This public correspondence was modified for accessibility. For original correspondence, contact disb@deltacouncil.ca.gov

memo

Delta Regional Monitoring Program

To: Delta Council ISB <disb@deltacouncil.ca.gov>
From: Debbie Mackey <President@deltarmp.org>
CC: DRMP Board of Directors
Date: Monday, May 12, 2025 8:22 AM

Re: Comments on Draft Prospectus for Contaminant Monitoring: “Contaminant monitoring in the Sacramento San Joaquin Delta to inform environmental management”.

Comment on Draft Prospectus for Contaminant Monitoring

The Delta Regional Monitoring Program (DRMP) is a stakeholder-directed initiative designed to collect crucial water quality data to enhance our understanding of Delta water quality issues. The program's primary objectives include developing capabilities for regularly compiling, synthesizing, and reporting data from existing monitoring efforts, building interest and involvement by addressing important regional questions, and creating a coordinated monitoring framework to inform environmental management and policy decisions. Stakeholder involvement and coordination are critical to the success of the DRMP, which collaborates with various regulatory agencies, resource agencies, permittees, scientists, and interested parties to ensure comprehensive and effective monitoring.

The draft prospectus for review of contaminant monitoring, as detailed in the document "Contaminant monitoring in the Sacramento San Joaquin Delta to inform environmental management: draft prospectus," describes an approach to evaluate existing monitoring programs that are providing environmental information related to contaminants. The

outlined strategies and methodologies show promise for understanding existing data sets, how they were collected, and evaluating their effectiveness for understanding the effects of contaminants in the Delta.

The DRMP appreciates the opportunity to review and comment on the draft prospectus and looks forward to closely collaborating with the Delta Independent Science Board (ISB) to help inform their process, provide context, and coordinate efforts. The DRMP has a history working with the ISB when identifying key management and assessment questions used to drive monitoring priorities and designs. The DRMP has consulted with the ISB to conduct third party reviews of the DRMP monitoring program including an assessment of the first iteration of the Current Use Pesticide monitoring program that was implemented in 2015.

Evaluation of Key Aspects

Clear Goals

The document sets clear and concise goals for reviewing contaminant monitoring, which are crucial for guiding the efforts of all parties involved. Four goals are outlined which focus on 1) assessing current monitoring programs, 2) understanding how monitoring can better inform decision making, 3) reviewing emerging technologies, and 4) identifying shortcomings and critical gaps. To achieve the first goal (assessing current monitoring programs), it is unclear if the ISB plans to evaluate programs individually (e.g., does program A have a comprehensive program) or wholistically across the Delta (e.g., when evaluating the monitoring conducted across program A, B, and C the information gained from monitoring is comprehensive). Each monitoring program being assessed will have its own priorities and objectives which were used to drive their monitoring design. This will be important to bring into the evaluation especially when identifying shortcomings and critical gaps. For example, the ISB could start with identifying the monitoring programs in the Delta and each program's specific focus including who, what, where, and why questions. This effort will also help identify key experts to interview (Task 1) related to contaminant monitoring and would likely assist in interviews with other experts. In addition, this effort lends itself to the Delta Science Program 2022-2026 Science Action Agenda (SAA) Science Action 1A: "Establish publicly accessible repositories, interactive platforms, and protocols for sharing information, products, and tools associated with monitoring and modeling efforts, in support of forecast and scenario development, timely decision-making, and collaborative efforts".

Approach, Scope, Tasks, and Products

The prospectus offers a wide-ranging scope that covers various aspects of contaminant monitoring, including identification of data gaps, data collection, analysis, and

management strategies. This thorough approach ensures that no critical area is overlooked, allowing for a more effective and holistic response to contaminant issues but may be too broad to effectively meet the four goals outlined.

This approach includes focusing on chemical contaminants and toxicity monitoring in surface waters, sediments, and wastewater treatment effluents and align with the broader goals of environmental protection and public health. In addition, the prospectus limits the scope by indicating that "less focus" will be placed on nutrients, Harmful Algal Blooms (HABs), and drinking water associated contaminants referencing other work being done on these topics. However, once the "who" and "what" are identified during the assessment of current monitoring in the Delta, the scope might need to be narrowed down even further. Having a step in the process to evaluate which programs will be assessed after they are identified may be beneficial to ensure that the scope if manageable.

