



**Establishing a Groundwater Extraction Credit for Landowner Initiated  
Intentional Surface Water Recharge Operations  
For Water Year 2023**

[Board Approved November 10, 2022]

The Merced Subbasin GSA (MSGSA) recognizes that a key component of meeting the Groundwater Sustainability Plan (GSP) objective, while striving for continued viability of irrigated agriculture in its service area, is to increase the use of available surface water as we reduce the use of groundwater. One key mechanism to increased surface water use is through capturing surface water when available and storing it underground through active recharge projects – often involving diversions during winter and spring months for use later the same year or subsequent years.

To encourage landowners seeking an extraction credit for surface water recharge projects, the MSGSA has prepared this initial recharge framework to identify key requirements, processes, and considerations. While several of these elements are still only qualitative, the MSGSA anticipates being able to recognize an approximate recharge credit for compliant recharge operations during 2023.

**A landowner must:**

1. Provide documentation of control of the surface water asset(s) being used for recharge, limited to at least one of the following:
  - a. SWRCB-recognized water right
  - b. Contract with water supplier or water right holder (or other recognized water asset such as WWTP or San Joaquin River seepage agreements)
  - c. Documented diversion of nuisance water (SWRCB: *“Diversions only when flows in the source waterbody at or near the point of diversion exceed thresholds that trigger flood control actions necessary to mitigate threats to human health or safety, according to established written flood management protocols adopted by a flood control agency.”*)
2. Provide detailed information regarding the intended recharge method/facility (location, planned actions, etc.) using either:
  - a. Direct recharge using:
    - i. Dedicated infiltration basin (with or without a dry-well)
      1. Recharge basin should be located or constructed in such a manner that “recharge” water does not migrate laterally into any surface water conveyance facility.
    - ii. “FloodMAR” (where land is also actively farmed and irrigated per DWR’s definition)
  - b. Planned extraction information including
    - i. Proposed well locations for extraction of recharged water.

- ii. Purpose and place of use of extracted water.
- 3. Provide accurate measurement into facility using dedicated, calibrated flow meter
  - a. Measurement at point of diversion from surface delivery point, using totalizing flow meter (include anti-tamper procedures impacting hardware or removal)
  - b. Verify measurement with:
    - i. Reporting to SWRCB, or
    - ii. Reporting associated with contracted supplier (e.g. billing records, etc.)
  - c. Provide estimate and basis for potential loss during delivery to facility (e.g. seepage, evaporation, channel vegetation ET, etc.)
  - d. Quantified monthly total into recharge facility:
    - i. Provide estimate and basis for loss at facility
      - 1. Pond or soil evaporation
      - 2. Plant use/soil wetting (e.g. with FloodMAR where some winter/spring recharge will provide water to overlying crops early in the season)
      - 3. Lateral seepage to nearby conveyance facility or surface water channel
- 4. *[Future Requirement to likely begin in 2026 (or consistent with timing of an allocation)]*  
Provide accurate measurement of extraction and use of recharged water
  - a. Provide monthly flow meter readings to MSGSA via on-line platform (data may include: photograph of flow meter totalizer readout, list of APNs where recharged water was put to use.)

**The MSGSA will:**

- 1. Prepare policies that dictate the generation and use of credits
  - a. Quantification method
  - b. Limitations on quantity and use
  - c. Tracking and reporting requirements
  - d. Appeal process
- 2. Calculate the credit generated for each landowner-proposed recharge project
  - a. Apply standard loss to basin (Minimum loss % or “leave behind”)
  - b. Apply additional loss dependent on each recharge operation considering:
    - i. Hydrogeology (e.g. Corcoran Clay, existing high water levels, conveyance seepage, soil types)
    - ii. Facility/method (e.g. FloodMAR, recharge basin, deep dry well)
  - c. Establish recharge operation-specific credit derived in each year of recharge.
  - d. Define decay (leakage) for each year after credit it is initially generated that may limit the duration of recharge availability
  - e. Credits recognized by the MSGSA cannot be used until there is a groundwater allocation established by the MSGSA
- 3. Track credit generation and annual use for each recharge project



- a. Annual Use (limitations may include:)
    - i. Location limitations (May be limited to Sustainability Zone where recharge takes place, depending on MSGSA determinations)
    - ii. Purpose (type of crop)
  - b. Measurement (how is credit used in relation to an allocation? First? Last? As requested by user? Equal sharing?)
4. Provide annual reporting to landowner and, cumulative with other projects, as needed for GSP annual reports
  - a. For landowner, report would:
    - i. Quantify credit generated (quantity and date)
    - ii. Quantify remaining credits based on use and decay as appropriate
  - b. For GSP annual reports
    - i. Quantify total recharge credit in MSGSA for year
    - ii. Quantify total use of prior recharged credits used in year



## 2023 Recharge Facility Registration Form

This form is intended for Merced Subbasin GSA (MSGSA) landowners to register their recharge facility in order to establish a groundwater extraction credit for intentional surface water recharge in 2023.

Name of Recharge Project/ Operation: \_\_\_\_\_

Assessor Parcel Number (APN) of Recharge Facility Location: \_\_\_\_\_

Type of Recharge Method: \_\_\_\_\_

Acreage and Crop Type of Parcel if Conducting "Flood-MAR": \_\_\_\_\_

Documented Surface Water Source (provide copy of Water Right or Contract): \_\_\_\_\_

Estimated Recharge Rate per Acre Capacity: \_\_\_\_\_

APN(s) Where Extraction Credit Will Be Applied: \_\_\_\_\_

Recharge Measurement Method: \_\_\_\_\_

Extraction Measurement Method: \_\_\_\_\_

I hereby affirm that the information submitted with this form is accurate, true and representative of site conditions.

