



SAN FRANCISCO BAR PILOTS ASSOCIATION

Pier 9 East End
San Francisco, CA 94111

May 24, 2024

VIA EMAIL

California Air Resources Board
Commercial Harbor Craft Group
harborcraft@arb.ca.gov

Re: San Francisco Bar Pilots E 3 Extension Application

To Whom it May Concern:

The San Francisco Bar Pilots submit this application for extension of regulatory deadline for compliance under the CARB Harbor Craft Regulation.

I. Introduction

The San Francisco Bar Pilots (SFBP) are an organization of highly trained and experienced mariners, licensed by the State of California to direct the navigation of ships into, out of and within the Bays of, San Francisco, San Pablo, Suisun and Monterey, and on the Sacramento and San Joaquin Rivers. SFBP is organized as an unincorporated association whose membership is currently comprised of 52 state-licensed pilots who collectively pool resources to provide 24/7 on demand pilotage service. Commercial vessels over 750 tons engaged in foreign trade are statutorily obligated to be under the navigational control of a state-licensed pilot when navigating anywhere within the above-described pilotage grounds.

In order to provide these pilotage services, SFBP is statutorily obligated to maintain a fleet of pilot boats approved by the state regulatory agency governing pilotage, the Board of Pilot

Commissioners.¹

As provided in the California Code of Regulations, SFBP is required to maintain a minimum of two pilot boats in service, with one pilot boat “on station” at all times in the open ocean, 11 miles west of the Golden Gate Bridge. In current practice, in order to meet its operational requirements, SFBP maintains a fleet of five pilot boats, three of which are the 104 foot station boats that are the subject of this application.

In addition to the three station boats, the fleet consists of a 70 foot “run boat”, which transports pilots to and from the station boats offshore, as well as to and from various ports and anchorages around the bays. This vessel, the P/V GOLDEN GATE, is brand new. It was custom built to CARB-compliant specifications, with Tier-4 diesel engines, and launched in 2023. Finally, SFBP operates a smaller vessel out of Pittsburg to carry out pilot changes for vessels on long transits from sea to the ports of Stockton and Sacramento. That boat, the P/V PITTSBURG, is CARB-compliant until December 31, 2028.

The three station boats that are the subject of this application, the P/V CALIFORNIA, the P/V SAN FRANCISCO, and the P/V DRAKE, are identical in design, and were launched in 2000, 2000, and 2010 respectively. The former two face a CARB compliance deadline of December 31, 2024, while the latter has a compliance deadline of December 31, 2025.

II. Discussion

a. Compliance efforts to-date

SFBP wholly supports the intent of the CARB regulations and has expended significant resources in an attempt to achieve timely compliance. The Association has invested heavily in both staff time and capital in order to comply with the current CARB regulations. As noted above, SFBP commissioned, built, and launched the custom-designed, fully CARB-compliant

¹ Cal. Harb. & Nav. Code § 1131

P/V GOLDEN GATE in 2023, replacing an older vessel of the same name at a cost of approximately \$9.4 million. To date, SFBP has invested nearly \$1 million, initially to analyze the potential for repowering the existing station boats,² and when that proved infeasible, in pre-engineering work to design CARB-compliant replacement vessels. However, due to the factors further developed below, timely compliance for the entire SFBP fleet will not be possible.

b. Infeasibility of CARB-compliant re-power

Due to the configuration of the station boats and their unique operational profile, repowering these vessels with currently available CARB-compliant engine systems is not feasible.³ As is more fully discussed in Attachment C hereto, there are multiple practical barriers to repowering the existing station boats in order to achieve compliance. The primary issues are:

1. The size of exhaust after-treatment components compatible with available CARB-compliant engines in relation to available engine room space.
2. Technical incompatibility of available CARB-compliant engines with the existing infrastructure aboard the boats.
3. Incompatibility of available CARB-compliant engines with the station boat operational dynamics.

