

Memorandum

To: Salton Sea Authority Board of Directors
From: G. Patrick O'Dowd, Executive Director /GM
Date: May 21, 2026
Re: **Evolution of the Health Assurance Framework**

Background and Evolution

In November 2023, Authority staff advised the Board of efforts to develop a "Health Assurance Framework" to address the public health risks associated with changing conditions at the Salton Sea. What began as a monitoring coordination effort has evolved through successive stages: initial focus on integrating fragmented agency monitoring activities; recognition by late 2024 that accelerating conservation programs, declining inflows, and changing Sea chemistry were outpacing existing mitigation structures; and development by late 2025 of a broader framework concept addressing fragmented jurisdiction, siloed responsibilities, and lack of coordinated operational accountability and adequate resources. Staff has evaluated models such as Owens Lake, where long-term monitoring, adaptive management, and sustained funding mechanisms have been integrated into a durable public health management framework over multiple decades.

Emerging Biological and Vector Public Health Risks

Staff has identified a cluster of accelerating biological public health risks not adequately addressed by existing monitoring frameworks. As salinity rises and the fishery declines, the Sea is entering a hypersaline transition that comparable water bodies, including Mono Lake, have historically associated with mass brine fly emergence events. Given the Salton Sea's larger surface area, extreme desert temperatures, and elevated nutrient load from agricultural drainage, emergence events here could potentially be of significantly greater scale. While brine flies do not transmit disease, brine fly populations at hypersaline systems can reach into the trillions; decomposition of fly casings releases ammonia and hydrogen sulfide.

Mass emergence events of this scale also attract extraordinary concentrations of shorebirds and wading birds, whose guano accumulation in desert heat can produce localized ammonia emissions and air quality impacts, creating additional respiratory stressors that compound existing risk in communities already experiencing pediatric asthma rates substantially above state and national averages. Brine flies also accumulate selenium from algae and microbial mats in sediment containing elevated selenium concentrations; decomposition and disturbance of insect biomass and shoreline material may contribute to airborne particulate exposure pathways that have not been fully assessed. The precise trajectory and scale of these biological transitions remain uncertain. Staff believes, however, that the accelerating pace of ecological change warrants development of a coordinated long-term public health monitoring and response framework. The cumulative inhalation risk from this combined load has not been systematically assessed within any current framework.

Separately, the agricultural drain and canal network carrying return flows from the Imperial and Coachella valleys to the Sea provides extensive standing and slow-moving water habitat that supports significant mosquito populations capable of transmitting West Nile virus, Saint Louis encephalitis, and Western equine encephalitis. Vector control districts actively manage these corridors, but as agricultural water use patterns shift in response to conservation requirements, drain flow dynamics including the emergence of intermittent wetlands may change in ways that existing surveillance programs may not be designed to anticipate or track. These vector risks, combined with brine fly emergence and selenium particulate exposure, represent a pattern of interconnected biological public health conditions that cross the jurisdictional boundaries of any single agency.

Federal Engagement

Staff believes the Health Assurance Framework presents a well-defined opportunity for targeted federal engagement. This effort is grounded in public health, environmental monitoring, environmental justice, and community protection rather than broader ecosystem restoration or large-scale water infrastructure, which may facilitate bipartisan congressional support and more immediate implementation pathways. Unlike Owens Lake, where the Great Basin Unified Air Pollution Control District holds clear statutory jurisdiction and a single responsible party bears enforceable mitigation obligations, no existing federal or state agency holds comparable integrated statutory responsibility at the Salton Sea.

The State's Salton Sea Program focuses on habitat and dust mitigation; no federal agency operating in the basin holds a mandate spanning air quality, biological transition, vector surveillance, and cumulative exposure assessment together. That integrated gap, at both the state and federal level, is precisely what the Framework is designed to address.

Staff is evaluating opportunities to engage members of the regional congressional delegation regarding federal legislation that could support and institutionalize the Framework. Potential elements include: establishment of a coordinated interagency Salton Sea public health and environmental monitoring framework; authorization and funding for integrated monitoring of air quality, brine fly emergence, vector populations, selenium exposure, and other emerging conditions; support for university and community-based research partnerships; development of public risk-notification systems for shoreline communities; and establishment of a durable communication and coordination structure among federal, state, local, Tribal, academic, and community stakeholders.

Recommendation

Subject to further Board direction, staff recommends continuing discussions with regional, state, federal, Tribal, academic, and community partners regarding development of the Health Assurance Framework, and evaluating opportunities to engage members of the congressional delegation regarding targeted federal legislation designed to support and institutionalize these efforts over the long term.