

1 [Urging Nutrient Pollution Reduction from Wastewater in Response to the San Francisco Bay
2 Harmful Algal Bloom of 2022]

3 **Resolution urging the San Francisco Public Utilities Commission to reduce nutrient**
4 **loading to San Francisco Bay and the outer coast through appropriate technologies,**
5 **including wastewater recycling and advanced treatment.**

6
7 WHEREAS, The San Francisco Bay is suffering from excessive nitrogen loads, which
8 are excessive amounts of nitrogen compounds sourced primarily from wastewater treatment
9 plants, but also from agricultural runoff, stormwater, and atmospheric deposition which
10 contribute to negative impacts on the Bay's ecosystem, including harmful algal blooms, low
11 oxygen levels, and loss of habitat for fish and other aquatic species; and

12 WHEREAS, High nitrogen levels can affect water quality, making it unsuitable for
13 recreational uses such as swimming and fishing and to address this issue, various
14 management strategies should be implemented, focused on improvements to wastewater
15 treatment processes; and

16 WHEREAS, Presentations at the October 17, 2022, Land Use and Transportation
17 Committee hearing, on file with the Clerk of the Board of Supervisors in File No. 220962,
18 which is hereby declared to be a part of this Resolution as if set forth fully herein; and

19 WHEREAS, The San Francisco Bay/Sacramento-San Joaquin River Delta Estuary (the
20 "Bay-Delta Estuary") is critical to the natural environment and economy of the City and County
21 of San Francisco, the San Francisco Bay Area at large, and State of California, providing
22 some of the drinking water to two-thirds of the State's population, irrigating some of the
23 State's most productive farmland, and constituting one of the largest and most unique
24 estuarine ecosystems for fish and wildlife habitats in North America; and
25

1 WHEREAS, San Francisco Bay receives over 400 million gallons per day (“mgd”) of
2 treated wastewater from forty sewage treatment plants serving more than seven million
3 people in the Bay Area, including about 50,000 pounds of nitrogen pollution and 4,000 pounds
4 of phosphorus on a daily basis, making it among the most nutrient-rich estuaries in the world;
5 and

6 WHEREAS, The San Francisco Public Utilities Commission (SFPUC) discharges
7 approximately 20% of all municipal wastewater-borne nutrients to San Francisco Bay, despite
8 discharging less than 12% of the total wastewater flow to San Francisco Bay; and

9 WHEREAS, In July and August of 2022, the largest ever recorded harmful algal bloom
10 occurred in Central San Francisco Bay, comprised of the ‘red tide’ species, *Heterosigma*
11 *akashiwo*, which relied on abundant nutrients to reach an unprecedented magnitude; and

12 WHEREAS, This algal bloom coincided with the death of uncountably large numbers of
13 fish, including what leading scientists believe to be a significant proportion of the Bay’s
14 population of White Sturgeon, a Species of Special Concern, and Green Sturgeon, a
15 threatened species under the Endangered Species Act; and

16 WHEREAS, The harmful algae species *H. akashiwo* produces toxins dangerous to fish
17 and reduces the oxygen available to fish and other aquatic wildlife, resulting in the largest fish
18 kill ever recorded in San Francisco Bay; and

19 WHEREAS, The State Water Board updated the Water Quality Control Plan for the
20 San Francisco Bay/Sacramento-San Joaquin Delta Estuary (the “Bay-Delta Plan”); the State
21 Water Board is to require 40% unimpaired flow from each of the Stanislaus, Tuolumne, and
22 Merced Rivers during February through June, to maintain inflow conditions from the San
23 Joaquin River watershed sufficient to support and maintain the natural production of viable
24 native populations of San Joaquin River migratory fish species; and
25

1 WHEREAS, It is state policy and an objective of the Bay-Delta Plan to double natural
2 production of Chinook Salmon in the Central Valley relative to the years 1967-1991 average,
3 including in the Tuolumne River; and

4 WHEREAS, The SFPUC adopted the OneWaterSF Vision and Guiding Principles in
5 2016, and reaffirmed them in 2022, which includes a commitment to “the health and quality of
6 watersheds, San Francisco Bay, and the Pacific Ocean” and to pursue multiple benefits
7 across SFPUC’s enterprises; and

8 WHEREAS, In recent years, up to 90% of the San Joaquin River’s flow and up to 92%
9 of the Tuolumne River’s flow have been diverted or withheld in reservoirs upstream, causing
10 Tuolumne River salmon populations to plummet from 40,322 Chinook salmon in 1984, to less
11 than 300 in 2020; and

