

**California Regional Water Quality Control Board
Santa Ana Region**

October 29, 2010

ITEM: 8

**SUBJECT: Resolution No. R8-2010- 0039
Basin Plan Amendment - Revised total dissolved solids (TDS) and
Nitrate-nitrogen water quality objectives for the San Jacinto Upper
Pressure Management Zone based on the demonstration of
maximum benefit to the people of California.**

EXECUTIVE SUMMARY

Federal law requires states to establish water quality standards (beneficial uses, water quality criteria, and an antidegradation policy) for all water bodies within the state's jurisdiction, and to review those standards at least once every three years. The Porter - Cologne Water Quality Control Act (Division 7, "Water Quality", of the California Water Code) establishes similar requirements in state law. For the Santa Ana Region, these standards were established in the 1975, 1984 and 1995 Water Quality Control Plans, Santa Ana River Basin (Basin Plans)¹.

On January 22, 2004, the Santa Ana Regional Water Quality Control Board adopted Resolution No. R8-2004-0001 to amend the Basin Plan for the Santa Ana River Basin. The Amendment included revised boundaries for groundwater subbasins, now termed "groundwater management zones", revised total dissolved solids (TDS) and nitrate-nitrogen objectives for those zones, revised TDS and nitrogen wasteload allocations for discharges of recycled water to the Santa Ana River and its tributaries, and revised reach designations for certain surface waterbodies. To accommodate reclamation projects in the Region, alternative water quality objectives ("Maximum Benefit" objectives) were established for certain groundwater management zones. The approval of these objectives was contingent on a specific set of commitments by the proponents of the maximum benefit objectives to implement basin-wide water supply and water quality management programs, including salt removal projects, monitoring programs and conjunctive use programs – all developed to ensure that the beneficial uses of the groundwater management zones will be protected and that water quality consistent with maximum benefit to the people of the state will be maintained. The State Water Resources Control Board (State Water Board) and Office of Administrative Law (OAL) approved the Amendment on September 30, 2004 and December 23, 2004, respectively. The surface water standards provisions of the Amendment were approved by the U.S. Environmental Protection Agency on January 20, 2007.

Since the adoption of Resolution No. R8-2004-0001, Eastern Municipal Water District (EMWD) has developed a comprehensive "maximum benefit proposal" for the San Jacinto Upper Pressure Management Zone (SJUPMZ). The proposal is to revise the TDS and nitrate-nitrogen objectives for the San Jacinto Upper Pressure Management Zone to accommodate the implementation of the Hemet/San Jacinto Water Management Plan (Management Plan), which is intended to guide and support responsible water management in that area into the future. This Management Plan includes use of recycled water in the SJUPMZ and other water management activities and was developed through a coordinated effort among Eastern Municipal Water District (EMWD), Lake Hemet Municipal Water District (LHMWD), the city of Hemet, the city of San Jacinto, and two of the area's largest farming operations. The primary

¹ The Basin Plan was updated in 2008. This update did not include any substantive changes to the Plan. The purpose of the update was to incorporate in the text the separate amendments that had been approved subsequent to the re-publication of the Basin Plan in 1995.

benefits of the Management Plan are to reduce local groundwater overdraft and increase the sustainability and reliability of the local groundwater resources, to maximize use of recycled water produced from local water reclamation plants, and to maximize the reasonable and beneficial use of all waters available to the area. All of these activities will be managed by a local Watermaster.

The revision of water quality objectives as proposed would allow a lowering of water quality and therefore, compliance with the state's antidegradation policy (Resolution No.68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California") is required. Lowering of water quality is allowable provided that beneficial uses are protected, that there is best practicable treatment or control of waste discharges, and that the change is consistent with maximum benefit to the people of California. Board staff believes that the proposed revised TDS and nitrate-nitrogen objectives, coupled with water resource management commitments, meet these tests. Therefore, Board staff recommends amendment of the Basin Plan to add "maximum benefit" objectives for total dissolved solids (TDS) and the nitrate-nitrogen water quality for the San Jacinto Upper Pressure Management Zone (SJUPMZ) based on maximum benefit to the people of the state. The maximum benefit commitments that must be satisfied are also delineated in the amendment. The "maximum benefit" objectives would apply unless the Regional Board finds, after a duly noticed public hearing, that the maximum benefit commitments have not been met. In that case, the existing "antidegradation" objectives would apply.

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1.0 Introduction

Federal law and implementing regulations² require states to establish water quality standards for all water bodies within the state's jurisdiction. A water quality standard is composed of three parts: 1) the beneficial uses that apply to the waterbody; 2) the water quality criteria (or "objectives", in California terminology) needed to protect those uses; and 3) an antidegradation policy to protect water quality that is already better than the applicable criteria. The Porter-Cologne Water Quality Control Act (Division 7, "Water Quality", of the California Water Code, aka "Porter- Cologne Act") establishes similar requirements in state law.

In California, Regional Water Quality Control Boards enact water quality standards through a formal basin planning process. Each Regional Board publishes a Basin Plan that identifies individual water bodies within its jurisdiction, designates the beneficial uses that apply to each waterbody and specifies the water quality objectives for those water bodies. Although the federal Clean Water Act applies only to surface waters, the Porter-Cologne Act applies to both the ground and surface waters of California.

The San Jacinto River watershed, shown in Figure 1, is located in southwestern Riverside County. One of the major features of this watershed is the extensive groundwater resources that serve as a vital source of water supply in the area. The hydrogeology of the area is characterized by alluvium fills in the valley that serve as excellent permeable aquifers for groundwater storage. The depth of some of the older alluvium is up to 1000 feet. Groundwater replenishment occurs throughout the valley, with natural recharge of storm water and storm flows occurring primarily where the foothills meet the valley floor. The best quality water is within these areas that receive foothill recharge.

Water quality in many of the groundwater management zones in the San Jacinto River Watershed has been degraded over time by agricultural activities and natural conditions. The San Jacinto River Basin is an enclosed basin with high evapotranspiration rates. Rain or other waters that are applied in the San Jacinto basin are not as likely to reach the underlying groundwater because these waters are lost due to the high evaporation rates (hot, dry conditions) and transpiration by plants within this area). Salts in waters applied to land in the area remain in the vadose zone and are eventually transported to the underlying groundwater. Salt levels in most of the groundwater management zones in the San Jacinto River Watershed, as expressed by the concentration of total dissolved solids (TDS), exceed the secondary drinking water standard of 500 mg/L. As shown in Table 2, several of the management zones in the San Jacinto River watershed have water quality objectives, established based on historical ambient TDS concentrations, which exceed 500 mg/L. By comparison, water quality in the Canyon and San Jacinto Upper Pressure management zones is under 500 mg/L TDS. Given this higher quality, water supply entities in this area primarily rely on

² 40 Code of Federal Regulations (CFR) 131 Water Quality Standards Regulation

the Upper San Jacinto and/or the Canyon Management Zones as a primary potable supply. As a result, the Canyon and San Jacinto Upper Pressure management zones are threatened by over-pumping and over-draft.

Eastern Municipal Water District (EMWD) is the principal agency responsible for managing the groundwater resources in the San Jacinto River Watershed. EMWD has worked with local cities and farmers to develop two groundwater management plans (one for the western San Jacinto Basin and another for the Eastern San Jacinto Basin). The Eastern San Jacinto Groundwater Management Plan, also known as the Hemet/San Jacinto Water Management Plan, discussed in detail in Section 3.0 and as shown in Figure 2, encompasses the Canyon Management Zone, the Hemet South Management Zone, the San Jacinto Upper Pressure Management Zone and the northern portion of the Lakeview-Hemet North Management Zone. The Hemet/San Jacinto Water Management Plan (Management Plan) was developed to promote responsible water management in the future (Eastern Municipal Water District, 2007).

To support the Hemet/San Jacinto Management Plan (Management Plan), EMWD has developed a comprehensive "maximum benefit" proposal for the San Jacinto Upper Pressure Management Zone that would enable the implementation of water resource management activities pursuant to the Management Plan. This proposal includes recommendations for the adoption of less stringent nitrate-nitrogen and TDS objectives for the San Jacinto Upper Pressure Management Zone. Since the implementation of less stringent water quality objectives would allow the lowering of water quality, the requirements of the state's antidegradation policy, Resolution No. 68-16, must be satisfied before the objectives can be considered for adoption. Specifically, there must be demonstrations that beneficial uses will continue to be protected, that waste discharges will receive best practicable treatment or control, and that water quality consistent with maximum benefit to the people of the state will be maintained. The "maximum benefit" proposal is discussed below.