CARB-compliant engines are paired with diesel particulate filters (DPFs) and selective catalytic reduction units (SCRs) to achieve lower emissions. Of the currently available CARB-compliant engines suitable to power the station boats, there is only one model available on the market, the MAN D2862, equipped with SCRs and DPFs, that could potentially be accommodated in the existing station boat hulls. The SCRs and DPFs paired with the engines from the other manufacturers are too large to fit the station boat engineering spaces. As shown

² See Attachment F at exhibit 3.

³ See Attachment C, San Francisco Bar Pilots 104' Station Boat Repower Feasibility, dated March 29, 2024, Doc. No. 22115.01-000-02, Lilly, Benjamin T., Marine Engineer

in Attachment C at Figure 5, it would be *technically* possible to shoehorn the MAN DPFs above the engines, in between engine room ducting. However, doing so would require prohibitively costly structural changes to the vessels to include:

1. Replacement of the existing gear boxes;
2. Modification of all major engine systems (cooling, fuel oil and exhaust);
3. Modification of existing engine mounts;
4. Design, engineering and installation of diesel exhaust fluid (DEF) tanks;
5. Replacement of all local and remote engine controls and monitoring equipment.

Even if the above could be accomplished, the result would be boats with engines unable to meet the unique performance requirements of offshore station-keeping and pilot transfers. The passive DPF system that is coupled to the MAN engines operates by utilizing heat from the engines' exhaust to burn off the particulate matter that is trapped by the filters. However, in order to function properly, the engines must be run at a sufficiently high RPM to generate the considerable heat required to achieve burn-off. Due to their unique operational requirements, SFBP's station boats do not typically operate at a speed where this RPM and heat exchange is achieved. Approximately 67% of the station boat operating hours are spent at idle speed, loitering in the offshore area of the pilot boarding area awaiting pilot transfers.

Active DPFs that generate the necessary heat with electricity were also evaluated, but also come with equipment, infrastructure and space challenges including:

1. Replacement of the vessels' generators with larger units;
2. Substantial upgrades to onboard electrical systems;
3. Extensive modifications to the exhaust enclosures.

Retro fitting with a parallel hybrid propulsion system was also evaluated. These systems allow loitering with electric motors and only use CARB-compliant diesel engines when

necessary for increased speed or power generation. These systems, while better suited to the operational profile, are too large to fit within the existing engineering spaces on the current station boats

Given all of these challenges, and the associated expense in engineering and implementing solutions to them, it simply is not feasible for SFBP to repower the existing station boats. It should also be noted that the SAN FRANCISCO and the CALIFORNIA are within 6-7 years of their planned service life and even if a repower were feasible, the capital investment is not economically justified.

c. Practical Infeasibility of building new vessels by CARB deadlines

Because it is not feasible to retrofit existing station boats, absent a regulatory change, SFBP's only viable path to compliance with the CARB regulations is to build new vessels. In evaluating the currently available technology, a purpose-designed vessel incorporating a CARB compliant parallel hybrid system is best suited to the station boat operational profile. Under this system, the issues with passive DPF technology are ameliorated, because when the engines are utilized, they would be run at sufficient RPM to generate the heat required to achieve burn-off of the particulate.⁴

In an attempt to meet CARB compliance deadlines, SFBP has already commissioned considerable pre-build engineering work on a suitable new-build design.⁵ However, in doing so, several significant issues have become apparent with regard to meeting the CARB deadlines for all three station boats. Those issues include:

1. The exorbitant cost to build three vessels within the timeframe required under the regulations;

⁴ While a parallel hybrid system is the best option available now, SFBP reiterates our concern that existing CARB deadlines limit consideration of emerging technologies—a significant concern given capital investment and the service life of pilot vessels.

⁵ See Attachment F at exhibits 3 and 4.

2. Financing the capital to build three vessels and the business-risk associated with the debt;
3. Significant competition for yard space and labor to build the boats;
4. Long lead-times for engines and other critical machinery.

Current best-case estimate for delivery of the parallel hybrid systems that would power the boats is at least one year out.⁶ As such, this factor alone makes delivering an operational replacement for the existing station boats all but impossible by both the December 31, 2024 and December 31, 2025 deadlines.

