Water Quality Committee Meeting

JANUARY 31, 2024

Water Quality Committee Kickoff Recap

- The Water Quality Committee (WQC) reconvened for the first time in 13 years in October 2023
- At the 2023 WQC Kickoff meeting, reviewed:
  - 2000-2023 water quality management actions under the 2000 OBMP (Program Element 6)
  - Opportunities to enhance current water quality management, as identified in the 2020 OBMPU
  - Objectives for a Water Quality Management ~~Plan~~ Program
    - Obtained input and feedback on objectives and topics of interest – live survey, verbal and written feedback
  - Scope and purpose of developing an initial Emerging Contaminants Monitoring Plan
    - Obtained input on emerging contaminants of concern or interest – live survey, verbal and written feedback

Agenda

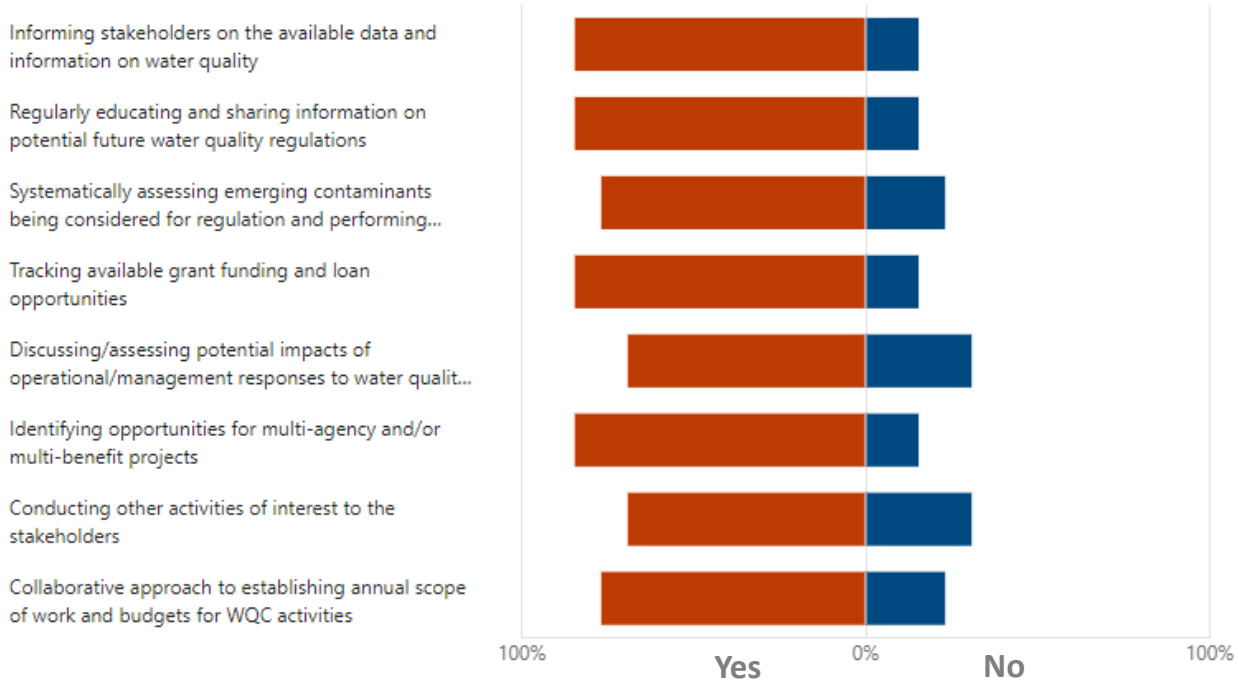
1. Objectives for Developing a Water Quality Management Program (WQMP) and WQC Meetings
2. Overview of Draft Initial Emerging Contaminants Monitoring Plan (ECMP)
3. Next Steps

Water Quality Management ~~Plan~~ Program

At the WQC Kickoff Meeting:

- Reviewed the WQMP concept envisioned in the 2020 OBMPU
- Presented a refined concept based on feedback since the 2020 OBMPU completed
- Discussed and solicited feedback on:
  - potential goals and objectives for the WQMP
  - water quality topics of interest

Topics Survey – Are these topics of interest to your agency?



WQMP concept envisioned in the 2020 OBMPU:

PERFORM EXPANDED MONITORING FOR EMERGING CONSTITUENTS AND CURRENT WATER-QUALITY ASSESSMENT -

IDENTIFY POTENTIAL ALTERNATIVE PROJECTS FOR WATER QUALITY IMPROVEMENTS

DEVELOP RECONNAISSANCE-LEVEL ENGINEERING EVALUATIONS FOR DESIGN AND OPERATION OF POTENTIAL PROJECTS

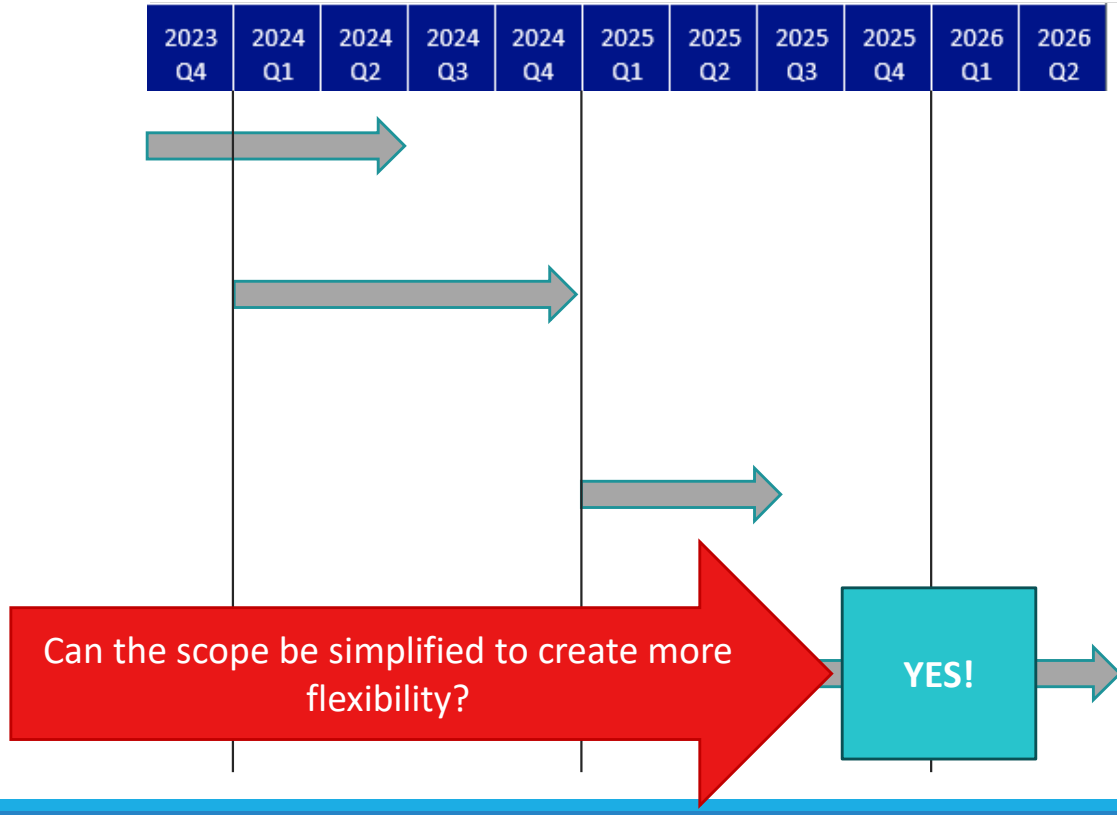
SELECT PROJECT(S) FOR IMPLEMENTATION AND PREPARE AN IMPLEMENTATION PLAN

PREPARE A FINAL WQMP

Can the scope be simplified to advance work more timely?

YES!

