Santa Cruz Active Management Area Assessment

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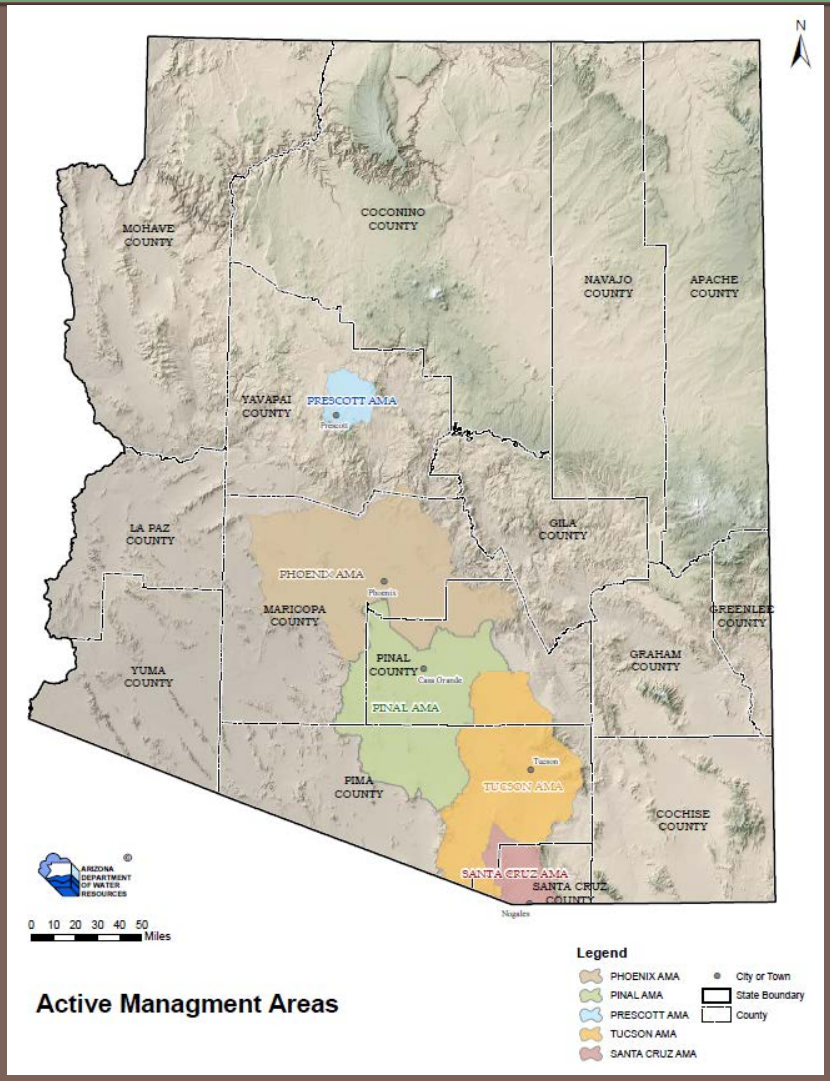
Arizona Department of Water Resources

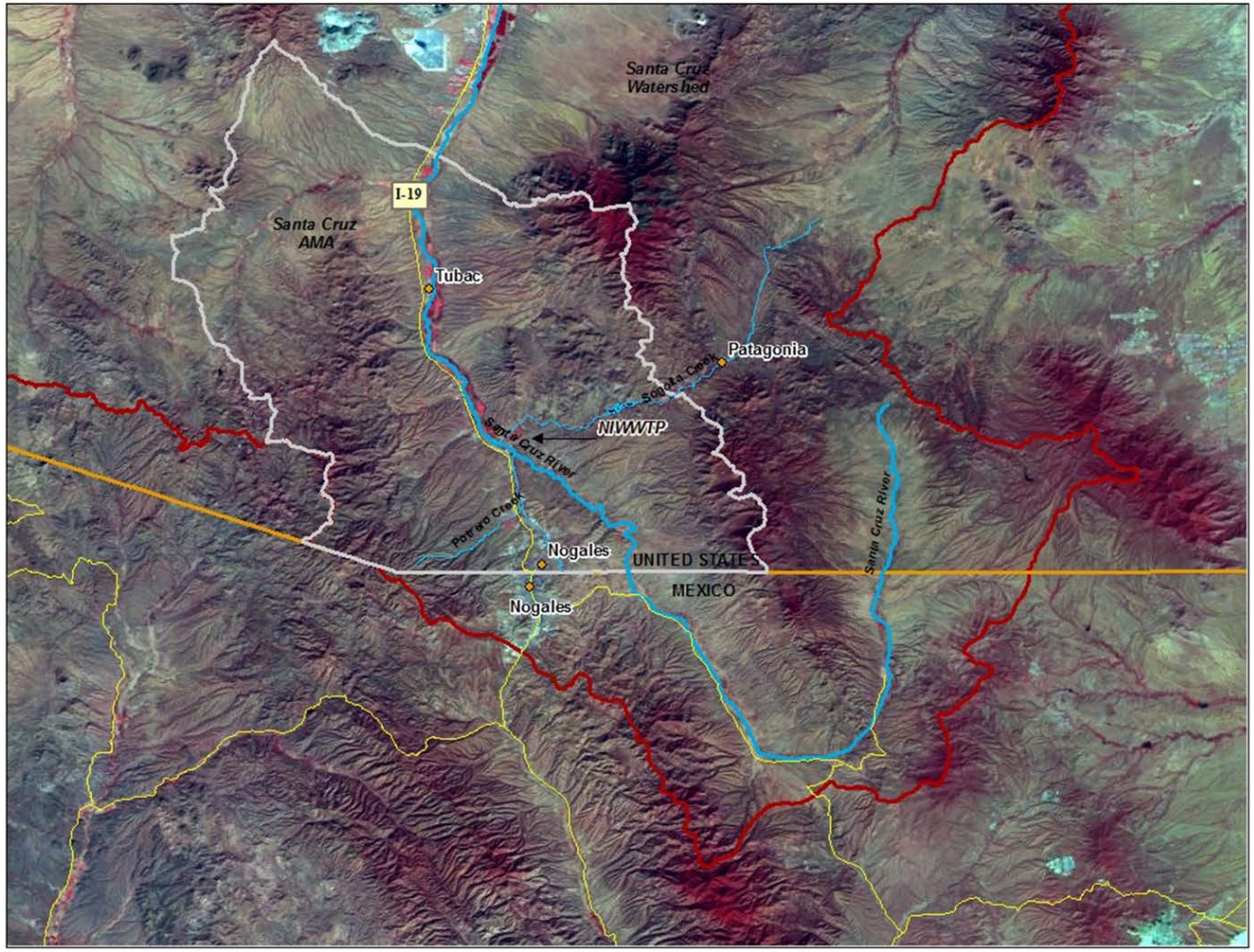
History, Goals & Mission

- Created in 1994
  - Originally Part of Tucson AMA
- AMA Goal
  - Maintain Safe Yield Condition
  - Prevent Local Water Table Declines
- Mission
  - "…manage all water resources in the AMA conjunctively, to assure a reliable water supply for current and future uses, and to protect aquatic and riparian habitat while sustaining a healthy economy."