Figure 1. San Jacinto River Watershed – Management Zones

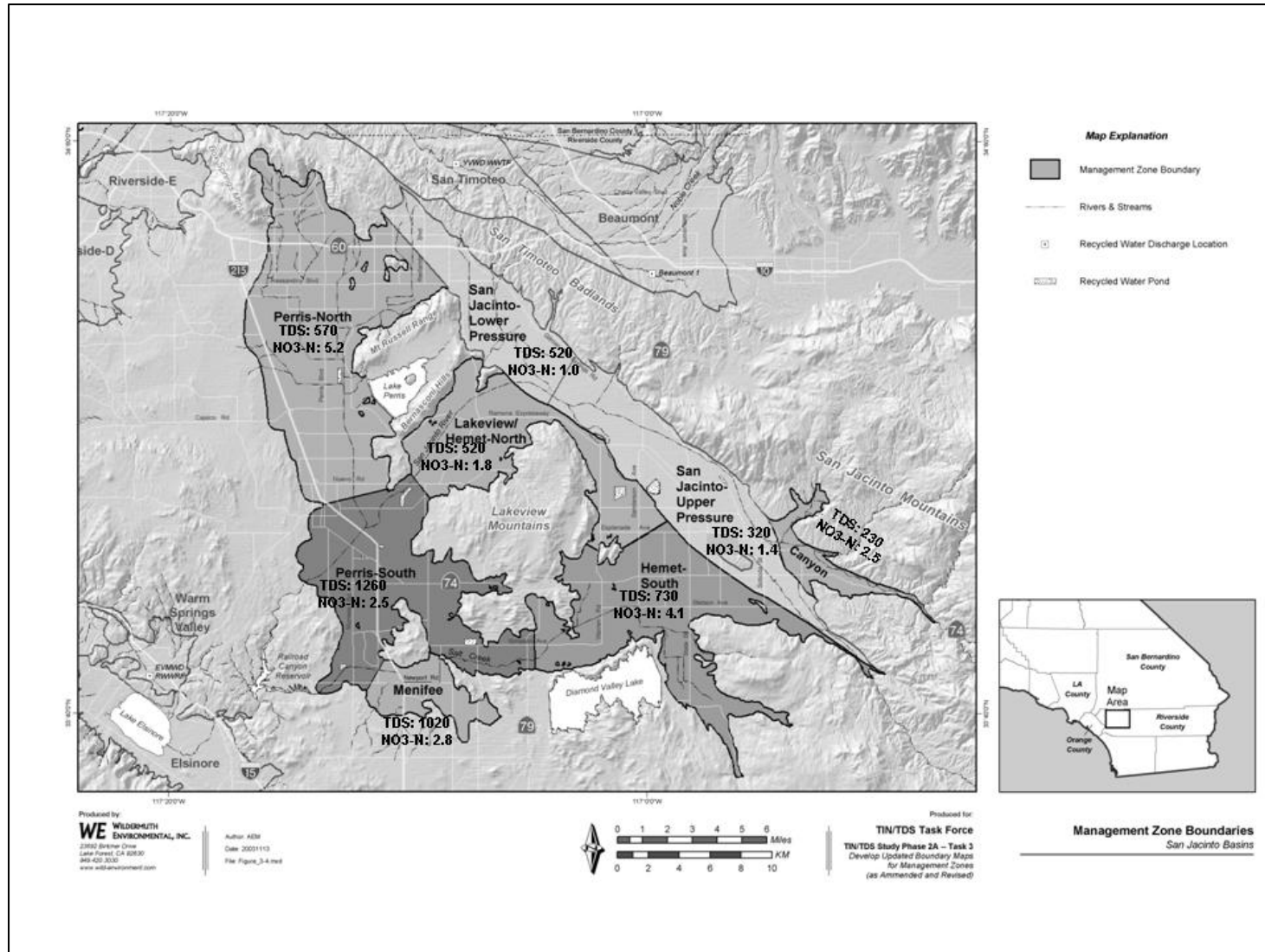
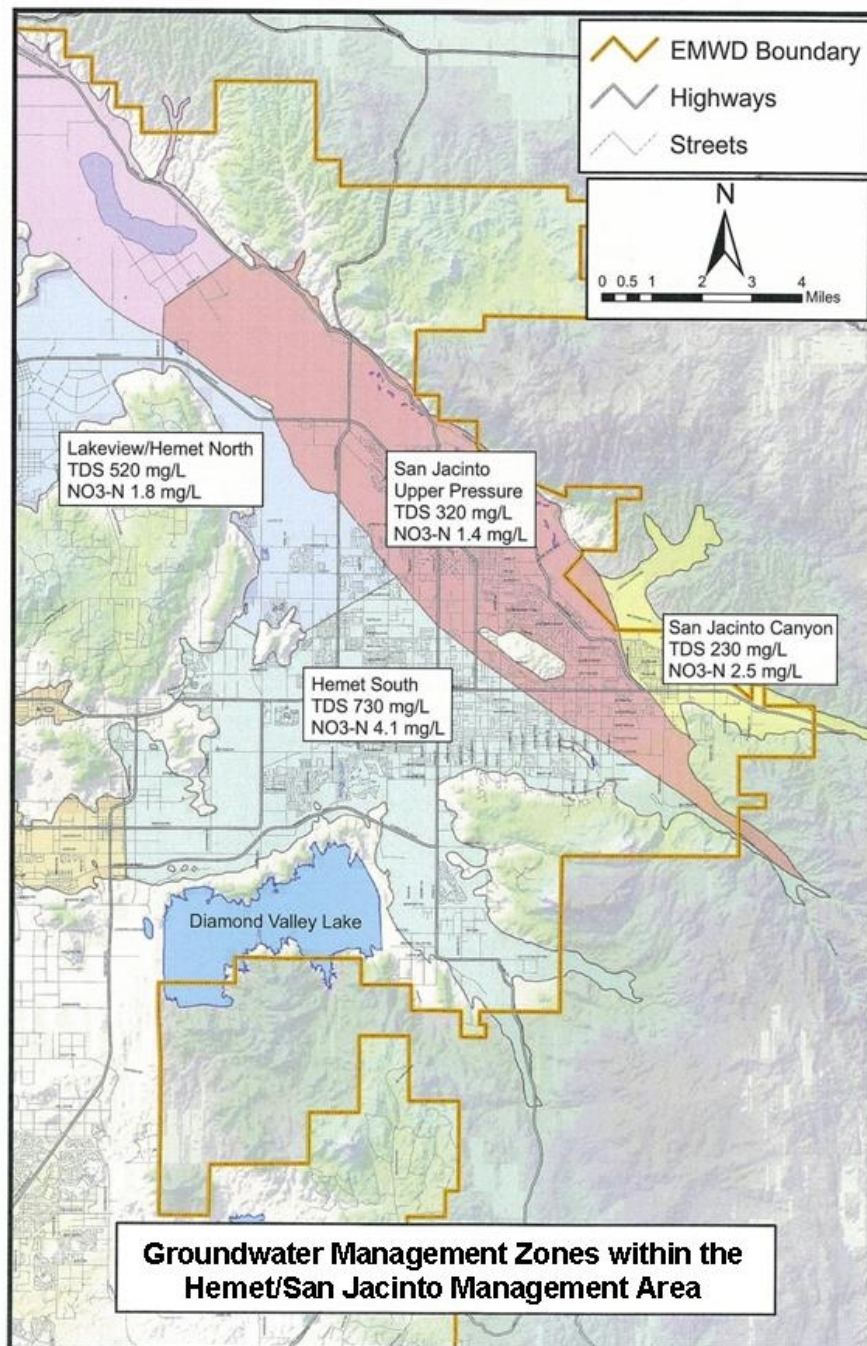


Figure 2. Hemet/ San Jacinto Management Area



2.0 Background

2.1 2004 Basin Plan Amendments: Groundwater Management Zones and “Antidegradation” Objectives

In the mid 1990s, a Santa Ana Region-wide effort was initiated to perform certain investigations on the boundaries and the TDS and nitrate-nitrogen water quality objectives for the groundwater subbasins in the Santa Ana River Watershed. A TIN/TDS Task Force was formed to conduct the necessary studies, which led to the establishment of revised groundwater subbasin boundaries and TDS and nitrate-nitrogen objectives for the revised groundwater subbasins (now termed “management zones”). Regional Board staff, water supply, water-recycling and wastewater agencies, as well as other agencies including the US Geological Survey, participated in the Task Force. Based on the technical investigations and recommendations from the Task Force, the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) was revised in 2004. New TDS and nitrate-nitrogen objectives for the revised groundwater management zones were developed using a statistical analysis of well water quality data for the period of 1954 to 1973, with the resulting well statistics volumetrically averaged to yield a new statistic for each water groundwater management zone (defined as the “historical ambient” water quality). This approach was consistent with the State’s antidegradation policy, Resolution No. 68-16. Because these objectives represent historical ambient quality consistent with the antidegradation policy, they are termed “antidegradation” objectives.

The new groundwater management zone boundaries in the San Jacinto River Watershed incorporated into the Basin Plan in 2004 are shown in Figure 1. The beneficial uses identified for each of the management zones are listed in Table 1; TDS and nitrate-nitrogen water quality objectives for each management zone are listed in Table 2 and are also shown in Figure 1. Per the Basin Plan, current ambient quality for all management zones must be determined every three years. This enables the Regional Board and dischargers to determine whether water quality objectives are being achieved, whether findings of assimilative capacity need to be revised, and whether some change in nitrogen and/or TDS management strategy is necessary. The most current determination of ambient quality encompassed the time period of 1987 through 2006 (Wildermuth Environmental Inc., 2008).³ Current ambient quality for the San Jacinto watershed management zones, as determined for the 20 year time period of 1987-2006, is shown in Table 2. As can be seen in Table 2, there is no TDS or nitrate-nitrogen assimilative capacity in the San Jacinto basins (with the exception of 0.6 mg/L of nitrate-nitrogen assimilative capacity in the Canyon Management Zone). The significance of these assimilative capacity findings is discussed further in Section 3.0.

³ Current ambient quality has been determined for the following time periods – 1978-1997, 1984-2003 and 1987-2006. Stakeholders are currently in the process of performing a re-calculation of the current ambient quality that will cover the time period of 1990-2009. These results are due to be reported to the Regional Board no later than June 30, 2011.

