| 1094 | 10/12/2021 | Mark Cappetta | none |
| 1095 | 10/12/2021 | Sherrill Futrell | none |
| 1097 | 10/12/2021 | Christian Cavanaugh | none |
| 1106 | 10/12/2021 | Nicole Denette | none |
| 1128 | 10/14/2021 | Bill Thaxton | none |
| 1144 | 10/16/2021 | Steven Powell | none |
| 1148 | 10/16/2021 | Mark Oronoz | none |
| 1153 | 10/17/2021 | Don Rowell | DLR Sportfishing |
| 1167 | 10/18/2021 | Jenny Folkesson | none |
| 1168 | 10/18/2021 | Jackie Lowell | none |
| 1172 | 10/19/2021 | Gary Beckerman | none |
| 1252 | 10/19/2021 | Cameron Dobbs | none |

| Comment Number | Date | Name | Affiliation |
|---|---|---|---|
| 1329 | 10/19/2021 | Myron Filipoff | none |
| 1345 | 10/19/2021 | Larry Brown | none |
| 1366 | 10/19/2021 | Carol Jones | none |
| 1393 | 10/19/2021 | Maffick Arie | none |
| 1402 | 10/19/2021 | Tom Sandau | none |
| 1428 | 10/19/2021 | Robert Baxter | none |
| 1450 | 10/19/2021 | Ashton Lawrence | none |
| 1458 | 10/19/2021 | Erik Zemanek | none |
| 1466 | 10/19/2021 | Thomas Gackstetter | none |
| 1540 | 10/20/2021 | Charlie Samms | none |
| 1548 | 10/20/2021 | Stephen Ernst | none |
| 1574 | 10/21/2021 | Stephen Santen | none |
| 1592 | 10/22/2021 | Tony Freeman | none |
| 1603 | 10/24/2021 | Dianne Martinez | City of Emeryville |
| 1612 | 10/25/2021 | Michael Mark Brady | none |
| 1615 | 10/25/2021 | Greg Hurner | Carpenter Sievers |
| 1621 | 10/26/2021 | Frank Geraty | none |
| 1623 | 10/26/2021 | Rodger Borge | none |
| 1643 | 10/26/2021 | Business/Tourism Org Coalition | Business/Tourism Org Coalition |
| 1647 | 10/26/2021 | Scott Ashton | none |
| 1649 | 10/26/2021 | Sadie Johnson | none |
| 1651 | 10/26/2021 | Sari Fordham | none |
| 1655 | 10/26/2021 | Katherine Curtis | none |
| 1656 | 10/26/2021 | Thomas Jordan | none |
| 1657 | 10/26/2021 | Mandeera Wijetunga | none |
| 1658 | 10/27/2021 | Frank Rescino | none |
| 1659 | 10/27/2021 | Sylvia Cardella | none |
| 1666 | 10/27/2021 | Wesley Chuang | none |
| 1675 | 10/28/2021 | Steve Volaski | none |
| 1676 | 10/28/2021 | Christopher Volaski | none |
| 1680 | 10/28/2021 | Jim Stewart | none |
| 1683 | 10/29/2021 | Andrew Guiliano | none |
| 1684 | 10/29/2021 | Scott Anderson | none |
| 1685 | 10/29/2021 | Michael Keating | Spirit of Adventure Charters I |
| 1690 | 10/31/2021 | M. Silver | none |
| 1695 | 10/31/2021 | Stephen George | none |
| 1698 | 11/1/2021 | Salvador Rocha | none |
| 1699 | 11/1/2021 | John Conniff | none |

| Comment Number | Date | Name | Affiliation |
|---|---|---|---|
| 1702 | 11/1/2021 | Tim Riley | Marina del Rey Lessees Association |
| 1704 | 11/1/2021 | Allie Stewart | PLATINUM ADVISORS, LLC |
| 1707 | 11/1/2021 | Capt. Court Mast | Salty Lady Sportfishing |
| 1710 | 11/1/2021 | Jeff Neubauer | none |
| 1713 | 11/1/2021 | Marcie Ligammari | none |
| 1722 | 11/2/2021 | Captain Kyle Haray | none |
| 1747 | 11/2/2021 | Jenn Bottmeyer | none |
| 1783 | 11/3/2021 | Rob Garfinkle | none |
| 1787 | 11/3/2021 | Jim Luttjohann | Catalina Island Tourism Authority |
| 1801 | 11/3/2021 | Dana Ben Kaplan | none |
| 1802 | 11/3/2021 | Randy Willer | none |
| 1806 | 11/3/2021 | Michael Fowlkes | Inside Sportfishing |
| 1809 | 11/3/2021 | Jeff Britton | none |
| 1836 | 11/3/2021 | Brian Mueller | none |
| 1839 | 11/3/2021 | Jeremiah Dietrich | none |
| 1841 | 11/3/2021 | Jeremy Mercer | none |
| 1844 | 11/3/2021 | Chung-Wei Chan | none |
| 1871 | 11/3/2021 | Steve Broadley | none |
| 1921 | 11/3/2021 | Jeff Brown | none |
| 1936 | 11/3/2021 | Darryl Dietz | none |
| 1947 | 11/3/2021 | Paul Morris | none |
| 1965 | 11/3/2021 | Roy Schroer | none |
| 1972 | 11/3/2021 | Geoff Andrews | none |
| 1990 | 11/3/2021 | Steven Zoelle | none |
| 2009 | 11/3/2021 | Moises Martinez | none |
| 2010 | 11/3/2021 | Harold Janes | none |
| 2019 | 11/3/2021 | Justin Hardin | none |
| 2020 | 11/3/2021 | James Gregson | none |
| 2039 | 11/3/2021 | James Hickle | none |
| 2042 | 11/3/2021 | Jay Krippes | none |
| 2045 | 11/3/2021 | Patricia Wisniewski | none |
| 2050 | 11/3/2021 | Allan Cruz | none |
| 2056 | 11/3/2021 | Charlie Jorgensen | none |
| 2059 | 11/3/2021 | Kenneth Kundargi | none |
| 2073 | 11/3/2021 | Jonathan Dewhurst | none |
| 2074 | 11/3/2021 | Scott Harris | none |
| 2077 | 11/3/2021 | Danielle Fauth | none |

| Comment Number | Date | Name | Affiliation |
|---|---|---|---|
| 2080 | 11/3/2021 | Mark Miller | none |
| 2122 | 11/4/2021 | Dale Dargatz | none |
| 2124 | 11/4/2021 | Ken Murray | none |
| 2133 | 11/4/2021 | Jerry Turgeon | none |
| 2139 | 11/4/2021 | Scott Nulton | none |
| 2141 | 11/4/2021 | Robin Krohn | none |
| 2148 | 11/4/2021 | Paul Levendoski | none |
| 2172 | 11/4/2021 | Luis Carlos Marinelarena | none |
| 2181 | 11/4/2021 | Jeff Endicott | none |
| 2202 | 11/4/2021 | Carter Rosenbaum | none |
| 2205 | 11/4/2021 | Gregg Hamer | none |
| 2225 | 11/4/2021 | Fred Main | none |
| 2227 | 11/4/2021 | Leif Bjerke | none |
| 2228 | 11/4/2021 | Sportfishing Assoc of California | Sportfishing Assoc of California |
| 2229 | 11/4/2021 | Kristofer Ekdahl | CCA, Surfrider |
| 2239 | 11/4/2021 | David Lee | none |
| 2245 | 11/4/2021 | Robert Noll | none |
| 2246 | 11/4/2021 | Daniel Lowe | none |
| 2250 | 11/4/2021 | Dustin Hoiseth | none |
| 2253 | 11/4/2021 | Carrie Smedley | none |
| 2256 | 11/4/2021 | Rachel Hollers | none |
| 2257 | 11/4/2021 | Chuck Ormson | none |
| 2273 | 11/4/2021 | Todd Shelton | none |
| 2274 | 11/4/2021 | Ignacio Rodriguez | none |
| 2276 | 11/4/2021 | Brian Ferguson | none |
| 2277 | 11/4/2021 | Lori Donchak | PierPride Foundation |
| 2293 | 11/4/2021 | Randy Shrier | none |
| 2302 | 11/4/2021 | James Holloway | none |
| 2315 | 11/4/2021 | Howard Reed | none |
| 2324 | 11/4/2021 | Cat Kelley | none |
| 2334 | 11/4/2021 | Betty Schneider | none |
| 2335 | 11/4/2021 | Leonard Voet | none |
| 2339 | 11/4/2021 | Kevin Johnson | none |
| 2350 | 11/5/2021 | Lucinda Lilley | none |
| 2351 | 11/5/2021 | Don Stokes | none |
| 2358 | 11/5/2021 | Sharon Bernie-Cloward on behalf of | San Diego Port Tenants Association |

| Comment Number | Date | Name | Affiliation |
|---|---|---|---|
| | | John Laun and Sharon Cloward | |
| 2359 | 11/5/2021 | John Gioia | Contra Costa County Board of Supervisors |
| 2372 | 11/5/2021 | Janet Longobucco | none |
| 2416 | 11/6/2021 | Christian Da Costa | none |
| 2422 | 11/6/2021 | Gene Campbell | none |
| 2435 | 11/6/2021 | Mary Moir | none |
| 2437 | 11/6/2021 | Alex Briffett | none |
| 2443 | 11/6/2021 | Lee Carlson | none |
| 2444 | 11/6/2021 | Steve Taniguchi | none |
| 2446 | 11/6/2021 | Ryan Ash | none |
| 2450 | 11/6/2021 | John Kozick | none |
| 2451 | 11/6/2021 | Roger Bautista | none |
| 2452 | 11/6/2021 | Bryan Dalton | none |
| 2454 | 11/6/2021 | Scott Shier | none |
| 2460 | 11/7/2021 | Elinor Buchen | City of Oakland |
| 2465 | 11/7/2021 | Linc Conard | none |
| 2471 | 11/7/2021 | Mike Hendersen | none |
| 2472 | 11/7/2021 | Jason Zenor | MV Pride |
| 2474 | 11/7/2021 | Christine Dabbaghian | none |
| 2478 | 11/8/2021 | Fred Christensen | none |
| 2482 | 11/8/2021 | Tony Darling | none |
| 2483 | 11/8/2021 | Jeff Yuhl | none |
| 2485 | 11/8/2021 | Susan Hayes | none |
| 2488 | 11/8/2021 | Casey Capparelli | none |
| 2496 | 11/8/2021 | Tim Hayes | none |
| 2502 | 11/8/2021 | Coleman Cosby | none |
| 2506 | 11/8/2021 | Joseph Gallia | none |
| 2539 | 11/9/2021 | Nick Musgrave | none |
| 2548 | 11/9/2021 | Mike Doherty | none |
| 2550 | 11/9/2021 | Grant Hill | none |
| 2565 | 11/10/2021 | Michael Thompson | Newport Landing Sport Fishing |
| 2567 | 11/10/2021 | Stephen Proud on behalf of Roger Carlson | City of Redondo Beach Harbor Commission |
| 2574 | 11/10/2021 | John McManus | Golden State Salmon Association |
| 2583 | 11/11/2021 | Rich Pope | none |

| Comment Number | Date | Name | Affiliation |
|---|---|---|---|
| 2584 | 11/11/2021 | Fred Tempas | none |
| 2585 | 11/11/2021 | Ross Melvin | none |
| 2588 | 11/11/2021 | Markus Medak | New Lo-An Sportfishing Inc |
| 2594 | 11/11/2021 | Jonathon Smith | none |
| 2599 | 11/11/2021 | Ferhat Acuner | none |
| 2602 | 11/12/2021 | Timothy French | Truck & Engine Manufacturers Association |
| 2603 | 11/12/2021 | Daniel Hubbell | Ocean Conservancy |
| 2606 | 11/12/2021 | Lara Larramendi | Los Angeles County Business Federation |
| 2607 | 11/12/2021 | Dike Anyiwo | San Diego Regional Chamber of Commerce |
| 2608 | 11/12/2021 | Sportfishing Assoc of California | none |
| 2610 | 11/12/2021 | William Barrett | American Lung Association in California |
| 2613 | 11/12/2021 | Lisa Bartlett | LA Co. Board of Supervisors |
| 2615 | 11/12/2021 | Regina Hsu | Earthjustice |
| 2620 | 11/12/2021 | Heather Pennington | none |
| 2621 | 11/12/2021 | Rex Richardson | Vice Mayor of the City of Long Beach |
| 2622 | 11/12/2021 | Gary Barsley | none |
| 2626 | 11/12/2021 | Victoria Dubeau | none |
| 2628 | 11/12/2021 | Ernest Prieto | none |
| 2629 | 11/12/2021 | Samantha Omana, on behalf of Senator Monique Limon | Senator Monique Limon, Nineteenth State District |
| 2630 | 11/12/2021 | David Stump | none |
| 2793 | 11/13/2021 | Robert Jorden | none |
| 2827 | 11/13/2021 | Tory Brotherton | none |
| 2854 | 11/13/2021 | Lawrence Nye | none |
| 2877 | 11/13/2021 | Steven Fukuto | none |
| 2951 | 11/14/2021 | Jason Hector | none |
| 3014 | 11/14/2021 | Alfred Barker | CCA California |
| 3023 | 11/14/2021 | Wade Gavin | none |
| 3025 | 11/14/2021 | Ruben Maestro | none |
| 3038 | 11/14/2021 | Jaime Diamond | none |
| 3046 | 11/15/2021 | Sergio Perez | none |
| 3065 | 11/15/2021 | Robert Taylor | none |

| Comment Number | Date | Name | Affiliation |
|---|---|---|---|
| 3102 | 11/15/2021 | Bob Mackie | none |
| 3117 | 11/15/2021 | Arthur Mead | Crowley |
| 3119 | 11/15/2021 | Alfredo Medina on behalf of Captain John Carlier | San Francisco Bar Pilots Assc |
| 3121 | 11/15/2021 | Scott Merritt on behalf of Mill Merritt | AmNav Marityime Services, LLC |
| 3122 | 11/15/2021 | Scott Merritt on behalf of Will Roberts | FOSS |
| 3124 | 11/15/2021 | Scott Merritt on behalf of Benjamin Ostroff | American Waterways Operators |
| 3125 | 11/15/2021 | Seymour Beek | Balboa Island Ferry Inc. |
| 3133 | 11/15/2021 | William Barrett | American Lung Association in California |
| 3135 | 11/15/2021 | James Shih | none |
| 3138 | 11/15/2021 | Thomas Jacobsen | Jacobsen Pilot Service, Inc. |
| 3143 | 11/15/2021 | Teresa Bui and Hilda Solis | County of Los Angeles Board of Supervisor Hilda Solis |
| 3145 | 11/15/2021 | Teresa Bui | Port of San Diego Port Commissioner Naranjo |
| 3155 | 11/15/2021 | Brent Perry | none |
| 3156 | 11/15/2021 | Suzanne Hume | CleanEarth4Kids.org |
| 3158 | 11/15/2021 | R.A. Carpenter | R.E. Staite Engineering, Inc. |
| 3165 | 11/15/2021 | Gregg Bombard | Catalina Channel Express, Inc |
| 3170 | 11/15/2021 | Max Cohen on behalf of Martin Curtin | Curtin Maritime Corp. |
| 3171 | 11/15/2021 | Cynthia Pinto-Cabrera on behalf of Dr. Catherine Garoupa White, Matt Holmes, and Mariah Looney | Central Valley Air Quality Coalition, Little Manila Rising, and Restore the Delta |
| 3174 | 11/15/2021 | Rob Southwick | Southwick and Associates |
| 3177 | 11/15/2021 | Dan Nutt | Kirby Offshore Marine, LLC |
| 3184 | 11/15/2021 | Melynda Dodds | none |
| 3185 | 11/15/2021 | Madeline Rose | Pacific Environment |
| 3189 | 11/15/2021 | Elias Van Sickle on behalf of Pace Ralli | SWITCH Maritime |

| Comment Number | Date | Name | Affiliation |
|---|---|---|---|
| 3191 | 11/15/2021 | Ernie Reinke | none |
| 3195 | 11/15/2021 | Greg Hurner on behalf of Ken Franke and Rick Powers | Sportfishing Association of California and Golden Gate Fishermens Association |
| 3196 | 11/15/2021 | Rebecca Baskins | CA Advanced Biofuels Alliance |
| 3197 | 11/15/2021 | Brian Collier | none |
| 3201 | 11/15/2021 | Trevor Wasson | none |
| 3208 | 11/15/2021 | James Carlisle | none |
| 3235 | 11/15/2021 | Scott Hedderich | Renewable Energy Group – Ames, IA |
| 3260 | 11/15/2021 | Harry Markarian | none |
| 3261 | 11/15/2021 | Melissa Miller-Henson | California Fish and Game Commission |
| Hearing-8 | 11/19/2021 | Dave Lee | none |
| Hearing-9 | 11/19/2021 | Teresa Bui on behalf of Mark Cappetta | Pacific Environment |
| Hearing-11 | 11/19/2021 | Lisa Patton | none |
| Workshop 3-1 | 1/12/2022 | Merlin Kolb | |
| Workshop 6-1 | 1/12/2022 | Markus Medak | |
| Workshop 7-1 | 1/12/2022 | Ken Franke | |
| Workshop 8-1 | 1/12/2022 | Peter Schrappen | |
| Workshop 8-2 | 1/12/2022 | Peter Schrappen | |
| Workshop 11-1 | 1/12/2022 | Luke Burson | |
| Workshop 11-2 | 1/12/2022 | Luke Burson | |
| Workshop 12-1 | 1/12/2022 | Frank Ursitti | |
| Workshop 12-2 | 1/12/2022 | Frank Ursitti | |
| Workshop 13-1 | 1/12/2022 | Max Rosenburg | |
| Workshop 13-2 | 1/12/2022 | Max Rosenburg | |
| Workshop 14-1 | 1/12/2022 | Teresa Bui | |
| Workshop 17-1 | 1/12/2022 | Michael Breslin | |
| Workshop 18-1 | 1/12/2022 | Michael Thompson | |
| Workshop 19-1 | 1/12/2022 | Scott Merritt | |
| Workshop 21-1 | 1/12/2022 | William Wilkerson | |
| Workshop 22-1 | 1/12/2022 | Regina HSU | |
| Workshop 28-1 | 1/12/2022 | Jamie Diamond | |
| Workshop 28-2 | 1/12/2022 | Jamie Diamond | |
| Workshop 28-3 | 1/12/2022 | Jamie Diamond | |
| Workshop 30-1 | 1/12/2022 | Frank Rescino | |

## A. Master Responses

The following Master Responses address recurring themes within the comments listed in Table 2-1. Master Responses are also cross-referenced within the individual responses, where applicable.

### 1. Master Response 1: Safety of New Requirements

**Comment:**

Numerous comments were made during the Draft EA comment period related to safety issues associated with CHC vessel compliance with the Proposed Amendments. These issues included:

- concern that required technology has not been or will not be properly tested for safety;
- concern that the heat generated by Tier 4 engines, Diesel Particulate Filters (DPFs), fuel cells, and/or lithium-ion batteries would create overheating and/or a fire hazard;
- concern that boats made of wood, fiberglass, or aluminum cannot be retrofit with the proposed emission control devices due to the potential for fire hazard in wood and fiberglass boats and potential for welds to break on aluminum boats;
- concern that Tier 4 engines and/or lithium-ion batteries would affect the stability of vessels and compromise vessel flotation;
- concern that the engine technology proposed is unreliable and could result in safety issues at sea, particularly related to loss of engine power;
- concern that DPF and selective catalytic reduction (SCR) aftertreatment systems would choke the flow of exhaust, creating a backup of pressure that could lead to engine failure and possible stranding at sea; and
- concern that the U.S. Coast Guard (USCG) has not been consulted about the Proposed Amendments and therefore has not provided approval of the required technology or identified the effect that implementation would have on its ability to respond to safety calls.

**Response:**

On Page D-11, the Draft EA explains that the reasonably foreseeable compliance responses associated with the Proposed Amendments would include the rebuild or retrofit of existing vessels with newer engines that meet a performance standard equivalent to the cleanest available marine standards (Tier 3 or Tier 4 below 600 kilowatts [kW], Tier 4 above 600 kW) plus a DPF. For repower of engines below 600 kW, if there is a suitable engine model certified to Tier 4 marine standards available at the time the engine order is placed, and in some circumstances within 12 months of a compliance deadline, then a Tier 4 engine must be used. As discussed on pages D-12 and D-13 of the Draft EA, the most reasonably foreseeable compliance response at this time for Zero-Emission-Capable Hybrid vessels is the use of battery-electric technology.

As discussed on page D-13 of the Draft EA, fuel cells are not thought to be a likely option as a compliance pathway at this time because that technology is not as developed, although it shows promise as a potential technology and is therefore still considered as reasonably foreseeable in the Draft EA.

Several commenters expressed concern related to the safety and reliability of these compliance technologies. Although the Proposed Amendments establish emissions related requirements for the engines in CHC, Tier 3 and Tier 4 marine engines have been produced and installed in vessels throughout the United States since 2009 and 2014, respectively. Moreover, engines certified to meet those emission requirements cannot be designed as to cause or contribute to unreasonable risks to public health, welfare, or safety while operating. 40 CFR § 1042.115(e), and in establishing those standards, EPA considered the safety and noise factors associated with those standards. 73 Fed. Reg. 37096, 37102 (Jun 30, 2008)."

With regard to approved technologies that could be used to achieve the requirements of the Proposed Amendments, Appendix E of the Initial Statement of Reason (ISOR) contains a review and assessment of the feasibility associated with the performance standards included in the Proposed Amendments. As discussed in Section IV.C of Appendix E of the ISOR, the careful analysis of many overlapping vessel design requirements must be evaluated before a feasibility determination can be made. Standards for vessel design are addressed in Title 46 of the Code of Federal Regulations. These vessel design standards address vessel stability, trim characteristics, buoyancy, and vessel structural design limit requirements. Regarding retrofitting of existing vessels, any additional aftertreatment devices must be consistent with gross register tonnage requirements to maintain USCG compliance. CARB staff recognizes that some vessels may not be able to be reconfigured to accommodate cleaner engines and emission control devices and has accordingly accounted for a fraction of vessel replacements as indicated in Appendix C-1 of the ISOR. Additional information on technical feasibility is contained in Appendix E of the ISOR.

Several commenters raised concerns that reconfiguration or modification of wood and fiberglass construction used for some types of vessels presents challenges. However, as of September 2021, there were 22 models of Tier 4 engines available, and additional engine and DPF manufacturers are undergoing the design, certification, and verification process to bring their products to market (see Appendix E of the ISOR). Whereas not all of these engines may fit into the machinery space of in-use vessels, they are available (some have been available since 2014) and can feasibly be installed in new build vessels. The Proposed Amendments also include necessary pathways for vessel owners and operators to remain in compliance by receiving compliance extensions if technologies do not become available or if they are available but do not fit on the in-use vessels.

Regarding concerns with overheating or fire hazards associated with required technology, Tier 4 engines and DPFs do not operate at a higher temperature than engines certified to less stringent emission standards. This is because DPFs are designed to only increase the temperature of the exhaust if the load of the engine is low and the DPF needs to be regenerated. There are many other vehicles and pieces of equipment that are designed

with passive DPFs, meaning, that they are designed to operate under the heat of the engine alone, with no additional heat source to raise the temperature of the aftertreatment. Passive DPFs may be a viable option for certain categories of harbor craft depending on the duty cycle profile. In addition, the thermodynamic efficiency of modern Tier 4 engines is better than some of the older-tier engines. With more efficient combustion, less waste heat is generated in the exhaust stream. Therefore, Tier 4 engines and DPF aftertreatment are not associated with hotter exhaust temperature potential than Tier 3 and earlier engines without aftertreatment. In addition, vessel owners and operators would be required to continue to meet USCG safety regulations applicable to their vessels, including but not limited to rules governing surface temperature and exhaust manifold insulation requirements within the engine rooms.

Many commenters addressed the reliability of required engines and expressed concerns related to engine derating or stopping on open water. These issues are related to the use of diesel exhaust fluid (DEF), which is required for selective catalytic reduction (SCR) systems to properly reduce nitrogen oxide ($NO_x$) emissions. Commenter concerns are likely related to on-road engines operating in on-highway trucks that include “driver inducements,” whereby vehicles, if operated with empty DEF tanks, after reaching a safe-harbor event, will derate and not operate above a certain speed (such as 5 miles per hour). This derating induces the drivers to maintain adequate DEF levels and not circumvent emissions controls. However, Tier 4 marine engines that also use SCR technology to reduce $NO_x$ emissions from harbor craft do not include such inducements. Instead of an inducement using the engine response (derate), CARB staff has proposed stringent recordkeeping and reporting requirements for both fuel and DEF to allow CARB to track whether DEF is not being filled into the engines. The increased cost of maintaining the SCR systems has been integrated into the cost analysis supporting the Proposed Amendments, and marine engines are not designed to derate if the efficacy of the emission control systems declines. Because the SCR system relies on recordkeeping rather than engine response (derated engine), a vessel would not stop, or experience reduced output during operation.

The Proposed Amendments also contain different compliance pathways if additional time is needed because of safety concerns. For example, the Proposed Amendments also allow request for compliance extension for shore power and zero emission and advanced technology (ZEAT) infrastructure that has site-specific physical constraints requiring additional time for safety review, and when an applicant can demonstrate that there are no certified engines and/or DPFs available to meet performance standards by compliance dates. As a result, the compliance deadlines would not force vessels to use unsafe or unproven technology or result in hazard impacts more significant than those disclosed in the Draft EA.

During development of the Proposed Amendments, CARB staff consulted and met with USCG on several occasions since 2018. The dates and number of occurrences of these meetings are listed in Appendix F to the Staff Report of the Proposed Amendments. At these meetings, CARB staff gave updates on interim versions of regulatory concepts and solicited comments and feedback from USCG. Discussions between CARB and USCG included topics such as:

- general coordination and discussion of Proposed Amendments;
- proposed Amendments and possible uses of U.S. Merchant Vessel Database to develop emission inventory;
- harbor craft regulatory classes and 46 CFR Subchapter requirements;
- USCG guidance on addressing CHC industry concerns about DPF installations in numerous CHC Subchapter vessel types; and
- vessel design standards relating to harbor craft exhaust systems and applicability to DPFs.

CARB requires, as a condition of DPF verification as set forth by 13 CCR 2706(w), analysis of all potential safety and catastrophic failure issues associated with the use of the diesel emission control strategy. Similarly, the U.S. Coast Guard has shared with CARB that they are requiring failure analyses to be performed on the initial set of DPFs being installed on marine vessels in California that are anticipated to meet the Level 3 requirements (and could be used to comply with the Proposed Amendments). These tests and evaluations could be used by DPF manufacturers to satisfy both CARB and U.S. Coast Guard requirements to ensure vessel and DPF safety after installation. Because these evaluations and requirements are in effect, CARB does not anticipate implementation of the Proposed Amendments to introduce any relevant safety concerns after systems have been carefully designed, rigorously tested, and modified to minimize the potential of failure. Although new vessel modifications could require some additional plan and design review, the USCG is equipped to inspect thousands of vessels each year on the West Coast. Although new vessel construction and design modifications of existing vessels could require some additional plan and design review, the USCG is equipped to inspect thousands of vessels each year on the West Coast. Whereas new vessels or designs could result in additional attention or focus on Tier 4 engines and DPFs on the first inspection after installation, the U.S. Coast Guard has not indicated to CARB that this would add more time or backlog to their process. The exhaust system is just one aspect of what they must periodically inspect on each vessel.

### 2. Master Response 2: Economic Leakage

**Comment:**

Some commenters expressed concern that CHC vessel compliance with the Proposed Amendments would result in economic leakage—the relocation of business activities from California to other states in the United States or other countries that are not required to comply with the Proposed Amendments. Commenters expressed concern that implementing the Proposed Amendments would force many in the sportfishing industry to move their vessel or sell their vessel outside the State or country, which would move jobs and emissions to these locations.

**Response:**

As stated on page D-12 of the Draft EA, CARB staff predicts that most retired vessels would be sold out of State, not scrapped. Larger, more costly, or other specialty vessels could be sold and transferred to regions around the globe. Because of the requirements

of the Current CHC Regulation in California, and air quality incentive programs such as the Carl Moyer Program that have funded voluntary upgrades, the current California fleet that may be relocated out of State is likely equal to or cleaner than the comparable vessels operating in neighboring states and countries. Therefore, CARB staff does not anticipate an increase of emissions in neighboring jurisdictions as a result of the Proposed Amendments.

Appendix C of the ISOR presents the Standardized Regulatory Impact Assessment (SRIA) for the Proposed Amendments. As discussed on page 142 of the SRIA:

> Industries that operate CHC would face costs and see net decreases in output growth and employment. Some of these businesses are large and would not be anticipated to face business elimination. However, many are small businesses and would face significant compliance costs. The water transportation industry and the fishing, hunting, and trapping industry are estimated to face decreases in output of up to 1 percent in the years of greatest impact.

Therefore, the economy-wide impact of the Proposed Amendments is anticipated to be small to the vessel category where vessel replacement and economic impacts may be largest. Moreover, the SRIA also presents many benefits to businesses, as provided in Section B of Appendix C of the ISOR. Businesses that would be expected to benefit from the Proposed Amendments include:

- CHC engine Original Equipment Manufacturers (OEMs);
- battery systems manufacturers;
- hydrogen fueling system manufacturers;
- diesel engine repair shops and boatyards;
- California shipyards;
- opacity testing equipment manufacturers;
- manufacturers of emission control technologies, including but not limited to DPFs;
- DPF installation, repair, and maintenance centers;
- electrical suppliers; and
- design, engineering, and construction firms.

Certain types of CHC operations in California are captive and unique to the State. For example, sportfishing activities often target a certain geographic region that cannot be relocated to other regions outside of the State. Tug and towing vessel activity directly support the California economy and movement of freight through its Ports. Therefore, any statements that the Proposed Amendments would result in economic leakage are speculative and unfounded. CARB has not received any data supporting that economic leakage would unequivocally occur as a result of the Proposed Amendments.

The economic effects of the Proposed Amendments presented in the SRIA (Appendix C of the Draft EA) were considered while developing the reasonably foreseeable compliance responses. The environmental effects of these reasonably foreseeable

compliance responses were analyzed in the Draft EA, which addresses the 18 resource topics required by CEQA. Mitigation measures are proposed to reduce the potential significant environmental effects to less than significant. However, although CARB is responsible for adopting the Proposed Amendments, it does not have authority over all the potential infrastructure and development projects that could be carried out in response to the Proposed Amendments. Other agencies are responsible for the review and approval, including any required environmental analysis, of any facilities and infrastructure that are reasonably foreseeable, including any definition and adoption of feasible project-specific mitigation measures, and any monitoring of mitigation implementation. Regarding effects on air quality, implementation of the Proposed Amendments would minimize emissions associated with CHC operation and would assist the State in meeting greenhouse gas (GHG) emission goals (Draft EA, page D-74). In addition, as discussed on page D-49, impacts related to air quality would result in high net positive overall health benefits over the life of the Proposed Amendments.

### 3. Master Response 3: Accuracy of Assumptions and Estimates

**Comment:**

Some commenters expressed concern regarding the accuracy of assumptions and estimates used to develop the 2021 Emissions Inventory (in Appendix H of the ISOR) and the accuracy of assumptions regarding vessel activity—specifically, the number of vessels and where and how they operate. Some commenters questioned the reliance on USCG data for the conclusion that CHC emissions were underreported, and they expressed concern that the uncertainty of CARB model's calculations of the health risk created by harbor craft emissions overstates their impact on the public.

**Response:**

The 2021 Emissions Inventory methodology is described in detail in Appendix H of the ISOR. The health analysis associated with the Proposed Amendments is presented in Appendix G of the ISOR. Sections IV.E.3 and IV.E.8 of the Draft EA summarize the changes in air quality and GHG emissions, respectively, associated with the Proposed Amendments.

The 2021 CHC Emission Inventory used to support the analysis of the Proposed Amendments is an updated version of the previous emission inventories specifically for CHC released by CARB staff that are discussed in Appendix H of the ISOR. The inventory update is used to support the emission reduction quantifications, which are used for local and statewide planning efforts, the health benefit valuation, and a health risk assessment.

As described in Appendix H of the ISOR, the 2021 Emissions Inventory was updated with the following input data available at the time of the update:

- Vessel and engine population and profile data were obtained from the Port of Los Angeles, the Port of Long Beach, the Port of Oakland, CARB (reporting data from 2019), and USCG.
- Population and activity growth factors were estimated based on historical trends in the past decade.
- Survival and purchasing curves were developed from the age distribution of CHCs in CARB reporting data from 2019.
- Load factors were updated using CARB reporting data and Engine Control Module data voluntarily supplied by the industry during 2019 and 2020.
- Emission factors were updated using EPA marine and off-road engine certification data.

CARB's 2021 Emissions Inventory estimates rely on the best available data when considering the effects of the Proposed Amendments. CARB staff has met numerous times with industry groups since 2018 to develop the proposed inventory, and since the end of the 45-day comment period, with those who raised concerns regarding vessel population. Two of the key inputs into an emission inventory include, among other inputs, the population of engines or equipment, and the number of hours that equipment operates per year. Some vessels operate across multiple states and may operate a significant number of hours while in Regulated California Waters but may not operate in California every single calendar year. The methodology to include those vessels in the emission inventory, at a representative average annual activity level, requires careful consideration of the total population in California plus the average hours that a vessel may operate while in the State. CARB staff has ensured that the total emissions from harbor craft were not overestimated, and that the total pieces of equipment which were subject to upgrade costs were not underestimated. However, after follow-up with some industries, such as the American Waterways Operators that represents the towing vessel industry, CARB staff may consider adjusting the number of operating hours of towing vessels the next time the emission inventory is updated after this rulemaking.

The updated inventory methodology used data reported between 2010 and 2019 to project future baseline and control emission scenarios for each vessel type, engine type (i.e., main engine or auxiliary engine), and air pollutant. The methodology accounts for the potential for errors in operator-reported data by considering reported cumulative non-resettable hour meter data, reported annual activity (hours and fuel), and measured Automatic Information System (AIS) vessel data to more accurately determine the fraction of emissions from vessels using Regulated California Waters. For full details of the 2021 Emissions Inventory for CHC, see Appendix H of the ISOR.

Regarding emission levels related to the Proposed Amendments and described in the Draft EA, data from the 2021 Emissions Inventory were used to calculate cumulative statewide emission reductions from 2023 through 2038. Calculations indicate that implementing the Proposed Amendments would reduce cumulative statewide emissions by approximately 1,610 tons of particulate matter less than or equal to 2.5 micrometers ($PM_{2.5}$), 1,680 tons of diesel particulate matter (DPM), 34,340 tons of $NO_x$, and 2,460 tons of reactive organic gases (ROG), relative to the baseline (see Table D-1c in the

Draft EA). As identified under Impact 8-2 in the Draft EA and updated in the Final EA, the Proposed Amendments would achieve GHG benefits to the State relative to emissions under the Current Regulation and GHG emissions in 2020. Compared to the Current Regulation, the Proposed Amendments are projected to reduce GHG emissions by approximately 415,060 metric tons from 2023 to 2038 (quantified as carbon dioxide equivalent [$CO_2e$]). In 2038, when emissions under the Proposed Amendments and the Current Regulation are compared, GHG emissions would be reduced by about 8 percent, from 523,000 metric tons per year (MTY) to 480,800 MTY (page D-72 of the Draft EA).

The potential health benefits correlated to these emission reductions are described in Section V.B of the ISOR. Health benefits are described in terms of cancer risk and noncancer risk. As noted on page v-4 of the ISOR:

> In 2038 without the Proposed Amendments, in the San Francisco Bay Area Air Basin, about 7 million people, including 0.5 million people who live in disadvantaged communities (DACs), are estimated to be exposed to a potential cancer risk of >1 chance per million from exposure to DPM. Under the Proposed Amendments compared to a baseline of the Current Regulation in 2038:
>
> - the population weighted-average cancer risk would be reduced from 12 chances per million to 1 chance per million;
> - the population exposure to a potential cancer risk level of greater than 50 chances per million would be eliminated; and,
> - the population that would be exposed to a potential cancer risk of less than 1 chance per million would reduce to 2 million.
>
> In 2038 without the Proposed Amendments, in the South Coast Air Basin, about 15 million people, including 6 million people who live in DACs, are estimated to be exposed to a potential cancer risk of >1 chance per million from exposure to DPM. Under the Proposed Amendments compared to a baseline of the Current Regulation in 2038:
>
> - the population weighted-average cancer risk would be reduced from 10 chances per million to 1 chance per million;
> - the population exposure to a potential cancer risk level of greater than 100 chances per million would be eliminated; and,
> - the population that would be exposed to a potential cancer risk >1 chance per million would reduce to 5 million.

For a more detailed analysis and overview of cancer risk estimates, see Appendix G [of the ISOR]. One analysis suggested that the modeled concentrations of diesel PM were higher than monitoring stations recorded for every other source contributing to pollution in that area. However, CARB worked with this commenter and their consultant to identify that they pulled data from the wrong table. Therefore, CARB's use of the CALPUFF model used best available input data and modeling results to estimate the ambient PM2.5 concentrations from CHC operating in the study areas.

In addition to reduced cancer risks, mortality and illness impacts associated with exposure to $PM_{2.5}$, including those related to cardiopulmonary mortality, hospital admissions, and emergency room visits, would be reduced. Estimated emission reductions associated with implementing the Proposed Amendments are expected to avoid 531 premature deaths, 161 hospital admissions, and 236 emergency room visits over the period of 2023–2038 (page V-6 of the ISOR). Detailed discussions related to these estimates are provided in Appendix G of the ISOR, "Health Analyses."