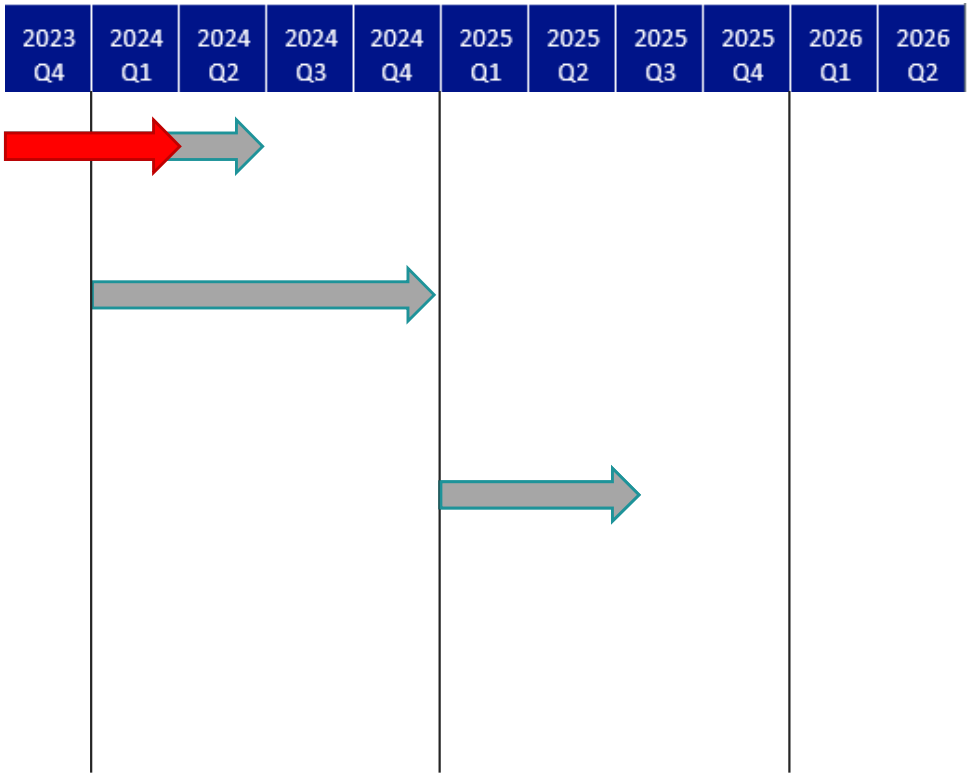
Condensed Scope of Work for Developing a WQMP



- Convene the WQC, define objectives, and refine scope of work
- Develop and implement an initial emerging-contaminants monitoring plan
- Perform a water quality assessment and prepare a scope to develop WQMP
- Develop WQMP to address WQC goals and objectives

Simplified Scope of Work for Developing a WQMP

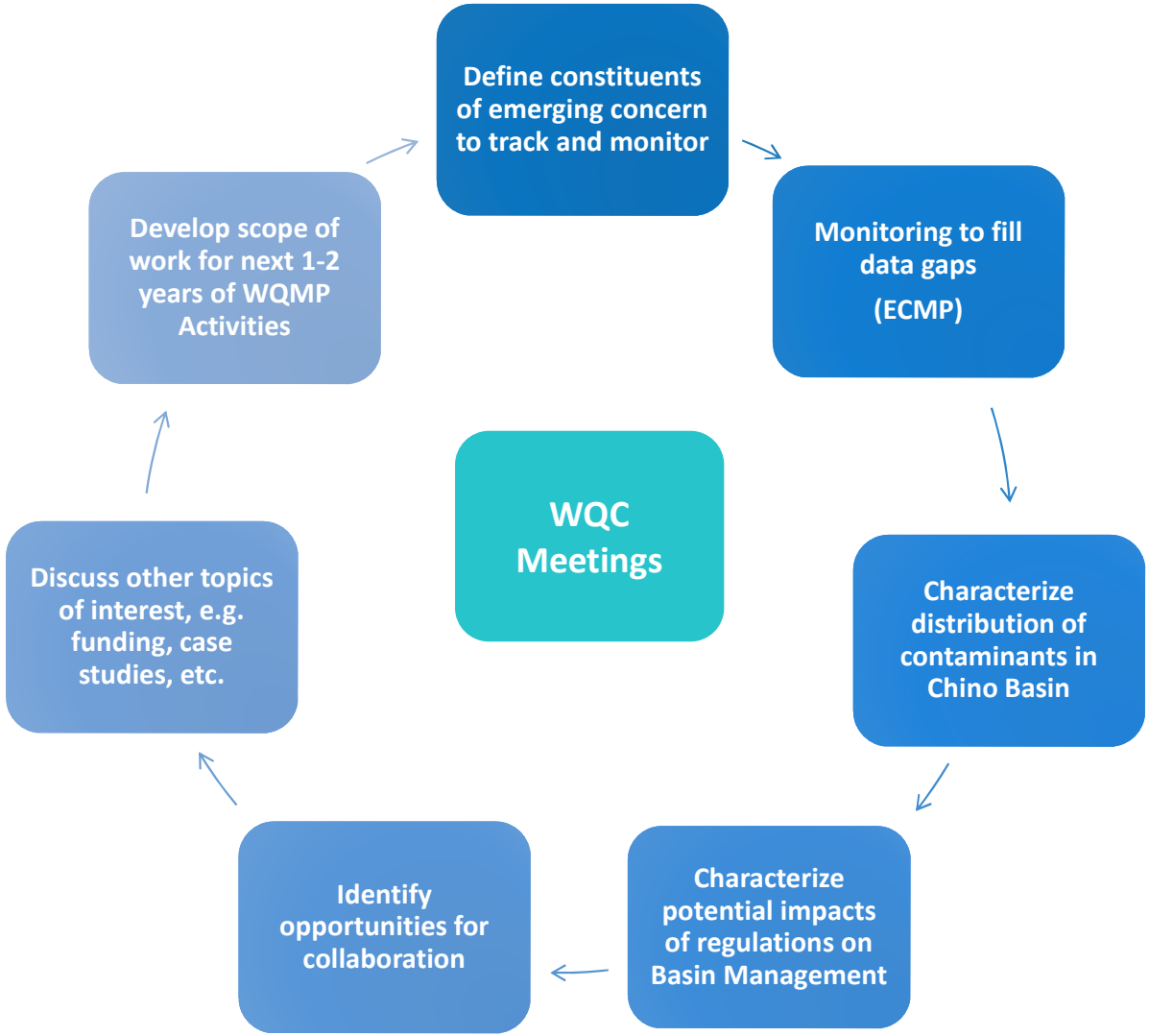
- Convene the WQC, define objectives, and refine scope of work
- Develop and implement an initial emerging-contaminants monitoring plan
- Perform a water quality assessment and prepare a scope ~~to develop WQMP~~ for WQMP activities over next 1 to 2 years
- ~~Develop WQMP to address WQC goals and objectives~~



WQMP Objectives

- Regular education and sharing information on emerging WQ regulations
- Inform stakeholders on available WQ data and information
- Implement Emerging Contaminants Monitoring Plan to monitor and characterize contaminant occurrence in Chino Basin
- Enhance ability to identify impacts to Basin that could result from operational or management responses to WQ regulations
- Enhance ability to identify multi-agency and/or multi-benefit projects
- Track available grant funding and loan opportunities
- Conduct other activities to address WQ concerns, based on stakeholder interest.
- Recommend annual scope of work and budget for WQMP activities

