Appendix A

Comments and Responses to Comments

Agency Providing Comment	Appendix Number
Santa Margarita Water District	A.1
San Juan Hills Golf Course – The Burnett Firm	A.2
Moulton Niguel Water District	A.3
City of San Juan Capistrano	A.4
Municipal Water District of Orange County	A.5
South Coast Water District	A.6
Capistrano Taxpayers Association	A.7
Rancho Mission Viejo	A.8

A.1 SANTA MARGARITA WATER DISTRICT

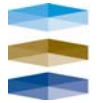
Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
1 As provided	Section 3.5, page 3-17 second paragraph	*The text says: "The projected SOCOD project construction cost is estimated at about &175 million (estimated 2015 dollars), and the unit cost of water would be about $1,300/acre-ft – with the cost being reduced to $1,050/acre-ft with incentives from Metropolitan."* This is way too low.	Text has been updated to read as follows: "*The projected SOCOD project construction cost is estimated at about $182 million to $241 Million (estimated 2012 dollars, without and with Fe/Mn treatment, respectively), and the unit cost of water could range from about $1,500 to $1,700 per acre-ft*[1] *without incentives from Metropolitan*."
2 As provided	Section 3.5.2, page 3-21 first paragraph	The text says: *"The end of period storage ranges from 7500 acre-ft to 43,900 acre-ft…"* How? Basin is 26K	The difference is explained by (1) the difference in the aquifer area described in Section 3.3.9 and the area used by MWDOC's consultant in their groundwater model which is larger, and (2) the elevation control on the WEI estimate in Section 3.3.9 is the channel bottom whereas there is no such control in the groundwater model.
3 As provided	Section 3.5.2, page 3-21 fourth paragraph	The text says: *"The take-aways from this baseline simulation is that planned production be the CSJC and SMWD along with private producers seems to exceed the production capabilities…"* SCWD?	Thank you. The text was changed to replace SMWD with SCWD.

[1] MWDOC planning documents in early 2013 suggests that the unit cost could range between $1,800 and $2,000 per acre-ft in 2019 when the SOCOD project could become operational.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
4 As provided	Section 3.9.3.2, page 3-46 second paragraph	The text says: *"The San Juan Creek Outfall has a design capacity of 107 mgd."* Update design capacity.	Thank you. The text has been updated to read as follows: "*The San Juan Creek Outfall has a design capacity of 36.8 mgd.*"
5 As provided	Section 3.10.1, page 3-46 last paragraph	The text says: *"Six of the seven wastewater treatment plants have advanced water treatment facilities that are capable of producing Title 22 water for irrigation."* Tertiary?	Text has been updated to read as follows: "*Six of the seven wastewater treatment plants have advanced water treatment (AWT) facilities that are capable of producing tertiary Title 22 effluent suitable for irrigation.*"
6 As provided	Section 4.0, page 4-1 second paragraph	The text says: *"The SJBA agencies currently (2010) have a combined service area population of…"* Couldn't this be updated? This is 3 years old.	It could be. 2010 was "current" when the investigation was commenced. The investigation to develop the plan has taken much longer than intended due to challenges beyond WEI's control.
7 As provided	Section 4.0, page 4-1 last paragraph	The text says: *"Imported water has been the primary source of potable water for the past five years."* Longer than that.	The sentence has been deleted.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
8 As provided	Section 4.0, page 4-2 third paragraph	The text says: *"Potable demand is met almost entirely through the purchase of imported water from the MWDOC, with only minimal amount of San Juan Basin groundwater produced each year…"* Where is this?	Source is the SMWD 2010 UWMP prepared jointly by SMWD and MWDOC. This was the source document provided to WEI for developing the supply plan.
9 As provided	Section 4.0, page 4-2 third paragraph	The text says: *"… the diversion of urban runoff flows in … Canada Gobernadora…"* Not yet.	Text has been updated to read as follows: "*Currently, non-potable demands are met through the use of recycled water , the diversion of urban run-off from Horno Creek, Oso Creek, and the Arroyo Trabuco, and in the near future, surface water diversions from the Canada Gobernadora. SMWD recycled water use will reach about 5,200 acre-ft/yr by 2015 and will increase to about 10,100 acre-ft/yr by 2030. SMWD will divert about 2,300 acre-ft/yr of surface water in 2015 and this will increase to about 2,700 acre-ft/yr by 2020.*"
10 As provided	Section 4.0, page 4-2 third paragraph	The text says: *"Total water demand is projected to increase to about 46,400 acre-ft…*" Higher than I remember.	Source is the SMWD 2010 UWMP prepared jointly by SMWD and MWDOC. This was the source document provided to WEI for developing the supply plan.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
11 As provided	Section 4.0, page 4-2 last paragraph	The text says: *"Since the startup of the SCWD Groundwater Recovery Facility, which now produces about 1,000 acre-ft/yr…"* This doesn't add up.	Thank you. Text has been updated to read as follows: "*Historically, imported water was the only source of potable water for the SCWD, but the demand for imported water has decreased in the last three years since the startup of the SCWD Groundwater Recovery Facility. Planned potable water production from the SCWD Groundwater Recovery Facility will reach about 1,300 acre-ft/yr by 2015 and 2,000 acre-ft/yr by 2020*."
12 As provided	Section 4.0, page 4-2 last	The text says: *"The total water demand is projected to increase to about 8,700 acre-ft by 2035…"* Why a 1,800 acre-ft increase for 2,900 people?	Source is 2010 UWMP prepared jointly by SCWD and MWDOC. This was the source document provided to WEI for developing the supply plan.
13 As provided	Table 4-2	The values for Chiquita Water Reclamation Plant 2015 and 2020 projections – This is different I think.	This was the information provided to WEI and Carollo when the data was being collected in 2011.
14 As provided	Table 4-2	*The row "Total Recycled Water" –* Not Recycled, this is wastewater.	Table has been modified replacing row titled "Total Recycled Water" with Total Wastewater"
15 As provided	Table 5-1	This table doesn't make much sense for where the bullets show up.	This table was prepared by the SJBA members themselves and has been reviewed by them at least three times prior to publishing them in the draft report.



Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
16 As provided	Table 5-2	Add bullets to items 1,2,3,5 and 6 for SMWD.	Table has been updated.
17 As provided	Table 5-4	Add bullet to item 17 for SMWD.	Table has been updated.
18 As provided	Table 5-8	What does grey highlight indicate?	The grey was included to help group content.
19 As provided	Table 5-8 Page 3 of 3	The text says: *"Goal 4 implications – SJBGWMFP is included in the MWDOC IWRMP"* MWDOC or County?	County. Table has been revised.
20 As provided	Section 6, page 6-1, second paragraph	The text says: *"The first set of alternatives…"* What numbers are the first set and which are the second?	Text has been updated to read as follows: "*The first six alternatives assume that the SOCOD project will either not be implemented or will be deferred by ten or more years. Alternatives 7 through 10 assume that the SOCOD project will be implemented within the next ten years.*"

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
21 As provided	Section 6, page 6-1, last paragraph	The text says: *"About 71 percent of the time, the yield will be less than 11,000 acre-ft/yr, and about 14 percent of the time…"* What about the other 15%?	The text in Section 3.5.2 and figures 3-25 and 3-26 were modified to more clearly characterize production limitations and their relationship to storage. This text was carried over to commented text. See text and figures for changes.
22 As provided	Section 6.1.1.5.2, page 6-7, first paragraph	The text says: *"In-stream recharge is the only viable large-scale recharge method for the San Juan Basin due to the lack of suitable off-stream sites for recharge and the inability of the basin to accept large amounts of recharge at a specific site."* Not sure I agree with this.	The text in this part of the document contains slight revisions to state that surface water storage is also a limiting factor for stormwater recharge.
23 As provided	Section 6.1.1.6, page 6-8	The text says: *"The yield of the Basin would be increased from about 9,200 acre-ft/yr to about 21,400 acre-ft/yr—an increase of about 12,000 acre-ft/yr."* Should be 16,000 for total project	As the Report is written it's about 12,000 acre-ft/yr. See Table 7-2.

A.2 SAN JUAN HILLS GOLF CLUB - THE BURNETT FIRM [2]

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
1 Para-phrased	Section 3.4	The Draft Plan understates the volume and nature of San Juan Golf's water rights. The San Juan Golf retains a 550 acre foot per year riparian water right.	Thank you. The text was updated to reflect the potential use of up to 550 AFY assuming compliance with pertinent agreements and San Juan Golf's SWRCB Permit.
2 Para-phrased	Section 3.4, Pages 3-14 to 3-16	The Draft Plan overstates the City of San Juan Capistrano's water rights. The City of San Juan does not have their own water rights but shares water rights with SJBA (3,325 acre-ft). It is imperative that the final quantification of water rights reflect the sharing of facilities and the original water rights held by participating agencies.	Under the settlement agreements associated with the SJBA's water rights permit, the Authority and the State Water Resources Control Board recognized the City has the right to secure its own water rights outside the water rights of the Authority in an amount up to 3,325 acre-ft of additional appropriative use.

[2] Paraphrased comments can be viewed as submitted within this appendix following the Appendix A tables.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
3 Para-phrased		The Draft Plan does not account for all of the extractions in the Basin. The plan does not include riparian rights holders such as Rancho Mission Viejo.	The active management boundary of the SJBGFM excludes the RMV. The Rancho Mission Viejo production occurs in the same watershed, but in different basin per se (in the upper basin). The production activities of the RMV impact the amount of inflow into the San Juan Basin, but the activities in the SJBA management area do not impact the RMV. Production by the RMV has been accounted for through the modeling of inflow to the lower basin and assumes that RMVs production will not significantly change relative to their current operations.
4 Para-phrased		In an effort to understand land subsidence it is requested to include past and present land surface elevations be included in the plan.	Given the geology of the basin, subsidence is not a concern for the management of this basin and thus no groundwater level monitoring will be required to monitor for it.
5 Para-phrased	Section 3.6.1, pages 3-21 to 3-22	The Draft Plan relies on a “firm yield” figure that is not the industry standard for determining the availability of supplies in a groundwater basin. The Draft Plan disavows safe yield as an appropriate measure for the Basin and instead uses “firm yield”. The risk of relying on this figure rather than traditional notions of safe yield is that it could result in overdraft conditions when expected recharge does not occur. Use of “firm yield” therefore calls into question the “sustainable” nature of the Draft Plan and its compliance with AB3030 requirements.	We respectfully disagree. From a regulatory perspective the San Juan Basin is considered surface water. Firm yield refers to yield of a surface water system regulated by storage. Safe yield, as used in groundwater adjudications, is not an appropriate management tool for the San Juan Basin as it would result in large losses of groundwater to the ocean.

