

# Process for Consistent Evaluation of the Municipal and Domestic Supply (MUN) Beneficial Use in Agriculturally Dominated Surface Water Bodies

Informational Item 30/31 July 2015

## INFORMATION DOCUMENT

**INTRODUCTION:** Currently, the Water Quality Control Plans for the Sacramento River and San Joaquin River Basins and for the Tulare Lake Basin (the “Basin Plans”) consider most agriculturally (Ag) dominated surface water bodies as supporting the Municipal and Domestic Supply (MUN) beneficial use. Furthermore, the Basin Plans mandate that the water quality in water bodies that support the MUN beneficial use consistently meet the primary and secondary Maximum Contaminant Levels (MCLs) contained in Title 22 of the California Code of Regulations. Recognizing that this regulatory requirement may be impractical, the Board is developing amendments to the Basin Plans that would specify a process whereby the Board could evaluate and de-designate or refine (where appropriate) the MUN beneficial use in certain Ag dominated water bodies.

Board staff presented information regarding the development of these amendments during a Board workshop on 16 April 2015. The Board requested additional information regarding a LIMITED-MUN beneficial use that could replace the MUN use where the Board found that the MUN beneficial use designation was not appropriate. Board staff will be discussing the various LIMITED-MUN beneficial use options during the Board’s 30/31 July 2015 meeting in Rancho Cordova.

**BACKGROUND:** When the Central Valley Water Board incorporated the *Sources of Drinking Water Policy* into the Basin Plans, it designated all surface and ground water bodies in region as supporting the MUN beneficial use. The only water bodies where this designation does not apply are those water bodies specifically identified in the Basin Plans as not supporting the MUN use. The *Sources of Drinking Water Policy* contains exception criteria for water bodies designed and/or modified to convey agricultural drainage. Utilizing this exception requires a Basin Plan Amendment to dedesignate the MUN use. The Basin Plans contain water quality objectives that specify that water bodies that support the MUN beneficial use must, at a minimum, meet the primary and secondary Maximum Contaminant Levels (MCLs) contained in Title 22 of the California Code of Regulations for chemical constituents, pesticides, and radionuclides. These MCLs were developed for direct consumption of the water (e.g. from the tap), and so it may not be appropriate to regulate to these standards in all Ag dominated surface water bodies.

The Board does not list the vast majority of the thousands of Ag dominated surface water bodies in the Basin Plans, which means that the MUN beneficial use currently applies to these water bodies. These Ag dominated surface water bodies include facilities constructed to convey agricultural supply or drainage water (or a combination) as well as natural channels that are dominated by agricultural flows during a majority of the irrigation season. Many types of Ag dominated water bodies, like constructed agricultural supply channels, do not clearly meet any of the exceptions in the *Sources of Drinking Water Policy*. Due to inherent limiting physical conditions, such as low or intermittent flows and/or elevated natural background constituent concentrations, applying primary and secondary MCLs (tap water standards) to certain categories of agriculturally dominated water bodies may not be appropriate. As such, a new LIMITED-MUN beneficial use designation has been proposed to protect the beneficial uses that these water bodies actually support.

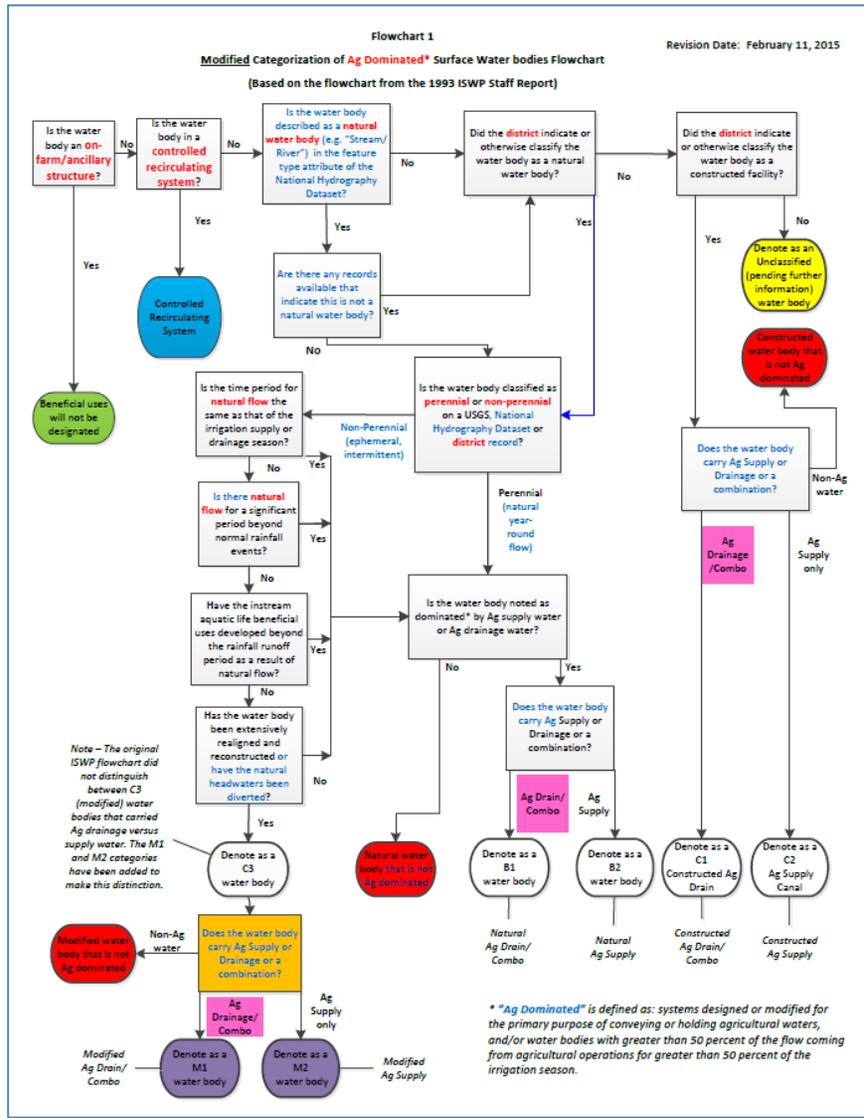
Appendix A illustrates how using a water body categorization process relates to the potential designation of the LIMITED-MUN beneficial use for certain water body categories (Flow Chart 1 and Table 1). In addition, Appendix A provides potential options for a LIMITED-MUN beneficial use definition and the draft selection criteria for evaluating the proposed water quality objectives. Table 2 in Appendix A presents the proposed options for a LIMITED-MUN water quality objective, along with Board staff's proposed ratings and corresponding notes.

