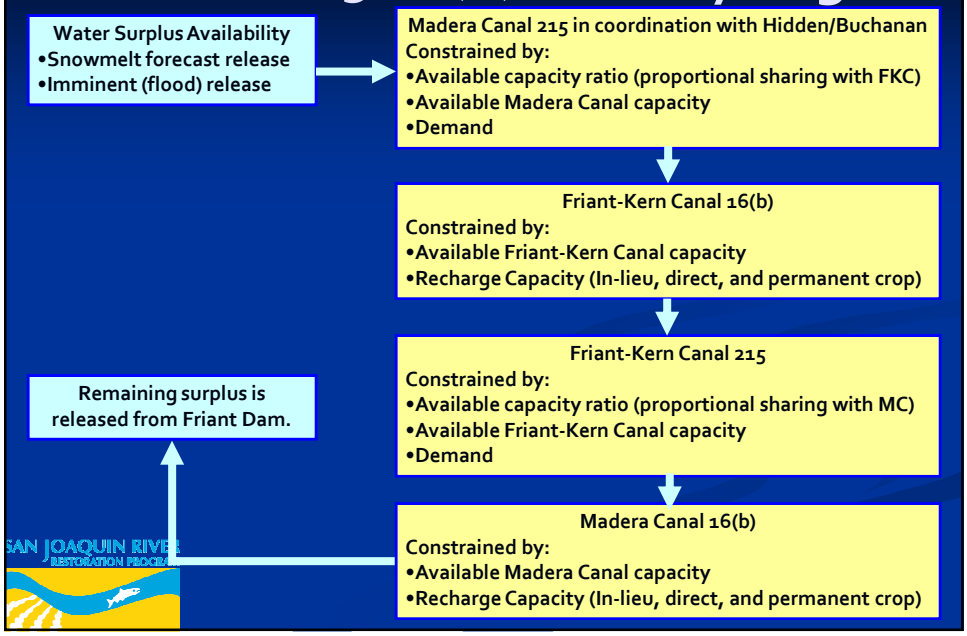
# San Joaquin River Restoration Program

## 16(b) Water Management Approach

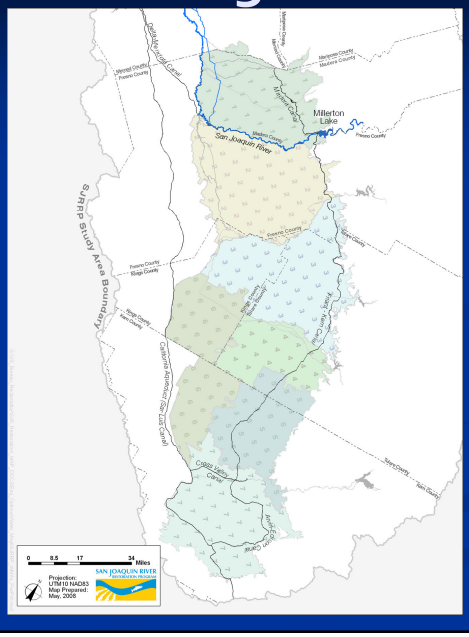
Water Management Group
Technical Feedback Meeting

January 9, 2009

## Section 215/16(b) Delivery Logic



# Water Management Areas

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# Direct Recharge Assumptions

- Recharge capacity assumptions were based on acreage and assumed infiltration rates (0.2 ft/day), unless otherwise specified
- Assumed available annual storage volume for direct recharge groundwater banks estimated as the product of the reported recharge delivery area, average depth to groundwater during baseline year and average groundwater basin specific yield values, unless otherwise specified

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# Direct Recharge Assumptions

| Water Management Area | Total Annual Storage Volume (TAF/yr) | Direct Recharge (cfs) when TWI< 41 (A) | Direct Recharge (cfs) when TWI > 41 (A) |
|---|---|---|---|
| WMA1 | 34 | 375 | 375 |
| WMA2 | 14 | 130 | 130 |
| WMA3 | 6 | 110 | 110 |
| WMA4 | 10 | 95 | 95 |
| WMA5N | 22 | 125 | 100 |
| WMA5S | 14 | 75 | 0 |
| WMA6 | 105 | 250 | 0 |
| WMA7 | 239 | 1,150 | 0 |
| **Total** | **444** | **2,310** | **810** |