CEQA requires that conclusions regarding environmental impacts be supported by substantial evidence. For the purposes of CEQA, "substantial evidence" is defined as "enough relevant information and reasonable inferences from…information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached" (CEQA Guidelines Section 15384[a]). The information provided in the Draft EA, and supported by the ISOR and its appendices, was based on the best available information and was compiled and analyzed by experts (i.e., CARB staff). Furthermore, the analysis was based on facts, reasonable assumptions predicated on facts, and expert opinions supported by facts, which is consistent with the CEQA Guidelines definition of "substantial evidence" (CEQA Guidelines Section 15384[b]). As described above, Appendix H of the ISOR presents the data, methodology, and assumptions associated with the emission reductions of the Proposed Amendments, and Appendix G addresses the potential health benefits related to these calculations. These appendices meet the definition of "substantial evidence" as defined by the CEQA Guidelines.

Furthermore, CEQA Guidelines Section 15151 states that "[d]isagreement among experts does not make an environmental impact report (EIR) inadequate, but the EIR should summarize the main point of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure." The main points of disagreement presented by experts (i.e., a submitted study based on substantial evidence) is described in the responses to comment letter 3121.

### 4. Master Response 4: Indirect Impacts

**Comment:**

Some commenters express concern that implementation of the Proposed Amendments could result in environmental impacts that outweigh the environmental benefits of the Proposed Amendments. For example, some commenters express concern that implementing the Proposed Amendments could lead to increased or accelerated landfilling of boats that are noncompliant and/or concern that implementing the Proposed Amendments could increase the manufacture, purchase, and use of private boats and/or smaller gas-powered boats because anglers would be unable to charter a CHC vessel, resulting in increased fuel use and pollution.

**Response:**

The ISOR prepared by CARB for the Proposed Amendments, also known as the Staff Report, includes in Appendix D an environmental analysis specific to the Proposed Amendments on a programmatic level. The Draft EA provides a good-faith effort to evaluate programmatically the potential for significant adverse impacts associated with implementation of the Proposed Amendments based on what is known at this time. In Section II, "Project Description," the Draft EA provides an overview of the project objectives, concepts of the Proposed Amendments, and outlines the potential compliance responses that could occur because of implementation of the recommended actions. Although the policy aspects of the Proposed Amendments do not directly change the physical environment, indirect physical changes to the environment could result from reasonably foreseeable compliance responses taken in response to implementation actions identified in the Proposed Amendments. CEQA is clear that an indirect impact should be considered only if it is a reasonably foreseeable impact caused by the project. (Cal. Code Regs., tit. 14, Sections 15064(d)(3), 15358(a)(2).) An environmental impact that is speculative or unlikely to occur is not reasonably foreseeable. (Cal. Code Regs., tit. 14 Section 15064(d)(3).)

The Draft EA makes a diligent effort to evaluate significant adverse impacts and beneficial impacts of the reasonably foreseeable compliance responses that could result from implementation of the Proposed Amendments and contains as much information about those impacts as is currently available, without being unduly speculative. The potentially significant adverse impacts on the environment discussed in the Draft EA, and the significance determinations for those effects, reflect the programmatic nature of the reasonably foreseeable compliance responses of the regulated entities. These reasonably foreseeable compliance responses are described in more detail in Chapter 2, "Project Description," of the Draft EA. The Draft EA addresses broadly defined types of impacts or actions that may be taken by others in the future as a result of implementation of the Proposed Amendments.

Most of the new vessels are expected to be produced outside of California, and most retired vessels are expected to be sold out of State (page D-18 of the Draft EA). It is possible that vessels that cannot be repowered with Tier 4 engines or retrofit with DPFs may be retained by the original owners and operated under low use exceptions. However, CARB staff has proposed to not allow newly acquired vessels to be eligible for low use exceptions. Therefore, continued operation in California would be limited to the fleets owned and operated by owners prior to the Proposed Amendments taking effect. Some of the existing fleets may be relocated out of State. Because the California fleet is newer than that of neighboring States and countries, it is unlikely that vessels would immediately be transferred to a landfill, especially if they are operable and have remaining useful life. There would not be a foreseeable increase in the use of personal boats, because owning a private use boat would likely require a larger capital investment than the marginal fare increase for a ticket on a commercial vessel subject to the Proposed Amendments. The cost metrics discussed in the ISOR and corrected in the Errata released on October 1, 2021, outline the cost increases per unit for select vessel categories. One category with price increases evaluated was the sportfishing

vessel category, which may increase by between $37 to $126 per person per day. These increases are less than the costs of owning, operating, and maintaining a private use vessel for each passenger.

The Draft EA provides an analysis of the reasonably foreseeable compliance responses related to implementation of the Proposed Amendments. Reasonably foreseeable compliance responses to the Proposed Amendments, as provided in Chapter 2 of the Draft EA, include vessel replacement, vessel engine replacement, modification of vessel engines (e.g., addition of DPF), and vessel retirement. The Draft EA contains a good-faith analysis of the significant adverse impacts and beneficial impacts of the reasonably foreseeable compliance responses that could result from implementation of the Proposed Amendments, and the Draft EA contains as much information about those impacts as is currently available without being unduly speculative. No substantial evidence indicates that there would be a reasonably foreseeable increase in the use of personal boats or an increase in the landfilling of boats; thus, it is not necessary to analyze these types of compliance responses in the Draft EA.

In the Draft EA, analysis of short-term construction-related activities associated with compliance with the Proposed Amendments is provided throughout Section IV, Impact Analysis and Mitigation Measures. In general, existing shipbuilding across Oregon, Washington, and California is expected to have capacity to repower, retrofit, and build new vessels in response to the Proposed Amendments, so no additional construction of existing shipyards is expected. Further, the degree or severity of construction emissions related to the construction of new boats to replace noncompliant boats is very speculative and beyond the scope of the Draft EA. Understanding construction impacts of vessel repower and new builds requires identifying the specifics of each project. To quantify the increased emissions in response to the Proposed Amendments would require knowledge of each shipyard's current and projected activities, types of vessels made, timeframe for each vessel repower or build, materials needed and where materials are transported, among other specificities. The ability for CARB staff to correctly estimate the location, amount, and types of projects which could occur in response to increased vessel repowers and new builds, has been determined to be too speculative for a thorough evaluation. The Proposed Amendments and the benefits they incur are inherently operational, and ultimately, the emissions benefits of the Proposed Amendments would far outweigh those construction emissions.

### 5. Master Response 5: More Stringent Regulation

**Comment:**

Some commenters expressed the concern that, given the state of the climate emergency, the regulations associated with the CHC rule are not as strict as they should be. For example, commenters expressed concern that; "The rule does not reduce greenhouse gas emissions and risk creating a stranded asset scenario for harbor craft owners who may pay to retrofit to Tier 3 and 4 engines only to be forced to make a full zero-emission transition in quickly proceeding years later." The following

recommendations to increase the stringency of the Proposed Amendments were identified:

1. Require a 100-percent zero-emission transition for most harbor boats by 2035, including tugboats and barges, which are excluded from the current rule.

2. Add language to allow CARB to revisit the rule as the zero-emission boat market evolves to ensure that the regulation achieves maximum emission reductions.

3. Increase funding for zero-emission boat pilots and retrofits to spur innovation.

4. Provide the appropriate funding for the implementation of best available technology to the regulated entities.

5. Ensure that a responsive technology review is in place to further amend the program to accelerate deployment as new zero-emission and other advanced engine technologies come online. This commitment to generating additional emission reductions should be included as a unique measure in the 2022 State Implementation Plan.

6. Substantially limit compliance extensions to ensure relief from pollution impacts that occur in the near term.

**Response:**

Alternatives to the Proposed Amendments are presented and analyzed in Section VII of the Draft EA. As discussed on page D-148, CARB's certified regulatory program (Title 17 CCR Sections 60000–60008) requires that, where a contemplated action may have a significant effect on the environment, a staff report shall be prepared in a manner consistent with the environmental protection purposes of CARB's regulatory program and with the goals and policies of CEQA. Among other things, the staff reports must address feasible alternatives to the proposed action that would substantially reduce any significant adverse impact identified.

CARB's certified regulatory program provides general guidance that no action or proposal for which significant adverse environmental impacts have been identified during the review process shall be approved or adopted as proposed if there are feasible mitigation measures or feasible alternatives available that would substantially reduce the adverse impacts. For purposes of this section, "feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors, and consistent with CARB's legislatively mandated responsibilities and duties (Title 14 CCR Section 15364).

CARB has identified alternatives that allow the public and Board to contemplate the differences between different approaches. CARB has made a good-faith effort to identify potentially feasible project alternatives. For the purposes of this analysis, three alternatives are considered:

- Alternative 1: No-Project Alternative;
- Alternative 2: CHC Amendments without a vessel owner/operator idling limits and facility shore power infrastructure requirements; and
- Alternative 3: CHC Amendments without requiring ZEAT for Short-Run Ferries and New Excursion Vessels.

As described on page D-8 of the Draft EA, the objectives of the Proposed Amendments include establishing requirements that are more stringent than those currently required by the existing CHC Regulation, expanding existing CHC Regulation requirements, and advancing zero-emission and clean combustion marine technologies in California. As described on page D-9 of the Draft EA, the Proposed Amendments include requirements for the adoption of ZEAT where feasible for all operations in California and identifies two areas that are technologically feasible and cost effective for zero-emission operations: new and in-use short-run ferries and new excursion vessels. The Proposed Amendments also include additional pathways for adopting ZEAT for any CHC operation where a given operation is feasible but not required.

CARB believes that a requirement of 100-percent transition to zero-emission (ZE) for the majority of harbor boats by 2035 is infeasible at this time because of uncertainty in how fast necessary technology would come to market in the future. Assumptions about whether technology would be available to meet 100-percent ZE transition by 2035 would be too speculative to forecast based on the careful design considerations to make Tier 4 and DPF technology feasible on the in-use CHC fleet today, and the marginal weight and volumetric demands required by zero-emission power systems, whether battery-electric or fuel-cell electric as discussed in Table E-29 of Appendix E to the ISOR. From a CEQA perspective, as explained on page D-144 of the Draft EA, it is not necessary to “consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative” (14 CCR Section 15126.6[f][3]). For these reasons, this scenario is not analyzed as an alternative in the Draft EA.

Feasible compliance options need to be available and clearly defined before implementation of a more stringent requirement. The Board regularly assesses technological advances to achieve maximum emission reductions that may result in the amendment of existing regulations. At the first hearing in November 2021, the Board discussed the possible direction for staff to regularly evaluate the status of zero-emission technology in the marine sector, and report back to the Board on updates on a regular (e.g., every two-year) interval going forward. Because staff will be proposing a Resolution with this process in place, adding language to the regulation about reassessment of the regulation when technology advances is unnecessary.

Some comments request inclusion of ferries, tugboats, dredges, and barges in the Proposed Amendments. As provided in Appendix A of the ISOR for the Proposed Amendments, compliance requirements for these types of vessels were added to several sections of the Proposed Amendment text. The Proposed Amendments refer to several sections of the regulation in which various types of dredges, barges (e.g., petrochemical tank, articulated tug, articulated tug barge (ATB), and bunker), ocean-

going tugboats or towboats, and certain types of ferries (catamaran, monohull, and short-run) are discussed.

Each year, CARB submits a proposed funding plan for clean transportation incentives to the Board for approval. The funding plan serves as the blueprint for expending the Low Carbon Transportation and Air Quality Improvement funds appropriated to CARB in the state budget. In November 2021, the CARB approved a funding plan that would include one demonstration project for zero-emission CHC that includes a resilient zero-emission fueling system. Other ongoing funding programs available to CHC may include the Carl Moyer program, the Volkswagen Mitigation Trust, the Proposition 1B goods movement program, the Clean Off-Road Equipment (CORE) voucher program, the Community Air Protection Program, and other opportunities. As proposed, most CHC may be granted compliance extensions as far out as 2034, with certain vessels (e.g., ferries, charter fishing boats, and excursion vessels) eligible to wait even longer to clean up. Regarding development of the 2022 State Strategy for the State Implementation Plan, please refer to the CARB website to provide comments on its scope.

## B. Individual Comments and Responses on the Draft Environmental Analysis

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| Comment Letter 4<br>10/2/2021 | Craig Gilmore |

**4-1:** The commenter states, “This has zero impact on global warming and California air quality. Please provide justification for eliminating this valuable industry and the ecological benefits on an absolute basis and relative to coal and other impact from China and India.”

**Response:** The environmental impacts of the Proposed Amendments are presented in Section IV of the Draft EA. Specifically; a robust discussion of the air quality impacts is provided in Section IV.B.3 and effects of GHG emissions are provided in Section IV.B.8 of the Draft EA. The comment does not raise a specific issue related to the air quality and GHG analysis in the Draft EA; therefore, no additional response is necessary.

The commenter seems to assert that implementation of the Proposed Amendments would result in an end to the commercial fishing industry and any ecological benefits associated with the industry. As discussed on page D-11 of the Draft EA and updated in the Errata, up to 12 percent of all CHC vessels subject to the Proposed Amendments (approximately 368 out of 3,159 vessels) are expected to cease operations in Regulated California Waters or be replaced between the years 2023 and 2034. Some of these vessels would be replaced with new vessels, but most are expected to be rebuilt or retrofitted with newer engines and/or with DPFs. It is assumed not all vessels removed from service would be replaced; however, from this prediction, there could be up to 368 new vessels built in the 12-year timeframe as a result of the Proposed Amendments. CARB staff assumes new vessels will steadily penetrate the CHC inventory from 2024 through 2034. However, more vessel modifications and turnover may occur in the years 2029 through 2034 because of the end of compliance extensions and due to compliance deadlines. Therefore, CARB respectfully disagrees with the assertion.

The commenter does not state what the ecological benefits of the industry are. However, impacts on biological resources are addressed in Section IV.B.4 of the Draft EA. As discussed under Impact 4-1 and Impact 4-2, impacts on biological resources would be potentially significant. Mitigation measures are provided that would reduce the impact to a less-than-significant level; however, the authority to determine project-level impacts and require project-level mitigation lies with local land use and/or permitting agencies for individual projects, CARB finds it legally infeasible to implement and enforce this measure. Moreover, due to the programmatic analysis of this EA, which does not allow project-specific details of potential impacts and associated mitigation, there is inherent uncertainty in the degree of mitigation that lead agencies may ultimately implement to reduce the potentially significant impacts if they approve these potential projects. Consequently, while impacts could likely be reduced to a less-than-significant level with mitigation measures imposed by the land use and/or permitting agencies acting as lead agencies for these individual projects under CEQA, and thus short-term and long-term impacts to biological resources were identified as potentially significant and unavoidable.

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| Comment Letter<br>120<br>10/4/2021 | Warren Myers |

**120-1:** The commenter states that “alternative verbiage proposed by the Sportfishing Association…would do more to achieve the air quality objectives while preserving recreational opportunities in California.”

**Response:** It is assumed the commenter is referring to one of the California Sportfishing Association letters received (Letter 2608 and 2228). Please see response to comment 2608 and 2228, submitted by the Sportfishing Association of California. Please also refer to Master Response 5 for discussion on selection of Alternatives analyzed in the Draft EA. Because the commenter does not reference the specific verbiage in these letters, a more detailed response cannot be provided.

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| Comment Letter<br>220<br>10/4/2021 | Michael Munn |

**220-1:** The commenter states that “these changes could have a negative impact on the stability and safety of such vessels.”

**Response:** As discussed in Section IV.C of Appendix E of the ISOR, many overlapping vessel design requirements requiring careful analysis must be evaluated before a feasibility determination can be made. Standards for vessel design are addressed in Title 46 of the Code of Federal Regulations. These vessel design standards address vessel stability, trim characteristics, buoyancy, and vessel structural design limit requirements. Regarding the retrofit of existing vessels, any additional aftertreatment devices must be consistent with gross register tonnage requirements to maintain USCG compliance. Please also refer to Master Response 1.

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| Comment Letter 332 10/4/2021 | Brendan Ryan |

**332-1:** The commenter states, “As for the DEF fluid, I work in a industry where the trucks have DEF fluid and when it burns off, it is very heavy, smells horrible, and is no better than just regular exhaust of a boat.”

**Response**: This comment refers to the smell of diesel engine exhaust when DEF, or Diesel Exhaust Fluid, is used by selective catalytic reduction (SCR) systems to reduce oxides of nitrogen ($NO_x$) emissions. DEF is an aqueous solution of urea, typically at a concentration of 32.5 percent, which serves as reductant when injected into an SCR system in the presence of hot diesel exhaust. CARB staff recognizes that DEF may exhibit an odor itself and could result in increased ammonia emissions at the tailpipe that change the odor profile of the exhaust. However, CARB’s Verification Procedure for Diesel Emission Control Strategies (DECS) as set forth by Title 13 CCR Sections 2700-2711 establishes health-protective limits on the concentration of ammonia permitted in raw exhaust. Additionally, the U.S. Environmental Protection Agency (EPA) has established and operates a stringent marine engine certification program based on the standards established in 40 Code of Federal Regulations (CFR) Part 1042; engines certified to Tier 4 standards have significant reductions in regulated criteria pollutants such as $NO_x$ and particulate matter (PM), which provide health benefits that are outlined in the Proposed Amendments. Reductions in $NO_x$ and PM emissions in the exhaust are also expected to change or reduce the odor of diesel exhaust. Therefore, CARB staff acknowledges that one may have an opinion that the odor of diesel exhaust when treated with an SCR system is unpleasant. Moreover, the newer engine technologies provide documented, health-protective emission reductions that are needed to reduce emissions and achieve air quality goals.

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| Comment Letter<br>410<br>10/4/2021 | Chris Latorre |

**410-1:** The commenter states, “Even though boat owners have been proactively reducing emissions by repowering their engines to the cleanest marine engines on the market today, the California Air Resources Board (CARB), a board appointed by Governor Newsom, has proposed engine emission regulations that require technology not developed for commercial passenger vessels, nor deemed safe at sea.”

**Response:** Please refer to Master Response 1.

**410-2:** The commenter states, “Then there are the unresolved safety issues. CARB’s regulations require engines to have equipment installed that has not been thoroughly tested at sea. It is common for this type of equipment on trucks and farm equipment to create significant heat and severe back pressure on engines. Blocked exhaust systems may be manageable on land, but not at sea. Passengers could be adrift at sea for hours as boat crews try to recover the system. The worst-case scenario of a failed engine would risk the lives of passengers and crew.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

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| Comment Letter<br>536<br>10/4/2021 | D. Dargatz |

**536-1:** The commenter states, “What’s more important is the safety factor while the regeneration is happening, it can catch fire & catching fire 100 miles off the coast is not a good thing!”

**Response:** Please refer to Master Response 1 and response to comment 696-2.

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| Comment Letter<br>544<br>10/4/2021 | Michael Taix |

**544-1:** The commenter states that “you will ship all these jobs to noncompliant countries.”

**Response:** Please refer to Master Response 2.

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| Comment Letter 555 10/4/2021 | Daniel Lilly |

**555-1:** The commenter states, “When these boats are removed, some will be replaced (most will not) but in order to build these new boats, more carbon will be emitted, more waste will be generated, and of our resources will be burned up for no better reason than someone thinks they had a good idea. Does no one think to look at what the result will be when you force others out of work? What will become of the boats you want off the water? Landfill? Most likely. Some things will be recycled but most will not. So you save one thing only to destroy another.”

**Response:** As stated on page D-11 and D-12 of the Draft EA and updated in the Errata, up to 12 percent of all CHC vessels subject to the Proposed Amendments (approximately 368 out of 3,159 vessels) are expected to cease operations in Regulated California Waters or be replaced between the years 2023 and 2034. Some of these vessels would be replaced with new vessels, but most are expected to be rebuilt or retrofitted with newer engines and/or with DPFs. It is assumed not all vessels removed from service would be replaced; however, from this prediction, there could be up to 368 new vessels built in the 12-year timeframe as a result of the Proposed Amendments. CARB staff assumes new vessels will steadily penetrate the CHC inventory from 2024 through 2034. However, more vessel modifications and turnover may occur in the years 2029 through 2034 because of the end of compliance extensions and due to compliance deadlines. CARB staff predicts most retired vessels would be sold out of state, not scrapped. Based on preliminary conversations with industry leaders, CARB staff expects many vessels to be sold or moved to other states or countries on the North American West Coast. Larger, more costly, or other specialty vessels could be sold and transferred to regions around the globe.

As described in Impact 3-1 of the Draft EA, understanding construction impacts of vessel repower and new builds requires identifying the specifics of each project. To quantify the increased emissions in response to the Proposed Amendments would require knowledge of each shipyard’s current and projected activities, types of vessels made, timeframe for each vessel repower or build, materials needed and where materials are transported, among other specificities. The ability for CARB staff to correctly estimate the location, amount, and types of projects which could occur in response to increased vessel repowers and new builds, has been determined to be too speculative for a thorough evaluation. Furthermore, since air quality impacts are largely regional in nature, such an analysis would also need to know where and when these projects are to be undertaken.

As required by CEQA, the Draft EA contains “an environmental analysis of the reasonably foreseeable methods by which compliance with that rule or regulation will be achieved (14 CCR Section 15378).” Section II.C provides the reasonably foreseeable compliance responses associated with the Proposed Amendments. The reasonably

foreseeable compliance responses are summarized in Section II.D of the Draft EA and assume that most retired vessels would be sold out of state (page D-19 of the Draft EA).

The analysis presented in the Draft EA includes reasonably foreseeable environmental impacts of the methods of compliance, reasonably foreseeable feasible mitigation measures related to significant impacts, and reasonably foreseeable alternative means of compliance that would avoid or eliminate significant impacts. As discussed in detail in Section IV.B.8 of the Draft EA and updated in the Final EA, the Proposed Amendments are projected to reduce approximately 415,060 metric tons of GHG from 2023 to 2038 (quantified as $CO_2e$). In 2038, when comparing the Proposed Amendments to the Current Regulation, GHG emissions would be reduced about 8 percent, from 523,000 MTY to 480,800 MTY (page D-72 of the Draft EA and updated in the Final EA).

Please also refer to Master Response 4.

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| Comment Letter<br>557<br>10/4/2021 | Fred A. Smith |

**557-1:** The commenter states that “if this bill passes where do you think these boats will go? Im pretty sure they will be sold to the Mexico sport fishing fleet….”

**Response:** Please refer to Master Response 2.

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| Comment Letter<br>563<br>10/4/2021 | Steve Peterman |

**563-1:** The commenter states, “Most of the anglers that I know would just drive to Mexico and go fishing from there.”

**Response:** Please refer to Master Response 2.

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| Comment Letter<br>574<br>10/5/2021 | Stephen Plummer |

**574-1:** The commenter states that “the Newsom Administration has proposed passenger boat regulations that require new engines and technology that is not feasible from a safety, financial or operational standpoint.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>595<br>10/5/2021 | John Davis |

**595-1:** The commenter states that the proposal would “require new engines and technology that is not feasible from a safety, financial or operational standpoint.”

**Response:** Please refer to Master Response 1.

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| Comment Letter 618<br>10/5/2021 | Dennis Groat |

**618-1:** The commenter states, “A recent detailed study by the prestigious California Maritime Academy demonstrated that the engine technology required for small boats in the proposed regulations DOES NOT CURRENTLY EXIST, and that the after-market pollution equipment required in their place present severe stability, fire, safety, and reliability issues. Many of the affected boats operate many miles from land and often in isolated conditions. Vessel stability, fire safety, and propulsion reliability are ESSENTIAL in these operations. Imposing the regulations as currently proposed would place these small boats and all aboard them squarely in harm’s way.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>644<br>10/5/2021 | Dennis Baxter |

**644-1:** The commenter states, “Let us comply when the machinery is proven and safe.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>651<br>10/5/2021 | Todd Mitchell |

**651-1:** The commenter states that “the required modifications are financially or structurally infeasible or unsafe.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>667<br>10/5/2021 | David Karlin |

**667-1:** The commenter states, “The proposed passenger boat regulations that require new engines and technology is not feasible from a safety, financial or operational standpoint, and should not be adopted.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>679<br>10/5/2021 | Alan Pearson |

**679-1:** The commenter states, “There are thousands of trucks with these d.e.f. engines nationwide right now sitting idle in their places of business because of a sensor that went bad, and they can’t keep upon the needed repair or get the part because of demand. We have three trucks down for 3 to 5 months waiting. Think of that cost. Not to mention the safety aspect when my truck simply shuts down on a freeway. What about on an ocean with 50 passengers!”

**Response:** In the Standardized Regulatory Impact Assessment (SRIA), which can be found in Appendix C-1 to the Staff Report, CARB staff accounted for increased maintenance costs of $6.70-$10.80 per horsepower of Tier 4 engine associated with maintenance of SCR systems. DEF must be supplied to the SCR system for it to properly reduce $NO_x$ emissions. Therefore, on-road engines operating in on-highway trucks include “driver inducements,” where vehicles, if operated with empty DEF tanks, once reaching a safe-harbor event, will derate and not operate above a certain speed (such as 5 miles per hour). This derating induces the drivers to maintain adequate DEF levels, and not circumvent emissions controls. However, Tier 4 marine engines that also use SCR technology to reduce $NO_x$ emissions do not include such inducements. Instead of an inducement using the engine response (derate), CARB staff has proposed stringent recordkeeping and reporting requirements for both fuel and DEF to allow CARB to track if DEF is not being filled into the engines. Therefore, no sensor would go bad that would result in stranding a crew or group of passengers as indicated by the commenter. In summary, the increased cost of maintaining the SCR systems has been integrated into the proposal, and marine engines are not designed to derate in the case the efficacy of the emission control systems declines. Because the SCR system relies on record-keeping rather than engine response (derated engine), a vessel would not stop, or experience reduced output during operation.

Please also refer to Master Response 1 and Master Response 3.

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| Comment Letter<br>686<br>10/5/2021 | Gale Flores |

**686-1:** The commenter states, “Listen to the experts and I force dangerous, outrageous expensive modifications.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>696<br>10/5/2021 | Jared Davis |

**696-1:** The commenter states, “A recent CARB commissioned California Maritime Academy study concluded that, #1- marine application engines that meet the proposed standards do not exist yet and, #2- would significantly impact a vesel's stability. Due to the excessive heat produced and the massive increase in size and weiht - by ’ARB's own admisson -‘vessel replacement will be likely, especially in the categories with wood or fiberglass vessels’ to comply with the proposed tier 4 mandate. With an overwhelming majority of sport fishing and whale watching boats constructed of these materials, nearly all of Califonia's iconic charter boat fleet will be unable to comply.”

**Response:** The California Maritime Academy (CMA) study, which CARB commissioned and was posted in September 2019, did not identify a fitment of Tier 4 engines, retrofit DPF, or retrofit SCR systems that were available at the time of the study on the vessel selected for the study. The commenter also raises a valid concern that the wood and fiberglass construction used for some types of vessels does present challenges to reconfigure or modify the vessels. However, as of September 2021, there were 22 models of Tier 4 engines available, and additional engine and DPF manufacturers are undergoing the design, certification, and verification process to bring their products to market. The Proposed Amendments include necessary pathways for vessel owners and operators to remain in compliance by receiving compliance extensions if technologies do not become available, or if they are available, but do not fit on the in-use vessels. If after the extensions expire no Tier 4 engines can be fit into the in-use vessel structure, vessel owners and operators can use one of the many available Tier 4 engines certified and commercially available when designing a new vessel. CARB staff also highlights that with any vessel modification, owners and operators routinely work with naval architects, shipyards, and require USCG approval of vessel design changes. As discussed in Master Response 1, Tier 4 engines and DPFs do not have a higher operating temperature potential than engines certified to less stringent emission standards. In addition, vessel owners and operators would be required to continue to meet USCG safety regulations applicable to their vessels, including but not limited to rules governing surface temperature and exhaust manifold insulation requirements within the engine rooms.

Please also refer to Master Response 1.

**696-2:** The commenter states that “relatively new technology currently being used in trucks and heavy equipment such as farm machinery has been documented to clog the Diesel Particulate Filter causing engines to stall & requiring hours to clean out the system and in some cases even causing engines to catch fire. These issues occur more frequently in engines run at low’R Is...precisely the type of application common amongst these vessels in low speed trolling. While stalling and fire might be daunting to operation“ in a "best case scenario "land based situation, these problems on a boat miles from shore and hours from potential help could very well lead to a truly tragic end.

In a remarkably stunning omission, these regulations have NOT been developed in collaboration with the US Coast Guard who are tasked with regulating stability and fire hazard on thi' state's navigable waters. In addition to these glaring issues there are more!!"

**Response:** The design and performance of DPF systems is reviewed when manufacturers undergo approval through the Verification Program as set forth by 13 CCR 2700 et seq. Many DPFs are designed with active regeneration strategy, where they use fuel injection or electrical resistance to increase the temperature of the exhaust if engines operate for extended periods of time at lower loads. DPFs are not designed to elevate the temperature to values higher than the engines are capable of achieving under full load. During the development of the Proposed Amendments, CARB staff consulted and met with USCG on several occasions. The dates and number of occurrences of these meetings are listed in Appendix F to the Staff Report of the Proposed Amendments.

Please refer to Master Response 1 and response to comment 696-1.

**696-3:** The commenter states, "Can the board please provide a realistic analysis of technological feasibility including some response to the well documented safety concerns ?? Clearly the current analysis is significantly flawed."

**Response:** Staff analysis is based on the best available emission inventory and technical feasibility data. Components of the Proposed Amendments are technology-forcing, and in many cases are transferring proven combustion and emission control technology from the on-road and off-road land-based sectors into the marine sector. Safety is a top priority; emission control manufacturers, such as those that manufacturer DPFs, are required to meet all applicable safety requirements as a condition of becoming CARB approved for their devices.

Please also refer to Master Response 1 and Master Response 3.

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| Comment Letter<br>724<br>10/6/2021 | Janet Zaldua |

**724-1:** The commenter states, “We are concerned about the California Air Resource’ Board's (CARB) costly proposal on engine emission regulations because it 1) requires technology that has not been developed or tested safe on passenger harbor crafts….”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>725<br>10/6/2021 | Brian Krawcykowski |

**725-1:** The commenter states that the Newsom Administration has “proposed passenger boat regulations that require new engines and technology that is not feasible from a safety, financial or operational standpoint.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>733<br>10/6/2021 | Kenneth Daer |

**733-1:** The commenter states that retrofitting “these ‘mom and pop’ charter boats is cost prohibitive and in some cases can upset the balance of the vessel.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>777<br>10/7/2021 | Luis Quinonez |

**777-1:** The commenter states, “[P]lease keep and really study the affects of how hazardous this equipment is specifically in the open ocean!!”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>795<br>10/7/2021 | Glen Mauriello |

**795-1:** The commenter states, “The Newsom Administration has proposed passenger boat regulations that require new engines and technology that is not feasible from a safety, financial or operational standpoint.”

**Response:** Please refer to Master Response 1.

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| Comment Letter 829<br>10/7/2021 | Erik Zemanek |

**829-1:** The commenter states, “I want to see data on exactly what these new rules will exactly by how much help on climate change or environmental impact?”

**Response:** The Draft EA contains an analysis of the environmental impacts of the Proposed Amendments. As discussed in the first paragraph of Impact 8-2 in the Draft EA and updated in the Final EA:

> Relative to the Current Regulation, the Proposed Amendments are projected to reduce approximately 415,060 metric tons of GHG from 2023 to 2038 (quantified as $CO_2e$ as defined above). In 2038, when comparing the Proposed Amendments to the Current Regulation, GHG emissions would be reduced about 8 percent, from 523,000 MTY to 480,800 MTY. Overall, the GHG emission reductions achieved by the Proposed Amendments over the Current Regulation would amount to about 5 percent of the total GHG emissions, from 2023 to 2038.

No specific issues were addressed for which further response can be provided.

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| Comment Letter<br>834<br>10/7/2021 | Steve Pazol |

**834-1:** The commenter states, “It appears that the proposed passenger boat regulations that require new engines and technology that is not feasible from a safety, financial or operational standpoint.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>849<br>10/8/2021 | Steve Hillyard |

**849-1:** The commenter states that “installing new engines is not feasible for financial, safety and operational reasons.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>855<br>10/8/2021 | Blythe Haney |

**855-1:** The commenter states, “Governor Newsom's proposed passenger boat regulations require changes that are not feasible from a safety, financial, or operational standpoint.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>856<br>10/8/2021 | Steven Williams |

**856-1:** The commenter states that “the Newsom Administration has proposed passenger boat regulations that require new engines and technology that is not feasible from a safety, financial or operational standpoint.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>892<br>10/9/2021 | Ryan Sinn |

**892-1:** The commenter states, “We've been running diesels for years without these regulations and lithium batteries to dispose is killing our ozone layer but that's OK though You're so worried about the carbs but not the lithium batteries….”

**Response:** Hazards related to lithium batteries are discussed in Section IV.B.9 of the Draft EA. As described on page D-78 of the Draft EA, lithium batteries contain potentially toxic metals and organic chemicals. While improper management of lithium-ion batteries could pose an environmental hazard and be of concern to public safety, when packaged and handled properly, lithium-ion batteries pose no environmental hazard, and there is not expected to be an increase in emergency conditions associated with increased use of lithium batteries. Without evidence supporting the concern that lithium batteries are affecting the ozone layer, no further response can be provided.

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| Comment Letter<br>909<br>10/9/2021 | Martin Colling |

**909-1:** The commenter states, “In this case the technology is not even available to retrofit or repower a fishing vessel. It is the equivalent of scraping off a house and rebuilding because the r’of isn't angled correctly for solar panels. Please consider a less specific alternative such as setting limits for existing exhaust output and giving time for the industry to come up with better solutions to meet a cleaner exhaust requirement.”

**Response:** The Proposed Amendments were designed to maximize flexibility for vessel owners and operators while still achieving the needed public health benefits with an 89-percent reduction in diesel PM and a 52-percent reduction in $NO_x$ by 2038. The Proposed Amendments include an 8-year phase-in period with the highest-emitting engines having the earliest compliance dates between 2023 and 2031. In addition, in situations where it is not technologically feasible to modify an in-use vessel and not financially feasible to pay for a replacement vessel by the compliance date, vessel operators can apply for compliance extensions for up to 8 years, or out to December 31, 2034, in most cases, to make the necessary adjustments to their business models while reducing their emissions.

Please also refer to Master Response 1.

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| Comment Letter<br>920<br>10/9/2021 | Gerald Maka |

**920-1:** The commenter states that CARB has “required engine technology that (wait for it) does not currently exist for this class of boats and, as a worrisome result, lacks safety testing.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>948<br>10/9/2021 | Mark Sherred |

**948-1:** The commenter states, “Making the San Diego fleet fish Mexican waters from Mexican ports, will not help CA air at all.”

**Response:** Please refer to Master Response 2.

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| Comment Letter<br>992<br>10/9/2021 | Michele Tracy |

**992-1:** The commenter states that “rebuilds will result in safety issues.…”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>1017<br>10/10/2021 | Chase Bourke |

**1017-1:** The commenter states, “The ability to go on a charter means I do not need to purchase a boat, which would cause GREATER air pollution than a charter boat if you consider how many fishermen regularly depart on these (20-40 fishermen means 20-40 boats that aren't on the water). Consider also these are blue collar business owner/operators who rely on low ticket price to sustain their businesses. Many of the modifications proposed will drive these captains out of business. The net result will be for more individual fishermen to purchase individual boats. Many individual boats will lead to more environment impact than a single large boat. Your analysis is confounded and not taking into account this impact, which is a net negative for the environment.”

**Response:** Please refer to Master Response 4.

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| Comment Letter<br>1020<br>10/10/2021 | Janet Callow |

**1020-1:** The commenter states, “The majority of sportfishing boats are older, retrofitting them is not an option, even if the parts were available. Their power plants run at much lower rpm’s than what would be necessary for air scrubbers to work without loading up and damaging the engine.”

**Response:** CARB staff does not anticipate the use of scrubber technology, which is typically designed to reduce oxides of sulfur ($SO_x$) emissions, to comply with the Proposed Amendments. The Proposed Amendments are anticipated to result in the use of Tier 4 engines that are generally originally equipped with an SCR system and DPF system. The performance of SCR and DPF systems is discussed in Master Response 1 and responses to comments 679-1 and 696-2, respectively.

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| Comment Letter<br>1039<br>10/11/2021 | J.J. Andrecht |

**1039-1:** The commenter states, “The amendments are unreasonable, expensive, unsafe and impractical.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>1041<br>10/11/2021 | Charles Barnett |

**1041-1:** The commenter states that it would be “a travesty to put so many people out of business or out of a job by requiring technology that is impractical, unsafe, prohibitively expensive, or does not exist.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1056<br>10/11/2021 | Lori Rafferty |

**1056-1:** The commenter states that “the Lithium Ion battery industry is unreliable, dangerous and constantly suffers from supply chain Issues.....”

**Response:** See response to comment 892 for a discussion related to safety issue associated with lithium-ion batteries.

