Public Comment Letter for September 17, 2025- Executive Summary

To: Borrego Springs Watermaster
From: David Garmon, MD, President, Tubb Canyon Desert Conservancy
Re: Putting the Cart before the Horse: The Currently Proposed Scope of Work for Determining Best Available Science

Introduction

At the August 20, 2025 meeting, Director Tyler Bilyk suggested that the Watermaster (WM) cannot yet rely on the UCI GDE Study and must instead continue to rely on Appendix D4 for its understanding of Groundwater Dependent Ecosystems (GDEs) in the Subbasin. This suggestion overlooks two critical facts:

> (1) Appendix D4 has never been peer reviewed and was never intended to be a definitive scientific work; and
>
> (2) The UCI GDE Study meets every criterion of the Watermaster's own Best Available Science (BAS) Policy.

To delay acceptance of the UCI GDE Study as BAS risks wasting pumpers' money, repeating costly work, and compounding the decline of a Beneficial User, the mesquite bosque.

Why Appendix D4 Fails as Science

Appendix D4 was not the product of rigorous research. Its authors were given 30 days, no budget, and a "starting point" assumption that the mesquite bosque was already destroyed. They conducted no experiments, generated no data, and relied on an incomplete vegetation map that ignored 95% of the mesquite bosque. By the authors' own admission, it was a "political decision"—not science.

Why the UCI Study Meets WM's BAS Policy Standards

By contrast, the UCI GDE Study was led by Dr. Travis Huxman, Chair of Ecology and Evolutionary Biology at UC Irvine, one of the foremost desert ecologists in the nation. Backed by a $1 million budget and a 3-year timeline, his team produced extensive field data using state-of-the-art methods. Their findings include:

(1) Radioisotopic signatures of groundwater in mesquite trees, proving that they access groundwater,
(2) Evapotranspiration rates that could not be sustained by surface water alone,
(3) Seasonal greening consistent with groundwater access,
(4) Conclusive data refuting the "perched water" claim.

This study squarely satisfies the Watermaster's BAS Policy criteria: it is relevant, timely, and consistent with professional scientific standards.

The Watermaster's Conflation Error

The WM's BAS Policy requires only one technical determination: whether the UCI GDE Study is consistent with scientific and engineering professional standards of practice. Period.

Yet the proposed Scope of Work transforms this simple determination into a year-long peer review process—something never required by the BAS Policy. Worse, it asks reviewers to opine as to how the WM should use the study's findings. That is not "determining BAS"; that is deciding how to respond to BAS, a separate and subsequent task. Conflating these steps is costly and unnecessary.

The Harms of Delay

The Scope of Work and bureaucratic process, as currently proposed, impose three serious harms, all borne by pumpers:

(1) Unnecessary Costs – A full peer review process greatly exceeds the requirements of WM policy, imposing needless expense on pumpers.

(2) Repetition of Work – Delaying recognition of the bosque as a Beneficial User until after Water Year 2026 will force the redo of planned work for WY 2026 at additional cost.
(3) Escalating Mitigation Costs – The mesquite bosque is in measurable decline. Delays only increase the eventual cost of mitigation and adaptive management.

What some portray as a "two-for-one" approach is, in reality, a "lose-lose": higher costs now and higher costs later.

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Recommendation

The wisest and fiscally responsible course for the Watermaster is to separate the tasks:

- Task 1: Make the straightforward determination that the UCI GDE Study is BAS.
- Task 2: Rely on its own advisors—or retain new ones—to develop adaptive management actions in response to new information.

By keeping these tasks distinct, the WM will honor its fiduciary duty, conserve scarce dollars, and ensure timely protection of the mesquite bosque as a Beneficial User.

Closing

The Watermaster's commitment to using Best Available Science is commendable. And in this case, the path forward is clear: avoid the costly sequencing error of conflating BAS determination with adaptive response. Put the horse before the cart—determine BAS now, then act on it. That is the fiscally responsible and scientifically sound choice.

Full Public Comment Letter for September 17, 2025

To: Borrego Springs Watermaster

From: David Garmon, MD, President, Tubb Canyon Desert Conservancy

Re: Putting the Cart before the Horse: The Currently Proposed Scope of Work for Determining Best Available Science

At the August 20, 2025 meeting of the Borrego Springs Watermaster (WM), during the discussion of Best Available Science (BAS) and the UCI GDE study, Director Tyler Bilyk opined the WM needed to rely on peer reviewed science in its deliberations. In this context, Director Bilyk implied that the WM could not yet rely upon the UCI GDE Study and must continue to rely upon Appendix D4 for its understanding of the status of GDE's in the Subbasin. In this context it should be noted Appendix D4 was never intended to be scientifically rigorous and has never been peer reviewed.

