Borrego Springs Watermaster
Environmental Working Group Meeting
November 20, 2024 @ 9 a.m.

In-person meeting at:

Steele/Burnand Anza-Borrego Desert Research Center

401 Tilting T Dr, Borrego Springs, CA 92004

There will be no virtual meeting option because we will be conducting a field visit.

AGENDA

Items with supporting documents in the Agenda Package are denoted with a page number.

I. Opening Procedures

A. Roll Call
B. Review Agenda

II. Public Comments

This is an opportunity for members of the public to address the EWG. Comments will be limited to three minutes per commenter.

III. Biological Restoration of Fallowed Lands ……. Page 2

A. Task 3 – Brush Pile Wildlife Sand Fence Case Study (Land IQ)
    i. Short presentation on the study design before heading out in the field to see the constructed project.
B. Task 4 – Farmland Fallowing Rehabilitation Strategies (Land IQ)
    i. Short presentation on key recommendations for updated fallowing standards.

IV. Public Comments (time permitting).

This is an additional opportunity for members of the public to address the EWG. Comments will be limited to three minutes per commenter, time permitting.

V. Future Meetings

VI. Field Tour

- **Start** (10:30 am) – Steele/Burnand Anza-Borrego Desert Research Center: Overview of Field Tour. Distribute handouts for field tour stops. Carpooling is encouraged. There will be driving on dirt roads but 4WD is not required.
- **Stop 1** (11:00 am) – BWD Property (Formerly Bauer Ranch) at the end of Di Giorgio Rd.
- **End** (1:00 pm) – **Steele/Burnand Anza-Borrego Desert Research Center**

VII. Adjourn

Borrego Springs Watermaster
Environmental Working Group Meeting
November 20, 2024

To: Environmental Working Group (EWG)

From: Travis Brooks (Land IQ) and Andy Malone (Watermaster Technical Consultant)

Date: November 14, 2024

Subject: Biological Restoration of Fallowed Lands

Dear Participants,

As we prepare for our upcoming meeting on Wednesday, please keep in mind that we will be embarking on a field trip and utilizing our personal vehicles for transportation. We kindly request that you plan to carpool whenever possible, as no additional transportation will be provided.

Our itinerary involves departing from the Research Center and traveling to the BWD property located at the end of Di Giorgio Road (formerly Bauer Ranch). Upon arrival at the BWD property, we will transition from paved public roads to a well-maintained private dirt road. From there, we will park our vehicles and proceed with a short walk to the sand fence project area. Please be aware that this portion of the trip will involve traversing uneven sandy terrain.

To ensure your comfort and safety during the outdoor portion of our meeting, we strongly advise you to bring suitable footwear, sun protection, and water. The duration of our time spent outdoors will be between 1 to 2 hours, depending on the extent of discussion that takes place.

Thank you for your cooperation and we look forward to a productive and enjoyable field trip experience.

Background

Background on the Management of the Borrego Springs Groundwater Subbasin - The Borrego Springs Groundwater Subbasin (Subbasin) overlies the Borrego Valley, where the sole source of water for the community of Borrego Springs and surrounding areas, including citrus farms and golf courses, is groundwater. In July 2020 the Borrego Water District, the public water district serving the Subbasin, entered into a settlement agreement to adjudicate the groundwater rights of the critically-overdrafted Subbasin, resulting in a proposed solution and Groundwater Management Plan (GMP), followed by a stipulated judgment (Judgment), that comprehensively determines and adjudicates all rights to extract and store groundwater in the Subbasin.

The Borrego Springs Watermaster is charged with managing and implementing the Judgment, which includes a sustainability goal that requires reducing groundwater pumping by 75% over the next 18 years (until 2040) within the Subbasin. To meet this requirement, it will be necessary to permanently

fallow (retire) agricultural land, which will also introduce potential adverse environmental consequences such as airborne dust emissions, invasive plant species establishment and spread, and degradation of the landscape's aesthetic value.