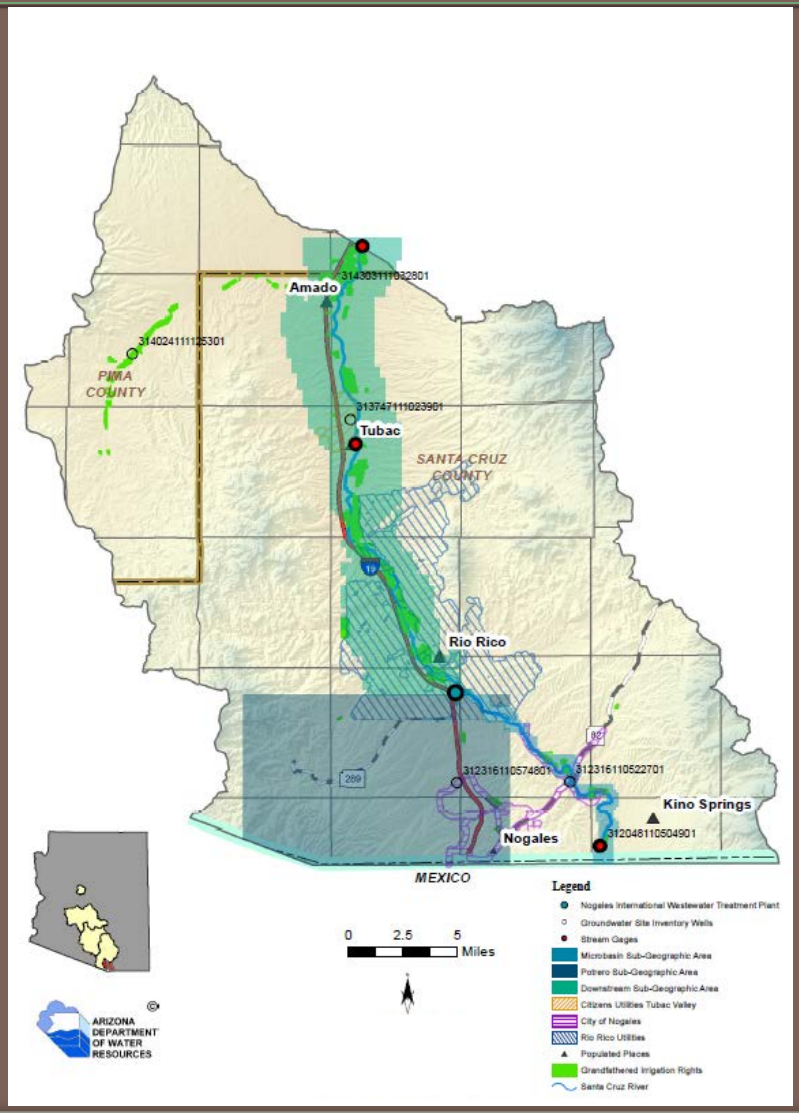
Active Management Areas



Santa Cruz Watershed



SCAMA Sub-Areas



Water Supplies

- Surface Water
- Reclaimed Water
- Groundwater

- "Water Withdrawn from Wells" (WWFW)
  - General Adjudication
    - GW/SW Interaction
      - Subflow Zone Determination
        - Saturated Floodplain Holocene Alluvium (FHA)
          - Technical Procedures Under Court Review
      - No Impact "Test" Adopted to Date
- Dual Filed Rights

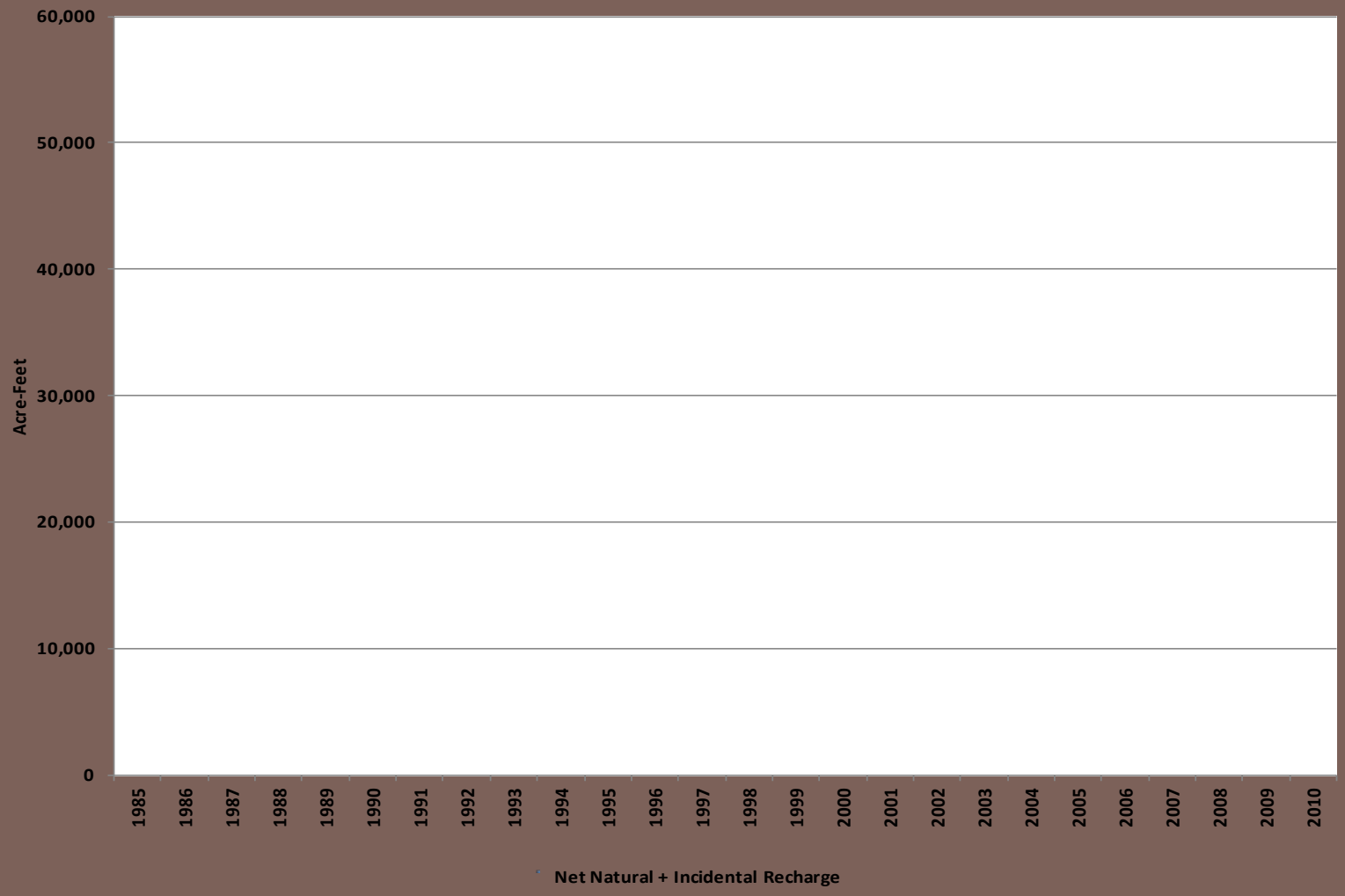
Water Uses

- Direct Use
  - Groundwater (WWFW)
  - Surface Water
    - Limited to single Agricultural User on Sopori Wash
- Indirect Use
  - Net Natural Recharge - Infiltrates into Stream Channels and Augments Supplies Available to Local and Downstream Water Users
  - Surface Water
  - Reclaimed Water

