



The Core Team has identified six projects and management action categories to be evaluated as part of the Groundwater Sustainability Plan (GSP). The six projects and management action categories include:

1. Project 1 - Water Trading Program
2. Project 2 - Water Conservation and Efficiency Programs
3. Project 3 - Modification of Land Use Designations
4. Project 4 - Agricultural Land Fallowing Program
5. Project 5 - Groundwater Quality Optimization Program
6. Project 6 - Intrabasin Water Transfer

For the May AC meeting additional information will be provided regarding three of the six projects:

1. Project 1 - Water Trading Program
2. Project 3 - Modification of Land Use Designations
3. Project 5 - Groundwater Quality Optimization Program

Projects & Management Actions

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Project #1 – Water Trading Program

Objective: Facilitate transfer of pumping allowance among groundwater users within the Borrego Springs Subbasin.

- Optimizes use of allocated water for maximal economic efficiency of groundwater use
- Encourages and rewards water conservation
- Facilitates continuous adjustment as conditions change (e.g., demand and supply fluctuation)
- Maintains local control, and enables shareholders freedom to choose whether or not to use, save, or transfer (sell) allocations from their water account

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The groundwater sustainability agency (GSA) is considering development of a Subbasin-specific Water Trading Program to facilitate transfer of baseline pumping allocation among groundwater users in the Borrego Springs Subbasin (Subbasin). This presentation contains concepts that have been developed by Dudek for Advisory Committee input.

The other objectives of the Water Trading Program include:

- Optimization of allocated water for maximal economic efficiency of groundwater use
- Encourage and reward water conservation
- Facilitate continuous adjustment (adaptive management) as conditions change
- Maintain local control, and enables shareholders freedom to choose whether or not to use, save, or transfer (sell) allocations from their water account

Projects & Management Actions

Prospective Project #1 – Water Trading Program

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Development Approach:

- Stakeholder collaboration (meetings and interviews)
- Identification of goals, guidelines, and tools
- Consolidation and re-issue of existing groundwater restrictive easements per Baseline Pumping Allocation
- Scoping and development of a governing document (the Water Trading Policy)
- Preparation of a publicly-accessible accounting register to track pumping allocations and water transfers

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Stakeholder/shareholder collaboration will be performed throughout the development process, from initiation to refinement of the draft Water Trading Policy document

The program development is anticipated to include the following general components:

- Collaboration of stakeholders and GSA to define the water trading approach.
- Identification of goals, guidelines, and administrative tools for implementation.
- Consolidation and reissue of existing groundwater restrictive easements in a consistent way.
- Development of a governing document to outline guidelines and regulatory procedures to transfer water credits.
- Development of components of GSA process to review trade consistency with rules.
- Development of an accounting system to track baseline pumping allocation and water transfers
- Along with identification of goals, potential unintended consequences will be identified.

Projects & Management Actions

Prospective Project #1 – Water Trading Program

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Anticipated Water Trading Fundamentals:

- Program to be administered by the GSA
- “Water Shares” issued per Baseline Pumping Allocation (replaces preexisting water credits)
- Shareholders are free to negotiate price of prospective trades pursuant to the Water Trading Policy
- Prospective trades are submitted to GSA for review:
 - If approved, trade is certified and register is updated
 - If denied, GSA will provide the rationale with rules and regulations established in the Water Trading Policy

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For the purposes of this program, it is anticipated that the GSA will administer the program. A trading platform will be selected by the GSA as part of the stakeholder outreach coordination.

- Water shares will be based on the final baseline pumping allocation, which will deflate annually consistent with the baseline allowance schedule.
- Shareholders are free to negotiate price/terms within the confines of the Water Trading Policy (yet to be developed) and any other applicable laws and regulations. The Policy will determine the details, but anticipated components may include:
 - Trades can be temporary (no less than one year) or permanent.
 - Costs can range based on market conditions.
 - Area of Origin limitation (no export outside Subbasin).
 - Cap on maximum number of shares owned of total Subbasin pumping allowance.
 - Trade Proposal Submittal Criteria (Beneficial Use, Trade Terms, Purchase Price, Point of Use [by well/parcel/Management Area], Penalties)
 - GSA, as governing body, will review all proposed trades for compliance with the Policy, and overall benefit to the parties and the Subbasin.

Projects & Management Actions

Prospective Project #1 – Water Trading Program

Anticipated Water Trading Policy Components:

- Water use limitations (e.g. Area of Origin restriction)
- Cap on total amount of water shares owned by a single private entity
- GSA review process and considerations for proposed trades (e.g. beneficial use of the water, etc.)
- Enforcement and penalty structure
- Annual Water Trading Policy review to determine whether revisions are warranted to prevent unintended consequences

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Area of origin would prevent export of water outside the basin and could potentially limit transfer from among management areas that are not connected hydraulically in the subsurface (i.e. limited hydraulic connection of the South Management Area with the Central and North Management Areas). The GSA is exploring conveyance among the management areas via Project 6 – Intrabasin Water Transfer that would use either the District's existing distribution system or new potable or non-potable distribution pipelines to convey water among the management areas.

Cap is similar to fisheries model for sustainability and would control monopolization of the market by one party.

GSA review process is important to prevent unintended consequences but in general the Water Trading Policy would set the rules and regulations by which trades would be reviewed and approved thus providing a level of certainty as to whether a trade is acceptable.