Right Sized Approach for a WQMP

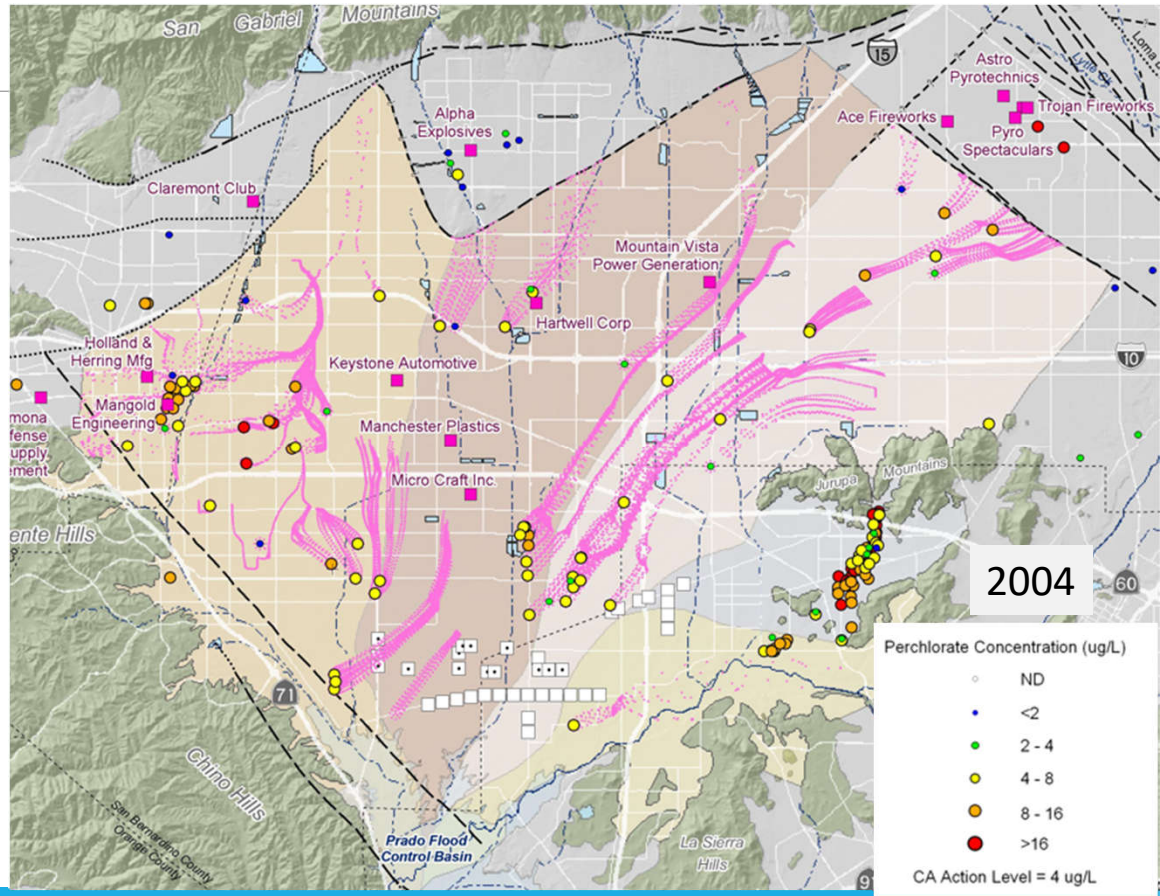


WQMP –Annual Scope of Work

- Stakeholder and engagement driven
- Based on information learned and discussed at WQC meetings and stakeholder input
- Reviewed and updated annually
- Could include:
  - Annual tracking of emerging regulations
  - Updating Emerging Contaminants Monitoring Plan (ECMP)
  - Monitoring pursuant to ECMP
  - Characterizing occurrence of emerging contaminants
  - Follow-on studies of specific contaminants, e.g. assessing source of contaminants or technical assessment of water level, storage, or quality response to change in operations to address regulations
  - Follow-on assessment of regional solutions to specific contaminants
  - Hearing from guest speakers on specific topics of interest

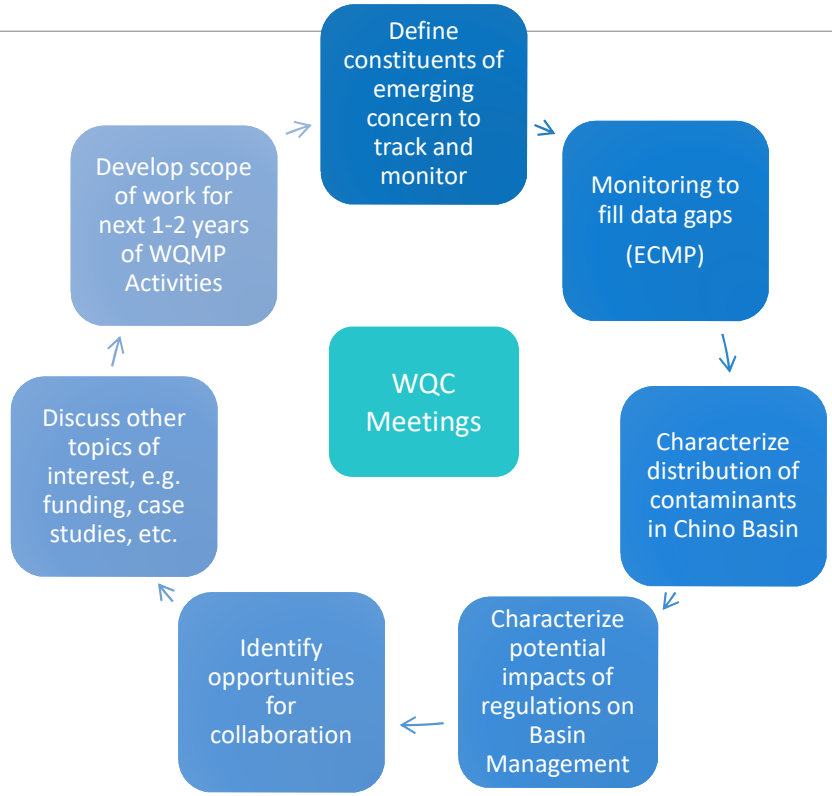
Example from prior WQC work

- Perchlorate in Chino Basin
  - Studies to identify sources and assist the Santa Ana Water Board with identifying PRPs
    - Environmental Records Search
    - Backwards particle tracking
    - Help narrow down sites that are PRPs, additional records and air photo review
  - Monitoring in wells, surface water, and imported water
  - Perchlorate isotope study - natural or anthropogenic source
  - Tracking investigations in the Rialto-Colton basins where there were known PRPs

