

# RECLAMATION

*Managing Water in the West*

## **Bureau of Reclamation Central Valley Project Groundwater Transfers**



U.S. Department of the Interior  
Bureau of Reclamation

# Water Transfers

- **Voluntary process of selling water: willing sellers and willing buyers**
  - **Limited Water Supply**
  - **Geographic Mismatch of Supply and Demand**

# Long-Term Water Transfer Program

- **Develop Supplemental Water Supplies during CVP shortages**
- **Quickly Implementable**
- **Flexible to Meet Ever Changing Hydrologic Conditions**
- **10 year EIS (2015-2025)**

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# Long-Term Water Transfer Program

- 3 Components
  - Reservoir Re-operation
  - Crop Idling/Shifting
  - Groundwater Substitution



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# Groundwater Substitution Transfers

- Annual Review and Approval
- Well Locations
  - Vicinity to surface water features
- Well Construction
  - Depth in relation to vicinity of surface water structures
  - Properly constructed to not adversely affect groundwater quality
- Baseline Pumping
  - Pumping in non-transfer years

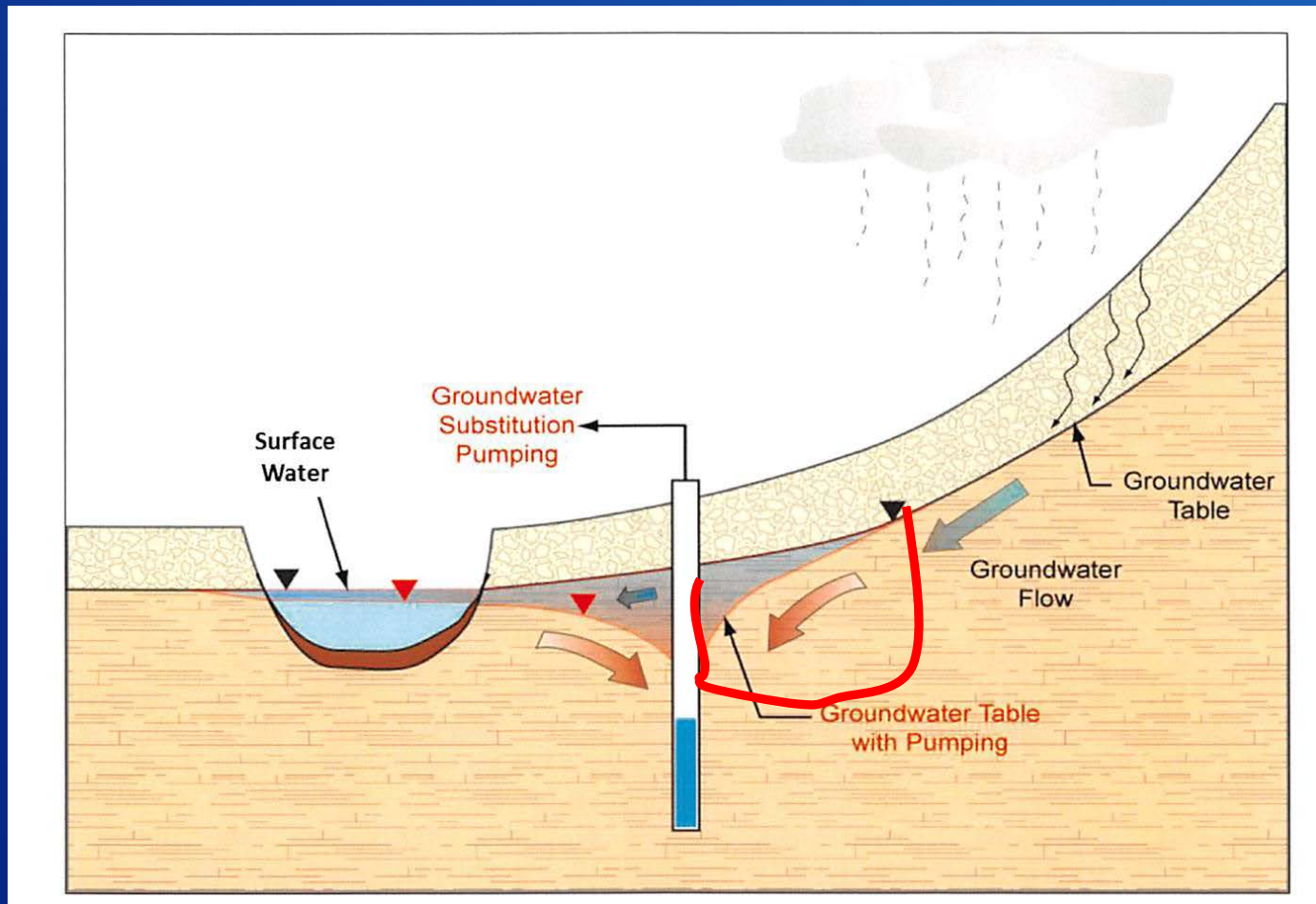
# Groundwater Substitution Transfers

- **Proposed Volumes and Timing**
  - Well capacity and diversion patterns
- **Monitoring Plan**
  - Identify changes in groundwater levels or quality
    - Monitoring well network
    - Groundwater levels
    - Groundwater quality
    - Land subsidence
- **Mitigation Plan**
  - Mitigate any negative local impacts resulting from the transfer pumping

