



San Diego County Water Authority

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February 6, 2015

San Diego Regional Water Quality Control Board

2735 Northside Drive, Suite 100

San Diego, CA 92108-2700

Attn: Ms. Michelle Mata

MEMBER AGENCIES

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Municipal Water District

City of Del Mar

City of Escondido

City of National City

City of Oceanside

City of Poway

City of San Diego

Fallbrook
Public Utility District

Helix Water District

Lakeside Water District

Olivenhain
Municipal Water District

Otay Water District

Padre Dam
Municipal Water District

Camp Pendleton
Marine Corps Base

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Municipal Water District

Ramona
Municipal Water District

Rincon del Diablo
Municipal Water District

Son Dieguito Water District

Santa Fe Irrigation District

South Bay Irrigation District

Vallecitos Water District

Valley Center
Municipal Water District

Vista Irrigation District

Yuima
Municipal Water District

OTHER REPRESENTATIVE

County of San Diego

**SUBJECT: Triennial Review Comments
Basin Plan Modifications to Support Sustainable Local Water Supply**

Dear Ms. Mata:

Thank you for the opportunity to provide comments on Basin Plan issues and priorities as part of the San Diego Water Board's triennial review of the Basin Plan. The San Diego County Water Authority (Water Authority) and its member agencies that operate imported water reservoirs have reviewed the proposed Basin Plan triennial review priorities identified in the San Diego Water Board's December 8, 2014 *Issues Description for the 2014 Review of the Water Quality Control Plan for the San Diego Basin (Basin Plan)*.

While we support these issues and priorities, we would like to bring additional important Basin Plan issues and inconsistencies to the San Diego Water Board's attention. The reservoir issues were noted as part of the Water Board Executive Officer's presentation and subsequent discussion at the San Diego Integrated Regional Water Management (IRWM) Regional Advisory Committee on December 3, 2014. These issues require correction in order to better allow local water agencies to manage the region's water supplies and resources and to help achieve the "sustainable local water supply" goal of the 2013 *San Diego Water Board Practical Vision* and the water reliability and sustainability goals of the 2013 *California Water Plan*. The purpose of this letter is to:

- 1) Identify these important Basin Plan issues and inconsistencies that warrant revision,
- 2) Identify suggested Basin Plan modifications to address these issues or inconsistencies, and
- 3) Offer resource assistance to the San Diego Water Board in evaluating and implementing the required Basin Plan modifications.

Basin Plan Issues

Overview. Within the San Diego Region, the Water Authority and some of its member agencies operate and maintain reservoirs that are connected to the Water Authority's untreated water aqueducts and provide untreated water supplies to potable water filtration plants. These reservoirs were constructed specifically for the purpose of providing municipal supply. To support this use, the reservoirs are subject to operating restrictions established within Water Supply (Operating) Permits issued by the State Water Resources Control Board (State Board) Division of Drinking Water (DDW). In accordance with the DDW requirements (and requirements of other state and federal agencies), reservoir operating agencies:

- Deliver imported waters to the reservoirs and manage reservoir waters,
- Store and withdraw reservoir waters and treat the withdrawn water in DDW-regulated potable water filtration plants,
- Restrict, limit, manage, or control public contact and recreation at the reservoirs, consistent with DDW Water Supply Permit requirements and reservoir water quality protection needs established by the water agencies,
- Restrict, remove, and/or mitigate invasive species or emergent vegetation,
- Implement reservoir management actions to control algae, ensure the treatability of reservoir supplies, and support other beneficial uses that are consistent with water supply needs, and
- Monitor reservoir waters and water quality to achieve compliance with state and federal drinking water standards.

The *2013 California Water Plan* calls for the orderly and coordinated control, protection, conservation, development, and use of the state's water resources. Regional Water Board Basin Plans are important components of state-wide water resources plans and become part of the *California Water Plan* upon adoption by the Regional Water Boards and approval by the State Board. To this end, the San Diego Basin Plan establishes water quality objectives and implementation policies to support and uphold designated beneficial uses. Municipal and Domestic Supply (MUN) is the first beneficial use listed within the Basin Plan. Denoting the importance of the MUN beneficial use, State Board Resolution No. 88-63 (Sources of Drinking Water Policy) specifies that, except under specifically defined conditions, all surface and ground waters of the state are to be protected as existing or potential supplies of municipal and domestic water supply.