Table 1. Beneficial Uses of Groundwater Management Zones in the San Jacinto River Watershed

Management Zones	Beneficial Use			
	MUN	AGR	IND	PROC
Canyon	X	X	X	X
Hemet South	X	X	X	X
Lakeview/Hemet North	X	X	X	X
Menifee	X	X		X
Perris North	X	X	X	X
Perris South	X	X		
San Jacinto Lower Pressure	X	X	X	
San Jacinto Upper Pressure	X	X	X	X

MUN - Municipal and domestic water supply

AGR - Agricultural water supply

IND - Industrial service water supply

PROC - Industrial process water supply

Table 2. TDS/Nitrate-nitrogen Objectives and Current (2006)¹ Ambient Quality for Groundwater Management Zones in the San Jacinto River Watershed

Management Zones	TDS			NO ₃ -N		
	Water Quality Objective (mg/L)	Current Ambient (mg/L)	Assimilative Capacity (mg/L)	Water Quality Objective (mg/L)	Current Ambient (mg/L)	Assimilative Capacity (mg/L)
Canyon	230	370	none	2.5	1.9	0.6
Hemet South	730	920	none	4.1	5.5	none
Lakeview/Hemet N.	520	880	none	1.8	2.7	none
Menifee	1020	2140	none	2.8	4.7	none
Perris North	570	730	none	5.2	6.5	none
Perris South	1260	2600	none	2.5	5.5	none
San Jacinto Lower Pressure	520	810	none	1.0	1.2	none
San Jacinto Upper Pressure	320	350	none	1.4	1.6	none

¹ Current ambient water quality as determined by Wildermuth Environmental, Inc., 2008.

2.2 2004 Basin Plan Amendments: “Maximum Benefit” Objectives

In addition to the antidegradation objectives established in the 2004 Basin Plan Amendment, an alternative set of “maximum benefit” objectives were established for specific groundwater management zones. These “maximum benefit objectives”, which are less stringent than the applicable antidegradation objectives, were developed and approved to accommodate water resource management plans formulated by specific agencies and parties. These plans incorporated, in part, the expanded use and recharge of recycled water. Adoption of these less stringent objectives required the demonstration of conformance with the antidegradation policy, *i.e.*, that the beneficial uses of the affected waters would continue to be protected, that waste discharges would be provided best practicable treatment or control, and that water quality consistent with maximum benefit to the people of the state would be maintained. The proponents of the “maximum benefit” objectives made these demonstrations. The “maximum benefit” demonstrations were contingent on the implementation by the proponents of specific programs and projects identified in the Basin Plan. If these programs and projects are not implemented to the Regional Board’s satisfaction, then the alternative “antidegradation” objectives apply to the affected waters for regulatory purposes.

In considering approval of the “maximum benefit” objectives and whether the demonstration of maximum benefit to the people of California had been made by the project proponents, the Regional Board gave great weight to the fact that the “maximum benefit” proposals would enhance recycled water use and recharge, displace the use of potable water and contribute to the optimal use of water resources. These results are consistent with the goals and expectations expressed by the California Legislature and the State Water Resources Control Board. The Legislature has declared that:

“...the people of the state have a primary interest in the development of facilities to recycle water containing waste to supplement existing surface and underground water supplies and to assist in meeting the future water requirements of the state... it is the intention of the legislature that the state undertake all possible steps to encourage development of water recycling facilities...”

(California Water Code (CWC), Sec. 13510 & 13512)

The California Water Code further specifies that:

“...adequately treated recycled water should, where feasible, be made available to supplement existing surface and underground supplies and to assist in meeting future water requirements of the coastal zone.” (CWC, Sec. 13142.5 (e)(1))

Reflecting these legislative commitments, in 1977, the State Water Resources Control Board (State Board) adopted Resolution No. 77-1, “Policy with Respect to Water Reclamation in California”, directing the State Board and Regional Boards to encourage

reclamation and reuse and to implement a “Plan of Action for Water Reclamation in California” (December 1976)⁴. It was recognized that Regional Boards would likely need to review water quality objectives in light of the adoption of this plan and policy. More recently (2009), the State Board adopted the “Policy for Water Quality Control for Recycled Water” (Resolution No. 2009-0011). This Policy establishes goals that promote sustainable local water supplies, in part by increasing the acceptance and promoting the use of recycled water. This includes the substitution of as much recycled water for potable water as possible by 2030.

After further analysis of future water resource management programs for the San Jacinto Watershed, EMWD realized that in order to implement the Hemet/San Jacinto Management Plan, revision of the TDS and nitrate-nitrogen water quality objectives for the San Jacinto Upper Pressure Management Zone is needed to allow the use of recycled water. In 2007, EMWD submitted documentation to the Regional Board to request and justify less stringent “maximum benefit” TDS and nitrate-nitrogen water quality objectives for the San Jacinto Upper Pressure Management Zone. Since the implementation of less stringent water quality objectives would allow the lowering of water quality, the requirements of the state’s antidegradation policy, Resolution No. 68-16, must be satisfied. EMWD has proposed to implement specific programs and projects designed to assure conformance with the policy, including the demonstration of maximum benefit to the people of the state. The “maximum benefit” proposal is discussed in Section 3.0.

3.0 San Jacinto Upper Pressure Management Zone Proposed Maximum Benefit Water Quality Objectives

Through local community collaboration, EMWD and the Lake Hemet Municipal Water District, along with the cities of Hemet and San Jacinto and private water producers, developed the Hemet/San Jacinto Water Management Plan (Management Plan). As shown in Figure 2, the Management Plan encompasses the Canyon Management Zone, the Hemet South Management Zone, the northern portion of the Lakeview-Hemet North Management Zone and the San Jacinto Upper Pressure Management Zone. The Management Plan provides a foundation for responsible water resource management, now and in the future. Additionally, EMWD and the Lake Hemet Municipal Water District have also worked with the Soboba Band of Luiseño Indians (Soboba Tribe) and the Federal Government (Bureau of Indian Affairs) to develop a Settlement Agreement that would resolve past issues with respect to tribal water rights and water management practices in the management area. The stakeholders have developed a Stipulated Judgment that calls for the formation of a Watermaster to implement the Management Plan, which describes water supply management activities to maximize the reasonable and beneficial use of all waters available to the area, eliminate overdraft, protect prior rights of the Soboba Tribe, and provide for the substantial enjoyment of all water rights by recognizing their priorities.

⁴ The term “reclamation” has since been supplanted by the term “recycling” in some sections of the Water Code.

The Watermaster, through EMWD, is implementing or will implement the following components of the Management Plan in the San Jacinto Upper Pressure Management Zone:

- **Hemet/San Jacinto Integrated Recharge and Recovery Program (IRRP):** This program is designed to recharge imported water in the San Jacinto Upper Pressure Management Zone and extract groundwater at a capacity such that the following goals are met: satisfy prior and paramount Soboba Tribe water rights; offset the estimated 10,000 acre-feet per year (AFY) of overdraft in the San Jacinto Upper Pressure Management Zone; and provide an additional 15,000 AFY to help meet the projected increases in demand. The San Jacinto Upper Pressure Management Zone is expected to receive State Project water with average TDS and total inorganic nitrogen concentrations of 250 mg/L and 0.6 mg/L, respectively. Water demands and maintaining TDS and nitrate-nitrogen quality in the San Jacinto Upper Pressure Management Zone will be addressed by the recharge of State Project water. Although the volume recharged may vary depending on specific requirements, for modeling purposes (see discussion below) approximately 16,000 AFY of State Project water is assumed to be recharged. This recharge is anticipated to occur during wet years when the salinity of State Project water is very low. The recharge of higher-quality State Project water will result in a net benefit to the San Jacinto Upper Pressure Management Zone, which has current (2006) ambient TDS and nitrate-nitrogen concentrations of 350 mg/L and 1.6 mg/L, respectively. The established antidegradation objectives for this Management Zone are 320 mg/L and 1.4 mg/L, respectively. Based on the current ambient concentrations of TDS and nitrate-nitrogen (350 mg/L and 1.6 mg/L, respectively), there is no assimilative capacity for either constituent in the San Jacinto Upper Pressure Management Zone (see Table 2).
- **Recycled Water In-Lieu Project:** This project will supply recycled water from the San Jacinto Valley Regional Water Reclamation Facility for agricultural irrigation in lieu of pumping native groundwater for agricultural operations that overlie the San Jacinto Upper Pressure Management Zone. This project will provide additional recycled water outside of the approximately 5,000 AFY that is currently being served throughout the San Jacinto Upper Pressure Management Zone. One project that is already in the planning stages is expected to deliver up to 8,540 AFY of recycled water to Rancho Casa Loma and the Scott Brothers Dairy, which are located in the San Jacinto Upper Pressure Management Zone. Recycled water would displace potable water for specific uses at these sites. The project costs will be split between EMWD, the Lake Hemet Municipal Water District, and the cities of Hemet and San Jacinto. Agreements that set limits on groundwater production and provide for

payment of a portion of the operation and maintenance costs will be made with Rancho Casa Loma and the Scott Brothers Dairy.

- **Hemet Water Filtration Plant:** EMWD recently constructed and operates the Hemet Water Filtration Plant to treat State Project water for potable supply. This additional supply is used in lieu of native groundwater. The use of treated State Project water will reduce the TDS in the recycled water and result in a net decrease in the TDS concentration in returns from use to groundwater.

As previously stated, these commitments will promote the use of recycled water, provide an alternative water supply for the area, reduce local overdraft of the San Jacinto Upper Pressure Management Zone, increase the sustainability and reliability of not only the San Jacinto Upper Pressure Management Zone but adjacent management zones as well, and will maximize the reasonable and beneficial use of all waters available to the area. This will result in the protection of the beneficial uses of the San Jacinto Upper Pressure Management Zone and adjacent management zones, and demonstrate that water quality consistent with maximum benefit to the people of the state will be maintained.

