

UNIVERSITY OF ARIZONA  
COOPERATIVE EXTENSION WATER CONFERENCE

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*MSIDD*  
*PLANNING FOR SHORTAGE AND*  
*CONTINUED DROUGHT*

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# CENTRAL ARIZONA PROJECT SYSTEM MAP



- Recharge Project
- ⚡ Pumping Plant
- ~ Santa Rosa Canal
- Central Arizona Project Canal
- Maricopa-Stanfield Irrigation & Drainage District

# District Project

## 480 Square Miles - West of Casa Grande

Between Gila River and Tohono O'Odham Nations

**87,000 Gross Acres (80,000 Farmable in 1989)**

**Canal System Completed in 1989**

**District Acquired Over 400 Operable Irrigation Wells in 1989 (1,000 cfs)**

40-year Lease Agreements with Landowners

### • Canal System :

- Santa Rosa Canal: 56 Miles
  - Serves Ak-Chin Community & CAIDD
- East Main Canal: 17 Miles
- Lateral Canals: 130 Miles
- 193 Delivery Turnouts (95% Gravity)
- Entire Service Area Has Equal Access to CAP Water
- SCADA/ No Regulatory Storage

### • Groundwater System:

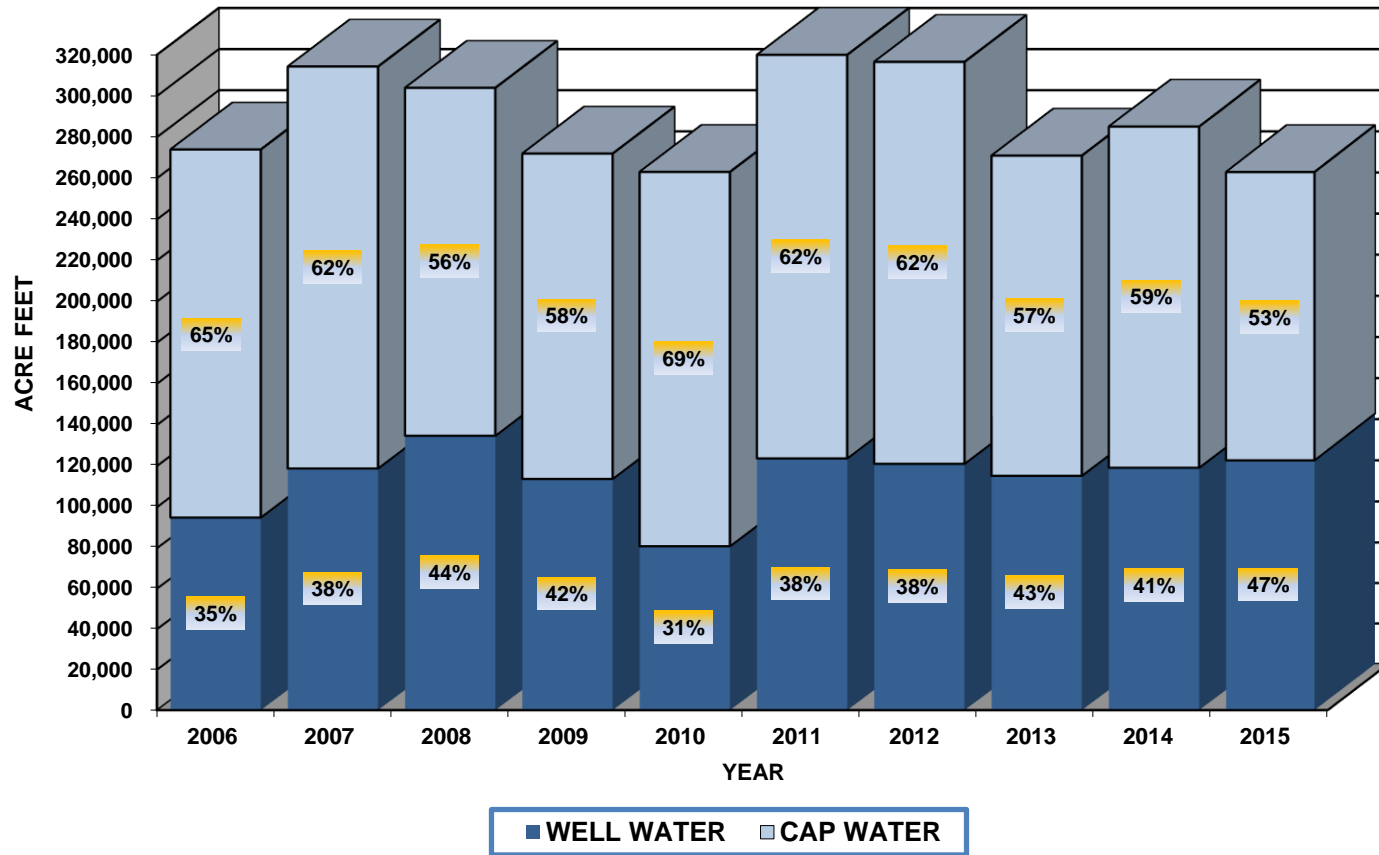
- Current Capacity: Over 440 cfs (150 Wells)
  - Capacity Lost to Development: 150 cfs (70 Wells)
- Current Production Capability: 170,000 AFA\*
  - 72% of Wells Connected to Canal System
- Uneven Access – Some Areas “GW Poor/Dry”
- Capital Improvement Program for 2016
  - Increase Capability to 190,000-200,000 AFA\*
  - 75% of Wells Connected to Canal System