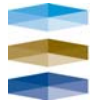
Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
6 Para-phrased	Section 3.6.2, pages 3-22 to 3-23	The Basin is over-subscribed. The Draft Plan and model demonstrate that there is not enough water on a year to year basis in the Basin to support all the existing and proposed uses described in the Draft Plan. The lower than estimated firm yield is corroborated by major drawdown of water levels in the Basin which appears to coincide with increased production at the Groundwater Recovery Facility. The SJBA needs to consider a change in operations that potentially include reducing the volume of water taken by the facility, including water taken by the City of San Juan Capistrano.	The intent of the SJBGFMP is to maximize the beneficial use of the basin and to protect those that depend on the basin for water supply. One of the key features of the plan is an adaptive management element that would limit production by the CSJC, SJBA and SCWD based on groundwater in storage and consistent with the requirements of the SJBA and SCWD permits (e.g limit production or change production operations in years when the storage volume is low).
7 Para-phrased		The Basin Authority and the City need to consider changing operations at the City's Groundwater Recovery Facility to prevent impacts to other pumpers.	See response to your comment 6 above.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
8 Para-phrased		Adopting the Draft Plan is a discretionary action requiring compliance with the California Environmental Quality Act. The impacts caused by the management practices and alternatives will need to be studied in an associate environmental document produced to support the draft Plan in compliance with CEQA.	Based on our review of the draft SJBA Groundwater Management Plan (the "Plan"), we think the Authority's adoption of this Plan is statutorily exempt from CEQA under State CEQA Guidelines, section 15262. Specifically, State CEQA Guidelines Section 15262 exempts from the EIR/negative declaration requirements a "project involving only feasibility or planning studies for possible future actions which the agency . . . has not approved, adopted or funded". The agency has considered environmental factors when approving the planning/feasibility study. Also, the planning/feasibility study does not have a legally binding effect on later activities. Additional work is required for development of any projects to a level that CEQA can be prepared.

A.3 MOULTON NIGUEL WATER DISTRICT

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
1 As provided	Section 3.5.2, page 3-21	Last paragraph, first sentence (Page 3-21) - Change reference of SMWD to SCWD	Thank you. The text has been modified.
2 As provided	Section 3.6.2, page 3-22	Page 3-22- last paragraph, first sentence - Change 'form' to 'from'	Thank you. The text has been modified.
3 As provided	Section 3.7.3	The last paragraph in Section 3.7.3 is confusing	Thank you. The text has been modified.
4 As provided	Section 3.10.4	Is this section missing?	Thank you. The text has been modified.
5 As provided	Section 6.1.1.6	This section identifies recycled water recharge from May through September. Is the additional yield based on available recycled water production to meet those recharge values or will that require additional storage to maximize the recycled water production from the plants?	Based on existing and planned recycled water available during that period.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
6 As provided	General	The wastewater treatment plant capacity is good information, but it should be supplemented with the annual average inflow to the plant. Excluding those numbers may overstate the availability of recycled water. Also, I assume the numbers were confirmed by SOCWA. With the information provided in Section 4, maybe change 'will be generated' to 'could be generated'.	Table 4-2 represents the projected volume of wastewater that will be generated during the planning period (not the treatment plant capacity). These data were provided by MWDOC, as directed by the Authority. Table 4-2 was modified to compare the future recycled water demands with the capacity for producing Title 22 recycled water to ensure that the availability of recycled water is not overstated relative to the existing capacity to produce Title 22 recycled water.
7 As provided	General	Does the publication of the groundwater modeling report change or lend more significant information to this report where the modeling results are left uncertain or undefined?	As we understand this question, the recently developed groundwater model could be used to analyze some of the program elements in the SJBGFMP. This effort should be deferred until the model has been peer reviewed. There are certain model features that need to be tested and potentially updated (e.g. subsurface boundary inflow) prior to using the new model to evaluate the SJBGFMP.



A.4 CITY OF SAN JUAN CAPISTRANO

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
1 As provided	Section 6.1.1	Add somewhere in article 6.1.1 preferably 6.1.1.1 to have an aggressive arundo removal program since arundo absorbs a tremendous amount of water that otherwise would replenish the basin.	Thank you. The text has been modified.
2 As provided		Add as a plan to study and then implement a plan for retention of water in the Oso/Creek/Trabuco Creek area of the basin.	Thank you. The text has been modified. See the new section 6.2.
3 As provided		Additional monitoring along Oso and Trabuco Creeks to determine more accurately the amount of water from run-off occurring all year round.	It is anticipated that surface discharge and water quality data at the boundaries of the basin will be available from the monitoring conducted for the SOCWA SNMP. A footnote has been added to Section 8.2.1.2 to indicate this.
4 As provided	Section 3.5, page 3-17	Article 3.5 on Page 3-17 states that the use of slant wells to extract sea water greatly reduces the cost of pre-filtration. I have not seen a comparison cost ad I believe that assumes that the manganese and iron levels will levels will eventually be reduced. I have seen no proof of that occurring.	Comment noted. The statement in the report is based on information provided by MWDOC.
5	Section 3.5, page 3-17	Article 3.5 on Page 3-17 states that SOCOD could be operating by 2016. That is not realistic.	Thank you. The text has been modified replacing 2016 with 2019.

A.5 MUNICIPAL WATER DISTRICT OF ORANGE COUNTY[3]

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
1 Para-phrased		The yield was determined through the use of a watershed model that calculated daily streamflow and recharge based on a production well water level constraints that ceased production when the pumping water levels fell below 2-feet above the top of the screen, this constraint should be noted in the GWM&F Plan.	Thank you the report has been revised.

[3] Paraphrased comments can be viewed as submitted within this appendix following the Appendix A tables.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
2 Para-phrased		The model runs constrain production only on pumping water levels and not on seawater intrusion, The yield generated by the model includes the 300-400 afy of seawater intrusion. Basin production should be reduced by 300 to 400 afy to maintain a net positive outflow to the ocean to prevent seawater intrusion.	Current groundwater production is below the target production that was analyzed with the new MWDOC model. It is also presumptuous to assume, based on the MWDOC model that seawater intrusion is occurring at the rate predicted by the model. The model is approximate and based on a short calibration period. At this point in time the model results are “suggestive” and not “deterministic”. Monitoring is required to make a finding of seawater intrusion. The SJBA is conducting groundwater monitoring to detect seawater intrusion and will coordinate and manage future production to ensure it doesn’t occur, consistent with the SJBA and SCWD permits.
3 Para-phrased		The GWM&F Plan should note the yield for both dry and average periods.	The characterization of “dry” and “average” periods as discussed with the MWDOC model are arbitrary and not actionable in the management of the basin. The adaptive management plan coupled with monitoring provides SJBA the tools needed to manage production and control seawater intrusion.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
4 Para-phrased		Ranney Wells were estimated to increase the basin yield by 800 afy. We are not sure how that estimate was derived. We believe it could be from mining storage.	The Ranney wells were evaluated as a tool to enable groundwater production at storage levels enabling the generation of yield from water that would otherwise remain in storage during low storage periods. This storage would be refilled during wet years.
5 Para-phrased		The Doheny Desal Project will need to mitigate its impact on the basin in one of three ways: 1) Provide in-lieu of pumping make-up water from the desal project yield to the impacted users 2) Install a coastal injection barrier using recycled water to reduce or eliminate the draw on the basin and to maintain higher water levels in the coastal area 3) Invest in basin yield enhancement projects	Additional analysis is warranted to determine the impacts to the Basin from potential pumping by the Doheny Desal Project. The identified mitigation alternatives are recognized as potential solutions to impacts.
6 Para-phrased		The GWM&F Plan should extend the decision making process to cover the full extent of the basin past just the groundwater basin and ocean interface.	Comment noted. The current level of planning is in the groundwater basin above the ocean interface. The Authority will continue to cooperate with the Doheny Desal planning process

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
7 Para-phrased		The GWM&F Plan should include the Doheny Ocean Desalination Project in its plan. It should also be noted that the Doheny Desal Project would also provide seawater intrusion control for the benefit of the basin, also that the extraction wells can be converted to injection wells when the Doheney Desal Project is implemented.	There are two sets of alternatives. One includes and the other excludes the Doheny Desal Project (referred to as SOCOD project in the draft and final reports), respectively. It was also stated in the report that the Doheny Desal Project would function as a seawater intrusion barrier. The Authority will continue to cooperate with the Doheny Desal planning process,
8 Para-phrased	Section 7-2	The cost estimate for the extraction barrier desalination project uses the Doheny Desal Project costs. We estimate that a 3 mgd plant would have a higher unit cost of about 10% above a 15mgd plant.	Comment noted.

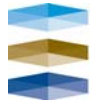
A.6 SOUTH COAST WATER DISTRICT

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
1 As Provided	Figure 2-1, 2-2	SJBA boundary differs from watershed?	Yes.
2 As Provided	Figure 2-11	Aliso Creek watershed is within SJBA boundary?	No.
3 As Provided	Section 3.4, page 3-14	Why is Aliso Creek permit listed in San Juan Basin water rights Section 3.4? The jurisdiction of the SJBA is the management of the San Juan Creek Basin only. The report appears to imply that there is an extension of management into the service areas of each of the member agencies for the scope of the geographic area of the basin authority members and this is inaccurate. The scope of the SJBA activities is stated in the 1971 Basin Authority Agreement as "management" of the basin and that basin is clearly stated to be the "San Juan Creek Basin" only. Permit 21256 should not be mention in this report. That Permit is held by SCWD and the referenced amount in the first table in Section 3.4 is wrong. The purpose of use is also inaccurate. Further, in the Table on Page 3-14 (all tables should be identified with a Table number), the water rights of the SCWD for the GRF Permit number 21138 has recently revised from 976 to 1300 acre' per year.	Thank you. The text has been revised pursuant to your comment.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
4 As Provided	Section 3.4, page 3-14	Permit 21138 has been amended to 1,300 afy already.	Thank you. The text has been revised pursuant to your comment.
5 As Provided	Page 3-46	Aliso Creek Ocean Outfall within SJBA?	Thank you. The text has been revised pursuant to your comment.
6 As Provided	Section 6.1.1.1, page 5-1	Says it will reduce the rate of seawater intrusion, Is this simply theoretical based on the model or is there observed intrusion? Is there a rate of extraction for which there is no seawater intrusion?	The model is suggestive of seawater intrusion as is historically limited groundwater monitoring data. The present SJBA monitoring program has been recently modified to detect seawater intrusion if present. The adaptive management program being pursued by the SJBA will result in an annual estimate of extraction that will result in no seawater intrusion.
7 As Provided	Section 6.1.1.5, page 6-6	Alts 5a and 5b layout additional storm water recharge of 2,000 to 5,000 afy. How was this estimated?	Your observation is incorrect. The correct increase in storm water recharge is 800 acre-ft/yr.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
8 As Provided	Alternatives 5 and 6	T & L levees are discussed to detain the stream flow. There are some differing opinions on the effectiveness. For Santiago Creek, OCWD enters once a year (and pulls permits) due to the sensitive habitat. That creek bottom is disturbed with heavy equipment and level to spread the water. T & L levees required more maintenance. Raceways along the river are also used. The correct configuration will have to consider the velocity in the creek and the amount of maintenance that will be provided.	We concur. OCWD recharges storm and Santa Ana River baseflow, the latter of which is perennial and often greater than stormwater and therefore their maintenance issues are different. If implemented the SJBA will have to experiment with various channel bottom configurations and operational practices as did OCWD. It may be more efficient to construct and operate rubber dams than the "T" and "L" levees.
9 As Provided	Alternative 6	Rather than basins, it appears to be stream discharge in the San Juan Creek. Are there some issues with this use? NDMA?	The concept is to create temporary basins in the stream bottom and to recharge recycled water in those basins. The basins would be flooded to shallow depths enabling them infiltrate completely prior to a storm event. There are significant environmental issues that would need to be worked out. Providing that the habitat issues can be worked out, the efficacy of the groundwater quality issues will be resolved through a Title 22 Engineering Report process for a GRRP.
10 As Provided	Alternative 6	Recharge appears to be adjacent to proposed extraction and in some cases downstream, this would appear to provide little to no retention time, any estimation?	To be determined in a subsequent investigation.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
11 As Provided	Alternative 6	The reach of the creek identified for recharge is not maintained to a condition that would recharge effectively. Is SJBA going to take over the maintenance of the channel?	To be determined in a subsequent investigation.
12 As Provided	Alternative 6	Water depth at one foot or less will develop biological growth particularly when using tertiary treated water, which will decrease permeability. Is there a plan to address?	To be determined in a subsequent investigation.
13 As Provided	Alternative 6	Will use of the OC flood facilities be possible in storm season?	To be determined in a subsequent investigation.
14 As Provided	Alternative 6	Are there any existing permits in place for maintenance of the channel?	To be determined in a subsequent investigation.
15 As Provided	Alternative 6	It appears that an assumption regarding permeability was made at an overall average of 1 ft/day? Any basis for this number? How long to develop a fouling layer? How often a year would clean be necessary?	It was assumed that the seasonal average infiltration rate was 1 f/d. It would likely be more at the onset of recharge operations and deteriorate during the season. The thought was that the basin would be operated in an "on and off" pattern throughout the recharge season to main infiltration rates in excess of 1 f/d. All this will be resolved in a subsequent investigation and ultimately after the project is implemented.