As described in the draft prospectus, the first part is to interview experts with the goal of understanding the regulatory landscape driving contaminant monitoring. Expert opinions will be obtained on approaches and design of current programs, how data are synthesized and communicated, and on key gaps and barriers that may exist. This is important context when understanding the objectives of the individual monitoring designs and decisions made regarding where, when, how often, and what constituents are being monitored. It also will inform data quality needs within the regulatory landscape. Experts should be familiar with California water quality monitoring and understand the regulatory and policy frameworks driving monitoring in the Delta especially as it relates to prioritized contaminants. Within the graphic on page 6 of the draft prospectus, there is a bulleted item referring to "Explore management triggers". It would be helpful to tie this into the language and add an explanation associated with this action.

The second part of the process will be to review and evaluate current contaminant monitoring programs in the Delta using relevant documents. It is unclear where in the process the ISB will consider monitoring conducted under comprehensive programs such as the DRMP Current Use Pesticide program or the Irrigated Lands Regulatory Program. The DRMP recommends that the ISB not just focus on synthesis reports of constituents of emerging concern (CECs) but also evaluate programs with ongoing data collection that have been developed as a result of regulatory drivers. The types of contaminants referenced in the prospectus include metals, pesticides, pharmaceuticals, industrial chemicals, tire-wear constituents, and microplastics. This is a broad suite of contaminants and the ISB may consider narrowing down this portion of the scope or risk the ability to thoroughly meet the first goal of the review (Goal 1: Assess current contaminant monitoring

programs to determine the degree to which they are able to provide a comprehensive picture of the ecological risks of contaminants in the Delta).

The prospectus highlights the importance of understanding use of contaminants (e.g. Pesticide Use Data) and pairing chemical concentrations with methods to evaluate impacts of multiple contaminants on organisms. These are important concepts to carry through the review since when and where contaminants are used is helpful to understand the likelihood of finding them in surface water, effluent, or sediment and further understanding the impact on the ecology of the Delta.

In Part 3 of the effort, the draft Prospectus proposes to evaluate mixtures of chemicals and multiple stressors including how advanced effect-based methods could be integrated into monitoring programs. The DRMP understands that this part of the review is a large undertaking and should be caveated with some bounds on the scope of this effort. Before identifying data gaps and providing recommendations for future monitoring, care should be taken to understand the likelihood of a chemical to be present and the potential impact on the Delta ecosystem using a robust and scientifically sound evaluation system.

The prospectus includes various products of this effort including a seminar series (Part 4) focused on state-of-the-art toxicological and analytical tools for contaminant monitoring and risk assessment. The seminar series includes "proposed ways to overcome barriers and gaps." The DRMP encourages the ISB to conduct this part of the seminar series as a collaborative forum (possibly a summit) where real time feedback and input can be gathered on proposed ways to overcome barriers and gaps.

The final products will be a short summary of the key findings and recommendations as well as a final report addressing the four objectives. These products will be of value to the DRMP stakeholders to provide additional knowledge of existing programs and identify data gaps.

Realistic Timeline

The timeline presented in the prospectus appears realistic and achievable, considering the complexity of the tasks involved. It sets reasonable milestones and deadlines, which should help keep the project on track and ensure timely progress. Additional time may be needed to identify and get a better understanding of the various monitoring programs in the Delta and their management drivers.