To implement the Hemet/San Jacinto Water Management Plan (Management Plan), EMWD has requested revisions of the TDS and nitrate-nitrogen water quality objectives currently specified for the San Jacinto Upper Pressure Management Zone (Eastern Municipal Water District, 2007). EMWD requested that the water quality objectives for nitrate-nitrogen and TDS in the San Jacinto Upper Pressure Management Zone be set at levels higher than the current “antidegradation” water quality objectives. These proposed “maximum benefit” objectives are compared to the current water quality objectives (“antidegradation objectives”) and the current ambient quality in Table 3. Both the current water quality objectives and the proposed “maximum benefit” water quality objectives would assure the protection of beneficial uses. The proposed “maximum benefit” TDS objective (500 mg/L) is the drinking water secondary maximum contaminant level for TDS, which was established based on aesthetic considerations. The proposed “maximum benefit” nitrate-nitrogen objective (7.0 mg/L) is based on values that can accommodate the direct use of recycled water in the San Jacinto Upper Pressure Management Zone without impairing beneficial uses. Revision of the TDS and nitrate-nitrogen water quality objectives for the San Jacinto Upper Pressure Management Zone will enable the efficient implementation of the Management Plan by creating assimilative capacity, thereby enabling the use of recycled water in place of potable water, reducing groundwater pumping, and allowing for the recharge of imported water.

Table 3. Comparison of Proposed Maximum Benefit TDS and Nitrate-nitrogen Water Quality Objectives with Current (2006) Ambient Quality in the San Jacinto Upper Pressure Management Zone

Management Zone	Existing WQOs		Proposed "Maximum Benefit" WQOs		2006 Ambient Quality ¹	
	TDS mg/L	NO ₃ -N mg/L	TDS mg/L	NO ₃ -N mg/L	TDS mg/L	NO ₃ -N mg/L
San Jacinto Upper Pressure	320	1.4	500	7.0	350	1.6

¹ Current ambient water quality as determined by Wildermuth Environmental, Inc., 2008.

The "maximum benefit" objectives are necessary for the Management Plan to proceed. As shown in Tables 2 and 3, for TDS and nitrate-nitrogen, the ambient water TDS and nitrate-nitrogen concentrations are greater than the existing TDS and nitrate-nitrogen water quality objectives and therefore, there is no assimilative capacity for either constituent. Assimilative capacity findings have significant regulatory repercussions. Water Code Section 13263 requires that waste discharge requirements must implement the Basin Plan. If there is assimilative capacity in the receiving waters for TDS or nitrate-nitrogen, waste discharge requirements may allow a discharge quality in excess of the objectives for those constituents, as long as the discharge does not cause violation of the objectives. However, if there is no assimilative capacity in the receiving waters, the discharge limits generally cannot exceed the receiving water objectives or the degradation process would be accelerated. This rule was expressed clearly by the State Water Resources Control Board in a decision regarding the appropriate TDS discharge limitations for the Rancho Caballero Mobile home park, located in the Santa Ana Region (Order No. 73-4, the "Rancho Caballero decision").

The success of the Management Plan depends on EMWD's ability to recharge significant amounts of water from all sources, including State Project water, other imported water, storm water, and recycled water. As shown in Table 3, the established TDS and nitrate-nitrogen Basin Plan objectives for the San Jacinto Upper Pressure Management Zone are very low. Again, because there is no assimilative capacity, recycled water recharge and recycled water reuse would have to be limited to the existing water quality objectives. However, the existing Basin Plan water quality objectives could prevent State Project water, other imported water, and recycled water from being recharged or reused unless significant treatment, mitigation or offset is provided. The recycled water proposed to be used in this management zone will come primarily from EMWD's San Jacinto Valley Recycled Water Reclamation Facility (SJVRF). The 2009 annual average of TDS and total inorganic nitrogen (TIN) quality of the effluent was 555 mg/L and 19 mg/L, respectively, both of which exceed the current Basin Plan TDS and nitrate-nitrogen water quality objectives and current

(2006) ambient quality. As discussed in Section 3.2, below, by 2014, the SJVRWRF will be expanded and as a result, the resulting total inorganic nitrogen discharge quality discharge will be at a concentration of 10 mg/L or less. Assuming the 60% nitrogen loss coefficient that has been incorporated into the EMWD Master Reclamation Permit (Order No. R8-2008-0008), a discharge quality of 13 mg/L (or less) total inorganic nitrogen will ensure that the 7 mg/L proposed nitrate-nitrogen water quality objective is met.

The creation of assimilative capacity in this management zone allows for the direct use of recycled water and still ensures protection of the beneficial uses in this management zone. Extensive treatment of this recycled water, including reverse osmosis, that exceeds best practicable treatment or control expectations would be necessary to achieve the existing TDS and nitrate-nitrogen objectives, which would severely hinder recycling and reuse opportunities. The “maximum benefit” objectives recommended by EMWD would create both TDS and nitrate-nitrogen assimilative capacity that would accommodate maximum recycled water recharge and reuse, as well as State Project water recharge, and ensure protection of beneficial uses. As described in Section 1.0, this is consistent with the intent expressed by the Legislature and the State Water Resources Control Board to encourage the use of recycled water and the substitution of recycled water for potable water.

3.1 Proposed Total Dissolved Solids “Maximum Benefit” Water Quality Objective

To support their “maximum benefit” proposal, EMWD provided evidence to demonstrate that in the San Jacinto Upper Pressure Management Zone, the TDS concentration is projected to increase indefinitely, even without recycled water use. This is due to the impact of historic, and to a lesser extent, current agricultural practices in the area overlying the San Jacinto Upper Pressure Management Zone. EMWD evaluated the TDS effects of several alternative scenarios of the use of State Project water and recycled water at TDS concentrations of 575 mg/L and 650 mg/L for the replenishment of the San Jacinto Upper Pressure Management Zone and for non-potable supply. The following water resources management cases were analyzed (Eastern Municipal Water District, 2007):

- Case 1. No project scenario: the Integrated Recharge and Recovery Program (IRRP) and Recycled Water In-Lieu Project do not occur. Groundwater production in the San Jacinto Upper Pressure Management Zone is reduced according to the Management Plan and remaining water demand is satisfied by treated imported water.

- Case 2. The IRRP does not occur and the Recycled Water In-Lieu Project is online starting in 2008⁵. The recycled water TDS concentration is assumed to be 575 mg/L. Groundwater production in the San Jacinto Upper Pressure Management Zone is reduced according to the Management Plan and remaining water demand is satisfied by treated imported water.
- Case 3. State Water Project water is used for groundwater replenishment in the San Jacinto Upper Pressure Management Zone and the Recycled Water In-Lieu Project is online starting in 2008⁵. The Hemet Water Filtration Plant is constructed and treated imported water is served in lieu of native groundwater from the San Jacinto Upper Pressure Management Zone starting in 2010. TDS concentration in the recycled water is assumed to be 575 mg/L.
- Case 4. Same as Case 3 but TDS concentration in recycled water is assumed to be 650 mg/L.

Each case represents a possible water resources management strategy that could be adopted by EMWD. Case 1 simulates future conditions without the proposed major facility improvements in the Management Plan. In Case 1, groundwater production must be reduced to the safe yield of the San Jacinto Upper Pressure Management Zone. Case 2 is identical to Case 1 except that the Recycled Water In-lieu Project is assumed to come online in 2008. Cases 3 and 4 represent the proposed Management Plan with the IRRP, Recycled Water In-lieu Project, and the Hemet Water Filtration Plant, and differ only in the assumption of the TDS concentration in the recycled water used for irrigation in the Recycled Water In-lieu Project. For modeling purposes, it has been estimated that the volume of State Project water recharge in the San Jacinto Upper Pressure Management Zone is approximately 16,000 AFY and that the Hemet Water Filtration Plant will serve up to 8,000 AFY of treated imported water in lieu of native groundwater pumped from that Zone.

Figure 3 shows the estimated San Jacinto Upper Pressure Management Zone TDS concentration expected through the year 2100 for all four cases. TDS projections for all 4 cases within the next 30 year planning horizon and for long-term (year 2060) are provided in Table 4. It should be noted that the TDS projections presented for the four case studies are conservative estimates of the resulting basin TDS quality since the model does not take into account the travel time through the vadose zone for returns from water applied for irrigation. The model is essentially a continuous stirred tank reactor and does not include the delay that actually occurs for the recycled water to move through the vadose zone. The model assumes that all water applied immediately

⁵ The modeling EMWD conducted in 2007 anticipated approval of their "maximum benefit" proposal by 2008 and start-up of the recycled water in lieu project in 2008; however, because of delays in finalizing the Basin Plan amendment, actual initiation of the recycled water in lieu project will be delayed pending approval of the Basin Plan amendment.

enters the groundwater basin. Thus, it is expected that the TDS concentration of the San Jacinto Upper Pressure Management Zone will not increase as rapidly as suggested in the TDS concentration projections shown in Figure 3.