Assumptions:

(A) Direct recharge when the Tule Wetness Index (TWI) is below 41 TAF, but is reduced to zero in non-Friant regions when TWI is above 41 TAF

# In-Lieu Recharge Assumptions

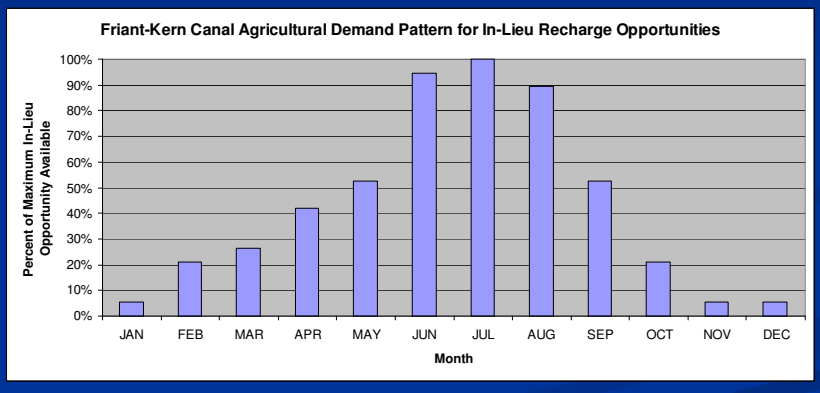
- Recharge capacity assumptions were based on data provided by FWUA member districts
- Highest in-lieu opportunity assumed to occur in July with a percentage of the opportunity in the remaining months of the year

# In-Lieu Recharge Assumptions

| Water Management Area | In-Lieu Recharge (cfs) |
|---|---|
| WMA1 | 25 |
| WMA2 | 45 |
| WMA3 | 10 |
| WMA4 | 590 |
| WMA5 | 50 |
| WMA6 | 465 |
| WMA7 | 1,000 |
| **Total** | **2,185** |

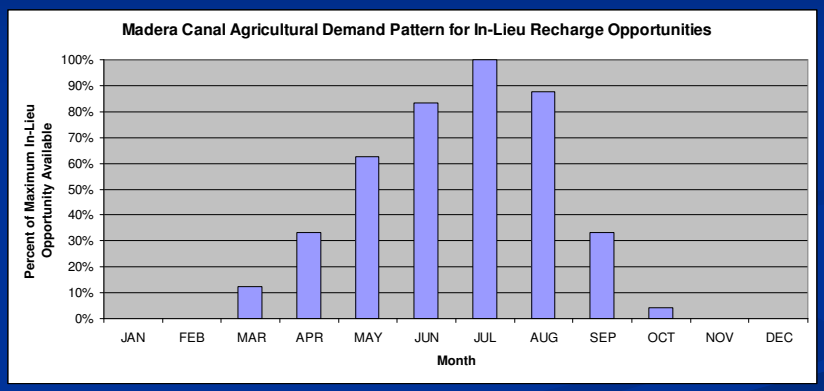
*Based on information provided by Friant districts*