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|---|---|
| Comment Letter<br>1060<br>10/11/2021 | Collin Jones |

**1060-1:** The commenter states that "all the construction creates way more pollution. It makes no sense."

**Response:** The short-term construction-related impacts on air quality are discussed in Impact 3-1, beginning on page D-36 of the Draft EA. As described in this impact, the primary sources of construction-related emissions would occur from soil disturbance and use of construction equipment. It is expected that during the construction phase for any new project, criteria air pollutants (e.g., $NO_x$, $SO_x$ and PM) and toxic air contaminants (TACs) could be generated from a variety of activities and emission sources including equipment use and worker commute trips (page D-37 of the Draft EA). Even though it is not possible to model the location and magnitude of specific anticipated construction-related adverse health effects in this case, by evaluating emissions of air pollutants against construction-related significance thresholds, it is foreseeable that health complications associated with ozone and $PM_{10}$ exposure could be exacerbated to nearby sensitive receptors by construction-generated emissions. Overall, short-term construction-related impacts associated with implementation of the Proposed Amendments could be potentially significant. However, note that overall, across all years beginning with 2023, the Proposed Amendments would result in overall greater emissions reductions, even accounting for a worst-case scenario in which all construction activities occur in the first single year (2023) (page D-44 of the Draft EA). As described on page D-46 of the Draft EA, the short-term construction-related air quality effects could be reduced to a less-than-significant level by mitigation that can and should be implemented by local lead agencies but is beyond the authority of CARB. The authority to determine project-level impacts and required project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic levels of analysis associated with this Draft EA does not attempt to address project-specific details of mitigation, and there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. With mitigation, construction emissions could still exceed local air district threshold levels of significance, depending on the intensity, location, and duration of construction.

However, the Draft EA also addressed long-term operational air emission levels related to the Proposed Amendments. As shown in Table D-1 of the Draft EA, calculations indicate that implementing the Proposed Amendments would reduce cumulative statewide emissions by approximately 1,610 tons of particulate matter less than or equal to 2.5 micrometers ($PM_{2.5}$), 1,680 tons of diesel particulate matter (DPM), 34,340 tons of oxides of nitrogen ($NO_x$), and 2,460 tons of reactive organic gases (ROG), relative to the baseline. Overall, implementation of the Proposed Amendments would minimize emissions associated with operation of CHC and would assist the State in meeting the air quality standards both regionally and statewide. Emission reductions resulting from the implementation of the Proposed Amendments are expected to far

outweigh any long-term operational-related emission increases and would result in high net positive overall health benefits over the life of the Proposed Amendments (page D-49 of the Draft EA).

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|---|---|
| Comment Letter<br>1065<br>10/11/2021 | James McDaniels |

**1065-1:** The commenter states, “As soon as the technology exists that is safe to use in our vessels, I will be the first one to apply for my third repower.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1071<br>10/12/2021 | Nadine Urciuoli, San Rafael Channel Association |

**1071-1:** The commenter states, “The environment impact of rebuilding or replacement of these vessels outweighs the environment impact of continuing to use the current vessels with tier 3 engines.”

**Response:** Please refer to Master Response 4.

| | |
|---|---|
| Comment Letter<br>1080<br>10/12/2021 | Jonathan Conk |

**1080-1:** The commenter states, “The Newsom Administration has proposed passenger boat regulations that require new engines and technology that is not feasible from a safety, financial or operational standpoint.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1081<br>10/12/2021 | Patrick Gee |

**1081-1:** The commenter states that “it could also cause a safety hazard if these engines are not tested beforehand. I am a Navy veteran and have spent many years on US Naval vessels, we still had problems and fires aboard these modern vessels, the same will happen if sufficient time is not permitted.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1094<br>10/12/2021 | Mark Cappetta |

**1094-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. I'm asking you to strengthen the Commercial Harbor Craft rule:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

| | |
|---|---|
| Comment Letter<br>1095<br>10/12/2021 | Sherrill Futrell |

**1095-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. I'm asking you to strengthen the Commercial Harbor Craft rule:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

This comment letter included an attachment with letters similar to comment letter 1095 but from different commenters. These commenters are referred to response to comment 1095-1.

| | |
|---|---|
| Comment Letter<br>1097<br>10/12/2021 | Christian Cavanaugh |

**1097-1:** The commenter states, “Until the technology comes along it makes no sense economically, environmentally or from a safety stand point to replace our engines.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1106<br>10/12/2021 | Nicole Denette |

**1106-1:** The commenter states that they hope CARB will “continue to provide motors to the fleet as they become more reliable and safe for our passengers.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1128<br>10/14/2021 | Bill Thaxton |

**1128-1:** The commenter states, “I am concerned the proposed passenger boat regulations require new engines and technology that is not feasible from a safety, financial or operational standpoint.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1144<br>10/16/2021 | Steven Powell |

**1144-1:** The commenter states that “there are concerns with implementing regulations whose safety is still unproven.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1148<br>10/16/2021 | Mark Oronoz |

**1148-1:** The commenter states, “The proposed CARB legislation of repowering our boats, with engines not designed for our boats, would create a number of financial and safety issues that would frankly put us out of business. Engines too large, exhaust too hot, speed parameters too extreme.”

**Response:** Please refer to Master Response 1. With every vessel repower project, the rated speed of the engine, gear ratios, and propeller designs need to be tailored for an engine. To the extent that available Tier 4 engines do not provide torque at the same engine shaft speed on the engine map, other components of the vessel powertrain may need to be modified or updated.

| | |
|---|---|
| Comment Letter<br>1153<br>10/17/2021 | Don Rowell, D.L.R. Sportfishing Inc. |

**1153-1:** The commenter states, “The regulations, as they are drafted, require technology that has not been developed or proven safe at sea, and consequently are economically and structurally impossible to co–ply with - requiring boats constructed of wood/fiberglass like mine to be removed from service as soon as 2031.”

**Response:** Please refer to Master Response 1 and response to comment 696-1.

| | |
|---|---|
| Comment Letter<br>1167<br>10/18/2021 | Jenny Folkesson |

**1167-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. Im asking you to strengthen the Commercial Harbor Craft rule to:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

This comment letter included an attachment with letters similar to comment letter 1167 but from different commenters. These commenters are referred to response to comment 1167-1.

| | |
|---|---|
| Comment Letter<br>1168<br>10/18/2021 | Jackie Lowell |

**1168-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. Im asking you to strengthen the Commercial Harbor Craft rule to:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

| | |
|---|---|
| Comment Letter<br>1172<br>10/19/2021 | Gary Beckerman |

**1172-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. Im asking you to strengthen the Commercial Harbor Craft rule to:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

| | |
|---|---|
| Comment Letter<br>1252<br>10/19/2021 | Cameron Dobbs |

**1252-1:** The commenter states, “The process of manufacturing new vessels will use more resources and cause more environmental harm than using older vessels.”

**Response:** Please refer to Master Response 4.

| | |
|---|---|
| Comment Letter<br>1329<br>10/19/2021 | Myron Filipoff |

**1329-1:** The commenter states, “Diminishing returns that will likely negate any minuscule ‘improvements’ in efficiency, through the destruction of existing boats and construction of new, expensive ones. No mention is made of the destruction of livelihoods and the massive number of fishermen who will be deprived of much needed recreational opportunity. Many of them will be ‘forced’ to purchase their own personal crafts, further eliminating any environmental gain.”

**Response:** Please refer to Master Response 4.

| | |
|---|---|
| Comment Letter<br>1345<br>10/19/2021 | Larry Brown |

**1345-1:** The commenter states, “If fully implemented these regulations would have a trivial positive impact on the environment, but would cripple an entire industry and negatively impact all Californians and out of state tourists who enjoy sports fishing and diving in California. The total pollution caused by these older boats is negligible in the grand scheme.”

**Response:** Please refer to Master Response 4.

| | |
|---|---|
| Comment Letter<br>1366<br>10/19/2021 | Carol Jones |

**1366-1:** The commenter states, “The regulations as drafted require technology that has not been developed or proven safe at sea.…”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1393<br>10/19/2021 | Maffick Arie |

**1393-1:** The commenter asks CARB to “think of the amount of waste and/or environmental impact that manufacturing aluminum, plastic or other boats will have….”

**Response:** Please refer to Master Response 4.

| | |
|---|---|
| Comment Letter<br>1402<br>10/19/2021 | Tom Sandau |

**1402-1:** The commenter states that “the safety factor alone would be enough to discourage the board from considering this regulation.…”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1428<br>10/19/2021 | Robert Baxter |

**1428-1:** The commenter refers to “[t]he suggestion from the Coastguard that its not safe.…”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1450<br>10/19/2021 | Ashton Lawrence |

**1450-1:** The commenter states, “These regulations will simply put an end to the local sportfishing and whale watching business and will not solve the climate crisis, nor will it have much effect on improving air quality.”

**Response:** Please refer to Master Response 2 for a discussion related to effects on businesses in California. See response to comment 4-1 for a discussion related to the effects of the Proposed Amendments on air quality and GHG emissions.

| | |
|---|---|
| Comment Letter<br>1458<br>10/19/2021 | Erik Zemanek |

**1458-1:** The commenter states that he has not received an "explanation of how much pollution this will remove or EPA impact report on what damage these boats contribute…."

**Response:** The first paragraph of Impact 8-2 (page D-70) in the Draft EA, and updated in the Final EA, addresses the degree to which the Proposed Amendments would reduce GHG emissions compared to the Current Regulation. In summary:

Relative to the Current Regulation, the Proposed Amendments are projected to reduce approximately 415,060 metric tons of GHG from 2023 to 2038 (quantified as $CO_2e$ as defined above). In 2038, when comparing the Proposed Amendments to the Current Regulation, GHG emissions would be reduced about 8 percent, from 523,000 MTY to 480,800 MTY. Overall, the GHG emission reductions achieved by the Proposed Amendments over the Current Regulation would amount to about 5 percent of the total GHG emissions, from 2023 to 2038.

Please refer to the Draft EA for further explanation on the environmental effects of the Proposed Amendments. No specific issues were addressed for which further response can be provided.

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|---|---|
| Comment Letter<br>1466<br>10/19/2021 | Thomas Gackstetter |

**1466-1:** The commenter states that “boat ’owners can't comply with regulations that mandate technology that does not exist (much less proven safe at sea).”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1510<br>10/20/2021 | Charlie Samms |

**1540-1:** The commenter states, “The older engines in use today were never engineered to run with this newer emission equipment. It will make the engine compartments EXTREMELY hot and probably cause many boats to catch fire!!”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1548<br>10/20/2021 | Stephen Ernst |

**1548-1:** The commenter states, “Imagine if even half of the folks paying for access to these fleets buy small private vessels to continue fishing. Pollution would be even worse.”

**Response:** Please refer to Master Response 4.

| | |
|---|---|
| Comment Letter<br>1574<br>10/21/2021 | Stephen Santen |

**1574-1:** The commenter states, “Many boats will be forced into landfills because the cost of moving them to another state or county would be prohibitive. This long term Hazardous material disposal should be part of the considerations.”

**Response:** Please refer to Master Response 4.

| | |
|---|---|
| Comment Letter<br>1592<br>10/22/2021 | Tony Freeman |

**1592-1:** The commenter states, “Some boats will move to Mexico moving tourism dollars there.”

**Response:** Please refer to Master Response 4.

**1592-2:** The commenter states, “Boat’ that don't will be scarped or sunk at sea causing more environmental damage.”

**Response:** Please refer to Master Response 4.

| | |
|---|---|
| Comment Letter<br>1603<br>10/24/2021 | Dianne Martinez |

**1603-1:** The commenter states, “We are concerned that the timeline proposed by CARB is not realistic and could result in mariners retrofitting boats with equipment that is not yet approved as safe for passenger use.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1612<br>10/25/2021 | Michael Mark Brady |

**1612-1:** The commenter states, “I am concerned about the proposed passenger boat regulations requiring new engines and technology that are not feasible from a safety, financial, or operational standpoint.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1615<br>10/25/2021 | Greg Hurner |

**1615-1:** The commenter states, “The California Maritime Academy informed CARB that the technology does not exist for CFV or CPFV and if it did it would create vessel stability and heat issues creating life health and safety concerns for passengers and crews. Even given the same information on vessel and passenger safety, CARB has arbitrarily chosen to separate out CPFV from CFV for a separate, infeasible, and economically damaging compliance path that will increase global GHG emissions.”

**Response:** The Proposed Amendments would achieve a 5 percent GHG reduction from CHC statewide between 2023 and 2038, therefore, there would be no increase in global GHG emissions associated with regulating CPFV and commercial fishing vessels as proposed. Please also refer to Master Response 1 for a discussion of safety and feasibility as it relates to performance standards of the Proposed Amendment and response to comment 696-1.

**1615-2:** The commenter states, “Because recreational pursuits are elastic and compete with all other opportunities, increased ticket prices will reduce participation rates impacting coastal communities, California tourism, and conservation funding as families choose other pursuits and anglers choose other states or countries.”

**Response:** Please refer to Master Response 2.

| | |
|---|---|
| Comment Letter<br>1621<br>10/26/2021 | Frank Geraty |

**1621-1:** The commenter states, “abandon the boat engine emission regulations initiative being contemplated! Other than the fact that it will create a huge environmental disaster by dumping non compliant boat and ship engines.”

**Response:** Please refer to Master Response 4.

| | |
|---|---|
| Comment Letter<br>1623<br>10/26/2021 | Rodger Borge |

**1623-1:** The commenter states, “Your regulations won't effect air pollution, so-called global warming a fraction of 1%.”

**Response:** Please refer to response to comment 4.

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|---|---|
| Comment Letter<br>1643<br>10/26/2021 | Business/Tourism Org Coalition |

**1643-1:** The commenter states that “the California Air Resources Board (CARB) has proposed costly engine emission regulations that require technology that has not been developed or tested safe on passenger harbor crafts. Similar technology used on trucks and farm equipment has been known to stall engines for hours at a time to clean emission control systems, and in worst case scenarios, catch fire. On land, a stalled engine or fire is a serious economic disruption; at sea, it is life threatening to both passengers and crew.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

| | |
|---|---|
| Comment Letter<br>1647<br>10/26/2021 | Scott Ashton |

**1647-1:** The commenter states, “Furthermore, the size and weight of the proposed diesel particulate filters (DPFs) would make sportfishing vessels unstable, posing significant safety concerns for passengers and crew. Operational issues with the DPFs could result in unexpected equipment failure when the boats are out at sea with passengers.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

**1647-2:** The commenter states, “Vessels that can be modified will incur a significant cost for retrofit and will be faced with the potential safety issues noted above.”

**Response:** Please refer to Master Response 1.

**1647-3:** The commenter states, “Boat owners also have serious reservations about a host of unresolved safety concerns that extend beyond the stability of reconstructed boat hulls. Engines equipped with DPFs have not been thoroughly tested at sea. It is common for DPFs used on farm equipment and trucks to experience blockage, creating significant heat and severe back pressure on engines, sometimes taking hours to clear exhaust systems and restart engines. While this circumstance is manageable on land, under the best-case scenario, passengers could be adrift at sea for hours as boat crews try to recover the system. The more likely scenario will result in sea rescues due to engine failure. In a surprising omission, CARB has not solicited the input of the United States Coast Guard which regulates the safety of commercial passenger vessels.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

| | |
|---|---|
| Comment Letter<br>1649<br>10/26/2021 | Sadie Johnson |

**1649-1:** The commenter states, “We need to strengthen the rule to eliminate fossil fuel pollution and advance zero-emissions technologies.”

**Response:** Please refer to Master Response 5.

| | |
|---|---|
| Comment Letter<br>1651<br>10/26/2021 | Sari Fordham |

**1651-1:** The commenter states, “I urge the Board to require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which the rule as it is written now exclude.”

**Response:** Please refer to Master Response 5.

| | |
|---|---|
| Comment Letter<br>1655<br>10/26/2021 | Katherine Curtis |

**1655-1:** The commenter states, “Please act now to require 100% electric harbor vessels.”

**Response:** Please refer to Master Response 5.

| | |
|---|---|
| Comment Letter<br>1656<br>10/26/2021 | Thomas Jordan |

**1656-1:** The commenter states, “These new proposals are not reasonable and will do little to have the desired effect on environment. They are not proven safe for watercraft and some do not even exist.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1657<br>10/26/2021 | Mandeera Wijetunga |

**1657-1:** The commenter states, “I wanted to submit this public comment supporting the proposed commercial harbor craft rule and urge the California air resource board to adopt a stronger rule.”

**Response:** Please refer to Master Response 5.

**1657-2:** The commenter states, “We need to strengthen the rule to eliminate fossil fuel pollution and advance zero-emissions technologies. I urge the Board to require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule.”

**Response:** Please refer to Master Response 5.

| | |
|---|---|
| Comment Letter<br>1658<br>10/27/2021 | Frank Rescino |

**1658-1:** The commenter states, “These new engines have to run at full power Bernhardt and have not been proven safe by the Coast Guard to operate in our boat yet.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1659<br>10/27/2021 | Sylvia Cardella |

**1659-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. Im asking you to strengthen the Commercial Harbor Craft rule:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

| | |
|---|---|
| Comment Letter<br>1666<br>10/27/2021 | Wesley Chuang |

**1666-1:** The commenter states, “We need to strengthen the rules to eliminate fossil fuel pollution and advance zero-emissions technologies that already exist.

“I urge the Board to require a 100% zero-emissions transition for the majority of harbor crafts by 2035, including tugboats and barges, which are excluded from the current rule.”

**Response:** Please refer to Master Response 5.

| | |
|---|---|
| Comment Letter<br>1675<br>10/28/2021 | Steve Volaski |

**1675-1:** The commenter states that “the regulations as drafted require technology that has not been developed or proven safe at sea.…”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1676<br>10/28/2021 | Christopher Volaski |

**1676-1:** The commenter states, “Will this new Bill you are trying to put into place, the regulations as drafted require technology that has not been developed or proven safe at sea.…”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1680<br>10/28/2021 | Jim Stewart |

**1680-1:** The commenter states, “As written, however, CARB's draft harbor craft rule misses the opportunity to fully embrace this technology transition. While California claims to be a leader on climate action, we continue to concentrate impacts in low-income communities and communities of color.

“We need to strengthen the rule to eliminate fossil fuel pollution and advance zero-emissions technologies.”

**Response:** Please refer to Master Response 5.

| | |
|---|---|
| Comment Letter<br>1683<br>10/29/2021 | Andrew Guiliano |

**1683-1:** The commenter states, “You cannot ask passenger vessels to retrofit or install new engine(s) that have not been tested safe for ALL commercial water craft.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1684<br>10/29/2021 | Scott Anderson |

**1684-1:** The commenter states, “They will then take their existing boats and go 20 miles to Baja California, either Encidada or Puertoctias and operate their boats from those Mexican waters. And hundreds of thousands of enthusiasts like myself WILL go there to patronize the same boats, only out of a different location. The point being, there will be no actual reduction in emissions, they will simple be done several miles away.”

**Response:** Please refer to Master Response 2.

| | |
|---|---|
| Comment Letter<br>1685<br>10/29/2021 | Michael Keating, Spirit of Adventure Charters I |

**1685-1:** The commenter states, "In reality, these changes will do nothing for climate change. Unless California buys them out of service, these vessels will move or be sold somewhere else – East Coast or Mexico. Global Emissions will be the same or worse. And the only difference (as has happened a lot) will be the loss of jobs here in California. Worse, "commercial" Sportfishing will switch more and more to the unregulated "recreational" vessels that already operate many illegal charters throughout the State, making that problem worse and undoubtedly adding immense amounts of air pollution. I am sure the State at some point will try to reign them in, but if past is prolog, they will not do well."

**Response:** Please refer to Master Response 2.

**1685-2:** The commenter states, "If the State does somehow-someway manage to try to make these thousands of boats comply, the only people who will be able to afford a yacht capable of incorporating Tier 4 Final Technology on board will be the very wealthy. Everyone else will be out of luck and have to take their fishing vacations somewhere else – with still more jobs lost in California."

**Response:** Please refer to Master Response 2.

| | |
|---|---|
| Comment Letter<br>1690<br>10/31/2021 | M. Silver |

**1690-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. Im asking you to strengthen the Commercial Harbor Craft rule:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

| | |
|---|---|
| Comment Letter<br>1695<br>10/31/2021 | Stephen George |

**1695-1:** The commenter states, “The Newsom Administration has proposed passenger boat regulations, regulations that require new engines and technology that is not feasible from a safety, financial or operational standpoint. These regulations will most likely remove passenger boats made of wood and fiberglass from service; over 80% of all boats!”

**Response:** Please refer to Master Response 1 and response to comment 696-1.

| | |
|---|---|
| Comment Letter<br>1698<br>11/1/2021 | Salvador Rocha |

**1698-1:** The commenter states, “I also have questions as to where the data was used to make the assumptions on particulates and amounts of fuel burned per vessel and the pollution that they produce?”

**Response:** The PM emission factors were derived from U.S. EPA certification data for marine and off-road engines, as discussed in Appendix H to the ISOR. Activity levels (i.e., fuel burned per vessel) were primarily obtained from required reporting under the current CHC Regulation and is also summarized in the 2021 CHC Emission Inventory document used to support the analysis of the Proposed Amendments in Appendix H of the ISOR. As of March 2022, the emission inventory model was last modified by CARB in June 2021 to determine the emissions baseline and reductions from CHC as a source category when releasing the Proposed Amendments.

**1698-2:** The commenter states, “I hope someone will come to their senses and rethink this and move foreword with it when the technology is readily available and tested and proven worthy of the safety of the passengers onboard.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1699<br>11/1/2021 | John Conniff |

**1699-1:** The commenter states, “Let’s assume for a moment that California’s commercial passenger vessel owners did find a way to finance new construction. From an environmental perspective that seems like a step backward. I’m sure the readers of this letter have spent little time in a shipyard but I have. New boat construction is a massive project that consumes millions of dollars in new materials, many of which California is already trying to do away with. To rebuild the California sportfishing fleet from scratch defies logic on a number of levels but if you think that is an eco-friendly option you are sorely mistaken. Honestly, the realistic end to this situation would likely be the fire sale of these boats to other states where these regulations aren’t in place. From a nationwide perspective there would be no reduction. The boats would go elsewhere as would the previous owners in search of new livelihoods and affordable housing.”

**Response:** Please refer to Master Response 2 and Master Response 4.

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| Comment Letter<br>1702<br>11/1/2021 | Tim Riley, Marina del Rey Lessees Association |

**1702-1:** The commenter states, “The Association is greatly concerned that the California Air Resources Board's contemplation of adopting significantly new restrictions severely limiting the use of diesel engines on yacht charter and fishing boats is ill-advised and fails to consider the ruinous economic consequences of moving forward on engine emission regulations that require technology that is not economically feasible nor has been fully developed or tested for safety on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1704<br>11/1/2021 | Allie Stewart, Platinum Advisors, LLC |

**1704-1:** The commenter states, “CARB has proposed engine emission regulations that require technology that has not been developed for passenger sportfishing and whale watching vessels or tested safe at sea. Similar technology used on trucks and farm equipment has been known to stall engines for hours at a time to clean emission control systems, and in worst case scenarios, catch fire. On land, a stalled engine or fire is a serious economic disruption. At sea, the consequences would be life threatening.”

**Response:** Please refer to Master Response 1.

**1704-2:** The commenter states, “If a vessel were to stall in a harbor or near shore, the threat of running aground or colliding with another vessel is a very real and an unacceptable possibility. Rather than hours, crews could have only minutes or seconds to regain control of their vessel.”

**Response:** Please refer to Master Response 1.

**1704-3:** The commenter states, “This is why it concerns us greatly that CARB did not initially consult the U.S. Coast Guard when drafting the regulations.”

**Response:** Please refer to Master Response 1.

**1704-4:** The commenter states, “Moreover, the Cal Maritime Academy raised concerns associated with boat stability, which could have the practical effect of removing metal boats from service as well.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

**1704-5:** The commenter states, “Moreover, compliant vessels would have to be metal and larger in size to accommodate Tier Four engines, Diesel Particulate Filters and other addons. It is possible that larger vessels would require harbors and marinas to spend resources to reconfigure landings and result in less slips available to rent. CARB did not consult with harbor masters and marina operators as part of any stakeholder outreach. Consequently, the impacts of the proposed regulations raise serious economic and safety issues.”

**Response:** Whereas CARB staff anticipates many vessels to be reconfigured to accommodate Tier 4 engines and DPF control technology, there is no data that suggests there would be a significant increase to the size of the vessel in length, width, or depth that would affect the vessel’s ability to fit within slips or berthing locations at marinas and harbors. The Proposed Amendments would include requirements for owners and operators of facilities related to infrastructure and reporting; therefore,

outreach was performed with port authorities, and all facilities that conduct business with harbor craft. A list of meetings and events, including a dedicated workgroup meeting to discuss requirements for facilities and presentation at a meeting of the Marine Recreation Association, can be found in Appendix F of the ISOR.

Construction, modification, and maintenance activities occurring within harbors, marinas, and other facilities are analyzed at a programmatic level throughout the Draft EA. As discussed on page D-4 of the Draft EA, the level of detail of impact analysis is necessarily and appropriately general because the Proposed Amendments are programmatic. Reasonably foreseeable compliance responses are analyzed in a programmatic manner for several reasons: (1) any individual action or activity would be carried out under the same program; (2) the reasonably foreseeable compliance response would result in generally similar environmental effects that can be mitigated in similar ways (Cal. Code Regs., tit.14, Section 15168 (a)(4)); and (3) while the types of foreseeable compliance responses can be reasonably predicted, the specific location, design, and setting of the potential actions are unknown at this time. The Proposed Amendments, by design, are flexible, taking a performance standard-based approach rather than requiring specific infrastructure improvements at specific harbors or marinas. CEQA is clear that an indirect impact should be considered only if it is a reasonably foreseeable impact caused by the project. (Cal. Code Regs., tit. 14, Sections 15064(d)(3), 15358(a)(2).) An environmental impact that is speculative or unlikely to occur is not reasonably foreseeable. (Cal. Code Regs., tit. 14 Section 15064(d)(3).) Attempting to predict decisions by entities regarding the specific location and design of infrastructure undertaken at harbors and marinas, which involves extensive decision-making processes in response to implementation of the Proposed Amendments, is speculative given the influence of other business and market considerations in those decisions. As a result, CARB's CEQA analysis covers all reasonably foreseeable activities, and avoids engaging in speculation about what specific actions may occur at individual marinas, harbors, and docks. Specific actions undertaken to implement the Proposed Amendments would undergo project-level environmental review and compliance processes as required at the time they are proposed. It is expected that many individual development projects would be able to feasibly avoid or mitigate potentially significant impacts to less-than-significant levels, at the time when they undergo specific local land use agency review.

In regard to safety, please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1707<br>11/1/2021 | Capt. Court Mast, Salty Lady Sportfishing |

**1707-1:** The commenter states, “However, the Tier 4 diesel motors and diesel particulate filters (DPFs) used on land are too heavy and too hot to retrofit into boats made of wood, fiberglass or aluminum. Boats made of these materials comprise over 80% of the boats in the mandated group.

“A recent California Maritime Academy study concluded that marine-application engines that meet the proposed standards do not exist yet. The excessive heat produced by the currently available engines and DPFs could catch fire when run at low RPMs, the speed at which most of the vessels in the mandated group operate. Ask any vessel owner, ‘what is your worst nightmare?’ It's fire.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

**1707-2:** The commenter states, “CARB's proposed regulations have NOT been reviewed by the U.S Coast Guard, which is the final authority for inspecting and approving all vessels in the Commercial Harbor Craft classification.”

**Response:** Please refer to Master Response 1 and response to comment 696-1.

**1707-3:** The commenter states, “Selling a boat out-of-state doesn't cu’ the boat's emissions, it simply moves the emissions to another state. So the actual decrease in global emissions from this whole exercise is negligible.”

**Response:** Please refer to Master Response 2.

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|---|---|
| Comment Letter<br>1710<br>11/1/2021 | Jeff Neubauer |

**1710-1:** The commenter states, “Lastly, these sportfishers will change their vessels, to gas powered outboards and run more units which will combine to actually increase emissions from their current levels.”

**Response:** Please refer to Master Response 4.

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|---|---|
| Comment Letter<br>1713<br>11/1/2021 | Marcie Ligammari |

**1713-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. Im asking you to strengthen the Commercial Harbor Craft rule:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

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|---|---|
| Comment Letter<br>1722<br>11/2/2021 | Captain Kyle Haray |

**1722-1:** The commenter states, “The engines that would have to be installed would take up a lot of deck space and the exhausts and filters would pose a fire hazard.”

**Response:** Please refer to Master Response 1 and response to comment 696-1.

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|---|---|
| Comment Letter<br>1747<br>11/2/2021 | Jenn Bottmeyer |

**1747-1:** The commenter states, “Currently there’ just isn't a history of using these new engines on boats that have been retrofitted and they have issues with failure. This could mean people stranded at sea or at least decreasing safety on the water.”

**Response:** Please refer to Master Response 1 and response to comment 696-1.

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|---|---|
| Comment Letter<br>1783<br>11/3/2021 | Rob Garfinkle |

**1783-1:** The commenter states, “Have you considered the carbon footprint and negative impact to the environment that scarping the current, fully serviceable, low emissions, prolusion units from thousands of boats, and replacing them with newly manufactured systems, that at this time don't exist.”

**Response:** Please refer to Master Response 1 and Master Response 4.

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|---|---|
| Comment Letter<br>1787<br>11/3/2021 | Jim Luttjohann, Catalina Island Tourism Authority |

**1787-1:** The commenter states, “The proposed regulations will cause significant waste due to scrapping of currently operating vessels, many of which have been only recently put into service or undergone multi-million-dollar upgrades to meet tier 3 standards.”

**Response:** Please refer to Master Response 4.

**1787-2:** The commenter states, “Replacement vessels will have to grow in size and weight to accommodate the required technology making them less efficient than the vessels that are currently in service and in many cases, they may be too large to safely navigate the harbor facilities in which they operate’ Catalina's small coves, docks and some mainland facilities simply cannot accommodate a larger or heavier craft than they currently do.”

**Response:** See response to comment 1704-5. In addition, CARB has not received any quantitative analysis suggesting that vessels custom built around new engines or repowered with new engines would present operational limitations as described in this comment.

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|---|---|
| Comment Letter<br>1801<br>11/3/2021 | Dana Ben Kaplan |

**1801-1:** The commenter states, “I urge you to vote NO on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1802<br>11/3/2021 | Randy Willer |

**1802-1:** The commenter states, “Please cast a no vote pertaining to the regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor craft.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1806<br>11/3/2021 | Michael Fowlkes, Inside Sportfishing |

**1806-1:** The commenter states, “The proposed technology has not been tested as safe for passenger harbor craft.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1809<br>11/3/2021 | Jeff Britton |

**1809-1:** The commenter states, “As a boat owner I urge CARB to vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1836<br>11/3/2021 | Brian Mueller |

**1836-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1839<br>11/3/2021 | Jeremiah Dietrick |

**1839-1:** The commenter states, “I urge CARB to vote NO on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1841<br>11/3/2021 | Jeremy Mercer |

**1841-1:** The commenter states, “I am strongly against the new proposed regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1844<br>11/3/2021 | Chung-Wei Chan |

**1844-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1871<br>11/3/2021 | Steve Broadley |

**1871-1:** The commenter states, “I urge CARB to vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1921<br>11/3/2021 | Jeff Brown |

**1921-1:** The commenter states, “Please vote no on the regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1936<br>11/3/2021 | Darryl Dietz |

**1936-1:** The commenter states, “CARB please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1947<br>11/3/2021 | Paul Morris |

**1947-1:** The commenter states, “There is no technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** The commenter seems to assert that technology is economically unfeasible and has not been tested as safe. Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>1965<br>11/3/2021 | Roy Schroer |

**1965-1:** The commenter states, “I will just fly to Mexico instead, where you know the old boats are likely to go and continue to operate. You won't be forcing retirement of the boats, just moving them south of the border, so no environmental gains will– be made - but you will be exporting the business of the boats, fish processing, hotel business, restaurants, etc. to Mexico if that is your objective.”

**Response:** Please refer to Master Response 2.

| | |
|---|---|
| Comment Letter<br>1972<br>11/3/2021 | Geoff Andrews |

**1972-1:** The commenter states, “I urge you to vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>1990<br>11/3/2021 | Steven Zoelle |

**1990-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2009<br>11/3/2021 | Moises Martinez |

**2009-1:** The commenter states, “I love going on charter boats. If you start banning them because of emissions, you will force a lot of us that own private boats to go out and fish a lot more. I own a old ’oat and i'm sure it waste more fuel and pollutes more than the charters boats.”

**Response:** Please refer to Master Response 4.

| | |
|---|---|
| Comment Letter<br>2010<br>11/3/2021 | Harold James |

**2010-1:** The commenter states, “I urge CARB to vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2019<br>11/3/2021 | Justin Hardin |

**2019-1:** The commenter states, “[V]ote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2020<br>11/3/2021 | James Gregson |

**2020-1:** The commenter states, “I am pleading CARB to vote NO on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2039<br>11/3/2021 | James Hickle |

**2039-1:** The commenter states, “There are several other ways for older boats to off set emissions. The airline industry and many other forms of transportation as well as large corporation utilize carbon off sets as part of the nuetral carbo footprint strategy. I encourage CARB resources board to offer or enable small businesses like sports fishing boat owner the same opportunities for offsets verses passing regulations that essentially will cost boat owners their business due to the extraordinary cost to retrofit with new engines.”

**Response:** This commenter is referencing strategies CARB has and continues to use to control greenhouse gas (GHG) emissions. The Proposed Amendments would achieve reductions in GHGs, criteria pollutants, such as NOx and PM2.5, and near-source toxics such as diesel PM, which present global, regional, and near-source impacts to receptors. Offsets work well for globally-mixed pollutants such as GHGs but are not effective in controlling regional or location-specific emission sources. The emission reductions of NOx and PM2.5 need to be achieved directly from harbor craft in order to meet localized risk reduction goals and regional public health goals. Therefore, there is no alternative to reducing emissions from other sources that would meet California’s overall air quality and public health goals.

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|---|---|
| Comment Letter<br>2042<br>11/3/2021 | Jay Krippes |

**2042-1:** The commenter states, “Vote NO on regulations that rely on technology that are economically unfeasible and have not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2045<br>11/3/2021 | Patricia Wisniewski |

**2045-1:** The commenter states, “Vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2050<br>11/3/2021 | Allan Cruz |

**2050-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2056<br>11/3/2021 | Charlie Jorgensen |

**2056-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2059<br>11/3/2021 | Kenneth Kundargi |

**2059-1:** The commenter states, “The technology doesn't exist yet to safely implement in a cost effective manner.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2073<br>11/3/2021 | Jonathan Dewhurst |

**2073-1:** The commenter states, “They will be underpowered, the emissions equipment will not fit or make the vessel unsafe or decrease the utility of the vessel for it's intended purpose.”

**Response:** Please refer to Master Response 1 and response to comment 696-1.

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|---|---|
| Comment Letter<br>2074<br>11/3/2021 | Scott Harris |

**2074-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2077<br>11/3/2021 | Danielle Fauth |

**2077-1:** The commenter states, “I urge you to vote no on regulations that rely on technology that is economically unfeasible and have not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2080<br>11/3/2021 | Mark Miller |

**2080-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2122<br>11/4/2021 | Dale Dargatz |

**2122-1:** The commenter states, “Also this engine process in the exhaust can & does catch fire from time to time, what are you going to do when a boat is 100 miles OFFSHORE catches fire???”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2124<br>11/4/2021 | Ken Murray |

**2124-1:** The commenter states, “I urge CARB to vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2133<br>11/4/2021 | Jerry Turgeon |

**2133-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2139<br>11/4/2021 | Scott Nulton |

**2139-1:** The commenter states, “It has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2141<br>11/4/2021 | Robin Krohn |

**2141-1:** The commenter states, “I vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2148<br>11/4/2021 | Paul Levendoski |

**2148-1:** The commenter states, “I urge CARB to vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2172<br>11/4/2021 | Luis Carlos Marinelarena |

**2172-1:** The commenter states, “CARB we urge you to vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2181<br>11/4/2021 | Jeff Endicott |

**2181-1:** The commenter states, “Please vote ‘No’ on regulations that rely on economically unfeasible technology and have not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2202<br>11/4/2021 | Carter Rosenbaum |

**2202-1:** The commenter asks, “Would you rather have every person who goes on sport fishing boats get a boat and pollute more or would your rather have all these people keep using these sportfishing boats which allows more people on the water for less pollution?”

**Response:** Please refer to Master Response 4.

| | |
|---|---|
| Comment Letter<br>2205<br>11/4/2021 | Greg Hamer |

**2205-1:** The commenter states, “There has to be some rational compromise rather than simply imposing technology on commercial vessels that is economically unfeasible and has not yet been fully tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2225<br>11/4/2021 | Fred Main |

**2225-1:** The commenter states, “Vessels that can be modified will incur a significant cost for retrofit and will be faced with the potential safety issues.”

**Response:** Please refer to Master Response 1.

**2225-2:** The commenter states that “we encourage your Administration to work with the sportfishing industry to develop air quality regulations that are economically feasible, take into account existing technology and not putting the safety of passengers and crew at risk.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2227<br>11/4/2021 | Leif Bjerke |

**2227-1:** The commenter states, “I strongly urge CARB to vote no on this issue because the proposed regulations rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2228<br>11/4/2021 | Sportfishing Assoc of California |

**2228-1:** The commenter states, “(CARB) has proposed cost prohibitive engine emission regulations that require technology that has not been developed or tested safe at sea.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2229<br>11/4/2021 | Kristofer Ekdahl |

**2229-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2239<br>11/4/2021 | David Lee |

**2239-1:** The commenter states, “Vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2245<br>11/4/2021 | Robert Noll |

**2245-1:** The commenter states, “I strongly urge you to vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2246<br>11/4/2021 | Daniel Lowe |

**2246-1:** The commenter states, “Vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2250<br>11/4/2021 | Dustin Hoiseth |

**2250-1:** The commenter states, “The modifications needed to comply with this regulation are often too large to fit in existing engine rooms. Even in the cases where the modifications fit, the California State University of Maritime Academy concluded that the modifications would significantly impact vessel stability. Boat owners have many safety concerns beyond stability issues. There has been little testing done at sea for engines with DPF’s. It is concerning that the U.S. Coast Guard has not been included in discussions regarding the safety of these regulations, considering they are responsible for regulating the safety of commercial passenger vessels.”