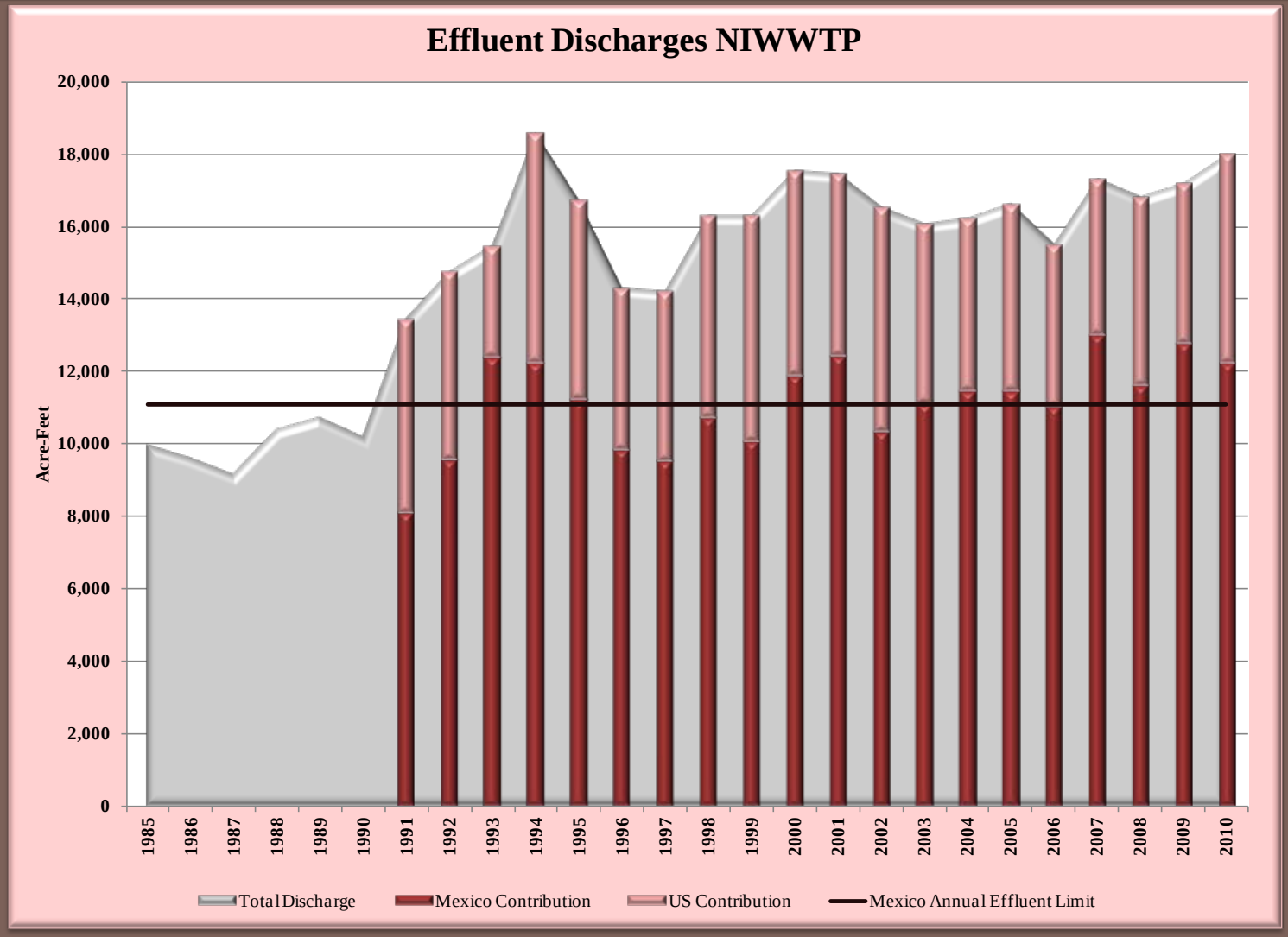
ADWR Analysis

- Groundwater Models
  - Areas
    - Microbasins
    - Downstream Area
  - Construction, Simulation, Calibration
- Risk Analysis
  - Stochastic Streamflow Analysis
    - 100 Independent Predictive Realizations
  - Translated to GW Model Predictions