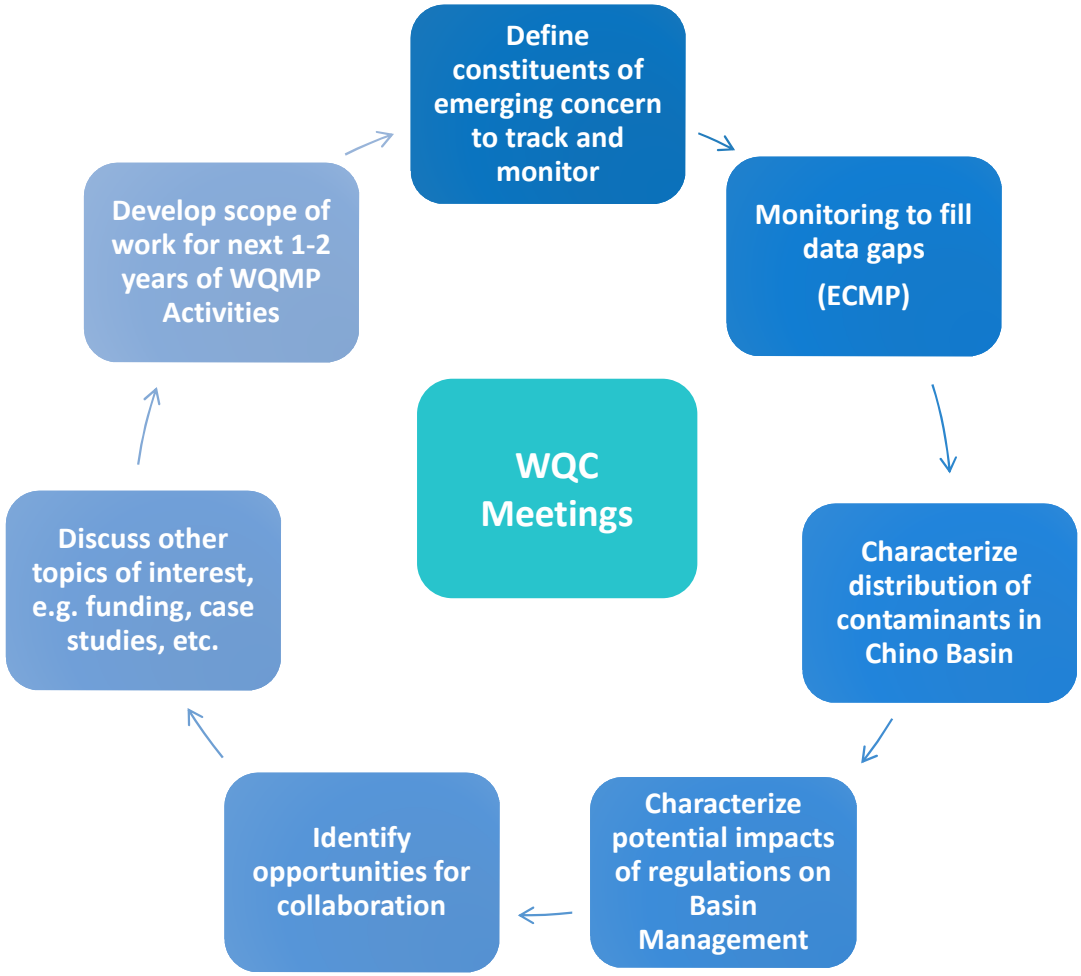


WQMP Next Steps

- Develop simple documentation of WQMP:
  - Describes WQMP objectives
  - Identifies WQC role and function in leading the WQMP
  - Describes operation of the WQC
  - Describes generalized approach to establishing scope of annual activities
- Circulate documentation for review and comment
- When complete, document can be used for stakeholder outreach and co

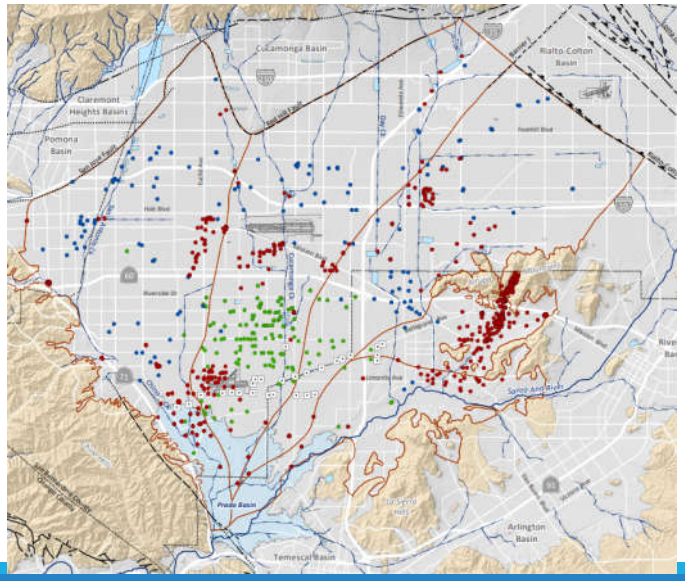


WQMP: Discussion and Feedback



Initial Emerging Contaminants Monitoring Plan (ECMP)

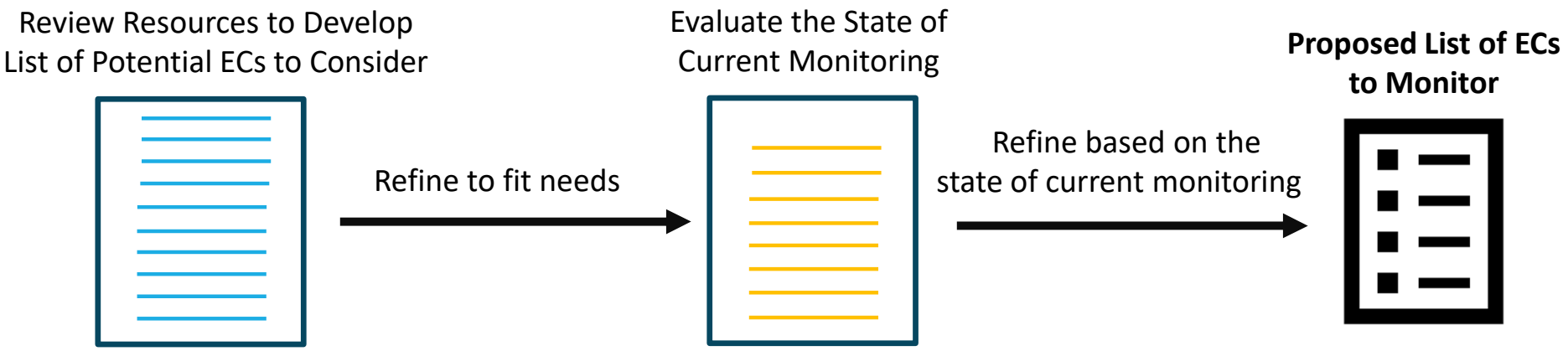
- Objective: Initial monitoring plan to fill data gaps relative to emerging contaminants and characterize current conditions to understand how these contaminants could impact other management activities and inform future actions for the WQC.
- Can serve as a framework for long-term monitoring as part of the WQMP
- Draft Initial ECMP:
  - 1. Background and Objectives
  - 2. Determination of Emerging Contaminants to Consider
  - 3. Evaluation of Current Monitoring for Emerging Contaminants
  - 4. Initial ECMP
    - List of emerging contaminants to monitor
    - Locations for Watermaster monitoring (monitoring/private wells)
    - Request for Appropriator and cooperators to monitor wells



Initial Emerging Contaminants Monitoring Plan (ECMP)

"Emerging Contaminants" = Contaminants with emerging drinking water regulations of concern

Process to Select Emerging Contaminants to Monitor for Initial ECMP:



Initial Emerging Contaminants Monitoring Plan (ECMP)
Determination of Emerging Contaminants to Monitor

Various resources were used develop the potential list of initial emerging contaminants:

a. Feedback provided by the attendees at the October 18, 2023 WQC meeting.

b. CA State Water Resources Control Board Division of Drinking Water (DDW) - Drinking Water Programs "News"

c. CA DDW *2023-0007 Proposed Prioritization of Drinking Water Regulations for Calendar Year 2023*

d. CA DDW "Emerging Contaminants" and "Contaminants in Drinking Water" webpages

e. CA DDW webpage on notification levels

f. Federal EPA Unregulated Contaminant Monitoring Rule (UCMR)

g. Federal EPA Unregulated Contaminants Analytical Methods webpage

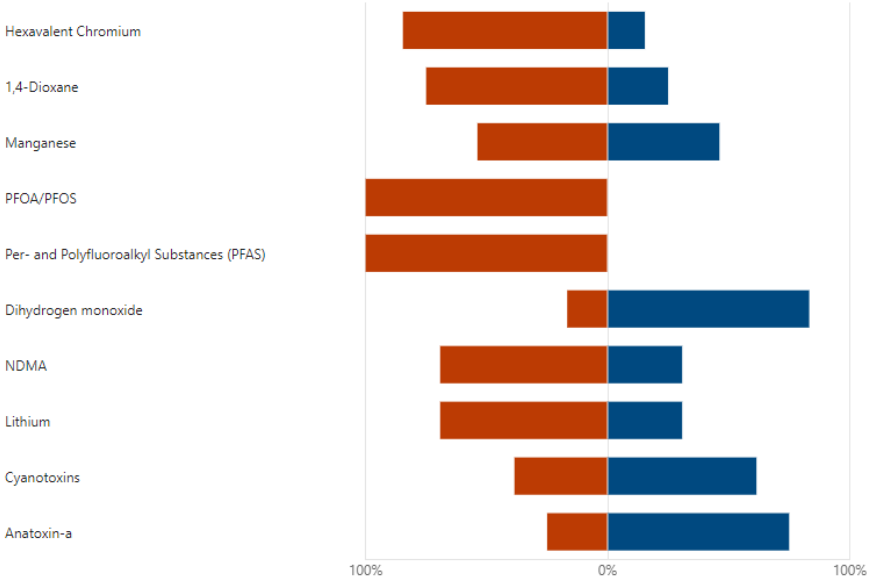
h. Federal EPA Contaminant Candidate Lists

i. Federal EPA Drinking Water Regulations Under Review Webpage

Initial Emerging Contaminants Monitoring Plan (ECMP)

Determination of Emerging Contaminants to Monitor

Feedback provided at the October 2023 WQC meeting – Are you aware of these emerging contaminants of concern?



STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 2023-0007

ADOPTING THE PROPOSED PRIORITIZATION OF DRINKING WATER REGULATIONS DEVELOPMENT FOR CALENDAR YEAR 2023

THEREFORE BE IT RESOLVED THAT:

The State Water Board directs the Division of Drinking Water to prioritize the development of drinking water regulations during calendar year 2023 as follows:

1. Maximum Contaminant Levels
   a. Chromium (hexavalent)
   b. Arsenic
   c. Perfluoro-octanoic acid (PFOA) and perfluoro-octane sulfonic acid (PFOS)
   d. N-nitroso-dimethylamine (NDMA)
   e. Disinfection Byproducts
   f. Styrene
   g. Cadmium and Mercury
2. Direct Potable Re-Use

https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2023/rs2023-0007.pdf

Initial Emerging Contaminants Monitoring Plan (ECMP)
Determination of Emerging Contaminants to Monitor

List of Potential ECs to Consider

- Manganese
- 1,4-Dioxane
- Hexavalent Chromium
- Arsenic
- PFOA/PFOS
- Other PFAS
- NDMA
- Styrene
- Mercury
- Cadmium
- Perchlorate
- ~~Lithium~~
- ~~Microplastics~~
- ~~Cyanotoxins~~
- ~~Disinfection Byproducts~~

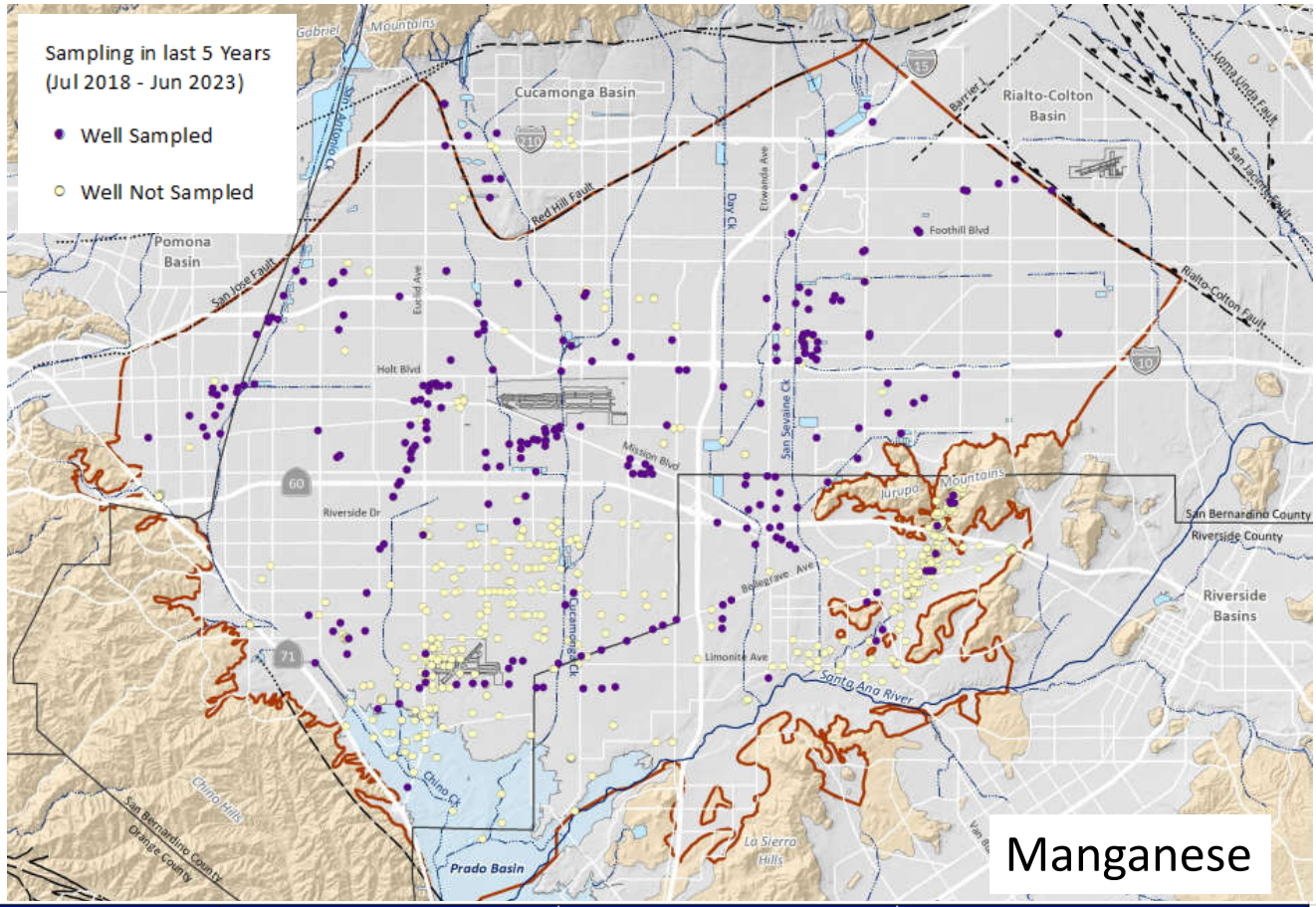
Table 1 in Initial ECMP of all the Potential ECs to Consider

Contaminant	NL µgl	RL µgl	Primary MCL µgl	PHG µgl	Resource									Comments	Further Consideration for 2024 Monitoring	
					a	b	c	d	e	f	g	h	i		yes/no	reason
Manganese	20	200			X	X	X	X	X		X	X		California passed bill in 2022 to set in motion the development of a primary MCL. In February 2023 the state issued revised lower NL of 20 µgl and RL of 200 µgl as part of this process. A NL and RL for manganese is in the State Board's prioritization of drinking water regulations development for 2023	Yes	Newly established NL and RL. Potential for future State MCL
1,4 - Dioxane	1	35						X			X	X		California NL of 1 µgl set in 2010 (revised from 3 µgl). In 2019 the State Board ask OEHHA to set a PHG for 1,4-dioxane. The State Board indicated intent to begin a rulemaking process to set a MCL based on the PHG set for 1,4-dioxane.	Yes	Potential for future State MCL
Hexavalent Chromium			10 (proposed)	0.02	X	X	X	X					X	California issued notice of rulemaking for an MCL in June 2023 with a proposed MCL of 10 µgl. A revised MCL for hexavalent chromium is in the State Board's prioritization of drinking water regulations development for 2023	Yes	Proposed State MCL

ECMP – Evaluation of Monitoring for ECs

List of Potential ECs to Consider

- Manganese
- 1,4-Dioxane
- Hexavalent Chromium
- Arsenic
- PFOA/PFOS
- Other PFAS
- NDMA
- Styrene
- Mercury
- Cadmium
- Perchlorate