**Response:** Please refer to Master Response 1 and response to comment 696-1.

| | |
|---|---|
| Comment Letter<br>2253<br>11/4/2021 | Carrie Smedley |

**2253-1:** The commenter states, “As an avid fisherwoman, I am begging you to vote NO on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2256<br>11/4/2021 | Rachel Hollers |

**2256-1:** The commenter states, “Vote no on regulations that rely on technology that is economically unfeasible and has NOT BEEN TESTED AS SAVE on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2257<br>11/4/2021 | Chuck Ormson |

**2257-1:** The commenter states, “Vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2273<br>11/4/2021 | Todd Shelton |

**2273-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2274<br>11/4/2021 | Ignacio Rodriguez |

**2274-1:** The commenter states, “[V]ote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2276<br>11/4/2021 | Brian Ferguson |

**2276-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2277<br>11/4/2021 | Lori Donchak, PierPride Foundation |

**2277-1:** The commenter states that “Improved air quality is a desirable goal. However, technology does not exist for some vessels and will pose safety risks for others.”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2293<br>11/4/2021 | Rancy Shrier |

**2293-1:** The commenter states, “If you were to take the amount of increased pollution if the sport fleet was to be mothballed and 50% of the anglers that could no longer fish on a sport boats would get smaller gas powered skiffs and towing to the launch ramp, I'm sure that there would be an increase of pollution.”

**Response:** Please refer to Master Response 4.

| | |
|---|---|
| Comment Letter<br>2302<br>11/4/2021 | James Holloway |

**2302-1:** The commenter states, “As of now the proposed replacements are unsafe.…”

**Response:** Please refer to Master Response 1.

| | |
|---|---|
| Comment Letter<br>2315<br>11/4/2021 | Howard Reed |

**2315-1:** The commenter states, “[V]ote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2324<br>11/4/2021 | Cat Kelley |

**2324-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2334<br>11/4/2021 | Betty Schneider |

**2334-1:** The commenter states, “I urge CARB to vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2335<br>11/4/2021 | Leonard Voet |

**2335-1:** The commenter states, “If you kill off charter boats, it will lead to more people buying their own boats. More boats = more pollution.”

**Response:** Please refer to Master Response 4.

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| Comment Letter<br>2339<br>11/4/2021 | Kevin Johnson |

**2339-1:** The commenter states, “Imagine if we who fish on charter boats had to buy our own boats. There would be much more pollution.”

**Response:** Please refer to Master Response 4.

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| Comment Letter<br>2350<br>11/5/2021 | Lucinda Lilley |

**2350-1:** The commenter urges CARB to "vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts."

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2351<br>11/5/2021 | Don Stokes |

**2351-1:** The commenter states, “I humbly request for you to vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2358<br>11/5/2021 | Sharon Bernie-Cloward on behalf of John Laun and Sharon Cloward, San Diego Port Tenants Association |

**2358-1:** The commenter states, “CARB has proposed engine emission regulations that require technology that has not been developed or tested to be reliable and safe at sea. Similar technology used on trucks and farm equipment has been known to stall engines for hours at a time to clean emission control systems, and in worst case scenarios, catch fire. At sea, these scenarios could be life threatening.

“Vessels often enter and exit harbors that are difficult to navigate, especially during high winds and seas. If a vessel were to stall in a harbor or near shore, the threat of running aground or colliding with another vessel is a very real and an unacceptable possibility. Rather than hours, crews could have only minutes or seconds to regain control of their vessel. In San Diego, well known as a Navy and Coast Guard town, we have heavy traffic of naval war ships coming in and out of the harbor alongside commercial and leisure harbor craft. Therefore, it concerns us greatly that CARB did not initially consult the Coast Guard when drafting the regulations.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

**2358-2:** The commenter states, “Moreover, compliant vessels would have to be of metal construction and larger in size to accommodate TIER 4 engines, Diesel Particulate Filters and other exhaust after treatment systems. It is realistic to assume these larger vessels will necessitate harbors and marinas to resign marina layouts, resulting in decreased berthing available for rent or business operations. CARB did not consult with harbor masters and marina operators as part of any stakeholder outreach. Consequently, the impacts of the proposed regulations raise serious economic and safety issues.”

**Response:** See response to comment 1704-5.

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| Comment Letter<br>2359<br>11/5/2021 | John Gioia, Costa County Supervisor |

**2359-1:** The commenter states, “I’m asking you to strengthen the Commercial Harbor Craft rule in the following ways:

“1. Move forward with a strong rule now to advance zero-emission and clean up the dirtiest engines in other commercial harbor craft categories.

“2. Set all ferries, tugboats, dredges and barges on an electrification pathway right now and require full electrification by 2035.

“3. Direct staff to revisit the rule with the Board as the zero-emission boat market evolves to ensure the regulation achieves maximum emission reductions.

“4. Increase funding for zero-emission boat pilots, retrofits, and new vessels to spur innovation.”

**Response:** Please refer to Master Response 5.

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| Comment Letter<br>2372<br>11/5/2021 | Janet Longobucco |

**2372-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. Im asking you to strengthen the Commercial Harbor Craft rule:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

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| Comment Letter<br>2416<br>11/6/2021 | Christian Da Costa |

**2416-1:** The commenter states, “I urge you to VOTE NO on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2422<br>11/6/2021 | Gene Campbell |

**2422-1:** The commenter states, “This damaging over reach will over regulate the sport fishing industry and create unsafe and dangerous regulations witch will due extreme harm to the sporfishing and boating industry.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2435<br>11/6/2021 | Mary Moir |

**2435-1:** The commenter states, “[V]ote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2437<br>11/6/2021 | Alex Briffett |

**2437-1:** The commenter states, “The proposed passenger boat regulations that require new engines and technology that is not feasible from a safety, financial or operational standpoint.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2443<br>11/6/2021 | Lee Carlson |

**2443-1:** The commenter states, “CARB, please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2444<br>11/6/2021 | Steve Taniguchi |

**2444-1:** The commenter states that the Proposed Amendments run the risk of "potentially endangering passengers riding their vessels, if untested new regulatory requirements are imposed."

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2446<br>11/6/2021 | Ryan Ash |

**2446-1:** The commenter states, “’oats aren't ready for the larger than existing engines in the hulls, the energy grid is not ready to charge the giant batteries and can not keep up with air conditioners in our homes even. The batteries would compromise boats flotation and ability to maneuver which means the possibility of lives lost.”

**Response:** CARB staff calculated increased electricity consumption as a result of the Proposed Amendments, and provided this information to the California Energy Commission in support of their Integrated Energy Policy Report (IEPR) updates and additional analysis as required by Assembly Bill 2127 that was signed by Governor Brown in 2018. Relative to the capacity of the grid, and projections of marginal electricity that is anticipated to be required in the future for all mobile source and transportation electrification, the increased electric from the Proposed Amendments is trivial as discussed in Section C.3. of the Draft and Final EA. Please also refer to Master Response 1.

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|---|---|
| Comment Letter<br>2450<br>11/6/2021 | John Kozick |

**2450-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2451<br>11/6/2021 | Roger Bautista |

**2451-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2452<br>11/6/2021 | Bryan Dalton |

**2452-1:** The commenter states, “Vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2454<br>11/6/2021 | Scott Shier |

**2454-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2460<br>11/7/2021 | Elinor Buchen, City of Oakland |

**2460-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. I’m asking you to strengthen the Commercial Harbor Craft rule:

“1. Move forward with a strong rule now to advance zero-emissions and clean up the dirtiest engines in other commercial harbor craft categories.

“2. Set all ferries, tugboats, dredges and barges on an electrification pathway right now and require full electrification by 2035.

“3. Direct staff to revisit the rule with the Board as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“4. Increase funding for zero-emissions boat pilots, retrofits and new vessels to spur innovation.”

**Response:** Please refer to Master Response 5.

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|---|---|
| Comment Letter<br>2465<br>11/7/2021 | Linc Conard |

**2465-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. Im asking you to strengthen the Commercial Harbor Craft rule:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

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|---|---|
| Comment Letter<br>2471<br>11/7/2021 | Mike Hendersen |

**2471-1:** The commenter writes, “Please urge CARB to vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2472<br>11/7/2021 | Jason Zenor, MV Pride |

**2472-1:** The commenter states, “TIER 4 engines that do exist in other capacities are extremely dangerous. These engines produce exhaust gases in excess of 1500 degrees. The fire hazards are extremely high. We have seen the consequences of a fire on a small wooden boat with the recent conception tragedy. If TIER 4 engines are implemented risk of tragedies like the Conception will increase dramatically. In addition the menus one control technology is very unreliable’ This isn't acceptable 100 miles out at sea. There are times where my passengers and crews lives are relying on our propulsion to keep us safe. If CARB does implement this rules the board members will have to live with themselves if a tragedy is related to the use of this TIER 4 technology.”

**Response:** Regarding safety and feasibility of the technology required for compliance, please refer to Master Response 1 and response to comment 696-1. The commenter also refers to “risk of tragedies like the Conception”, which staff understands is in reference to a vessel operating in California in September 2019 that was not equipped with Tier 4 engines. The final National Traffic Safety Board (NTSB) report on this issue stated the following: “Although a definitive ignition source cannot be determined, the most likely ignition sources include the electrical distribution system of the vessel, unattended batteries being charged, improperly discarded smoking materials, or another undetermined ignition source.”

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| Comment Letter<br>2474<br>11/7/2021 | Christine Dabbaghian |

**2474-1:** The commenter states, “[V]ote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2478<br>11/8/2021 | Fred Christensen |

**2478-1:** The commenter states, “Please VOTE NO on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2482<br>11/8/2021 | Tony Darling |

**2482-1:** The commenter states, “[V]ote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2483<br>11/8/2021 | Jeff Yuhl |

**2483-1:** The commenter states, “I wish to vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2485<br>11/8/2021 | Susan Hayes |

**2485-1:** The commenter states, “Vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2488<br>11/8/2021 | Casey Capparelli |

**2488-1:** The commenter states, “Please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2496<br>11/8/2021 | Tim Hayes |

**2496-1:** The commenter states, “CARB please vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2502<br>11/8/2021 | Coleman Cosby |

**2502-1:** The commenter states, “Vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2506<br>11/8/2021 | Joseph Gallia |

**2506-1:** The commenter states, “Being out in the ocean, 50 miles from the shore, we need to have proven, reliable technology that works with ocean-running vessels. This proposed regulation calls for dangerous experimentation that is unfeasible for small business owners like me and puts peoples lives at risk.”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2539<br>11/9/2021 | Nick Musgrave |

**2539-1:** The commenter states, “The conducted engine changes will also impact the boat's stability.…”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2548<br>11/9/2021 | Mike Doherty |

**2548-1:** The commenter states that “tier 4 engines produce excessive amounts of heat and can not be in confined spaces there is the likelihood of a fire at sea this happens to trucks quite often tier 4 engines are meant to run at high load factors to make the emissions and aftertreatment equipment work properly fishing vessels run at low speed and load factors when fishing or trolling this will lead to 2 things fire at sea or engines going into a limp mode when the emission control equipment malfunctions lets think about this if bad weather comes ’p and you're coming home and the engines go to limp mode then you have a boat load of people in danger.”

**Response:** Please refer to Master Response 1 and response to comment 696-2. Engine compartments on vessels, often referred to as machinery spaces by US Coast Guard standards, are often highly confined and not open to the outside air. There are various amounts of space for personnel to walk or enter these compartments. These confined engine rooms are designed to house diesel engines that generate heat and exhaust manifolds that carry hot exhaust gases to the exhaust stacks. Within an engine room, equipment generally needs to meet surface temperature requirements. Tier 4 engines have been certified in the United States for marine use since 2014 and have met applicable safety requirements to operate within these compartments.

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| Comment Letter<br>2550<br>11/9/2021 | Grant Hill |

**2550-1:** The commenter states, “And get the Coast Guard involve, as they ultimately would be the enforcement are of these new regulations.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2565<br>11/10/2021 | Michael Thompson, Newport Landing Sport Fishing |

**2565-1:** The commenter recommends that CARB “shelve this proposal until there is some progress in a proven technology that will move a vessel through the water efficiently and safely.”

**Response:** Please refer to Master Response 1.

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| Comment Letter 2567 11/10/2021 | Stephen Proud on behalf of Roger Carlson, City of Redondo Beach Harbor Commission |

**2567-1:** The commenter states that “the Cal Maritime Academy confirmed in a report to CARB that the size and weight of such DPFs and other engine retrofits would render CPFV s and other small vessels unstable, and also pose significant safety concerns for passengers and crew. As we understand these concerns, existing boat hulls for sportfishing, charters and other smaller vessels were not originally designed to accommodate the additional size and weight of expected engine retrofits and DPFs. In addition, operational issues with the DPFs could result in unexpected equipment failure when the boats are out at sea with passengers. While such equipment failure is manageable on land, such circumstances at sea may pose life threatening and other safety concerns for passengers and crews that could be adrift for hours.”

**Response:** Please refer to Master Response 1 and response to comment 696-2.

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| Comment Letter<br>2574<br>11/10/2021 | John McManus, Golden State Salmon Association |

**2574-1:** The commenter states, “These requirements would require the installation of Tier 4 marine diesel engines and diesel particulate filters within CPFV that have been acknowledged by agency staff to be either impossible to acquire because they are not available on the open market, infeasible to install because operators cannot conform to US Coast Guard vessel safety requirements, or unsafe to operate because they run at operating temperatures that preclude their installation in wood and fiberglass hulls.”

**Response:** Please refer to Master Response 1.

**2574-2:** The commenter states, “The Legislature has directed your agency to take prudent action to reduce airborne toxins with the further direction that implementation programs be ‘practicable’ (HSC §39650(k)) as well as ‘cost-effective, and technologically feasible’ (HSC §43013(a)). We appreciate CARB’s efforts to implement policies to reduce emissions that impact climate change and reduce criteria pollutants. However, the proposed rule does not conform to the Legislature’s statutory guidance for regulatory practicability.”

**Response:** CARB disagrees with the comment. Because the comment raises a general assertion without providing specific details regarding which specific provision of the proposed amendments is problematic, CARB provides the following response.

As a threshold matter, the comment selectively cites to specific portions of statutes authorizing CARB to regulate toxic air contaminants and emissions from off-road engines and equipment, respectively, without also recognizing that those statutory programs primarily direct CARB to reduce both toxic air contaminants and emissions from off-road engines and equipment to the maximum extent possible, while also recognizing the costs associated with complying with emissions standards and other emissions related requirements. In other words, the overriding objective of CARB’s air toxic contaminant and off-road emissions programs is to eliminate and reduce the emission of air pollutants that threaten the health and welfare of Californians.

California's Air Toxics Program, set forth in Health and Safety Code sections 39650 through 39675, mandates the identification and control of air toxics in California. The Legislature expressly found that emissions of toxic air contaminants into the ambient air endanger the public health, welfare, and safety (H & S Code section 3960(a)) and declared that the public policy of California is to control emissions of toxic air contaminants “to levels which prevent harm to the public health.” (H & S Code section 3960(c)).These two provisions provide context and help to confirm that H & S Code section 39650(k)’s use of the term “practicable control” refers to measures needed to reduce emissions of toxic air contaminants, such as the “development and use of advanced control techniques and alternative processes and materials.” (H & S Code section 39650(k)).

In 1998, CARB identified diesel particulate matter (PM) as a toxic air contaminant with no specified threshold exposure level below which no adverse health impacts would be expected, pursuant to Health and Safety Code (HSC) sections 39650 through 39675. A needs assessment for diesel PM was conducted between 1998 and 2000 pursuant to H & S Code sections 39658, 39665, and 39666. This resulted in CARB staff developing, and the Board approving, the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (Diesel RRP) in 2000. The Diesel RRP presented information on the available options for reducing diesel PM and recommended regulations to achieve these reductions. The Diesel RRP's scope was broad, addressing all categories of mobile and stationary diesel engines. It included control measures for off-road diesel PM sources, such as those covered by the Proposed Amendments.

H & S Code sections 43013 and 43018 broadly authorize and require CARB to achieve the maximum feasible and cost-effective emission reductions from new and in-use non-vehicular and mobile sources, including, to the extent permitted by federal law, the adoption of regulations for marine vessels, (H & S Code section 43013(b)). H & S Code section 43013(h) directs CARB to expeditiously reduce NOx emissions from diesel marine vessels and other vehicular and mobile sources "which significantly contribute to air pollution problems." H & S Code section 43108(a) directs CARB to achieve "the maximum degree of emission reduction possible" from both vehicular and other mobile sources. These statutory sections provide context and help to confirm that H & S Code section 43103(a)'s statement that require the emissions standards and in-use performance standards proposed by CARB to control emissions from off-road sources, including marine vessels to be necessary, cost-effective, and technologically feasible. The Staff Report and the other materials associated with this rulemaking action set forth the information to support the Board's determination that the emission requirements established in proposed amendments are in fact necessary, cost-effective, and technologically feasible.

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| Comment Letter<br>2583<br>11/11/2021 | Rich Pope |

**2583-1:** The commenter states, “The regulations as drafted require technology that has not been developed or proven safe at sea.…”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2584<br>11/11/2021 | Fred Tempas |

**2584-1:** The commenter states, “The regulations as drafted require technology that has not been developed or proven safe at sea.…”

**Response:** Please refer to Master Response 1.

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|---|---|
| Comment Letter<br>2585<br>11/11/2021 | Ross Melvin |

**2585-1:** The commenter states, “Regulations as drafted require technology that has not been developed or proven safe at sea.…”

**Response:** Please refer to Master Response 1.

This comment letter included an attachment with letters similar to comment letter 2585 but from different commenters. These commenters are referred to response to comment 2585-1.

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| Comment Letter<br>2588<br>11/11/2021 | Markus Medak, New Lo-An Sportfishing Inc |

**2588-1:** The commenter states, “When making the calculations for their inventory and health analysis, Staff once again used incorrect assumptions. According to Wei Liu of the ARB, they used AIS (Automatic Identification System) data to calculate what portion of vessel activity was occurring within 24 nm of the California coast. However, AIS is not required on vessels of less than 65 feet unless they are operating in a Vessel Traffic Service (VTS). A majority of the CPFV fleet is less than 65 feet, and the 2 VTS areas in California are directly offshore of the Golden Gate and LA/Long beach harbors, thus AIS is not required for the majority of the CPFV fleet. The CPFV fleets of San Francisco Bay and LA/Long Beach harbors tend to spend more time fishing inshore than significant portions of the CPFV fleet. Because of this, any use of AIS data to show area of operation will bias the data towards a more inshore area of operation than actually occurs as a whole. A more accurate method of determining area of operations of the CPFV fleet would be to use log book data from the California Department of Fish and Wildlife (CDFW). All CPFVs must submit daily logs of times and location they spent fishing. Why was this method not used?”

**Response:** The CDFW logbooks referenced by this commenter do not provide enough data for CARB to calculate operating time within 24 nm across the fleet. This commenter attached the logbooks for their vessel, but without firsthand knowledge, and a clear documentation of daily engine operating records of how the vessel is typically operated on different types of trips, calculating runtime for each engine would not be possible. The commenter and other vessel operators have not provided daily trip-level information that is sufficient for CARB to calculate the geographic distribution of emissions from the fleet using CDFW logbook data.

Please also refer to Master Response 3.

**2588-2:** The commenter states, “CARB staff also used a second method in determining area of operation of CPFVs. This method consisted of a survey that was required by operators of commercial vessels in California. Unfortunately, the public outreach for this effort was not very robust and this resulted in an incomplete data set. I remember filling my report out, but it was not clear at all that ONLY hours and fuel burned in California regulated waters were to be reported. Since there had been new requirements for hour meters that could not be shut off, I, along with many of my colleagues (incorrectly) assumed that we were being asked for total hours of operation annually. Staff acknowledges this issue in Appendix H, where they nevertheless decide to assume that ALL hours reported are from regulated waters. By not correcting this issue, the data are significantly biased towards showing higher emissions in regulated waters than there actually are. Once again, CDFW logs are legal documents that show positions and time spent operating in certain geographical areas. By not using these data, CARB staff are not using the best available science in the assumptions for their analysis.”

**Response:** The methodology in Appendix H accounts for the potential of errors in operator-reported data by considering reported cumulative non-resettable hour meter data, reported annual activity (hours and fuel), and measured Automatic Information System (AIS) vessel data to most accurately capture the fraction of emissions captured within Regulated California Waters (RCW, 24 nm).

Please also refer to Master Response 3.

**2588-3:** The commenter states, "When calculating total emissions, Staff used the baseline number of 274 vessels in the CPFV fleet with diesel engines. However, the Sportfishing Association of California and Golden Gate Fisherman's Association conducted joint surveys of ports and were only able to account for 174 inspected CPFVs. It is likely that the remaining vessels are 6 pack charter boats, but the calculations of fuel burn should be different for these vessels as they tend to be smaller and operate much less. Once again, CDFW log book data should be used to quantify where and when these vessels operated. Since CDFW logbook data was not used in order to determine operating areas for CPFVs, I downloaded the logbook data from the CDFW for my vessel (Appendix 2). The logbook data is considered proprietary, so I am not able to access any of the information from the rest of the fleet, but the data is available to other government agencies."

**Response:** CARB staff directly used the vessel population of inspected commercial passenger fishing vessels (CPFVs) provided by the Sportfishing Association of California (SAC) and is documented by this comment. Because SAC did not supply the population of diesel-powered uninspected CPFVs, or '6-pack' CPFVs, CARB staff separately worked with CDFW and performed additional analysis to determine the fraction of 6-pack vessels that would be subject to the Proposed Amendments (see Appendix H of the Staff Report, reference 13, for more details).

Please also refer to Master Response 3.

**2588-4:** The commenter states, "When building mathematical models, such as those for calculating economic impacts of various emissions scenarios, it is critical to have accurate baseline data of the actual operating parameters of the vessels involved rather than using incorrect assumptions. 'The appropriate use of models and their output can contribute to effective policy making, but misuse of models or misrepresentation of their output can mislead decision-making[1]. Staff did not use the correct operating parameters for the San Diego fleet when building their model showing CPFV emissions statewide. San Diego accounts for a very significant portion (perhaps even the majority) of CPFV operations in California. Without logbook data for the entire fleet this number is impossible to quantify. As a government agency, CARB has access to this data, but elected not to use it."

[1] Richardson, B.C. 1979. Limitations on the use of mathematical models in transportation policy analysis. University Microfilms International, Ann Arbor, Mich.

**Response:** CARB staff analysis included the best available emissions, cost, and operational data at the Statewide level. As part of the cost and economic analyses as presented in the ISOR and Appendix C-1, macroeconomic modeling was presented at the State level to present economy-wide impacts of the Proposed Amendments. The CPFV fleet in San Diego is approximately one-quarter (92 out of 352 vessels Statewide), for which the emissions (baseline and control) and avoided adverse health outcomes were calculated as presented in Appendix H and Appendix G, respectively. The agency's response to the commenter's concerns regarding CDFW logbook data is addressed in Agency Response to 2588-2.

Please also refer to Master Response 3.

**2588-5:** The commenter states, "In their cost/benefit analysis, CARB staff relied on faulty data from AIS and the CHC reporting form. Because they did not use the most robust data set available, the conclusions reached by staff are flawed. The CPFV fleet, as a whole, spends less time operating and emitting in regulated waters than is assumed in the analysis. Since not as many emissions occur in the regulated waters as assumed, the health cost and associated monetary savings to the California population from the CPFV fleet will be significantly lower than concluded in the analysis. Because unrealistic figures were used in the economic analysis of the CPFV industry, the economic costs to the industry, associated businesses and waterfront community will be much higher than the cost/benefit analysis shows."

**Response:** CARB staff's analysis reflects use of the best available emissions and activity data. Staff's provided responses on the accuracy of CDFW logbook data in the response to comment 2588-2 and provide references to the cost/benefit methodology in the response to comment 2588-6. Statewide, 83 percent of CPFV operation is within Regulated California Waters. In some areas of the State, CPFVs may operate less within Regulated California Waters (possibly in the San Diego region due to the proximity to international waters south of the California-Mexico border). For every region or local that has operation below the Statewide average, there is another region or local that has a greater amount of operation than the Statewide average.

Please also refer to Master Response 3.

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| Comment Letter<br>2594<br>11/11/2021 | Johnathon Smith |

**2594-1:** The commenter states, “The proposed regulations require me to install marine engines that have not been designed or tested yet, because the application is not practical or safe. A tier 3 engine or tier 4 engine with the new exhaust system with DEF would run so hot that there would almost certainly be a fire in the engine room. Our fiberglass boats are made with polyester resin, which is flammable. I’m not a scientist but I’m sure that my boat would be at risk of fire at sea with passengers onboard. That’s assuming the coast guard would approve the changes.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

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| Comment Letter<br>2599<br>11/11/2021 | Ferhat Acuner |

**2599-1:** The commenter states, “We appreciate the work that CARB staff have done on the proposal. However, the draft rule as written is short-sighted. The rule does not reduce greenhouse gas emissions and risks creating a stranded asset scenario for harbour craft owners who may pay to retrofit to Tier 3 and 4 engines only to be forced to make a full zero-emission transition in quickly proceeding years later. For the marine sector, a strong but achievable standard would be that all harbour craft operating in the state must be zero emission.”

**Response:** See response to comment 4-1 for a discussion related to reductions in GHG emissions associated with the Proposed Amendments. See Master Response 5 for a discussion on more stringent regulations, including a zero-emission requirement.

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| Comment Letter 2602 11/12/2021 | Timothy French, Truck & Engine Manufacturers Association |

**2602-1:** The commenter states that CARB needs to clarify "the critical role that the United States Coast Guard (USCG) will play in implementing the proposed regulatory amendments."

**Response:** See Master Response 1.

**2602-2:** The commenter states, "New Tier 3-plus and Tier 4-plus marine engines and aftertreatment systems are not available and likely will remain unavailable for installation in existing CHC vessels. Similarly, as noted, the necessary supply of Level 3 DPFs does not exist. Even if products were available, it is unclear whether the USCG would approve the modification of CHC vessels with such significant retrofits, given the likely impacts on vessel weight, displacement, balance, safety, hull integrity and sea-worthiness."

**Response:** As of March 2022, there are no Level 3 DPFs verified by CARB for marine use. CARB has received multiple applications and is working with the applicants through the Verification Procedure as set forth in 13 CCR 2700 et seq. As of March 2022, one application for verification has been approved, and the system is currently in operation and undergoing a durability demonstration that is required before full verification. If no Level 3 systems become verified by the first compliance date of December 31, 2024, that would require use of DPFs, compliance extension E2 as set forth by the Proposed Amendments in subsection (e)(12)(E)(2) of the CHC Regulation would apply to allow the owner or operator of the vessel more time on their compliance date. Please also refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

**2602-3:** The commenter states, "CARB's underlying inventory analysis appears to use deterioration factors associated with older outdated marine engine technologies. In that regard, it is the case that $NO_x$ emissions tend to decrease as current marine engines age, not increase. In addition, it also appears that CARB's analysis fails to account for the reduced emissions rates that result after engine rebuilds."

**Response:** CARB disagrees with the statement that NOx emissions decrease as marine engines age and no data has been provided to CARB demonstrating that emission control systems for NOx on harbor craft improve their effectiveness with time. Please also refer to Master Response 3.

**2602-4:** The commenter states, "With respect to CARB's cost-benefit calculations, it appears that CARB is improperly applying a twenty-times (20x) multiplier to the estimated reductions of $PM_{2.5}$ (See SRIA, p.163.) That 20x multiplier, however, was developed for assessing how to allocate Carl Moyer incentive funds, not for assessing the monetized health benefits of a proposed CARB regulation as a component of an

actual regulatory cost-benefit analysis. Thus, through the improper application of an arbitrary 20x multiplier to the estimated reductions of $PM_{2.5}$, CARB has vastly and unreasonably overstated the putative benefits, and has similarly vastly understated the costs of the proposed CHC regulations."

**Response:** The commenter is correct that the 20-times multiplier for PM emissions is part of the cost per weighted ton formula used by the Carl Moyer incentive program. Staff calculated an average cost per ton using this methodology to compare the relative cost of the Proposed Amendments to those that are paid through this particular air quality incentive program. Therefore, use of this cost per weighted ton metric is not arbitrary and does not result in underestimation of cost or overestimating of emission benefits from the Proposed Amendments.

When calculating overall costs and benefits of the Proposed Amendments, CARB staff directly attributed the costs to industry versus the monetized benefits of improved air quality as described by the methodology in Appendix G to the Staff Report. CARB staff calculate costs of $1.98 billion versus valuated benefits of $5.25 billion. Please also refer to Master Response 3.

**2602-5:** The commenter states: "3. EMA's Potential Alternative Proposal

- "European Stage 5 marine engine requirements, which took effect in 2020, include DPF-forcing particle number (PN) standards. Those Stage 5 marine engines could be deployed in the U.S market to help achieve a portion of CARB's CHC-related objectives. However, there are several issues that would need to be addressed, including how to coordinate U.S. EPA certification of EU Stage 5 engines.
- "Instead of adopting unique standards for California-deployed CHC marine engines that OEMs will not be able to build given the low sales volume of CHC marine engines in California, CARB should encourage the use of Tier 4 engines, and should work with EPA to streamline the certification of EU Stage 5 marine engine configurations for use in the U.S. by treating those engines, in effect, as non-credit-generating engines with Family Emissions Limits (FELs) below the Tier 4 standard. The streamlined EPA certification process would need to apply a PM certification metric (assessed in gravametric terms of g/bhp-hr, and not in terms of PN) consistent with US regulations. The streamlined EPA certification also would need to cover deterioration factor (DF) issues as well. (Note: there is a 1.5 MW power limit for the EU Stage 5 standards.) Importantly, this recommended approach would utilize the certification procedures and requirements under the existing Tier 4 regulation, and so would obviate the need for unique CARB standards and retrofit requirements. CARB's incentive programs could apply to engines with EU and US certifications below the Tier 4 FELs.
- "EPA certification requires some form of marine engine durability demonstration. Typically, a DF is used, which requires thousands of durability test hours in an engine laboratory.

- “Under various test engine exemptions, some marine engine manufacturers have accrued significant in-use durability hours from engines installed in vessels. Perhaps those sources of durability data (or assigned DFs) could be used in the US EPA streamlined certification of Stage 5 engines under the current Tier 4 certification protocols.
- “US EPA and CARB also should consider promoting the availability of remanufacturing kits for marine engines as additional means to lower emissions from in-use vessels. Further, ARB could work with EPA to upgrade the existing US EPA marine engine remanufacturing requirements to include requirements to meet Tier 3 or Tier 4 emission levels. While that may not be a near-term priority for EPA, it is an issue that warrants additional consideration.
- “As noted, CARB will need to identify and implement the necessary incentive programs to cover the significant costs of what could amount to a CHC vessel-replacement program, or to subsidize the installation of Tier 4 or EU Stage 5 engine configurations (certified by US EPA to emission levels below Tier 4 standards) in existing vessels where it is practical. Without those necessary incentive programs and funds, this rulemaking will not be viable.”

**Response:** The commenter has highlighted some differences between the United States and European requirements that apply to new marine engines. CARB staff has, and continues to meet with U.S. EPA and individual engine manufacturers regarding engine platforms certified to either market, and lowest cost pathways to certify engines meeting the performance standards in the Proposed Amendments. Whether U.S. EPA grants a particular engine manufacturer a certificate of conformity to sell and operate in the United States is beyond the scope of this rulemaking and is outside of the purview of CARB. CARB staff recognizes that engines certified to the Stage V standards that apply to inland waterway engines are required to meet a particulate standard that would likely meet the numerical performance standards of the Proposed Amendments. However, CARB staff also highlights that engine certification does include evaluation of many other parameters, including the deterioration factor (DF) as mentioned in the comment, and a careful review of other engine control parameters such as Auxiliary Emission Control Devices (AECDs). CARB staff is committed to continue to work with U.S. EPA, engine manufacturers, and the Engine Manufacturers Association to perform technical analyses and other supporting work to facilitate and maximize the opportunities for the cleanest combustion vessels to operate in California.

For a discussion of funding plans for clean transportation incentives, refer to Master Response 5. For a discussion of feasibility associated with the performance standards included in the Proposed Amendments, refer to Master Response 1.

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| Comment Letter<br>2603<br>11/12/2021 | Daniel Hubbell, Ocean Conservancy |

**2603-1:** The commenter states, “I appreciate that this rule includes a first-in-the-nation requirement for almost 200 vessels to zero-emissions vessels by 2030. While this is a key step, CARB should expand the scope of their considerations to include other harbor craft segments such as ferries, tugboats, dredges, and barges. Giving these segments a zero-emissions target by 2035 would provide a clear regulatory trajectory for owners. Taking this step, and ultimately taking similar steps for all components of the maritime sector as this becomes technologically feasible, is essential to the ultimate decarbonization of the maritime sector. It is also essential that CARB provides the necessary avenues to funding or grants for all vessel types to meet compliance.”

“Creating a market for zero-emissions harbor craft will build a strong market for next generation vessels here in the United States, creating new jobs while reducing our impact on the climate and air quality. Rather than prolonging the use of dirty diesel engines, California and other states must chart a rapid course away from fossil fuels altogether. Properly supported by CARB this transition can be done smoothly and quickly. There are currently over 300 zero-emission ships powered by batteries in operation in the world, with another 194 on order. The cost of inaction far outweighs the price of implementation for this rule, which could save billions of dollars in averted negative health outcomes alone.”

“Climate change and its ocean impacts are here now, and promise to get worse if we do not act. I urge CARB to take action now to tackle this global threat.”

**Response:** Whereas there may be over 300 zero-emission capable vessels elsewhere in the world, they are largely either operating in less rigorous duty cycle operations than the California fleet, or they spend a lesser or small fraction of their overall operating profile in a zero-emission mode. There are some larger vessels, such as roll-on roll-off car-carrying ferries that operate in other jurisdictions that have sufficient space and vessel tonnage to accommodate large batteries. However, in California, the majority of the small number of vehicle-carrying ferries are already subject to zero-emission requirements, because they operate over a short run of 3 nautical miles or less for a single trip. Notwithstanding these limitations, the Proposed Amendments are still estimated to result in the deployment of over 100 zero-emission capable vessels within the State. Please also refer to Master Response 5.

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| Comment Letter<br>2606<br>11/12/2021 | Lara Larramendi, Los Angeles County Business Federation |

**2606-1:** The commenter states, “The proposed rule specifies technology that has not yet been manufactured or tested safe for these small passenger vessels.”

**Response:** Please refer to Master Response 1.

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| Comment Letter 2607<br>11/12/2021 | Dike Anyiwo, San Diego Regional Chamber of Commerce |

**2607-1:** The commenter states that "the California Air Resources Board (CARB) has proposed costly engine emission regulations that require technology that has not been developed or tested safe on passenger harbor crafts. Similar technology used on trucks and farm equipment has been known to stall engines for hours at a time to clean emission control systems, and in worst case scenarios, catch fire. On land, a stalled engine or fire is a serious economic disruption; at sea, it is life threatening to both passengers and crew."

**Response:** Please refer to Master Response 1 and response to comment 696-2.

**2607-2**: "The commenter states "We share your desire to reduce engine emissions, as do the boat owners that have been repowering and upgrading their engines for years. The Administration should consider amending the draft regulations to incentivize passenger sportfishing and whale watching boat owners to continue to upgrade their vessels to lower emission engines, using available technology that is feasible and does not create safety concerns. This is the reasonable approach CARB applied to commercial fishing vessels, vessels with engines that are technically identical to the sportfishing boats."

**Response**: For a discussion of how CARB selected alternatives to the Proposed Amendments, refer to Master Response 5. Please refer to Master Response 1 for a discussion of safety.

**2607-3**: The commenter attaches a letter from Jerry Sanders of the San Diego Regional Chamber of Commerce that states "the California Air Resources Board (CARB) has proposed costly engine emission regulations that require technology that has not been developed or tested safe on passenger harbor crafts. Similar technology used on trucks and farm equipment has been known to stall engines for hours at a time to clean emission control systems, and in worst case scenarios, catch fire. On land, a stalled engine or fire is a serious economic disruption; at sea, it is life threatening to both passengers and crew."

**Response:** Please refer to Master Response 1 and response to comment 696-2.

**2607-4**: The commenter attaches a letter from Jerry Sanders of the San Diego Regional Chamber of Commerce that states "We share your desire to reduce engine emissions, as do the boat owners that have been repowering and upgrading their engines for years. The Administration should consider amending the draft regulations to incentivize passenger sportfishing and whale watching boat owners to continue to upgrade their vessels to lower emission engines, using available technology that is feasible and does not create safety concerns. This is the reasonable approach CARB applied to

commercial fishing vessels, vessels with engines that are technically identical to the sportfishing boats."

**Response**: For a discussion of how CARB selected alternatives to the Proposed Amendments, refer to Master Response 5. Please refer to Master Response 1 for a discussion of safety.

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| Comment Letter<br>2608<br>11/12/2021 | Sportfishing Association of California |

**2608-1:** The commenter states that "Californians [are] concerned about engine emission regulations that are economically and structurally infeasible, and unsafe."

