

Use-Based Allocation of Groundwater in the Indian Wells Valley Groundwater Basin

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OBJECTIVE

Allocate groundwater based on **uses** of groundwater to realize the **most-reasonable** usage of the basin's groundwater resource. Treat all **users** symmetrically.

BACKGROUND

SGMA (California Water Code section 10723.2) states that **uses** and **users** of groundwater will be considered in the GSP.

'The groundwater sustainability agency shall consider the interests of all beneficial uses and users of groundwater.....'

SGMA (California Water Code section 10720.1 (b)) states that **groundwater rights** will be considered in the GSP.

'It is the intent of the Legislature to preserve the security of water rights in the state to the greatest extent possible consistent with the sustainable management of groundwater.'

The California Constitution (ARTICLE X WATER, SECTION 2) requires that water be used **reasonably** and not be **wasted**:

'It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare. '

The California Water Code (DIVISION 1, CHAPTER 1) states the existence of a **human right to water**:

'106.

It is hereby declared to be the established policy of this State that the use of water for domestic purposes is the highest use of water and that the next highest use is for irrigation.

106.3.

(a) It is hereby declared to be the established policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. '

If every pumper were to proportionally reduce production, most users would not have enough water to reasonably sustain their quality of life; in fact, most users would suffer unreasonably large losses in personal livelihoods and infrastructure investments.

USES OF GROUNDWATER

- Safety*
- Sanitation*
- Consumption / Cooking*
- Cooling*
- Irrigation – Urban Green Spaces*
- Irrigation – Residential*
- Industrial
- Irrigation – All Other

*These are the elements of a 'basic allocation' or a 'health and safety' allocation.

USERS OF GROUNDWATER

- Navy
- Domestic
- De Minimis Well Owners
- City & County Government
- Business (No Industrial Water Uses)
- Business (Industrial Water Uses)
- Searles Valley Minerals (SVM)
- Agriculture

USES VS USERS OF GROUNDWATER

BASIC ALLOCATION	USES ↓	USERS →							
		NAVY	DOMESTIC	DE MINIMIS	CITY & COUNTY	BUSINESS (No Industrial Water Uses)	BUSINESS (Industrial Water Uses)	SVM	AGRICULTURE
	SAFETY	X	X	X	X	X	X	X	X
	SANITATION	X	X	X	X	X	X	X	X
	CONSUMPTION / COOKING	X	X	X	X	X	X	X	X
	COOLING	X	X	X	X	X	X	X	X
	IRRIGATION – GREEN SPACES	X			X			X	
	IRRIGATION – RESIDENTIAL	X	X	X				X	
	INDUSTRIAL	X					X	X	
	IRRIGATION – ALL OTHER	X	X	X	X	X	X	X	X

REASONABLE GROUNDWATER USES

The recommended goal for the GSP is to allocate pumping to support the most-reasonable usage of the groundwater in the Indian Wells Valley groundwater basin consistent with sustainability. The most-reasonable and most-efficient uses of groundwater are:

- Uses that support the maximum number of current **livelihoods per acre-foot of groundwater pumped**.
- Uses that support the maximum amount of current **infrastructure per acre-foot of groundwater pumped**.

These groundwater uses are appropriate for the IWV groundwater basin due to its limited recharge, its excessive overdraft, the limited understanding of the amount of *potable* groundwater in storage, and the uncertainties in the availability and cost of imported water. These conditions result in an *extremely high replacement cost* for groundwater in storage, which argues in favor of preserving groundwater in storage and making the most-reasonable use of groundwater that is extracted.

RELATIVE NUMBERS OF LIVELIHOODS SUPPORTED BY USES OF GROUNDWATER

USERS USES		NAVY	DOMESTIC	DE MINIMIS	CITY & COUNTY	BUSINESS (No Industrial Water Uses)	BUSINESS (Industrial Water Uses)	SVM	AGRICULTURE
BASIC ALLOCATION	SAFETY	EXTREMELY LARGE - ALMOST ALL LIVELIHOODS IN THE BASIN					SMALL	LARGE	SMALL
	SANITATION								
	CONSUMPTION / COOKING								
	COOLING								
	IRRIGATION – GREEN SPACES								
	IRRIGATION – RESIDENTIAL								
	INDUSTRIAL						SMALL		
	IRRIGATION – ALL OTHER					SMALL			SMALL

RELATIVE VALUE OF INFRASTRUCTURE SUPPORTED BY USES OF GROUNDWATER

USERS USES		NAVY	DOMESTIC	DE MINIMIS	CITY & COUNTY	BUSINESS (No Industrial Water Uses)	BUSINESS (Industrial Water Uses)	SVM	AGRICULTURE
BASIC ALLOCATION	SAFETY	EXTREMELY LARGE INVESTMENTS IN FACILITIES, INFRASTRUCTURE, AND HOMES						VERY LARGE	SMALL
	SANITATION								
	CONSUMPTION / COOKING								
	COOLING								
	IRRIGATION – GREEN SPACES								
	IRRIGATION – RESIDENTIAL								
	INDUSTRIAL								
	IRRIGATION – ALL OTHER								

ALLOCATION PRIORITIES FOR USES OF GROUNDWATER

The most-reasonable use of groundwater is the ‘basic allocation’. This use supports most existing livelihoods and infrastructure investments and ensures that all users have water for health and safety. This is a very efficient use of groundwater (supports extremely large numbers of livelihoods and investments in infrastructure per AF pumped), since no groundwater is used for either irrigation or industrial purposes.

The second-most reasonable use of groundwater is industrial, due to the large number of livelihoods supported (SVM) and the large infrastructure investments in place (SVM). This use of groundwater is less efficient (supports fewer livelihoods and investments in infrastructure per AF pumped) than the basic allocation.

The third-most reasonable use of groundwater is irrigation other than for quality of life, due to the smaller number of livelihoods supported and the lower investments in infrastructure. This use of groundwater is the least efficient (supports fewest livelihoods and investments in infrastructure per AF pumped).

These allocation priorities are shown below.

	USERS USES	NAVY	DOMESTIC	DE MINIMIS	CITY & COUNTY	BUSINESS (No Industrial Water Uses)	BUSINESS (Industrial Water Uses)	SVM	AGRICULTURE
BASIC ALLOCATION	SAFETY	PRIORITY 1							
	SANITATION								
	CONSUMPTION / COOKING								
	COOLING								
	IRRIGATION – GREEN SPACES								
	IRRIGATION – RESIDENTIAL								
	INDUSTRIAL	PRIORITY 2							
	IRRIGATION – ALL OTHER	PRIORITY 3							

ADVANTAGES

Both users and uses of groundwater are considered, as required by SGMA.

Groundwater is allocated to uses that maximize reasonable use of water (protecting existing livelihoods and infrastructure).

All users are treated symmetrically.

All livelihoods are considered.

All infrastructure investments are considered.

Protects the human right to water.

Flexibility to adjust pumping in the future as needed if conditions change, such as if imported water is not realized, if imported water is more (or less) costly than planned, or if recharge numbers require adjustment.

The qualitative assessments used in the tables above (i.e. – ‘extremely large’, ‘very large’, ‘large’, and ‘small’) could be replaced with estimates of actual numbers.