Introduction to the Borrego Springs Subbasin Project - The Watermaster's Environmental Working Group (EWG) contends that ecological restoration of current and future retired agricultural lands could be a solution for addressing the potential adverse impacts associated with land fallowing, and could be helpful in protecting human health, the environment, and the socioeconomic wellbeing of the Borrego Springs community during GMP implementation.

The Borrego Water District received funding from a California Department of Water Resources Sustainable Groundwater Management grant to implement the Borrego Springs Subbasin Project, which includes a component (Biological Restoration of Fallowed Lands) to prioritize and develop a strategy for retiring farmlands within the Borrego Valley that will reduce water consumption and avoid or minimize potential adverse impacts. The current minimum fallowing standards in the Judgment include destroying all tree crops (by chipping or burning), removing all surface irrigation equipment, and stabilizing soil by mulching with chips or ash. While these minimum standards may help to reduce dust emissions and other effects of soil erosion, they may not represent best practices for addressing other environmental and socioeconomic concerns associated with fallowing such as visual blight, invasive species, impaired ecosystem function, and overall conditions that impact the landscape and activities in the Borrego Valley.

Purpose of the Biological Restoration of Fallowed Lands Component (Component) - The main goal of this component was to characterize historical and current conditions of the northern agricultural area in the Subbasin; explore the feasibility of various biological restoration/rehabilitation techniques; and develop guidance for future biological restoration projects on current and future fallowed lands within the Subbasin. The Component includes the following tasks:

Task 1. Review and Analysis of Existing Data
Task 2. Natural Reference and Retired Farmland Study
Task 3. Dust Control Treatment Study
Task 4. Retired Farmland Rehabilitation Strategies
Task 5. Retired Farmland Prioritization
Task 6. Watermaster's Environmental Working Group Meetings

Discussion

At the EWG meeting, the scientists at LandIQ and UCI will cover two topics:

Topic 1. Overview of the Task 3, Dust Control Treatment Study Design, which we will see during the field tour. The goal of Task 3 was ultimately to design economical fallowing practices that serve multiple functions including dust control by reducing wind driven erosion, creating microsites for seed/litter accumulation, and creating conditions beneficial to native plant establishment such as shading and perches for seed dispersal as well as wildlife habitat.

The approach to Task 3 was to conduct a field study that tested the feasibility and effectiveness of potential fallowing treatments.

1) Treatment 1 – Rows of mulch (chipped orchard trees) rows that represent the minimum fallowing standard practice defined in the Judgment
2) Treatment 2 - Felled orchard trees scattered throughout the site to emulate desert shrubs
3) Treatment 3 - Constructed tree fences using felled orchard trees
4) Treatment 4 - Temporary sand fences