**Response:** Please refer to Master Response 1.

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| Comment Letter 2610 11/12/2021 | William Barrett, American Lung Association in California |

**2610-1:** The commenter states:

"Strengthening the Proposal to Improve Health

"We believe that the proposal is a critical step toward healthier air, reduced cancer risk and a range of health improvements in communities most disproportionately burdened by toxic CHC emissions. The proposal could be improved to accelerate the health benefits of greater deployment of zero-emission technologies, reduce policy delays following technology advancement and limit compliance flexibilities that extend the life of high-emitting technologies:

- "CARB should expand requirements for zero-emission technologies beyond the limited range of vessels included in the proposed amendments to accelerate more zero emission technologies as rapidly across the CHC fleet and in line with Governor Newsom's Executive Order N-79-20 which set a state goal to "transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible."
- "CARB should ensure a responsive technology review is in place to further amend the program to accelerate deployment as new zero-emission and other advanced engine technologies come online. This commitment to generating additional emissions reductions should be included as a unique measure in the 2022 State Implementation Plan.
- "CARB should significantly limit compliance extensions to ensure relief from pollution impacts occur in the near term. As proposed, most CHC may be granted compliance extensions as far out as 2034, with certain vessels (e.g., ferries, charter fishing boats, and excursion vessels) eligible to wait even longer to clean up."

**Response:** As discussed on page D-8 of the Draft EA, two of the nine objectives of the Proposed Amendments are to advance zero-emission and clean combustion marine technologies in California, which would create additional cleaner marine engines for meeting these standards in other jurisdictions worldwide; and further the goals of Executive Order N-79-20 by driving further implementation of ZEAT in California's off-road sector. As discussed on pages D-14 and D-16 of the Draft EA, it is possible that compliance responses may contribute at some level to demand for fuel cells as more sectors respond to Executive Order N-79-20, which broadly directs the state's on- and off-road vehicle fleets to transition to zero-emission technology by certain dates.

In regards to responsive technology review conducted by CARB, please refer to Master Response 5. The results of technology and implementation review proposed to the Board for incorporation into the resolution would be considered by future regulatory and planning efforts the agency undertakes through the State Implementation Plan process.

In regard to the commenter's request that CARB significantly limit compliance extensions, CARB Board members expressed during the hearing on November 19, 2021, that staff should consider options to provide vessel owners and operators, especially those owners or operators owning just one or two vessels, additional flexibility in the provisions that establish compliance extensions. Because 368 vessels are anticipated to be taken out of service and replaced, it is necessary to retain up to 6-8 years of extensions for the majority of the vessel categories, especially those that have early compliance dates. CARB staff will review these applications carefully to ensure only those vessels that cannot be modified will receive extensions; vessels that have feasibility to upgrade their engines and reduce their emissions would be required to do so by applicable compliance dates.

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| Comment Letter<br>2613<br>11/12/2021 | Lisa Bartlett, Orange County Board of Supervisors |

**2613-1:** The commenter states, “The retrofit of current sportfishing vessels to Tier 3 or Tier 4 engines and the necessary diesel particulate filters will take up additional space in the vessel, weigh more than the engines they are replacing, likely require framework modifications, and create potential vessel instability. Most concerning of all, is the comments received regarding the potential adverse impact this rule may have on the safety and stability of vessels.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2615<br>11/12/2021 | Regina Hsu, Earthjustice |

**2615-1:** The commenter states, “While the proposed amendments will bring significant emissions reductions, we recommend that CARB include zero-emission targets for additional categories of harbor craft. Zero-emission harbor craft are already being deployed in California, and CARB has an opportunity to further reduce emissions from harbor craft by setting more zero-emission targets in this rule. At a minimum, we request that CARB conduct an interim evaluation of the Harbor Craft Regulation before 2024 to evaluate progress and the state of technology to determine whether additional amendments are feasible.”

**Response:** Please refer to Master Response 5.

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| Comment Letter<br>2620<br>11/12/2021 | Heather Pennington |

**2620-1:** The commenter states, “I am writing to ask that you take action to transition commercial harbor craft to 100% clean fleets. The climate emergency demands nothing less. In accordance with requests from the Coalition for Clean Air on Commercial Harbor Craft rules, please:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

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| Comment Letter 2621<br>11/12/2021 | Rex Richardson, Vice Mayor of the City of Long Beach |

**2621-1:** The commenter states, “I’m asking you to adopt a strong rule for Commercial Harbor Craft that:

“1. Moves forward with a rule to advance zero-emission technology and cleans up the dirtiest engines in other commercial harbor craft categories.

“2. Sets all ferries, tugboats, dredges, and barges on an electrification pathway right now and require full electrification by 2035.

“3. Directs staff to revisit the rule with the Board as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions.

“4. Increases funding for zero-emissions boat pilots, retrofits, and new vessels to spur innovation.

“5. Provides the appropriate funding for the implementation of best available technology to the regulated entities.”

**Response:** Please refer to Master Response 5.

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| Comment Letter<br>2622<br>11/12/2021 | Gary Barsley |

**2622-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. I'm asking you to strengthen the Commercial Harbor Craft rule:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

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| Comment Letter<br>2626<br>11/12/2021 | Victoria Debeau |

**2626-1:** The commenter states, “With the climate crisis we are facing, we need bold and immediate climate leadership. Which is why I am asking you to strengthen the Commercial Harbor Craft rule:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emission boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

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| Comment Letter<br>2628<br>11/12/2021 | Ernest Prieto |

**2628-1:** The commenter states that “requiring commercial passenger fishing vessels to move to Tier 4 engines are not economically, technologically, or financially feasible. With this new Bill you are trying to put into place, the regulations as drafted require technology that has not been developed or proven safe at sea….”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2629<br>11/12/2021 | Samantha Omana on behalf of Senator Monique Limon, Nineteenth State District |

**2629-1:** The commenter states that “there are a host of safety concerns associated with exhaust modifications and equipment that have not been determined safe for marine passenger vessels.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2630<br>11/12/2021 | David Stump |

**2630-1:** The commenter states, “Please take immediate action on the following items by strengthening the Commercial Craft rule:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

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| Comment Letter<br>2793<br>11/13/2021 | Robert Jorden |

**2793-1:** The commenter states, “You should also take into consideration that the required modifications are not physically possible in many situations and create possible hazards to both crew and passengers due to extreme heat and possible fire issues in other cases.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2827<br>11/13/2021 | Tory Brotherton |

**2827-1:** The commenter states, “The requirements you want to put in place are not safe for marine applications yet.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2854<br>11/13/2021 | Lawrence Nye |

**2854-1:** The commenter states, “The new rules require untested equipment in the marine environment which could lead to tragic results of human life and property.

This technology is not approved by the United States Coast Guard which has jurisdiction in this matter.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>2877<br>11/13/2021 | Steven Fukuto |

**2877-1:** The commenter states:

"2) There is no safe place to locate a Diesel Particulate Filter (DPF) on board the vessel.

"3) Heat produced by the regeneration process of the DPF is to intense for the wood/fiberglass construction of the vessel.

"4) The weight displacement created by a larger Engine/DPF configuration will negatively affect the stability of the vessel. They may not be able to be retrofitted to existing vessels."

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

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| Comment Letter<br>2951<br>11/14/2021 | Jason Hector |

**2951-1:** The commenter states, “The approach CARB is taking with the madate will cause these existing vessels which have many years of useful life to be sold to other countries where they will continue to be used and not result in a net benefit of reducing pollution.”

**Response:** Please refer to Master Response 2.

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| Comment Letter<br>3014<br>11/14/2021 | Alfred Barker Jr., CCA California |

**3014-1:** The commenter states, “2.) The proposed technology for the Diesel Particulate Filter (DPF) does not exist and due to non existence, has not been approved by the U.S. Coast Guard.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

**3014-2:** The commenter states, “3.) The proposed technology has not been tested and has not been proven to be safe for use at sea. This could lead to putting human lives in danger.”

**Response:** Please refer to Master Response 1.

**3014-3:** The commenter states, “4.) The California State University Maritime Academy has concluded that the suggested standards for existing engines does not exist. In the alternative, treatment equipment (modifications) alone will significantly impact a vessel's stability.”

**Response:** Please refer to Master Response 1 and response to comment 696-1.

**3014-4:** The commenter states, “5.) Over 80% of the existing Sport Fishing fleet is constructed of wood, fiberglass and combinations of said materials. Boats built of these materials would not be safe to operate if they could be retrofitted with proposed emissions devices.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>3023<br>11/14/2021 | Wade Gavin |

**3023-1:** The commenter states, “(CARB) has proposed cost prohibitive engine emission regulations that require technology that has not been developed or tested safe at sea.”

**Response:** Please refer to Master Response 1.

**3023-2:** The commenter states, “During the public comment period, CARB did not consult with the California Department of Fish and Wildlife, the California Fish and Game Commission, the Department of Boating and Waterways, the Coastal Commission, tourism authorities, chambers of commerce, harbor and marina organizations, port authorities, the United States Coast Guard or local government agencies up and down the California coast.”

**Response:** CARB staff has consulted and met with several of the organizations and entities listed above, which are listed in Appendix F of the ISOR. These meetings were used to inform the technical and economic feasibility of the Proposed Amendments. For example, CARB consulted with the California Department of Fish and Wildlife (CDFW) to better understand the State’s oil spill requirements that are implemented by the Office of Spill Prevention and Response (OSPR), as well as licensing numbers and data behind CPFV (i.e., sportfishing) vessels that operate in the State. CARB staff also conducted outreach to all marinas, harbors, and ports where harbor craft operate to solicit input on the proposed requirements for shore power infrastructure and reporting. CARB staff met with the USCG numerous times, both the Eleventh District on the west coast that oversees vessel inspections as well as the Marine Safety Center (MSC) that develops new requirements and approves vessel design plans related to safety.

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| Comment Letter<br>3025<br>11/14/2021 | Ruben Maestro |

**3025-1:** The commenter states, “2.) The proposed technology for the Diesel Particulate Filter (DPF) does not exist and due to non existence, has not been approved by the U.S. Coast Guard.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

**3025-2:** The commenter states, “3.) The proposed technology has not been tested and has not been proven to be safe for use at sea. This could lead to putting human lives in danger.”

**Response:** Please refer to Master Response 1.

**3025-3:** The commenter states, “4.) The California State University Maritime Academy has concluded that the suggested standards for existing engines does not exist. In the alternative, treatment equipment (modifications) alone will significantly impact a vessel's stability.”

**Response:** Please refer to Master Response 1.

**3025-4:** The commenter states, “5.) Over 80% of the existing Sport Fishing fleet is constructed of wood, fiberglass and combinations of said materials. Boats built of these materials would not be safe to operate if they could be retrofitted with proposed emissions devices. The result of the newly proposed emissions devices would require boats currently being used, to be replaced with boats made of steel hulls. This requirement would force most sport fleet operators out of business as the cost of this would be untenable.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>3038<br>11/14/2021 | Jamie Diamond |

**3038-1:** The commenter states, “The lack of communication between CARB and USCG is unacceptable. We cannot change anything on our vessels without USCG approval, therefore we cannot put in engines or other equipment without their oversight for safety as we are passenger carrying vessels. I’m sure you can appreciate my concern here after the Conception disaster. Tier 3 or 4 plus DPF is just not possible for us. The added weight of components will not fit and will affect stability of the vessels. It will also change our passenger capacity due to added weight further increasing the cost to the public. CARB has stated they are aware and said we will just have to replace all 174 CPFV s in the fleet with steel vessels. Why? Because the proposed equipment runs so hot it isn’t safe for use in wood or fiberglass vessels, and the expansion & contraction will break the welds on aluminum boats too. The diesel particulate filters they want us to use are notorious for clogging. For a truck, its most likely no big deal, pull over get out and wait for a tow. If that were to happen on a Passenger vessel, it would leave us dead in the water. What if that happened mid shipping channel crossing with weather picking up, or touring the painted cave at the Channel Islands, entering/exiting the harbor? Even worse, when these filters clog and the engine does not automatically shut off, they can overheat, catch fire, and explode. This has the potential to make the Conception incident seem commonplace.”

**Response:** Please refer to Master Response 1, response to comment 696-1, 696-2, and comment 2472-1.

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| Comment Letter<br>3046<br>11/15/2021 | Sergio Perez |

**3046-1:** The commenter states:

"2.) The proposed technology for the Diesel Particulate Filter (DPF) does not exist and due to non existence, has not been approved by the U.S. Coast Guard.

"3.) The proposed technology has not been tested and has not been proven to be safe for use at sea. This could lead to putting human lives in danger."

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

**3046-2:** The commenter states, "5.) Over 80% of the existing Sport Fishing fleet is constructed of wood, fiberglass and combinations of said materials. Boats built of these materials would not be safe to operate if they could be retrofitted with proposed emissions devices. The result of the newly proposed emissions devices would require boats currently being used, to be replaced with boats made of steel hulls. This requirement would force most sport fleet operators out of business as the cost of this would be untenable."

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>3065<br>11/15/2021 | Robert Taylor |

**3065-1:** The commenter states:

"2.) The proposed technology for the Diesel Particulate Filter (DPF) does not exist and due to non existence, has not been approved by the U.S. Coast Guard.

"3.) The proposed technology has not been tested and has not been proven to be safe for use at sea. This could lead to putting human lives in danger."

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

**3065-2:** The commenter states, "5.) Over 80% of the existing Sport Fishing fleet is constructed of wood, fiberglass and combinations of said materials. Boats built of these materials would not be safe to operate if they could be retrofitted with proposed emissions devices. The result of the newly proposed emissions devices would require boats currently being used, to be replaced with boats made of steel hulls. This requirement would force most sport fleet operators out of business as the cost of this would be untenable."

**Response:** Please refer to Master Response 1.

This comment letter included an attachment with letters similar to comment letter 3065 but from different commenters. These commenters are referred to response to comment 3065-1 and 3065-2.

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| Comment Letter<br>3102<br>11/15/2021 | Bob Macki |

**3102-1:** The commenter states, “The Sportfishing fleet can be looked at as an efficient, safe platform where multiple enthusiasts can participate in an activity that otherwise may involve multiple private owned vessels that collectively may create worse environmental harm and be tougher to regulate.”

**Response:** Please refer to Master Response 4.

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| Comment Letter 3117 11/15/2021 | Arthur Mead, Crowley Maritime Corporation |

**3117-1:** The commenter states, “At this point, it is highly questionable if DPF technology can be installed with Tier 3 or Tier 4 engines in a technically-feasible or safe manner. Although DPF devices have been used on trucks, albeit with some serious consequences such as fire danger, there is no indication that DPFs can be used on large marine engines, or that it would be safe to do so.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

**3117-2:** The commenter states, “Given the flexible, safe, efficient and cost-effective transportation option provided by ATBs, the CHC Regulation’s effect of removing Crowley’s ATB fleet from California would have a potentially far-reaching impact for Californians.

“If the interstate clean petroleum product and emerging, new liquid energy trade, with California no longer has the option to use ATBs, it would instead be forced to charter MR Tankers to carry such products to and from California ports. ATBs of more than 120,000 bbl. capacity are the functional equivalent of MR Tankers and are, therefore, relatively interchangeable with those vessels in operational markets. MR Tankers are not proposed to be regulated under this current rulemaking because they must comply with CARB’s previous At Berth Regulation.

“The proposed amended CHC Regulation would therefore not have its intended beneficial effect on California emissions. Should the CHC Regulation be issued as proposed, without addressing a meaningful ACE for ATBs, ATBs will be displaced on the West Coast with MR Tankers enjoying a lower regulatory threshold and having the perverse result of increasing the carbon intensity, particulate matter and GHG discharges for the equivalent of liquid energy cargo carried in and to and from California ports into the future.

“This would also have a substantial adverse impact on interstate commerce and is contrary to what this rule was designed to accomplish in terms of environmental justices and health benefits to the people of California.

**Response:** This comment highlights that medium-range (MR) tankers, which CARB regulates as ocean-going vessels, may be able to perform some of the work performed by articulated tug barges (ATBs) that are subject to the Proposed Amendments. This was discussed in Chapter I.1.a. of the Staff Report – Initial Statement of Reasons. Whereas there may be similarity between MR tanker and ATB operations, CARB staff has determined there are specific operational and cost reasons why petrochemical product transport by ATB is preferable over MR tankers. For example, lower staffing

requirements result in lower operational costs because they are subject to separate requirements by the U.S. Coast Guard. Further, CARB has not received any unequivocal data indicating that petrochemical product transport would be diverted from ATBs to MR tankers because of the Proposed Amendments. The statements that activity of MR tankers would increase, thereby increasing emissions, are speculative and unsubstantiated. CARB staff continues to explore opportunities to further reduce emissions from MR tankers and other ocean-going vessels while in transit in Regulated California Waters, therefore any potential mode-shift of transport from ATBs to MR tankers would not necessarily result in an increase of emissions in the unlikely case this were to occur, at a later point, because of the Proposed Amendments.

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| Comment Letter<br>3119<br>11/15/2021 | Alfredo Medina on behalf of Captain John Carlier, San Francisco Bar Pilots Association |

**3119-1:** The commenter states, “Green harbor craft technology is nascent and much of it untested for pilot vessel application. Forced adoption of early technologies into a 20+ year asset creates safety and reliability concerns and precludes the use of technologies that may be developed in the near future.”

**Response:** Please refer to Master Response 1.

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| Comment Letter 3121 11/15/2021 | Scott Merritt on behalf of Milt Merritt, AmNav Maritime Services, LLC |

**3121-1:** The commenter states:

"INACCURATE AND GROSSLY OVERINFLATED VESSEL POPULATION DATA

The U.S. Coast Guard database used by CARB to determine the vessel population affected by the rule was designed to track the ownership and regulatory status of a vessel and provides no insight or information into where a vessel is operated. CARB's use of this database overstates the population of tug and towing vessels to reach the false conclusion that there is a significant number of vessels that are not reporting their engine hours to CARB.

"We have shown ample evidence in previous comment letters and multiple meetings with CARB personnel to validate our position that emissions from vessels who have not reported their hours is only a fraction of the scaling factor CARB used to inflate the emission inventory. We have pointed out to ARB staff on these occasions that overcounting number of tug and towing vessels operating in California overinflates health risk assessment that is the justification for this rulemaking. We have explained the basis for the discrepancies and told the agency how it can obtain accurate data through the use of readily available AIS data that will show not only every vessel that enters CARB regulated waters, but when those vessels are actually underway. Inexplicably, CARB has done nothing to revise its figures or update its model. Indeed, at the CHC Workshop #4 held on March 16, 2021, CARB acknowledged that the agency was aware that its vessel counts did not accurately reflect the actual number of vessels in the applicable airshed, but informed attendees, without further explanation, that CARB would not be revising the vessel count numbers in the draft regulation. These technical and procedural errors jeopardize the entire basis for the regulation and subject it to heightened legal scrutiny.

"For the purposes of this comment letter our trade organization, AWO, contracted with Ramboll, a third-party consulting engineering group, to conduct an independent assessment of the number of tug and towing vessels operating in California and the likely impact of emissions from those vessels. Using Automatic Identification System (AIS) data for 2019, Ramboll was able to account for every tug and towing vessel within California waters during that year. The AIS data affirms that CARB has significantly overcounted the size of California's tug and towing vessel fleet. Specifically, Ramboll found that 200 tug and towing vessels operated within a 100 nm or the California Coast, not the 229 tug and towing vessels estimated by CARB. Additionally, the CARB model assumes that non-reporting vessels operated with the same number of hours as reporting vessels. From the AIS data we can determine the number of hours when the vessels were moving, which when compared to hours reported to CARB, proved to be a reliable predicator of main engine hours. We were able to isolate the vessels CARB shows as having filed reports from those vessels that have not. The non-reporting

vessels averaged only 18% of the hours of the reporting vessels. This means that the total unreported hours are just 2.3% of the total reported hours, not the 29% that the CARB scaling factors estimated.

“Towing Vessel AIS Average Hours >.1 knot - Year 2019

| Vessel Type | Reporting Vessels | Non-reporting Vessels | Non-reporting as % of Reporting |
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| Tugboat Push/Tow | 1,022 | 300 | 29% |
| Tugboat SA | 2,336 | 239 | 10% |
| Total of Tug Categories | 1,637 | 291 | 18% |

| | |
|---|---|
| Reporting Vessels | 177 |
| Non-Reporting Vessels | 200 |
| % of Vessel's not reporting | 12% |
| % of Unreported Hours | 2.3% |

“Ramboll ran estimates based on these accurately captured tug and towing vessel hours and found that $NO_x$ and PM emissions were only 72% and 62%, respectively, of the figures the improperly inflated CARB’s model produced. We suspect a similar over estimation may exist with the other vessel categories of harbor craft and given that CARB’s assumption was that 39% of the CHC were not reporting, the potential for a massive overestimation of the impact of all harbor craft is possible.”

**Response:** CARB’s proposed regulation relies upon the best available data, which has considered the input of AWO during the development of the Proposed Amendments. As indicated in Appendix H to the Staff Report, CARB staff has not relied upon United States Coast Guard (USCG) totals for the towing vessel sector. The comments above from AWO reflect an analysis that relies upon Automatic Identification System (AIS) tracking of towing vessels; however, not all towing vessels are equipped with AIS equipment. Therefore, other towing vessels operate in California that are not included in the analysis referenced in these comments. CARB staff has worked with AWO to identify a list of all known vessels with AIS and combined these vessels with all other

vessels whose owners or operators have reported operation in California. These results are reflected in the emission inventory. Please also refer to Master Response 3.

**3121-2:** The commenter states:

"HEALTH STUDY CONCERNS

"Given the above-noted inflation of the tug and towing vessel fleet size and operating hours we expect that CARB's assessment of harbor craft emissions is similarly skewed. In fact, Ramboll's estimates based on updated vessel fleet size and operating hours indicates that CARB's emissions are overstated. AWO also asked Ramboll to look at and comment on the Health Study section of the CARB rulemaking packet. Based on this assessment, Ramboll raised serious questions about the methodology CARB used both in its assessment of cumulative harbor craft emissions as well the resulting health effects. Most concerning to AWO is Ramboll's observation that CARB has made no apparent effort to validate its air quality model with verifiable, real-world results. Ramboll conducted a preliminary analysis to validate the agency's harbor craft- related exposure estimates by comparing the CARB modeled air concentrations at receptor points near Long Beach, Anaheim, Pico Rivera, and Los Angeles with the $PM_{2.5}$ concentrations measured at the sampling stations installed at these locations. Because the sampling stations are designed to capture emissions from all nearby sources, the agency's modeled concentrations for harbor craft specifically would be expected to be within the range of the total measured emissions or, more likely, even lower. Below is the table of results from this exercise, extracted from the Ramboll report.

"Table 6. Comparison between annual average $PM_{2.5}$ measured concentrations at monitoring stations in the South Coast to modeled concentrations at the nearest receptors.

| $PM_{2.5}$ ($mg/m^3$) annual average | Average of all POCs (daily) | Average of 1hr | Closest Receptors (Modeled $PM_{2.5}$ $mg/m^3$, Receptor #) | | | |
|---|---|---|---|---|---|---|
| Long Beach (North) | 10.81 | - | 34.82 (1856) | 35.68 (1857) | 38.30 (1858) | 34.15 (1855) |
| Long Beach (South) | 12.82 | 14.56 | 51.57 (1874) | 48.44 (1876) | 59.88 (1900) | 58.13 (1901) |
| Long Beach-Route 710 Near Road | 13.87 | 15.02 | 24.01 (1825) | 24.80 (1826) | 22.29 (1827) | 22.35 (1824) |

| | | | | | | |
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| Anaheim | 11.05 | 13.62 | 15.30<br>(2602) | 14.34<br>(2604) | 16.13<br>(2601) | 14.17<br>(2588) |
| Compton | 13.24 | - | 18.05<br>(1683) | 18.41<br>(1677) | 18.96<br>(1685) | 18.03<br>(1684) |
| Pico Rivera #2 | 12.49 | - | 8.41<br>(1458) | 8.55<br>(1459) | 9.04<br>(1457) | 9.09<br>(1467) |
| Los Angeles-North Main Street | 11.69 | - | 7.28<br>(530) | 7.22<br>(491) | | |

"The second column above shows the average annual $PM_{2.5}$ concentrations measured at the sampling stations listed on the left. Again, these figures show estimated PM concentrations from all sources in the area, including from cars and trucks, rail and harbor craft as well as other sources. They also reflect locations near the shoreline that are most likely to be impacted by harbor craft emissions. The four columns on the right show the CARB's modeled concentrations calculated at four locations nearest to each sampling station. As highlighted in the table, Ramboll found from this preliminary check of the data that CARB's modeled estimates are up to 4 times higher than actual measured concentrations of from all sources captured at sampling stations in the same general area. It makes no sense that the emissions just from harbor craft would be higher than the emissions captured in these areas from all possible sources. This raises serious questions about the legitimacy of CARB's model and what if any efforts CARB has made to validate it.

"Ramboll and AWO made numerous requests for information from CARB staff that would help us understand the methodology the agency used to determine health impacts associated with harbor craft emissions. CARB staff were unable or unwilling to provide much of the necessary information, which has forced Ramboll to make more generalized observations about CARB's approach. Those observations are offered in detail in Section 2.2 of the attached report, but in short, (1) there is enormous uncertainty in the health effects data that CARB has presented calling into question the purported benefits of the proposed rulemaking; and (2) CARB has applied health effects analyses in an unconventional way and has failed to report its findings in a way that transparently acknowledges the lack of certainty inherent in their findings.

"What we can say with certainty is that the health risks are overstated, if only by the overestimation of the vessel inventory and emissions, but likely to a much greater extent due to the unaddressed issues with the modeling itself. CARB's overstating the emissions from harbor craft is magnified in each step of the model, with each highly

conservative assumption or input that is propagated throughout both risk assessments. Based on the comparison of the model output with actual PM levels at monitoring sites we have reason to believe that the errors in the model are overestimating the actual exposures to communities along the shoreline, and thus overestimating any potential benefits of the proposed CHC rules by a significant margin. This is too important a rulemaking to be based on a health study with so much unaddressed uncertainty. CARB needs to take the time to get this right.

“To that end AmNav urges CARB to:

- Develop an accurate vessel population data set using available means of gathering real-time vessel operating information and emission profiles. This should be done for all vessel categories.
- Validate the emission model to ensure inputs and results are realistic and accurately portray the impact of CHC emissions
- Amend the study utilizing the corrected data set to determine the industry specific impact and need for regulation.
- Redraft the Proposed Regulations in collaboration with the CHC industry and other stakeholders to reflect the conclusions of the new study, and the best path achieving our common goal of a cleaner and healthier environment.

“Moving forward with regulation without correcting errors in the underlying data set undermines the legitimacy of the regulatory process.”

**Response:** Ramboll and AWO have attempted to compare measured ambient PM2.5 levels compared to modeled diesel PM concentrations at select locations within the South Coast Air Basin. However, they instead compared modeled cancer risk (in chances per million) to ambient PM2.5, which has resulted in the discrepancies highlighted above. The modeled PM2.5 concentrations should be calculated by dividing the modeled cancer risk values shown in Table 6 above by 894 (the DPM unit cancer risk factor) and multiplying by 0.956 (DPM to PM2.5 ratio), which is about three magnitudes lower than those shown in Table 6. CARB’s emission inventory, air quality dispersion modeling and therefore modeled cancer risk is accurately described in Appendix G to the Staff Report. The CHC health risk analysis modeling files, which include both PM2.5 concentrations and diesel PM cancer risk values, are available for download at the following website: https://www.arb.ca.gov/CommercialHarborCraft-Health-Risk-Files.

**3121-3:** The commenter states:

“CARB’S ARBITRARY AND CAPRICIOUS EXEMPTION OF SOME VESSELS VERUS OTHERS

“CARB’s decision to exempt about 1,570 commercial fishing vessels (approximately 40% of the total CHC population) from the rule is arbitrary and capricious. This decision places 100% of the emission reduction burden of the CHC rule on 60% of the vessel population.

"CARB's rationale for excluding these vessels applies to the towing vessels that operate in coastal and international trade. Specifically:

- Small profit margins.
- Demonstrated lack of feasibility for Tier 4 repowers and retrofits.
- Competition with out of State and global markets; and,
- Tendency to conduct most of their operations far from the coast.

"Ocean-going tugs and barges, either towed on a wire or rigidly connected through an ATB system, are directly analogous in their operation to commercial fishing vessels and share all four bases that led CARB to exempt commercial fishing vessels. AWO submitted information in April of 2020 showing that "repowering with EPA Tier 4 engines could be significant and cost prohibitive for some ship assist and escort tugs." Similar technical challenges exist for ocean-going tugs, barges, and ATBs. These vessels commonly operate in interstate commerce in competition with self-propelled vessels in out of state and global markets. Additionally, the tugboats and barges operating in these markets are required by law to be U.S.-flagged, -owned, -crewed, and -built. This rule would place U.S.-flagged towing vessels at a competitive disadvantage against self-propelled foreign-flagged vessels that are not covered by CARB's rule. Finally, AIS and Marine Exchange data reveals that these vessels conduct most of their operations far from the California coast, giving them a similar air emission profile in California as the exempted commercial fishing vessels.

"CARB's decision to exempt 40% of CHC based on the exact conditions that apply to other non-exempt vessels is arbitrary and capricious and should be remedied in any final rule."

**Response:** ATB tugs and barges together represent 38 vessels, which make up approximately 1.2 percent of all harbor craft by population. However, due to their size, operating profile, and other patterns, they are estimated to contribute 10.1 percent of statewide DPM emissions in 2023, which is disproportionately larger than their share of the population. Therefore, the success of the Proposed Amendments depends on further reductions from ATBs. For additional information, please refer to Master Response 3.

**3121-4:** The commenter states:

"CARB'S PROPOSAL IS TECHNICALLY INFEASIBLE

"In its April 30, 2020 letter, AWO submitted an Engineering Review Summary performed by Jensen Naval Architects on the Marine Engineers of the Cal Maritime Tier 4 Feasibility study with which CARB supports its assertion that the proposed regulations are feasible for CHC operators. The Cal Maritime study evaluated four DPF retrofit scenarios for a single ship assist and escort tug. The Jensen Review Summary also demonstrates the feasibility of DPF retrofit using a comparable large towing vessel. While the Cal Maritime study projects a $2.81 million per vessel cost, the Jensen study finds a larger cost impact – between $3.7 and $4.5 million – and makes some important points about the limitations of the Cal Maritime study:

- This study of one large and spacious ship assists and escort tug is not representative of the diverse tug and towing vessel fleet.
- The Jensen Review Summary notes “the technical challenges of repowering with EPA Tier 4 engines could be significant and cost prohibitive for some ship assist and escort tugs.”
- The Jensen Review notes that size constraints on some tugs could entirely preclude the placement of aftertreatment systems required by CARB.

“CARB’s proposal to combine Tier 3 or Tier 4 engines with DPF aftertreatment technology is unproven, unavailable, and technically infeasible. Size and weight constraints make re-powering and retrofit options impossible for many tug and towing vessels, but even if a vessel had the necessary space to accommodate this technology, there is no available DPF aftertreatment product on the market. The absence of commercially available technology has limited the guidance that engine manufacturers can provide about potential paths to compliance. Additionally, the absence of compliant technology makes planning future capital investment impossible. No matter how carefully a CHC operator has planned out the service life and maintenance schedule of a given vessel, the impact of this proposed rule with its unknowable compliance price-tag cannot be accounted for.

“CARB must acknowledge that there is no available technology that currently meets both the performance standards of the proposed regulation and the propulsion needs of the regulated population of tug and towing vessels. CARB must provide realistic relief for vessels that cannot comply with its rules based on space or feasibility constraints. As the draft rule stands now, AmNav will be forced to spend tens of millions of dollars on unproven and potentially dangerous retrofits on vessels that have only recently been repowered to meet the last iteration of the CHC regulations. In the most egregious case, AmNav has vessels that have just been delivered or it will take delivery off that will be forced to be retrofitted just a few short years after they are first put into service. The financial waste caused by this proposal is staggering and raises the question of whether CARB is legally ‘taking’ property from vessel operators by devaluing fully operational equipment that meets federal standards through state regulation.

“CARB must consider providing vessel operators a feasible path to reducing stack emissions from CHCs. This path must include less prescriptive means of achieving emission reductions and longer-lasting exemptions for vessels that cannot feasibly retrofit.”

**Response:** CARB staff has considered all referenced costs in the analysis for the Proposed Amendments. For more detail on the cost analysis, see Appendix C-1 and Chapter IX of the Staff Report. CARB staff recognizes that vessel replacement may be a compliance outcome for vessels that cannot be reconfigured to accommodate Tier 4 engines and DPF aftertreatment. For vessels where compliant equipment is not available or cannot fit, there are compliance extensions available for owners to remain in compliance while technology becomes available for their specific vessel. There are also compliance extensions available if vessel replacement is the only compliance

option and operators cannot immediately pay to replace. This extension is up to 6 years for towing vessels.

Please also refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

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| Comment Letter 3122 11/15/2021 | Scott Merritt (on behalf of Will Roberts), Foss Maritime Company |

**3122-1:** The commenter states:

"INACCURATE AND GROSSLY OVERINFLATED VESSEL POPULATION DATA

"The U.S. Coast Guard database used by CARB to determine the vessel population affected by the rule was designed to track the ownership and regulatory status of a vessel and provides no insight or information into where a vessel is operated. CARB's use of this database overstates the population of tug and towing vessels to reach the false conclusion that there is a significant number of vessels that are not reporting their engine hours to CARB.

"We have shown ample evidence in previous comment letters and multiple meetings with CARB personnel to validate our position that emissions from vessels who have not reported their hours is only a fraction of the scaling factor CARB used to inflate the emission inventory. We have pointed out to CARB staff on these occasions that overcounting number of tug and towing vessels operating in California overinflates health risk assessment that is the justification for this rulemaking. We have explained the basis for the discrepancies and told the agency how it can obtain accurate data through the use of readily available AIS data that will show not only every vessel that enters CARB regulated waters, but when those vessels are actually underway. Inexplicably, CARB has done nothing to revise its figures or update its model. Indeed, at the CHC Workshop #4 held on March 16, 2021, CARB acknowledged that the agency was aware that its vessel counts did not accurately reflect the actual number of vessels in the applicable airshed, but informed attendees, without further explanation, that CARB would not be revising the vessel count numbers in the draft regulation. These technical and procedural errors jeopardize the entire basis for the regulation and subject it to heightened legal scrutiny.

"For the purposes of this comment letter our trade organization, AWO, contracted with Ramboll, a third-party consulting engineering group, to conduct an independent assessment of the number of tug and towing vessels operating in California and the likely impact of emissions from those vessels. Using Automatic Identification System (AIS) data for 2019, Ramboll was able to account for every tug and towing vessel within California waters during that year. The AIS data affirms that CARB has significantly overcounted the size of California's tug and towing vessel fleet. Specifically, Ramboll found that 200 tug and towing vessels operated within a 100 nm or the California Coast, not the 229 tug and towing vessels estimated by CARB. Additionally, the CARB model assumes that non-reporting vessels operated with the same number of hours as reporting vessels. From the AIS data we can determine the number of hours when the vessels were moving, which when compared to hours reported to CARB, proved to be a reliable predicator of main engine hours. We were able to isolate the vessels CARB shows as having filed reports from those vessels that have not. The non-reporting

vessels averaged only 18% of the hours of the reporting vessels. This means that the total unreported hours are just 2.3% of the total reported hours, not the 29% that the CARB scaling factors estimated.

“Towing Vessel AIS Average Hours >.1 knot - Year 2019

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| Reporting Vessels | 177 |
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| % of Vessel's not reporting | 12% |
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“Ramboll ran estimates based on these accurately captured tug and towing vessel hours and found that $NO_x$ and PM emissions were only 72% and 62%, respectively, of the figures the improperly inflated CARB’s model produced. We suspect a similar over estimation may exist with the other vessel categories of harbor craft and given that CARB’s assumption was that 39% of the CHC were not reporting, the potential for a massive overestimation of the impact of all harbor craft is possible.”

**Response:** See response to comment 3121-1.

**3122-2:** The commenter states:

“HEALTH STUDY CONCERNS

“Given the above-noted inflation of the tug and towing vessel fleet size and operating hours we expect that CARB’s assessment of harbor craft emissions is similarly skewed. In fact, Ramboll’s estimates based on updated vessel fleet size and operating hours indicates that CARB’s emissions are overstated. AWO also asked Ramboll to look at and comment on the Health Study section of the CARB rulemaking packet. Based on this assessment, Ramboll raised serious questions about the methodology CARB used both in its assessment of cumulative harbor craft emissions as well the resulting health effects. Most concerning to AWO is Ramboll’s observation that CARB has made no apparent effort to validate its air quality model with verifiable, real-world results. Ramboll

conducted a preliminary analysis to validate the agency's harbor craft- related exposure estimates by comparing the CARB modeled air concentrations at receptor points near Long Beach, Anaheim, Pico Rivera, and Los Angeles with the $PM_{2.5}$ concentrations measured at the sampling stations installed at these locations. Because the sampling stations are designed to capture emissions from all nearby sources, the agency's modeled concentrations for harbor craft specifically would be expected to be within the range of the total measured emissions or, more likely, even lower. Below is the table of results from this exercise, extracted from the Ramboll report.

"Table 6. Comparison between annual average $PM_{2.5}$ measured concentrations at monitoring stations in the South Coast to modeled concentrations at the nearest receptors.

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"The second column above shows the average annual $PM_{2.5}$ concentrations measured at the sampling stations listed on the left. Again, these figures show estimated PM concentrations from all sources in the area, including from cars and trucks, rail and harbor craft as well as other sources. They also reflect locations near the shoreline that are most likely to be impacted by harbor craft emissions. The four columns on the right

show the CARB's modeled concentrations calculated at four locations nearest to each sampling station. As highlighted in the table, Ramboll found from this preliminary check of the data that CARB's modeled estimates are up to 4 times higher than actual measured concentrations of from all sources captured at sampling stations in the same general area. It makes no sense that the emissions just from harbor craft would be higher than the emissions captured in these areas from all possible sources. This raises serious questions about the legitimacy of CARB's model and what if any efforts CARB has made to validate it.

