

San Diego Bacteria TMDL Workgroup, 03/22/17

Meeting Notes, Action Item List

MEETING NOTES

The meeting summary is organized around major points in the meeting agenda, which is included at the end of the meeting summary, along with a list of attendees. Agreements are **highlighted in bold**. Action items are listed at the end of the meeting summary.

1. Introduction and purpose of meeting

The purpose of the meeting was to:

- Provide an update on the recent CBA meeting and TMDL-related elements
- Discuss MS4 recommended approaches for wet and dry weather
- Discuss
- Discuss next steps to address wastewater sources
- Discuss next steps

2. CBA update

Workgroup members who had participated in the most recent meeting of the Cost Benefit Analysis (CBA) Steering Committee summarized the discussion and identified key remaining issues. These included:

- Creation of a subcommittee to create a communications plan
- Monitoring of recreation after storms at 3 beaches to obtain a more detailed picture of the potentially exposed population
- Completion of the financial analysis as input to recommendations about the schedule

3. MS4 recommended wet weather approach

Ashli Desai presented a revised flow chart that summarized the MS4s' recommendations for an approach to compliance with the TMDL requirements. The revised flow chart provides more clarity in terminology and in timeframes related to interim permit compliance and meeting longer-term, ultimate TMDL targets. The Water Quality Objectives are based on the USEPA 2012 criteria and the flow chart includes 3 alternative implementation pathways that range from the existing approach to a fully risk-based approach. Monitoring during the implementation period would provide information that would trigger different responses depending on the implementation pathway chosen. The choice of implementation pathway depends in part on the data available. For example, pathway #2 requires human marker data (HF183), while pathway #3 requires epidemiology data or the results of a QMRA study. In addition, monitoring requirements differ for each pathway. Discussion of the flowchart included the following points:

- A key difference between pathways #1 and #2 is the use of an allowable exceedance frequency (AEF) in pathway #1 but not #2. The AEF is not needed in pathway #2 because the HF183 threshold fills an analogous purpose by confirming that human sources are below some threshold
 - In pathway #1, there may be a need to confirm that human sources are not involved even if the *Enterococcus* standard and the AEF are met
 - This could be accomplished through the same sort of periodic sanitary survey approach proposed for pathway #3 (see below)

- The “Assess Allocations” step will involve a large amount of detail because this is the point at which information about other sources (e.g., wastewater, homeless) needs to be integrated into a more complete analysis
 - An assumption is that much of this information would stem from an integrated and collaborative monitoring and assessment program that will include a wide range of sources and this will require an ability to deal with commingled sources (e.g., for source identification)
 - However, source reduction actions described in the draft technical report will be specific to the MS4 (see Section 5 below)
 - Other sources’ implementation actions would need to be defined through another process, perhaps convened by the Regional Board
 - There was discussion of existing collaborative efforts at source identification and reduction, e.g., City of San Diego’s Tiger Team approach
- Thresholds for HF183 in pathway #2 have not yet been formally defined, although there are thresholds that can be derived from results of the Surfer Health Study
- A key action, especially in pathway #3, is the human source reduction program, which is a core implementation measure for this pathway
- The second box in pathway #3 that includes “reassess risk if sources change” could refer to a sanitary survey methodology to ensure that the pattern of human sources, and thus presumably the risk, has not changed since the initial assessment
- Many elements of the flow chart, e.g., the HF183 threshold in pathway #2 and the initial assessment in pathway #3, will depend on discussion and decisions about a level of allowable risk

4. MS4 recommended dry weather approach

Ashli Desai explained the flow chart for dry weather, which uses the same basic approach as used for wet weather, but uses different targets or thresholds as the basis for assessment. There is no analog to the Surfer Health Study available for dry weather, which means that there is no human marker (e.g., HF183) threshold for pathway #2 and no epidemiology or QMRA study available for pathway #3. It would be possible to use a “percent detection” approach for human markers in the interim. Discussion of the flow chart included the following points:

- Jo Ann Weber will talk to other regional Boards to find out how they are dealing with the percent detection metric (AI)
- The proposed schedule in the draft technical report will probably request a longer schedule for creeks because of the change to the *E. coli* standard and because of the difficulty of achieving compliance in creeks
- The dry weather flow chart will be revised to reflect the revisions requested for the wet weather flow chart (AI)

5. Human sources reduction program

Ashli Desai presented a table summarizing implementation options for MS4s to select from in addressing different categories of sources. It is envisioned that the MS4s would create a core program drawn from options in the table. It is envisioned that other categories of sources would create similar tables of implementation options they would use to create analogous source reduction programs. This would be included in the implementation section of the TMDL. Discussion of the table included the following points:

- The table is intended as a menu of options (included but not limited to) to choose from, rather than as a more prescriptive approach
- Regional Board staff would be amenable to a BMP approach to determining a maximum extent practicable level of effort

- A challenge would be to connect the MS4 options to those developed for other sources to implement
- This is different from what is currently in the WQIPs, especially in terms of bacteria vs. human sources

6. Wastewater check-in

Nothing of note was reported.

