



Kate Harrison
Councilmember, District 4

CONSENT CALENDAR
November 7, 2023

To: Honorable Members of the City Council

From: Councilmember Harrison

Subject: Budget Referral: Refer \$800,000 to the November 2023 AAO #1 for Matching Funds to Repair Eight Deficient Tide Tubes to Avoid Catastrophic Structural Failure and Escalating Construction Costs

RECOMMENDATION

Refer \$800,000 to the November 2023 AAO #1 to repair eight deficient tide tubes to avoid catastrophic structural and transportation failure, escalating construction costs, certain climate and sea level rise impacts, and further environmental catastrophe by providing the Parks, Recreation & Waterfront Department matching funds for a Federal Highway Administration (FHWA) PROTECT or other available grants.

BACKGROUND

The City's tide tubes connect the lagoon at Aquatic Park created as part of the construction of I-80 in the 1930s and the San Francisco Bay. The lagoon combines storm water run-off along with water from the Bay, creating brackish water that has hosted a wide variety of marine life.

Well-functioning tide tubes not only help collect influxes of storm water (increasing because of climate change), but also help flush toxins from the lagoon and attract salt water species such as leopard sharks, bat rays, and pelicans.¹ The City is also subject to a U.S. Environmental Protection Agency directive to improve water quality, particularly in the Bay, which Aquatic Park is a part, and spends tens of millions per year to prevent storm water infiltration and the release of partially treated sewage into the Bay.

The tubes are prone to blockage from invasive tubeworm species, contributing to poor water quality, flooding, and further harm to species and ecosystems. According to the City Manager and the Parks, Recreation & Waterfront Department, thanks to the evaluation and structural repair of the five main tide tubes (completed in 2022 under

¹ Aquatic Park Webpage, City of Berkeley, <https://berkeleyca.gov/community-recreation/parks-recreation/parks/aquatic-park>.

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T1), more fish and other creatures live in the lagoon than before the renovation.² Part of this project included partial dredging and repairs to the tide gates and the ends of the tubes.³ Despite recent upgrades to the five main tubes, three other tubes are still not fully functional. During the January 2023 atmospheric river event, the lagoon the City saw a mass die off of sharks and rays. The City’s consultants indicated that a deluge of fresh water from the storm draining into the lagoon changed the salinity and created a toxic environment for aquatic life. However, ill-functioning tubes are likely to have exacerbated the event as only five of the eight tubes are fully functional.



Credit: Berkeleyside and Citizen reporter



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During the Measure T1 evaluation, the City found that a large portion of the five main Tide Tubes are clay walls that are failing. The evaluation recommended the City replace or sleeve the tubes as soon as possible and that the City could expect complete failure in no later than 10 years from 2020. Additionally, there are three other tide tubes that need repair. Two of the tubes travel from the Aquatic Park lagoon to the Model Yacht Basin and another from the basin to the Bay. Each are significantly clogged and likely require sleeving. Renovating all eight Tide Tubes will help improve the water quality in the lagoon and help eliminate fecal matter by regular flushing of the lagoon with bay water. Renovated tide tubes will also prevent the collapse of Interstate 80 that is projected to occur due to the scouring effects of water flowing through the tide tubes, which will worsen with increased storms and rising tides associated with climate change.

To help fund these expensive repairs, the Parks, Recreation & Waterfront Department is pursuing a variety of grant possibilities. The 2021 Bipartisan Infrastructure Law

² Update on Aquatic Park, Dee Williams-Ridley, City Manager, February 15, 2023, <https://berkeleyca.gov/sites/default/files/documents/2023-02-15-PRW-aquatic%20park.pdf>.

³ Aquatic Park Central Tide Tubes Repair Sediment Removal Webpage, City of Berkeley <https://berkeleyca.gov/your-government/our-work/capital-projects/aquatic-park-central-tide-tubes-repair-sediment-removal>.

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established the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Program to “help make surface transportation more resilient to natural hazards, including climate change, sea level rise, flooding, extreme weather events, and other natural disasters....” The PROTECT Program includes over \$8.7 billion over five years (FY22 – FY26) through competitive grants to State DOTs, metropolitan planning organizations, local governments, Indian tribes, Territories and other eligible entities.⁴ All construction grant applications for this funding source require at least 20% in local matches.

In August 2023 the City submitted an initial \$466,000 grant application to the FHWA PROTECT Discretionary Grant Program for the Interstate 80 and Aquatic Park Lagoon Subsurface Culvert Resiliency and Habitat Project, and will provide a 12% local cash match of \$63,600 from the Parks Tax. This planning and design project will investigate feasible methods to renovate the existing failing subsurface culverts (tide tubes) that connect Aquatic Park to the Bay underneath I-80, and to the Model Yacht Basin. The planning effort, when paired with construction, will increase the resilience of I-80, Bolivar Drive at Aquatic Park, and the adjacent local City roads (e.g., 2nd Street) from the impacts of sea-level rise and increased storms due to climate change.

This grant only includes the planning and environmental process for the needed maintenance on all eight tide tubes. The Parks, Recreation & Waterfront Department is currently prevented from applying for the larger grant to perform construction work due to lack of readily available local matching funds as required. Additionally, the Public Works Department has determined that such a project is not eligible for the City’s Sanitary Sewer or Storm Water Funds as matching funds for these grants. It is unclear whether the City could use Solid Waste funds.

The total cost for repairing the eight tubes and all the related costs is estimated to be \$3.6-\$4.0M with a required 20% local match. This budget referral would provide a 20% match with an option to adjust the amount as needed at the Budget Committee or Council through the budget process if this price increases.

Contractors and environmentalists indicate that it is in the public interest to address outstanding repairs “as soon as possible.” It is also critical to leverage any available state or federal funding immediately to perform the needed repairs ahead of likely additional inflation, structural failure, and additional environmental catastrophes. The PROTECT grant funding is in place only through Fiscal Year 2026.

FISCAL IMPACTS OF RECOMMENDATION
\$800,000 from the General Fund.

ENVIRONMENTAL SUSTAINABILITY

Properly-functioning tide tubes allow saltwater from the Bay to flow into the lagoon with the daily tide cycle and also allow fresh water from storms to drain quickly from the

⁴ FHWA PROTECT Grant Program Webpage, <https://www.fhwa.dot.gov/environment/protect/>.

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lagoon into the Bay, helping maintain a high-quality aquatic habitat at the lagoon. In addition, the renovated tide tubes will prevent the collapse of Interstate 80 that is projected to occur due to the scouring effects of water flowing through the tide tubes, which will worsen with increased storms and rising tides associated with climate change.

CONTACT PERSON

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