"Ramboll and AWO made numerous requests for information from CARB staff that would help us understand the methodology the agency used to determine health impacts associated with harbor craft emissions. CARB staff were unable or unwilling to provide much of the necessary information, which has forced Ramboll to make more generalized observations about CARB's approach. Those observations are offered in detail in Section 2.2 of the attached report, but in short, (1) there is enormous uncertainty in the health effects data that CARB has presented calling into question the purported benefits of the proposed rulemaking; and (2) CARB has applied health effects analyses in an unconventional way and has failed to report its findings in a way that transparently acknowledges the lack of certainty inherent in their findings.

"What we can say with certainty is that the health risks are overstated, if only by the overestimation of the vessel inventory and emissions, but in all likelihood to a much greater extent due to the unaddressed issues with the modeling itself. CARB's overstating the emissions from harbor craft is magnified in each step of the model, with each highly conservative assumption or input that is propagated throughout both risk assessments. Based on the comparison of the model output with actual PM levels at monitoring sites we have reason to believe that the errors in the model are overestimating the actual exposures to communities along the shoreline, and thus overestimating any potential benefits of the proposed CHC rules by a significant margin. This is too important a rulemaking to be based on a health study with so much unaddressed uncertainty. CARB needs to take the time to get this right.

"To that end Foss urges CARB to:

- "Develop an accurate vessel population data set using available means of gathering real-time vessel operating information and emission profiles. This should be done for all vessel categories.
- "Validate the emission model to ensure inputs and results are realistic and accurately portray the impact of CHC emissions
- "Amend the study utilizing the corrected data set to determine the industry specific impact and need for regulation.
- "Redraft the Proposed Regulations in collaboration with the CHC industry and other stakeholders to reflect the conclusions of the new study, and the best path achieving our common goal of a cleaner and healthier environment.

"Moving forward with regulation without correcting errors in the underlying data set undermines the legitimacy of the regulatory process."

**Response:** See response to comment 3121-2.

**3122-3:** The commenter states:

"CARB'S ARBITRARY AND CAPRICIOUS EXEMPTION OF SOME VESSELS VERUS OTHERS

"CARB's decision to exempt about 1,570 commercial fishing vessels (approximately 40% of the total CHC population) from the rule is arbitrary and capricious. This decision places 100% of the emission reduction burden of the CHC rule on 60% of the vessel population.

"CARB's rationale for excluding these vessels applies to the tug and towing vessels that operate in coastal and international trade. Specifically:

- "Small profit margins.
- "Demonstrated lack of feasibility for Tier 4 repowers and retrofits;
- "Competition with out of State and global markets; and,
- "Tendency to conduct most of their operations far from the coast.

"Ocean-going tugs and barges, either towed on a wire or rigidly connected through an ATB system, are directly analogous in their operation to commercial fishing vessels and share all four bases that led CARB to exempt commercial fishing vessels. AWO submitted information in April of 2020 showing that 'repowering with EPA Tier 4 engines could be significant and cost prohibitive for some ship assist and escort tugs.' Similar technical challenges exist for ocean-going tugs, barges, and ATBs. These vessels commonly operate in interstate commerce in competition with self-propelled vessels in out of state and global markets. Additionally, the tugboats and barges operating in these markets are required by law to be U.S.-flagged, -owned, -crewed, and -built. This rule would place U.S.-flagged towing vessels at a competitive disadvantage against self-propelled foreign-flagged vessels that are not covered by CARB's rule. Finally, AIS and Marine Exchange data reveals that these vessels conduct most of their operations far from the California coast, giving them a similar air emission profile in California as the exempted commercial fishing vessels.

"CARB's decision to exempt 40% of CHC based on the exact conditions that apply to other non-exempt vessels is arbitrary and capricious and should be remedied in any final rule.

**Response:** See response to comment 3121-3.

**3122-4:** The commenter states:

"CARB'S PROPOSAL IS TECHNICALLY INFEASIBLE

"In its April 30, 2020 letter, AWO submitted an Engineering Review Summary performed by Jensen Naval Architects on the Marine Engineers of the Cal Maritime Tier 4

Feasibility study with which CARB supports its assertion that the proposed regulations are feasible for CHC operators. The Cal Maritime study evaluated four DPF retrofit scenarios for a single ship assist and escort tug. The Jensen Review Summary also demonstrates the feasibility of DPF retrofit using a comparable large towing vessel. While the Cal Maritime study projects a $2.81 million per vessel cost, the Jensen study finds a larger cost impact – between $3.7 and $4.5 million – and makes some important points about the limitations of the Cal Maritime study:

- "This study of one large and spacious ship assists and escort tug is not representative of the diverse tug and towing vessel fleet.
- "The Jensen Review Summary notes "the technical challenges of repowering with EPA Tier 4 engines could be significant and cost prohibitive for some ship assist and escort tugs."
- "The Jensen Review notes that size constraints on some tugs could entirely preclude the placement of aftertreatment systems required by CARB.

"CARB's proposal to combine Tier 3 or Tier 4 engines with DPF aftertreatment technology is unproven, unavailable, and technically infeasible. Size and weight constraints make re-powering and retrofit options impossible for many tug and towing vessels, but even if a vessel had the necessary space to accommodate this technology, there is no available DPF aftertreatment product on the market. The absence of commercially available technology has limited the guidance that engine manufacturers can provide about potential paths to compliance. Additionally, the absence of compliant technology makes planning future capital investment impossible. No matter how carefully a CHC operator has planned out the service life and maintenance schedule of a given vessel, the impact of this proposed rule with its unknowable compliance price-tag cannot be accounted for.

"CARB must acknowledge that there is no available technology that currently meets both the performance standards of the proposed regulation and the propulsion needs of the regulated population of tug and towing vessels. CARB must provide realistic relief for vessels that cannot comply with its rules based on space or feasibility constraints. As the draft rule stands now, Foss will be forced to spend tens of millions of dollars on unproven and potentially dangerous retrofits on vessels that have only recently been repowered to meet the last iteration of the CHC regulations. In the most egregious case, Foss has vessels that have just been delivered or it will take delivery off that will be forced to be retrofitted just a few short years after they are first put into service. The financial waste caused by this proposal is staggering and raises the question of whether CARB is legally "taking" property from vessel operators by devaluing fully operational equipment that meets federal standards through state regulation.

"CARB must consider providing vessel operators a feasible path to reducing stack emissions from CHCs. This path must include less prescriptive means of achieving emission reductions and longer-lasting exemptions for vessels that cannot feasibly retrofit."

**Response:** See response to comment 3121-4.

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| Comment Letter<br>3124<br>11/15/2021 | Scott Merritt (on behalf of Benjamin Ostroff), American Waterways Operators |

**3124-1:** The commenter states:

"INACCURATE AND GROSSLY OVERINFLATED VESSEL POPULATION DATA

"The U.S. Coast Guard database used by CARB to determine the vessel population affected by the rule was designed to track the ownership and regulatory status of a vessel and provides no insight or information into where a vessel is operated. CARB's use of this database overstates the population of tug and towing vessels to reach the false conclusion that there is a significant number of vessels that are not reporting their engine hours to CARB.

"We have shown ample evidence in previous comment letters and multiple meetings with CARB personnel to validate our position that emissions from vessels who have not reported their hours is only a fraction of the scaling factor CARB used to inflate the emission inventory. We have pointed out to CARB staff on these occasions that overcounting number of tug and towing vessels operating in California overinflates health risk assessment that is the justification for this rulemaking. We have explained the basis for the discrepancies and told the agency how it can obtain accurate data through the use of readily available AIS data that will show not only every vessel that enters CARB regulated waters, but when those vessels are actually underway. Inexplicably, CARB has done nothing to revise its figures or update its model. Indeed, at the CHC Workshop #4 held on March 16, 2021, CARB acknowledged that the agency was aware that its vessel counts did not accurately reflect the actual number of vessels in the applicable airshed, but informed attendees, without further explanation, that CARB would not be revising the vessel count numbers in the draft regulation. These technical and procedural errors jeopardize the entire basis for the regulation and subject it to heightened legal scrutiny.

For the purposes of this comment letter our trade organization, AWO, contracted with Ramboll, a third-party consulting engineering group, to conduct an independent assessment of the number of tug and towing vessels operating in California and the likely impact of emissions from those vessels. Using Automatic Identification System (AIS) data for 2019, Ramboll was able to account for every tug and towing vessel within California waters during that year. The AIS data affirms that CARB has significantly overcounted the size of California's tug and towing vessel fleet. Specifically, Ramboll found that 200 tug and towing vessels operated within a 100 nm or the California Coast, not the 229 tug and towing vessels estimated by CARB. Additionally, the CARB model assumes that non-reporting vessels operated with the same number of hours as reporting vessels. From the AIS data we can determine the number of hours when the vessels were moving, which when compared to hours reported to CARB, proved to be a reliable predicator of main engine hours. We were able to isolate the vessels CARB shows as having filed reports from those vessels that have not. The non-reporting

vessels averaged only 18% of the hours of the reporting vessels. This means that the total unreported hours are just 2.3% of the total reported hours, not the 29% that the CARB scaling factors estimated.

“Towing Vessel AIS Average Hours >.1 knot - Year 2019

| Vessel Type | Reporting Vessels | Non-reporting Vessels | Non-reporting as % of Reporting |
|---|---|---|---|
| ATBs | 1,613 | 278 | 17% |
| Tugboat Push/Tow | 1,022 | 300 | 29% |
| Tugboat SA | 2,336 | 239 | 10% |
| Total of Tug Categories | 1,637 | 291 | 18% |

| | |
|---|---|
| Reporting Vessels | 177 |
| Non-Reporting Vessels | 200 |
| % of Vessel's not reporting | 12% |
| % of Unreported Hours | 2.3% |

“Ramboll ran estimates based on these accurately captured tug and towing vessel hours and found that $NO_x$ and PM emissions were only 72% and 62%, respectively, of the figures the improperly inflated CARB’s model produced. We suspect a similar over estimation may exist with the other vessel categories of harbor craft and given that CARB’s assumption was that 39% of the CHC were not reporting, the potential for a massive overestimation of the impact of all harbor craft is possible.”

**Response:** See response to comment 3121-1.

**3124-2:** The commenter states:

“HEALTH STUDY CONCERNS

“Given the above-noted inflation of the tug and towing vessel fleet size and operating hours we expect that CARB’s assessment of harbor craft emissions is similarly skewed. In fact, Ramboll’s estimates based on updated vessel fleet size and operating hours indicates that CARB’s emissions are overstated. AWO also asked Ramboll to look at and comment on the Health Study section of the CARB rulemaking packet. Based on this assessment, Ramboll raised serious questions about the methodology CARB used both in its assessment of cumulative harbor craft emissions as well the resulting health effects. Most concerning to AWO is Ramboll’s observation that CARB has made no apparent effort to validate its air quality model with verifiable, real-world results. Ramboll conducted

a preliminary analysis to validate the agency's harbor craft- related exposure estimates by comparing the CARB modeled air concentrations at receptor points near Long Beach, Anaheim, Pico Rivera, and Los Angeles with the $PM_{2.5}$ concentrations measured at the sampling stations installed at these locations. Because the sampling stations are designed to capture emissions from all nearby sources, the agency's modeled concentrations for harbor craft specifically would be expected to be within the range of the total measured emissions or, more likely, even lower. Below is the table of results from this exercise, extracted from the Ramboll report.

"Table 6. Comparison between annual average $PM_{2.5}$ measured concentrations at monitoring stations in the South Coast to modeled concentrations at the nearest receptors.

| $PM_{2.5}$ ($mg/m^3$) annual average | Average of all POCs (daily) | Average of 1hr | Closest Receptors (Modeled $PM_{2.5}$ $mg/m^3$, Receptor #) | | | |
|---|---|---|---|---|---|---|
| Long Beach (North) | 10.81 | - | 34.82 (1856) | 35.68 (1857) | 38.30 (1858) | 34.15 (1855) |
| Long Beach (South) | 12.82 | 14.56 | 51.57 (1874) | 48.44 (1876) | 59.88 (1900) | 58.13 (1901) |
| Long Beach-Route 710 Near Road | 13.87 | 15.02 | 24.01 (1825) | 24.80 (1826) | 22.29 (1827) | 22.35 (1824) |
| Anaheim | 11.05 | 13.62 | 15.30 (2602) | 14.34 (2604) | 16.13 (2601) | 14.17 (2588) |
| Compton | 13.24 | - | 18.05 (1683) | 18.41 (1677) | 18.96 (1685) | 18.03 (1684) |
| Pico Rivera #2 | 12.49 | - | 8.41 (1458) | 8.55 (1459) | 9.04 (1457) | 9.09 (1467) |
| Los Angeles-North Main Street | 11.69 | - | 7.28 (530) | 7.22 (491) | | |

"The second column above shows the average annual $PM_{2.5}$ concentrations measured at the sampling stations listed on the left. Again, these figures show estimated PM concentrations from all sources in the area, including from cars and trucks, rail and harbor craft as well as other sources. They also reflect locations near the shoreline that are most likely to be impacted by harbor craft emissions. The four columns on the right show the CARB's modeled concentrations calculated at four locations nearest to each

sampling station. As highlighted in the table, Ramboll found from this preliminary check of the data that CARB's modeled estimates are up to 4 times higher than actual measured concentrations of from all sources captured at sampling stations in the same general area. It makes no sense that the emissions just from harbor craft would be higher than the emissions captured in these areas from all possible sources. This raises serious questions about the legitimacy of CARB's model and what if any efforts CARB has made to validate it.

"Ramboll and AWO made numerous requests for information from CARB staff that would help us understand the methodology the agency used to determine health impacts associated with harbor craft emissions. CARB staff were unable or unwilling to provide much of the necessary information, which has forced Ramboll to make more generalized observations about CARB's approach. Those observations are offered in detail in Section 2.2 of the attached report, but in short, (1) there is enormous uncertainty in the health effects data that CARB has presented calling into question the purported benefits of the proposed rulemaking; and (2) CARB has applied health effects analyses in an unconventional way and has failed to report its findings in a way that transparently acknowledges the lack of certainty inherent in their findings.

"What we can say with certainty is that the health risks are overstated, if only by the overestimation of the vessel inventory and emissions, but in all likelihood to a much greater extent due to the unaddressed issues with the modeling itself. CARB's overstating the emissions from harbor craft is magnified in each step of the model, with each highly conservative assumption or input that is propagated throughout both risk assessments. Based on the comparison of the model output with actual PM levels at monitoring sites we have reason to believe that the errors in the model are overestimating the actual exposures to communities along the shoreline, and thus overestimating any potential benefits of the proposed CHC rules by a significant margin. This is too important a rulemaking to be based on a health study with so much unaddressed uncertainty. CARB needs to take the time to get this right.

"To that end Starlight urges CARB to:

- "Develop an accurate vessel population data set using available means of gathering real-time vessel operating information and emission profiles. This should be done for all vessel categories.
- "Validate the emission model to ensure inputs and results are realistic and accurately portray the impact of CHC emissions
- "Amend the study utilizing the corrected data set to determine the industry specific impact and need for regulation.
- "Redraft the Proposed Regulations in collaboration with the CHC industry and other stakeholders to reflect the conclusions of the new study, and the best path achieving our common goal of a cleaner and healthier environment.

"Moving forward with regulation without correcting errors in the underlying data set undermines the legitimacy of the regulatory process."

**Response:** See response to comment 3121-2.

**3124-3:** The commenter states:

"CARB'S ARBITRARY AND CAPRICIOUS EXEMPTION OF SOME VESSELS VERUS OTHERS

"CARB's decision to exempt about 1,570 commercial fishing vessels (approximately 40% of the total CHC population) from the rule is arbitrary and capricious. This decision places 100% of the emission reduction burden of the CHC rule on 60% of the vessel population.

"CARB's rationale for excluding these vessels applies to the towing vessels that operate in coastal and international trade. Specifically:

- "Small profit margins.
- "Demonstrated lack of feasibility for Tier 4 repowers and retrofits.
- "Competition with out of State and global markets; and,
- "Tendency to conduct most of their operations far from the coast.

"Ocean-going tugs and barges, either towed on a wire or rigidly connected through an ATB system, are directly analogous in their operation to commercial fishing vessels and share all four bases that led CARB to exempt commercial fishing vessels. AWO submitted information in April of 2020 showing that 'repowering with EPA Tier 4 engines could be significant and cost prohibitive for some ship assist and escort tugs.' Similar technical challenges exist for ocean-going tugs, barges, and ATBs. These vessels commonly operate in interstate commerce in competition with self-propelled vessels in out of state and global markets. Additionally, the tugboats and barges operating in these markets are required by law to be U.S.-flagged, -owned, -crewed, and -built. This rule would place U.S.-flagged towing vessels at a competitive disadvantage against self-propelled foreign-flagged vessels that are not covered by CARB's rule. Finally, AIS and Marine Exchange data reveals that these vessels conduct most of their operations far from the California coast, giving them a similar air emission profile in California as the exempted commercial fishing vessels.

"CARB's decision to exempt 40% of CHC based on the exact conditions that apply to other non-exempt vessels is arbitrary and capricious and should be remedied in any final rule."

**Response:** See response to comment 3121-3.

**3124-4:** The commenter states:

**"CARB'S PROPOSAL IS TECHNICALLY INFEASIBLE**

"In its April 30, 2020 letter, AWO submitted an Engineering Review Summary performed by Jensen Naval Architects on the Marine Engineers of the Cal Maritime Tier 4 Feasibility study with which CARB supports its assertion that the proposed regulations are feasible for CHC operators. The Cal Maritime study evaluated four DPF retrofit scenarios for a single ship assist and escort tug. The Jensen Review Summary also demonstrates the feasibility of DPF retrofit using a comparable large towing vessel.

While the Cal Maritime study projects a $2.81 million per vessel cost, the Jensen study finds a larger cost impact – between $3.7 and $4.5 million – and makes some important points about the limitations of the Cal Maritime study:

- "This study of one large and spacious ship assists and escort tug is not representative of the diverse tug and towing vessel fleet.
- "The Jensen Review Summary notes "the technical challenges of repowering with EPA Tier 4 engines could be significant and cost prohibitive for some ship assist and escort tugs."
- "The Jensen Review notes that size constraints on some tugs could entirely preclude the placement of aftertreatment systems required by CARB.

"CARB's proposal to combine Tier 3 or Tier 4 engines with DPF aftertreatment technology is unproven, unavailable, and technically infeasible. Size and weight constraints make re-powering and retrofit options impossible for many tug and towing vessels, but even if a vessel had the necessary space to accommodate this technology, there is no available DPF aftertreatment product on the market. The absence of commercially available technology has limited the guidance that engine manufacturers can provide about potential paths to compliance. Additionally, the absence of compliant technology makes planning future capital investment impossible. No matter how carefully a CHC operator has planned out the service life and maintenance schedule of a given vessel, the impact of this proposed rule with its unknowable compliance price-tag cannot be accounted for.

"CARB must acknowledge that there is no available technology that currently meets both the performance standards of the proposed regulation and the propulsion needs of the regulated population of tug and towing vessels. CARB must provide realistic relief for vessels that cannot comply with its rules based on space or feasibility constraints. As the draft rule stands now, Starlight will be forced to spend tens of millions of dollars on unproven and potentially dangerous retrofits on vessels that have only recently been repowered to meet the last iteration of the CHC regulations. In the most egregious case, Starlight has vessels that have just been delivered or it will take delivery off that will be forced to be retrofitted just a few short years after they are first put into service. The financial waste caused by this proposal is staggering and raises the question of whether CARB is legally "taking" property from vessel operators by devaluing fully operational equipment that meets federal standards through state regulation.

"CARB must consider providing vessel operators a feasible path to reducing stack emissions from CHCs. This path must include less prescriptive means of achieving emission reductions and longer-lasting exemptions for vessels that cannot feasibly retrofit."

**Response:** See response to comment 3121-4.

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| Comment Letter<br>3125<br>11/15/2021 | Seymour Beek, Balboa Island Ferry Inc. |

**3125-1:** The commenter states, “Based on our review of the ZEV requirements, compliance with the proposed amendments would result in the need to have battery powered electric propulsion in each of Balboa Island Ferry's vessels, which would result in an extremely high cost to Balboa Island Ferry.

“As an initial matter, it is unclear whether CARB has adequately considered the impact of these costs, the lack of any significant corresponding emissions reductions, or the potential increases in emissions associated with discontinuing services such as Balboa Island Ferry's transportation of passengers and vehicles.”

**Response:** Staff does not expect that the Proposed Amendments would result in a decrease in ferry services within the State. CARB staff has performed a detailed cost and emissions analyses of the Proposed Amendments that would apply to Balboa Island Ferry’s short-run ferry vessels, which would be required to transition to zero-emission operations by December 31, 2025. If compliance costs for the typical short-run ferry in California were passed onto the customer, each ferry passenger would pay an increase of $0.98 per one-way ferry trip. The shortest on-land route between the Balboa Island Ferry terminals would be approximately 6 miles. Therefore, at an assumed two passengers per vehicle, $1.96 per one-way trip would cost less than paying to drive a vehicle 6 miles, which would cost an estimated $3.48 at a federal reimbursement rate of $0.58/mile.

**3125-2:** The commenter states, “Balboa Island Ferry also does not see any consideration in CARB's materials with respect to battery and electrification safety requirements that are or may be implemented by the U.S. Coast Guard, much less the likely costs associated with such requirements.”

**Response:** Please refer to Master Response 1.

**3125-3:** The commenter states, “Without the ferry, all 350,000 vehicles would have to take the alternative route: a commute of about six miles. Conceivably most of the pedestrian passengers would also have to take this route by personal vehicle, taxi, or rideshare. CARB failed to consider the emissions of these automobiles taking the alternative in any analysis. Further analysis should be undertaken to account for these emissions.”

**Response:** For the economic reasons alone, as discussed in response to comment 3125-1, CARB staff does not expect any transportation mode shifts because of the Proposed Amendments. That said, some passengers of the Balboa Island Ferry may opt to take the ferry service even when doing so requires more time and is more costly, especially if they are accessing the Balboa peninsula from a location northbound on

Pacific Coast Highway or along the major freeway connecting this region to the nearest airport. This is because this particular ferry service is an attraction, and may provide service comparable to an excursion vessel. The direction of travel and subset of passengers that do rely on the ferry for transportation would not change their transportation mode based on the cost analysis presented in response to comment 3125-1.

**3125-4:** The commenter states, “The impacts have not been fully considered and you do not have the appropriate and correct information to properly assess the benefits or impacts.”

**Response:** CARB staff reached out to the Balboa Island ferry to receive any supporting data regarding ridership or business-specific operations but did not receive any response. Therefore, the cost metrics cited in response to comment 3125-1 above are based on operations of other short-run ferry operators across the State. The overall emissions benefits and costs of the Proposed Amendments can be found in Appendices G and C-1 to the ISOR, respectively.

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| Comment Letter 3133 11/15/2021 | William Barrett, American Lung Association in California |

**3133-1:** The commenter states:

"Strengthening the Proposal to Improve Health

"We believe that the proposal is a critical step toward healthier air, reduced cancer risk and a range of health improvements in communities most disproportionately burdened by toxic CHC emissions. The proposal could be improved to accelerate the health benefits of greater deployment of zero-emission technologies, reduce policy delays following technology advancement and limit compliance flexibilities that extend the life of high-emitting technologies:

- "CARB should expand requirements for zero-emission technologies beyond the limited range of vessels included in the proposed amendments to accelerate more zero emission technologies as rapidly across the CHC fleet and in line with Governor Newsom's Executive Order N-79-20 which set a state goal to "transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible."
- "CARB should ensure a responsive technology review is in place to further amend the program to accelerate deployment as new zero-emission and other advanced engine technologies come online. This commitment to generating additional emissions reductions should be included as a unique measure in the 2022 State Implementation Plan.
- "CARB should significantly limit compliance extensions to ensure relief from pollution impacts occur in the near term. As proposed, most CHC may be granted compliance extensions as far out as 2034, with certain vessels (e.g., ferries, charter fishing boats, and excursion vessels) eligible to wait even longer to clean up."

**Response:** Please refer to response to comment 2610-1 and Master Response 5.

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| Comment Letter<br>3135<br>11/15/2021 | James Shih |

**3135-1:** The commenter states, “I urge CARB to vote no on regulations that rely on technology that is economically unfeasible and has not been tested as safe on passenger harbor crafts.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>3138<br>11/15/2021 | Thomas Jacobsen, Jacobsen Pilot Service, Inc. |

**3138-1:** The commenter states, “CARB has proposed engine emission regulations that require technology that has not been developed or tested to be reliable and safe at sea. Our three pilot boats deliver pilots to inbound ships, and the transfer process out in the open ocean can be dangerous. It is paramount for us to have reliable and safe engines.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>3143<br>11/15/2021 | Teresa Bui and Hilda Solis, Office of County of Los Angeles Board of Supervisor |

**3143-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. I’m asking you to strengthen the Commercial Harbor Craft rule:

“1. Move forward with a strong rule now to advance zero-emissions and clean up the dirtiest engines in other commercial harbor craft categories.

“2. Set all ferries, tugboats, dredges, and barges on an electrification pathway right now and require full electrification by 2035.

“3. Direct staff to revisit the rule with the Board as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions.

“4. Increase funding for zero-emissions boat pilots, retrofits and new vessels to spur innovation.”

**Response:** Please refer to Master Response 5.

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| Comment Letter 3145 11/15/2021 | Teresa Bui, Port of San Diego Port Commissioner Sandy Naranjo |

**3145-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. I’m asking you to strengthen the Commercial Harbor Craft rule:

“1. Move forward with a strong rule now to advance zero-emissions and clean up the dirtiest engines in other commercial harbor craft categories.

“2. Set all ferries, tugboats, dredges and barges on an electrification pathway right now and require full electrification by 2035.

“3. Direct staff to revisit the rule with the Board as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“4. Increase funding for zero-emissions boat pilots, retrofits and new vessels to spur innovation.”

**Response:** Please refer to Master Response 5.

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| Comment Letter<br>3155<br>11/15/2021 | Brent Perry, Shift Clean Energy |

**3155-1:** The commenter states, “We urge CARB to require 100% zero-emissions deadline for all vessel segments of the Commercial Harbor Craft Rule.”

**Response:** Please refer to Master Response 5.

**3155-2:** The commenter states, “We appreciate the hard work that CARB staff have done on the proposal. However, the draft rule as written is short-sighted. The rule does not reduce greenhouse gas emissions and risks creating a stranded asset scenario for harbor craft owners who may pay to retrofit to Tier 3 and 4 engines only to be forced to make a full zero-emission transition in quickly proceeding years later.

“The world is undergoing a period of significant change unlike anything in human history. All of us must work together to reduce fossil fuel emissions. **For the marine sector, a strong but achievable standard would be that all harbor craft operating in the state must be zero emission by 2035.** What we need now to drive uptake are strong market accelerating policies, including incentives and funding mechanisms.”

**Response:** The Proposed Amendments would achieve an overall reduction in GHGs compared to the baseline, for more detail please refer to the Initial Statement of Reasons, and Master Response 5.

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| Comment Letter<br>3156<br>11/15/2021 | Suzanne Hume, CleanEarth4Kids.org |

**3156-1:** The commenter states, “Require a 100% zero-emissions transition for all harbor craft by 2035, including tugboats and barges.

“Revisit the rule regularly to maximize emission reductions as new technology and innovations are developed.

“Increase funding for zero-emissions replacements and retrofits.”

**Response:** Please refer to Master Response 5.

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| Comment Letter<br>3158<br>11/15/2021 | R. A. Carpenter, R.E. Staite Engineering, Inc. |

**3158-1:** The commenter states, “Safety is our #1 concern.

“Heavy marine construction is inherently dangerous. We have been tracking many of the issues manufacturers have been having with their Tier 4 marine equipment. We understand that there has been some communication with the Coast Guard related to the safety issues of the proposed technology. Before a regulation is approved, it is important that the safety concerns be shared with all stakeholders. Allowing more time for implementation allows more time for safety trials and testing. The middle of the ocean is a dangerous place for a mishap, and anything our company can do to send our crews out with every safety advantage ahead of time is our goal. Allowing more time for safety is a must.”

**Response:** Please refer to Master Response 1.

**3158-2:** The commenter states, “We have concerns about the requirements and costs for opacity testing. Our tug boats are specially tuned for performance to provide the power, maneuverability, and braking necessary to operate safely while maneuvering heavy loads, towing equipment or operating in tight quarters. We agree with the American Waterways Operators conclusion that ‘Tuning the engine to minimize smoke during the transitional phase could compromise engine integrity when the operator needs maximum responsiveness to ensure safe operation.’”

**Response:** CARB staff does not anticipate any engine tuning changes in response to the opacity testing requirements in the Proposed Amendments. This test procedure is adapted from the SAE J1667 recommended practice, and is a field test to evaluate the repair or maintenance status of the engine to its factory certified condition only. For additional information, refer to Master Response 1.

**3158-3:** The commenter states, “The number of CHC vessels has been a point of contention with the maritime industry since the Proposed Amendment was introduced. Appendix H, 2021 Update to the Emission Inventory for Commercial Harbor Craft: Methodology and Results details how CARB Staff determined their numbers, but does not address the numerous questions from the industry about possible discrepancies.

“The number of vessels is the basis for many of the studies and conclusions, particularly about health and environmental impacts. Until the number of vessels can be verified, the conclusions drawn in the Standardized Regulatory Impact Assessment (SRIA), Draft Environmental Analysis (EA) and the Staff Report: Initial Statement of Reasons (ISOR) regarding health outcomes may not be valid.”

**Response:** Please refer to Master Response 3.

**3158-4:** The commenter states, “The verification of the vessel data as mentioned above is critical in estimating health benefits or declines from CHC emissions.”

**Response:** See Master Response 3.

**3158-5:** The commenter states, “It is recognized that everyone benefits from reduced emissions, but the drastic measures that are being targeted at CHC vessels is not the whole solution to the issue. It has been acknowledged that each port in California is unique and may have other contributing factors to emissions besides CHC. We would like to see a study done that looks at all of the sources of pollution that contribute to health impacts before regulations are changed. We would like a study of each port and the contributing emission sources so that a better picture of CHC emissions can be generated and solutions can be created that are in proportion to the pollution.”

**Response:** Please refer to Master Response 3.

**3158-6:** The commenter states, “Page 5 of the Public Notice reads (underline ours for emphasis):

“‘The Proposed Amendments are expected to improve California residents’ health benefits, especially those in communities located near California’s seaports and marine terminals. Many of these communities are disadvantaged and bear a disproportionate health burden due to their close proximity to emissions from CHC (at dock, and in transit) and other emission sources including trucks, locomotives, and terminal equipment serving the seaports. These improvements in health benefits are anticipated to include reductions of 531 premature deaths reduced, 73 hospital admissions for cardiovascular illness, 88 hospital admissions for respiratory illness and 236 emergency room visits. The total statewide valuation due to avoided health outcomes between 2023 and 2038 totaled $5.25 billion.’

“We agree that any improvement in someone’s health or preventing a premature death is very important, however, the numbers referenced above are shockingly small for a time span of 15 years that covers the entire state of California. We question the results, are the gains really that small?”

**Response:** Please refer to Master Response 3.

**3158-7:** The commenter states that “we are not sure about how the technology will integrate with our vessels and are very uncertain about the safety of the applications. We do not have the opportunity to see how the technology is applied in a real world situation. We can’t ask questions of the installers or colleagues in the industry, because no one else has the technology either. It is not tested or vetted. As of February 2021, there is one possible verified level 3 DPF.”

**Response:** Please refer to Master Response 1, response to comment 696-1, response to comment 696-2, and response to comment 2602-2.

**3158-8:** The commenter states, “A thorough review of Section IV. Impact Analysis and Mitigation Measures, Section 3, Air Quality of the Draft Environmental Analysis needs to be completed. Environmentally this is probably the most important section of the Draft Environmental Assessment and there are statements throughout the document that several modeling options are not available and that in many cases it is not possible to predict improvements regarding air quality. The sentences below are out of context, but are not meant to be misleading, only illustrative of the difficulties of pin-pointing air quality gains or degradations.

“Page D-37: ‘It is not possible to predict exactly where project related improvements would occur or what each project would involve.’

“Page D-38: ‘The ability for CARB staff to correctly estimate the location, amount, and types of projects which could occur in response to increased vessel repowers and new builds, has been determined to be too speculative for a thorough evaluation.’

“Page D-39: ‘Therefore, modeling emissions associated with the manufacturing and delivery of marine vessels is not possible. For calculating increased emissions associated with vessel repowers and new builds, the industry standard CalEEMod is thus not a viable modeling option.’

“Page D-43 ‘However, the exact location and magnitude of specific health impacts that could occur as a result of project-level construction-related emissions in specific air basins is infeasible to model with any degree of accuracy with the level of information known about the Proposed Amendments.’”

**Response:** Section IV.A of the Draft EA provides an explanation of the approach to the analysis. As discussed, the potentially significant adverse impacts on the environment discussed in the Draft EA, and significance determinations for those effects, reflect the programmatic nature of the reasonably foreseeable compliance responses of the regulated entities. The scope of the analysis and assumption included in the Draft EA are provided in Section IV.D as follows:

The degree of specificity required in a CEQA document corresponds to the degree of specificity inherent in the underlying activity it evaluates. An environmental analysis for broad programs cannot be as detailed as for specific projects (14 CCR Section 15146). For example, the assessment of a construction project would be naturally more detailed than one concerning the adoption of a local general plan because construction-related effects can be predicted with more accuracy (14 CCR Section 15146(a)). Because this analysis addresses a broad regulatory program, a general level of detail is appropriate. However, this Draft EA makes a diligent effort to evaluate significant adverse impacts and beneficial impacts of the reasonably foreseeable compliance responses that could result from implementation of the Proposed Amendments and contains as much information about those impacts as is currently available, without being unduly speculative.

Because information related to how more specific information could be incorporated into the discussion, no further response can be provided.

**3158-9:** The commenter states, “The following statement repeats throughout the Draft Environmental Analysis (example taken from EA pg D-27):

‘Because the authority to determine project-level impacts and require project-level mitigation lies with local land use and/or permitting agencies for individual projects, CARB finds it legally infeasible to implement and enforce this measure. Moreover, due to the programmatic analysis of this EA, which does not allow project-specific details of potential impacts and associated mitigation, there is inherent uncertainty in the degree of mitigation that lead agencies may ultimately implement to reduce the potentially significant impacts if they approve these potential projects.

‘Consequently, while impacts could likely be reduced to a less-than-significant level with mitigation measures imposed by the land use and/or permitting agencies acting as lead agencies for these individual projects under CEQA, if and when a project applicant seeks a permit for compliance-response related project, this Draft EA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that short-term construction-related and long-term operational impacts to aesthetics associated with the Proposed Amendments would remain **potentially significant and unavoidable**.’

“Are impacts less than significant or potentially significant and unavoidable? While we understand the limits of authority to impose mitigation, the EA should provide more direction in terms of environmental impacts of the Proposed Amendments.”

**Response:** Section IV.A of the Draft EA provides an explanation of the approach to the analysis. As discussed, the potentially significant adverse impacts on the environment discussed in the Draft EA, and significance determinations for those effects, reflect the programmatic nature of the reasonably foreseeable compliance responses of the regulated entities. The scope of the analysis and assumption included in the Draft EA are provided in Section IV.D as follows:

“The degree of specificity required in a CEQA document corresponds to the degree of specificity inherent in the underlying activity it evaluates. An environmental analysis for broad programs cannot be as detailed as for specific projects (14 CCR Section 15146). For example, the assessment of a construction project would be naturally more detailed than one concerning the adoption of a local general plan because construction-related effects can be predicted with more accuracy (14 CCR Section 15146(a)). Because this analysis addresses a broad regulatory program, a general level of detail is appropriate. However, this Draft EA makes a diligent effort to evaluate significant adverse impacts and beneficial impacts of the reasonably foreseeable compliance responses that could result from implementation of the Proposed Amendments and contains as much information about those impacts as is currently available, without being unduly speculative.”

For each potentially significant impact, mitigation measures are provided that could reduce impacts to a less-than-significant level. However, as noted in the quoted text included in the comment, CARB cannot enforce mitigation measures that are subject to local land use authorities, thus a less-than-significant conclusion cannot be made for impacts that would rely on adoption by local agencies as discussed throughout the analysis presented in Section IV of the Draft EA. Therefore, the environmental impacts of the Proposed Amendments are determined to be potentially significant and unavoidable for those resource areas.

**3158-10:** The commenter states, "Our understanding of the Proposed Amendments are to reduce emissions in order to improve the health of those in impacted polluted areas. By selling vessels out of state, the problem would just be shifted elsewhere. Emissions may be reduced in California, but the impact to global warming would remain. In addition, most areas that have maritime commerce already have vessels."

**Response:** Vessels sold out of state would meet the local emissions requirements associated with the location for which they are sold. Vessels with lower emissions standards in other parts of the world would exist regardless of the Proposed Amendments. See Master Response 3 for assumptions related to the number of vessels and associated GHG reductions of the Proposed Amendments.