Compounding lead-time issues, is the fact that shipyard availability, particularly on the west coast of the United States, is scarce. This is due to competition from other commercial harbor craft operators booking to meet CARB deadlines, and a strong aversion nationally from the shipyards to take on CARB-related build projects.

SFBP sent out requests for interest to approximately 12 different shipyards around the country in October of 2023, and to-date has had only four responses. All of the shipyards from which SFBP has solicited interest are out of the state—there are no shipyards in California specializing in this type of vessel build. Further, once a construction agreement is reached, the build-times for these vessels will be in excess of one year, and potentially two, depending on availability of labor, materials, and parts. Thus, even if SFBP were able to lay three new keels today, it is impossible that new boats would be operational before the current CARB deadlines.

d. Infeasibility of due to cost

SFBP's pilot boats are paid for via a statutory surcharge incorporated into the pilotage fees charged to vessels using pilot services. The funds collected from this surcharge are held by the Board of Pilot Commissioners and are disbursed in arrears to reimburse SFBP for BOPC

⁶ See budgetary quotation, Danfoss Power Solutions US, Attachment F at exhibit 8.

approved costs. The current BOPC reimbursement process requires SFBP to first seek BOPC approval to commission, finance and build a pilot boat (pre-authorization). When the vessel is complete, the BOPC issues a final authorization to reimburse SFBP for costs that BOPC approves. Even with the pre-authorization, there is no guarantee that BOPC will approve all construction related costs. After final authorization is approved, BOPC reimburses SFBP costs that have been incurred and reimburses SFBP's loan payments as per the loan schedule. This procedure was employed most recently to build the P/V GOLDEN GATE in 2022-2023.

Importantly, although the cost of the boats built in this manner is ultimately paid for by the shipping interests that utilize pilot services, SFBP must obtain, and guaranty, the construction loans. This comes with substantial risk. The pilot boat surcharge revenue is directly tied to the volume of ship traffic. In the event of a decrease in surcharge revenue due to some disruption to shipping coming into or out of the bay (such as port closure, pandemic, war or natural disaster or simply economic downturn), SFBP would be required to make up any shortfall.

Attached as exhibit 5 to Attachment F of this application is a rough cost-estimate for the new builds provided by naval architect firm Glostén, which SFBP has engaged to assist with the project. At \$22.5 million per boat,⁷ the cost to build three vessels is projected to be roughly \$67.5 million.

Taking into account approximately \$9 million in advance surcharge funding currently on hand, approximately \$58.5 million in capital financing is required to complete three new hulls. The total cost of repayment at today's interest rates is projected to be upwards of \$80 million. SFBP's annual revenue is not sufficient from an underwriting perspective to take on, nor to guaranty, that amount of debt. This is particularly so, considering that SFBP is currently

⁷ This figure includes detail and production design, as well as the architect's recommended change order contingency. See Attachment F at exhibit 5, pp 3-4.

guarantor on the \$9 million loan for the construction of the PV GOLDEN GATE, will need to expend approximately \$3 million to replace the P/V PITTSBURG in or around 2028, and is also guarantor of approximately \$4 million in other business-related debt.

Even if it were feasible from an underwriting perspective for SFBP to borrow and guaranty that amount of debt, from a business perspective it would be an unacceptable risk. Under a best-case scenario, where pilot boat surcharge revenue increases modestly over time, such debt would be a massive weight on SFBP's business. It would effectively preclude SFBP's ability to borrow for other contingencies long into the future. In a less-than-best-case scenario, the debt would be catastrophic.

In 2020, SFBP saw its revenue drop by approximately one-third overnight due to the pandemic. Vessel traffic, and therefore pilotage fee revenue, is still not back to pre-pandemic levels. Supply-chain disruption continues to occur and Bay Area ports struggle to be competitive. If a similar disruption occurred with SFBP obligated on \$58.5 million in additional debt, it is highly likely that SFBP would be unable to service the loans. With the disruption of the pandemic still settling out,⁸ it would be exceedingly imprudent to leverage the business so heavily, on the blithe assumption that no similar disruption would happen again during the term of the loans.