While the intent of the Basin Plan is to protect the MUN beneficial use in local reservoirs, a number of Basin Plan water quality objectives and implementation policies

are inconsistent with operational needs of the water agencies charged with managing the reservoirs, controlling public access and recreation, protecting beneficial uses, and developing and delivering municipal and domestic water supplies. These issues or inconsistencies are summarized below.

Water Quality Objectives Based on Secondary Drinking Water Standards. DDW establishes Maximum Contaminant Levels (MCLs) which apply to potable treated water supplies. Primary MCLs are established for the protection of public health, while secondary MCLs are established to address consumer acceptance (aesthetic) concerns. Secondary MCLs, in part, address such parameters as total dissolved solids (TDS), chloride, sulfate, iron, manganese, and color. Recognizing that the achievability of aesthetic goals varies with the nature of available water supplies, DDW establishes a range of secondary MCLs for TDS, chloride, and sulfate, including "recommended" MCLs, "upper limit" MCLs, and "short term" MCLs. The recommended MCL for TDS, for example, is 500 mg/l, while the upper limit MCL is 1000 mg/l, and the short-term MCL is 1500 mg/l. Although the goal of water supply agencies is to provide water that complies with the lower of these standards (the recommended secondary MCLs), this is not always possible because mineral concentrations in imported supplies (particularly Colorado River supplies) frequently exceed the recommended MCLs, (but not the upper limit or short term MCLs).

With the intent of protecting municipal supply beneficial uses, the Basin Plan establishes surface water quality objectives for many of the Region's potable supply reservoirs at the recommended consumer acceptance MCLs (e.g., TDS objective of 500 mg/l). However, by establishing water quality objectives at the recommended secondary MCL levels, the Basin Plan in essence converts a recommended secondary drinking water consumer acceptance (aesthetic) standard that is intended to serve as a goal for treated water supplies into a not-to-be-exceeded water quality standard that:

- 1) Applies to raw untreated waters stored in reservoirs instead of the treated water supply, and
- 2) Is subject to the full enforcement power of the Clean Water Act, including Section 303(d) impaired water designations, and the imposition of Total Maximum Daily Loads (TMDLs) to achieve the not-to-be-exceeded standard.

For reservoirs that may be dominated by imported water, the quality of water within the reservoir may be entirely dependent on the quality of the imported supply. As the Basin Plan is currently written, a water agency that takes delivery of imported water from the Colorado River (which is frequently the only supply available) or stores transferred

water, risks its reservoir being listed as 303(d) impaired due to non-compliance with Basin Plan objectives that are based on recommended secondary MCLs. TMDLs resulting from such listings could potentially result in restrictions on water agency reservoir operations, including restrictions that may be inconsistent with reservoir operational requirements mandated by DDW in the agency's Water Supply Permit. Additionally, any such TMDLs would be ineffective. When the quality of the imported water supply (which is not regulated by the Regional Water Board or EPA) exceeds recommended secondary drinking water MCLs, existing Basin Plan objectives may not be attainable, even if all enforcement actions available to the EPA and the Regional Board under the Clean Water Act and the Porter-Cologne Water Quality Act have been implemented.

Water Quality Objectives for San Vicente Reservoir. Construction to raise the San Vicente Dam has been completed, and San Vicente Reservoir capacity has been increased by 150,000 acre-feet to a total capacity of approximately 240,000 acre-feet. This increased reservoir capacity is allotted to the Water Authority for emergency storage of imported water. San Vicente Reservoir is currently the only San Diego Region reservoir connected to the Water Authority aqueduct system that has surface water TDS, chloride, and sulfate objectives of 300 mg/l, 50 mg/l, and 65 mg/l. While proposed indirect potable reuse supplies which would be discharged to San Vicente (after undergoing 100 percent reverse osmosis treatment) will comply with these stringent mineral quality objectives, the current San Vicente Reservoir objectives for TDS, chloride, and sulfate are inconsistent with the quality of imported water stored in the reservoir.