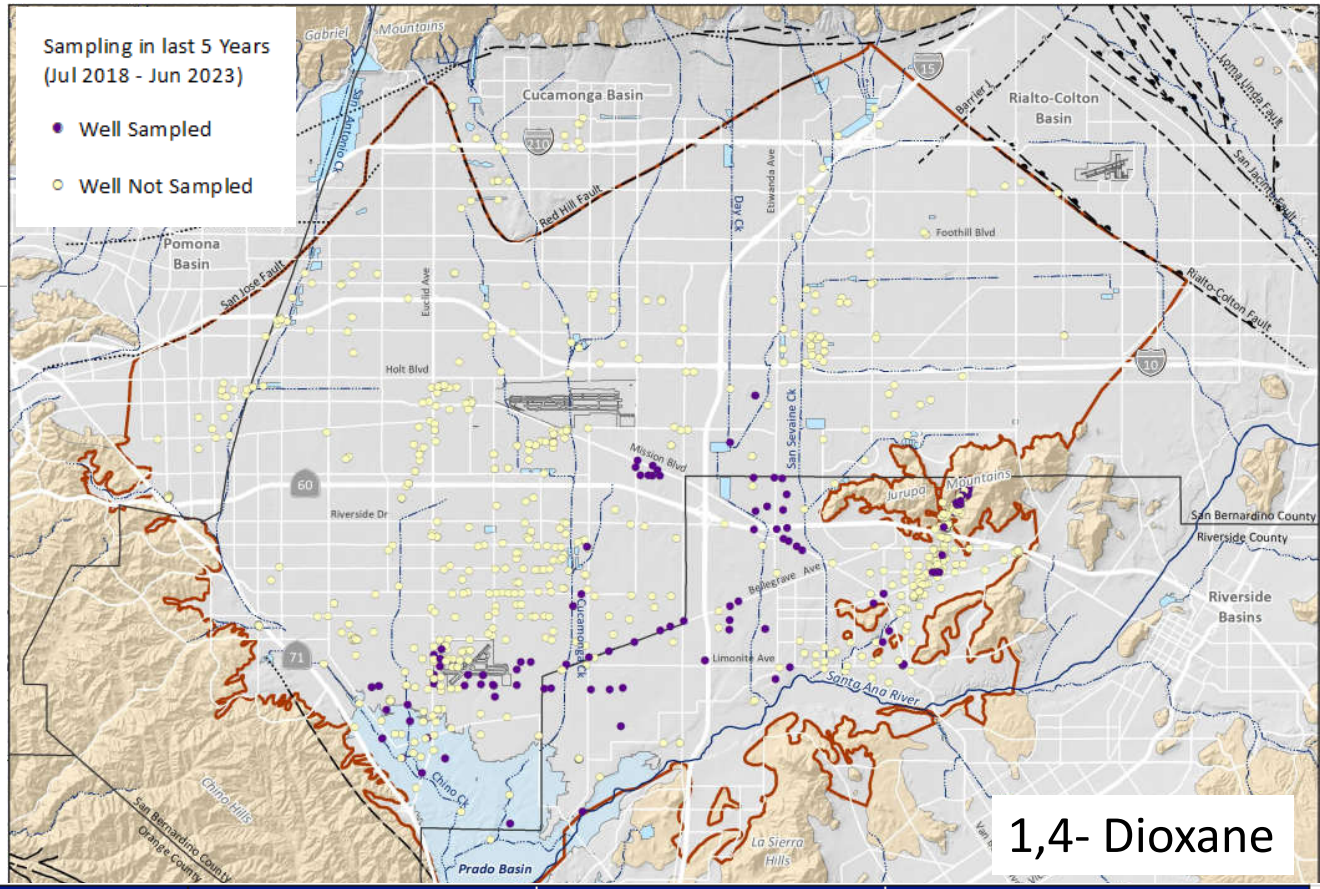


Well Type	# of Wells Not Sampled	# of Wells Sampled	# of Wells with Detections
Appropriator	45	135	25
Monitoring - Watermaster	51	27	2
Monitoring - Cleanup Site	606	142	110
Private	121	9	2
Total	823	313	139

ECMP – Evaluation of Monitoring for ECs

List of Potential ECs to Consider

- Manganese
- 1,4-Dioxane
- Hexavalent Chromium
- Arsenic
- PFOA/PFOS
- Other PFAS
- NDMA
- Styrene
- Mercury
- Cadmium
- Perchlorate

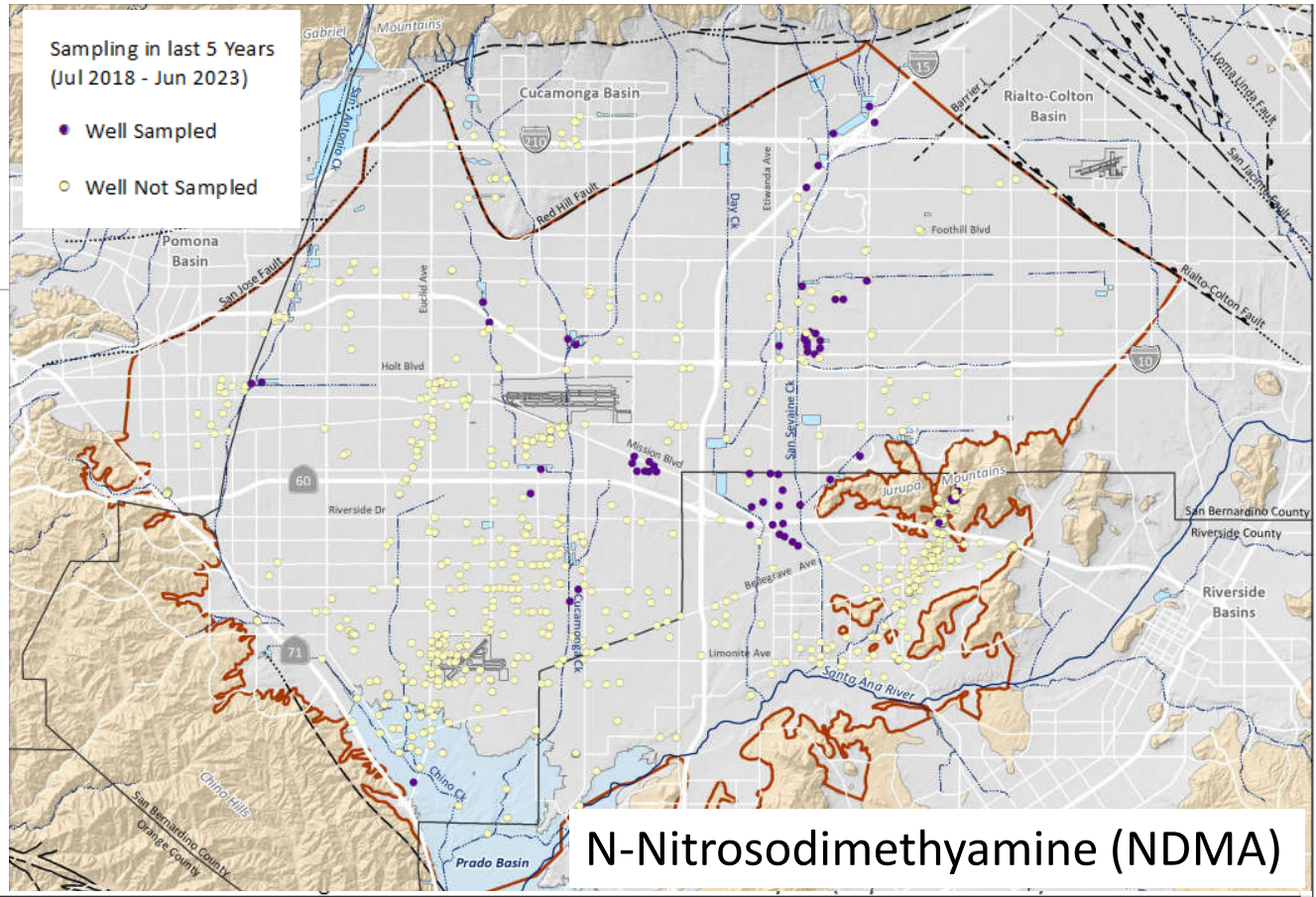


Well Type	# of Wells Not Sampled	# of Wells Sampled	# of Wells with Detections
Appropriator	130	50	31
Monitoring - Watermaste	45	33	2
Monitoring - Cleanup site	610	138	84
Private	130	0	0
Total	915	221	117