The Role of the Delta Regional Monitoring Program

The DRMP's mission is to better inform decisions on protecting and restoring beneficial uses of water by producing objective and cost-effective scientific information critical to

understanding regional water quality conditions and trends in the Delta. The DRMP can play a pivotal role in the monitoring program review process by providing an overview of the DRMP monitoring sectors, data, reports and synthesis and plans for future monitoring. In addition, the DRMP can utilize the recommendations from the ISB contaminant monitoring program review to inform future monitoring designs by highlighting key data gaps. The DRMP can provide expertise, resources, and a framework for coordinated monitoring efforts to implement recommendations and engage stakeholders. Additionally, the DRMP can facilitate ongoing evaluation and adaptation of the monitoring processes to ensure they remain responsive to emerging contaminants and new technologies. We encourage the ISB to better define the role of the DRMP in the implementation of the review process outlined in the prospectus.

DRMP Monitoring Sectors and Long Term Monitoring Strategy

The DRMP has four primary monitoring sectors: mercury, contaminants of emerging concern (CECs), nutrients (including HABs), and current use pesticides (CUPs). We developed a comprehensive long-term planning strategy that involves a staggered approach across its monitoring sectors. This strategy alternates between planning, monitoring, and reporting activities over several years to maximize resources and ensure thorough and effective monitoring.

The long-term planning process begins with discussions to determine the program's priorities, objectives, and management and assessment questions for each monitoring sector. These discussions lead to the development of Multi-Year Study Plans, which outline the specific goals, methodologies, and timelines for monitoring each sector. These plans are then used to create project-specific documents that include detailed information necessary for budgeting and implementation.

The DRMP revisits and updates its long-term five-year plan every three years, incorporating feedback from stakeholders, including representatives on the Technical Advisory Committees (TACs). This iterative process allows the program to adapt to new challenges and opportunities, ensuring that the monitoring efforts remain relevant and effective. Additionally, the DRMP collaborates with other monitoring programs, such as the Interagency Ecological Program (IEP) and the Delta Science Program, to identify areas where coordination can occur to maximize resources and fill data gaps. This collaborative approach enhances the program's ability to address complex environmental issues in the Delta. We encourage participants from these other programs to attend and provide updates at our DRMP Steering Committee meetings which are open to the public. In addition, there is an available seat available on the Steering Committee for a stakeholder

from resource agencies to participate as a voting member or potential options under coordinated monitoring (Link to DRMP Steering Committee website).

Current Efforts for Long Term Monitoring

Mercury: The information collected as part of the DRMP mercury monitoring sector is critical to implementing the Delta MeHg Total Maximum Daily Load (TMDL), providing calibration and validation data for a Department of Water Resources (DWR) mercury model, and informing other management and regulatory decisions related to water quality improvement and ecosystem restoration in the Delta. This monitoring has provided essential evidence for regulators implementing the TMDL and contributes to ongoing analytical work by DWR. The DWR model was used to guide regulations and operational decisions related to farming, flood control, and wetland management. Central Valley Water Quality Control Board (CVRWQCB) staff used these data to inform the 2020 Delta Mercury Control Program including Phase 2 potential modifications and options.

Annual sport fish sampling was last conducted in September 2022 and mercury monitoring has rotated into a long-term planning stage. As part of the long-term planning process, a Mercury Interpretive Report was developed with a primary audience of the CVRWQCB and Methylmercury TMDL stakeholders and an objective to assess trends in fish tissue and aqueous methylmercury concentrations and evaluate other factors impacting trends in methylmercury concentrations. Data utilized in the report included data generated from 2016 – 2022 and evaluated trends in aqueous and fish tissue mercury concentrations since 2000 in the context of water year type and subarea.

The DRMP is currently underway with providing direction to the Mercury TAC to develop a long-term monitoring design based on prioritized management questions.

Constituents of Emerging Concern (CECs): In parallel to long-term planning for mercury, the DRMP will be developing an Interpretive Report to discuss the results of their CEC Pilot Study monitoring that spanned three years. Following that, there will be efforts to implement the long-term planning process for CECs including evaluating data gaps and identifying priority management priorities. The ISB contaminant monitoring report will come at a beneficial time for informing the DRMP CEC long-term planning efforts.