12 WHEREAS, San Francisco Bay’s watershed experienced two extreme droughts in the
13 past ten years, punctuated by extreme precipitation events; and

14 WHEREAS, Climate change scientists warn that California, and the San Joaquin River
15 watershed in particular, may experience droughts of greater duration and severity in the near
16 future; and

17 WHEREAS, In 2018 the State Water Resources Control Board (“State Water Board”)
18 established a goal to increase wastewater recycling by 350% by 2030, compared with a 2015
19 baseline, and reuse of all dry weather discharges of treated wastewater from enclosed bays,
20 estuaries and coastal lagoons, and ocean waters, which includes San Francisco Bay; and

21 WHEREAS, The SFPUC recycles less than one-percent of its wastewater discharges,
22 and provides no treated wastewater for direct or indirect potable reuse; and

23 WHEREAS, The SFPUC plays an outsized role in nutrient loading, with nearly four
24 times the amount of nitrogen discharged to San Francisco Bay, compared to San Jose’s plant;
25 and

1 WHEREAS, California allows for the augmentation of groundwater and reservoir-based
2 water supplies with advanced-purified water, and in 2023 plans to codify the direct potable
3 reuse of advanced purified water; and

4 WHEREAS, Technologies exist to remove nutrients and other pollutants from
5 concentrated wastewater streams, including reverse osmosis concentrate and wastewater
6 side streams; and

7 WHEREAS, In May 2022, the SFPUC released the San Francisco Purified Water
8 Opportunities Study and found up to forty-three mgd of purified water is potentially available
9 for recycling through various projects and concluded that "...there are feasible projects that
10 can reliably produce a significant new water supply within the City;" and

11 WHEREAS, On October 17, 2022, Thomas Mumley, Assistant Executive Officer of the
12 SF Bay Regional Water Quality Control Board ("Regional Board") described their Nutrient
13 Management Strategy to the San Francisco Land Use and Transportation Committee; through
14 their regulatory authority, the Regional Board has issued two permits governing nutrient
15 discharges from wastewater facilities throughout the region; the Regional Board intends to
16 issue a third permit in the year 2024 and is considering inclusion of a load reduction clause;
17 this requires exploring the science on how to execute this and how much it would cost; now,
18 therefore, be it

19 RESOLVED, That San Francisco is a recognized leader in the State and region in
20 green infrastructure; this infrastructure helps San Francisco manage excess stormwater to our
21 combined sewer system; San Francisco has demonstrated the will to step up to the
22 challenges put forth and must once again rise to the challenge to reduce our nutrient loading
23 in the Bay; and, be it

24 FURTHER RESOLVED, That the San Francisco Board of Supervisors instructs the
25 SFPUC to evaluate and report to the Board on a full range of technologies and strategies to

1 reduce the amount of wastewater nutrients released into San Francisco Bay and the outer
2 coast, including, but not limited to multi-benefit strategies; and, be it

3 FURTHER RESOLVED, That the San Francisco Board of Supervisors urges the
4 SFPUC to take necessary steps to further diversify its water supply and reduce reliance on
5 the Tuolumne River; and, be it

6 FURTHER RESOLVED, That the Clerk of the Board of Supervisors forward this
7 Resolution to the SFPUC, Bay Area Clean Water Agencies, California State Water Board,
8 California Department of Fish and Wildlife, and each of the City's elected State and Federal
9 representatives.



City and County of San Francisco
Tails
Resolution

City Hall
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4689

File Number: 230150

Date Passed: February 14, 2023

Resolution urging the San Francisco Public Utilities Commission to reduce nutrient loading to San Francisco Bay and the outer coast through appropriate technologies, including wastewater recycling and advanced treatment.

February 14, 2023 Board of Supervisors - ADOPTED

Ayes: 11 - Chan, Dorsey, Engardio, Mandelman, Melgar, Peskin, Preston, Ronen, Safai, Stefani and Walton

File No. 230150

I hereby certify that the foregoing
Resolution was ADOPTED on 2/14/2023 by
the Board of Supervisors of the City and
County of San Francisco.

Angela Calvillo
Clerk of the Board

Unsigned

London N. Breed
Mayor

2/24/2023

Date Approved

I hereby certify that the foregoing resolution, not being signed by the Mayor within the time limit as set forth in Section 3.103 of the Charter, or time waived pursuant to Board Rule 2.14.2, became effective without her approval in accordance with the provision of said Section 3.103 of the Charter or Board Rule 2.14.2.

Angela Calvillo
Clerk of the Board

2/24/2023
Date