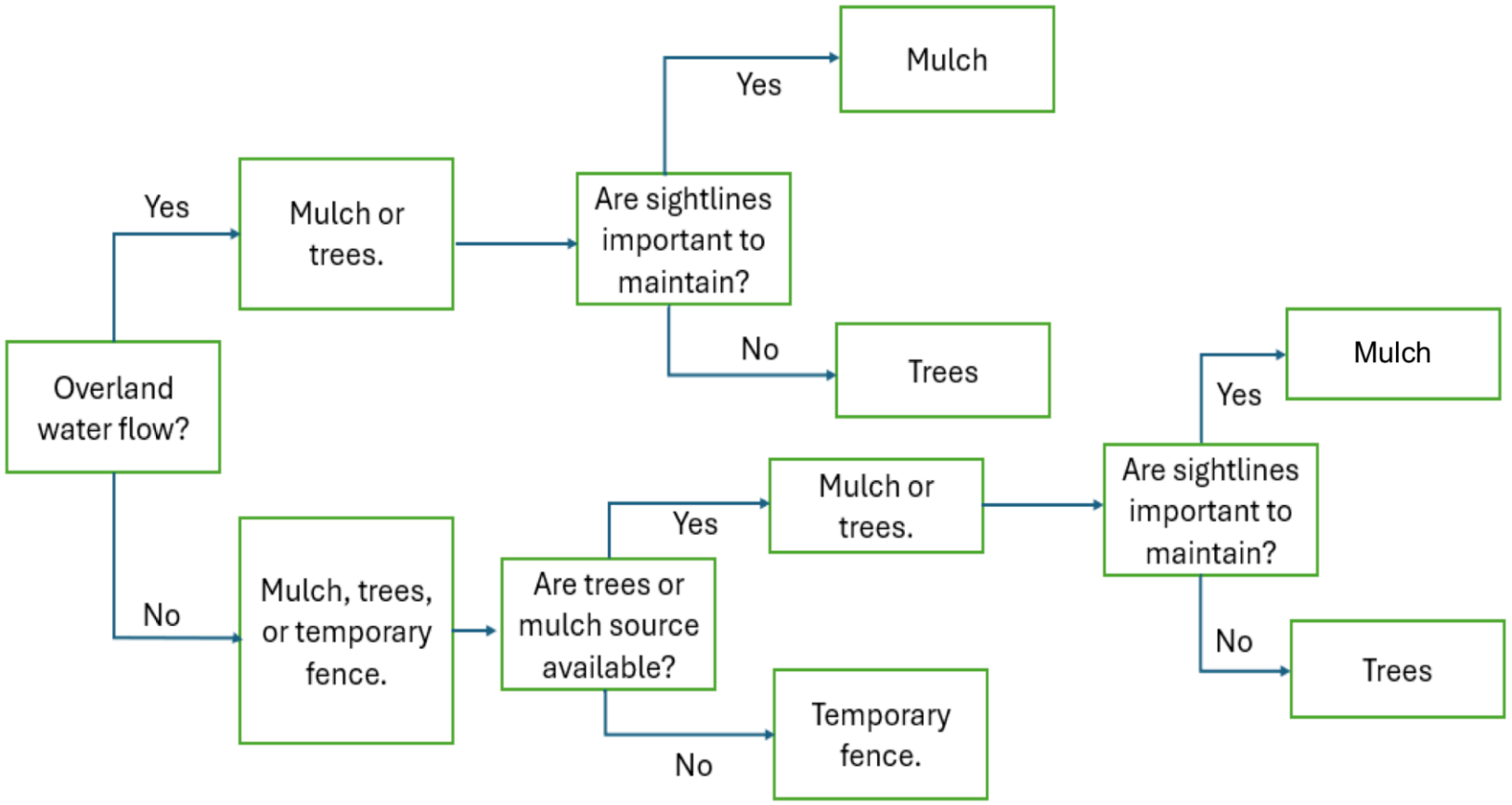
Topic 2. Present key findings from the Draft Task 4 Report, Recommended Retired Farmland Rehabilitation Strategies. The objectives of the Task 4 report are to:

- Summarize findings and lessons learned from Tasks 1, 2 and 3
- Develop conceptual models to contextualize strategies in a meaningful framework for farmland rehabilitation as part of Task 4
- Evaluate strategies and make recommendations for fallowing strategies as part of Task 4
- Revise, if necessary, the Task 1 fallowing prioritization map to finalize prioritization recommendations and acknowledge prioritization criteria options that influence prioritization outcomes

The key findings will inform recommendations to the EWG to consider for fallowing strategies that provide environmental and socio-economic benefit to the Borrego Springs community in addition to stabilizing soil and avoiding undesirable effects of retiring farmland. Each recommended strategy was tested in a field study in Task 3 and was evaluated for factors including dust control effectiveness, time and effort to install, cost, visibility, suitability for key environmental conditions identified in Task 2, and biological benefits such as wildlife protection and habitat.

The four recommended fallowing strategies include mulch (a more specific application of the existing fallowing standard), tree sand fences, scattered trees, and temporary sand fences.

To retire farmland, a landowner would find the recommended strategy for a specific site using the selection criteria illustrated in Figure 1, then consult the pros and cons of each fallowing strategy, summarized in Table 1, which are provided for making informed decisions about fallowing strategies depending on landowner and/or Watermaster priorities. A landowner may choose not to select the recommended strategy indicated by the decision tree because of considerations from Table 1. A landowner may choose to select one strategy and implement it on an entire field or property or select more than one strategy for implementing in combination with other strategies in different places or times. Recommendation 5, removal of invasive weeds, is important to implement with any of the four fallowing strategies.