Current Use Pesticides and Toxicity (CUP): The monitoring and reporting under the most recent DRMP CUP monitoring study design was completed in September 2024 which concluded a four year monitoring program (conducted over six years) focused on the status and trends of current use pesticides in the Delta. The CUP monitoring sector rotated into the reporting and planning phase of long-term planning in 2025. It is currently planned to have the next CUP multi-year monitoring design completed after 2029 to first prioritize

monitoring of nutrients, then mercury (estimated to begin in 2027), followed by CECs (estimated to begin in 2029). The DRMP is in the process of identifying a short-term special study to fill known data gaps that could be implemented in parallel to the other long-term monitoring designs being developed.

Nutrients: The DRMP developed the Nutrient Multi-Year Study Plan to guide long-term studies of the effects of nutrients on the ecology of the Delta. After discussion between the DRMP Steering Committee and the Nutrient TAC, three primary questions (also referred to as focus areas) were developed to guide the development of the Study Plan.

1. Following a reduction in nutrient loading from different point and nonpoint sources, what ranges of nutrient concentrations are expected to occur throughout the Delta, and how might they be affected by climate change, wetland restorations, and water management and routing?
2. What are the thresholds for nutrients (nitrogen (N) and phosphorus (P) and their ratios) that can limit HAB biomass and cyanotoxin accumulation to safe levels, limit the abundance and distribution of nuisance macrophytes, and support robust growth of desirable phytoplankton and macrophytes throughout the Delta?
3. How are the characteristics of harmful cyanobacteria blooms and cyanotoxins in the Delta changing (e.g., species, magnitude, geographic extent, and timing) and what factors contribute to these changes?

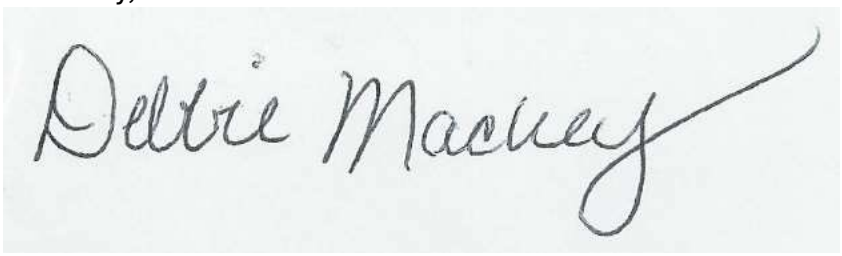
The Nutrient Multi-Year Study Plan addresses these three questions or focus areas using a combination of modeling, field/experimental studies, and monitoring. It is not the objective of this Nutrient Multi-Year Study Plan to completely address all three focus area questions. The intent of the studies included in this Study Plan is to begin a multi-year process that begins to address these questions with a hypothesis driven approach and prioritizing data gaps identified by the Steering Committee and Nutrient TAC. The biogeochemical modeling efforts will be used to answer question 1 within the Nutrient Multi-Year Study Plan through a series of hypothesis driven model scenarios developed to help inform management options. The nutrient reduction bioassay effort will assist with understanding the ecological effects of nutrient reductions to answer question 2. The bioassay experiment is an exploratory study that seeks to address questions about how nitrogen and phosphorus reductions will affect Microcystis growth, biomass accumulation, and toxin production, accumulation of biomass of desirable phytoplankton, and how other environmental factors (e.g., mixing, aquatic plant growth, clam grazing) affect Microcystis sp. and/or phytoplankton populations.

Overall Comments

Overall, the draft prospectus represents a thorough and forward-thinking plan for contaminant monitoring. Its successful implementation will depend on continued support, adequate funding, and the active participation of all parties involved. We recommend being cognizant of the scope to ensure that the timelines and objectives of the process can be met without compromising the scientific basis of the recommendations. The DRMP feels that its program provides a structured and adaptive framework for monitoring and managing water quality in the Delta, ensuring that the program can effectively address current and future challenges and looks forward to engaging and coordinating with the ISB on these efforts.

Please feel free to reach out at any time with any questions to me, Debbie Mackey, the DRMP President (president@deltarmp.org) or Melissa Turner, the DRMP Program Manager (mturner@mljenvironmental.com).

Sincerely,



Debbie Mackey, President
Delta Regional Monitoring Program