\* Depends on Annual Demand and Well Location

# MSIDD

## Last Decade

TOTAL ACRE FEET DELIVERED



# The Shortage Challenge

|      | <u>Recent Supplies</u> |           | <u>Supplies During Level 1 Shortage</u> |
|------|------------------------|-----------|-----------------------------------------|
| CAP: | 130,000                |           | 50,000                                  |
| GW:  | <u>170,000</u>         | > > > ? ? | <u>200,000</u>                          |
|      | 300,000                |           | 250,000                                 |

**Can MSIDD Increase Groundwater Production to 200,000 AFA?**

# Shortage Strategies

## **Forbearance: Protect Lake Mead Water Levels**

Delayed Onset of Level 1 Shortage Until 2018 or Later

## **Drought Contingency Plan Among AZ, CA & NV**

An Insurance Policy?

## **Increase Groundwater Pumping**

How Much More and For How Long  
Concern Over Preserving Resource

## **Growers May be Forced to Increase Fallowing**

## **Growers Continue Shift to Efficient Low-Head Irrigation Systems**

Make GW Supplies More Effective

## **Growers Change to Alternative Crops**

Must Prove Profitability – Long Term  
Requires Investment in Infrastructure

# Factors Affecting Future GW Pumping

- Does Demand Remain Constant *i.e.* GW Replaces All Lost CAP
  - Or Reduce Acres to Match GW Capability
- Infrastructure: Can CAP be replaced by GW where needed
  - New Pipelines to Connect More Wells to System
  - More Point Sources - Reduce “GW Poor/Dry” Areas
    - Rehab Old
    - Drill New (Partnering for Recovery May Help)
  - Redundancy to Match Farm System Capacities (Even More Wells!)
  - Main Canal Pump Back System
- Cost of Increased GW Water Pumping
  - Increased Cost of Maintaining More Wells
  - Energy Costs for Groundwater Pumping
    - » Drought Reduces Hydropower Availability
    - » Increased Use of Supplemental Power – Spot Market
  - Increased Depths to Groundwater
    - » More Energy per Unit Produced
    - » Potential Quality Degradation
    - » Risk Return of Subsidence

# Preparing for Reduced CAP Supplies

## Investments in GW Infrastructure

- 2009 – 2012: \$1.5 Million Revenue Bond  
Planning for 2017 Ag Pool Reductions  
Target →170,000 AFA
- 2013: 3-Year Plan- \$1.2 Million in Reserves
- 2014: Consultant Study – Develop  
Construction Improvement Program (CIP)
- 2015 – 2016: CIP Implementation  
Planning for Shortage / Drought  
Target →190,000 – 200,000 AFA



# Water Policy Ramifications

- **District Level (Board Decisions)**
  - How Much to Actually Pump
    - Cost vs. Resource Management vs. Subsidence
  - Limits on Flow Rate and / or Daily Use
  - Strict / Reduced Annual Allotments
- **State Level (ADWR and CAP)**
  - Will Extra Pumping Lead to More Regulation?
  - Pricing Strategies for Remaining Colorado River Water
- **Basin Level (Federal)**
  - Does AZ Continue to Bear “Cost” of Lowest Priority?
    - Structural Deficit Distribution - DCP
    - Colorado River Management
      - Upper Basin vs. Lower Basin Transfers
      - Shift Ag Conservation Burden to Other States