Figure 3. Comparison of TDS Concentration Time Histories for the San Jacinto Upper Pressure Management Zone

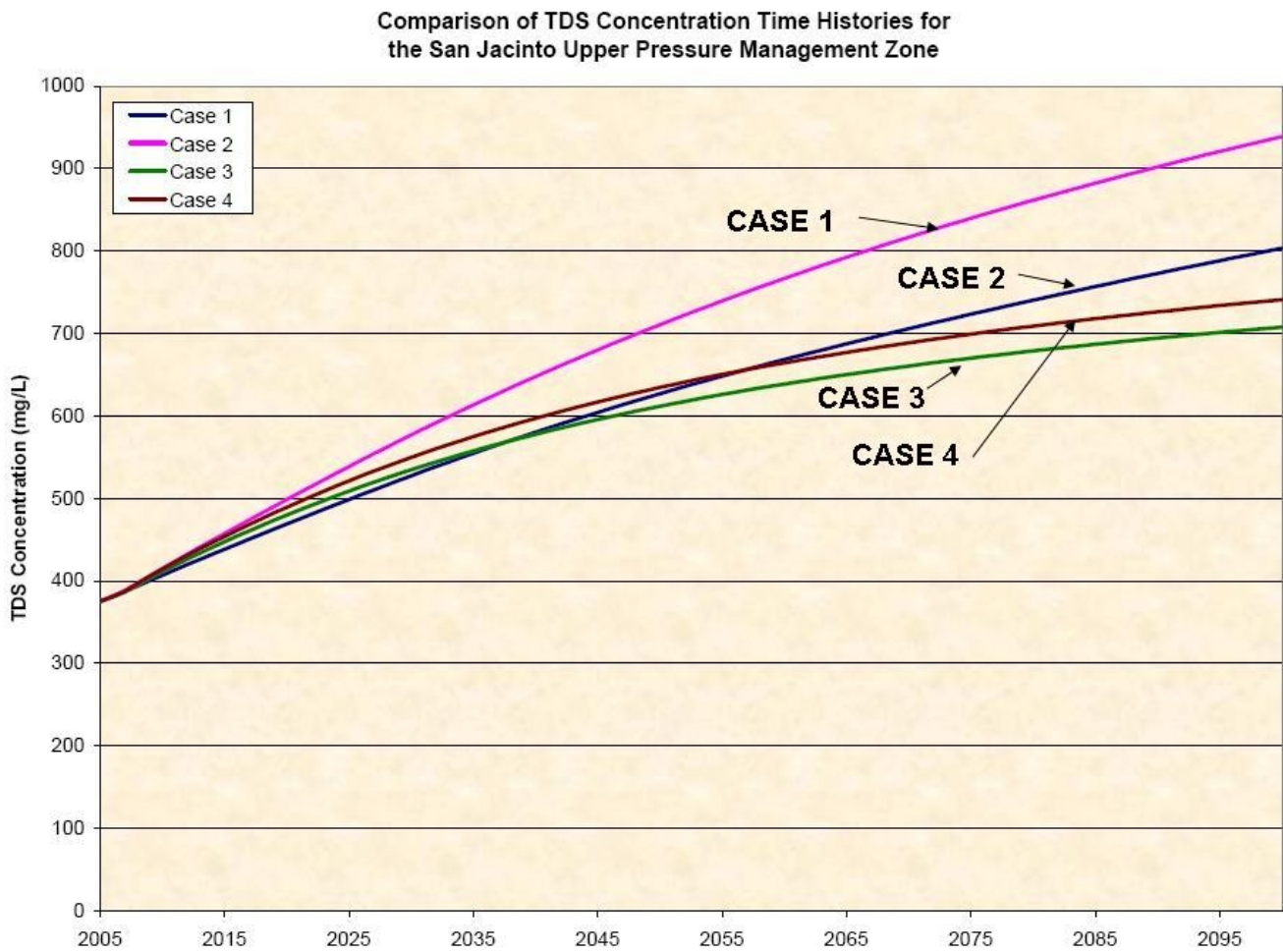


Table 4. Comparison of Resultant Long-term TDS Quality in the San Jacinto Upper Pressure Management Zone under Four (4) Scenarios

	Projected TDS (mg/L)			
	2025	2030	2040	2060
Case 1	499	528	580	668
Case 2	539	577	648	767
Case 3	509	535	578	639
Case 4	521	544	597	664

It is important to note that in Case 1, the no project alternative, if the IRRP and Recycled Water In-Lieu Project were not implemented, the expected TDS concentration by 2025 would be an increase from the current ambient quality of 350 mg/L to 499 mg/L. The increasing TDS concentration is driven largely by historical agricultural activities and returns from water that was applied for irrigation. In Case 2, by 2025, the TDS concentration would increase to 539 mg/L and the estimated TDS concentrations in year 2025 for Cases 3 and 4 are 509 and 521 mg/L, respectively. The long term TDS predictions for Case 3 and Case 4 are lower than the predictions for Case 1 and Case 2. In addition, as shown in Figure 3, TDS concentrations simulated for Cases 3 and 4 degrade at a slower rate than Cases 1 and 2. Cases 3 and 4 both result in better quality groundwater than the baseline condition. Implementation of the EMWD Management Plan will offset the TDS inputs to groundwater from the Recycled Water In-Lieu Project and slow the expected increase of the San Jacinto Upper Pressure Management Zone TDS concentration by implementing the Management Plan for the Hemet/San Jacinto area and recharging imported water. Cases 3 and 4 are the alternatives that must be pursued by EMWD to ensure a reliable supply in its service area. The “maximum benefit” TDS objective of 500 mg/L would enable the implementation of Case 3 and/or Case 4 to occur. The model projections indicate that the proposed TDS objective would be exceeded over the long-term. However, EMWD proposes to implement programs and projects designed to assure that the objective is not violated (see 4.0 Antidegradation Analysis; “Maximum Benefit” Commitments).

The Management Plan, as implemented in Case 3 or Case 4, may result in the management zones surrounding the San Jacinto Upper Pressure Management Zone receiving better quality water than if the Management Plan was not implemented. The most current groundwater flow model for the San Jacinto Watershed assumes that there is no outflow from the San Jacinto Upper Pressure Management Zone (TechLink Environmental, Inc., 2002). However, it is believed that there is some outflow to the Hemet South Management Zone, but that this flow is de minimus. With the

implementation of the Management Plan, groundwater levels will rise in the San Jacinto Upper Pressure Management Zone and there may be outflow to the Hemet South, Lakeview/Hemet North, and San Jacinto Lower Pressure Management Zones. The ambient TDS concentrations and the TDS objectives for these management zones are greater than the proposed objective for the San Jacinto Upper Pressure Management Zone (see Table 2); therefore, any incidental subsurface discharge from the San Jacinto Upper Pressure Management Zone to its adjacent management zones will have a beneficial impact on these downgradient management zones.

3.2 Proposed Nitrate-nitrogen “Maximum Benefit” Water Quality Objective

During the revision of the Salt Management Plan in 2004, as required to address Water Code Section 13241(a) (past, present and probable future beneficial uses), the TIN/TDS Task Force conducted an extensive review of available scientific literature to identify the concentrations of nitrate-nitrogen that are likely to impair beneficial uses. Special emphasis was placed on the water quality criteria and standards for drinking water recommended by the U.S. Environmental Protection Agency (EPA) and the California Department of Public Health Services. This focus was based on the recognition that the MUN beneficial use was the most sensitive use; objectives established to protect the MUN use would assure protection of the other beneficial uses of groundwaters in the Santa Ana Region. Based on this review, the TIN/TDS Task Force determined that the use protection threshold for nitrate-nitrogen in groundwater is concentrations less than 10 mg/L. The Task Force also found that lower concentrations of nitrate-nitrogen provided a useful safety factor (Regional Water Quality Control Board, January 2004).

EMWD proposes that the nitrate-nitrogen objectives for the San Jacinto Upper Pressure Management Zone be set at 7 mg/L. The proposed “maximum benefit” nitrate-nitrogen objective of 7 mg/L and the current ambient nitrate-nitrogen concentration of 1.6 mg/L in this management zone are lower than the 10 mg/L beneficial use threshold and are thus protective of current and future beneficial uses.

Currently, EMWD’s San Jacinto Valley Recycled Water Reclamation Facility (SJVRWRF) produces total inorganic nitrogen (TIN) effluent quality of 19 mg/L. By 2014, EMWD will produce recycled water with a 12-month average TIN concentration of 10 mg/L or less. TIN losses in recycled water recharge are assumed to be at least 25 percent in the Basin Plan and a recent study titled Quantification of Nitrogen Removal Under Recycled Water Ponds (Daniel B. Stephens & Associates, Inc., 2007) demonstrated that total nitrogen losses under the Alessandro Ponds in the San Jacinto Upper Pressure Management Zone averaged 64% at a depth of about 29 feet. The 60% nitrogen loss coefficient has been incorporated into the EMWD Master Reclamation Permit – Order No. R8-2008-0008. Assuming a 60% nitrogen loss coefficient, a discharge quality of 13 mg/L (or less) total inorganic nitrogen will ensure that the 7 mg/L nitrate-nitrogen water quality objective is met. The creation of assimilative capacity in this management zone allows for the direct use of recycled water and still ensures protection of the beneficial uses in this management zone.

4.0 Antidegradation Analysis; “ Maximum Benefit” Commitments

The implementation of less stringent TDS and nitrate-nitrogen water quality objectives in the San Jacinto Upper Pressure Management Zone would allow the lowering of water quality; therefore, requirements of the state’s antidegradation policy, Resolution No. 68-16, must be satisfied before the objectives can be considered for adoption. Specifically, there must be a demonstration that beneficial uses will continue to be protected, that waste discharges will receive best practicable treatment or control, and that water quality consistent with maximum benefit to the people of the state will be maintained.

As discussed below, the proposed change in TDS and nitrate-nitrogen objectives will ensure protection of the most sensitive beneficial use (i.e., municipal water supply) of the San Jacinto Upper Pressure Management Zone. The proposed TDS water quality objective is at the recommended secondary drinking water standard (500 mg/L) and the proposed nitrate-nitrogen water quality objective is below the primary drinking water maximum contamination level (10 mg/L).

In order to assure that water quality consistent with the maximum benefit to the people of the state will be maintained despite the lowering of water quality that could occur by the implementation of the “maximum benefit” objectives, EMWD is committed to implement the projects and requirements summarized below. These projects and requirements, also included as part of the proposed amendments to the implementation chapter of the Basin Plan (Chapter 5) that are presented in the Attachment to tentative Resolution No. R8-2010-0039, are described below.

