

The Top 5 Areas Where the California Water Quality Monitoring Council (Council) has Expertise and can Add Value to the State

1. The Council is a vehicle for determining if water quality monitoring programs are designed and implemented to adequately address management questions in an efficient and cost-effective manner.

Description: One of the main charges of the Council is to coordinate monitoring programs in order to create efficiency and eliminate redundancies. An output of this effort is identification of monitoring overlap and data gaps. Once this inventory is established it can be utilized to eliminate the overlaps and fill the data gaps through the development of an efficient and complete inter-agency monitoring program that provides the information necessary to make key management decisions. Historically the Council has done this through its theme-specific workgroups and the portals on mywaterquality.ca.gov which helped stakeholders visualize these data overlaps and gaps in order to impact future planning efforts and coordination.

Nexus with the Open and Transparent Data Act (AB 1755) and the Typical Data Life Cycle: The Council's ability to define data completeness and guide the development and performance of monitoring programs, addresses the planning portion of the data life cycle which focuses on designing a well thought out data collection program. This function also addresses the information and data driven decisions portion of the data life cycle by determining if the data and resulting information is adequate to answer the desired management questions and providing guidance on how to adjust the monitoring program accordingly.

Examples and Opportunities:

- Beach Water Quality Monitoring. Assembly Bill 411 (Wayne, 1997) requires that public beaches that attract at least 50,000 visitors annually and are adjacent to a storm drain that flows in the summer months (April 1 – October 31) be tested on weekly basis for total coliform, fecal coliform, and enterococci bacteria. The intent of the legislation is to protect public health by notifying water contact recreators when the levels of bacteria are unsafe. While several of the coastal beaches are captured under the AB 411 legislation there are significant gaps in the overall monitoring of beaches in California, especially in the inland freshwater areas where water contact recreation is also high. If the overall goal of beach water quality monitoring is to protect public health statewide, then there is a significant gap in where monitoring is occurring and how the public is being notified. California would benefit from a coordinated effort to establish bacteria monitoring in highly recreated areas across waterbody types.
- Wetland monitoring (“no net loss” of wetlands). Tracking the extent, distribution and change over time of wetlands (and other aquatic resources) statewide is a foundational element of California's wetland monitoring and assessment programs (CWMW 2010). It not only provides the basic information to report on wetland status and trends, but is also crucial for accurately assessing the Federal and State “no net loss” policies in terms of wetland quantity and evaluating the effectiveness of current regulatory and management programs (e.g., Porter-Cologne Water Quality Control Act, Clean Water Act §401, CA Fish and Wildlife Code §1600). Despite being a national leader in investment in wetland protection, management, and monitoring, California agencies cannot reliably answer essential questions about the extent and distribution of wetlands, streams, lakes, and estuaries and how these resources are changing over time (CNRA 2010). This

knowledge gap precludes our ability to accurately evaluate the effectiveness of statewide investments in aquatic resources restoration, regulation, and management.

- An additional tool that the Council could provide via mywaterquality.ca.gov is an integrated map showing the current and future monitoring locations across the state. This would allow agencies to visualize the monitoring locations across the state and see where there is potential overlap in sampling sites and parameters, and actually adjust the monitoring programs to leverage resources more effectively.

2. The Council establishes guidance on data quality and method consistency for established monitoring programs across the state.

Description: The Council provides guidance to its workgroups on data quality standards, method standardization, and comparability. This service is essential to achieve the overarching goals of SB 1070 which is to integrate and coordinate the state's water quality and ecological monitoring efforts. Many agencies utilize specific and different sampling and reporting protocols that impact how the resulting data and information can be used, with the Council's help these differing datasets can be utilized in concert to help inform management decisions.

Nexus with the Open and Transparent Data Act (AB 1755) and the Typical Data Life Cycle: The guidance the Council provides directly impacts the data collection and assurance portions of the data life cycle and also plays an important role in turning data from multiple programs into comparable information to inform management decisions.

Examples and Opportunities:

- The Council through its theme-specific workgroups has provided guidance on how to establish comparability with existing monitoring protocols like those established through the Surface Water Ambient Monitoring Program.
- The State Water Board has established a very powerful bioassessment program with specific sampling protocols and an indices to interpret the data as it relates to the waterbodies ecological health. While the protocols are being consistently applied within the State Water Board, other agencies like the Department of Water Resources collect benthic macroinvertebrates using different protocols and different interpretation tools. It would be to the benefit of the state if the bioassessment data collected across the state could be integrated to provide insight into the health of watersheds.

3. The Council can identify where data interpretation thresholds are needed and help provide recommendations on what those thresholds could be.

Descriptions: State agencies collect thousands of data points a year but data itself is not useful unless it can be analyzed and transformed into information. The analysis and interpretation of water quality and ecological health data generally requires a numeric threshold to compare the data against in order to determine if beneficial uses of the waterbody are being supported. However, many pollutants, especially those that are new or emerging, lack an accepted or promulgated numeric threshold to compare water quality or ecological health data to. The Council can facilitate the development of workgroups that utilize a group of multi-agency experts to recommend data interpretation thresholds for such pollutants.

Nexus with the Open and Transparent Data Act (AB 1755) and the Typical Data Life Cycle:

The development of data interpretation thresholds is an important step in turning data into information which ultimately can lead to data driven decisions.