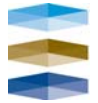
Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
16 As Provided	General	What is the difference between Alternative 6 and Alternative 10? There appears to be a large production difference. Although adding SOCOD should be similar to creating a seawater barrier?	The major difference is that the seawater extraction barrier that is included in Alternative 6 is not included in Alternative 10 – and this explains the difference in yield.
17 As Provided	General	There are two sections called "Recommended Alternatives…" then at the end of Chapter 7 there is one recommended alternative. This is a little confusing. Perhaps the sections in Ch 6 should just say "Alternatives…"?	Thank you. The text has been modified.
18 As Provided	General	Shouldn't improving stormwater recharge be the highest priority of the proposed projects?	A new short Section 6.2 is included in the final report and it says: "*Many stakeholders commented that there were no recommendations for diversion of stormwater to off stream recharge facilities included in the SJBGFMP. Early in the investigation the concept of off stream recharge was discussed with the TAC committee and it concluded in those discussions that there were few suitable sites for off stream recharge and for off stream recharge to work there would be a need for significant storage for which it was concluded that there no suitable storage sites. These conclusions should be revisited prior to or during the next SJBGFMP update.*"

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
19 As Provided	Section 7-2	In the yield costs section it states that costs associated with the treatment and conveyance are not included. Aren't those significant (RO, UV?)when considering the recommendation? Can the unit costs be fairly compared with no cost put to the treatment of the recycled water?	To be determined in a subsequent investigation.
20 As Provided	Table 7-5	In the Implementation Difficulty Section, could we break up stormwater and recycled water separately? It seems one may be easier to do than the other.	To be determined in a subsequent investigation.
21 As Provided	Table 7-3c	Is the 13ft ID big enough for directional drilling? How will it be installed? Are dewatering costs included in the unit cost?	Facility sizes and cost were provided by Layne Christiansen.
22 As Provided	Section 8.1.2	Strike "additional" or "extensive".	Thank you. The text has been modified.
23 As Provided		Costs exclude construction?	The costs shown in Table 8-1 do not include construction costs.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
24 As Provided	Section 3.4, page 3-15	Regarding water rights, at footnote 4 a reference is made to a withdrawal of the CSJC Rights Application, information should be obtained from the State Water Board to confirm the status of the application and the City should provide information as to the status as well.	Thank you. The CSJC has stated that it has not "withdrawn" its 1998 application for an appropriative water rights permit for extraction/diversion of 3,325 acre feet per year ("AFY") of water from the San Juan Basin with the State Water Resources Control Board ("SWRCB"). The application remains pending, and CSJC is currently evaluating options for the future disposition of its application.
25 As Provided	Section 3.4, page 3-14;3-16	At footnote 6, reference is made to the Richard Bell memo, however the agreements in question are numerous, were signed by differing parties over a series of years and the overall intent and basis of historical use for each of the members of the basin is hard to readily discern. Accordingly, Richard Bell's observations may not be accurate and/or may be incomplete. There is no foundation indicating that Richard Bell's memo was intended to be relied upon as a conclusive statement of water rights. There is no foundation that Richard Bell has a particular expertise in water rights or that his memo was ever finalized or distributed for comment or discussion. As an example, the March 13, 1998 correspondence to the SWRCB from the SJBA, the CBWD and the CSJC notes that the parties' agreements were intended to reserve 3,325 acre-ft/yr to CSJC as water no longer available for	Comment noted.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
		appropriation. However, later agreements appear to intend that the Desalter Project extractions are representative of and include this reserved water (Project Implementation Agreement of October 15, 2002); therefore, while it is informative to introduce the topic of water rights into the GWBMP the report should indicate that the relationship of the rights and claims to the past or the future use of the basin is somewhat inconclusive. As a further example, the Project Implementation Agreement of October 15, 2002 refers to the initiation of negotiations should diversions of water in addition to the production water from the Desalter Project occur. The text discussion of the parties rights or obligations may not be complete or accurate in light of the whole of the various agreements and the history, and this should be noted if the text at 3-16 if a water rights discussion is to be included at all. Further, the three documents referenced at 3-16 are not the whole of the record on the water rights, the issued permits and their history. SCWD would reserve the right to look further into the accuracy of the references outlined and to agree or disagree with the references.	

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
26 As Provided	Section 3.8.1, page 3-40	Native water supply: Production capacity for the desalter the well capacity or the product water? If it is native water supply it should be revised to 1089 acre feet per year replacing 795. If it is product water revise the number to 900 (?) replacing 795 (note to David, please check this number with Joe Sovella, he is confirming the table in the Tetra Tech GRF Expansion Report dated June 2012 with Steve Dishon on Monday).	Thank you. The text has been modified.
27 As Provided	Section 3.8.1, page 3-40	Please revise the estimated future capacity on the Capo Beach Desalter from 1465 to 1776 acre ' per year. The design and construction of the GRF allows for expansion of the treatment system in two future stages, Stage 1 would go from present production to 1776 acre ' yr of product water. Stage 2 would increase production from 1776 acre ' yr to 2622 acre ' per year. Of course, to achieve such expansion of production there will be an additional raw water source, and the existing facility is capable of growth in the use of groundwater supply from 1300 acre ' of drawn well water to Stage 1 at 2163 acre feet a year and Stage 2 (or ultimate) at 3194 acre ' per year. Please see the Tetra Tech GRF Expansion Report dated June 2012.	Thank you. The text has been modified.
28 As Provided	General	Alternatives do not include analysis on environmental impacts. It's unlikely that CA Dept of Fish and Game and US Fish and Wildlife will allow a live stream discharge during the steelhead migration period.	To be determined in a subsequent investigation.



Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
29 As Provided	Alternative 3	Expanding the existing diversion permits will be difficult and may result in a determination that the Creek is over-appropriated. This will also require CEQA analysis.	To be determined in a subsequent investigation.
30 As Provided	Alternative 4	How will Ranney well affect surface flows? Surface flows will likely be required by Resource Agencies to meet habitat requirements for arroyo toad and steelhead. There will be impacts to the lagoon that need analysis.	To be determined in a subsequent investigation.
31 As Provided	Alternative 5	Don't need to revise water supply rights permit to recharge storm water.	Comment noted.
32 As Provided	Alternative 6	Extensive effort for permitting and may require field studies to determine travel times, dilution rates, chemical interactions. Will require Basin Plan amendments along with CEQA.	To be determined in a subsequent investigation.
33 As Provided	General	Goals do not include environmental goals such as maintaining and protecting wildlife habitat. A schedule for the alternatives should be supplied. Costs should include CEQA/NEPA, permitting and mitigation.	The goals were established by the SJBA TAC. Table 8-1 includes a schedule and has a preliminary budget of about $1.8 million for CEQA and permitting.
34 As Provided	General	There should be an objective ranking of alternatives based on cost/benefits and considering environmental impacts. The ranking and how it was done should be discussed in detail.	To be determined in a subsequent investigation.

A.7 JOHN PERRY (CAPISTRANO TAXPAYERS ASSOCIATION)[4]

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
1 As Provided	Page 1-1, Section 1.1, first bullet point	Of all the management options presented in this report this option makes the most sense to me. The attached chart from the Urban Water Management Report shows that MWD can support all its current customer needs for water through 2035 with current sources. Why should we spend hundreds of millions on improving the basin yields when a less expensive source of water is available?	There are two reasons: (1) the MWD forecast is based on the hydrology of 1922 to 2004 which is representative of that period and not representative of what is possible. Historical records indicate there are more severe dry-periods than included in this period. The MWD report makes assumptions regarding facilities, droughts and other water supply shortages and disaster recovery all of which may not be true. (2) Diversification of supply and local control may enhance an agency's water supply portfolio to ensure reliability during droughts or other supply shortages and system outages. Local water supplies under the control of the local retail water agency enhance the reliability of the imported supplemental water supplies. And the local supplies often cost more.

[4] Paraphrased comments can be viewed as submitted within this appendix following the Appendix A tables.