**ISSUES:** A public stakeholder meeting was held on 3 June 2015, focusing on the development of a LIMITED-MUN beneficial use. Participants at the meeting provided Board staff with comments pertaining to the definition, selection criteria and water quality objectives of a LIMITED-MUN beneficial use. Stakeholders were also provided the opportunity to submit written comments after the meeting. Specific comments regarding a LIMITED-MUN beneficial use were received from the Central Valley Clean Water Association, the Sacramento River Source Water Protection Program, and the San Joaquin Tributaries Authority. Comments and proposed options were incorporated into the material presented in Appendix A. The majority of the discussion revolving around development of a LIMITED-MUN beneficial use designation has been related to the following issues:

- 1) Defining the LIMITED-MUN beneficial use to reflect the appropriate use of the water
- 2) Establishing the appropriate water quality objectives that will provide flexibility to address different limiting physical conditions while preventing future degradation
- 3) Ensuring protection of downstream beneficial uses

## Appendix A – Development of LIMITED-MUN Beneficial Use Designation

Flow Chart 1 –Categorization of Ag Dominated Surface Water Bodies



Water Body Categorization Report and Regional Board Staff review

Table 1. Proposed MUN Beneficial Use Designations *document*

Water Body Category	Beneficial Use	MUN WQOs
C1 (Constructed Ag Drain/Combo)	No MUN	N/A
M1 (Modified Ag Drain/Combo)	No MUN	N/A
C2 (Constructed Ag Supply)	LIMITED-MUN	Narrative and/or Numeric
M2 (Modified Ag Supply)	LIMITED-MUN	
B1 (Natural Ag Drain/Combo)	LIMITED-MUN	
B2 (Natural Ag Supply)	LIMITED-MUN	
Controlled Recirculating System	No MUN	N/A

Primary Topic for Discussion

- Definitions
- Selection Criteria
- Water Quality Objective – language

**Potential Options for the LIMITED-MUN Beneficial Use Definition:**

**LIMITED – MUN Beneficial use**

1. *Non-potable uses of water for community, military, or individual water supply systems.*
2. *Uses of water that are part of agricultural activities and support non-potable uses of water for community, military, and or individual water supply systems.*
3. *Uses of water for municipal and domestic supply in agriculturally dominated surface water bodies resulting from management activities and/or water treatment beyond conventional treatment.*

*Management activities may include but are not limited to wheeling water year-round, blending, prohibiting ag drainage into the water body and limiting maintenance activities. Treatment beyond conventional may include but not be limited to ion exchange and reverse osmosis.*

4. *Uses of water for municipal and domestic supply in agriculturally dominated surface water bodies where full use is limited by physical conditions such as intermittent flow conditions and/or elevated natural background constituent concentrations.*

**Draft Selection criteria for a LIMITED-MUN water quality objective:**

1. Maintain consistency with federal and state water quality laws and policies as applicable (e.g. Sources of Drinking Water Policy, Anti-degradation Policy)
2. Provide the appropriate protection of MUN in an Ag dominated surface water body with consideration given to the current and potential future uses
3. Assure compliance with all relevant water quality objectives downstream.
4. Allow constructed Ag dominated water bodies to be utilized for their intended design and purpose  
*Example - Irrigation Supply Channels*
5. Make efficient (reasonable) use of Central Valley Water Board and stakeholder resources to develop and implement water quality standards
6. Provide flexibility to address naturally elevated background constituents