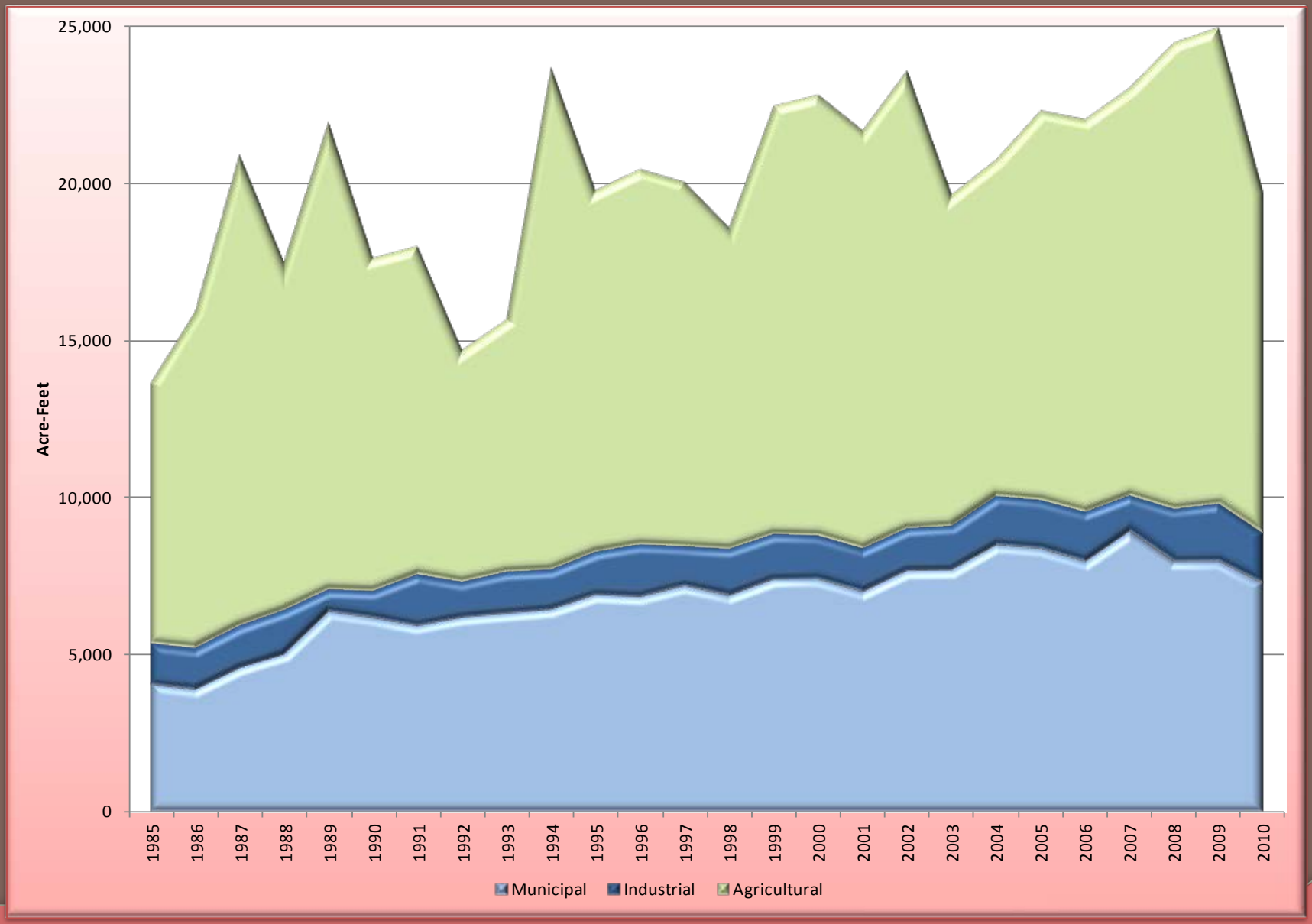
Modeled Net Natural Recharge



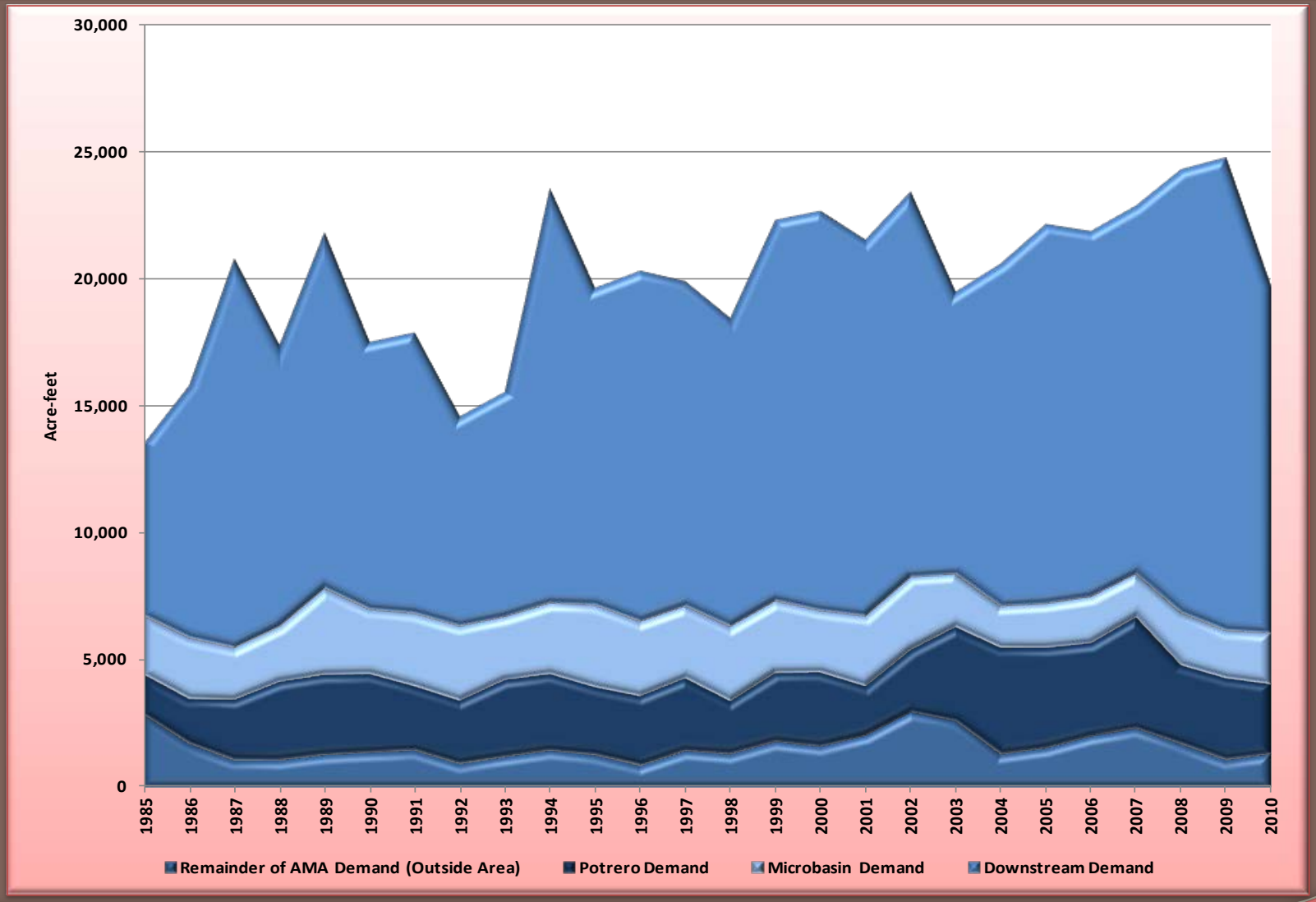
NIWWTP Discharges



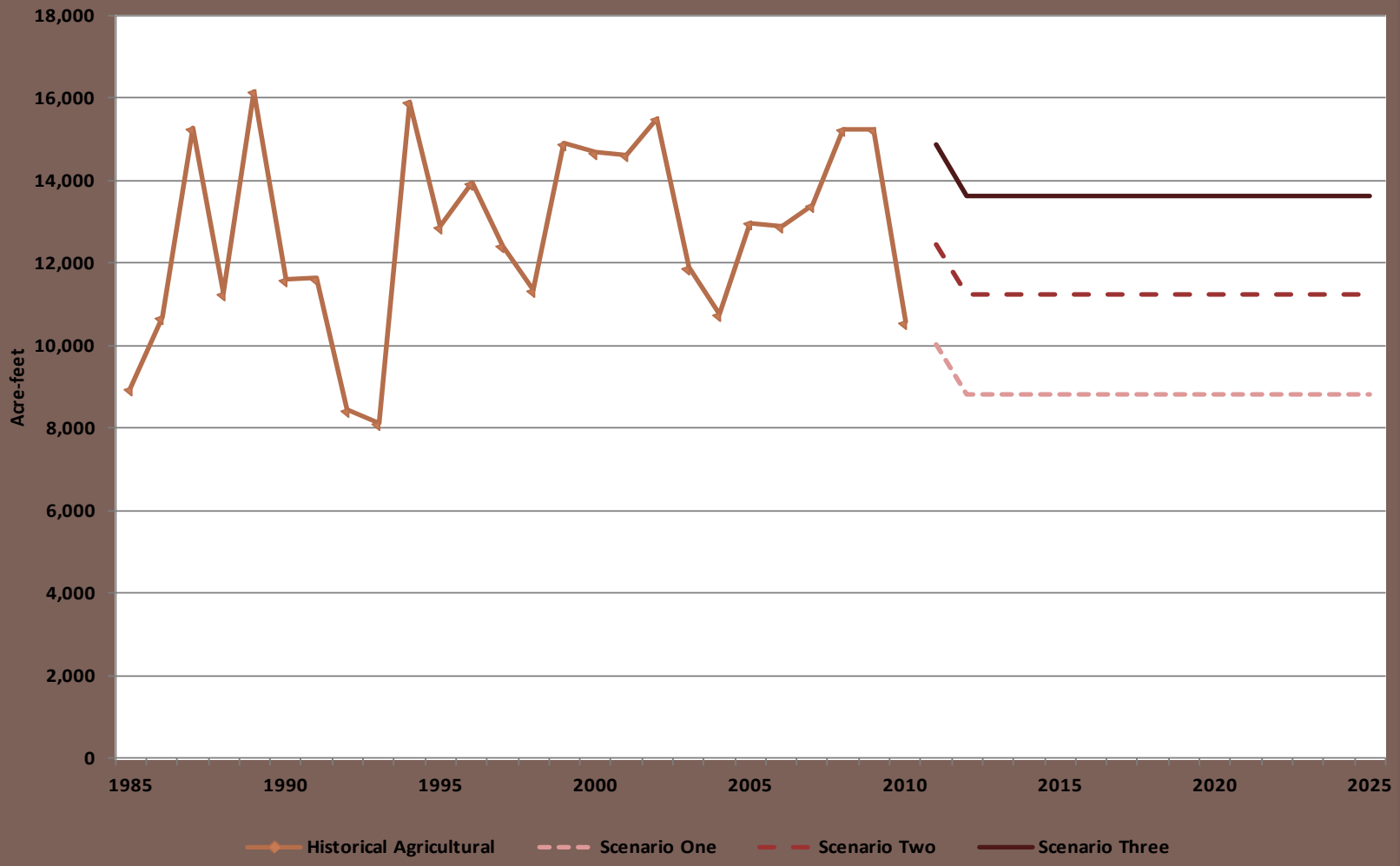
Total SCAMA Demand by Sector



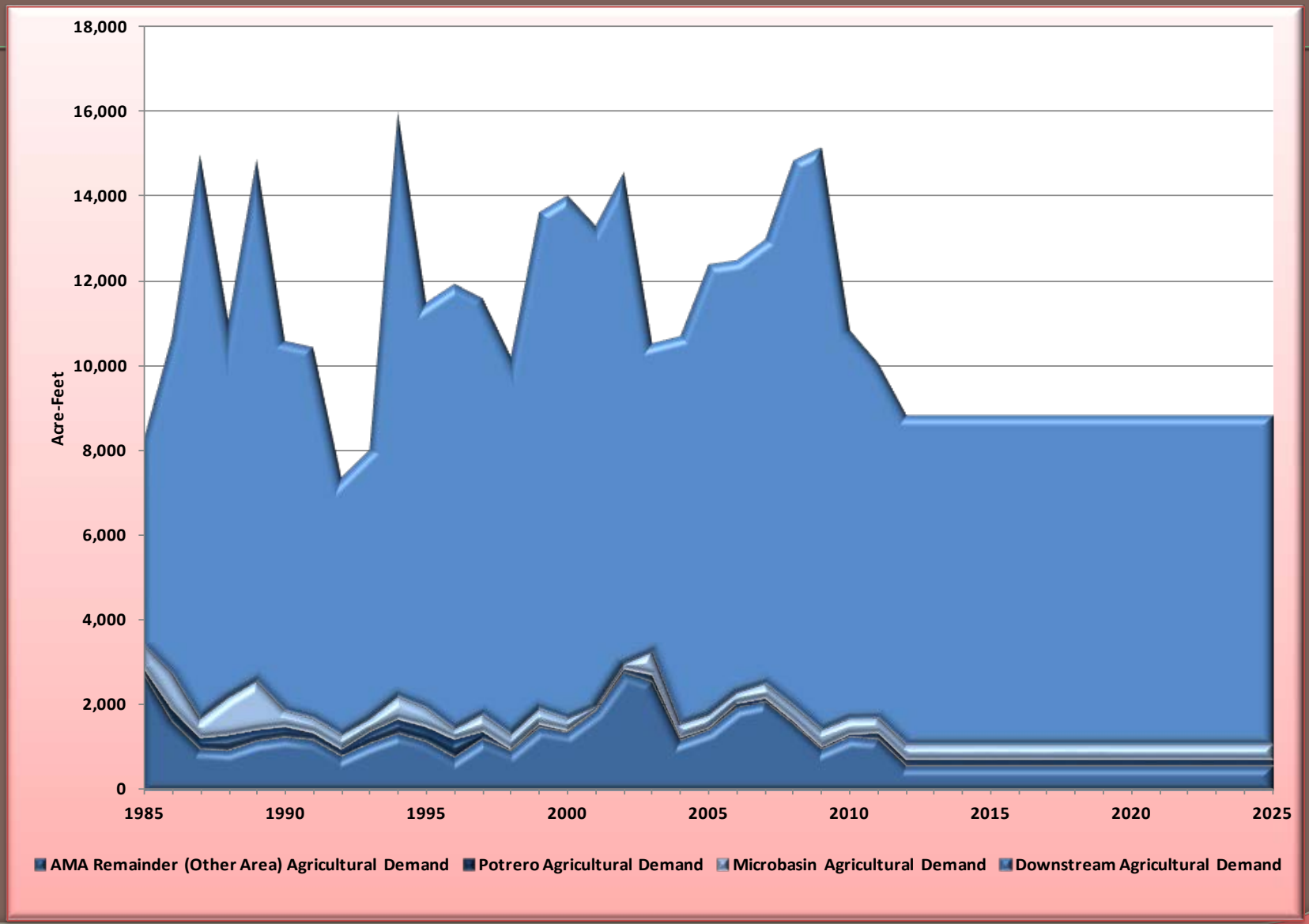
Total Demand by Sub-Area



