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Jaimie Galayda
Tucson Water
One Water 2100 Plan-Comments
310 W Alameda St
Tucson, AZ. 85701

Subject: Tucson Water-One Water 2100 Plan-Comments

Dear Jaimie:

The Tortolita Alliance (TA) is a local (Marana, AZ) non-profit organization that advocates for land conservancy, ensuring protection of open space, wildlife habitat, watershed, and compatible recreational use.

TA has also been active in area of water education, conservation and ensuring an adequate water supply for the Tucson region and the entire southwest.

The Tucson Water (TW) One Water 2100 Plan (Plan) is an exemplary water resource plan for the following reasons:

1. Contains a long-term, comprehensive analysis of water supply and water demands including the impacts of water conservation and climate change.
2. Water supply, water demand, water quality, climate resilience, quality of life, affordability and other societal strategies are presented.
3. Implementation Actions and Adaptive Management tools provide assurance the Plan will not sit on a shelf until the next water plan.
4. Community/Stakeholder involvement is impressive and should be used as a model by other water agencies in the Tucson Active Management Area (TAMA).

TA has identified some areas in the Plan that need modification, correction and/or enhancement. We request that the following comments and suggestions be incorporated into the final Plan:

1. TW Service Area-Figure 1.6 (Pg 1-6)-The Tortolita Preserve is not shown in green as a Preserve on this figure. The 2,400-acre Tortolita Preserve is Marana's premier natural resource asset and should be added to this

- figure and shown in green as a Preserve and on all other maps in the Plan and Appendices.
2. TW Service Area (Pg 1-6)-Section 1.3.3 should include a description of Tucson Water Service Area Policy and Intergovernmental Agreements with other communities/water agencies. There should also be a statement that TW as no intention of serving areas that are outside its Obligated Service Area and in particular the areas in white in Dove Mountain (Marana) including the Tortolita Preserve and surrounding lands.
 3. Surface Water-Colorado River (Pg 3-2)-The Colorado River is over allocated by 3.5 million acre-feet per year (MAFY) and all Colorado River water allocations should be cut by 20% (3.5/16.5). See [TA Comment Letter \(9/1/22\)](#) to the United States Bureau of Reclamation (USBR). All water agencies that receive Colorado River water should assume a 20% cut for water resource planning purposes.
 4. Recharge & Recovery (Pg 3-4)-TW has been importing Colorado River Water for recharge and recovery since 2001. Non-native replenishment water has been mixed with the native groundwater for 22 years. This may lead to long-term in-situ groundwater and alluvium issues due to dissimilar water quality. The Plan should include an action item to study the long-term impacts of Colorado River Water replenishment in terms of water quality and alluvium mineral deposition.
 5. Groundwater (Pg 3-6)-There is no mention of TAMA in this section or throughout the document. The Plan should include a discussion of this comprehensive regional water resource planning effort and TW's role in that effort.
 6. Groundwater (Pg 3-6)-There is no mention of aquifer safe yield and the fact that the TAMA aquifer(s) accumulated overdraft from 1985-2020 is 1.8 MAF, i.e., the aquifer(s) is already in a deficit and needs to be paid back.
 7. Groundwater-Figure 3.8 (Pg 3-7)-This figure shows improving groundwater levels in some TAMA regions but not in others. There should be a note associated with this figure that states that although groundwater levels are improving in some areas, each water agency's Designated Assured Water Supply (DAWS) dictates how much native groundwater can be withdrawn. For example, Marana DAWS (2018) has a native groundwater allowance of 25.5 MAFY and an incidental recharge allowance of 294.5 MAFY for a total of 320 MAFY. Yet Marana's water demands are 2,920 MAFY, requiring the balance to come from renewable water supplies via replenishment.
 8. Groundwater Remediation (Pg 3-10)-PFAS compounds in the aquifer is a regional problem and impacting other water agencies. The Plan