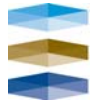
Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
2 As Provided	Section 3.4, page 3-16, first paragraph	The State water permit does not allow the basin to be pumped to below 50% of total storage of to impair any other water user with water rights. If the estimates of water storage are accurate we may now be approaching the 50% level.	One of the key features of the SJBGFMP is an adaptive management element that would limit production by the CSJC, SJBA and SCWD based on groundwater in storage consistent with the requirements of the SJBA and SCWD permits. This was done to ensure that all private pumpers would be able to produce their rights and to manage storage.
3 As Provided	Section 3.5, page 3-17	The SOCOD facility with an output of 16,000 acre feet at a cost of $1050 would be a bargain if the cost estimates are anywhere close. Also, the SODOD will provide a salt water barrier that will protest the basin from seawater intrusion. We should seriously consider this option instead of spending hundreds of millions on basin enhancement.	Comment noted. Also the draft report contained a typo regarding the cost of SOCOD water. The correct estimate of SOCOD unit cost was abstracted from MWDOC planning documents produced in early 2013 that suggest that the unit cost could range between $1,800 and $2,000 per acre-ft in 2019 when the SOCOD project could become operational.
4 As Provided	Section 3.5.1, page 3-18	Is it true that our model of the basin model is unable to predict effects of high levels of pumping?	No.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
5 As Provided	Section 3.5.2, page 3-19	The recharge of the basin depends on rain. If this drought thing is long term, how can we plan on high levels of pumping? Sea water intrusion may occur at any time in dry years.	Given the existing facilities, recharge depends on rain. The SJBGFMP, when implemented, will increase the recharge from rain and recycled water, allow the basin to operate at lower pumping levels during dry periods and protect the basin from seawater intrusion. Your last comment is not accurate as to "may occur at any time in dry years". Dry years do not cause seawater intrusion. Depressed groundwater levels near the coast may cause sea water intrusion if not managed. As of this moment there is no management of groundwater levels near the coast. The SJBGFMP, when implemented will protect the basin from seawater intrusion.
6 As Provided	Page 3-20, Table 3-11	The long term predictions show production totals cause groundwater levels falling below state requirements 90% of the time. Will reduced production be the answer?	No. Aggressive groundwater management as provided for in the SJBGFMP is the answer.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
7 As Provided	Page 3-21, fourth paragraph	The prediction that planned production levels will cause sea water intrusion without extensive and costly measures to recharge and block the sea water? I return to item 1on my comments as the only way to manage the basin without causing the consumer water rates to drastically increase.	Increasing local supplies and improving their reliability may be more costly in the short run than depending on imported water. Water supply costs include reliability and the value placed on reliability by an agency recognizes the being able to continue to use water during droughts, water supply emergencies; and it's the benefit to community in sustaining the local economy during shortages.
8 As Provided	Section 3.8.1.1, Page 3-41, second paragraph	I am surprised that SJC has potable wells that produce almost 1million gallons of drinking water per day without treatment. What can't we drill more wells in this area of the lower Trabuco?	The supply is limited by water quality. If these wells produce water, they have to be blended with other sources lower concentrations of TDS, iron, and manganese. To produce more water would require treatment.
9 As Provided	Section 4.0, page 4-1 last paragraph	The demand for potable water for SJC seems to be overstated. The 2012/13 budget document shows the demand to be 7423 af. Why is the figure of 8400 af used?	The demands reported in Section 4 represent the total water that needs to be produced to meet consumptive demands. In the case of the CSJC and SCWD, there are water losses associated with the groundwater desalination process and thus more water needs to be produced than is consumed. The text and Table 4-1 has been modified to clarify this distinction.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
10 As Provided	Section 5.0, page 5-2, third paragraph	Does goal 5 mean that only SCWD and CSJC will be the only water departments to pay for all of the proposed basin management alternatives? This will mean the SJC taxpayers will foot the majority of the costs?	No. SMWD and MNWD are interested in the implementation of the SJBGFMP and obtaining some of the new supplies consistent with their participation in the SJBGFMP. The Plan does not attempt to allocate water or costs among the Authority Member Agencies at this time, but rather identifies the amount of estimated supply.
11 As Provided	Page 6-1, Alternative 2	Alternate 2 proposes to create a seawater injection barrier using MWD water as a source. Won't the cost of production increase if we buy water to inject it into the basin then pump it out in a contaminated condition and have to clean it up before we can use it? It seems like the cost per acre foot would nearly double? I go back to my comments on number 1.	Yes and yes. It's not effective and is not being pursued in the SJBGFMP As to your comment No. 1 please see the response to that comment.
12 As Provided	Alternative 3	Alternate 3 would be a seawater extraction barrier sort of like the SODOC but using new facilities at SCWD to process seawater. This alternate is extremely costly and drive the water rates for SCWD and CSJC through the roof.	The SJBGFMP as proposed herein will not be implemented by the CSJC and SCWD only – if implemented the increased yield will be allocated among the participating agencies, which may include the SMWD and MNWD. At this time, the Plan does not attempt to allocate water or costs.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
13 As Provided	Alternative 4	Alternate 4 would do everything above in Alternates 2-3 but drill one or two Ranney wells to take water from the bottom of the basin that turbine pumps can't reach. The wells are extremely expensive to drill and to maintain. Again, all of this would be paid by CSJC and SCWD?	The SJBGFMP as proposed does not attempt to allocate water or costs. If implemented, CSJC, SCWD, SMWD, and MNWD may participate and share both the benefits and the costs.
14 As Provided	Alternative 5	Alternate 5 would add in stream recharge using storm water. This is a relatively inexpensive approach but is full of environmental concerns to regulators. Is it doable?	To be determined in a subsequent investigation.
15 As Provided	Alternative 6	Alternative 6 is the TEC committee recommended alternative. This do everything approach and is the most expensive. I don't know how the TEC committee can recommend this alternative when they have no idea of the total cost. Somehow we must get the "water empire" folks to recognize that it is the consumer water rates that pay the bills. Under the plan only the CSJC and SCWD would pay all of the construction and annual costs because they are the only agencies to benefit from the basin improvements. If the basin was the only water source available we would be forced to do most of the things they have recommended. But MWD water is available at significantly lower cost than any of the various combinations of alternatives.	Additional work needs to be done to determine the yield and improve the cost estimates. The cost of implementing the SJBGFMP cannot be directly compared to MWD water as their reliabilities are different. The SJBGFMP will produce more reliable water. See response to your comment No. 1. The SJBGFMP as proposed herein does not attempt to allocate water or costs. If implemented the increased yield benefits and costs will be allocated among the participating agencies, which may include the SMWD and MNWD.



A.8 RANCHO MISSION VIEJO[5]

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
1 As Provided	Section 3.3	Report Approach: Please confirm the boundary of the Middle and Lower Basins. In the event that the upstream boundary is upstream of Ortega Highway, the study should address the RMV Mutual Water Company and address the riparian water rights. Section 3.3 indicates that the Upper Basin is not a part of the study and should be clarified that it is because it operates independent from the Lower and Middle Basin.	The intent of the report is to address the water resources management downstream of the RMV and its new mutual water company.
2 As Provided	General	Ortega/Trampas Lake Reservoir: While the study reinforces a strategy for recharge of the groundwater, it should recognize ongoing efforts to implement a potential 5,000 acft recycled/non-potable water facility. Also, this project has received support from the County Board of Supervisors for contributing storm runoff water as well as recycled water from the SMWD CWRP. This project would be the largest storage facility in the region of this type and should maintain a high priority for implementation.	This project was discussed during the SJBGFMP development was considered to more of recycled or non-potable management tool than a SJBGFMP element. This decision was made early in the SJBGFMP update process. It will be considered again during the next SJBGFMP update.

[5] Paraphrased comments can be viewed as submitted within this appendix following the Appendix A tables.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
3 As Provided	Figure 2-1 through 2-4 and 3-45 through 3-47	The San Juan Basin Authority boundary appears to follow the cumulative external boundaries of the San Juan Basin Authority (SJBA) agency member. In some cases the boundary exceeds the boundary of the San Juan Watershed. In cases where this occurs, please clarify if there be some delineation between the boundary corresponding to a service area of a SJBA member and the actual boundary of SJBA.	The text has been modified as followed: "*Many of the maps contained in this planning document refer to the SJBA service area as the union of the SJBA member agencies service area. For clarity, the SJBGFMP contains management activities for surface and ground waters within the San Juan Creek watershed exclusively in the lower part of the watershed. The SJBGFMP management activities provide direct benefits to the SJBA member agencies. The service area boundaries of the SJBA member agencies extend beyond the boundaries of the watershed. This means that while the management activities of SJBGFMP occur within the San Juan Creek watershed (and exclusively in the lower part of the watershed), that the direct benefits of the management program can reach beyond the watershed, principally the service areas of the SJBA member agencies and the State.* *The Rancho Mission Viejo (RMV) is a large land owner and riparian water user located in the San Juan Creek watershed whose lands and water use are upstream and not included in the SJBGFMP except through the recognition of the RMV upstream water uses. The management activities included in the SJBGFMP occur completely downstream of the RMV and they do not interfere with the water rights*

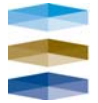
Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
			and management activities of the RMV." Also the first paragraph in the new text is included as a footnote to text references of the figures in Section 3 where the SJBA boundary is shown.
4 As Provided	Figure 3-1:	Clarify the Lower and Middle Basin study area boundary on this or an appropriate exhibit. Figure 3-14 and 6-1 appears to reference a portion of the boundary however it is not clear.	The subbasin delineation for the Lower, Middle and Upper Basins originated with the DWR in its Bulletin 104-7. This delineation was subsequently adapted by the SJBA in its 1994 SJBGFMP. We were aware of the bedrock elevation at the Ortega Highway bridge and located the "active storage management area" for the 2013 SJBGFMP update downstream of the Ortega Highway Bridge. We are using the DWR basin designations as tools to describe water levels and water quality but not as the active management area of the SJBGFMP. The text was updated in to reflect this.
5 As Provided	Figure 3-3	The Laguna Beach Station is used to summarize Annual Precipitation and Cumulative Departure from Mean. It seems that there would be better stations to represent runoff tributary to the San Juan Creek, either the mountainous or coastal area.	The Laguna Beach station has a relatively long record and was used to characterize wet and dry periods. From Table 3-1 it can be seen that the period of record is the longest of all active precipitation stations in the area. Its elevation and location make it a logical choice for this purpose. It was not used to represent runoff in the watershed other than to indicate which year or period of years would likely have produce high or low runoff.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
6 As Provided	Figure 3-15:	The determination of the boundary for the Middle Basin appears to be upstream of the crossing at Ortega Highway. However, prior construction information for the bridges at Ortega Highway and Antonio Parkway indicate that bedrock is 10' and 75' (+/-)below the thalweg of the Creek. Please confirm the boundary location. In the event that the boundary is upstream of Ortega Highway, the study should address the RMV Mutual Water Company and address the riparian water rights.	See response to RMV comment number 4.
7 As Provided	Figure 3-27	Address the interdependence of the Upper Basin since this is designated in this exhibit.	See response to RMV comment number 8.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
8 As Provided	Section 1.1	Clarify the intent of the study boundary. In the event that the boundary is upstream of Ortega Highway, the study should address the RMV Mutual Water Company (MWC) and address the riparian water rights.	Thank you. The text was modified as described in response to comment No. 6 and Section 1.1 contains a new short paragraph that reads: "*The investigation considered all the water resources of the San Juan Creek watershed but limited the application of management activities to the surface and ground waters of the lower part of the watershed between the Pacific Ocean at the most downstream end of the watershed to the Ortega Highway bridge on San Juan Creek and to near the confluence of the Arroyo Trabuco and Oso Creeks on the Arroyo Trabuco. The investigation area is sometimes referred to as the active management area or the active storage area later in this document. This investigation area was developed in Task 4 and was approved by the SJBA TAC during the 2013 SJBGFMP development process."*
9 As Provided	Section 2.1.2	The report references 4 water districts, yet there appears to be an area not designated under a water district. Clarify if this is for another water district or if it is within the sphere of influence of such.	Thank you. The text was modified with the following added to the last paragraph of this section: *"The Trabuco Canyon Water District overlies parts of the Arroyo Trabuco and Bell Canyon watersheds north of the SMWD. TCWD is not a member of the SJBA and like the RMV their groundwater and surface water management activities were considered in the development of the SJBGFMP."*

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
10 As Provided	Section 2.3.1	The report indicates that the Ranch Plan has not yet been developed, however P A-1 has been graded with lots currently for sale. Also, clarify the boundary area and the relationship with area outside of the San Juan Watershed as it seems the study should not include areas outside of the watershed.	Thank you. The text regarding the Ranch Plan in this section was deleted
11 As Provided	Section 2.3.2	Clarify the acreages in the Ranch Plan. The Ranch Plan includes 22,282 acres yet 29,507 are referenced. Also, lands pending developed are removed from the Williamson Act contract (the report indicates them as "not renewed" which is incorrect administration of the process).	Thank you. The text was updated.
12 As Provided	Section 2.6.1.8	The report indicates that Aliso Creek watershed is included in the analysis since this is tributary to San Juan Creek. However, San Mateo watershed, not tributary to San Juan Creek, appears to be included in the analysis for which there is no explanation.	Thank you. The text was updated.
13 As Provided	Section 3.3.5	Clarify that the aquifer is for the Middle and Lower Basins.	Thank you. The text was updated.

Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
14 As Provided	Section 3.4	Similar to comments above, confirm that the boundary of the analysis does not include the RMV MWC; otherwise the numeric information in this section will need to be adjusted appropriately. Also, clarify the eligible diversion amount of 3,325 acft. (in the table) is that which the City of San Juan Capistrano has as a part of the Desalter Project; also confirm the amounts that the City has been including in current operations.	Thank you. The text was updated to include the following paragraph at the end of the section*: "The active management area of the SJBGFMP excludes the RMV whose lands and water use are upstream and not included in the SJBGFMP except through the recognition of the RMV upstream water uses and water rights. The management activities included in the SJBGFMP occur completely downstream of the RMV and they do not interfere with the water rights and management activities of the RMV."*
15 As Provided	Section 3.5.2 and 3.6.2	The study indicates that the firm yield of the basin appears to be less than 7,000 acft./yr., yet 13,508 acft./yr. is permitted. Clarify the impact of this variance.	The permitted diversions can sum to be larger than the firm yield. When there is not enough water to meet all the permitted diversions then diversions are reduced to the available supply.
16 As Provided	Section 3.7.1.2	Rancho Mission Viejo (Well 7) is included in the study yet this well is upstream of the Middle Basin. Please clarify why this is included in the study if it is outside the boundary.	The chemistry of RMV Well 7 was included to characterize the water quality of groundwater that may flow into the active management area.
17 As Provided	Section 3.8 and 4	Confirm the Water Demand and Supply volumes for SMWD as these appear to be higher than current operations.	The water demands in Section 4 are based on planning data provided by the SMWD to MWDOC for the 2010 UWMP. The water demands in Section 3.8 were also provided by the SMWD.



Comment Number	Page Reference in April 2013 DRAFT	Comment	Response
18 As Provided	Section 3.9.2.6	The report indicates that 5.0 mgd is sent to advanced water treatment. However, SMWD recently increased the capacity at the plant to 5.5 or 5.75 mgd. Please clarify.	SMWD is in the process of expanding the capability; the current permit is for 5.0 MGD through the Regional Board.
19 As Provided	Section 6:	Provide a summary table of each alternatives with advantages, disadvantages, capacity, costs, and time for implementation. Provide clarification for where there is overlap or where one alternative supersedes another.	This is covered in Section 7 of the report.

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MICHAEL W. BURNETT

September 6, 2013

Mr. Larry McKenney
Board Chair
San Juan Basin Authority
C/O Santa Margarita Water District
P.O. Box 7005
Mission Viejo, CA 92690-7005

RE: Comments on Draft AB 3030 Groundwater Management Plan for the San Juan Creek Groundwater Basin

Dear Mr. McKenney:

This letter provides comments from San Juan Hills Golf Club LP ("San Juan Golf") on the draft Groundwater Management Plan ("Draft Plan") for the San Juan Creek Groundwater Basin ("Basin")[1] circulated for public comment by the San Juan Basin Authority ("Basin Authority") on July 17, 2013.

As you may be aware, San Juan Golf owns and operates the San Juan Hills Golf Course and Country Club ("Golf Course"). The Golf Course is located adjacent to San Juan Creek in the City of San Juan Capistrano. Incident to its ownership of the Golf Course, San Juan Golf holds riparian water rights to the surface and underflow of San Juan Creek, and the associated San Juan Groundwater Basin. San Juan Golf additionally holds appropriative rights permit number 21142 allowing diversion and use water from San Juan Creek and its underlying groundwater basin for irrigation uses on the Golf Course. San Juan Golf therefore has a substantial interest in the management and use of the Basin.

The Draft Plan includes estimates of the sustainable yield of the Basin, and a summary of the existing and potential future groundwater extraction projects that will

[1] The California State Water Resources Control Board has investigated the San Juan Basin and determined that it is underflow of San Juan Creek and the other creeks that converge with San Juan Creek downstream of the San Juan Hills Golf Club. California law gives the State Board jurisdiction over surface water, and groundwater that is part of the flow of a surface water body.

rely on the Basin as a water supply. It also includes a model of the Basin and projections of available water supplies in the Basin produced by the Metropolitan Water District of Southern California (the "Basin Model"), and a description of several management options for the Basin. San Juan Golf has significant concerns about aspects of the Draft Plan, including the potential that implementation of any of the proposed alternatives will result in long term overdraft conditions and/or seawater intrusion that will degrade the quality of water presently available in the Basin.

Basin Authority Staff have taken the time to meet with San Juan Golf representatives and discuss some of San Juan Golf's concerns. San Juan Golf is hopeful that its concerns regarding the Draft Plan and more importantly the long term management of the Basin can be addressed through coordinated action with the Basin Authority. Nonetheless, San Juan Golf cannot support any Basin-wide management plan until the Basin Authority makes firm commitments to San Juan Golf that its activities in the Basin will not hinder San Juan Golf's long term access to water of a quality sufficient to support the Golf Course.

Lastly, it is unclear from the notice provided on the Basin Authority's website whether the meeting planned for September 10, 2013 is the hearing anticipated by Water Code section 10753.5. If so, please consider these comments San Juan Golf's official protest to adoption of the Draft Plan in its current form. Our comments follow.

COMMENTS ON DRAFT PLAN

1. THE DRAFT PLAN UNDERSTATES THE VOLUME AND NATURE OF SAN JUAN GOLF'S WATER RIGHTS.

The Golf Course property is riparian to both San Juan Creek and the underlying groundwater basin. As a result of this location (*Lux v. Haggin* (1886) 69 Cal. 255, 390-391.), and separate agreements with the Basin Authority, San Juan Golf holds a riparian water right to take up to 550 acre feet of water from the Basin annually.

Use of water pursuant to a riparian right is limited to the riparian property, but allows the owner to use as much water as necessary for reasonable and beneficial use of their property. The right to take water is not dependent on how much the owner, or any other riparian has used in the past, or when that use began. (*See Peabody v. City of Vallejo* (1935) 2 Cal.2d 351; *United States v. State Water Resources Control Board* (1986) 182 Cal.App.3d 82, 104.) Additionally, all riparian owners have an equal, or correlative, right to use the water, and a new or expanded riparian use is entitled to share equally with all other riparian users, so long as the use is reasonable and beneficial. (*In re Waters of Long Valley Creek Stream System* (1979) 25 Cal. 3d 339, 359.)

San Juan Golf's riparian water rights are superior to and take priority over the rights of all appropriative users in the Basin including the Basin Authority and the City of San Juan Capistrano. (*City of Barstow v. Mojave Water Agency* (2000) 23 Cal.4th 1224, 1241; *Allen v. California Water & Tel. Co.* (1946) 29 Cal.2d 466, 481.)

In addition to riparian rights, San Juan Golf holds appropriative rights to the Basin. On August 19, 1992, San Juan Golf's predecessor in interest in the Golf Course filed an application to appropriate water from the Basin. The State Board granted the Golf Course's application for 450 acre feet per year in 2003. San Juan Golf's application to appropriate was filed immediately after and in response to the Basin Authority's application to appropriate water from the Basin.

In 1997, San Juan Golf's predecessor in interest in the Golf Course and the Basin Authority entered in a settlement agreement regarding water rights in the Basin. The 1997 settlement agreement removed mutual opposition to the applications to appropriate, and included the following notable terms:

- The Golf Course can continue to take up to 550 acre feet of year of water from the Basin under any water right (riparian or appropriative), and that water will be used for "irrigation and other proper riparian purposes only."

- The Golf Course will request that the State Board include the riparian use limitation in the Golf Course's appropriative rights permit.

- The Basin Authority will not oppose the Golf Course's application to appropriate water, and will not "interfere with" the Golf Course's take of 550 acre feet per year from the Basin.

- The Basin Authority will not take water from the Basin in a manner that causes significant injury to the quality of water necessary for use by the Golf Course or any other use recognized for the San Juan Creek watershed in the Water Quality Control Plan for the San Diego Basin.

Thus San Juan Golf retains a 550 acre foot per year riparian water right and the Basin Authority cannot operate or otherwise manage the Basin in a manner that causes degradation to the quality of water available to the Golf Course. This full right is not noted in the Draft Plan. Instead, the Draft Plan uses the 450 acre-foot figure from San Juan Golf's appropriative rights permit. (Draft Plan pp. 3-15.)

The Draft Plan needs to be revised to reflect the Golf Course's full water right. Moreover, as explained more fully below, the Draft Plan needs to include alternatives that will ensure that the Basin Authority complies with its obligations under the 1997 settlement agreement and applicable California law.

2. THE DRAFT PLAN OVERSTATES THE CITY OF SAN JUAN CAPISTRANO'S WATER RIGHTS.

The City of San Juan Capistrano ("City") currently operates a groundwater recovery facility in the Basin under contract with the Basin Authority. Notably, the City does not hold a valid water rights permit from the State Water Resources Control Board. Nor does it hold other recognized water rights to the Basin.

The City filed an application to appropriate water from the Basin in April, 1998, approximately six years after the Basin Authority and the Golf Course. The City's application is still pending, and the State Board has made no indication that it will issue a permit any time soon. Moreover, during the permit application process, the City opposed the Golf Course's application on the grounds that the City holds pueblo water rights to the Basin.

The State Board rejected the City's argument on the grounds that there is no historical evidence that San Juan Capistrano was a pueblo, and the Mission San Juan Capistrano is located upstream on Oso Creek, a different tributary to the San Juan Creek system. (*See* Feb 17, 1993, Memorandum from Edward Anton, Chief Division of Water Rights, to Susan Trager regarding protests to Applications 30123 (San Juan Basin Authority) and 30171 (Torson Pacific Investments) filed by the Capistrano Valley Water District claiming interference with pueblo water rights; and March 23, 1995 from Marci Williams to Barbara Katz regarding same; *see also* State Water Resources Control Board Order No. WR-95-7 [citing *id.*].) As a result, the City lacks an independent right to draw water from the Basin unless it can prove the water it is drawing is water that it originally imported into the Basin.[2]

Despite the fact that the City lacks its own water rights permit, it operates a groundwater recovery project under contract with the Basin Authority. The Basin Authority reports the City's water take as part of its own when filing reports with the State Board.