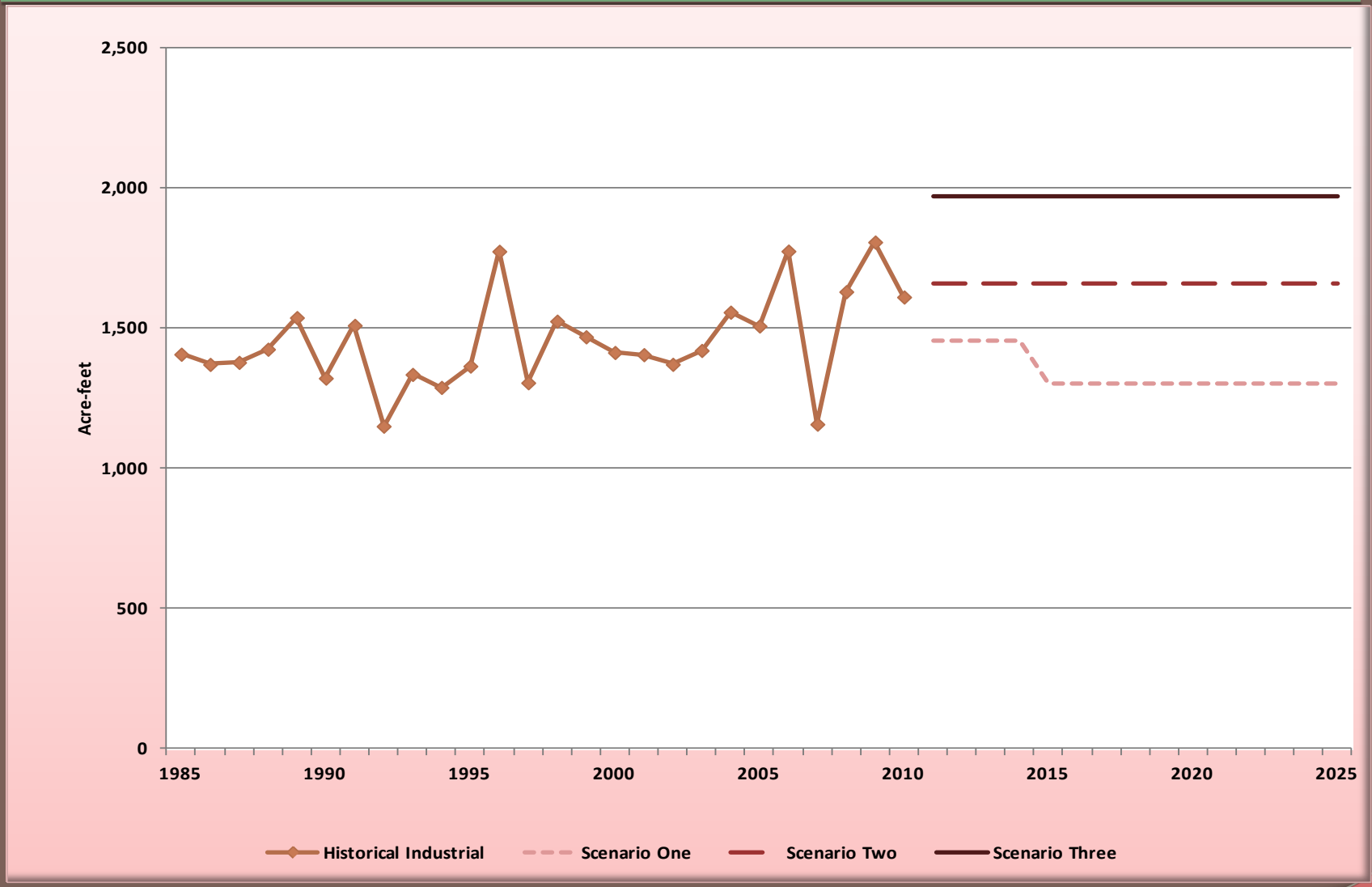
Total AMA Agricultural Demand



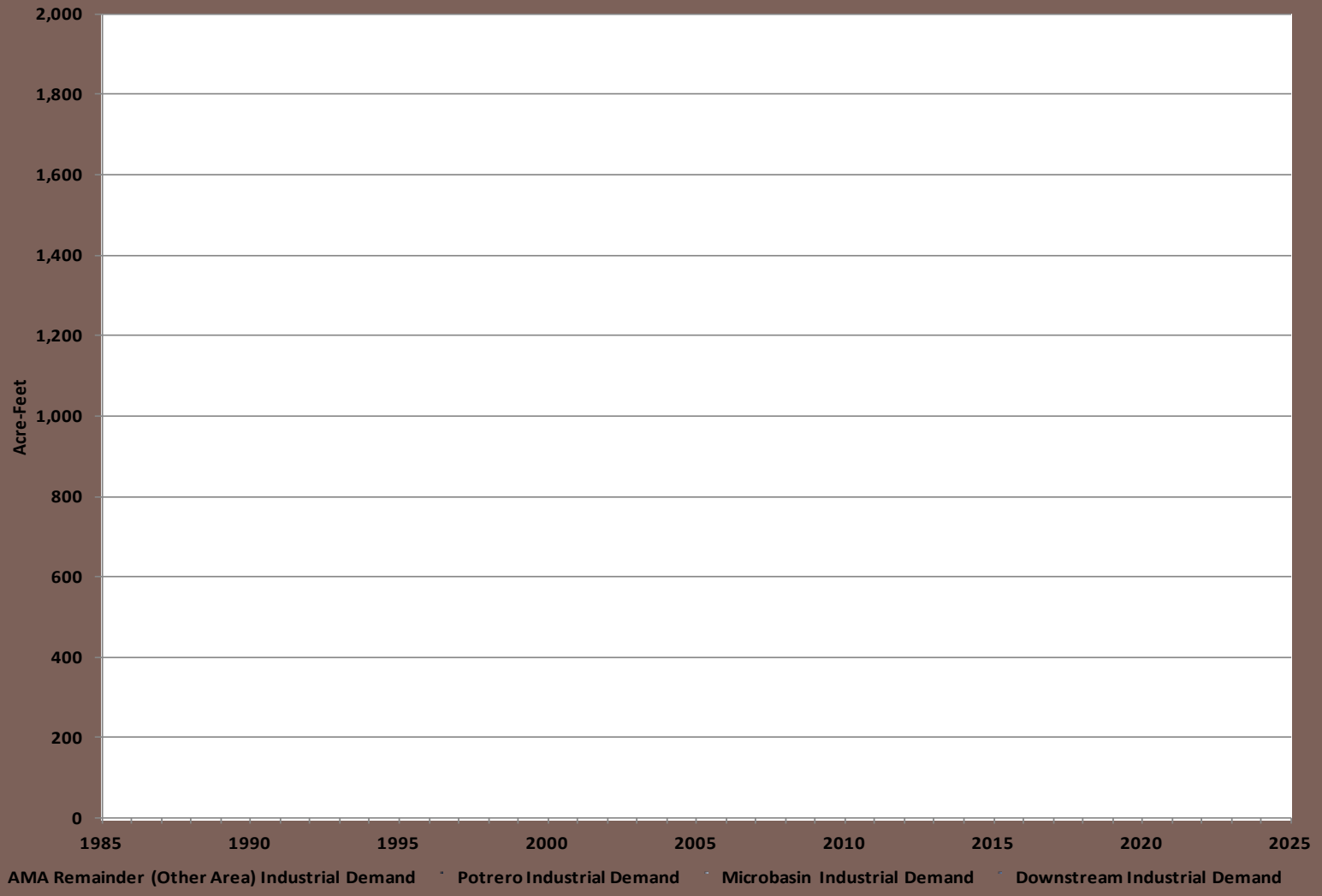
Agricultural Demand by Sub-Area



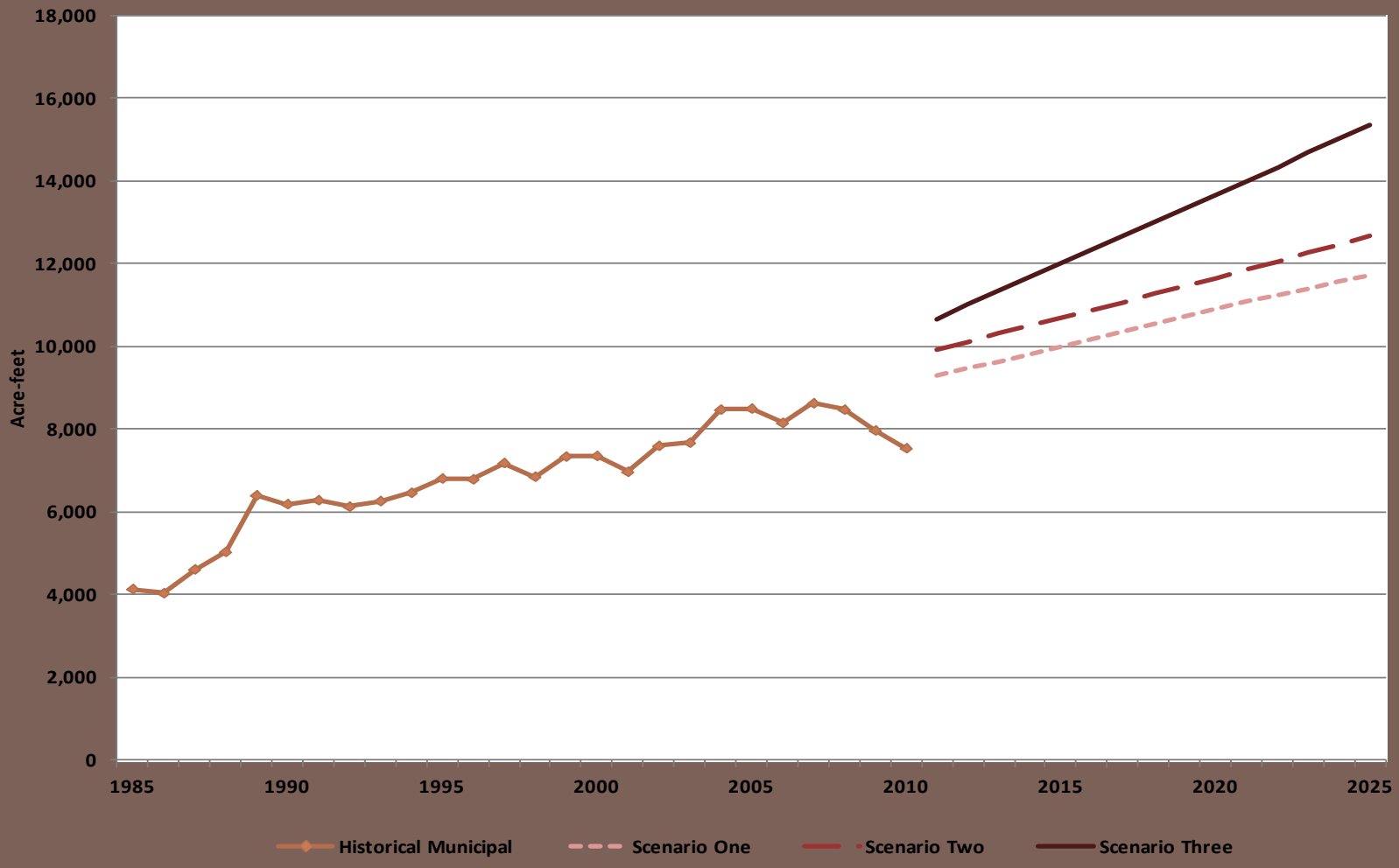
Total AMA Industrial Demand



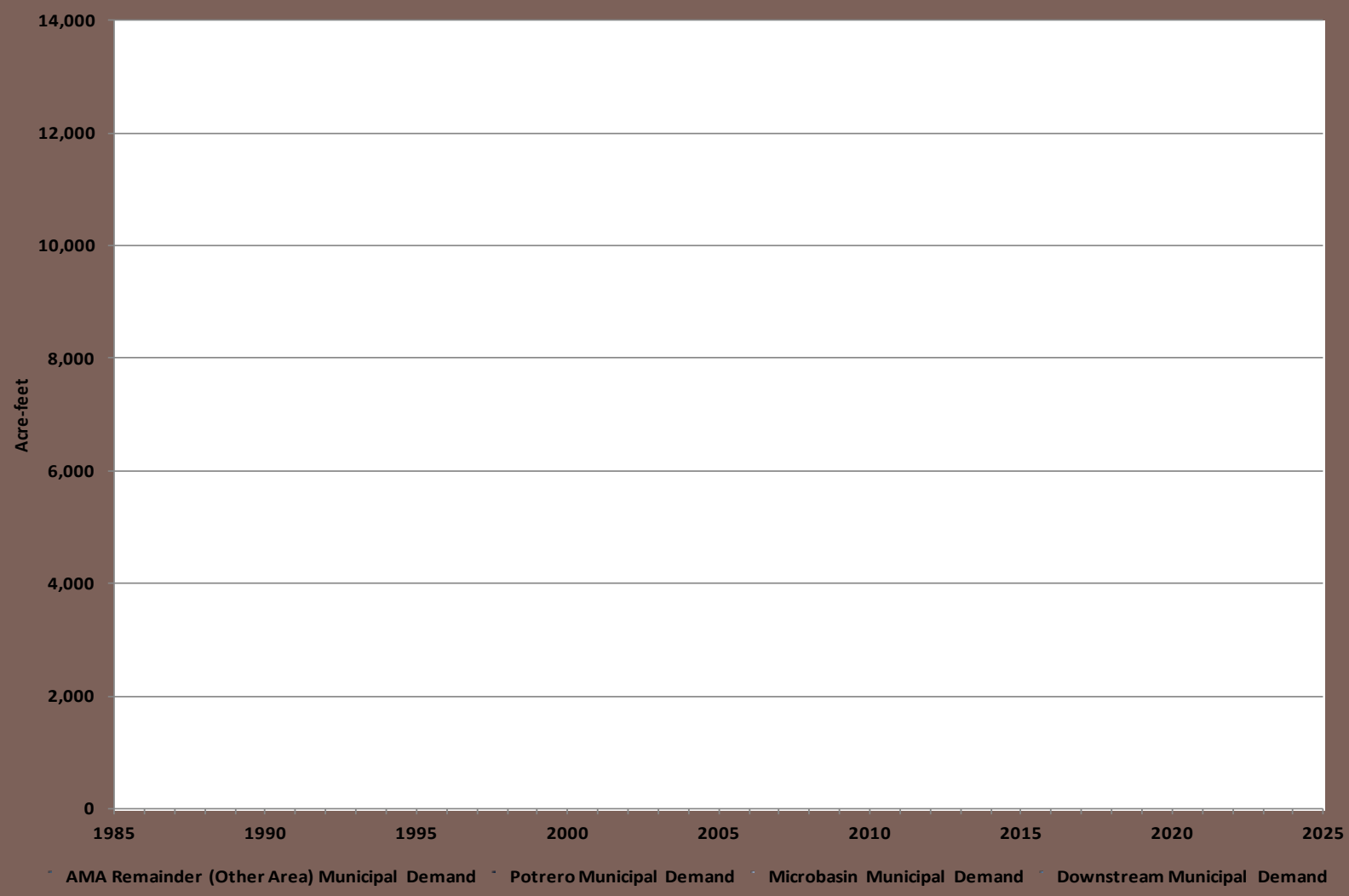
Industrial Demand by Sub-Area