1. Groundwater Monitoring Program

EMWD will conduct groundwater monitoring that will enable the determination of ambient TDS and nitrate-nitrogen concentrations in the management zones affected by the implementation of the Management Plan – the Canyon Management Zone, the Hemet South Management Zone, the Lakeview-Hemet Management Zone and the San Jacinto Upper Pressure Management Zone and adjacent management zones, as well as allow for the evaluation of the water quality effects of implementation of the “maximum benefit” proposal, including the “maximum benefit” nitrate-nitrogen and TDS objectives⁶. Annual reports summarizing monitoring activities will be submitted, and every three years a determination of ambient nitrate-nitrogen and TDS quality in the San Jacinto Upper Pressure Management Zone as well as all the management zones with EMWD’s service area (within the San Jacinto

⁶ EMWD is already a member of the Basin Monitoring Program Task Force, which formed after the N/TDS Task Force had completed its work and the 2004 N/TDS Basin Plan amendments were adopted. The Basin Monitoring Task Force has assumed the responsibility to conduct analyses needed to implement certain Basin Plan requirements, including the triennial determination of ambient groundwater quality and revisions to the TDS and TIN wasteload allocations. Absent action by the Task Force, EMWD will conduct the analyses necessary to determine ambient groundwater quality for all management zones in the San Jacinto watershed and/or recommend revisions of the wasteload allocations, if necessary.

watershed) will be made. Based on these assessments, the demonstration of maximum benefit may be revisited and the need for changes to the TDS and nitrogen management strategy in the area can be identified.

2. Implementation of the Hemet/San Jacinto Water Management Plan (Management Plan)

EMWD commits to the implementation of the Management Plan pursuant to the schedules articulated in the Management Plan.

3. Development and Implementation of a Salinity Management Program.

EMWD will develop and implement a program to minimize the TDS concentration in the source and recycled water. The salinity management program will include TDS reduction strategies to protect beneficial uses when the ambient TDS concentration in the San Jacinto Upper Pressure Management Zone approaches the maximum benefit objective and to meet waste discharge requirements when the TDS concentration in the SJVRWRF effluent approaches 650 mg/L. EMWD will always attempt to serve the lowest TDS supply available for its potable supply.

The Salinity Management Program will include the following elements:

a. Development of a Source Water TDS Reduction Plan

EMWD will develop a TDS Reduction Plan designed 1) to minimize the TDS concentration in source water, 2) to supply water with the lowest reasonable TDS concentration for municipal uses, 3) to reduce the TDS waste increment through use (defined herein as the average TDS increase that occurs through indoor uses, which is numerically equal to the average TDS concentration in recycled water minus the average TDS concentration in the source water supply) and salt added through treatment at recycled water facilities. The waste increment includes salt added by water conditioning and self regenerative water softeners, industrial sources, and other sources. The TDS Reduction Plan may include plans and schedules to enact ordinances, incentive programs to reduce water softener use, and development of requirements that minimize the TDS waste increment.

When the volume-weighted TDS concentration in the San Jacinto Upper Pressure Management Zone equals or exceeds 490 mg/L (i.e., 10 mg/L less than the proposed TDS objective of 500 mg/L), EMWD will develop a plan to reduce the TDS concentration in source water and serve this water to its customers and/or to reduce the TDS concentration in recycled water.

The proposed amendments specify the date for submittal of the proposed TDS Reduction Plan and require the implementation of that Plan upon Regional Board

approval. The Plan must be operational within seven years of Regional Board approval.

b. Desalters (or equivalent technologies)

EMWD will construct a desalter or equivalent technologies when the 5 year running average TDS in EMWD's effluent reaches 640 mg/L. This requirement would also be triggered when the San Jacinto Upper Pressure Management Zone ambient TDS quality equals or exceeds 490 mg/L.

The proposed Basin Plan amendments require the submittal of a plan and schedule for construction of a desalter(s) and any requisite brine disposal facilities, and the implementation of that plan upon Regional Board approval. Facilities are required to be operational within seven years of Regional Board approval.

c. Recycle Water Use/Recharge

Recycled water from the SJVRWRF will be preferentially served unless the demand for recycled water in the San Jacinto Upper Pressure Zone exceeds the supply produced by the SJVRWRF. The recycled water supply will not exceed an annual volume-weighted average TDS concentration of 650 mg/L and TIN of 10 mg/L.

d. Imported Water Use/Recharge

An average of 7,500 acre-feet/year of State Water Project water will be recharged in the San Jacinto Upper Pressure Management Zone over the next fifteen years. Additional State Project water will be recharged to offset the overdraft of the San Jacinto Upper Pressure Management Zone. Water will be preferentially recharged when the TDS concentration is low and water is abundant to reduce stress on Delta resources.

4. Ambient Groundwater Quality Determination and Wasteload Allocation Update

Every three years, EMWD will either contribute financially to regional efforts to estimate the ambient TDS and nitrate concentrations for the management zones in their service area or will prepare these estimates themselves. If the analyses are done by EMWD, the results will be documented in a report submitted to the Regional Board. The methodology employed will be the same as that used by the Basin Monitoring Task Force⁶. These estimates will be prepared every three years, on a timetable directed by the Regional Board.

5. Ambient TDS projection

By July 2014 and every six years thereafter, EMWD shall submit a projection of TDS quality in all of the San Jacinto Basin management zones within their service area. This projection shall be developed using methodology developed by the Imported Water Recharge Task Force⁷ and approved by the Regional Board. The projections will be compared to prior projections and to estimates of the historical ambient TDS concentrations. This analysis must be submitted in a report submitted to the Regional Board.

6. Wasteload Allocation Update

During winter months when the demand for recycled water is reduced, EMWD discharges excess recycled water to the Santa Ana River via Temescal Creek. For these discharges, the Basin Plan specifies a TDS and total inorganic nitrogen wasteload allocation to ensure that the water quality objectives of underlying management zones in the Temescal Valley and the Santa Ana River, Reach 3 and Reach 2 are met. The wasteload allocations distribute a share of the total TDS and nitrogen wasteloads to the River system to each Publicly Owned Treatment Works (POTW) that discharges to the River, either directly or indirectly. The Basin Monitoring Task Force has coordinated periodic review and recommended revisions to the wasteload allocations in order to ensure continued compliance with applicable water quality standards⁶. EMWD will continue to participate financially in regional efforts to review and update the TDS and nitrogen wasteload allocations for the Santa Ana River and its tributaries.

5.0 Evaluation of Water Code Section 13241 Factors

Water Code Section 13241 specifies the following:

Each Regional Board shall establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the quality of the water to be changed to some degree without unreasonably affecting beneficial uses. Factors to be considered by the Regional Board in establishing water quality objectives shall include, but not necessarily be limited to, all of the following:

a) Past, present, and probable future beneficial uses of water.

⁷ The Imported Water Recharge Workgroup was established by water recharging agencies to assure that water quality (TDS and Nitrogen) in groundwater as a result of recharge operations is protected. The Workgroup developed a cooperative agreement to prepare a report at six-year intervals that provides a 20 year projection of ambient water quality in each groundwater management zone.

- b) *Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.*
- c) *Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.*
- d) *Economic considerations.*
- e) *The need for developing housing within the region.*
- f) *The need to develop and use recycled water.*

The following sections discuss the factors as they relate to the proposed “maximum benefit” TDS and nitrate-nitrogen water quality objectives for the San Jacinto Upper Pressure Management Zone.

5.1 Past, Present, and Probable Future Beneficial Uses Of Water

The beneficial uses designated in the current Basin Plan for the San Jacinto Upper Pressure Management Zone are:

Municipal and Domestic Supply (**MUN**) waters used for community, military, municipal, or individual water systems. These uses include, but are not limited to, drinking water supply.

Agricultural Supply (**AGR**) waters used for farming, horticulture, or ranching. These uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.

Industrial Service Supply (**IND**) waters used for industrial activities that do not depend primarily on water quality. These uses include, but are not limited to, mining, cooling water supply, conveyance, gravel washing, fire protection, and oil well repressurization.

Industrial Process Supply (**PROC**) waters are used for industrial activities that depend primarily on water quality. These uses include, but are not limited to, process water supply and all uses of water related to product manufacturing and food preparation.

The MUN use is the most sensitive use of these waters; use impairment threshold concentrations for TDS and nitrate-nitrogen for MUN beneficial use as listed in the current Basin Plan are shown in Table 5.

Table 5. Use Protection Thresholds for Total Dissolved Solids and Nitrate-Nitrogen¹

Beneficial Use	TDS Threshold (mg/L)	NO₃- N Threshold (mg/L)
MUN	500	10

¹ Source: Water Quality Control Plan for the Santa Ana Basin, Chapter 4, 1995

The proposed TDS water quality objective of 500 mg/L and the proposed nitrate-nitrogen objective of 7 mg/L are both protective of the most sensitive beneficial use (MUN) and therefore protective of the all San Jacinto Upper Pressure Management Zone beneficial uses.

5.2 Environmental Characteristics of the Hydrographic Unit Under Consideration

As discussed in Section 3, approval of the proposed TDS and nitrate-nitrogen “maximum benefit” objectives in the San Jacinto Upper Pressure Management Zone would allow implementation of the Hemet/San Jacinto Water Management Plan (Management Plan). The Plan was developed specifically to take into account the environmental/hydrological characteristics of the hydrographic unit, including the nature of the aquifers, patterns of recharge, groundwater pumping and replenishment, and interrelationships of the groundwater management zones. The Plan is intended to ensure the quantity and reliability of local water supplies and reduce demand for imported water, particularly during critical low flow periods.