Beneficial Use Designations. The Basin Plan defines Contact Water Recreation (REC-1) as recreational activities that involve body contact where ingestion of water is reasonably possible. The Basin Plan generically includes "fishing" as a REC-1 use, but does not differentiate between shore/boat fishing (where ingestion is not reasonably possible) and fishing using waders or float tubes (where ingestion may be reasonably possible). The Basin Plan also generically lists "boating" as a non-contact water recreational (REC-2) use, but does not distinguish between conventional motorboats, rowboats, canoes, and paddleboats (where ingestion of water is not reasonably possible) and kayaking (where ingestion is possible).

The degree of public contact at each San Diego Region reservoir is dependent on rules established by each water agency and conditions established in each agency's DDW Water Supply Permit. Clarification of the Basin Plan is recommended to render the Basin Plan recreational beneficial use designations consistent with DDW recreational

restrictions on the reservoirs, and to ensure that Clean Water Act water quality assessments are based on actual allowed beneficial uses.

Additionally, some Basin Plan beneficial use designations for drinking water storage reservoirs are outdated and require qualification or revision. These include beneficial use designations for agricultural supply (AGR), industrial service supply (IND), industrial process supply (PROC), and hydropower (POW).

Dissolved Oxygen Objectives. The Basin Plan establishes a "one-size-fits-all" 5.0 mg/l water quality objective for dissolved oxygen to San Diego Region surface waters that support warm freshwater habitat (WARM). A similar "one-size-fits-all" dissolved oxygen objective of 6.0 mg/l is established for waters that support cold freshwater habitat (COLD).

The mandated Basin Plan dissolved oxygen concentrations simply do not and cannot naturally occur at depth in the Region's deeper reservoirs due to natural seasonal thermal stratification conditions. Such conditions are naturally created early each spring as a thermocline forms which hydraulically separates warmer upper waters (epilimnion) from colder deep waters. This thermal stratification prevents oxygen-laden epilimnion waters from mingling with deeper hypolimnion waters, and dissolved oxygen concentrations in the hypolimnion steadily decline throughout the summer and fall. Dissolved oxygen concentrations in the hypolimnion can be replenished during the brief period of reservoir turnover (which typically occurs for a few weeks in winter), but natural dissolved oxygen concentrations in deep reservoir waters can achieve the existing Basin Plan dissolved oxygen standards only during and immediately after these brief periods of reservoir turnover.

Water agencies are concerned that, as currently written, Basin Plan dissolved oxygen standards, in addition to being unachievable and not based on naturally occurring conditions, may cause 303(d) listings of drinking water reservoirs and the need for development of TMDLs which cannot be met under any form of load reduction regulation (short of mandating the construction of physical projects such as hypolimnetic aeration). Additionally, water agencies are concerned that potential indirect potable reuse projects may be adversely impacted by Basin Plan dissolved oxygen objectives that are not consistent with natural reservoir hydrodynamics and do not reflect dissolved oxygen levels that are naturally achievable within the hypolimnion.

Reservoirs Serving as Forebays to Water Treatment Plants. Several reservoirs were constructed as a part of existing water treatment plants and act as forebays to those treatment plants. Under these operations, each reservoir is used as an adjunct to its accompanying water filtration plant, serving as a source water forebay storing transferred, imported, or local water supplies. These reservoirs may serve as part of the overall potable water treatment process in conjunction with an associated potable water filtration plant. Some forebays are used to recycle process waters from the filtration plant, allowing the water to settle and blend with the source water supply before recycling it back into the treatment plant. In addition to saving on chemical costs and reducing flows discharged to the sewer, reservoir water quality and the treatability of reservoir water can be enhanced as a result of the recycling of coagulated solids. If allowed by the regulations and Basin Plan, some of these forebays could also be considered for future potable reuse projects through reservoir augmentation. The Basin Plan does not recognize that these reservoirs are part of the overall treatment and filtration process, and water agencies are concerned about how the Basin Plan and regulations could be interpreted with respect to the Clean Water Act or the Porter-Cologne Water Quality Act.