**3158-11** The commenter states, "The following statement was made on page D-2 of the Draft EA:

'Construction and modification of vessels would likely occur both inside and outside of California. As outlined in Section IV.E of Appendix E to the ISOR, CARB staff performed a survey of existing shipyards in California, Oregon, and Washington, which confirmed there is sufficient capacity to repower, retrofit, and build new vessels in response to the Proposed Amendments. The survey identified capacity for 23 percent of repowers and retrofits (82 out of 353 repowers per year), and capacity for 73 percent of new ship builds (72 out of 98 new builds per year) in either Oregon or Washington. Therefore, the majority of new vessel builds are expected to occur outside of California. This may be particularly likely because labor can be cheaper in other states.'

"Why are we not planning for these retrofits and new vessels to occur in California?"

**Response:** The quoted text in this comment is derived from page D-12 of the Draft EA, which is included in a discussion of the reasonably foreseeable compliance responses associated with the Proposed Amendments. As discussed on page D-3 of the Draft EA, the policy aspects of the Proposed Amendments do not directly change the physical environment; however, indirect physical changes to the environment could result from reasonably foreseeable compliance responses taken in response to implementation actions identified in the Proposed Amendments. The Draft EA contains "an environmental analysis of the reasonably foreseeable methods by which compliance with that rule or regulation will be achieved (14 CCR Section 15378)." The reasonably foreseeable compliance responses are not directive of how to implement the Proposed

Amendments. Rather they provide a series of assumptions of how covered entities would implement the Proposed Amendments.

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| Comment Letter<br>3165<br>11/15/2021 | Gregg Bombard, Catalina Channel Express, Inc |

**3165-1:** The commenter states:

“A Better Alternative

“CCE believes that, working with CARB staff and new technologies, we can achieve a better compliance path that will result in some immediate emissions benefits while ultimately resulting in our fleet achieving zero emissions within a decade.

“First, CCE will immediately convert to using renewable diesel yielding significant and immediate emissions reductions.

“Second, CCE will work with CARB and new technologies to develop the use of green hydrogen, electric, or some combination of the two, to upgrade the CCE fleet in a reasonable time. While these technologies have not yet progressed to the point needed (given the size and speed of Catalina ferries), such technologies are not that far off. Already there are pilot projects for smaller vessels involving electric and green hydrogen technologies. More companies are also now offering green hydrogen for transportation fuels in California. This signals that CARB has an opportunity to show its leadership in developing a zero emission solution for the marine transportation industry by assisting the private sector to develop such technologies.

“Third, CCE will work with local shipyards to develop and build zero-emission vessels here in California, creating a new, green shipbuilding industry, more jobs, and economic opportunity for all Californians.

“While the prospect of a zero-emissions ferry fleet is on the horizon, so is the harm that would be caused if CARB does not allow sufficient time for CCE to achieve this goal without allowing costly and infeasible Tier IV standards to prevent this ‘small’ company from reaching a much better environmental goal.”

**Response:** For discussion on how CARB identifies feasible alternatives to a proposed action (Alternatives were analyzed in Section VII of the Draft EA), refer to Master Response 5.

As described on page D-9 of the Draft EA, the Proposed Amendments include requirements for the adoption of ZEAT where feasible for all operations in California and identifies two areas that are technologically feasible and cost effective for zero emission operations: new and in-use short run ferries, and new excursion vessels. The Proposed Amendments also include additional pathways for adopting ZEAT for any CHC operation where a given operation is feasible but not required. The Proposed Amendments include additional pathways for adopting ZEAT for any CHC operation where a given operation is feasible but not required. For example, consider the scenario

in which a non-short-run ferry (such as those operated by CCE), which is not subject to ZEAT requirements but must meet Tier 4 + DPF performance standards, is removed from service and replaced with a zero-emission vessel before its compliance date. In that scenario, the owner or operator of the ferry may request that CARB grant up to seven additional years to the compliance date for another vessel in the owner or operator's fleet that is operating in the same air basin.

Please refer to Master Response 1 in regard to feasibility associated with the performance standards included in the Proposed Amendments and different compliance extensions available if additional time is needed. Refer to Master Response 5 for a discussion of how feasible compliance options are determined and technology advancements are regularly assessed by CARB. CARB staff has not made any adjustment to delay cleaner combustion requirements due to the potential for zero-emission technology to come to market. CARB staff is unsure how soon zero-emission technology will be available and widespread in the same duty cycle rating as current diesel engine technology on CHC.

**3165-2:** The commenter states, "We are also concerned that the regulations may increase GHG emissions. In existing vessels, the mandated Tier IV engines will reduce the ferry passenger capacity by over 50% and will force CCE to make twice as many trips to simply keep up with current demand. The additional trips will require the use of more fuel which will defeat the very purpose of the regulations."

**Response:** The commenter would not double their number of trips or increase the number of trips for several reasons. First, most ferry operators operate at below half capacity, especially commuter ferries that are moving passengers in one direction in the morning, and another direction in the afternoon. Second, under compliance extension E3 as set forth in subsection (e)(12)(E)(3) of the Proposed Amendments, demonstrating that passenger capacity is reduced by 25 percent is sufficient for an applicant to qualify for technical infeasibility, which would allow additional compliance time to plan, finance, and deploy a new build vessel. Therefore, it is unlikely that a ferry operator such as CCE would upgrade an existing vessel, and not make any other modifications to the vessel to retain the original passenger capacity within 25 percent or lower. If it is not possible to retain passenger capacity, CARB staff anticipates vessels would be replaced as outlined in Appendix C-1 to the Staff Report. Third, and before considering replacement vessels, CARB staff anticipates operators to take the lowest cost option for compliance, which for major operators like CCE, may include shifting vessels among routes to ensure peak demand routes and times are serviced by the largest and/or newest vessels of the fleet.

**3165-3:** The commenter states, "The primary concern with the proposed regulations is that the weight and size of the new engines (Tier IV) will require complete rebuilding of existing vessels while significantly reducing passenger loads. We ask CARB to take the longer view of embracing a zero-emission future and partnering financially with the private sector to convert the Catalina ferry fleet to 100% clean engines in a reasonable time period."

**Response:** Please refer to response to comment 3165-2.

**3165-4:** The commenter states:

"• The retrofit would add a significant amount of weight (approximately 15 tons) to the vessel. To keep the vessel within its "structural design limit," a retro-fitted vessel's passenger capacity would need to be adjusted down from 390 to 172 passengers – a 218 passenger or 56% reduction.

"• Post retrofit, each vessel would need to make two round trips to Catalina Island to carry its current USCG certified capacity of passengers.

"• The vessel retrofit would burn 100% more fuel on a passenger carried basis, produce more emissions per run and more than double the carbon footprint per passenger carried."

**Response:** This scenario is unlikely due to the reasons discussed in response to Comment 3165-2 above. Please also refer Master Response 4.

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| Comment Letter 3170 11/15/2021 | Max Cohen on behalf of Martin Curtin, Curtin Maritime Corp. |

**3170-1:** The commenter states, “Additionally, there are concerns regarding the impact of the DPF + SCR aftertreatment systems on the vessel's exhaust system which was not addressed in the Cal Maritime Feasibility Study. These aftertreatment systems choke the flow of exhaust creating a backup of pressure which can lead to engine failure. This highlights a valid safety concern, rather than a fiscal burden. Attempting to rapidly force unavailable, infeasible, and untested technology upon this specific class of vessel will put stability, and ultimately crew safety, in jeopardy.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

**3170-2:** The commenter states:

“- Define its methodology for establishing the population of CHCs operating over 300 hours in California waters. It is important that the methodology also accounts for the specific operational usage of these vessels.

“- Show direct cause between CHC's and higher cancer rates. It is irresponsible to draw this conclusion without first proving causation for obvious reasons. Placing the burden of guilt upon CHC operators, while openly acknowledging that ‘Industrial & On Road emission sources will cause $NO_x$ levels to increase through 2029’, in a region that is heavily industrialized and situated amongst the nations most congested freeway systems seems to be a rush to judgement.”

**Response:** The operating hours, or activity levels of the vessel fleets, were obtained primarily from reporting data submitted by vessel operators to CARB to comply with the Current Regulation. Some activity data was submitted by Port of Oakland that was also considered, as discussed in Appendix H of the Staff Report. CARB staff estimated cancer risks from CHC operation in Appendix G of the Staff Report. The cancer risk estimates are based CHC emissions and activities, and it shows there are significant health impacts from CHC operations. Other industrial activities and on-road emission sources have health impacts, but are outside the scope of this rulemaking. Please also refer to Master Response 3.

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| Comment Letter<br>3171<br>11/15/2021 | Cynthia Pinto-Cabrera on behalf of Dr. Catherine Garoupa White, Matt Holmes, and Mariah Looney, Central Valley Air Quality Coalition, Little Manila Rising, and Restore the Delta |

**3171-1:** The commenter states, "As it stands, CARB's current draft harbor craft rule misses the opportunity to fully embrace this technology transition and provide much-needed emissions reductions. CARB must maintain its commitment to disadvantaged communities like south Stockton to reduce cumulative impacts by expediting the transition to zero-emissions technologies for commercial harbor crafts. This step is critical for protecting the health of Valley residents living near the Port of Stockton, and for portside communities across the state."

**Response:** The Proposed Amendments include mandates for ZEAT in certain applications, where staff determined it to be a feasible transition. In addition to these ZEAT requirements, the Proposed Amendments also include the Alternative Control of Emissions (ACE) pathway, and the ZEAT Credit to further encourage and incentivize the transition to ZEAT in the marine sector. DACs were carefully considered with each requirement, and the following additional stringency was built into the proposal for vessels operating near DACs.

To ensure that DACs would not experience a higher burden than other communities, the additional compliance time given as a ZEAT credit may not be applied to a combustion engine on a vessel with a homebase (a facility where a vessel is anchored or docked the majority of the time within a calendar year) in a DAC, unless the ZEAT vessel is also deployed in a DAC. A vessel is operating in a DAC if its homebase or any regularly scheduled stops are within two miles of a DAC. For operators to take advantage of the ACE provision in the Proposed Amendments, the applicant must demonstrate in their application that DACs would not experience a higher burden than other communities as a result of implementing an ACE.

To further reduce emissions in DACs, the Proposed Amendments would also require more stringency for low-use compliance in areas that qualify as a DAC. The low-use compliance thresholds in DACs would be half that in other areas of the State. The low-use thresholds for each engine tier in DACs and other areas are outlined in Table 22 of Appendix A of the ISOR, and would apply to all vessels, regardless of category.

The feasibility compliance extension of the Proposed Amendments provides a renewable two-year extension for Tier 4 engines on a vessel that have no fitment for a DPF and operate below 2,600 hours/year. If the vessel is operating in a DAC, this operational threshold is also halved to 1,300 hours/year, to provide additional stringency. Please also refer to Master Response 5.

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| Comment Letter 3174 11/15/2021 | Rob Southwick, Southwick and Associates |

**3174-1:** The commenter states, “Please note that it is possible to measure the effects of price increases on California's license sales. The necessary license data are in possession of the California Department of Fish and Wildlife. CARB’s economic analysis (SRIA) does not refer to any effort to conduct this basic statistical assessment.

“3. Will there be any impact on fisheries management and state conservation efforts?

“Fisheries management is largely dependent upon the sale of fishing licenses.”

**Response:** CDFW's License and Revenue Branch is responsible for the issuance and revenue collection of approximately 400 types of licenses and permits related to recreational hunting and fishing, commercial fishing and special permits. The Department enlists approximately 1,300 retail license agents and online license sales to issue sport fishing and hunting license through the Automated License Data System (ALDS). License Agents vary in size from "mom and pop" stores in rural areas to large, big box stores in urban areas. License Agents issue licenses to the public through Internet Point of Sale terminals. California law establishes fishing and hunting license fees each year for the CDFW. The base fee for sport fishing licenses established in Fish and Game Code Section 7149.05 and the fees for validations and most report cards are established in other sections of the Fish and Game Code or Title 14 CCR (CDFW 2021b). CDFW is responsible for determining how fees will be used throughout the state. It not anticipated that the Proposed Amendments would affect fisheries management and state conservation efforts performed by CDFW because funding for this agency is derived from many different sources and fees can be increased, if necessary.

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| Comment Letter<br>3177<br>11/15/2021 | Dan Nutt, Kirby Offshore Marine, LLC |

**3177-1:** The commenter states, “But we believe that, based on the information presented in the AWO’s comments, the emission impacts of towing vessels and barges, including ATB’s, have been miscalculated and their effects on public health overstated in the CARB Statement of Reasons for the new rules.”

**Response:** The comment refers to AWO’s comment letter. It is unclear which issue in particular is being addressed. For responses to a comment letter submitted by AWO, please see responses to comment letter 3121.

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| Comment Letter<br>3184<br>11/15/2021 | Melynda Dodds |

**3184-1:** The commenter states, “The proposed requirements are unsafe. Please consider the safety of boaters.”

**Response:** Please refer to Master Response 1.

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| Comment Letter 3185 11/15/2021 | Madeline Rose, Pacific Environment |

**3185-1:** The commenter states, “However, we still believe the rule misses the opportunity to embrace electrification solutions for the commercial harbor craft sector and remain deeply concerned that the rule as written generates almost no material greenhouse gas reductions. In the face of climate emergency, we believe that the draft CHC rule remains insufficient and that significantly more harbor craft segments must be pushed off of fossil fuel propulsion to 100% zero-emissions by 2035.

“We therefore urge CARB to go further to set an even stronger, zero-emission rule:

“I. Require a 100% zero-emission transition for more harbor craft segments by 2035, notably all ferries, tugboats, dredges and barges, which are allowed to stay on diesel under the proposal as written:”

**Response:** Please refer to Master Response 5.

**3185-2:** The commenter states, “The proposed regulation is still not sufficiently ambitious and misses greenhouse gas emissions reduction potential by requiring zero-emissions for only two segments. This risks creating a stranded asset scenario for harbor craft owners who may pay to retrofit to Tier 3/4 engines, only to be forced to make a full zero-emission transition in quickly proceeding years later. The proposed regulation also risks putting CARB out of compliance with E.O. N-79-20.”

**Response:** Please refer to Master Response 5.

**3185-3:** The commenter states:

“**II. Include technology reopener in rule language to revisit zero emission options as the commercial market matures**

“With technology changing so rapidly, we recommend that CARB provide the ability to reopen the rule as the commercial market matures. We are attaching with our comment letter the Getting to Zero Coalition’s ‘Mapping of Zero Emission Pilots and Demonstration Projects’ report.”

**Response:** Please refer to Master Response 5.

**3185-4:** The commenter states:

“**III. Include a State Implementation Plan commitment to revise this rule as technology matures to achieve additional reductions.**

“The final rule should include an official, time-bound, aggressive commitment on when the next iteration of this rule will be considered and adopted.”

**Response:** Please refer to Master Response 5.

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| Comment Letter 3189 11/15/2021 | Elias Van Sickle on behalf of Pace Ralli, SWITCH Maritime |

**3189-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. SWITCH is asking CARB to strengthen the Commercial Harbor Craft rule in the following specific ways:

“1. Move forward with a strong rule now to advance zero-emissions and clean up the dirtiest engines in other commercial harbor craft categories.

“2. Set all ferries, tugboats, dredges and barges on an electrification pathway right now and require full electrification by 2035.

“3. Direct staff to revisit the rule with the Board as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“4. Increase funding for zero-emissions boat pilots, retrofits and new vessels to spur innovation.”

**Response:** Please refer to Master Response 5.

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| Comment Letter<br>3191<br>11/15/2021 | Ernie Reinke |

**3191-1:** The commenter states: “2.) The proposed technology for the Diesel Particulate Filter (DPF) does not exist and due to non existence, has not been approved by the U.S. Coast Guard.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

**3191-2:** The commenter states: “3.) The proposed technology has not been tested and has not been proven to be safe for use at sea. This could lead to putting human lives in danger.”

**Response:** Please refer to Master Response 1.

**3191-3:** The commenter states: “5.) Over 80% of the existing Sport Fishing fleet is constructed of wood, fiberglass and combinations of said materials. Boats built of these materials would not be safe to operate if they could be retrofitted with proposed emissions devices. The result of the newly proposed emissions devices would require boats currently being used, to be replaced with boats made of steel hulls. This requirement would force most sport fleet operators out of business as the cost of this would be untenable.”

**Response:** Please refer to Master Response 1 and response to comment 696-1.

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| Comment Letter<br>3195<br>11/15/2021 | Greg Hurner on behalf of Ken Franke and Rick Powers, Sportfishing Association of California and Golden Gate Fishermens Association |

**3195-1:** The commenter states, “Further, CARB has not been responsive to input from vessel owners to improve the data CARB is using to justify the health benefits of the rule. For example, CARB has ignored the request to use the logbook data that captures the operational location of each vessel and is electronically logged daily by the captains under threat of criminal penalty. Instead, CARB uses a less accurate method to make assumptions about a few vessels and inaccurately extrapolates that profile to the fleet statewide. This leads CARB to assume vessels operate 83% of the time in regulated waters. However, using logbook data, a vessel owner determined they operated in regulated waters an average of only 16.28% of the time over a five-year period. This is also not a one boat outlier as over 50% of the inspected CPFV operate out of the same area in a similar manner.

“To attempt to conceal this fatal error, CARB suggests that uninspected six-pack (6 passengers or fewer) boats should be combined with inspected CPFVs for looking at the emissions, impacts, and benefits from the rule. Certainly, there are more six-pack boats than inspected CPFVs, but most are not subject to the rule as they have gasoline engines. In fact, there are roughly 40 sixpacks that operate full-time, and it is believed that most of those are gasoline engines. The balance of diesel six-packs would likely meet the low use thresholds; however, their emissions are still included in the CPFV category and skewing the data.

“By combining vessels that operate differently, utilizing fatally flawed modeling, ignoring constructive input, and not providing transparent access to data, CARB is purposely overstating emissions contributions from inspected CPFVs to obfuscate that the proposed rule is not based on adequate information, and is not cost effective or technologically feasible. In addition, the rule creates significant barriers to social equity for ocean access. Because of these and other flaws, CARB cannot determine that the proposed rule creates a positive cost-benefit and that there are no reasonable alternatives. Especially, when using accurate operational data would demonstrate that nearly all CPFVs operate distant from CalEnviroScreen identified environmental justice communities

“Analysis of the data CARB did provide (see Exhibit 1), even putting aside intrinsic overstatement, reveals it projects these rules will contribute daily emission reductions from CPFVs that will be less than a single ton of nitrogen oxide ($NO_x$) emissions per day and will do so by requiring engines that do not yet exist and are technologically infeasible for these boats, yet will be economically fatal to an entire industry that caters to broadly diverse socioeconomic groups and that supports access by those in disadvantaged communities to sustainable fishing and enjoyment of the state’s natural ocean resources. Meanwhile the Rules ignore the transport shipping fleet, so called “ocean going vessels,” with roughly 150x more emissions than CPFVs currently

contribute, even while they continue to clog our Ports and pollute our communities with excess emissions due solely to congestion in the South Coast basin alone in amounts equivalent to the entire state-wide contribution of CHCs and nearly 10x that of CPFVs."

**Response:** Responses to this summary of comments are provided below in response to comment 3195-2 through 3195-9.

**3195-2:** The commenter states:

"G. CARB Has Not Made the Necessary Information Available to Adequately Review the Alleged Emission and Health Impacts/Benefits from the Rule"

"Information as important as this to a major rulemaking should be much easier to access and available much earlier in the rulemaking process. CARB should provide the data in the most easily readable and universal programs possible. There should be more detailed data tables in your staff report, or attached to it, that have every emissions modeling, risk, and health benefit data point for each year, vessel category, and air basin as well as all of the input variables used in the calculations and their sources."

"Transparency should be the order of the day, and the format and timeline in which you have supplied data is far from transparent. It feels as if CARB is making access to these data as difficult as possible as well as providing data so late in the process that there is not adequate time to do the necessary review."

**Response:**

CARB staff has posted the staff report and made the rulemaking record available for public review as legally required during the 45-day comment period. In addition, CARB staff has publicly posted and answered questions of regulated industry to simplify the process of quickly providing requested information. The files are posted using commonly available compressed file extensions, or in the format in which the files were created. The public links were posted on CARB's web site here (https://ww2.arb.ca.gov/our-work/programs/commercial-harbor-craft/chc-meetings-workshops), and links were also provided directly to the stakeholders.

**3195-3:** The commenter states:

"1. By Improperly Combining Inspected Vessels with Six-Pack Charter Operations, including those with gas-powered engines, CARB has Misleadingly Conflated and Skewed the Data, While Refusing to Conduct or Provide More Meaningful and Insightful Information

"The combination of inspected vessels with six-pack boats skews emission numbers and risk impacts from inspected vessels such that we cannot see the separate contribution of each vessel category. Beyond the fact that both offer fishing opportunities to the public, there are very few other similarities between inspected

vessels and the six-pack boats. Further, since these boats are prevalent in different locations across the state at different population sizes/percentages, their inclusion in the data set also skews the contribution of inspected vessels in each air basin falsely makes it appear that there are more inspected vessels in the major health impact zones (South Coast and Bay Area). In addition, since all but a few of the diesel-powered six-pack boats, which are regulated by this rule, are part-time vessels, it does not make sense to regulate them at all under the rule.

“SAC specifically requested data separately for inspected vessels and six-pack boats. It really is key to have all of this data separately as without it, stakeholders cannot adequately assess the emission/risk/health benefit contribution from the inspected vessels and whether the stringent regulation of those boats is reasonable in light of their separate and unique impacts. SAC’s data requests in this regard are detailed below:

- SAC asked for separate emission numbers for inspected and six-pack vessels. CARB indicated that these data were not separated. We believe CARB should have the data to do these calculations separately, and that the calculations should be straightforward for them to complete.
- SAC asked for separate risk reduction numbers for inspected and six-pack vessels. CARB indicated these data were not separated. We believe CARB should have the data to do these calculations separately. Once CARB completed the separate emission numbers above, this task would be easy to complete.
- SAC asked for separate health benefits numbers for inspected and six-pack vessels. CARB indicated that these data were not separated. We believe that CARB should have the data to do these calculations separately once they completed the separate calculations for emissions and risk reductions.
- SAC asked for a separate air modeling, risk calculations, and health benefits analysis for inspected and six-pack vessels as part of the detailed analysis completed in the BAAB and SCAB. CARB indicated that this analysis was not completed separately for each vessel category, which we believe is a major flaw in the analysis. It is critical to know which vessel types are contributing the most to these risks/health benefits.
- SAC asked for separate cost numbers for inspected and six-pack vessels. CARB said these data were not separated. We believe that CARB should have the data to do these calculations separately. This is very important since the capital and operating costs for these boats vary substantially.

“Much of the data and analysis that was furnished by CARB arrived late, weeks after the public notice and comment period commenced, and was presented in cumbersome and, in several instances, wholly inaccessible format, preventing meaningful analysis. The industry and the public deserve complete transparency and data before such disruptive standards are adopted.”

**Response:** CARB staff has separated harbor craft into 18 categories in the emission inventory and has included all CPFV vessels in a single category. CARB staff disagrees

with the commenter that these two types of fishing vessels should be separated. First, CARB staff recognizes that most vessels are custom built and have at least slightly different operations or business models depending on their design. Rather than creating a category in the emission inventory for each sub-class of vessels, some level of grouping is performed. Because a variety of types – here 6-pack and larger inspected CPFVs – are included proportionally in the input data, there is no skewing of the final emissions, costs, or benefits of the regulatory requirements. Whether a 6-pack or inspected CPFV, both are licensed by the California Department of Fish and Wildlife (CDFW) to perform sportfishing activities. On average, the 6-pack vessels operate fewer hours per year than the inspected fleet, and these activity values have been proportionally considered in the emission inventory. Vessels that operate under the low use thresholds (up to 700 hours for a Tier 3 or 4 engine) when within Regulated California Waters, can comply without upgrading to the proposed performance standards. CARB staff provided data for the combined category of CPFVs – costs, emissions, and benefits, which was discussed in response to Comment 3195-2.

**3195-4:** The commenter states:

“2. By Using Combined Data and Analysis, CARB Has Prevented an Adequate and Accurate Assessment of CPFV Contributions to Emissions and Health Impacts

“Some of CARB’s analyses conflate the overall projected risk impacts and health care benefits of ALL CHC and not specifically the 174 inspected CPFVs. Sportfishing and whale watching boats typically represent a very small portion (approximately 10%) of the CHC found in most marinas and harbors. Further, CPFVs are not present in significant numbers within large ports that serve international vessels where CARB’s projected health benefits are greatest (e.g., Los Angeles and the San Francisco Bay Areas). As already highlighted above, approximately 50% of the full-time USCG inspected CPFV’s operate from San Diego County; however, only approximately 7% of the expected health benefits per CARB’s numbers occur in San Diego County. This strongly suggests that stringently regulated inspected CPFVs will not deliver the substantial health benefits invoked to justify this rule.

“SAC made the following data requests relative to this issue:

- SAC asked for separate risk reduction numbers individually for all CHC vessel types. CARB indicated these data were not calculated, which makes it impossible to compare and contrast the risk contribution of each vessel type.
- SAC asked for separate health benefits numbers individually for all CHC vessel types. CARB indicated that these were not evaluated, which makes it impossible to compare the relative contributions of each vessels category to the alleged health benefits under the rule.
- SAC asked for separate air modeling, risk calculations, and health benefits for each CHC vessel type for the detailed analysis in the BAAB and SCAB Basins. CARB said that this analysis was not completed separately by vessel,

> which prevents us from demonstrating that inspected CPFVs are minor contributors to risks/health benefits in these key locations, compared to other CHC."

**Response:** CARB's emission inventory and fact sheets, available online here (https://ww2.arb.ca.gov/resources/fact-sheets/chc-fact-sheet-commercial-passenger-fishing-sportfishing-vessel), demonstrate that 26 percent of CPFVs in California (92 out of 352), not 50 percent as indicated above, have a homebase in the San Diego region. In addition, the commenter is identifying requests for separation of cancer risk and health benefit valuation by vessel category, which was not analyzed or presented by CARB staff in this rulemaking. However, the emissions contributions within Regulated California Waters are presented in Appendices H and G to the ISOR, which can be used to evaluate the emissions contribution of CPFV (i.e. sportfishing vessels) compared to all other harbor craft.

**3195-5:** The commenter states:

"5. CARB Actively Ignored Available Vessel Logbook Information to Gather True Operational Data but Instead Relied on Incomplete and Insufficiently Representative AIS Data for Its Modeling and Risk Analysis.

"When making the calculations for their inventory and health analysis, CARB used incorrect assumptions relative to CPFVs. According to CARB, they used AIS (Automatic Identification System) data to calculate what portion of vessel activity was occurring within 24 miles of the California coast. However, AIS is not required on vessels of less than 65 feet. unless they are operating in a Vessel Traffic Service (VTS) area. A majority of the CPFV fleet is less than 65 feet, and the two VTS areas in California are directly offshore of the Golden Gate and Los Angeles/Long Beach harbors, thus AIS is not required for the majority of the CPFV fleet. The CPFV fleets of San Francisco Bay Area and South Coast tend to spend more time fishing inshore than significant other portions of the CPFV fleet, such as in San Diego.

"Because of this, any use of AIS data to show area of operation will bias the data towards a more inshore area of operation than actually occurs as a whole for the CPFV fleet. A more accurate method of determining area of operations of the CPFV fleet would be to use logbook data from the CDFW as we have repeatedly indicated to CARB. All CPFVs must submit daily logs of times and location they spent fishing. CARB should have used this information, rather than AIS data, for its modeling and risk analysis of CPFVs.

"Much of the CPFV fleet from San Diego spends the majority of their time in the Mexican EEZ where AIS is not required on vessels of less than 150 tons, thus the AIS data is not usable. Most of the CPFV fleet that has AIS has only class B transponders, which are lower powered and less likely to be accurately received by shore stations. Relying on Marine Cadestre (Vessel Traffic information) for accurate locations of the CPFV fleet will not yield accurate results."

**Response:** Whereas not all vessels are equipped with AIS, and a count of unique vessels with an AIS system would not be adequate to establish the Statewide population, there was a sufficient fraction of CPFVs equipped with AIS to determine the locations where vessels operate in general. The distance from shore calculated using AIS was similar to that reported from the CPFV fleet to CARB (83 percent within RCW based on AIS, 80 percent within RCW based on CARB reported data). For additional information, please refer to Master Response 3.

**3195-6:** The commenter states:

"6. CARB Admittedly Relied on Survey Data It Acknowledged was Flawed from Which it Made Unjustified Assumptions to Support its Position

"CARB staff also used a second method in determining area of operation of CPFVs. This method consisted of a survey that was required by operators of commercial vessels in California. Unfortunately, the public outreach for this effort was not very robust, and this resulted in an incomplete data set. Many of the boat owners did not fill out the survey or did not understand the questions being asked or how the data would be used. For example, when filling out reports, some owners were not clear that ONLY hours and fuel burned in California regulated waters were to be reported. Since there had been new requirements for hour meters that could not be shutoff, the owners (incorrectly) assumed that we were being asked for total hours of operation annually. CARB staff acknowledges this issue in Appendix H of the Staff Report, where they nevertheless decide to assume that ALL hours reported are from regulated waters. By not correcting this issue, the data are significantly biased towards showing higher emissions in regulated waters than there actually are.

"Once again, CDFW logs are legal documents that show positions and time spent operating in certain geographical areas. One analysis of vessel logbook data, contemporaneously furnished as required to the CDFW, by the owner of a fairly typical overnight vessel (conducting trips of 1-3 days duration) calculated over a five-year period that 16.28% of the vessel's operational time was spent in regulated waters, contrasted against the 83% of time assumed by CARB staff using faulty AIS and survey data for operational time conducted in regulated waters. Critically, operators are required to carefully track their areas and times of operation and to submit the logbook to CDFW, a California governmental agency, but in making operational assumptions, CARB, also a California governmental agency, consciously chose to ignore regulatorily required actual data in favor of inaccurate and deficient surrogate data, even though CARB recognizes and acknowledges the data was not reliable as a proxy. This owner's analysis can and should have been replicated by CARB in developing its rulemaking. By not using these data, CARB staff are not using the best available science in the assumptions for their analysis and likely overstated emissions by 5 times for 50% of the fleet."

**Response:** CARB staff considered multiple sources of data when calculating emissions, the primary source being reports required by the Current Regulation to be submitted to CARB. The regulatory text, and associated reporting forms requested for

operators to provide total operation hours, both inside and outside of RCW (24 nm of the coastline). Based on discussion with operators that there was confusion, CARB staff proposed a method in Appendix H of the ISOR that is robust to any reporting interpretations by relying upon readings of non-resettable hour meters. The commenter is also raising concerns about use of AIS data, and that it provides selection bias for the CPFV fleet. CARB staff included a sample of 45 vessels with AIS systems for the CPFV fleet, which provides statistical significance of the Statewide population of 352 vessels at the 85 percent confidence level. Using this data, 83 percent of CPFV operations were recorded to occur within RCW. Using reporting data alone, that may have been subject to misinterpretation due to the reasons above, approximately 80 percent of CPFV operations would have occurred within California. Therefore, the use of AIS and reporting data provide tightly constrained data (80 versus 83 percent of total operation occurring within 24 nm of the coastline). However, use of CDFW log data does not provide any information about the exact location of a vessel or whether the vessel is moving or has engines operating while it is located within a region reported to CDFW. The commenter attached the logbooks for their vessel, but without firsthand knowledge, and a clear documentation of daily engine operating records of how the vessel is typically operated on different types of trips, calculating runtime for each engine would not be possible. The commenter and other vessel operators have not provided daily trip-level information that is sufficient for CARB to calculate the geographic distribution of emissions from the fleet using CDFW logbook data. Therefore, it was not quantified or used for the purpose of allocating which fraction of activity occurred within RCW. CARB staff recognizes that some vessels may operate a smaller or greater percentage of time within RCW. Vessels that operate only 16-17 percent of the time in California may be able to comply by low use and not need to undertake vessel replacement or engine repower projects.

**3195-7:** The commenter states:

“7. CARB Failed to Account for Differences in Land-Based versus Maritime-Based Operations and Ignored Identified Safety Concerns Attendant to DPF Use While at Sea”

“CARB wants the marine engines on CHC equipped with DPFs, the same technology appearing on trucks and off-road equipment that is causing extensive downtime for truckers and farmers. In order for a DPF to not become plugged, it must run at high RPMs, in stark contrast to CPFVs boats that typically troll for fish at low RPMs. Under low RPMs blockage is quite common, creating significant heat and severe backpressure on engines, sometime taking hours to clear the blockage and restart stalled engines. A stalled truck is very different from a stalled boat, adrift at sea, with numerous human passengers at risk. A stalled boat coming into port would have a risk of running aground or crashing into the dock, which would result in damage to the vessel and potential injuries to crew and passengers. CARB has received an October 28, 2021, letter from the California Association of Harbor Masters and Port Captain expressing this same concern.

“Under the best-case scenario, boats could be adrift for hours as crews try to recover engine systems. More likely, at sea rescues would become common due to engine failure. In a worst-case scenario, engines fires, which have occurred on truck engines using DPFs, could occur putting passenger and crew at severe risk.”

“In a surprising and glaring omission, CARB did not consult with the USCG, that regulates the safety of passenger vessels, until after the proposed rule was drafted. Due to the seriousness of this issue, CARB should have done a detailed analysis of the health and safety risks for the use of Tier 4 engines with DPFs on passenger vessels, which operate far out to sea, away from first responder services.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

**3195-8:** The commenter states:

“F. It is Not Appropriate to Push Forward Regulations Which Require Installation of Unavailable Technology While Serious Questions About Safety and Feasibility Remain Unanswered.

“The CHC rules as drafted will require installation and use of DPFs, which are commonly found on tractor trailers and farm equipment. Have DFPs been used on passenger boats before? Are they safe for passenger harbor crafts? Have they been tested on passenger fishing boats and whale watching boats that typically operate at low RPMs? If so, where, and when, and for how long? Please provide the research.

“It is not uncommon in the trucking industry for DPFs to become clogged, requiring the trucks to leave the road and “regenerate” the DPF. The circumstances would differ vastly for a vessel miles from shore or in a narrow harbor. What evaluation has CARB made of safety considerations involved if a DPF becomes clogged, stops working and needs to be regenerated while at sea? Boat owners are concerned that DPFs could stall engines at sea and in the worst case, catch fire. Has CARB evaluated these concerns? https://www.nbcbayarea.com/news/local/bay-legaltruckers-sue-ca-again-claiming-air-filter-puts-public-safety-at-risk/36208/

“Has CARB conducted any research into the safety of DPFs at sea? Please share the information.

“Have safety concerns associated with the use of DPFs been raised before? If so, please share the circumstances.

“Has CARB evaluated the risk of stalled engines, especially if vessels are near shore and entering/existing harbors, and most notably during high winds and seas?

“Has CARB provided the Cal Maritime report to the USCG and solicited its input? (The Cal Maritime report says that the technology does not exist for sportfishing and commercial fishing boats and if it did, it would be unsafe).

“If the USCG determines that DPFs are not safe at sea, will CARB revise the regulations and, if so, how?

“Should CARB be permitted to develop and impose regulations that are economically and technologically infeasible, requiring technology that is unavailable, not tested for the prescribed use, or proven as safe or practical for CPFVs?”

**Response:** Please refer to Master Response 1, response to comment 696-1, and 696-2.

**3195-9:** The commenter states, “Did CARB evaluate the impact of many boats and businesses going out of service on government fees and the funding of various environmental programs on which those fees are used?”

**Response:** This commenter does not specify which fees and environmental programs they are referring to, however staff assumes the commenter is referring to CDFW license fees and the fisheries management and conservation efforts those fees support. CARB staff did not assume any changes to the demand for sportfishing activity aboard CPFV vessels as a compliance response to the Proposed Amendments. Macroeconomic modeling, as documented in Appendix C-1 Table E-3, predicts continued growth of the economy and jobs with implementation of the Proposed Amendments. Overall, the percent change in total statewide employment is projected to increase initially, then decrease by no more than 0.01 percent in any year modeled during the implementation period of 2023 to 2037. For specific industries, percent decreases in statewide jobs are not projected to exceed 1 percent in any year modeled between 2023 and 2037, including for the fishing, hunting and trapping industry. See additional detail in response to comment 3174-1.

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| Comment Letter<br>3196<br>11/15/2021 | Rebecca Baskins, CA Advanced Biofuels Alliance |

**3196-1:** The commenter states, "As a drop-in fuel replacement for petroleum diesel, biodiesel and renewable diesel can help California achieve its carbon neutrality goals.

"While both fuels provide significant benefits on their own, blending the fuels together maximizes both the environmental and economic profiles of biodiesel and renewable diesel.

"A California Air Resources Board (CARB) approved fuel[2], renewable diesel and biodiesel blends comprised of up to 20% biodiesel and 80% renewable diesel (R80/B20) will reduce emissions, perform higher and provide supply and cost benefits to California communities."

**Response:** The use of an 80 percent renewable diesel and 20 percent biodiesel (R80/B20) blend instead of the proposed blend of renewable diesel at 99 percent purity or higher (R99) would increase NOx emissions. Although a B20/R80 blend would have enough renewable diesel (RD) to offset most of the NOx increase from B20, there wouldn't be as much of a NOx benefit as with R99. In addition, biodiesel also acts as a surfactant and in initial use in engines that have not used biodiesel (BD) previously, a lot of detritus can be released which can foul filters and negatively affect engine performance. Therefore, the use of biodiesel in 20 percent concentrations or higher could result in engine performance issues due to the age of the existing CHC fleet and fueling systems, including fuel tanks, fuel links, and other ancillary components.