Leasing and sharing water production facilities where more than one entity needs access to the same supply is not an uncommon practice among water purveyors. It saves resources and can protect the sustainability of a given supply. However, it is imperative that the final quantification of water rights reflect the sharing of facilities, and the original water rights held by participating agencies. The Draft Plan does not do that and appears to over allocate water rights to the City. Water rights that the City does not hold.

Pages 3-14 through 3-16 of the Draft Plan include totals of quantified water rights in the Basin. The Draft Plan allocates 3,325 acre-feet per year to the City. Page 3-16 includes a statement that the City's take is pursuant to a 1995 agreement with the Basin Authority under which the Basin Authority "recognized and agreed that it would not challenge the City extractions up to 3,325 acre-ft/yr." An agreement not to challenge is not equivalent to a right to take. Moreover, the Draft Plan appears to account for the City's acre-foot take as a right in addition to that allowed for the Basin Authority under its permits from the State Water Resources Control Board. (Draft Plan, pp. 3-15, 3-16.)

The Draft Plan needs to be revised to clearly state that the 3,325 acre-feet that the City draws comes from the Basin Authority's allocation under State Water Resources Control Board Water Rights Permit No 021074 (application No 30123). Any

[2] Pursuant to the California Supreme Court's decisions in *City of Los Angeles v. Glendale* (1943) 23 Cal.2d 68 and *City of Los Angeles v San Fernando* (1975) 14 Cal. 3d 199, a water purveyor has a prior and preferential right to reclaim all of the water it imports into a watershed or groundwater basin, including water that it serves to customers that then infiltrates into an underlying groundwater basin.

calculations done to support the Draft Plan or the Basin Model that rely on the City's allocation as an additional take must also be revised to reflect the same limitation.

3. THE DRAFT PLAN DOES NOT ACCOUNT FOR ALL OF THE EXTRACTORS IN THE BASIN.

The Draft Plan does not appear to include pumping by numerous other operators in the Basin including riparian rights holders such as the Rancho Mission Viejo. Leaving these operators out of the analysis in the Draft Plan leaves a huge data-gap that could severely hinder the Draft Plan's use as a planning tool or informational document.

The Legislature passed AB 3030 (California Water Code sections 10750-10756) in 1992 to "ensure the safe production, quality, and proper storage of groundwater in this state." (Cal Water Code § 10750(b).) The primary purpose of a groundwater management plan adopted pursuant to AB 3030 is to develop monitoring and management objectives to ensure the sustainable use of the subject basin. (Cal Water Code §§ 10750(a); 10752(e); 10753.7(a)(1); 10753.8.) Specifically, a groundwater management plan adopted pursuant to AB 3030 must include components to manage the following:

- groundwater levels,
- groundwater quality,
- land surface subsidence, and
- changes in surface flow and surface water quality that directly affect groundwater levels or quality or are caused by groundwater pumping in the basin.

(Cal Water Code § 10753.7(a)(1).)

The plan should also include components relating to seawater intrusion and overdraft mitigation among other things. (Cal Water Code § 10753.8.)

Without accurate information about the characteristics of a groundwater basin, including total extractions and the number and locations of users, a groundwater management plan cannot adequately meet the above listed requirements. In the case of the Draft Plan, in order to accurately assess the sustainable yield, and the amount of pumping that can take place moving forward, an accurate accounting of all of the extractions from the Basin is required. This information is necessary before the Basin Authority can formulate appropriate management practices for the Basin, and without it, the Draft Plan is useless as a planning or management tool.

4. THE DRAFT PLAN RELIES ON A "FIRM YIELD" FIGURE THAT IS NOT THE INDUSTRY STANDARD FOR DETERMINING THE AVAILABILITY OF SUPPLIES IN A GROUNDWATER BASIN.

The Draft Plan deviates from the industry standard use of "safe yield" as the determining factor for management practices in the Basin. (*See* Draft Plan pp. 3-21, 3-22.) The industry standard for expressing the volume of water that can be safely removed from an aquifer is the "safe yield." The Draft Plan disavows safe yield as an appropriate measure for the Basin and instead uses "firm yield." (*Id.*) Perhaps more concerning is the Draft Plan's statement that the use of the "firm yield" figure is an effort to avoid the storage requirements traditionally associated with safe yield. (Draft Plan pp. 3-21 ["the concept of safe yield does not strictly apply to the San Juan Basin as the storage in the groundwater basin is small relative to recharge and production"].)

Safe yield is generally defined as the maximum quantity of water that can be withdrawn from a groundwater basin over a long period of time without resulting in adverse conditions. Safe yield is typically determined by technical professionals based upon a defined hydrology, water levels or groundwater models. (Metropolitan Water District of Southern California, Groundwater Assessment Study, Report Number 1308 (Sep., 2007) III-3.)

Use of safe yield as a measure of aquifer sustainability is the industry standard. It is used by the California Department of Water Resources and the Metropolitan Water District of Southern California ("MET") to describe groundwater basins throughout the State. MET describes safe yield as follows:

> The determination of safe yield may include quantitative measures to evaluate when adverse conditions occur. . . . This is particularly important in basins in which seawater intrusion is a factor. For example, the Ventura County Basins operate under a safe yield that is based upon maintaining water levels to prevent seawater intrusion or migration of contaminants among aquifers. This safe yield is significantly lower than the safe yield determined based on a hydrologic water balance alone.
>
> (Metropolitan Water District of Southern California, Groundwater Assessment Study, Report Number 1308 (Sep., 2007) III-3.)

In contrast, the Draft Plan is relying on the "firm yield" term to emphasize the higher rates of recharge that the Basin periodically experiences. The risk of relying on this figure rather than traditional notions of safe yield is that it could result in overdraft conditions when expected recharge does not occur. For businesses dependent on groundwater for continued operations this could be highly detrimental.

Use of the firm yield figure therefore calls into question the "sustainable" nature of the Draft Plan and its compliance with the requirements of AB 3030. AB 3030's stated goal is to "ensure the safe production, quality, and proper storage of groundwater in this state." (Cal Water Code § 10750(b).) Use of the firm yield figure could violate

that requirement. For that reason, the Draft Plan should be revised to assess and rely on the safe yield of the Basin.

5. **THE BASIN IS OVER-SUBSCRIBED.**

The Draft Plan and the Basin Model demonstrate that there is not enough water on a year-to-year basis in the Basin to support all of the existing and proposed uses described in the Draft Plan. (Draft Plan pp. 3-22, 3-23.)

The Basin Model indicates that the firm yield of the Basin is potentially as low as 7,000 to 11,000 acre-feet per year. (Draft Plan pp. 3-23.) Pumping the Basin at this level would "require intensive monitoring and facilities to protect the basin from seawater intrusion." (*Id.*) This figure is substantially lower than previous estimations of the Basin's safe yield. For example, in 1998, Boyle Engineering estimated that the safe yield of the Basin was 14,100 acre feet per year. (Availability of Unappropriated Water San Juan Creek Basin, Boyle Engineering, 1998.)

The lower than estimated firm yield is corroborated by a major drawdown in water levels in the Basin that has occurred since 2007. According to the Draft Plan and the Basin Model, drawdown has increased since 2010, and appears to coincide with increased production at the City of San Juan Capistrano's groundwater recovery facility. To protect the health of the Basin, the Basin Authority will need to consider a change to operations that potentially includes a reduction in the volume of water taken under its permit – including water taken by the City.

The Basin Authority's permit allows the Basin Authority to initially draw a maximum of 8,026 acre feet per year. This amount can be increased by an additional 2,676 acre feet per year upon showing by the Basin Authority that there is additional unappropriated water available for a total of 10,702 acre feet per year. (California State Water Resources Control Board, Water Rights Permit No. 21074, Condition 5.) Given the projections in the Draft Plan it appears unlikely that the Basin Authority will ever be able to exercise the full allocation allowed under its permit. Indeed, the State Board may need to revise the Basin Authority's permit as well as others to reflect the lower amount of water available.

As stated above, the purpose of AB 3030 is to develop monitoring and management objectives to ensure the sustainable use of the subject basin. (Cal Water Code §§ 10750(a); 10752(e); 10753.7(a)(1); 10753.8.) Where a Basin is already oversubscribed, the management objectives should reflect the need to maintain the long term sustainable use of the Basin and management practices that achieve that goal. The Draft Plan does not accomplish that goal. It needs to be revised to include specific steps the Basin Authority and other major groundwater users will take to preserve the viability of the resource for all other lawful users.

6. **THE BASIN AUTHORITY AND THE CITY NEED TO CONSIDER CHANGING OPERATIONS AT THE CITY'S GROUNDWATER RECOVERY FACILITY TO PREVENT IMPACTS TO OTHER PUMPERS IN THE BASIN.**

The Draft Plan includes a range of alternatives that the Basin Authority can pursue to manage the Basin. Alternative 1, (Draft Plan, pp. 6-1) purports to preserve the 2013 status quo. No other reduced pumping alternative is presented in the Draft Plan.

As described above (and in the Draft Plan) major drawdown in water levels in the Basin that has occurred since 2007, and has increased since 2010. The increase in drawdown appears to coincide with increased production at the City of San Juan Capistrano's groundwater recovery facility. To alleviate pressure on other existing pumpers such as San Juan Golf, the Basin Authority needs to consider a reduced production alternative operation plan that returns the Basin to the pre-City groundwater recovery project status quo.

Because the City lacks its own water rights permit, it operates the groundwater recovery project under contract with the Basin Authority. The Basin Authority therefore has direct control over the volume of water produced by the facility and the ability to reduce extraction activity. These measures should at a minimum be included in the Draft Plan as an alternative.

7. **ADOPTING THE DRAFT PLAN IS A DISCRETIONARY ACTION REQUIRING COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT.**

Because the Basin is already oversubscribed and the Draft Plan includes no alternatives that would reduce current pumping rates, proceeding with any of the management goals described in the Draft Plan will result in significant draw-down of the Basin. These impacts will need to be studied in an associated environmental document produced to support the Draft Plan in compliance with the California Environmental Quality Act ("CEQA").

CEQA applies to "discretionary projects proposed to be carried out or approved by public agencies." (Cal Pub Res Code §21080.) Adoption of an AB 3030 groundwater management plan is a discretionary decision of the Basin Authority. We are unaware of any exemptions from CEQA that would excuse the Basin Authority from conducting environmental review of the environmental impacts that will be caused by implementation of the Draft Plan. The Draft Plan is more than a mere planning study. It includes management plans that will direct future activities in the Basin. As such its adoption will tie the Basin Authority to a course of action that could have negative impacts on the environment.

While it is true that the impacts associated with some of the projects described in the Draft Plan were studied in past CEQA documents, the Basin Model represents new information not available at the time of those previous studies. As a result, the previous CEQA determinations are not relevant (Cal Pub Res Code § 21166) and a new review that takes into account the Basin Model is required.