5.3 Water Quality Conditions that Could Reasonably be Achieved

EMWD conducted modeling analyses to evaluate the water quality conditions that could reasonably be achieved in the San Jacinto Upper Pressure Management Zone and other management zones under various scenarios of imported water recharge, recharge and use of recycled water, treatment and use of imported water and changes in groundwater pumping patterns. A Management Plan was developed to integrate these considerations and optimize the quality and reliability of water supplies in the area while protecting beneficial uses into the future. Adoption of the proposed “maximum benefit” objectives would accommodate implementation of this Management Plan.

5.4 Economic Considerations

As shown in Table 2, currently the San Jacinto Upper Pressure Management Zone lacks assimilative capacity for both TDS and nitrate-nitrogen. As a result, any addition of TDS and nitrate-nitrogen at concentrations above the Basin Plan water quality objectives would require treatment, mitigation and/or offsets. The treatment/mitigation/

offset requirement would apply to the recharge and direct reuse of recycled water and, potentially, to the recharge of imported water. From the discussion in Section 3, it is clear that the TDS concentration in the San Jacinto Upper Pressure Management Zone will increase regardless of the TDS objective, with or without recycled water use.

For EMWD to comply with the current “antidegradation” TDS and nitrate-nitrogen water quality objectives for the use of recycled water in the San Jacinto Upper Pressure Management Zone, the recycled water would require additional treatment or desalinization. EMWD has prepared a life cycle cost estimate for the desalination of recycled water to meet the current water quality objectives prior to reuse and/or storage. The infrastructure that provides recycled water to the San Jacinto Upper Pressure Management Zone is comprised of two main lines and each of these main lines would require their own desalter. A regional desalter is not feasible since it would require an additional infrastructure system (e.g. piping and well fields). A thirty-year life cycle cost to construct two desalters, associated piping and brine disposal as well as the operational and maintenance costs (for thirty years) is estimated to be \$921,000,000.

Water reuse in the area overlying the San Jacinto Upper Pressure Management Zone currently consists of primarily agricultural uses; there is the potential to convert the agricultural uses to urban uses (landscape irrigation) as population growth occurs. Reduction in TDS concentration is not a significant benefit for this type of use and may result in higher recycled water rates to cover the treatment costs. Further, desalting and the costs associated with desalting are not consistent with Hemet/San Jacinto Groundwater Management Plan (Management Plan). The proposed “maximum benefit” program, in conjunction with the Management Plan, includes plans to treat potable water supplies pumped from the San Jacinto Upper Pressure Management Zone. This is a more reasonable approach with direct benefit to the potable water customers in the area.

It can be concluded that groundwater treatment for potable use is the best solution to manage the future TDS and nitrate-nitrogen degradation of groundwater in the San Jacinto Upper Pressure Management Zone. The TDS and nitrate-nitrogen concentrations in groundwater basins are asymptotically approaching these return flow concentrations in these basins. The model demonstrates that regardless of the recycled water reuse in the San Jacinto Upper Pressure Management Zone, degradation beyond the water quality objective will occur and therefore, at some point desalting of the groundwater would be necessary.

Adopting the proposed “maximum benefit” TDS and nitrate-nitrogen objectives will lower the cost of implementing the Management Plan, maximize the reasonable and beneficial use of all waters available in this area, and optimize SWP supplies at time when those supplies are plentiful, which provides state wide economic and environmental benefits. It should be emphasized that implementation of the “maximum benefit” program, as well as following the Management Plan, commits EMWD and others to spend approximately \$626,000,000 over the next 30 years to remove salt and

thereby improve water quality and the reliability of groundwater in the San Jacinto Upper Pressure Management Zone.

5.5 The Need for Housing Within The Region

Riverside County and the cities in the EMWD service area, and in particular the area overlying the San Jacinto Upper Pressure Management Zone, have determined a need for housing and have adopted general and specific plans that show substantial increases in housing in the Management Area as the land is converted from vacant and agricultural uses to urban uses. All of these plans have been approved and have certified environmental documents. The demand for water supply will increase as the population housed increases. Implementation of the Management Plan, which would be accommodated by the adoption of the proposed “maximum benefit” objectives, is intended to address the reliability, and quality, of water supplies in the area needed to meet increases in demand.

5.6 The Need to Develop and Use Recycled Water

As a result of the expected increase in housing demands, the water supply entities in the Management Area have responded to the water supply challenge by developing the Management Plan. The Management Plan relies heavily on recycled water to displace certain potable water uses, decrease groundwater pumping and overdraft conditions, and enhance the reliability of water supplies. The Management Plan addresses current and future demands through the development of large-scale recharge, recycled water in-lieu projects and regional conveyance facilities. The Recycled Water In-Lieu Project will offset the use of 8,540 AFY of native groundwater in the San Jacinto Upper Pressure Management Zone, reducing the overdraft up to 85 percent. Adoption and implementation of the “maximum benefit” objectives is necessary to allow implementation of the Management Plan to proceed.

6.0 Proposed Monitoring and Reporting Program

Section 13242 of the California Water Code specifies that Basin Plan implementation plans must contain a description of the monitoring and surveillance programs to be undertaken to determine compliance with water quality objectives. As part of this proposed “maximum benefit” revision to the TDS and nitrate-nitrogen water quality objectives for the San Jacinto Upper Pressure Management Zone, staff proposes changes to the Basin Plan to require the implementation of a specific groundwater monitoring program in the San Jacinto Upper Pressure Management Zone (and adjacent management zones).

In addition to the Water Code requirement, the need to develop and implement a monitoring program specific to the San Jacinto Upper Pressure Management Zone is consistent with the approach for salt management developed by the TIN/TDS Task Force; future decisions regarding TDS and nitrogen management would not be based

solely on model projections, but key future findings regarding assimilative capacity, compliance with TDS and nitrogen water quality objectives, the efficacy of the wasteload allocations, evaluation of recycled water project impacts, etc., would be based on real-time data obtained through a rigorous monitoring program.

The proposed amendment to the Basin Plan includes the requirement that EMWD propose a groundwater monitoring program that would allow evaluation of the effects of the implementation of the “maximum benefit” objectives on the affected management zone and downgradient management zones. This “maximum benefit” proposal supports the water use activities discussed in the Hemet/San Jacinto Water Management Plan (Management Plan). This Management Plan addresses use of the groundwater for potable water services and use of recycled water for agricultural purposes. Comprehensive monitoring and reporting programs are associated with both of these uses. EMWD manages these programs and periodically reports the results to several regulatory agencies for the State as well as US EPA. These monitoring and reporting programs will continue and the data will be analyzed and used to evaluate the water quality in the San Jacinto Upper Pressure Management Zone and downgradient management zones. These monitoring programs are described below.

6.1 Groundwater Monitoring Program

The Hemet/San Jacinto Groundwater Monitoring program entails collection, compilation and analysis of groundwater-related data. The program is a cooperative effort funded by EMWD, Lake Hemet Municipal Water District, and the cities of Hemet and San Jacinto. It provides the information necessary for a comprehensive view of the Management Plan area and contains the following elements: water level monitoring; water quality monitoring; groundwater extraction monitoring; and, inactive well capping/sealing.

To support the “maximum benefit” proposal, continued implementation of the water quality monitoring aspect of this program is essential. EMWD collects samples from available private, inactive and agricultural wells, in addition to wells owned by EMWD. The Lake Hemet Municipal Water District and the cities of Hemet and San Jacinto also collect samples from their drinking water wells and forward the results to EMWD for compilation and analysis. In 2008, 144 wells were sampled in the San Jacinto basin; 73 of the 144 wells were located in the San Jacinto Upper Pressure Management Zone. All samples are analyzed for TDS, nitrate-nitrogen and other constituents.

The data that are collected pursuant to these monitoring programs support the Management Plan and will gauge the timing for desalinization activities described in the proposed EMWD Salinity Management Program for the San Jacinto Upper Pressure Management Zone (see Section 4.0, #3). In addition, these data are used in the determination of the San Jacinto Upper Pressure Management Zone current ambient water quality. This effort is managed by the Basin Monitoring Program Task Force (see Section 4.0). EMWD is committed to continue to participate in this task force in order to

manage the water quality in the San Jacinto Upper Pressure Management Zone and the other entire San Jacinto basin.

6.2 Recycled Water Monitoring and Reporting Program

EMWD owns and operates four regional water reclamation facilities (RWRFs). EMWD is authorized to discharge from these four RWRFs in the San Jacinto River Basin pursuant to the Regional Board Order No. R8-2008-0008. Order No. R8-2008-0008 specifies a comprehensive monitoring and reporting program for the recycled water generated at EMWD's RWRFs that is discharged in the San Jacinto River Watershed, including the San Jacinto Upper Pressure Management Zone. This monitoring and reporting program is described in detail in Attachment E of Order No. R8-2008-0008. In summary, the monitoring and reporting program requires frequent and routine sampling of the recycled water generated at the RWRFs. The frequency of sampling varies by compound analyzed – from daily, weekly, monthly, quarterly to annually. The compounds of concern relative to this maximum benefit proposal are TDS and nitrate-nitrogen. TDS and total inorganic nitrogen are sampled at least monthly. These samples are collected from the discharge point for each RWRFs.

7.0 California Environmental Quality Act

The Regional Board is the Lead Agency responsible for evaluating the potential environmental impacts of the proposed amendment to the Water Quality Control Plan for the Santa Ana River Basin Region (Basin Plan) incorporating the “maximum benefit” TDS and nitrate-nitrogen objectives for the San Jacinto Upper Pressure Management Zone and an implementation plan.