Appendix D4

As the circumstances regarding the creation of Appendix D4 may not be general knowledge shared by all members of the WM Board, I would like to provide information from a

phone conversation I had with the lead author of Appendix D4 on December 12, 2022. In this conversation, the author informed me that he and his co-author were given 30 days and no budget to produce Appendix D4. He said their "starting point" was that the mesquite bosque was already destroyed and that there was no chance of bringing it back. He said their starting point was a "political decision" because there was no pressure from any agency pushing for the recognition of the existence of GDE's in the subbasin.

The authors of D4 conducted no scientific experiments and generated no data. One of the bases of their report was a vegetation map showing vegetation only in the state park, not in the privately held acres of the valley where 95% of the mesquite bosque exists. Rather than being a scientific document of any repute, worthy of the Watermaster's trust and regard, Appendix D4 is a hastily written opinion piece drafted by hydrogeologists whom this Board now regularly acknowledges have no expertise in biological systems.

UCI GDE Study

In contrast to Appendix D4, UCI's GDE study was led by one of the most preeminent and senior researchers in US desert ecosystems, Dr. Travis Huxman, who is the Chairman of the Department of Ecology and Evolutionary Biology at one of the most prestigious universities in the nation. Dr. Huxman's team had a research budget of more than $1,000,000 and a 3-year time frame during which to conduct extensive on-the-ground research. Their research protocols were state of the art and generated vast amounts of data. The data demonstrated the radioisotopic signature of groundwater in mesquite trees. The data demonstrated evapotranspiration in the mesquite bosque far in excess of that that could be sustained by surface water. The data showed greening of the mesquite trees during times of the year when plants without access to groundwater turn brown. To address this Board's questions regarding the unsupported hypothesis of "perched water," the research team discovered and reported extensive data conclusively refuting the concept.

Also, in contrast to Appendix D4, which was created in a vacuum without public comment or participation and presented as a *fait accompli*, the UCI GDE Study communicated with stakeholders continuously over three years concerning every datapoint collected. These communications were in the form of technical memoranda, progress updates, and public fora. The study and its results have been publicly discussed and critiqued continuously over its three-year duration, including forwarding all written communications to this board as well as providing this board with in-person updates. All research data generated by the study is publicly available.

WM's Conundrum

The WM's commitment to basing its decisions on Best Available Science is both necessary and commendable. However, when confronted with the stark contrasts between Appendix D4—a document that was hastily prepared by individuals who were not subject matter experts and who had no budget and therefore no capacity to conduct scientific research—and a study conducted by preeminent subject matter experts who possessed both the time and funding

to conduct extensive scientific research, the WM's hesitation to reject the former and expeditiously embrace the latter raises questions as to the WM's clarity of purpose and commitment to efficiently managing scarce resources.

The most generous explanation of the WM's apparent conundrum is that it is not clear as to how to apply its own BAS policy to the matter at hand. Moreover, as it fails to simply apply its own policy, the WM is simultaneously conflating "determining BAS" with "responding to BAS." Simply stated, the two tasks being conflated are:

1) Determining BAS. Determine if the UCI GDE Study Report represents the Best Available Science on the mesquite bosque as defined by the Watermaster's Best Available Science Policy; and

2) Responding to BAS. If the UCI GDE Study Report is the Best Available Science, devise Adaptive Management Actions that address the Undesirable Results the mesquite bosque, as a Beneficial User, is experiencing under the current water regime.

As shown below, Tasks 1 and 2 are vastly different and the failure to appreciate the differences will result in increased costs to all the pumpers in the Valley.

Task 1 – Best Available Science

If over the next 20 years the Borrego Valley avoids a water catastrophe, it will be because this Board will have availed itself of the best available science in all its decisions. To that end, the WM has adopted a Best Available Science Policy. Section 2 of this Policy establishes the WM's criteria for "best available science." The Policy lists only three criteria, which are:

1) Relevant to the decision being made by the Watermaster;
2) Available to the Watermaster within a reasonable time in advance of the Watermaster's decision; and
3) Consistent with scientific and engineering professional standards of practice.

The Policy does not provide additional criteria for determining Best Available Science. Criteria 1 and 2 are procedural, having to do with relevance and timeliness, leaving Criteria 3 as the crux of all determinations of Best Available Science.

Section 3 of the Policy states the Watermaster "may" direct the TAC, EWG, or Technical Consultant to conduct an independent review of the information or data, presumably to establish if the new information/data meets the WM's Criteria for BAS as defined in Section 2.

Section 4 of the Policy states the Watermaster "may not" rely on or use any technical information or data … without an independent review and recommendation from the TAC,

EWG, or Technical Consultant, again presumably to establish whether the new information/data meets the Criteria for BAS as defined in Section 2.