Similarly, the Draft Plan discusses the proposed Dana Point desalination project that may be constructed in the future. The Draft Plan indicates that the proposed desalination project could cause significant seawater intrusion into the Basin and that this

will need to be managed as part of the project. (Draft Plan pp. 3-19.) The desalination project will have other environmental impacts (and impacts to the Basin) that need to be considered and mitigated before it moves forward. The Basin Authority should include reference to the future studies that will be required for this project in the Draft Plan.

CONCLUSION

The Draft Plan includes a comprehensive analysis of water supplies in the San Juan Basin. The Draft Plan provides the Basin Authority's options for managing groundwater supplies in the Basin, and a description of efforts for coordinating (to the extent possible) the actions of its member agencies. The written comments above represent our comments after an initial review of the Draft Plan. We appreciate the Basin Authority's attention to our comments and efforts to meet with San Juan Golf representatives to hear our concerns. We look forward to working with Basin Authority staff to preserve the long term viability of the Basin.

Thank you for your attention to this matter. If you have any questions regarding the comments in this letter or San Juan Golf's position on the Draft Plan please do not hesitate to contact me.

Very truly yours,

THE BURNETT FIRM

Michael W. Burnett

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

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September 10, 2013

Mr. Daniel R. Ferons, Administrator
San Juan Basin Authority
26111 Antonio Parkway
Rancho Santa Margarita, CA 92688

Subject: Comments on Draft Groundwater Management and Facilities Plan

Dear Dan,

We appreciate the opportunity to provide comments on the subject draft Groundwater Management and Facilities Plan for the San Juan Basin. It is our opinion that the plan provides an excellent overall framework for managing the small alluvial basin associated with San Juan Creek, augmenting its supply and providing protection from potential seawater intrusion under higher production levels. We will be providing technical comments in a separate memorandum in the next few days.

Over the course of the development of the plan, through the work of the Doheny Ocean Desalination Project, a refined regional watershed and groundwater model was developed to help in understanding the basin yield under dry, average and wet periods without the Doheny Desal Project and then by imposing the project on the basin to determine its potential direct drawdown impacts and draw of brackish water from the basin.

Over the nearly three years of effort, we very much appreciate the assistance provided by San Juan Basin Authority and its consultant, Wildermuth Environmental, Inc. This collaborative effort has led to a robust modeling tool that can used in evaluation of alternative management and facility plans to evaluate drawdowns at individual wells, estimate basin yields, and determine potential seawater intrusion effects and controls.

With the recent award of funding through the MET Foundational Action Program, additional groundwater modeling and study will be undertaken by SJBA and the Doheny Desal Project over the next year or two. MWDOC looks forward to continued coordination and collaboration with SJBA and the Doheny Desal Project participants in the subsequent investigations. Areas of further coordination include environmental baseline studies, offshore geotechnical investigations, and groundwater level and water quality sampling from our two monitoring wells located in Doheny State Beach.

It is understood that the Doheny Desal Project will need to mitigate its impact on basin and further work is necessary to evaluate cost-effective approaches. The SJBA plan should also recognize that the basin extends out under the ocean and the Doheny Desal Project should be considered as a component of its recommended plan.

If you should have any questions, please do not hesitate to contact the undersigned.

Sincerely,

Richard B. Bell, PE
Principal Engineer

MEMORANDUM

September 10, 2013

TO: Dan Ferons, SJBA
FROM: Richard Bell, MWDOC
SUBJECT: Technical Comments on the SJBA Draft GW Management and Facilities Plan

Supplementing the general comments provided in our letter of today, are the following technical comments on the Draft Groundwater Management and Facilities Plan.

Basin Yield. The groundwater modeling work conducted by the Doheny Desal Project by Geoscience estimated the yield of the basin over a 64-year baseline period that included a 31-year dry period. The yield was determined through the use of a watershed model that calculated daily streamflow and recharge based on a production well water level constraints that ceased production when the pumping water levels fell below 2-feet above the top of the screens. This constraint should be noted in the Draft GWM&F Plan.

The basin yield without the Doheny Desal Project was determined to average 9,150 afy over a 31-year period of average precipitation and over a repeat of the 31-year dry period the supply would decrease to 8,040 afy. Since the model runs constrained pumping only on pumping water levels and not on seawater intrusion, these yields include ocean water intrusion that over the 64-year period average are thought to be about 300 to 400 afy. These quantities have not yet been confirmed. Under these runs when ocean water intrusion occurred and salinity reached 2,600 mg/l at the the South Coast wells, they were turned off. This occurred after 9 and 12 years for the dry and average periods, respectively with the starting point being the beginning of the the 64-year period (1947). The results from these runs are shown below.

Groundwater Modeling Production Analysis – Base Case (2i/2j)
Pumping Water Level Constraint with Salinity Constraint

Producer	Groundwater Pumping Yield (afy) Dry	Average
City's GWRP Wells	5,808	6,690
City's Other Wells	823	942
Subtotal City	6,631	7,632
SCWD	559	664
Private Wells	850	850
Total (1)	8,040 afy	9,146 afy

(1) Includes a low level of seawater intrusion of approximately 300 to 400 afy (needs confirmation)

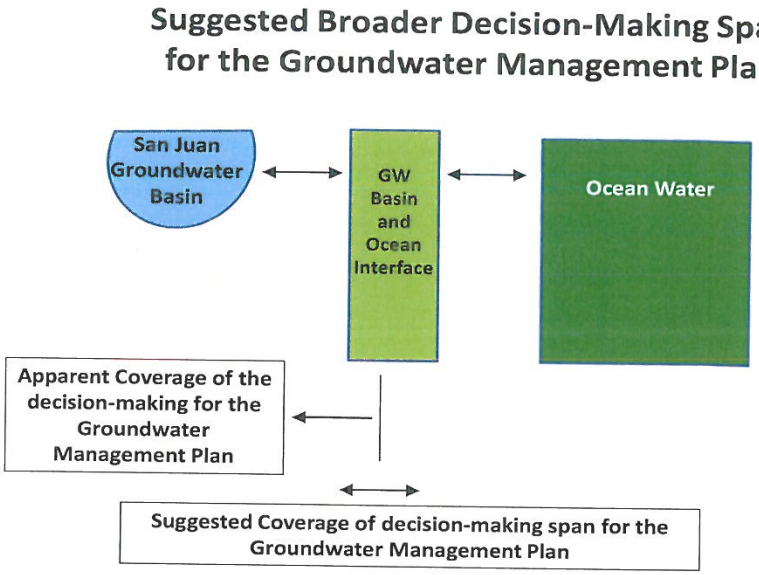
The draft Groundwater Management and Facilities Plan indicates an impact on the basin by the Doheny Desal Project at 1,700 afy. Based on the modeling work, the average impact over the 64-year base period was found to be 1,660 afy. However, as noted above, the base case runs induced seawater intrusion. To control seawater intrusion, basin production would have to be reduced by about 300 to 400 afy to maintain a net positive outflow to the ocean in order to prevent seawater intrusion. Using these numbers would reduce the Doheny Desal Project impact to about 1,300 afy over the 64-year

period. These runs will need to be completed in the next phase of work. The Draft GWM&F Plan should note the yield for both the dry and average periods.

Ranney Well Evaluation. We noted that the Draft GWM&F Plan indicates that the use of Ranney Wells will increase the basin yield by 800 afy. We are not sure how that estimate was derived. The groundwater model yields used all the available streamflow that naturally recharged the basin. We believe this new yield could be from mining storage. Ranney Wells provide the advantage in shallow river/stream basins of having their intakes near the bottom of the alluvial channel. They are not constrained by pumping water levels below screened intervals that can lead to the introduction of aerated water and downhole oxidation of dissolved iron present in the groundwater. They also allow a greater amount the basin storage to be utilized and would also allow the desalter plants to run more continuously without having to be shutdown as often due to the pumping water level constraint.

Doheny Desal Mitigation. The Doheny Desal Project will need to mitigate its impact on the basin in one of three ways: (1) provide in-lieu of pumping make-up water from the desal project yield to the impacted users, (2) install a coastal injection barrier using recycled water to reduce or eliminate the draw on the basin and to maintain higher water levels in the coastal area, and/or (3) invest in basin yield enhancement projects.
Further work is required to determine the cost-effectiveness of the second and third approaches. This work is planned to be undertaken over the next year or two as part of the MET Foundational Action Program work.

San Juan Basin – Planning Extent and Integration with the Doheny Desal Project. The alluvial basin underlying San Juan Creek extends out under the ocean within the continental shelf.



The current Draft GWM&F Plan seems to end at the interface between the basin and the Ocean. It is important that the decision making process cover the full extent of the basin as the source of intrusion is

the ocean and marine groundwater and the proposed Doheny Desal Project would utilize slant wells constructed from the beach out under the ocean.

The plan should include in its recommended plan the Doheny Ocean Desalination Project. The use of the vertical extraction wells as both a seawater intrusion control barrier and a feedwater supply for an ocean desalination project may inadvertently constrain the planned Doheny Desal Project. It should also be noted in the preferred plan that the Doheny Desal Project would also provide seawater intrusion control for the benefit of the basin. Also, the proposed extraction wells along the coast can be converted to injection wells using recycled water when the Doheny Desal Project is implemented. The conversion to injection wells will help to mitigate the Doheny Desal Project impacts on both the draw of brackish water from the basin and the drawdown impacts. The injection wells will also help to mitigate any project impacts on drawdowns of water levels in the seasonal coastal lagoon.

Desalination Cost Estimates Utilized in the Draft GWM&F Plan. The plan utilized the Doheny Desal Project costs to estimate the costs for the extraction barrier desalination project. There is an economy of scale effect with desalination projects that should be factored into the cost estimate. We estimate that a 3 mgd plant would have a higher unit cost of about 10% above a 15 mgd plant.

San Juan Basin Authority
Attn: Dan Ferons General Manager

COMMENTS ON SJBA BASIN GROUNDWATER MANAGEMENT REPORT

Page 1-1 "Preserve the status quo. Complete existing planned projects and rely on Metropolitan to serve all water above and beyond existing local supplies. In this alternative the SJBA agencies will purchase the maximum amount of Metropolitan water relative to other alternatives and be subject to Metropolitan's rate structure and drought penalties."

1. Of all the management options presented in this report this option makes the most sense to me. The attached chart from the Urban Water Management Report shows that MWD can support all its current customer needs for water through 2035 with current sources. Why should we spend hundreds of millions on improving the basin yields when a less expensive source of water is available?

Page3-16 " Exactions by all pumpers shall not exceed the total recharge and the condition is satisfied as long as the groundwater storage does not fall below 50 percent of the storage capacity of the basin. The SJBA right is subject to the prior riparian right of the San Juan Hills golf course and shall not cause significant impact on water quality"

2. The State water permit does not allow the basin to be pumped to below 50% of total storage of to impair any other water user with water rights. If the estimates of water storage are accurate we may now be approaching the 50% level.