7. Updated TMDL schedule

Clint Boschen presented a revised schedule that targets the October 2018 Board hearing as a final date.

8. New business, wrap-up, and next steps

Nothing of note was discussed.

Next meeting date

The next workgroup meeting will be April 25, 2017, from 1:00 – 4:00 PM per the agreed meeting schedule.

Attendees

San Diego Regional Water Board: Christina Arias, Jeremy Haas, Michelle Santillan, Jimmy Smith, Helen Yu

San Diego County: Todd Snyder, Jo Ann Weber

Orange County Public Works: Chris Crompton, Jian Peng

City of San Diego: Vicki Kalkirtz, Ruth Kolb

Team: Clint Boschen, Ashli Desai, Brock Bernstein, Jeff Soller

Draft Agenda
San Diego Bacteria TMDL Workgroup Meeting
Regional Water Quality Control Board
Meeting #20 – March 22, 2017 1:00 pm to 4:00 pm

1. Introductions (5 min)
2. CBA update and carryover to Bacteria TMDL process (10 min)
3. MS4 Recommended Entero/HF183 wet weather approach (40 min)
4. MS4 Recommended dry weather approach (40 min)
5. Human sources reduction program opportunities (30 min)
6. Wastewater check-in/next steps (5 min)
7. Updated TMDL Schedule (35 min)
8. New Business/Wrap-up (15 min)

San Diego Bacteria TMDL Workgroup Action Items Report

Key to status colors:

- **Green** indicates a completed deliverable
- **Blue** indicates greater than 30 days until the deliverable is due
- **Yellow** indicates a deliverable is due within 30 days
- **Red** indicates an overdue deliverable



Mng Date	Deliverable	Assigned To	Due Date	Status	Comments
08/27/15	List of studies, completion dates, value added, implications for reopener	Consultant team	09/02/15	●	
08/27/15	Distribute draft cost sharing agreement	Todd Snyder	09/10/15	●	
08/27/15	Review past MOUs to assess whether useful concepts or language can be borrowed for this MOU	Drew Kleis, Ruth Kolb	09/10/15	●	
08/27/15	Discuss cost sharing agreement	Workgroup	09/10/15	●	
08/27/15	Finalize MOU	Workgroup	09/10/15	●	
08/27/15	Michelle Mata to meet with small group to review planned overall approach and its relationship to schedule; develop picture of how pieces fit in logical progression	Michelle Mata, Clint Boschen, Chris Minton, Ashli Desai, key permittees	10/7/15 meeting handout	●	
09/0/15	Evaluate implications of 32 vs. 36 illness rate using available monitoring data from creeks and beaches	Chris Minton, Dustin Bambic	10/7/15 meeting presentation	●	
09/10/15	Frame a more formal description of how a risk-based framework could be used in the TMDL	Ruth Kolb	10/7/15 meeting handout	●	
09/10/15	Develop options for calculating geomeans that account for varying intensities/frequencies of monitoring events	Chris Minton, Dustin Bambic	10/7/15 meeting presentation	●	
09/10/15	Expand the example table (single sample vs. STV) to include a column showing how the geomean compares to the single sample and STV results	Chris Minton, Dustin Bambic	Undefined, but soon	●	