ECMP – Evaluation of Monitoring for ECs

List of Potential ECs to Consider

- Manganese
- 1,4-Dioxane
- Hexavalent Chromium
- Arsenic
- PFOA/PFOS
- Other PFAS
- NDMA
- Styrene
- Mercury
- Cadmium
- Perchlorate



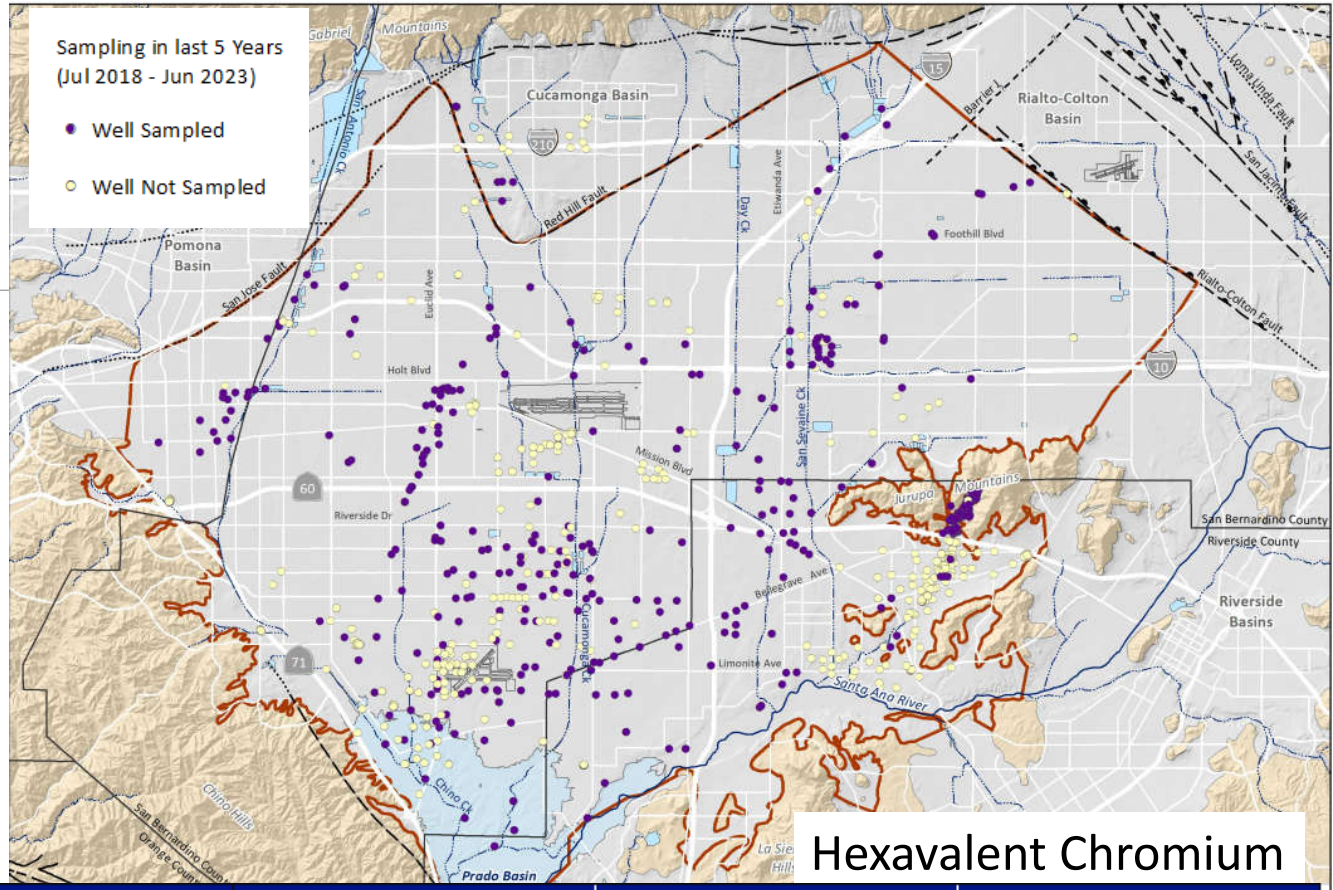
N-Nitrosodimethyamine (NDMA)

Well Type	# of Wells Not Sampled	# of Wells Sampled	# of Wells with Detections
Appropriator	164	16	1
Monitoring - Watermaster	53	23	0
Monitoring - Cleanup site	651	99	61
Private	130	0	0
Total	998	138	62

ECMP – Evaluation of Monitoring for ECs

List of Potential ECs to Consider

- Manganese
- 1,4-Dioxane
- Hexavalent Chromium
- Arsenic
- PFOA/PFOS
- Other PFAS
- NDMA
- Styrene
- Mercury
- Cadmium
- Perchlorate



Hexavalent Chromium

Well Type	# of Wells Not Sampled	# of Wells Sampled	# of Wells with Detections
Appropriator	52	128	120
Monitoring - Watermaste	8	70	66
Monitoring - Cleanup Site	395	353	285
Private	45	85	85
Total	500	636	556

ECMP – Evaluation of Monitoring for ECs

Table 2. Summary of Evaluation of Current Monitoring for Emerging Contaminants

Contaminant	Figure No.	Number of Wells Not Sampled Last Five Years					Recommend to Monitoring For Initial ECMP
		Total (out of 1136)	Appropriator (out of 180)	Monitoring - Watermaster/ IEUA (out of 78)	Monitoring - Clean-up Site (out of 748)	Private (out of 130)	
Manganese	2	824	45	51	606	121	Yes, but only at the Watermaster monitoring of private & monitoring wells
1,4-Dioxane	3	915	130	45	610	130	Yes
Hexavalent Chromium	4	500	52	8	395	45	No, current monitoring is sufficient
N-Nitrosodimethylamine (NDMA)	5	998	164	53	651	130	Yes
Arsenic	6	637	42	2	553	40	No, current monitoring is sufficient
Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic acid (PFOS)	7	980	97	24	729	130	Yes, but only at the Watermaster monitoring of private & monitoring wells. Monitoring for PFAS is currently being done by agencies at select location for the UCMR 5
Other PFAS	8	980	97	24	729	130	
Cadmium	9	771	45	51	553	121	Yes, but only at the Watermaster monitoring of private & monitoring wells
Mercury	10	792	50	54	565	123	Yes, but only at the Watermaster monitoring of private & monitoring wells
Styrene	11	200	41	8	107	44	No, current monitoring is sufficient
Perchlorate [(a)]	12	403	26	6	327	44	Yes, but using low level method (DL of 1.0 µgl or lower)

Notes:
(a) Most historical sampling was performed using an analytical method with a DL greater than 1.0 µgl. O% of the monitoring at the private wells and monitoring wells used a low detection limit ; and 76% of the monitoring at the Appropriator wells used a low detection limit.

Proposed Initial ECMP

Table 3. List of Emerging Contaminants to Monitor For the Initial ECMP

Contaminant	Detection Limit	Method	Cost
1,4 - Dioxane [a,b,c]	1 µgl	EPA 522	$195.00
NDMA [a,b]	0.003 µgl	EPA 521	$240.00
Perchlorate (low level method) [a,b,c]	1 µgl	EPA 314	$30.00
PFAS [b,c]	multiple	EPA 533 [a]	$350.00 [d]
Manganese [b]	2 µgl	EPA 200.8	$15.00
Mercury [b]	0.2 µgl	EPA 200.8	$35.00
Cadmium [b]	0.5 µgl	EPA 200.8	$15.00
Total per sample (Appropitator Monitoring)			**$465.00**
Total per sample (Watermaster Monitoring)			**$880.00**
Total per sample (IEUA Monitoring)			**$575.00**

Notes:

(a) Contaminant monitoring proposed for Watermaster monitoring at the private and monitoring wells.