Water Trading Policy would also address enforcement and penalty structure.

Annual reviews would address reasons for potential trade denials, if any, and other measures to strengthen the program's effectiveness and limit unintended consequences.

Trade Proposal Submittal Criteria

- **New Development Must Secure Permanent Transfer**
- **Priority of Beneficial Use**
- **Matching Available Supply with Demand**
- **Beneficial Use, Trade Terms, Purchase Price?, Point of Use [by well/parcel/Management Area], Penalties**
- **No carry over until sustainability is achieved **

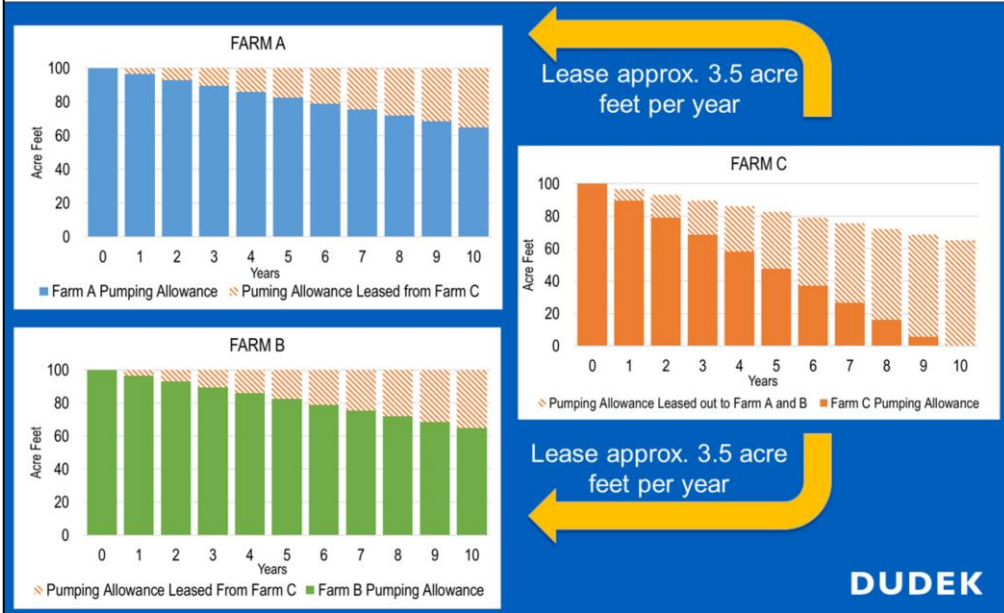
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Some general criteria the GSA and stakeholders should consider for the Water Trading Policy include:

- New development must secure permanent transfer as this represents a fixed demand.
- The priority of beneficial use for existing and potential future beneficial uses should be considered (i.e. domestic indoor use is the highest priority with irrigation as the next priority so it will be important that there is sufficient supply allocated to future development). Over time what is considered a beneficial use evolves. For example flood irrigation in a desert environment using pumped groundwater may not be considered beneficial use considering alternative irrigation techniques such as drip and micro-spray that use substantially less water. Similarly, luxuriant water-intensive landscaping in a desert environment for ornamental purposes should be evaluated (i.e. landscape restrictive ordinance) to maximize efficient water use.
- The Water Trading Policy should be designed to efficiently match available supply with demand taking into account required pumping reductions (i.e. facilitate trading and publicize availability of shares).
- Determine rules and regulations pertaining to beneficial use (agriculture domestic, municipal, and ecosystem benefits), trade terms, market pricing (e.g. limit order pricing), point of use and penalties.

- No Baseline Pumping Allocation carry over until sustainability is achieved.

Hypothetical Example Water Trading Program



In this hypothetical water trading program Farm C has mature citrus trees that have reach the end of their prime production years and decides to fallow land equivalent to a Baseline Pumping Allocation of 100 acre-feet per year (AFY). Farm C Pumping Allocation deflates by 3.5% per year or 3.5 acre-feet per year starting in year 2 to achieve Subbasin sustainability by 2040. In year 10 of Plan implementation, Farm C has a Pumping Allocation of $(100 - (10 \times 3.5) = 65 \text{ AFY})$. Farms A and B have made recent capital investments in new infrastructure and have tress with about 10 years of prime production remaining. Farms A and B decide that they want to farm for 10 more years and lease Pumping Allocation from Farm C in order to have sufficient allocation to remain in business. Each year Farms A and B are required to lease an additional 3.5 AFY assuming a linear reduction of 3.5% per year. At year 10, Farms A and C are each leasing 32.5 AFY from Farm C for a total of 65 AFY. In their final year of operation, Year 10, Farms A and B need to acquire an additional 2.5 AFY each from another shareholder as Farm C has leased out all of their Pumping Allocation. In Year 11, Farms A and B decide to fallow because their trees are beyond their prime producing years. In year 11, additional Pumping Allocation is needed for new development in the Subbasin and all of the farms decide to permanently transfer their allocations to the municipal sector. New development is required to obtain permanent transfer that is fully mitigated (i.e. 70% reduction over 20 years). The Baseline Allocation of 300 AFY assigned to Farms A, B and C would provide a fully deflated allocation of about 90 AFY assuming a 70% reduction to achieve sustainability.