Mng Date	Deliverable	Assigned To	Due Date	Status	Comments
09/10/15	Prepare a set of scenarios showing a range of comparisons across the options presented	Chris Minton, Dustin Bambic	10/7/15 meeting presentation	●	
10/07/15	Prepare background information on the basis for the 32 vs. 36 illness rates	Chris Minton, Dustin Bambic	10/29/15 meeting	●	
10/07/15	Add language to draft TMDL targets memo to explain the applicability of the reference reach analysis in the risk-based framework	Chris Minton, Dustin Bambic	10/29/15 meeting	●	
10/07/15	Prepare a draft decision flow chart	Ashli Desai, Clint Boschen	10/29/15 meeting	●	
10/07/15	Prepare a draft Technical Report outline	Team	12/10/15 meeting	●	
10/29/15	Prepare background information on STV	Team	11/12/15	●	
10/29/15	Provide comments on draft decision flow chart and draft TMDL targets memo	RWQCB staff	11/6/15	●	
10/29/15	Provide revised TMDL targets memo and flow chart based on comments	Team	11/12/15	●	
11/19/15	Provide more detail on analyses needed to compare the two illness rates, along with cost and time estimate	Team			Hold off for now
11/19/15	Approach State Board about Workgroup meeting with them as a focus group	Jeremy Haas	12/10/15 meeting	●	
11/19/15	Examine the 13241 requirements to identify what information would be needed to address those	Team		●	Completed and ready to insert into draft documents when needed
11/19/15	Add the caveat to the draft language that the 32 illness level is a "working assumption"	Team	12/10/15 meeting	●	
11/19/15	Describe the statistical background and rationale for the EPA 2012 criteria	Team		●	
11/19/15	Add a minor revision to the language in the alternative on Slide 7 to capture the potential for regional linkages	Team	12/10/15 meeting	●	
11/19/15	Develop ideas for prototypes or case studies of site-specific objectives that would illustrate different issues such as natural source exclusion	Team	TBD		Longer term
11/19/15	Develop revised language related to allowable exceedance frequency	Team		●	
11/19/15	Prepare an explanation of "safe" in different contexts and what the implications could be for action in response to different types of monitoring outcomes	Team			Longer term

Mng Date	Deliverable	Assigned To	Due Date	Status	Comments
1/26/16	Prepare data comparing STV and SSM to send to SWRCB and RWQCB	Team	03/15/16	●	
1/26/16	Make the suggested minor edits to the list of items of potential concern on bacteria policy for SWRCB.	Team will prepare initial list and provide to RWQCB. RWQCB will send to SWRCB.	Dustin Bambic	●	
02/24/16	Prepare data memo comparing STV to SSM to send to SWRCB. Send to entire team for review.	Dustin Bambic	03/15/16	●	
02/24/16	Briefly raise the issue of the potential contribution of leaking sewer collection systems to the bacteria problem at the March 4 SCCWRP Commission meeting	Todd Snyder	03/03/16	●	
02/24/16	Prepare a white paper summarizing evidence for the role of leaking sewer collection infrastructure. Provide data, references, and other information to Clint Boschen, who will work with Dustin Bambic and Chris Minton to prepare a draft white paper that would be included as part of the targets and sources section of the TMDL/ Basin Plan Amendment	Team	04/15/16	●	Replaced by draft sources section in technical support document
02/24/16	Begin preparing written descriptions of implementation pathways building on the concepts agreed on during the past two workgroup meetings.	Team	03/23/16	●	
02/24/16	Clarify whether State Board's Plan will allow Regional Boards to establish more stringent targets, using other indicators, than identified in the State Plan.	Regional Board staff	03/23/16	●	
03/23/16	Revise memo to State Board to include mention of sewer collection system and revision of AB411 standards to be consistent with EPA 2012 criteria. Distribute to workgroup for review.	Jimmy Smith	04/15/16	●	
03/23/16	Develop more detailed written descriptions of the CBA scenarios.	Team	04/15/16	●	
03/23/16	Submit any additional local information on studies of leaking infrastructure to Clint Boschen.	All	04/15/16	●	
03/23/16	Individual sponsors of or participants in the San Diego River study will encourage Ken Schiff to develop estimates of the range of leaking sewage needed to produce observed amounts of human markers.	All	04/15/16	●	
03/23/16	Invite retired sewage system expert to next meeting	Chris Crompton	04/15/16	●	Invite for June meeting

Mng Date	Deliverable	Assigned To	Due Date	Status	Comments
03/23/16	Forward specific questions related to the operation and monitoring of sewage systems to Michelle	All	04/15/16		
04/18/16	Distribute memo for State Board to workgroup for review	Jimmy Smith	05/01/16		
04/18/16	Review sewer agency annual reports for useful information about infrastructure and human sources	Board Staff	05/15/16		No annual reports; no useful data found
04/18/16	Distribute inventory of sources studies to workgroup	Clint Boschen	05/01/16		
04/18/16	Prioritize CBA scenarios, perhaps in consultation with contractor	Workgroup	??		Start at June CBA meeting with consultant
04/18/16	Prepare updated list of CBA scenarios	Consulting team	04/22/16		
04/18/16	Provide comments on draft Intro and Problem Statement	Board Staff	05/10/16		
05/17/16	Permittees to work with Helen Yu to expand database for delisting, i.e., more recent data, information on actions that led to observed improvements	Permittees	06/23/16		
05/17/16	Add discussion and justification for regional SSO to the technical support document	Consulting team	06/23/16		
05/17/16	Prepare for SCCWRP workshop on SSO	Workgroup members	??		
05/17/16	Provide comments on draft targets section by week before next meeting	Board Staff	06/15/16		
05/17/16	Invite sewer system expert to next workgroup meeting	Chris Crompton	06/23/16		
06/23/16	Provide comments on revised Recommendations table, Source Analysis, and Targets sections	Board Staff	07/20/16		
07/27/16	Expand description of implications of risk-based approach for all aspects of implementation	Consulting team	08/24/16		
02/28/17	Revise Recommended Scenario flowchart and related text to clearly separate final TMDL compliance from interim actions to meet permit conditions	Consulting team	03/22/17		
02/28/17	Send Ben Arnold's paper to Board staff	Jian Peng	02/28/17		
02/28/17	Review 3 rd flowchart pathway with SCCWRP and SHS researchers	Consulting team	06/30/17		
03/22/17	Jo Ann Weber will talk to other regional Boards to find out how they are dealing with the percent detection metric	Jo Ann Weber	04/25/17		
03/22/17	Revise dry weather flow chart to match wet weather	Consulting team	04/25/17		