Finally, from a public policy perspective, it is unconscionable that a private association of 52 individuals, who essentially perform the equivalent of a public utility service, should be required to guaranty the repayment of \$80 million in debt, in order to continue to provide a service they are statutorily mandated to provide. Pilotage in the San Francisco Bay Area forms a critical component of California's economy. The services provided by SFBP enable the

⁸ SFBP's income has recovered after the pandemic, but only as a result of targeted legislation imposing a supplemental "temporary transit fee" on users of pilotage services. *See* Assem. Bill 2056, (2021-2022 Sess.) § 1

operation of 9 major ports in the state, representing billions of dollars in trade and providing thousands of jobs. It would be imprudent policy to put the financial viability and stability of that service in jeopardy in the name of blanket enforcement of regulatory deadlines, when alternative means of achieving compliance are readily available.

e. Proposed Path to Compliance

Given the insurmountable challenges to meeting the current deadlines for the station boats to achieve compliance, SFBP has, in addition to working within the CARB regulatory framework, also been working in collaboration with shipping stakeholders, BOPC staff and the Legislature to develop a financially and practically feasible path to compliance.

At current vessel traffic levels, the pilot boat surcharge generates approximately \$6 million per year.⁹ Currently the fund holds about \$9 million. Assuming a similar annual collection rate, and taking into account existing obligations of the fund, within three years from today, and roughly every three years thereafter, the surcharge account would hold enough money to fund the construction of a new, compliant station boat without the need to obtain financing.

Not only would this solution relieve the burden from SFBP of borrowing and guaranteeing an unsustainable amount of debt, but it would save the rate payers that ultimately fund the pilot boats nearly \$20 million in interest that would otherwise accrue, were the vessels built with construction loans financed at today's interest rates. Further, assuming vessel traffic and thus surcharge collection rates hold relatively steady, this schedule for new vessel construction roughly coincides with the expected service lives of the existing station boats. Historically the useful service life of these vessels is approximately 30 years. Proceeding as described above, with the first new-build coming online in approximately early or mid-2028 and

⁹ The structure of the pilot boat surcharge was most recently altered with the passage of Assem. Bill 2056 in 2022, which adjusted the rate of collection of funds and the mechanisms for disbursement of those funds. Some further alterations to the statutory scheme are anticipated to be necessary in order to allow the surcharge to fund vessel construction in the way SFBP is proposing herein. SFBP is currently engaged in discussions to effect these changes

at roughly three-year intervals thereafter, the existing station boats CALIFORNIA, SAN FRANCISCO, and DRAKE would be retired at roughly 28 years, 32 years and 27 years respectively. This would allow pilotage rate payers and SFBP to obtain close to the anticipated benefit of previous capital investment.

The above approach is dependent on vessel traffic continuing at or increasing from today's levels. And it would require more than a one-time extension of current CARB deadlines for SFBP. The existing station boats would require extensions of roughly 4, 8, and 10 years respectively. Given the nature of SFBP's business and the cost of the capital assets at issue, SFBP requires some degree of certainty in order to conduct long-term business planning. As such, there would ideally be a solution that does not require SFBP to plan and execute on such large capital projects in reliance on a series of interim extensions being granted. However, SFBP desires to continue to work with CARB, and within the existing regulatory framework, in good faith. As such, SFBP submits this application for an extension for the station boats, P/V CALIFORNIA, P/V SAN FRNACISCO, and P/V DRAKE.

III. Conclusion

Despite diligent effort and the expenditure of considerable resources toward that end, SFBP will be unable to meet the CARB deadlines to repower or replace its station boat fleet. It is both practically impossible, and financially infeasible, to do so. However, SFBP supports the goal of CARB and the intent of the regulations. SFBP has mapped out a viable pathway to achieve compliance, and is working toward that end within the regulatory framework. In light of these facts, SFBP submits this application for extension under the E3 extension protocol, and hopes to continue to work with CARB to ultimately achieve compliance for its entire fleet.