- should include an action item to study and remediate PFAS compounds on a regional basis.
9. Stormwater (Pg 3-19)-The Plan should include an item to conduct basic cost/benefit analysis before embarking on large-scale stormwater capture projects. It seems doubtful that a positive cost/benefit can be achieved in a region that has an average rainfall of less than 12" per year and two large aquifers that have been accepting natural runoff for eons.
 10. Water Demands (Pg 4-2)-Section 4.1.1 states that residential water demands have declined to about 100 gpcd yet on the following page, Figure 4.4 shows residential demands declining to 75 gpcd. This needs to be corrected. Figure 4.4 does not match Figure 9 in Appendix J as 4 more years have been added and should state as such.
 11. Seasonal/Non-Seasonal Demands-Figure 4.5 (Pg 4-4)-This figure compares non-seasonal and seasonal water consumption. It was developed using some very sketchy assumptions whereby winter use was averaged and multiplied by 12 to obtain non-seasonal use (indoor) and that was subtracted from the total use to get the seasonal use (outdoor). The Plan states that seasonal use (outdoor) is about 20% of total use. This is not a scientific study and it is well known that known that in arid regions the outdoor water use can be 50%-75% of total use, especially if weather-based irrigation controllers are not used. This figure should be removed and replaced with some scientific indoor/outdoor water use data.
 12. Rebates & Incentives (Pg 4-6)-Weather-based irrigation controllers are not mentioned. They can save up to 12,250 gallons per year per home. Weather-based irrigation controllers should be included in the Plan and offered by TW free of charge and the building codes should be changed to require them. See [TA's Smart Irrigation To Save Water](#).
 13. Rebates & Incentives (Pg 4-6)-Hot water recirculation pumps are not mentioned. They can save 9,000 to 12,000 gallons of water per year per home. Hot water recirculation pumps prevent wasting of water while waiting for the water to warm up for showers, etc. and should be included in the Plan. TW should offer a hot recirculation pump rebates and the building codes should change to require them. See TA's [Tidbits #39](#).
 14. Population Projections-Figure 4.11 (Page 4-11)-Tucson service area population is expected to grow to 947,000 by 2100 for an average annual increase of 0.3 percent. This is a reasonable and sustainable growth rate compared to other communities like Marana which has a projected growth rate of 7.48% over the period 2021-2041. See TA's [Marana DAWS Modification Part II-Analysis](#).

15. Demand Projections-Figure 4.12 (Pg 4.12)-This figure and discussion does not match the water demands presented in the Water Use Projections-Appendix J. There is no mention of including climate change and water conservation in the projections. Appendix J-Figure 9 show three projection scenarios (low-medium-high) that range from 116,000 AFY to 150,000 AFY with an average of 133,000 AFY in 2100. Figure 4.12 has two projections-increasing demand and decreasing demand ranging from 106,000 AFY to 127,000 AFY. This does not match the presentation in Appendix J and needs to be rectified or explained.
16. Supply and Demand Comparison (Pg 4-13)-Section 4.5.3 is very confusing and should redone for the following reasons:
 - a. As mentioned in Item 15, the demands in section 4.5.3 are different than in Appendix J.
 - b. There is not a good explanation of the TW sources of supply.
 - c. Where does the 54,000 AFY of available groundwater come from? Is this related to Additional Groundwater Avra Valley Water Rights totaling 1.2 MAF?
 - d. Assuming 50% reduction of Colorado River supplies is too conservative and should be 20%.
 - e. Figure 18 in Appendix J is much easier for the average person to understand. This type of graph should be used showing the range of demands versus two supply alternatives—one with 20% Colorado River cut and one without. See TA's [Tucson Water One Water 2100 Analysis \(10/9/22\)](#).
17. Strategies-TA agrees with most of the Strategies presented with the following additions:
 - a. SW-1-utilize 80% of Colorado River water supply as available for planning purposes.
 - b. GW-4-include ultimate replenishment of the 1.8 MAF of TAMA accumulated overdraft.
 - c. GW-5-all wheeling agreements should be required to perform a cost-of-service study and provide credits to the existing customers that paid for the infrastructure that will serve the new area covered by a wheeling agreement. See [TA Letter to Tucson Water \(1/16/21\)](#).
 - d. GW-6-add strategy to study the long-term impacts of Colorado River Water replenishment in terms of water quality and alluvium mineral deposition.
 - e. S-1-Perform cost/benefit analysis first-see Item 9.

- f. I-2-include weather-based controllers and hot water recirculation pumps.
- g. I-3-consider budget based tiered rates.
- h. E-2-support Smartscape HOA Transformation Program.
- i. GP5-the TW needs drastic improvements to provide better access to documents and phone/email listings for TW employees.

TA does not have and comments for Chapter 6-Implementation and this ends our comments.

The bottom line: TW's current water supplies are adequate to meet projected water demands to the year 2100 even with a 20% cut to TW's Colorado River Supply.

Thank you for the opportunity to comment.

Regards,



Mark L. Johnson
President

cc: Regina Romero, Mayor Tucson
John Kmiec, TW Director
Tom Buschatzke, ADWR
David McKay, ADWR
Senator Mark Kelly
Senator Kyrsten Sinema
Congressman Juan Ciscomani