San Diego Bacteria TMDL Workgroup Decision Record

Number	Date	Decision	Type	Yes	No	Abstain
2015-1	09-02-15	Allow two weeks for review of meeting notes	Consensus			
2015-2	09-02-15	Michelle Mata to take on central coordinating role	Consensus			
2015-3	09-02-15	Materials for discussion/review distributed minimum of 10 calendar days before meeting	Consensus			
2015-4	09-02-15	Meeting agendas to include decision points, discussion lead, intended outcomes, and reference to background documents	Consensus			
2015-5	09-02-15	Use 9/10 meeting as trial run for planned approach to more detailed discussion	Consensus			
2015-6	09-10-15	Future discussions of methods for calculating exceedance rates and related topics will account for different settings (freshwater, marine, bays) where this has important implications for the policy	Consensus			
2015-7	10-07-15	Overall schedule of completion between December 2017 and April 2018 with target of September 2016 for technical report	Consensus			
2015-8	10-07-15	Documentation and justification of assumptions will be provided in technical report	Consensus			
2015-9	10-07-15	Use of risk-based framework is appropriate	Consensus			
2015-10	10-29-15	Both the 36 and the 32 per 1000 illness rates are scientifically defensible and the 32 per 1000 illness rate represents an incremental improvement in water quality in accordance with the 2012 USEPA criteria. The 32 per 1000 illness rate has been selected with the possibility of revision based on the results of the Cost Benefit Analysis and/or if the SWRCB selects the 36 per 1000 illness rate as part of the Revision of Bacterial Objectives.	County San Diego, City of San Diego and RWQCB agreed. Pending final agreement from Orange county			
2015-11	10-29-15	E. Coli as the single indicator for freshwater and Enterococcus as the single indicator for marine waters	Consensus			
2015-12	11-19-15	Documents be worded to reflect that the choice of the 32/1000 illness rate is a working assumption. Revises Decision #2015-10	Consensus			
2015-13	11-19-15	The geometric mean is an appropriate TMDL target for dry weather because it is a good indicator of the level of risk over time, but additional thought needs to be given to the details of monitoring, averaging period, etc. in order to best measure trends in risk over time	Consensus			
2016-01	04-18-16	The Cost Benefit Analysis will include only REC 1 beneficial use, not REC 2	RWQCB, agreed by all other participants			
2016-02	07-27-16	Ultimate compliance could be based on illness rate, with FIB used as interim benchmarks of progress	Consensus			
2017-01	02-28-17	The CBA is intended as one of several inputs to a final decision about a science-based reopener; it will not be used as the final criterion for decision making	Consensus			
2017-02	02-28-17	Direct measurement of risk or illness with epidemiology studies or QMRA is more accurate and effective than monitoring with FIB to determine if the objective is being met	Consensus			

San Diego Bacteria TMDL Workgroup Parking Lot

Meeting Date	Issue	Tentative Meeting Date for discussion
9/10/15	Relationship of monitoring locations and procedures to compliance	TBD
10-29-15	Purpose of Cost Benefit Analysis Study and alternatives to be considered in the study	December or January
10-29-15	Need for 13241 analysis for proposed objectives	TBD
10-29-15	Methodologies for monitoring and analysis	TBD
10-29-15	Approach for addressing non-MS4 contributions (particularly wastewater) in TMDL	TBD
11-19-15	Align the definition of dry weather in the TMDL and the permit	TBD

Participants agreed that direct measurement of risk or illness with epidemiology studies or QMRA is more accurate and effective than monitoring with FIB to determine if the objective is being met