The WM's BAS Policy hinges on whether new information is "consistent with scientific and engineering professional standards of practice." Whether new information meets these standards of practice is the technical crux of the determination of BAS; not the costly and time-consuming Scope of Work that has been recently designed for potential independent reviewers.

While it remains my opinion the WM's Technical Advisor should be able to inform the WM as to whether or not the UCI GDE Study is consistent with scientific and engineering professional standards of practice, if the WM does not have sufficient confidence in its Technical Advisor to make this determination, the only question the BAS Policy requires a response to from an independent reviewer is simply: Is the UCI GDE study consistent with scientific and engineering professional standards of practice? Period. That is the determination of BAS as per WM Policy. Nothing more is required.

Unfortunately, the Scope of Work that the Technical Advisor is proposing goes well beyond the WM's BAS Policy. While the BAS Policy is completely silent on the subject of "peer review," the current scope of work being proposed is just that—a peer review of the entire UCI Study. In fact, the independent reviewers are referred to in the Scope of Work as peer reviewers. Peer review is not a determination of BAS, but a very different and far more encompassing endeavor. Peer review is not a requirement of the WM's BAS Policy.

Task 2 – What to do with Best Available Science

What to <u>do</u> with Best Available Science is a completely different task from determining BAS. Once new information is confirmed as BAS in accordance with the WM's Policy, it is then possible to begin consideration of what to do in response to the innumerable questions precipitated by the new information. However, in the currently proposed Scope of Work independent reviewers are being asked to weigh in on <u>how to use</u> information contained in the UCI report, e.g. "How can/should the Watermaster use the results of the UCI GDE Study Report? For example, can the report be used to update the BVHM? If so, how so?" "Do you agree or disagree with the recommendations in the UCI GDE Study Report?"

These and similar questions are not the purview of an independent reviewer tasked with ascertaining if new information is consistent with scientific and engineering professional standards of practice. These are questions the WM and its advisors must grapple with <u>after</u> they have confirmed new information as BAS and move to develop appropriate adaptive management actions.

The Harms of the currently proposed Scope of Work

The currently proposed Scope of Work for Independent Reviewers creates a year-long process, at great expense, that goes far beyond the requirements of the WM's BAS Policy. Such a process would create multiple harms. Chief among these harms are:

1) All Pumpers Bear Unnecessary Costs
   All Watermaster expenses are funded by pumpers. Unnecessarily extending the review process beyond the requirements of the BAS Policy imposes needless financial burdens on all pumpers in the subbasin. Such an action is inconsistent with the WM's goal of exercising faithful fiduciary responsibility for all pumpers.

2) Delayed Recognition Forces Repetition of Work in Water Year 2026
   Delaying recognition of the mesquite bosque as a Beneficial User until after WY 2026 ensures that work planned for Water Year 2026 will have to be redone at pumpers' expense. Such an action is inconsistent with the WM's goal of exercising faithful fiduciary responsibility for all pumpers

3) Delayed Recognition Increases Mitigation Costs
   During the scientific study of the mesquite bosque, researchers developed the capacity to use ground-truthed, remote sending capabilities to monitor the health and productivity of the mesquite bosque both retrospectively and in real time. The mesquite bosque, as a groundwater dependent ecosystem, has been in measurable decline for many years. The longer recognition of the mesquite bosque as a Beneficial User of Water entitled to the protections afforded by SWGMA is delayed, the more this groundwater dependent ecosystem declines, compounding mitigation costs. Again, these increased costs will be borne by all pumpers and conflict with the WM's goal of exercising faithful fiduciary responsibility for all pumpers.

"Two-for-one"

Some WM Directors have suggested that asking the independent reviewer(s) to both determine BAS and to provide recommendations to the WM about what to do with the new information is an efficient, cost-saving "two fer." The above paragraphs indicate that would not be the case because 1) the current scope of work will be more expensive than the simple determination of BAS 2) the year long time frame will necessarily cause much of the work planed for WY 2026 to be redone in subsequent water years at increased cost to pumpers, and 3) delayed recognition of the mesquite bosque as a GDE will compound the harm done to this Beneficial User, thereby increasing ultimate mitigation costs.

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Recommendation

The currently proposed process and Scope of Work for determining if the UCI Study represents the best available science puts the cart before the horse by conflating Tasks 1 and 2 as outlined above. My recommendation is that the WM not make this costly sequencing error, but rather put the horse before the cart by first making a simple determination of BAS and then using its own experts or hiring additional outside experts to assist with developing adaptive management actions. This recommendation serves the financial interests of all Beneficial Users in the Borrego Subbasin and would be a continuation of the WM's prudent and efficient use of scarce dollars.

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