Two of the forebays, Sweetwater Reservoir and Lower Otay Reservoir, are formed by dams constructed in existing streambeds. These reservoirs contain a blend of imported and local water supplies and rarely overflow. Several other forebays are small, isolated drinking water reservoirs that have limited inflows from the watershed and no downstream releases to the watershed. As such, there is no significant nexus between these forebays and the local watershed. These isolated reservoirs and their associated water filtration plants include:

- San Dieguito (San Dieguito Water District and Santa Fe Irrigation District R.E. Badger Filtration Plant),
- Miramar (City of San Diego Miramar Water Treatment Plant),
- Murray (City of San Diego Alvarado Water Treatment Plant),
- Jennings (Helix Water District R.M. Levy Water Treatment Plant),
- Dixon (Escondido-Vista Water Treatment Plant).

Proposed Basin Plan Modifications

To address the above issues and inconsistencies, the Water Authority and its member agencies that operate drinking water reservoirs recommend modifications to Chapter 2 (Beneficial Uses), Chapter 3 (Water Quality Objectives), and Chapter 4

(Implementation). It is recognized that specific Basin Plan modifications to address these issues will require technical evaluation by regulators and will be developed through a stakeholder input process. In order to understand the degree of resources required to address these Basin Plan issues, however, the San Diego Water Board has requested that the Water Authority identify suggested Basin Plan modifications as part of the triennial review comments. To accommodate this request, a potential Basin Plan modification approach is presented below.

Recommended Modifications to Chapter 2 - Beneficial Uses. Several recommended modifications to Chapter 2 (Beneficial Uses) are recommended for San Diego Water Board consideration to address the Basin Plan drinking water reservoir issues and inconsistencies identified above. These recommended modifications include:

1. Modify the "Beneficial Use Definitions" section of Chapter 2 to better delineate between REC-1 use (where ingestion of water is reasonably possible) and REC-2 uses (where such ingestion is not reasonably possible).
2. Modify the text description within the "Reservoirs and Lakes" section of Chapter 2 (Beneficial Uses) to:
 - Identify reservoirs connected to the San Diego Aqueduct that store untreated imported or local water as an important part of the MUN beneficial use,
 - Identify reservoirs operated as part of the overall water treatment process in fulfilling the MUN beneficial use,
 - Identify that reservoir operations and beneficial use restrictions may be established as part of DDW Water Supply Permits, and
 - Identify potable reuse as a potential future beneficial use for local reservoirs.
3. Modify Table 2-4 (Beneficial Uses of Reservoirs and Lakes) to:
 - Identify reservoirs operated as part of the overall water treatment process in fulfilling the MUN beneficial use,
 - Reflect the degree of body contact (REC-1 or REC-2) allowed pursuant to DDW Water Supply Permit requirements and water agency reservoir rules and regulations, and
 - Update beneficial use designations for hydropower generation.

Recommended Modifications to Chapter 3 - Water Quality Objectives. Two modifications to Chapter 3 (Water Quality Objectives) are proposed to address the Basin Plan issues and inconsistencies identified above. Suggested modifications include:

1. It is proposed that footnotes be added to Table 3-2 (Water Quality Objectives for Inland Surface Waters) to qualify that:
 - For designated drinking water reservoirs, where the stored water is either fed directly to an adjacent treatment facility or can be transferred by pipeline or via a natural water course to a treatment facility (i.e., San Dieguito, Miramar, Murray, Jennings, Dixon, Olivenhain, Poway, San Vicente, Sweetwater, Loveland, and Lower Otay), establish that treatment process operations (including process flow recycling back into the reservoir) are regulated by DDW through conditions established in each agency's Water Supply Permit.
 - Establish that the listed numerical water quality objectives for TDS, chloride, sulfate, iron, manganese, and color (objectives based on DDW consumer acceptance MCLs) apply to runoff entering drinking water reservoirs from tributary areas, but not to water stored in the reservoirs. Also establish that compliance with treated water consumer acceptance MCLs is to be regulated by DDW through conditions established in each water agency's Water Supply Permit.
2. Modify the Basin Plan dissolved oxygen objective to:
 - Acknowledge that natural thermal stratification effects in deep reservoirs render it impossible to maintain any one-size-fits-all dissolved oxygen concentration level under natural conditions,
 - Establish that Basin Plan numerical dissolved oxygen levels are not applicable (nor attainable under natural conditions) in hypolimnion waters of deep reservoirs, and
 - Establish a narrative objective for dissolved oxygen that applies to hypolimnion waters of deep reservoirs.

