



Westlands Water District

# Overview of Proposed Groundwater Management Strategies

Sustainable Groundwater Management Act Special Board Meeting  
July 16, 2018

# Workshop Purpose

- Present groundwater management strategy ideas that could be implemented by water users, land owners, interested parties and Westlands
- Seek input on ideas

# Sustainability

- SGMA defines *sustainable groundwater management* as “the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.”

# GSP: Dual Directives

**WWD's Groundwater Sustainability Plan (GSP) will pursue the dual directives of:**

(a) optimizing the reasonable and beneficial use of groundwater; and

(b) establishing thresholds for protection against undesirable results

- **Subsidence.** The potential impact of greatest concern is inelastic subsidence and the potential for physical damage within the basin.

# Supporting Strategies

- Accommodate annual variability in groundwater pumping to reflect changes in surface water availability.
- Adaptively manage the Basin in response to changing conditions and new information.
- Create clear, transparent rules for basin management.
- Empower stakeholders with the ability to manage their water supplies and to make choices.
- WWD assumes the global responsibility for achieving sustainability through cumulative replenishment and enforcement.
- Maintain a complete database to account for all water use within the Basin.

# WESTLANDS SGMA GROUNDWATER MANAGEMENT STRATEGIES

- (1) **WWD GSP will establish thresholds for protection against undesirable results**
  - > **Subsidence** - WWD may establish mitigation measures for areas of concern
- (2) **WWD maintains accounting record database**

## WWD to Establish a Groundwater Pumping Allocation

- District-wide, management area or by subareas
- Per acre and/or hydrogeology

## Preemptive Replenishment

- WWD acquires flood water for beneficiaries to replenish subbasin

**PUMPING ALLOCATION**



**LANDOWNER MEASURES**



**WWD REPLENISHMENT**



**WWD AUGMENTATION**



**BASIN SUSTAINABLE PUMPING**

## Managed Rolling Average

- Allows a water user to pump more or less groundwater than their pumping allocation with a managed reconciliation or "true-up" to pay for replenishment required to satisfy any overage
- Total deficit capped and subject to basin tolerance

## Water User Projects to Recharge Subbasin

- Aquifer Storage & Recovery
- Conservation
- Trading
- Recharge Projects
  - > Percolation Basins
  - > Dry Wells
  - > Subsurface Laterals
- Groundwater Allocation Rescheduling

## Reconciliation Replenishment

- WWD acquires replenishment water for beneficiaries in quantities to off-set over-pumping

## WWD Augmentation Project

- Ramp-up or down in available Allocation by continuing implementation of WWD projects to increase Allocation over time
- Timeline
  - Quantity



# Pumping Allocation

## **GSP Creates an Initial Groundwater Pumping Allocation**

- Either District-wide, management area or by subareas
- Per acre and/or hydrogeology
- Subject to adjustment over time as required

## **Allocation will be a Rolling Average**

- Rolling Average: 2-5 years (subject to change).
- Stakeholder may pump variable quantities year to year with the requirement that over-pumping be reconciled (true-up).
- Excess pumping (greater than cumulative allocation) incurs a replenishment obligation.
- Total deficit (excess pumping) will be capped and subject to basin tolerance (undesirable results).
- If water users pump less than their allocation, they may be permitted to carry over their allocation.

# Pumping Allocation

## Groundwater Meters by 2024

- Install tamper proof meters on all wells within Westside Subbasin
- Westlands maintain database to facilitate water user and landowner management measures

# Landowner Measures

## **Voluntary Water User-Funded Projects that Add or Create New Supplies for Subbasin & Comply with GSP Rules May Increase Allocation:**

- Beneficiary Pays
- Pre-qualified list of Projects
- Verified project completion and accounting

## **Pre-Qualified Projects may include:**

- ✓ Aquifer Storage & Recovery
- ✓ Conservation
- ✓ Trading Credits
- ✓ Recharge Projects
  - Percolation Basins
  - Dry Wells
  - Subsurface Laterals
- ✓ Groundwater Allocation
- ✓ Rescheduling

# WWD Basin Replenishment

## Preemptive Replenishment

- Opportunistic advance purchase of flood water for beneficiaries to replenish subbasin when available.
- Water is available for stakeholders to purchase to increase allocation.

## Reconciliation Replenishment

- WWD acquires replenishment water for beneficiaries in quantities to off-set over-pumping (pumping that exceeds allocation) and ensure sustainability.



# WWD Augmentation

- **WWD Augmentation Projects**

Ramp-up in available stakeholder pumping allocation by continuous implementation of WWD projects to increase allocation over time:

- **Type:** Surface Water Substitution/In Lieu Replenishment, Brackish Groundwater Desalting, Groundwater Banking, Groundwater Development (e.g. in Upper Aquifer), Subsurface Recharge, Aquifer Storage and Recovery
- **Timeline**
- **Quantity**





QUESTIONS, IDEAS, INPUT?