\_\_\_\_\_  
Owner Printed Name

\_\_\_\_\_  
Owner Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Telephone Number

\_\_\_\_\_  
Email Address

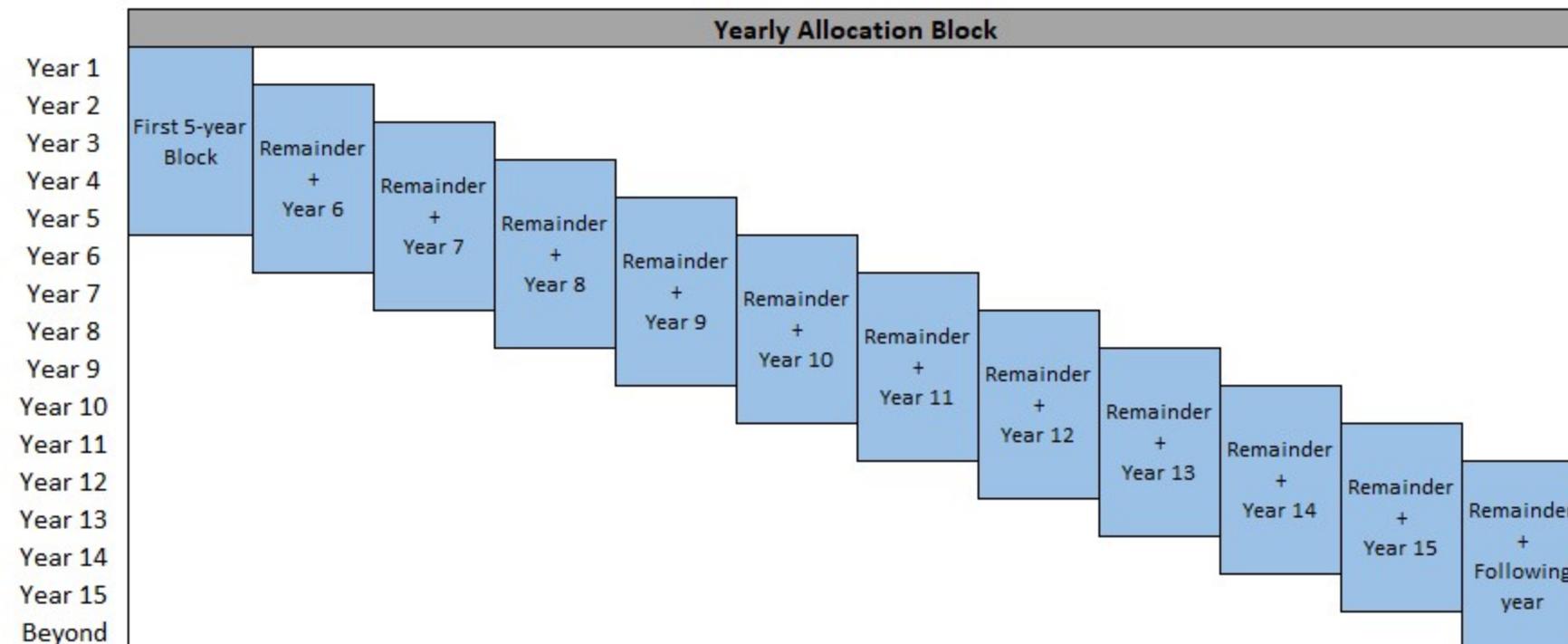
**Provide a map showing the location of the recharge facility, points of diversion from documented surface water source, location of water wells used to extract recharge credit, location of where credit will be applied, as well as any additional supporting documentation.**

**Note: Credit for landowner-initiated recharge will be granted at the discretion of the MSGSA according to recharge policies expected to be established. Credit will only be valid upon the establishment of a groundwater allocation by the MSGSA which is anticipated by the end of the Water Year 2025.**

**Values in acre-feet/acre**

	Base allocation	
Year 1	SY	TW
Year 2	SY	TW x 90%
Year 3	SY	TW x 80%
Year 4	SY	TW x 70%
Year 5	SY	TW x 60%
Year 6	SY	TW x 50%
Year 7	SY	TW x 40%
Year 8	SY	TW x 30%
Year 9	SY	TW x 20%
Year 10	SY	TW x 10%
Year 11	SY	0
Year 12	SY	0
Year 13	SY	0
Year 14	SY	0
Year 15	SY	0
Beyond	SY	1

Suggested Approach - 5 Year Rolling Bucket		
SY	TW Block	Total
SY x 5 years	TW + next 4 years	Total 5-year Allocation Block
SY	TW x 50%	Prior Total Remainder + Year 6
SY	TW x 40%	Prior Total Remainder + Year 7
SY	TW x 30%	Prior Total Remainder + Year 8
SY	TW x 20%	Prior Total Remainder + Year 9
SY	TW x 10%	Prior Total Remainder + Year 10
SY	Zero	Prior Total Remainder + Year 11
SY	Zero	Prior Total Remainder + Year 12
SY	Zero	Prior Total Remainder + Year 13
SY	Zero	Prior Total Remainder + Year 14
SY	Zero	Prior Total Remainder + Year 15
SY	Zero	Prior Total Remainder + Next year



SY = Sustainable Yield of Native Groundwater (an annual quantity as inches/acre/year)

TW = Transition Water; equivalent to continued overdraft during transition period (an annual quantity as inches/acre/year)