Recommended Modifications to Chapter 4 - Implementation. To insure proper interpretation of the proposed modifications to Chapter 3, it is recommended that a new section entitled "Imported/Local Water Storage" be added prior to the "Industrial Waste" section of Chapter 4 (Implementation). Objectives of this section would be to:

- Establish the rationale for why numerical Basin Plan objectives should not be applied to water stored in drinking water supply reservoirs or to water filtration plant discharges, and
- Clearly reiterate that the numerical objectives of Table 3-2 are (1) not to be applied to waters within the listed drinking water reservoirs, (2) do not represent Clean Water Act surface water quality standards, (3) are not to be used for designating reservoir waters as "impaired" waters pursuant to Clean Water Act Section 303(d), and (4) are not to be used for purposes of establishing effluent limits on water treatment residuals discharged to drinking water reservoirs or taking enforcement action against water agencies that operate the reservoirs in accordance with applicable DDW Water Supply Permit requirements.

The Water Authority and its member agencies that operate drinking water reservoirs have already developed specific suggested Basin Plan text and table revisions to address each of the above-proposed Basin Plan modifications. Upon request, we would be pleased to forward these specifics to the San Diego Water Board for consideration.

Recognized Need for Resources

The Water Authority and its member agencies that operate drinking water reservoirs support the prioritized Basin Plan issues identified in the San Diego Water Board's December 8, 2014 *Issues Description for the 2014 Review of the Water Quality Control Plan for the San Diego Basin (Basin Plan)*, and recognize the limited resources available to the Water Board to address Basin Plan issues. However, we also recognize and prioritize the importance of ensuring that Basin Plan requirements are consistent with water supply importation, management, storage, and treatment practices addressed within Water Supply Permits issued by DDW. We further recognize the need to ensure that Basin Plan requirements are consistent with the "sustainable local water supply" element of the *San Diego Water Board Practical Vision*.

We appreciate that restrictions on San Diego Water Board staffing levels may require the involvement of technical staff from the State Water Resources Control Board in pursuing this endeavor. To this end, the Water Authority and its member agencies that operate drinking water reservoirs are available to coordinate with the San Diego Water Board and the State Board to provide resources for the evaluation and consideration of the proposed Basin Plan modifications at the earliest possible date. We hope that the suggested outline of proposed Basin Plan modifications presented herein will provide the San Diego Water

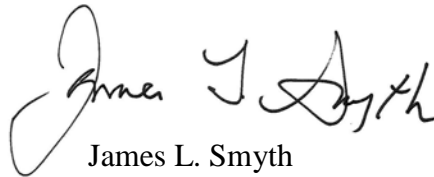
Board with sufficient information to evaluate required resources and staffing needs for the assessment of these Basin Plan issues.

Thank you for the opportunity to participate in the San Diego Water Board's triennial review process. We look forward to coordinating with the San Diego Water Board on Basin Plan modifications that (1) eliminate inconsistencies between water agency municipal supply operations and Basin Plan beneficial use designations, water quality objectives, and implementation policies, and (2) enhance opportunities to implement the "sustainable water supply" element of the *San Diego Water Board Practical Vision* and the water reliability and sustainability goals of the *2013 California Water Plan*.

Sincerely,



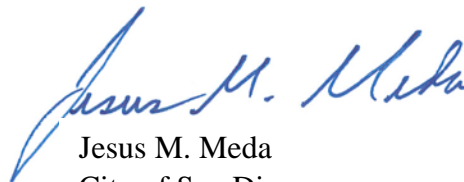
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