Total AMA Municipal Demand



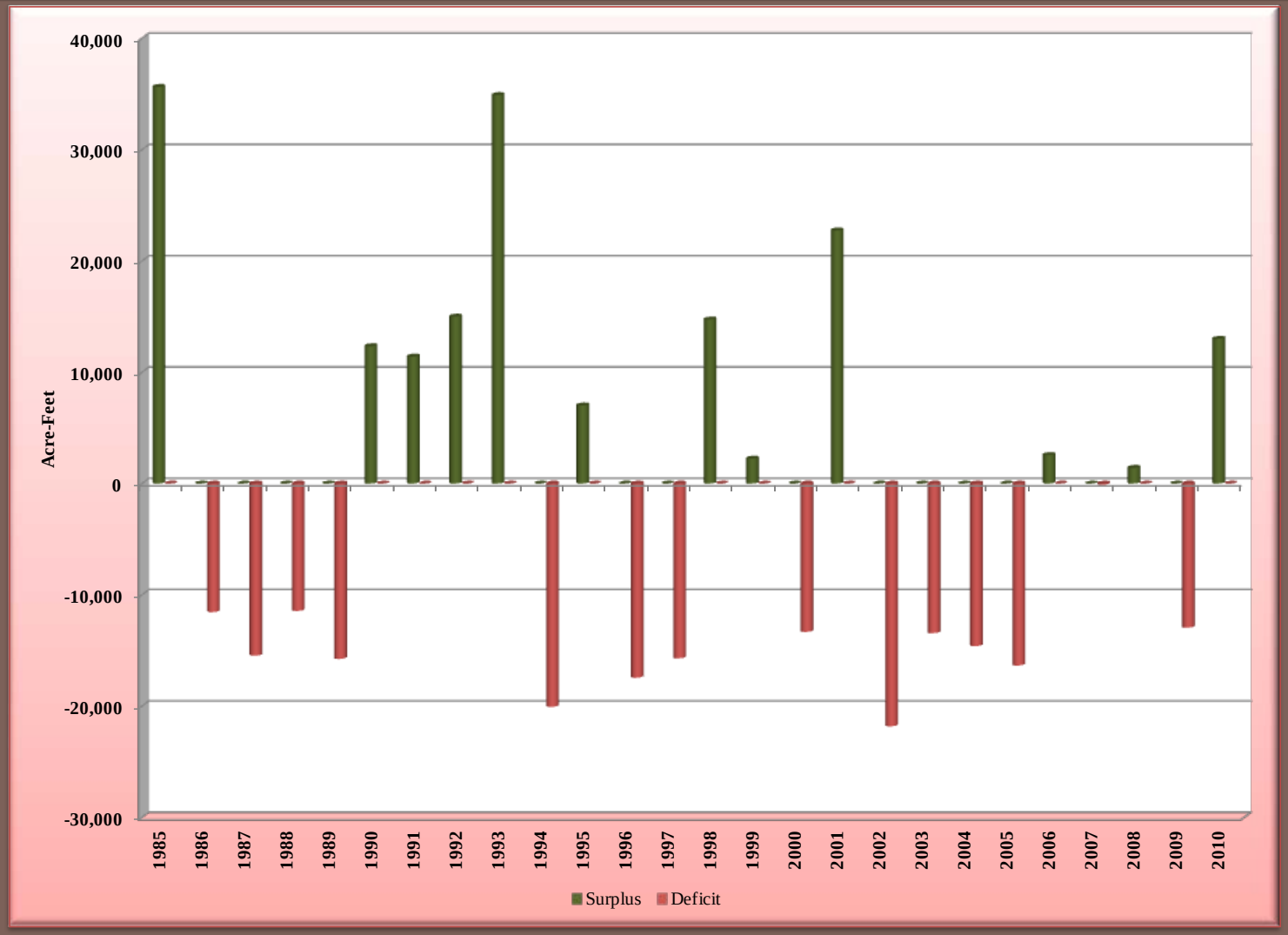
Municipal Demand by Sub-Area



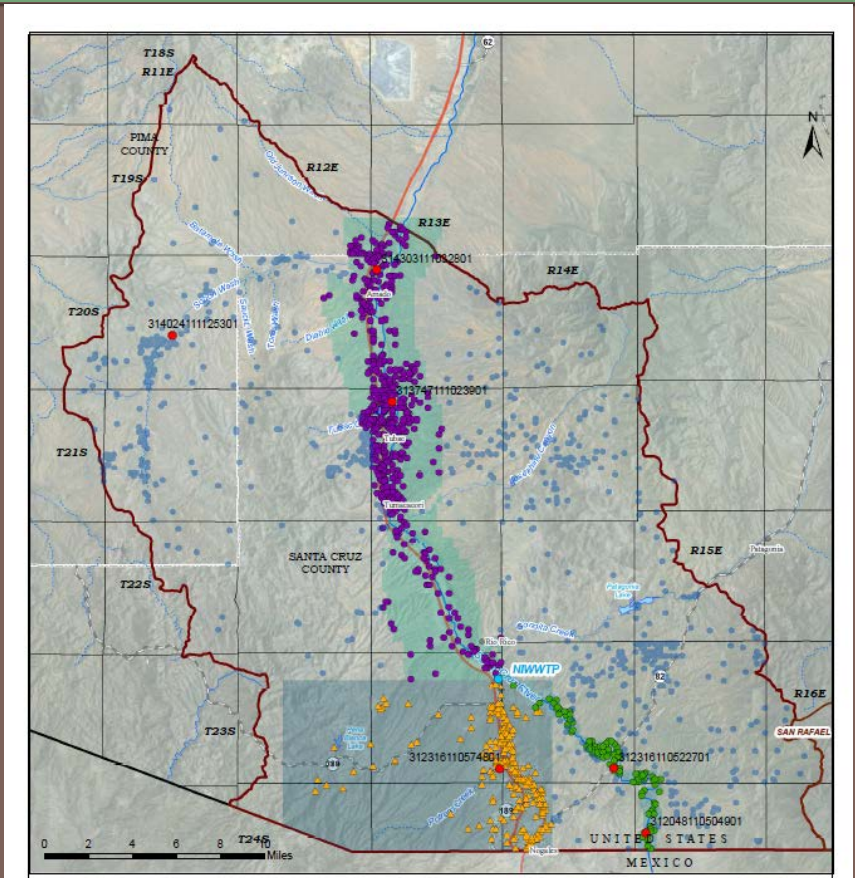
Pre-AWS Rules Platted Lots

	Demand (acre-feet/year)	No. of Lots
CURRENT (2010)	**7,500**	**17,000**
Committed Demand Remaining		
DAWS	1,600	4,600
CAWS (Estimated)	2,200	3,700
WR (Estimated)	600	600
Dry Lot Subdivisions (Estimated)	100	300
Pre-Rules Unbuilt lots (Estimated)	3,400 - 4,100	12,400 - 15,100
ESTIMATED COMMITTED TOTAL	**7,800 - 8,500**	**21,600 - 24,300**
Potential Demand (Current + Committed)	**15,300 - 16,000**	