(b) Contaminant monitoring proposed for IEUA monitoring at the monitoring wells.

(c) Contaminant monitoring proposed for Appropriatorwells.

(d) The cost to analyze for PFAS per sample does not include the cost to collect and analyze a Field Reagent Blank (FRB) which is a requirement for the method to assess the potential for PFAS cross-contamination being introduced during the sampling process. The frequency and location of when to collect and analyze the FRB will be determined when planning the

Proposed Initial ECMP

Target Monitoring Period = July through November 2024

Example of Monitoring Sites by Well Type

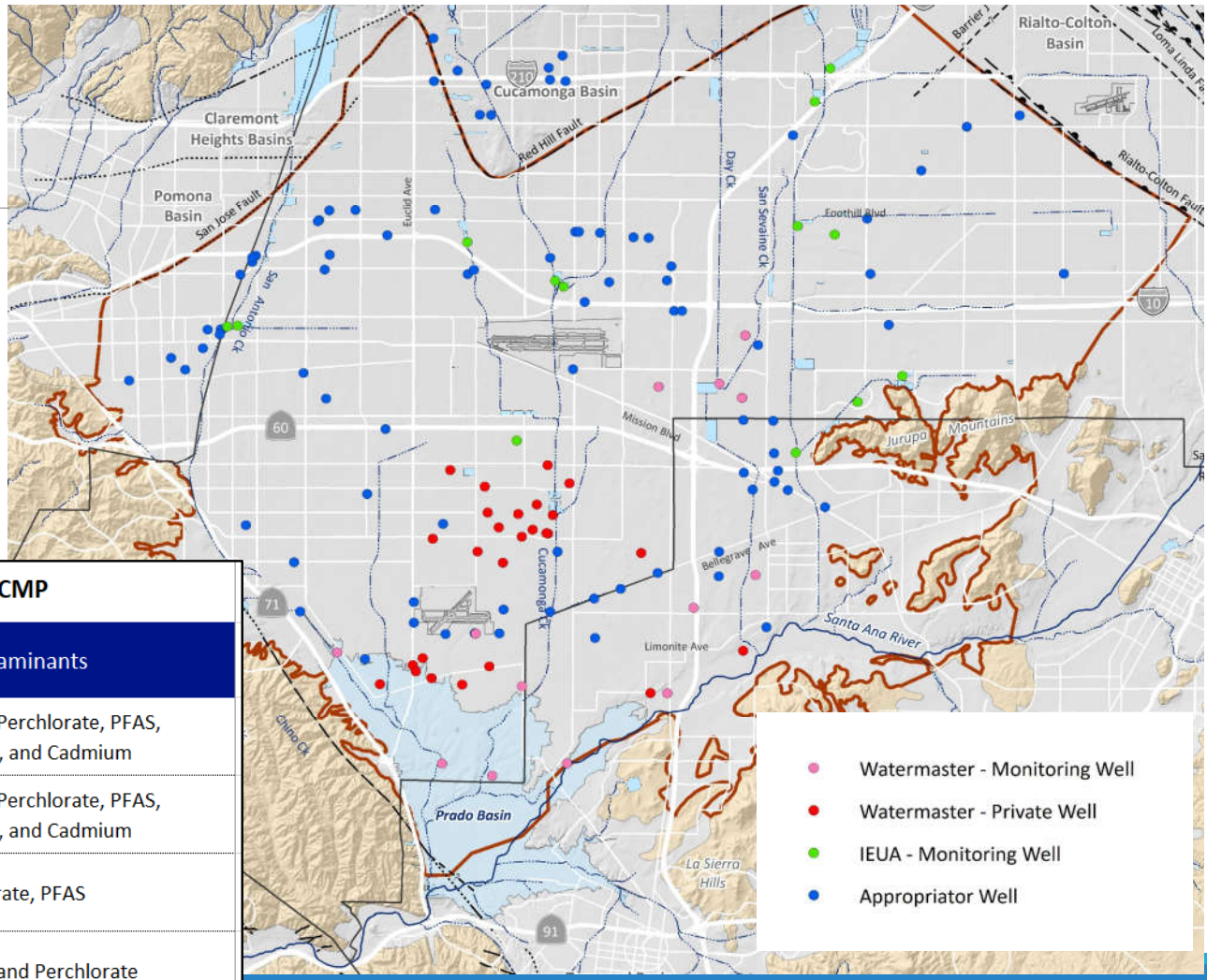
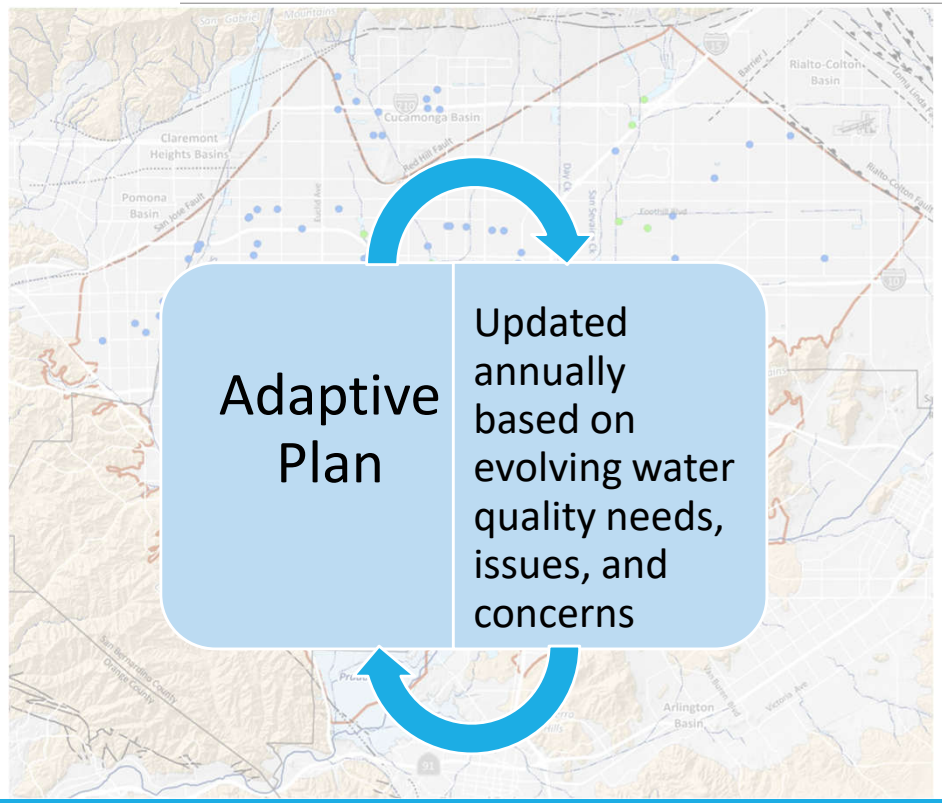


Table 4. Proposed Monitoring Locations for Initial ECMP

Well Group (count)	Target % to Monitor	Contaminants
Watermaster - Monitoring Wells (51)	30%	1,4-Dioxane, NDMA, Perchlorate, PFAS, Manganese, Mercury, and Cadmium
Watermaster - Private Wells (80)	30%	1,4-Dioxane, NDMA, Perchlorate, PFAS, Manganese, Mercury, and Cadmium
IEUA - Monitoring Wells (27)	50%	1,4-Dioxane, Perchlorate, PFAS
Appropriator Wells (190)	30 - 50%	1,4-Dioxane, NDMA, and Perchlorate

Emerging Contaminants Monitoring Plan (ECMP)



Annually Evaluate and Update the ECMP:

- Revisit the list of ECs
- Review results from prior year of monitoring

Next Steps

- In two weeks (mid-February 2024) distribute draft Initial ECMP for review and feedback.
  - Two-week review period

- April 2024 - Next WQC meeting:
  - Review Final Initial ECMP
  - Guest speaker (options being developed):
    - Case study of similar basin water quality monitoring program
    - Funding opportunities