# Assumed Annual Distribution of Friant-Kern Canal In-Lieu Recharge Demand




*Based on distribution patterns in CalSim model*

## Assumed Annual Distribution of Madera Canal In-Lieu Recharge Demand



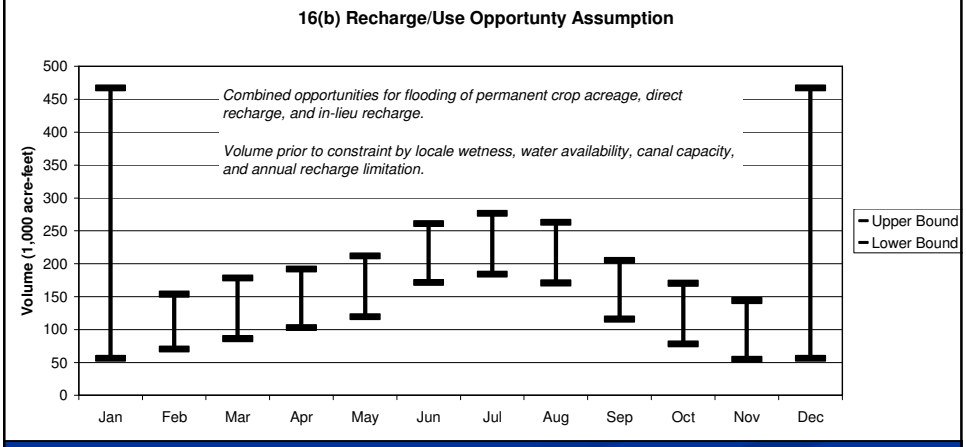

*Based on distribution patterns in CalSim model*

## Permanent Crop Recharge Assumptions

- Opportunities occur in months of December and January when:
  - Tule River Index is less than 41 TAF for Friant-Kern Canal demand
  - Chowchilla River Index is less that 30 TAF for Madera Canal demand

| Water Management Area | Permanent Crop Recharge Capacity (cfs) |
|---|---|
| WMA1 | 1,122 |
| WMA2 | 1,274 |
| WMA3 | 941 |
| WMA4 | 418 |
| WMA5 | 745 |
| WMA6 | 127 |
| WMA7 | 550 |
| **Total** | **5,177** |

# Composite Recharge/Use Opportunities

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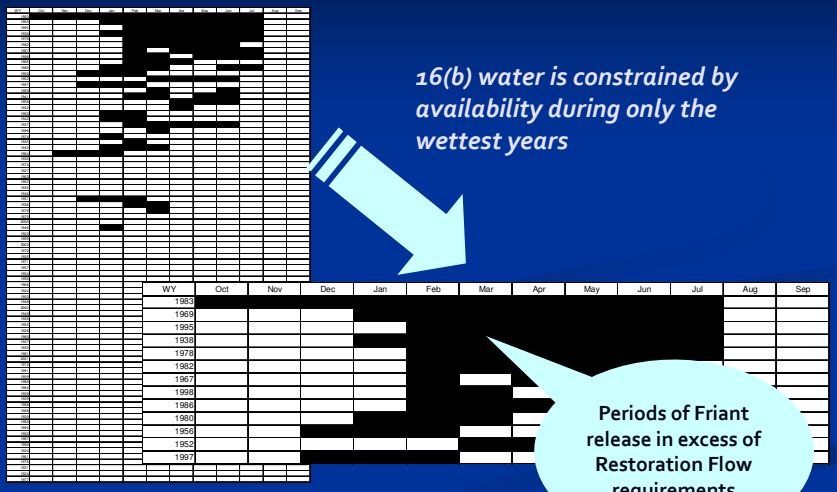
# Opportunities for 16(b) Availability

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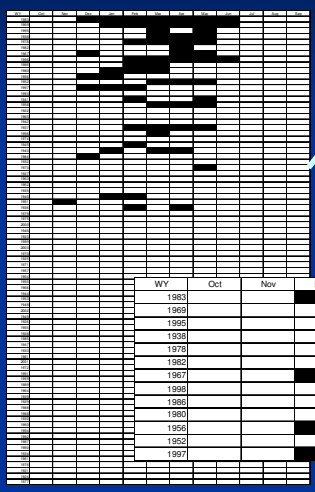
# Opportunities for 16(b) Availability



*Local wetness also constrains the ability to utilize 16(b) opportunity*

| WY | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 | | | | | | | | | | | | |
| 1969 | | | | | | | | | | | | |
| 1995 | | | | | | | | | | | | |
| 1938 | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | |
| 1982 | | | | | | | | | | | | |
| 1967 | | | | | | | | | | | | |
| 1998 | | | | | | | | | | | | |
| 1986 | | | | | | | | | | | | |
| 1980 | | | | | | | | | | | | |
| 1956 | | | | | | | | | | | | |
| 1952 | | | | | | | | | | | | |
| 1997 | | | | | | | | | | | | |

Periods of wetness that may constrain recharge opportunities

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