Page3-17 MWDOC Groundwater model and development of SOCOD

3. The SOCOD facility with an output of 16,000 acre feet at a cost of $1050 would be a bargain if the cost estimates are anywhere close. Also, the SODOD will provide a salt water barrier that will protest the basin from seawater intrusion. We should seriously consider this option instead of spending hundreds of millions on basin enhancement.

Page 3-18 MWDOC Groundwater model

4. Is it true that our model of the basin model is unable to predict effects of high levels of pumping?

Page 3-19 MODOC groundwater model

5. The recharge of the basin depends on rain. If this drought thing is long term, how can we plan on high levels of pumping? Sea water intrusion may occur at any time in dry years.

Page 3-20 " The annual production totals listed in Table 3-11show that production was limited by groundwater levels falling below drawdown constraints in 56 of 63 years of the simulation period or about 90% of the simulation period."

6. The long term predictions show production totals cause groundwater levels falling below state requirements 90% of the time. Will reduced production be the answer?

Page3-21 " the take-always from the baseline simulation is that planned production by CSJC and SCWD along with private producers seems to exceed the production capabilities of the basin and will result in production levels less than planned and potentially seawater intrusion.

7. The prediction that planned production levels will cause sea water intrusion without extensive and costly measures to recharge and block the sea water? I return to item 1 on my comments as the only way to manage the basin without causing the consumer water rates to drastically increase.

Page 3-41 "The Rosenbaum Well No. 1 produces .58 million gallons per day and North Open Space Well produces .47 mgd."

8. I am surprised that SJC has potable wells that produce almost 1 million gallons of drinking water per day without treatment. What can't we drill more wells in this area of the lower Trabuco?

Page 4-1 The City of San Juan Capistrano current potable water demand is 8,400 acre-ft/yr.

9. The demand for potable water for SJC seems to be overstated. The 2012/13 budget document shows the demand to be 7423 af. Why is the figure of 8400 af used?

Page5-2 "Goal No. 5 "Establish Equitable Share for the funding and costs of the SJBAMP. The intent of this goal is to align the benefits of the SJBAMP with individual SJBA member's agencies and the SJBAMP implementation costs. This goal will be accomplished by clearly articulating the benefits of the SJBAMP to each SJBA member agency and subsequently allocating the funding and costs in an equitable manner

10. Does goal 5 mean that only SCWD and CSJC will be the only water departments to pay for all of the proposed basin management alternatives? This will mean the SJC taxpayers will foot the majority of the costs?

Page 6-1 "Recommended alternatives assuming SOCOD is not implemented"

Alternate 1. The SJBA would set annual production limits in the spring of each year based upon based upon the levels measured that spring and an estimate of groundwater storage that spring. The productions levels would hold until the next spring.

Construction cost	**$0**
Annual cost	**$0**

Alternate 2. This alternate is an attempt to increase the yield of the basin during non-wet periods through injection of supplemental water into the basin just seaward of the SCWD desalter walls. The initial water for injection would come from MWDOC but could be replaced in subsequent years by recycled water.

Construction cost	**$2,925,600**
Annual cost	**$1,231,314**

Alternate 2 proposes to create a seawater injection barrier using MWD water as a source. Won't the cost of production increase if we buy water to inject it into the basin then pump it our in a contaminated condition and have to clean it up before we can use it? It seems like the cost per acre foot would nearly double? I go back to my comments on number 1.

Alternate 3. This alternate is designed to eliminate seawater intrusion into the basin by creating an extraction barrier by inducing seawater to flow inland due to production at the extraction barrier wells. The water would initially be brackish and would eventually be seawater. New treatment facilities would be constructed and collocated with the SCWD desalter facility.

Construction cost	**$42,435,461**
Annual cost	**$3,976,968**

Alternate 3 would be a seawater extraction barrier sort of like the SODOC but using new facilities at SCWD to process seawater. This alternate is extremely costly and drive the water rates for SCWD and CSJC through the roof.

Alternate 4. This alternate includes alternates 2 and 3 but would drill one or two Ranney-style wells to produce basin yield capacity during dry periods and to prevent seawater intrusion of sea water.

Construction cost	**$5,520,000 each or $11,040,000 for 2**
Annual cost	**$650,852 each or $1,301,704 for 2**

Alternate 4 would do everything above in Alternates 2-3 but drill one or two Ranney wells to take water from the bottom of the basin that turbine pumps can't reach. The wells are extremely expensive to drill and to maintain. Again, all of this would be paid by CSJC and SCWD?

Alternate 5. This alternate would include alternate 2-3-4 but would build T and L levies on a reach of the San Juan Creek as a storm water recharge facility from runoff from Arroyo and San Juan creeks. The storm water would percolate through the strata to recharge the basin.

Construction cost	**$?**

Annual cost	**$?**

Alternate 5 would add in stream recharge using storm water. This is a relatively inexpensive approach but is full of environmental concerns to regulators. Is it doable?

Alternate 6 This alternate would include alternates 2-3-4-5 and would use recycled water to recharge the basin during the months of May through September. The recycled water would come from existing sources but plans are to obtain water that meets Title 22 effluent from SOCWA for recharge. The SOCWA facility would be modified to produce Tertiary-treated water in quantities for annual recharge based upon spring time measurements.

Construction cost	**Not stated but could be over $75 million**
Annual cost	**Not stated but could be over $ 2 million per year**

Alternative 6 is the TEC committee recommended alternative. This do everything approach and is the most expensive. I don't know how the TEC committee can recommend this alternative when they have no idea of the total cost. Somehow we must get the "water empire" folks to recognize that it is the consumer water rates that pay the bills. Under the plan only the CSJC and SCWD would pay all of the construction and annual costs because they are the only agencies to benefit from the basin improvements. If the basin was the only water source available we would be forced to do most of the things they have recommended. But MWD water is available at significantly lower cost than any of the various combinations of alternatives.

John Perry
Capistrano Taxpayers Association

RANCHO MISSION VIEJO

September 9, 2013

Mr. Don Bunts
Santa Margarita Water District
26111 Antonio Parkway
Rancho Santa Margarita, CA 92688

Reference: San Juan Basin Groundwater Management Plan, Draft Dated April 2013

Subject: Rancho Mission Viejo Comments

Dear Don:

Thank you for the opportunity to review and comment on the referenced report. Rancho Mission Viejo (RMV) has reviewed the document and offers the following comments for your consideration:

General

1. **Pages ES-1 through ES 10**: These pages represent the Executive Summary, which appears to be missing from the document; please provide when available.

2. **Report Approach**: Please confirm the boundary of the Middle and Lower Basins. In the event that the upstream boundary is upstream of Ortega Highway, the study should address the RMV Mutual Water Company and address the riparian water rights. Section 3.3 indicates that the Upper Basin is not a part of the study and should be clarified that it is because it operates independent from the Lower and Middle Basin.

3. **Ortega/Trampas Lake Reservoir**: While the study reinforces a strategy for recharge of the groundwater, it should recognize ongoing efforts to implement a potential 5,000 acft recycled/non-potable water facility. Also, this project has received support from the County Board of Supervisors for contributing storm runoff water as well as recycled water from the SMWD CWRP. This project would be the largest storage facility in the region of this type and should maintain a high priority for implementation.

Exhibits & Figures

4. **Figure 2-1** through 2-4 and 3-45 through 3-47: The San Juan Basin Authority boundary appears to follow the cumulative external boundaries of the San Juan Basin Authority (SJBA) agency member. In some cases the boundary exceeds the boundary of the San Juan Watershed. In cases where this occurs, please clarify if there be some delineation

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between the boundary corresponding to a service area of a SJBA member and the actual boundary of SJBA.

5. **Figure 3-1**: Clarify the Lower and Middle Basin study area boundary on this or an appropriate exhibit. Figure 3-14 and 6-1 appears to reference a portion of the boundary however it is not clear.

6. **Figure 3-3**: The Laguna Beach Station is used to summarize Annual Precipitation and Cumulative Departure from Mean. It seems that there would be better stations to represent runoff tributary to the San Juan Creek, either the mountainous or coastal area.

7. **Figure 3-15**: The determination of the boundary for the Middle Basin appears to be upstream of the crossing at Ortega Highway. However, prior construction information for the bridges at Ortega Highway and Antonio Parkway indicate that bedrock is 10' and 75' (+/-) below the thalweg of the Creek. Please confirm the boundary location. In the event that the boundary is upstream of Ortega Highway, the study should address the RMV Mutual Water Company and address the riparian water rights.

8. **Figure 3-27**: Address the interdependence of the Upper Basin since this is designated in this exhibit.

9.

Report

10. Section 1.1: Clarify the intent of the study boundary. In the event that the boundary is upstream of Ortega Highway, the study should address the RMV Mutual Water Company (MWC) and address the riparian water rights.

11. Section 2.1.2: The report references 4 water districts, yet there appears to be an area not designated under a water district. Clarify if this is for another water district or if it is within the sphere of influence of such.

12. Section 2.3.1: The report indicates that the Ranch Plan has not yet been developed, however PA-1 has been graded with lots currently for sale. Also, clarify the boundary area and the relationship with area outside of the San Juan Watershed as it seems the study should not include areas outside of the watershed.

13. Section 2.3.2: Clarify the acreages in the Ranch Plan. The Ranch Plan includes 22,282 acres yet 29,507 are referenced. Also, lands pending developed are removed from the Williamson Act contract (the report indicates them as "not renewed" which is incorrect administration of the process).

14. Section 2.6.1.8: The report indicates that Aliso Creek watershed is included in the analysis since this is tributary to San Juan Creek. However, San Mateo watershed, not tributary to San Juan Creek, appears to be included in the analysis for which there is no explanation.

15. Section 3.3.5: Clarify that the aquifer is for the Middle and Lower Basins.

16. Section 3.4: Similar to comments above, confirm that the boundary of the analysis does not include the RMV MWC; otherwise the numeric information in this section will need to be adjusted appropriately. Also, clarify the eligible diversion amount of 3,325 acft. (in the table) is that which the City of San Juan Capistrano has as a part of the Desalter Project; also confirm the amounts that the City has been including in current operations.

17. Section 3.5.2 and 3.6.2: The study indicates that the firm yield of the basin appears to be less than 7,000 acft./yr., yet 13,508 acft./yr. is permitted. Clarify the impact of this variance.

18. Section 3.7.1.2: Rancho Mission Viejo (Well 7) is included in the study yet this well is upstream of the Middle Basin. Please clarify why this is included in the study if it is outside the boundary.

19. Section 3.8 and 4: Confirm the Water Demand and Supply volumes for SMWD as these appear to be higher than current operations.

20. Section 3.9.2.6: The report indicates that 5.0 mgd is sent to advanced water treatment. However, SMWD recently increased the capacity at the plant to 5.5 or 5.75 mgd. Please clarify.

21. Section 6: Provide a summary table of each alternatives with advantages, disadvantages, capacity, costs, and time for implementation. Provide clarification for where there is overlap or where one alternative supersedes another.

Should you have any questions regarding these comments, please feel free to contact me at (949) 240-3363.

Sincerely,

Jeff R. Thompson
Vice President, Development Engineering

Bcc: Laura Eisenberg, RMV
Jeff Brinton, PBMB
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