As far as carbon intensity of the two fuels, based on current CARB-certified fuel pathways under the Low Carbon Fuel Standard (LCFS) program, biodiesel does not necessarily have lower lifecycle GHG emissions than renewable diesel. The carbon intensity of biodiesel or renewable diesel depends on a variety of factors. The LCFS program assesses the lifecycle of GHG emissions associated with a fuel to calculate a carbon intensity for it. This includes direct emissions associated with producing, transporting, and using the fuel, as well as substantial indirect effects on GHG emissions, such as changes in land use associated with the feedstock used to produce the biofuel. CARB's certified fuel pathways for renewable diesel and biodiesel indicate an overlapping range of carbon intensity values for these fuels. Thus, general statements about the relative lifecycle GHG emissions of all biodiesels and all renewable diesels may not be accurate.

**3196-2:** The commenter states, "Allowing blend alternatives (e.g. R80/B20), as well as R100 in the Harbor Craft Regulation, will help California achieve emission benefits immediately while the state pursues its decarbonization efforts, enhance local air quality

[2] https://ww2.arb.ca.gov/sites/default/files/2021-07/ADF_Regulation_5-3-21.pdf

in disadvantaged and EJ communities near ports and waterways, and ease any potential cost and supply concerns. We ask that such blends be incorporated into the amendments through a 15-day rulemaking public process. This will also provide an opportunity to clarify and correct the technical basis for this rulemaking; it appears that the proposed amendments excluding the use of biodiesel are premised on inaccurate information regarding biodiesel, and we would be happy to work with CARB staff to correct the rulemaking record."

**Response:** Please see response to Comment 3196-1 regarding the reasons why CARB chose to require the use of R99 in CHC and not biodiesel. The commenter does not go into detail on what inaccurate information CARB used to not allow biodiesel to comply with the Regulation so no further response can be provided.

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| Comment Letter<br>3197<br>11/15/2021 | Brian Collier |

**3197-1:** The commenter states, “I would like to address the inherent safety implications of your proposed regulations. It has come to my attention that the addition of DPF systems to diesel engines is proving problematic in their current off-road applications. The need for regeneration of the filter requires conditions that charter boats can't always safely offer. The result of not performing a filter regeneration is an intentional loss of power, or in this case, propulsion. In may circumstances, this can prove to be very dangerous and possibly deadly, especially for vessels laden with passengers or in rough weather, or both. It sounds like a great idea to be able to filter particulates from the emissions, but it seems the technology is just still too dangerous for lower engine speed applications at this point.”

**Response:** Please refer to Master Response 1 and response to comment 696-2.

**3197-2:** The commenter states, “Another concern about the additional DPFs in USCG certified passenger carrying vessels is whether or not the USCG will even allow these systems under the current CFRs. Has the USCG had the opportunity to examine the proposed requirements? Ultimately, they are the entity that oversees the safety, construction and modifications to these vessels. Without their input on the feasibility of these systems, how can the rule making process proceed?”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>3201<br>11/15/2021 | Trevor Watson |

**3201-1:** The commenter states, “Schedule 4 diesels are a fire hazard and unproven on the ocean!”

**Response:** Please refer to Master Response 1 and response to comment 696-2.

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| Comment Letter<br>3208<br>11/15/2021 | James Carlisle |

**3208-1:** The commenter states, “Tier 4 diesels are unproven at seas, a fire hazard, and fiberglas and wood vessels can not accommodate due to their extremely high operation temperatures, rendering most passenger fishing vessels useless.”

**Response:** Please refer to Master Response 1, response to comment 696-1, and response to comment 696-2.

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| Comment Letter<br>3235<br>11/15/2021 | Scott Hedderich, Renewable Energy Group - Ames, IA |

**3235-1:** The commenter states:

"Unsupported Restriction of Biodiesel/Renewable Diesel Blends

- Amend 93118.5(e)7A to allow RD/BD blends with up to 20% BD to qualify under the rule

We have asked staff to amend this provision to include up to 80/20 RD/BD blends as allowed in ADF appendix 1 sub article 2(a)(1)B approved ADF formulations, and to reflect the additional data submitted by REG to the agency under the ADF and approved and issued in the form of executive orders (Executive Order G-714-ADF02, Executive Order G-714-ADF06, and Executive Order G-714-ADF09). In fact, we are somewhat confused as to why CARB's own regulation and supporting data weren't included by reference within this rulemaking. The REG data is further expanded upon in Appendix A."

**Response:** Please refer to response to comment 3196-1. Specifically, the three Executive Orders referenced in this comment and available online at https://ww2.arb.ca.gov/resources/documents/alternative-diesel-fuels-executive-orders certify that NOx reductions associated with the use of biodiesel blends up to 20 percent are between 0.96 and 3.00 percent relative to CARB diesel. These reductions of NOx are lower compared to the 10 percent NOx reductions achieved by an R99 or higher blend of renewable diesel.

**3235-2:** The commenter states, "Blends of biodiesel with renewable diesel has the ability to achieve a greater degree of emission reduction than neat renewable diesel. While blends of RD and BD could have slightly higher engine-out NOx emissions than neat RD (both blends and neat RD represent NOx reductions compared to CARB diesel), they produce lower emissions of particulate matter and hydrocarbons which can have greater adverse health effects than NOx, not to mention their potential to enable greater greenhouse gas (GHG) reductions than neat RD."

**Response:** Please refer to response to comment 3196-1.

**3235-3:** The commenter states, "This rule making is intended to focus on overall air quality in disadvantaged communities surrounding ports and harbors, not solely NOx. Staff have chosen, by disallowing RD/BD blends, to forgo additional reductions in other criteria pollutants and GHGs in favor of potential reductions in RD NOx emissions over the NOx reductions in 80/20 blends. Restricting the use of biodiesel may reduce marginal amounts of engine-out NOx but, most definitely will result in an increase in other engine emissions, including DPM from neat RD combustion. These engine

emissions are environmental pollutants and present real health risks to local communities."

**Response:** Please refer to response to comment 3196-1.

**3235-4:** The commenter states, "Emissions from R100 in a legacy (pre tier 3 engine) engine may see a NOx decrease of roughly 4% over the NOx reductions (compared to CARB diesel) from R80/B20 blends, however, there would be an increase in DPM of up to 12% compared to R80/B20. This trade off does not meet the stated goals of the rulemaking."

**Response:** CARB staff recognizes that use of R80/B20 fuels has been shown to demonstrate greater PM reductions than use of pure renewable diesel (R99 or R100) blends when tested on modern non-marine engines. However, due to the reasons discussed in response to comment 3196-1, use of R80/B20 in harbor craft could result in damaged injectors, and substantially increase PM emissions. Increasing PM emissions from the CHC sector is inconsistent with the goals of the Proposed Amendments.

**3235-5:** The commenter states, "While modern Tier 3 CHC engines currently include NOx mitigation aftertreatment they do not have DPM mitigation. This means if the data CARB used to make its ADF determinations on blends was in any way in error [it is not], any potential NOx increases from allowing up to 20% BD inclusion would still be mitigated with modern CHC engines while the more substantial DPM reduction benefits from BD blending would be prohibited allowing higher levels of DPM to still present in at-risk communities."

**Response:** Please refer to response to comment 3235-4.

**3235-6:** The commenter states, "The use of R99/R100 may cause performance issues in the CHC engines where it will be used. For example, RD is an extremely non-polar fuel with different solvency and elastomer interactions than traditional diesel which may cause additives to separate out (particularly when fuel is contacted with water) and has been proven to cause legacy elastomers to shrink (see Figure B1 and references in Appendix B), which has been observed to contribute to problems such as fuel injector seal leakage. RD also has an extremely high Cetane Number which can cause combustion and timing issues in both lower speed and legacy engines. These and other effects have been observed in engine testing for certain locomotive engines which are very similar to the larger CHC engines under consideration. Including BD in RD can mitigate all of the undesirable attributes of neat RD that have been identified so far.(See Table B1 in Appendix B)."

**Response:** R99 and higher blends of renewable diesel meet the ASTM D975 specification for diesel fuel. Therefore, CARB staff has proposed to require its use as a "drop-in" fuel; no adjustments to the engine or other fueling system components would be needed. In Appendix E to the ISOR, CARB staff has identified and described

examples of fleets that have used renewable diesel on a wide range of marine diesel engine sizes without any issues with elastomers as indicated in this comment. Please also refer to response to comment 3196-1.

**3235-7:** The commenter states, “The CHC rule as proposed is disharmonious with the current fuel allowed under ASTM D975. ASTM D975 allows for the inclusion of up to 5% biodiesel in the finished diesel fuel. Requiring neat RD only would prohibit a substantial amount of D975 diesel, including D975 RD which now often contains 5% BD, which is certain to create supply chain issues for the many smaller businesses that operate CHCs and do not have access to specialty fuel supplies. In short, D975 fuel, whether petroleum or RD, may contain up to 5% BD, which means this proposed rule creates an eventual requirement for a fuel that does not align fully to D975[1].”

**Response:** The Proposed Amendments would require use of R99 or higher, which would maximize the NOx reductions relative to an R95 blend that also complies with the ASTM D975 specification. The Proposed Amendments require a fuel that is fully compliant with ASTM D975 and meets additional requirements to maximize NOx emissions reductions.

**3235-8:** The commenter states, “Lastly, the rulemaking contains changes to the Alternative Control of Emissions (ACE) section. Under the ACE…. Accordingly we ask that this change be made in any 15 day change authorized by the Board.”

**Response:** The Proposed Amendments currently incorporate the Alternative Control of Emissions (ACE) option, which is voluntary, and does not preclude the use of biodiesel. Therefore, vessel owners and operators who can demonstrate the emissions performance of their fleet using a fuel that meets or achieves a greater level of reductions than directly complying with the rule would be able to eligible to propose a compliance pathway under the Proposed Amendments, and consequently no 15-day changes to the Proposed Amendments are needed.

**3235-9:** The commenter states, “Like biodiesel, renewable diesel is also an invaluable renewable fuel (albeit much less widely used than biodiesel and with substantially less “real world” experience), but it is not what Appendix E claims it is. It is without irony that we point out the concerns raised about biodiesel also apply to renewable diesel (see Table B1 provided in support of these comments) It is particularly confusing given how much data CARB has already accumulated on biodiesel and renewable diesel as a result of the Alternative Diesel Fuel (ADF) regulation. One particularly problematic example, from the ISOR is as follows: “biodiesel, which is a methyl ester compound that should not be used in high quantities with retrofit aftertreatment.” We have found no evidence to support the claim in Appendix E that biodiesel cannot be used in high quantities due to aftertreatment concerns.”

**Response:** Please refer to response to comment 3196-1. Any increase in PM emissions as a result of engine damage, as discussed in response to comment 3196-1,

would also adversely impact the performance of retrofit aftertreatment, such as wall-flow diesel particulate filters.

**3235-10:** The commenter states, “CARB’s own findings in the 2015 ISOR for the ADF determined "Engines that meet the latest emission standards through the use of Selective Catalytic Reduction (SCR) have been shown to have no significant difference in NOx emissions based on the fuel used4." It should be pointed out the study included testing B100 against CARB ULSD on an NTDE.”

**Response:** Based on the findings of this study and others, CARB staff did not apply the NOx emissions reductions from using R99 fuel after engines are repowered to meet Tier 4 standards. Even without applying NOx reductions to Tier 4 engines, there is still a substantial level of NOx reductions achieved from engines prior to reaching compliance dates to turn over to Tier 4, and many engines will meet final compliance requirements at Tier 3 levels. Tier 3 engines do not use SCR and would achieve ongoing NOx reductions by using R99 or higher blends of renewable diesel.

**3235-11:** The commenter states, “Again, we ask that the section on biodiesel be deleted from Appendix E.”

**Response:** Please refer to response 3235-1 through 3235-10 above.

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| Comment Letter<br>3260<br>11/15/2021 | Harry Markarian |

**3260-1:** The commenter states, “tests haven't been done on sea goin vessels and the risk of putting thousands of people in risk.”

**Response:** Please refer to Master Response 1.

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| Comment Letter<br>3261<br>11/15/2021 | Melissa Miller-Henson, California Fish and Game Commission |

**3261-1:** The commenter states, “Your agency’s efforts to meet air quality standards have focused in the past on the most egregious sources of emissions, where costs to implement regulation changes are outweighed by the long-term benefits. We are concerned that the subject regulations proposed by CARB place excessive burden on the commercial passenger fishing vessel (CPFV) fleet, a segment of vessels that may not contribute as greatly to reducing emissions as estimated nor in a cost-effective manner, but whose regulation as proposed would likely reduce equitable access to the marine environment and cause economic harm to coastal fishing communities.”

**Response:** Please see Master response 2 for a discussion related to the effects on coastal fishing communities and Master Response 3 for a discussion related to assumption and health benefits of the Proposed Amendments. The need to address CHC emissions is described at length in Chapter II of the Staff Report – Initial Statement of Reasons, including the need to reduce the uncompensated health and environmental costs to communities as much as possible, and the need to maximize both early and long-term reductions from sources including CHC to make progress toward NAAQS attainment in multiple air basins in California including South Coast, San Diego, and Ventura.

**3261-2:** The commenter states, “CARB staff have also made a number of assumptions about the CPFV fleet and existing emissions that appear problematic:

(1) Optimistic vessel replacement costs that are not supported by recent price quotes, even for smaller vessels

(2) the ability to sell existing vessels out of state to recoup some capital when attempted sales of these vessels have not been successful to date;

(3) an elastic demand that can absorb additional costs through increased ticket prices when, based on industry experience, small price changes have led to significantly reduced ticket sales, pointing to a highly inelastic demand;

(4) that CPFVs can pass along the increased costs to customers but commercial vessels cannot, without data to show that commercial fishing vessels cannot otherwise absorb the costs;

(5) the availability of financing for new vessel construction when such financing is difficult to obtain just for 60% of value for an existing vessel, much less 80% or more of the value for a new vessel;

(6) using the Automatic Identification System for calculating what portion of CPFV activity occurs within 24 nautical miles of the California coast when the majority of the

fleet is not required to use the system and spends most of its time outside those bounds;"

"(7) using a baseline number of inspected CPFVs that appears to overestimate the actual number compared to uninspected "six-pack" charter boats, which have a very different fuel burn rate;

"(8) using acknowledged faulty data on the estimated time spent in regulated waters with a four- to five-fold error range and, hence, potentially far less air quality and health benefits than estimated;

(9) that CPFV vessels are used solely for passengers when many are used in the off season for commercial fishing, and providing no indication of how such vessels will be regulated under the proposed amendments;

(10) potential underestimation of the number of associated jobs and businesses that will fail with a reduction in the CPFV fleet; and"

(11) that there will be no loss in license sales revenues to the California Department of Fish and Wildlife when the staff analysis makes clear that some vessels will be removed from service, even if temporarily."

**Response:** Please see Master Response 3 for a discussion related to assumption used to determine the reasonably foreseeable compliance responses analyzed in the Draft EA. Please see Master Response 2 for a discussion related to potential leakage. See response to comment 3174-1 regarding license fees and potential effects on CDFW-funded programs.

The potentially significant adverse impacts on the environment discussed in the Draft EA, and the significance determinations for those effects, reflect the programmatic nature of the reasonably foreseeable compliance responses of the regulated entities. These reasonably foreseeable compliance responses are described in more detail in Chapter 2, "Project Description," of the Draft EA. Reasonably foreseeable compliance responses to the Proposed Amendments, as provided in Chapter 2 of the Draft EA, include vessel replacement, vessel engine replacement, modification of vessel engines (e.g., addition of diesel particulate filters), and vessel retirement. Most of the new vessels are expected to be produced outside of California, and most retired vessels are expected to be sold out of state (page D-18 of the Draft EA). While the comment provides a series of arguments against the reasonably foreseeable compliance responses analyzed in the Draft EA, there is not substantial evidence provided to back up the comments and no further response can be provided.

**3261-3:** The commenter states, "Also of concern is that CARB's staff has acknowledged, for CPFVs, the proposed emission reduction requirements are currently impossible to meet for one of several reasons: The technology is not yet available on the open market, is infeasible to install and also conform to U.S. Coast Guard vessel safety requirements, or is unsafe to install in wood and fiberglass hulls due to the

operating temperatures at which they run. As a result, most CPFVs will necessarily have to be replaced, even after several years of compliance extensions. For a variety of reasons, it has been economically infeasible to build new CPFV vessels for decades. For example, most vessels in the southern California fleet were built in the 1970s and 1980s and it is estimated that more than 80% are constructed with wood or fiberglass. Without adequate grant funding to support vessel replacement, many CPFV businesses will shutter."

**Response:** Please refer to Master Response 1 and response to comment 696-1.

**3261-4:** The commenter states, "The California State Legislature has directed that implementation programs to reduce airborne toxins should be practicable (Health and Safety Code, subdivision (k) of section 39650). CARB's work to improve air quality, protect public health, and address climate change is vitally important, and can continue without imposing impracticable burdens on the CPFV fleet. Electrification of all types of engines is rapidly evolving, and it is easy to imagine a future in the coming years where zero-emission vessels are the norm. As currently written, the draft rule changes appear to be less forward-thinking than possible, which will leave those vessel owners that can afford it, incurring greater costs than necessary by retrofitting in-use diesel engines or purchasing new vessels with Tier 3 or Tier 4 engines and then having to convert to zero-emission and advanced technologies just a few years later. Rather than prolonging the use of diesel engines, perhaps CARB could consider incentivizing a faster transition to zero-emissions harbor craft, especially those vessels that spend the majority of their operating time closer to shore."

**Response:** Please see Master Response 5.

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| Hearing 8<br>11/19/2021 | David Lee |

**Hearing-8-1:** The commenter states, “ABB encourages the California Air Resources Board (CARB) to set an ambitious, long-term statewide plan to achieve zero emissions for vessels, as well as support the growth of the sustainable maritime industry. Specifically, we urge CARB to **require 100% zero-emissions deadline for all vessel segments of the Commercial Harbor Craft Rule by 2035.**”

**Response:** Please refer to Master Response 5.

**Hearing-8-2:** The commenter states, “**The proposed Commercial Harbor Craft rule as written is not ambitious enough.** The rule does not reduce greenhouse gas emissions and risk creating a stranded asset scenario for harbor craft owners who may pay to retrofit to Tier 3 and 4 engines only to be forced to make a full zero-emission transition in quickly proceeding years later.”

**Response:** Please refer to Master Response 5.

**Hearing-8-3:** The commenter states, “For the marine sector, a strong but achievable standard would be that all harbor craft operating in the state (e.g., ferries, tugs) must be zero emission, for example phase the requirement in for all new builds that go under contract on or 1/1/2022, and all operating vessels by 2035 to allow for repowerings and fleet planning.”

**Response:** Please refer to Master Response 5.

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| Hearing 9<br>11/19/2021 | Teresa Bui on behalf of Mark Cappetta, Pacific Environment |

**Hearing-9-1:** The commenter states, “Please see attached for list of Pacific Environment's members in support of a stronger harbor craft rule, calling for CARB to get to 100% Zero emission for tugboats, ferries, barges and dredges by 2035….

“Given the climate emergency that we are facing, we need bold climate leadership. I’m asking you to strengthen the Commercial Harbor Craft rule:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

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| Hearing 11<br>11/19/2021 | Lisa Patton |

**Hearing-11-1:** The commenter states, “Given the climate emergency that we are facing, we need bold climate leadership. Im asking you to strengthen the Commercial Harbor Craft rule:

“1. Require a 100% zero-emissions transition for the majority of harbor boats by 2035, including tugboats and barges, which are excluded from the current rule

“2. Add language to allow the Board to revisit the rule as the zero-emissions boat market evolves to ensure the regulation achieves maximum emission reductions

“3. Increase funding for zero-emissions boat pilots and retrofits to spur innovation.”

**Response:** Please refer to Master Response 5.

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| Workshop 3-1<br>1/12/2022 | Merlin Kolb |

**Workshop- 3-1:** The commenter states, “ And if I bought a new steel boat, if I bought a new steel boat and I put a giant Tier 4 engine in it, the carbon footprint of building the new steel boat, and disposing of my current excellent fiberglass boat, and then any hours of service additional, the delta between my current motors, the tons of emission, the dirty motors that I have that run very clean by the way, the delta between the Tier 4 the steel, the carbon footprint of building the, boat we'd be carbon deficit. Does anybody -- did anybody ever do the math? There would be a carbon deficit, if I followed CARB's recommendation to subset my vessel.”

**Response:** Please refer to Master Response 4 and response to comment 555-1.

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| Workshop 6-1<br>1/12/2022 | Markus Medak |

**Workshop- 6-1:** The commenter states, “And so you guys calculated using AIS data that the sportfishing fleet spends -- or operates 83 percent of the time within 24 miles of the California coast. If this were to be wrong -- if this was incorrect, will the calculations of the contribution of NOx and diesel particulate matter from the charter fishing fleet change significantly? and would the health benefit analysis also change?”

**Response:** Please refer to response to comment 2588-5, response to comment 3121-2, and Master Response 3.

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| Workshop 7-1<br>1/12/2022 | Ken Franke |

**Workshop- 7-1:** The commenter states, “ And then finally, the AIS data, Markus said it pretty well. So most of the boats don't have AIS. And I get it that that's the best available material that you had at the time. But as an example, the southern California area, you'd see a lot of straight lines going straight offshore or to Mexico, you know, 10 days at a time or two days at a time, whatever it is. You don't see any of that in the AIS data. So one recommendation would be frankly for the commercial passenger sportfishing sector, I would eliminate the AIS data as being a data point, because it's inaccurate as it's not reflective but of a tiny portion of the actual fleet.”

**Response:** Please refer to response to comment 3121-1, response to comment 2588-5, and Master Response 3.

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| Workshop 8-1<br>1/12/2022 | Peter Schrappen |

**Workshop- 8-1:** The commenter states, “The CARB's rule is based on inaccurate vessel population counts. We've pointed that out time and time again. The emission inventories are inflated. There's a misrepresentation of harbor craft pollution impacts. And I'm going to just put a little finer point on that. CARB's model emissions from harbor craft are as much as four times higher than actual measured emissions from all sources in four major coastal areas. It's not possible that harbor craft alone could produce more emissions than all nearby sources. You, know, even another specific one that was acknowledged by CARB that you've refused to address is the fact that, you know, we've proven under a -- without a shadow of doubt that the unreported hours are 2.3 percent not the 29 percent that CARB has factored. And based on this key number, emissions are a fraction of what you have in the model. So I'm getting to my question here, but the fact that this model and the data is so inaccurate and there continues to be a willful plotting towards and end result here that's based on faulty data and just an atrocious model, why is CARB staff continuing to move forward without any sort of input from an industry as important as the tugboat, towboat, and barge industry?”

**Response:** Please refer to response to comment 2588-5, response to comment 3121-1, and Master Response 3.

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| Workshop 8-2<br>1/12/2022 | Peter Schrappen |

**Workshop- 8-2:** The commenter states, “It's the unreported hour though -- hours though that we pointed out with real-time accurate information, David, 2.3 percent versus 29 percent. That's outside of the consultant and we're working with you on that working with our consultant. But really that 2.3 to 29 percent delta is, I'm going to say, mind-boggling. I don't want to be too dramatic here, but I think that we -- given the fact that you have not been able to look at the model again based on this difference, it's time to be dramatic.”

**Response:** Please refer to response to comment 3121-1 and Master Response 3.

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| Workshop 11-1<br>1/12/2022 | Luke Burson |

**Workshop- 11-1:** The commenter states, “My question is regarding the Tier 4 engines and the boats I fish in today, and it centers around safety. And my question real simple, what role has the Coast Guard played in the process to date - so what's occurred to date by you folks - and specifically in reviewing the draft recommendations, which are moving forward, and providing specific feedback regarding these changes and any impact they'll have on passenger safety being me? Thank you.”

**Response:** Please refer to Master Response 1.

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| Workshop 11-2<br>1/12/2022 | Luke Burson |

**Workshop- 11-2:** The commenter states, “So is it fair to say that the Coast Guard is partially responsible for the conclusion that many of the operators of fiberglass and wood vessels will have to decommission them and take them out of service, because there would be a safety issue? ”

**Response:** CARB staff respectfully disagrees with this statement. The U.S. Coast Guard is not responsible for the fact that shipyards do not regularly take on work that involves reconfiguring the hull and other key structures of vessels to include engines with new design footprints. For additional information, please refer to Master Response 1.

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| Workshop 12-1<br>1/12/2022 | Frank Ursitti |

**Workshop- 12-1:** The commenter states, “Diesel exhaust fluid will be required for the SCR units and marine fuel terminals will need to carry this product to support this fleet. So the biggest challenge here is going to be the tankage or storage for diesel exhaust fluid to support a fleet of boats that now have, you know, Tier 4, that's dependent upon this type of technology. Fuel terminals, as you all know, are located on port tidelands or leased lands from cities and counties and permitting is going to be required to provide tankage either above ground or below ground, and that permission is going to have to come from governing bodies. In San Diego, for example - I'll just speak for that, because that's where I am - I know space does not exist at current marine fuel terminals, and more than likely a coastal development permit will be required to place a tank or to dig for new tanks. What engagement have you had with the Coastal Commission with regards to that type of issue and have you canvassed marine fuel terminals to see what their willingness is to support DPF -- or to support DEF dispersion or dispensing DEF to boats and what they're going to have to go through, what process they're going to have to go to or through with Coastal, and is it worthwhile?”

**Response:** As stated on page D-21 and D-22 of the Draft EA, while CARB is responsible for adopting the Proposed Amendments, it does not have authority over all the potential infrastructure and development projects that could be carried out in response to the Proposed Amendments. Other agencies are responsible for the review and approval, including any required environmental analysis, of any facilities and infrastructure that are reasonably foreseeable, including any definition and adoption of feasible project-specific mitigation measures, and any monitoring of mitigation implementation. Because CARB cannot predict the location, design, or setting of specific projects that may result and does not have authority over implementation of specific infrastructure projects that may occur, the programmatic analysis in the Draft EA does not allow for identification of the precise details of project-specific mitigation. As a result, there is inherent uncertainty in the degree of feasible mitigation that would ultimately need to be implemented to reduce any potentially significant impacts identified in the Draft EA. It is expected that many potentially significant impacts of facility and infrastructure projects would be avoidable or mitigatable to a less-than-significant level as an outcome of their project-specific environmental review processes, conducted by the appropriate permitting agency with jurisdiction as the lead agency under CEQA.

As described in Mitigation Measure 1-1 of the Draft EA, proponents of new or modified facilities or infrastructure constructed as a result of reasonably foreseeable compliance responses would coordinate with State or local land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must follow all applicable environmental regulations as part of approval of a project for development.

Regarding the commenter's concerns about adding DEF tanks to SCR units and marine fuel terminals, the Draft EA does analyze the reasonable impacts of the new and improved infrastructure that would be required for implementation of the Proposed Amendments. As described on page D-4 of the Draft EA:

> "The precise locations of the many components covered in the Proposed Amendments are unknown. Furthermore, attempting to predict decisions by entities regarding the specific location and design of infrastructure undertaken in response to implementation of the Proposed Amendments would be speculative (if not impossible) at this early stage, given the influence of many business and market considerations in those decisions. As a result, there is some inherent uncertainty in the degree of potential impacts, as well as the mitigation that would ultimately need to be implemented to reduce any potentially significant impacts identified in this Draft EA. Consequently, this EA takes the conservative approach in its post-mitigation significance conclusions (i.e., tending to overstate the environmental impacts and the potential that feasible mitigation may not be implemented by the agency with authority to do so, or may not be sufficient) and discloses, for CEQA compliance purposes, that potentially significant environmental impacts may be unavoidable, where appropriate. It is also possible that the amount of mitigation necessary to reduce environmental impacts to less-than-significant levels may be less than disclosed in this Draft EA on a case-by-case basis. Specific actions undertaken to implement the Proposed Amendments would undergo project-level environmental review and compliance processes as required at the time they are proposed. It is expected that many individual development projects would be able to feasibly avoid or mitigate potentially significant impacts to less-than-significant levels, at the time when they undergo specific local land use agency review."

Although CARB is responsible for adopting the Proposed Amendments, it does not have authority over all the potential infrastructure and development projects that could be carried out in response to the Proposed Amendments. Other agencies are responsible for the review and approval, including any required environmental analysis, of any facilities and infrastructure that are reasonably foreseeable, including any definition and adoption of feasible project-specific mitigation measures, and any monitoring of mitigation implementation. Please also refer to response to comment 1704-5 and response to comment 3023-2.

Throughout the Draft EA, it is acknowledged that implementation of the Proposed Amendments could require substantial new and improved infrastructure (e.g., holding tanks, fueling stations, natural gas pipelines, distribution centers) to support the use of alternative fuels and fuel cells. Specific reference to DEF fueling infrastructure for Tier 4 diesel engines is implied in the Draft EA (e.g., references to storage tanks and/or holding tanks) but some wording that was inadvertently left out of the Draft EA has been added in the Final EA.

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| Workshop 12-2<br>1/12/2022 | Frank Ursitti |

**Workshop- 12-2:** The commenter states, “I've owned several vehicles and am very familiar with DPFs and DEF et cetera. My question is have we -- have we engaged Coastal with how we are going to store and dispense DEF. It's a -- it's a footprint issue. Most marine fuel terminals, especially here in San Diego, sit on a limited piece of port tidelands. And so in order for them to install new tankage to provide DEF, there's going to be a process. And I'm not quite sure that's going to fit within your timeline.”

**Response:** Please refer to response to comment Workshop-12-1.

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| Workshop 13-1<br>1/12/2022 | Max Rosenburg |

**Workshop- 13-1:** The commenter states, “So in conjunction with The American Waterways Operators, we've pointed out on countless occasions that there are, you know, significant flaws in the inventory and subsequent modeling of emissions contributions from regulated towing vessels. The inventory counts some vessels that don't operate in California at all and overstates the operating hours for many other vessels that call on California infrequently.

Modeling suggestions that commercial harbor craft contribute more emissions than all sources including CHC combined, a clear impossibility. CARB has recognized some of our comments and outright dismissed others, but continues to grossly overstate the emissions contribution of CHC, and most critically, you know, uses this falsified data as the core justification for this incredibly costly and waste -- (inaudible) CHC emission missions climate to the Board and more importantly to the California public to justify incremental gains in emissions reductions for political purposes, I assume, you know, rather than steering efforts and funding for more significant goals.

So my question that -- you know, at the risk of kind of repeating other questions that have been asked tonight is why is CARB staff unwilling to revisit the data and validate the modeling to ensure that emissions contributions from commercial harbor craft are accurately portrayed and appropriately justify the proposed regulation?

And, you know, I've heard several times this evening, you know, David in particular use the term, you know, "best available data", but you've also recognized that there are -- there are errors in your data collection. So, you know, why are you unwilling to revisit this? ”

**Response:** Please refer to response to comment 3121-1 and Master Response 3.

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| Workshop 13-2<br>1/12/2022 | Max Rosenburg |

**Workshop- 13-2:** The commenter states, “Wouldn't it be in yours and the public's best interest for the actual best available data to be represented and used to justify the regulation, you know, rather than -- I mean, you've recognized, you know, on a couple callers this evening that, you know, that there were opportunities for better data. Can you share with us at what point you froze your data, so that we can understand when -- you know, when the best available data was -- you know, was accumulated?”

**Response:** For the Proposed Amendment Staff Report released on September 21, 2021, the emission inventory (which includes the vessel and engine population, engine activity levels, and other information) is included as Appendix H, and was finalized on June 28, 2021. These final numbers were used to adjust final cost, emissions reductions, health benefits, and other information contained throughout the rulemaking package. Please also refer to Master Response 3.

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| Workshop 14-1<br>1/12/2022 | Teresa Bui |

**Workshop-** 14-1**:** The commenter states, “I just wanted to express our support for the zero-emission contingency measures. And I hope that it applies to the tugboats and ferries. Harbor craft are one of the top three cancer-causing emissions at ports and it's clear that we have to move to zero emission in places like South Coast and the San Diego Air Basin to address the acute public health crisis from port pollution. And since the November Board hearing, we've seen a number of new vessel projects that have been announced that's zero emission. So we see the frequent technology assessment as very important. And with that, we encourage CARB staff to adopt this rule as possible -- soon as possible.

**Response:** Please refer Master Response 5.

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| Workshop 17-1<br>1/12/2022 | Michael Breslin |

**Workshop- 17-1:** The commenter states, “the technology that you're talking about simply doesn't exist. It isn't feasible to put into the boats that we have. And also the data that you're relying on doesn't seem to be in line with the -- with the peer-reviewed data that we presented to you as an organization. So my question is how does CARB see moving forward with this proposal for Tier 4, which requires diesel exhaust fluid tanks around 5,000 gallons for a 2,000 horsepower engine, 100 cubic feet of space for the diesel particulate filters that are going to be above those engines? The existing vessel fleet doesn't have the ability to do that. What is your guidance for our operators as they look to see the correct path forward to making sure that their fleet meets the requirements of your act?.”

**Response:** Please refer to Master Response 1, Master Response 3, and response to comment 696-1.

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| Workshop 18-1<br>1/12/2022 | Michael Thompson |

**Workshop- 18-1:** The commenter states, “Just the whole over -- going back to what Markus Medak and Ken Franke were saying, you know, there's a lot of overnight boats in the CPFV fleet. I am going to say probably 40 percent, maybe more. That number those guys would have that travel through regulated waters for an hour or two and then disappear from anywhere for the rest of that day for two, three, or longer days. And how you come up with 83 percent of our time is spent in regulated waters I have no idea, and I think that you need to address that before you go any further with this. ”

**Response:** Please refer to response to comment 2588-5, response to comment 3121-2, and Master Response 3.

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| Workshop 19-1<br>1/12/2022 | Scott Merritt |

**Workshop- 19-1:** The commenter states, “I think and I'm hopeful that we can come to agreement on what that true inventory is. I am the one that actually met with your staff and identified some ATBs that they didn't have. I will say that while they may have reached out to the ATB operators to verify hours, they're still assuming there's five ATBs out there that are calling California waters at average vessel hours of the existing fleet. And we demonstrated in our comments, which is leading into my question, that that's just not true. Those vessels are not calling with anywhere near that frequency. And that's where the overstatement is in your assumption that the unreported vessels are accruing hours at the same as the average vessels.”

**Response:** Please refer to Master Response 3

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| Workshop 21-1<br>1/12/2022 | William Wilkerson |

**Workshop- 21-1:** The commenter states, “Based on the new information just heard today -- that I heard today from Peter from American Waterways about the numbers being skewed, when -- to 29 percent when the true number is 2.9 percent, why would staff not address this? ”

**Response:** Please refer to response to comment 3121-1 and Master Response 3.

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| Workshop 22-1<br>1/12/2022 | Regina Hsu |

**Workshop- 22-1:** The commenter states, “Given, the massive increase in port pollution throughout the State since the pandemic, particularly around the San Pedro Bay Ports. We think that this Harbor Craft Regulation is really critical to alleviating the pollution burdens, particularly on nearby port communities. And I think more action is needed, specifically for equipment such as barges and tugboats.”

**Response:** Please refer to Master Response 5.

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| Workshop 28-1<br>1/12/2022 | Jamie Diamond |

**Workshop- 28-1:** The commenter states, “The data we do have has glaring flaws. For example, we now know much of the boat base data for CPFV specifically was taken from four CPFV vessels and extrapolated across the fleet. My high schooler statistics class knows this is beyond flawed and negligent. Your use of the phrase, Best available data, is concerning. There is better data and we've stated that since the very beginning.”

**Response:** The statistics raised by this commenter are incorrect – a total of 45 CPFVs were selected to represent the CPFV fleet of 352, which carries substantially greater statistical weight than a sample of just 4 vessels. These data were used to assign the fraction of total emissions that occurred within 24 nm of the coast. The denominator, the total emissions, was derived from over 200 reported vessels that were reported to CARB to meet compliance requirements of the Current CHC Regulation. Using other methodologies, such as operator-reported fuel within the 0-3, 3-24, and beyond 24 nm zones, the total activity within 24 nm was within 3 percent of the methodology derived from AIS data. Therefore, because the two independent methodologies result in substantially similar results, CARB staff has decided to continue using AIS data to apportion activity within RCW for the CPFV category, which matches the methodology used for the other 17 categories of vessels in the CHC inventory. Please refer to response to response to comment 2588-5 and Master Response 3.

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| Workshop 28-2<br>1/12/2022 | Jamie Diamond |

**Workshop- 28-2:** The commenter states, “You cherry pick what the best available data is. You've taken flawed AIS data, but refuse to use the actual fishing log data shown where we spend our time, the blocks we're in, whether we're anchored, trolling, or drifting, meaning engines on or off.”

**Response:** Please refer to response to comment 2588-5 and Master Response 3.

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| Workshop 28-3<br>1/12/2022 | Jamie Diamond |

**Workshop- 28-3:** The commenter states, “you say your data was based on what you had, and it was too to late to change it. And yet, we've told you since the beginning AI -- that AIS data is flawed, we've told you the Fish and Game logs were far more accurate, and you've been putting the onus of data collection on us.”

**Response:** Please refer to response to comment Workshop-13-2, response to comment 2588-5, and Master Response 3.

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| Workshop 30-1<br>1/12/2022 | Frank Rescino |

**Workshop- 30-1:** The commenter states, “And if you guys do consider your -- you know, your emissions again, if you could look at the time that – you know, the power that the engines run at, instead of like say one power is always a hundred percent when -- like we run an hour at say 50 percent power and then the rest of the time we're at 10 percent power trolling or drifting. I would think that would save some, you know, emissions.”

**Response:** The composite average of all loads, including idling, low-speed transiting, and high-speed operation is included in the load factors that are separated for each category of vessel. Therefore, the adjustment for the fraction of time at lower loads was accounted for in the average load factor of 29 percent for main engines on CPFVs as indicated in Table H-9 of Appendix H to the Initial Statement of Reasons. Please also refer to Master Response 3.