Examples and Opportunities:

- Harmful algal blooms create cyanotoxins that can pose a threat to public health and wildlife throughout California. Currently, there are no federal or state standards for cyanotoxins in drinking water and recreational waters. The Council's California Cyanobacteria and Harmful Algal Bloom Network is an interagency team of staff that has developed and continues to refine guidelines and potential thresholds to protect public health in waters with the water contact beneficial use.
- The newly formed California Environmental Flows Workgroup will be establishing potential thresholds for the flow necessary to support the ecological systems of streams in California.
- Ocean Acidification and providing guidance on how the state should be assessing levels of nutrients and other pollutants that contribute to increased levels of carbon dioxide in it's coastal and estuarine environments is a specific area of need. The Council can work with and utilize the findings of the West Coast Ocean Acidification and Hypoxia Science Panel.
- The recycling and reuse of potable drinking water is an especially important are of research as are contaminants of emerging concern (CECs). By identifying data interpretation thresholds for these CECs, it can lead to the development of important regulations like maximum contaminant levels as well as the creation of important trend analysis programs to be proactive in the identification of potential public health problems.

4. The Council can identify emerging methods and technologies and offer guidance on how those should be developed to answer current and future management questions.

Description: If sampling, analysis, and reporting methods can be standardized across state agency monitoring programs, then the ability to coordinate monitoring resources becomes more feasible. Some of the best opportunities to do this through new and emerging pollutants and sampling methods. These opportunities should be identified by the Council and the Council should provide guidance and how to best standardize the methods to address management questions. Furthermore, the Council can act as a portal to academic researchers to provide a vehicle for communication with researchers. This could be incorporated into some sort of events.

Nexus with the Open and Transparent Data Act (AB 1755) and the Typical Data Life Cycle:

By identifying emerging methods and technologies the Council will also be developing use cases to help feed the data life cycle and the AB 1755 effort. By taking the next step on providing guidance on how these methods should be developed and implemented into monitoring programs this effort also fulfills the planning and collection phases of the data life cycle.

Examples and Opportunities:

- Molecular and genetic methods like eDNA are beginning to be utilized across the state to answer specific water quality and ecological health questions. Before agencies become siloed in how they collect, analyze and report this new data, the Council should be providing guidance on which methods the agencies should be using.
- As new pollutants and CECs are identified, new technologies and analysis methods will follow. By identifying those emerging technologies and methods for these CECs the Council can ensure that monitoring programs are developed to collect and provide data in a way that is most protective of beneficial uses.
- The California Water Quality Monitoring Collaboration Network can be utilized by providing them with emerging topics for their respected and widely used webinar series. The Water Quality Monitoring Collaboration Network provides a voluntary monthly webinar that allows members of the monitoring community to network and exchange information and ideas on topic of interest. Webinars are planned to share technical and support tools for monitoring, assessment and reporting; to encourage discussion on common concerns like information management and program development; and to provide a forum for networking and collaboration. The webinars are very well attended and the [YouTube page](#) where webinars are posted is also widely viewed. The facilitator of the California Water Quality Monitoring Collaboration Network via the Workgroup Summit requested more direct input from the Council on topics for webinars as well as additional facilitation support for the network.

5. The Council can link the disparate monitoring programs from local and regional entities that conduct the majority of monitoring across the state.

Description: The Council has had success coordinating state sponsored monitoring programs like the surface water ambient monitoring program, the environmental monitoring program, and municipal water quality program. However, the majority of monitoring that occurs across the state are from local and regional monitoring programs that are not conducted by state agencies. The Council should provide a venue for coordinating these other monitoring programs and incorporating these large sources of data to inform management decisions.

Nexus with the Open and Transparent Data Act (AB 1755) and the Typical Data Life Cycle:

By expanding the Council's integration efforts, this will identify new use cases for the AB 1755 effort and bring in more partners to provide data that can be used to inform management decisions.

Examples and Opportunities:

- The Workgroup Summit identified a desire to have the Council help the workgroups with outreach to stakeholders not participating in the workgroup and with publicity of workgroup products and tools. These can be addressed through the development of a Council subcommittee on outreach and publicity which could be tasked with developing a comprehensive communications strategy that would encompass both internal and external protocols.
- The California Estuary Monitoring workgroup has been extremely successful at coordinating monitoring programs throughout the San Francisco Bay - Delta and

providing information via a recently updated estuary portal. However, the workgroups overall goal is to provide information on all estuaries in California. The workgroup has had difficulties getting data from monitoring programs that operate on a smaller scale. These difficulties are due to various reasons including fear of regulation. If the Council could empower the workgroup to reach out and communicate with these smaller monitoring groups it could lead to a much more comprehensive portal and workgroup.

- One method could be to conduct events meant to target these smaller non-state sponsored monitoring programs to educate groups and provide them a what's in it for them guide to participating with the Council and its workgroups. These events could be targeted and would likely require some level of specificity and occur at strategic locations across the state.
- The SWAMP clean water team and the California Water Quality Monitoring Collaboration Network have a base of existing contacts to build on.
- By having a venue for open coordination with monitoring programs that are required by permits or other regulatory actions, the Council can help agencies better characterize cost of compliance.

Questions and Next Steps:

Does the Council and its workgroups agree with the information presented above?

If yes, then the next steps would be to update and implement a new comprehensive strategy.

Who/what else do we need to implement these strategic actions?