# Groundwater Substitution Transfers

## Stream Flow Depletion Factor

- DWR and Reclamation incorporated a Stream Flow Depletion Factor to mitigate losses that occur to surface water supplies



# Groundwater Substitution Transfers

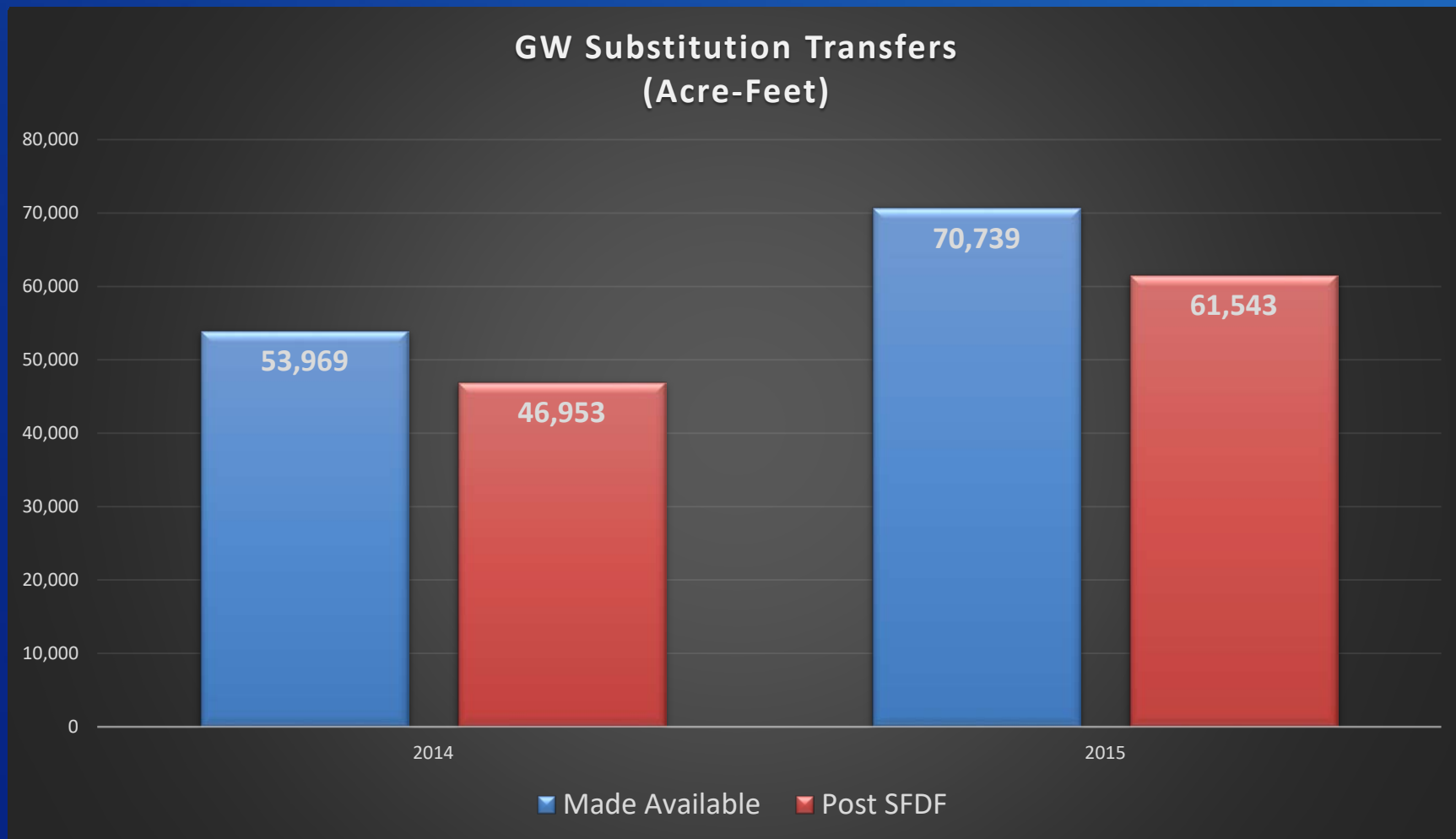
## Stream Flow Depletion Factor

- Current Stream Flow Depletion Factor is 13% of transferable water
  - SACFEM2013 Modeling
    - Range of depletion percent is 14 to 40% of pumping for 10 different years analyzed
    - Timing of recharge affects depletion percentage
      - Transfer followed by wet years = lower percentage
      - Transfer followed by dry years = higher percentage
    - Uncertainty at lower end of range was +/- 1%
- Sac Valley Streamflow Depletion Factor Management Group



# Program Activities

## Groundwater Substitution Transfers



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# Available Resources

- **Draft Technical Information for Preparing Water Transfer Proposals (White Papers)**
  - <http://www.water.ca.gov/watertransfers/>
- **Long-Term Water Transfers Final EIS/EIR**
  - [https://www.usbr.gov/mp/nepa/nepa\\_projdetails.cfm?Project\\_ID=18361](https://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=18361)
- **Groundwater Banking Guidelines**
  - <https://www.usbr.gov/mp/waterbanking/>
- **Various Grant Programs for Implementation Projects**
  - <https://www.usbr.gov/watersmart/>
  - <https://www.usbr.gov/mp/watershare/>
- **Coming Soon: Integrated Database**