**Table 2. Draft Water Quality Objective Options for a “LIMITED MUN” Category**

Water Quality Objective Options	Brief Description	Level of Consistency with Selection Criteria Ratings = Yes/No or High/Medium/Low						Notes
		1 (Laws)	2 (Potential Use)	3 (Downstream Protection)	4 (Intended Use)	5 (Reasonable use of resources)	6 (Background levels)	
Add new NARRATIVE water quality objective	A narrative water quality objective is given in the Basin Plan for the LIMITED MUN beneficial use  Proposed Options:  1. <i>Accumulation of constituents in the water body must not unreasonably affect non-potable water use.</i>	Yes	Low	Low	Med	Med	Low	- How is accumulation determined? - “Non-potable” is a very broad term; may be difficult know whether or not the water body is protected
	2. <i>Accumulation of constituents in the water body must not unreasonably affect non-potable water use or degrade other in-stream or downstream beneficial uses.</i>	Yes	Low	High	Med	Med	Low	- “Non-potable” is a very broad term; may be difficult know whether or not the water body is protected  - Considers in-stream and downstream beneficial uses
	3. <i>Accumulation of constituents in the water body must not unreasonably affect non-potable water use and cannot preclude potable use with reasonable management and/or treatment.</i>	Yes	Med	Low	Med	Med	Low	- “Non-potable” is a very broad term; may be difficult know whether or not the water body is protected  - “potable use” may result in the use of primary and secondary MCLs as water quality objectives  - “reasonable” may require examples
	4. <i>Accumulation of constituents in the water body above natural background concentrations cannot preclude managed and/or treated use of the water for Municipal or Domestic Supply (MUN) use or degrade downstream beneficial uses</i>	Yes	Med	High	Med	Med	High	- Need to define “natural background concentrations”  - Need examples of “managed and/or treated” and some concept of relative and acceptable economic cost.

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		1 (Laws)	2 (Potential Use)	3 (Downstream Protection)	4 (Intended Use)	5 (Reasonable use of resources)	6 (Background levels)	
	5. <i>Accumulation of constituents in the water body must be found to provide maximum benefit to the people of the state and not unreasonably affect managed and/or treated use of the water for Municipal or Domestic Supply (MUN) use nor degrade downstream beneficial uses above natural background concentrations.</i>	Yes	Med	High	High	Med	High	<ul style="list-style-type: none"> <li>- Includes reference to maximum benefit of the people of the state - Antidegradation</li> <li>- Need to define “natural background concentrations”</li> </ul>
	6. <i>Discharge from these water bodies will not degrade downstream beneficial uses consistent with the state antidegradation policy (SWRCB Resolution No. 68-16).</i>	Yes	Low	High	High	Med	Low	<ul style="list-style-type: none"> <li>- Does not protect the water body itself</li> <li>- Already an existing legal requirement</li> </ul>
	7. <i>Water quality will be protected as specified in the state antidegradation policy (SWRCB Resolution No. 68-16).</i>	Yes	Med	High	Med	Med	Med	<ul style="list-style-type: none"> <li>- Refers directly to antidegradation policy</li> <li>- May be able to provide clarification in implementation section</li> <li>- Already an existing legal requirement</li> </ul>
Add new NUMERIC water quality objective	<p>A numeric water quality objective is given in the Basin Plan for LIMITED MUN</p> <p>Proposed Options:</p> <p>1. <i>Must meet primary MCLs, but not secondary MCLs. (Narrative for nuisance objective will still apply)</i></p>	Yes	Med	Med	Low	Low	Low	<ul style="list-style-type: none"> <li>- Secondary MCLs are for taste, odor and appearance, and do not reflect a human health criteria</li> <li>- Water purveyors still must report exceedances to secondary MCLs in source water to the public</li> </ul>

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		1 (Laws)	2 (Potential Use)	3 (Downstream Protection)	4 (Intended Use)	5 (Reasonable use of resources)	6 (Background levels)	
	2. <i>Must meet primary and secondary MCLs with the exception of: trihalomethanes (short half-life)</i>	Yes	High	High	Low	Low	Low	<ul style="list-style-type: none"> <li>- Trihalomethanes have a short half-life and are a low human health threat in waters that are not currently being used for the MUN use.</li> <li>- MCLs are tap water standards and these objectives are restrictive for agricultural practices</li> <li>- Removing trihalomethanes or other constituents would require constituent by constituent scientific justification</li> </ul>
	3. <i>Must meet primary and secondary MCLs, but dissolved fractions can be used in place of total fractions</i>	Yes	High	High	Low	Low	Low	<ul style="list-style-type: none"> <li>- Using dissolved fractions reflects the use of filtration in conventional water treatment</li> <li>- Water purveyors use total fractions for reporting secondary MCL values</li> <li>- May be over-restrictive for potential MUN use of the water body itself.</li> </ul>