

Purposes of Use for Underground Storage Projects

Defining Beneficial Use

In water rights, “beneficial use” refers to the useful purpose to which water is applied. Common beneficial uses include domestic, irrigation, power generation, municipal, and industrial uses. Beneficial uses can also include uses that occur in a stream or reservoir, such as fish and wildlife enhancement, or recreation. Linking water right permits and licenses to beneficial use of the water helps to define the quantity of water that will be consumptively used and avoid wasteful application of this important resource.

Groundwater recharge is the augmentation of groundwater, by natural or artificial means, with surface water or recycled water. Groundwater recharge is **not** a beneficial use of water on its own, but rather is one method of diverting and storing water that takes advantage of the natural storage capacity of groundwater aquifers. To obtain a water right to divert water to underground storage, you must identify the eventual beneficial use of the water just as with above-ground surface water storage projects.

Types of Beneficial Use: Extractive vs. Non-Extractive

Water stored underground often is pumped to the surface before it is put to beneficial use (referred to as extractive beneficial use). Water that is stored in a groundwater basin may be extracted and used for any number of common purposes, including irrigation, municipal and domestic supplies, and industrial purposes. Any water right permit application or petition on an existing water right that involves diversion of surface water to underground storage for subsequent extractive beneficial use should identify the how the water will be used once it’s extracted.

Alternatively, water stored underground may be put to beneficial use without pumping the water to the surface (referred to as “in-situ” or “non-extractive” beneficial use). Examples of non-extractive beneficial uses include use as a seawater intrusion barrier, for prevention of subsidence, or to support groundwater dependent ecosystems. Any water right permit application or petition on an existing water right that involves diversion of surface water to underground storage and non-extractive beneficial use should describe the reason or need to keep the water in the basin.

Sustainable Groundwater Management Act and Surface Water Rights

The Sustainable Groundwater Management Act (SGMA) identifies six undesirable results that will be used to evaluate whether groundwater resources in a basin are being managed sustainably. The six undesirable results are abbreviated below and described in more detail on the Department of Water Resources’ website: <https://water.ca.gov/sgma>. Local agencies may choose to develop underground storage projects to address undesirable results. The following sections describe how undesirable results relate to beneficial uses recognized by the State Water Board.

1. Undesirable Result: Chronic lowering of groundwater levels

In general, simply raising or maintaining aquifer levels is not a beneficial use. Beneficial use may occur, however, where the applicant can demonstrate that an increase in aquifer levels has direct benefits, such as maintenance of supply in shallow domestic wells, reductions in pumping costs, or support of a wetted root zone for groundwater dependent ecosystems.

2. Undesirable Result: Reduction of groundwater storage

Increase or maintenance of groundwater storage alone is not considered a beneficial use of water. The water that is diverted and stored in the basin is ultimately serving some other purpose, whether it is extracted and used or used in place. It is this ultimate purpose that should be identified as the beneficial use of the stored water.

3. Undesirable Result: Seawater intrusion

Recharge of an aquifer to maintain or restore a groundwater gradient necessary to keep seawater out of the aquifer is a beneficial use of water. The prevention of seawater or salinity intrusion is a **Water Quality Use** as identified in the beneficial use listings in the California Code of Regulations (Cal. Code Regs., tit. 23, § 670).

4. Undesirable Result: Degraded water quality, including migration of contaminant plumes

Recharge of an aquifer to create or maintain a groundwater gradient necessary to prevent the migration of a contaminant plume is a beneficial use of water. Recharge of an aquifer to dilute existing contaminants to levels that allow the water to be beneficially used for other purposes can also be a beneficial use. Both are **Water Quality Uses** as identified in the California Code of Regulations. (Cal. Code Regs., tit. 23, § 670.)

5. Undesirable Result: Land subsidence that substantially interferes with surface land uses

Recharge of an aquifer to raise or maintain aquifer levels to prevent or reduce the rate of future land subsidence can be a beneficial use of water, depending on the severity and likelihood of the threatened subsidence.

6. Undesirable Result: Depletions of interconnected surface water that have adverse impacts on beneficial uses of the surface water

Recharge of an aquifer to avoid or reduce depletions of interconnected surface water can be a beneficial use, but the applicant must connect the recharge to a benefit that's accrued within the surface water system. For example, an applicant may seek to store water in an underground basin/aquifer for later discharge into a nearby stream reach to enhance fish habitat. In that example, the applicant should designate the beneficial use of **Fish and Wildlife Preservation and Enhancement Use** (Non-consumptive). The beneficial use of the recharged water is the purpose of use after the water is discharged to the stream.

Accounting for Storage and In-Situ Uses

Reporting to the State Water Board for underground storage, particularly non-extractive beneficial uses, requires a robust accounting method. The accounting methodology must demonstrate the amount of water infiltrated into the basin under the permit or license, the amount of water subject to the permit or license that remains in the basin after addressing losses over time, and the volume of



Fact Sheet

beneficial use. In basins with a groundwater sustainability plan (GSP) under SGMA, the GSP may provide an adequate accounting method that the State Water Board will require right holders to comply with in storing or using water within the groundwater basin. In other circumstances, the applicant or petitioner must demonstrate an accounting method that the State Water Board deems adequate to demonstrate beneficial use and avoid injury to other users of water.

Justification of Other Beneficial Use

Applicants or Petitioners seeking to apply for “**Other Beneficial Use**” will need to provide support for their request as part of their application or petition form. Per California Code of Regulations, title 23, section 659 approval of “Other Beneficial Use” is determined by the State Water Board on a case-by-case basis. Applicants should consider the overarching principal of reasonable use when developing their justification for “Other Beneficial Use.” Applicants are encouraged to contact State Water Board, Division of Water Rights staff early and before formally applying for a permit or petitioning for a change in an existing water right if they have questions about beneficial uses related to groundwater recharge.

Additional Resources and Project Specific Questions

For more information on water rights for groundwater recharge (underground storage), please visit our webpage [Water Rights for Groundwater Recharge](#).

For questions regarding this information as it relates to filing an application to appropriate water (permit), please contact the [Permitting Supervisor](#) responsible for your geographic area. For questions regarding this information as it relates to filing a change petition on an existing water right, please contact the Petition Unit supervisor at (916) 341-5390.

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