For any Basin Plan amendment, the Regional Board must comply with the provisions of the California Environmental Quality Act (CEQA). The Secretary for Resources has certified that the State and Regional Water Boards' Basin Planning process is exempt from the CEQA requirement to prepare an initial study, negative declaration, and environmental impact report (California Code of Regulations., Title 14, § 15250 and 15251(g)). In lieu of preparing these documents, the Regional Water Board must comply with the State Water Board's regulations⁸ applicable to exempt regulatory programs when amending basin plans and must also perform an environmental analysis of the reasonably foreseeable methods of compliance when it approves the Basin Plan amendments in satisfaction of Public Resources Code Section 21159. To comply with these requirements, a Substitute Environmental Document (SED) has been prepared by EMWD, with Regional Board staff guidance (Attachment B; “Substitute Environmental Document for the Basin Plan Amendment for the San Jacinto Upper Pressure Groundwater Management Zone amending the Total Dissolved Solids and Total Inorganic Nitrogen Objectives”, November 2009).

⁸ California Code of Regulations, Title 23, Sec. 3775-3782 (Note: the State Water Resources Control Board is currently in the process of revising these regulations.)

Section 3777(a) of the State Water Board's regulations requires a written report that includes a description of the proposed activity, an analysis of reasonable alternatives to the proposed activity, and identification of mitigation measures to minimize any significant adverse environmental impacts. Section 3777(a) also requires the Regional Water Board to complete an environmental checklist as part of its substitute environmental document. This checklist is provided in Attachment B.

On August 10, 2009, the Regional Board held a scoping meeting at EMWD to solicit public comment on this proposed action. Comments were received from the Western Riverside County Agricultural Coalition (WRCAC) and the Bureau of Indian Affairs. The comments received, included in Attachment B, were taken into consideration in the preparation of the proposed Basin Plan amendment and SED.

The SED concludes that implementation of the proposed Basin Plan amendment would not result in any significant or potentially significant impacts to the environment. While reasonable alternatives to the proposed amendment are described below, per the State Water Board's regulations, no alternatives to the Basin Plan amendment are recommended because they are not necessary to avoid or reduce any significant or potentially significant impacts.

A supplement to this staff report will be prepared that includes comments received on the proposed amendment and/or the SED, staff responses to those comments, and a discussion of any changes made to the proposed amendment as the result of the comments or future deliberation by the Board and/or Board staff. This supplemental report will address any additional CEQA considerations, including economics, which might arise as the result of changes to the proposed amendment.

7.1 Alternative Analysis

1. No Project Alternative

Under the "No Project" Alternative, no action would be taken to amend the Basin Plan to incorporate the "maximum benefit" objectives for the San Jacinto Upper Pressure Management Zone.

This is not a preferred alternative since it would render infeasible proposals to provide maximum benefit to the people of the state by optimizing recycled water reuse and thereby improving water quantity and water quality in the San Jacinto Upper Pressure Management Zone. Further, this alternative is not consistent with the legislature's intent to promote recycled water use and thereby reduce demands on potable supplies. These strategies are particularly necessary in this Management Zone where implementation of programs to meet the existing ("antidegradation") TDS and nitrate-nitrogen water quality objectives would likely preclude efficient and wise use of water and wastewater, and necessitate

treatment expenditures that would not serve public or environmental interests and are thus considered unreasonable.

2. Other Alternatives

In developing the Hemet/San Jacinto Water Management Plan and the proposed Basin Plan amendment, a variety of water and wastewater management scenarios was evaluated (see Section 3.0 for a description of the main alternatives considered). The TDS and nitrogen water quality objectives needed to be able to implement these scenarios were also considered. The proposed Basin Plan amendment, including the “maximum benefit” objectives and the Salt Management Plan for this Management Zone and Maximum Benefit Commitments by EMWD, incorporates and would enable implementation of the water resource management plan deemed most effective and feasible to implement. Other alternatives evaluated are less effective and/or are less reliable given their dependence on imported water.

3. Recommended Alternative

As shown in the proposed Basin Plan amendment (Attachment to tentative Resolution No. R8-2010-0039) and discussed in this staff report, the TDS and nitrate-nitrogen “maximum benefit” water quality objectives for the San Jacinto Upper Pressure Management Zone and the proposed Salt Management Plan for this Management Zone, including “Maximum Benefit” Commitments by EMWD, are the recommended alternative. The intent of the “maximum benefit” proposal is to optimize wastewater management and water supply strategies in the public interest. The recommended Basin Plan amendment includes safeguards should the “maximum benefit” proposal not be implemented or not prove feasible. Specifically, the established Basin Plan (antidegradation) TDS and nitrate-nitrogen objectives would apply in the event that the Regional Board finds that maximum benefit has not been demonstrated. The Regional Board will require mitigation for TDS and nitrogen objectives in excess of the antidegradation objectives, if maximum benefit is not demonstrated.

8.0 Regulatory Implementation of the “Maximum Benefit” Objectives

Implementation of the “maximum benefit” objectives in the San Jacinto Upper Pressure Management Zone would assure the protection of beneficial uses. Further, provided that the commitments identified above (4.0 Antidegradation; “Maximum Benefit” Commitments) are met, water quality that is consistent with maximum benefit to the people of the state will be maintained. The “maximum benefit” objectives would promote water recycling and reuse, which the California legislature has declared is a primary interest of the people of California (California Water Code (CWC) Sections 13510-13512). Implementation of the proposal would also increase the quantity and

reliability of local water supplies and reduce demand for imported water, particularly during critical low flow periods.

However, if EMWD fails to fulfill these commitments, this maximum benefit finding would be inappropriate and the current Basin Plan “antidegradation” objectives would be applied to San Jacinto Upper Pressure Management Zone. Therefore, the proposed Basin Plan amendments shown in the Attachment to Resolution No. R8-2010-0039 incorporate both scenarios. That is, the current Basin Plan “antidegradation” objectives will remain in the Basin Plan and the “maximum benefit” objectives are proposed to be added to the Basin Plan, with explicit language that governs their application (see Attachment to Resolution No. R8-2010-0039, Chapter 4, “Maximum Benefit Objectives”). The “maximum benefit” objectives apply only provided that there is timely implementation of the EMWD commitments that are described above and in the proposed amendments to Chapter 5, Implementation, of the Basin Plan (see Attachment to Resolution No. R8-2010-0039, “VI. Maximum Benefit Implementation Plans for Salt Management, D. Salt Management – San Jacinto Upper Pressure Management Zone (Eastern Municipal Water District)”.) If the Regional Board finds that “maximum benefit” is not being demonstrated, then the “antidegradation” objectives would apply and the Regional Board would require mitigation of the surface and groundwater effects of any discharges of recycled and imported water that took place in excess of those objectives. This mitigation requirement is explicitly identified in the proposed amendments to Chapter 5, “VI. Maximum Benefit Implementation Plans for Salt Management, D. Salt Management – San Jacinto Upper Pressure Management Zone (Eastern Municipal Water District)”.

9.0 Staff Recommendation

Board staff recommends the adoption of Resolution No. R8-2010-0039, adopting the amendment to the Water Quality Control Plan (Basin Plan) shown in the attachment to the Resolution to amend Chapter 4 of the Basin Plan (Water Quality Objectives) and Chapter 5 of the Basin Plan (Implementation Plan – Salt Management Plan) to incorporate the “Maximum Benefit Objectives” for the San Jacinto Upper Pressure Management Zone and an associated implementation plan, including “maximum benefit” commitments.

Attachments:

- Attachment A Tentative Resolution No. R8-2010-0039, including the proposed Basin Plan Amendment
- Attachment B California Environmental Quality Act (CEQA) Substitute Environmental Document
 - B.1 CEQA Scoping Comments Received and Response to Comments

10.0 References

1. California State Water Resources Control Board, "Policy with Respect to Maintaining High Quality Waters, Resolution No. 68-16," October 1968.
2. California Regional Water Quality Control Board, Santa Ana Region, "Staff Report Proposed Basin Plan Amendments Related to Nitrogen and Total Dissolved Solids Management in the Santa Ana Region, Section 4.0", January, 2004
3. California Regional Water Quality Control Board, Santa Ana Region, "Resolution No. R8-2004-0001, Resolution Amending the Water Quality Control Plan for the Santa Ana River Basin to Incorporate an Updated Total Dissolved Solids (TDS) and Nitrogen Management Plan for the Santa Ana Region Including Revised Groundwater Subbasin Boundaries, Revised TDS and Nitrate-Nitrogen Quality Objectives for Groundwater, Revised TDS and Nitrogen Wasteload Allocations, and Revised Reach Designations, TDS and Nitrogen Objectives and Beneficial Uses for Specific Surface Waters, Attachment to Resolution", Pages 15-20, January, 2004
4. California Regional Water Quality Control Board, Santa Ana Region, "Water Quality Control Plan for the Santa Ana River Basin (Basin Plan):, Chapter 4, pages XXX, 2004
5. California Regional Water Quality Control Board, Santa Ana Region, "Order No. R8-2008-0008, Waste Discharge and Producer/User Reclamation Requirements for Eastern Municipal Water District Regional Water Reclamation Facilities Discharge to Groundwater Management Zones Within San Jacinto River Basin, Attachment E – Monitoring And Reporting Program (MRP)", September 5, 2008
6. Eastern Municipal Water District, "Hemet/San Jacinto Water Management Plan", November 7, 2007
7. Eastern Municipal Water District, Letter to Gerard Thibeault, "Eastern Municipal Water District Proposal for New Total Dissolved Solids (TDS) and Total Inorganic Nitrogen (TIN) Water Quality Objectives for the San Jacinto Upper Pressure Management Zone Based on Maximum Beneficial Use," July 3, 2007
8. TechLink Environmental, Inc., "Regional Groundwater Model for the San Jacinto Watershed", December, 2002
9. Daniel P. Stephens and Associates, Inc., "Quantification of Nitrogen Removal Under Recycled Water Ponds", May 2007

Attachment A

**Resolution No. R8-2010-0039
with attached Basin Plan Amendment**

Attachment B

Supplemental Environmental Document