Site Suitability Decision Tree - Optimizes Dust Control Effectiveness and Biological Benefits

Figure 1. Draft Selection Criteria for Recommended Fallowing Strategy Site Suitability

Table 1. Draft Pros and Cons of Fallowing Strategies

Strategy	Dust control effectiveness	Time & Effort to Install/Implement	Cost	Visibility and Permanence	Biological Benefits
Mulch – current fallowing standard	Lower - Indicated by Task 3 results	Moderate– requires specialized equipment and highest time commitment to grind individual trees and spread mulch to specifications.	Moderate - cost of equipment, labor and fuel to chip and spread mulch.	Lower - least visible and takes the least time to break down.	Lower – comparatively, mulch does not provide as much habitat/wildlife shelter and potential for microsite development to recruit plants as sand fences.
Tree sand fence	Higher - Indicated by Task 3 results	Higher – requires specialized equipment to cut and move trees to specifications.	Lower – cost of equipment, labor and fuel to cut and move trees.	Higher - most visible and takes the most time to break down.	Higher – provides the most habitat/wildlife shelter and potential for microsite development to recruit plants as sand fences, given certain specifications for tree density and porosity.
Scattered tree sand fence	Higher - Indicated by Task 3 results	Higher - requires specialized equipment to cut and move trees to specifications.	Lower – cost of equipment, labor and fuel to cut and move trees.	Higher - most visible and takes the most time to break down.	Higher - provides the most habitat/wildlife shelter and potential for microsite development to recruit plants as sand fences, given certain specifications for tree density, and porosity. May provide higher benefit than tree sand fence.
Temporary sand fence (on fallowed orchard)	Higher - Indicated by Task 3 results	Moderate – requires specialized equipment to cut and move trees for chipping, followed by installation of sand fence.	Higher - cost of equipment, labor and fuel cut, move and chip trees, then cost of materials and installation of sand fence..	Moderate - visible (taller than mulch but shorter than trees) and can be removed after 5 to 15 years.	Moderate - provides moderate habitat/wildlife shelter and potential for microsite development to recruit plants as sand fences.
Temporary sand fence (on non-orchard field; no trees available)	Higher - Indicated by Task 3 results	Lower – does not require specialized equipment to install.	Moderate – cost of materials and labor to install sand fence.	Moderate - visible (taller than mulch but shorter than trees) and can be removed after 5 to 15 years.	Moderate - provides moderate habitat/wildlife shelter and potential for microsite development to recruit plants as sand fences.

Next Steps

The primary objective of the upcoming field tour and presentation of key findings from the draft Task 4 Report is to offer you understanding of the project's context and insights. Furthermore, we aim to gather your valuable feedback and suggestions regarding the technical findings and recommendations presented in the report. Your expert input will play a crucial role in refining the additional fallowing strategies, which will be submitted to the EWG for consideration. Upon the EWG's review, the strategies may be further recommended to the Watermaster Board for integration into the existing fallowing strategies outlined in the Judgment.

To facilitate a collaborative and transparent review process, we have shared a draft of the Task 4 Report via Google Docs, accessible through the following link:

https://docs.google.com/document/d/14d8lIbsTg6sCQCqwFJmmsrtet_c8Lxi6LZNXjYbelu4/edit?usp=sharing

For those who may be unfamiliar with Google Docs, we have included a brief video tutorial demonstrating how to add comments:

https://www.youtube.com/watch?v=5nifaSwGY3g

If you have any questions or concerns, please don't hesitate to contact Travis Brooks at tbrooks@landiq.com or 310-266-4627.

To ensure that your feedback can be considered in the final draft, we kindly ask that all comments be submitted through the Google Doc **by December 13, 2024**. We anticipate distributing the revised draft to the EWG for review in January 2025.

Thank you for your valuable input and continued dedication to this project.