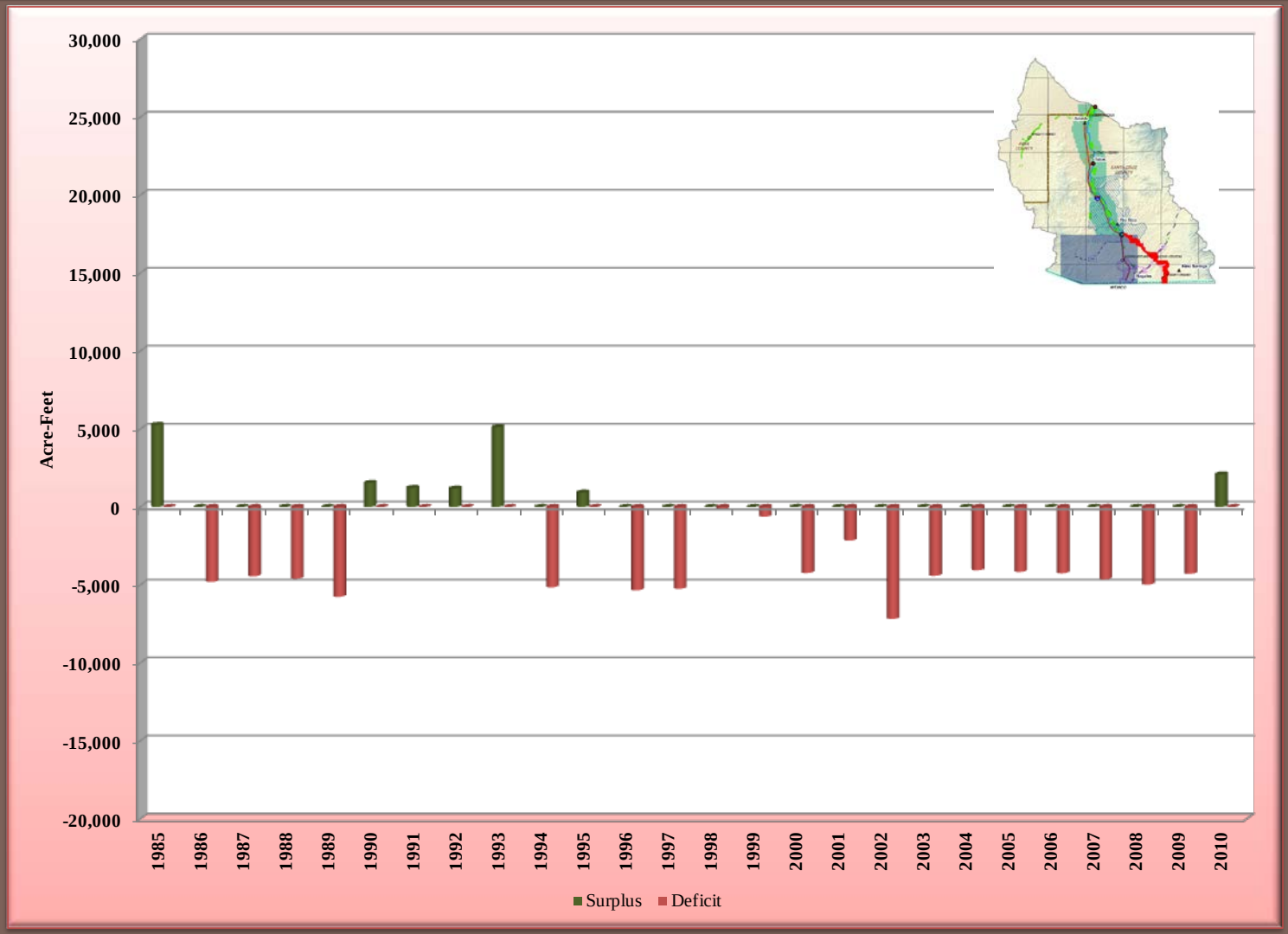
Net Water Balance – AMA wide



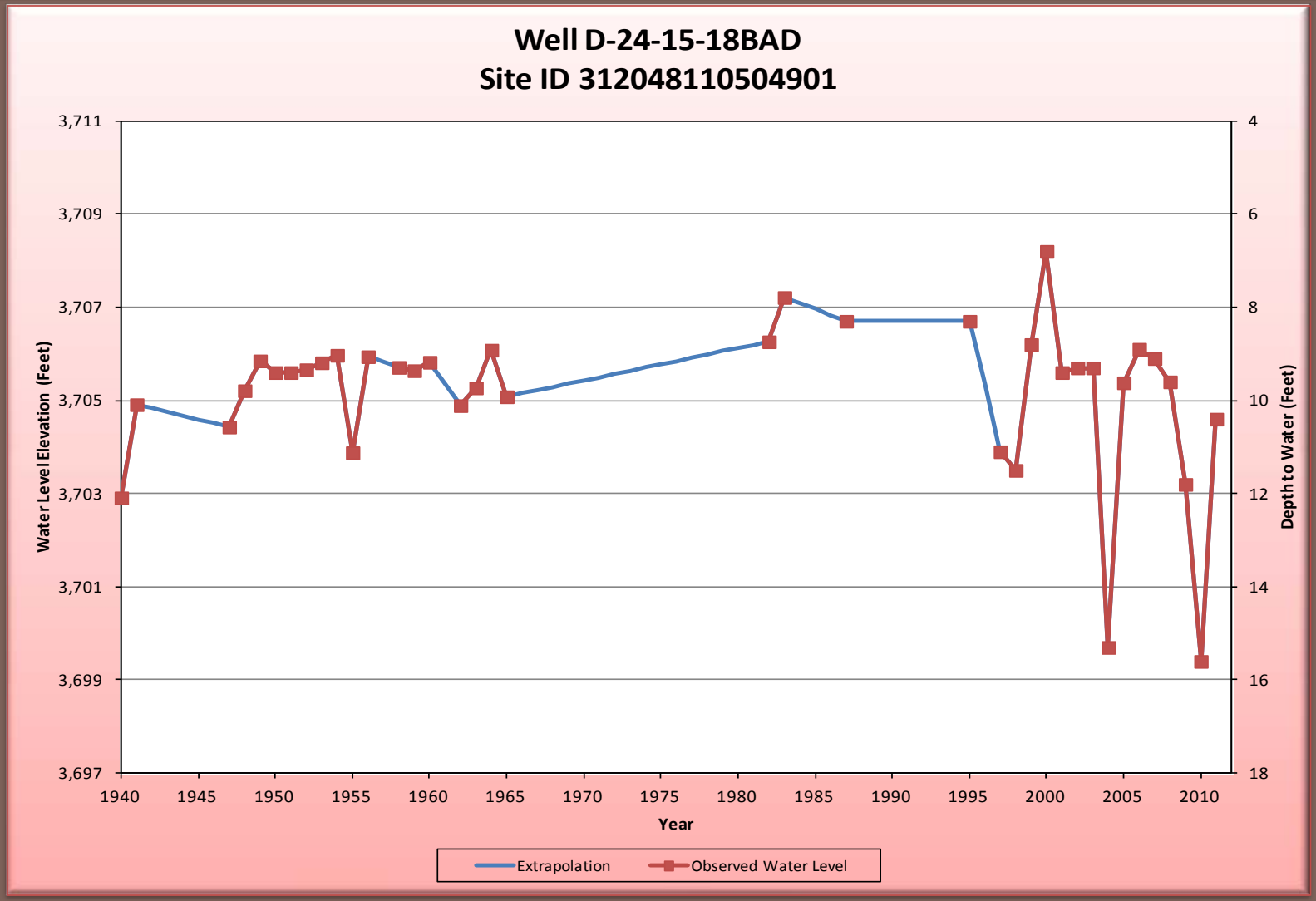
Location of Index Wells



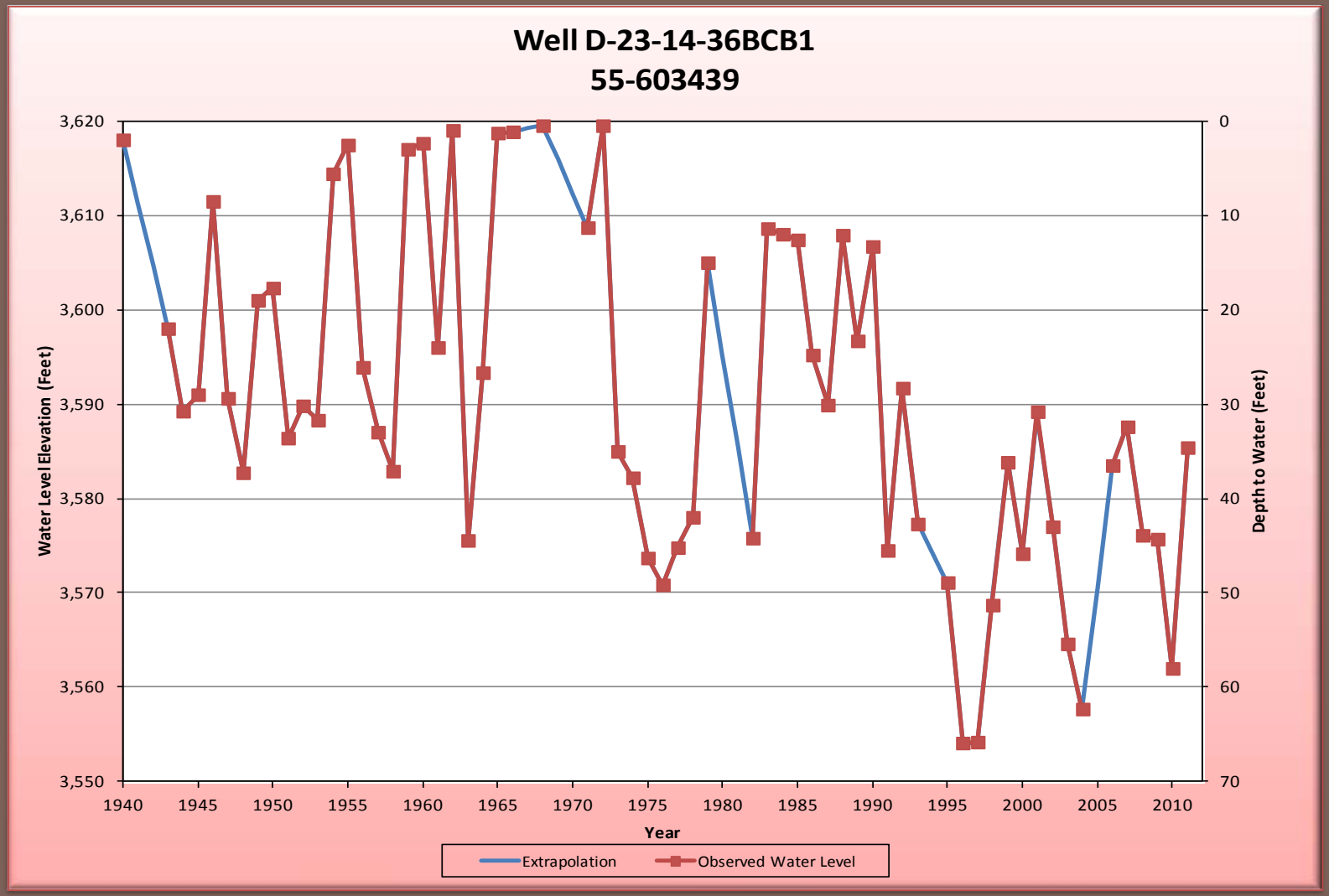
Net Water Balance - Microbasins



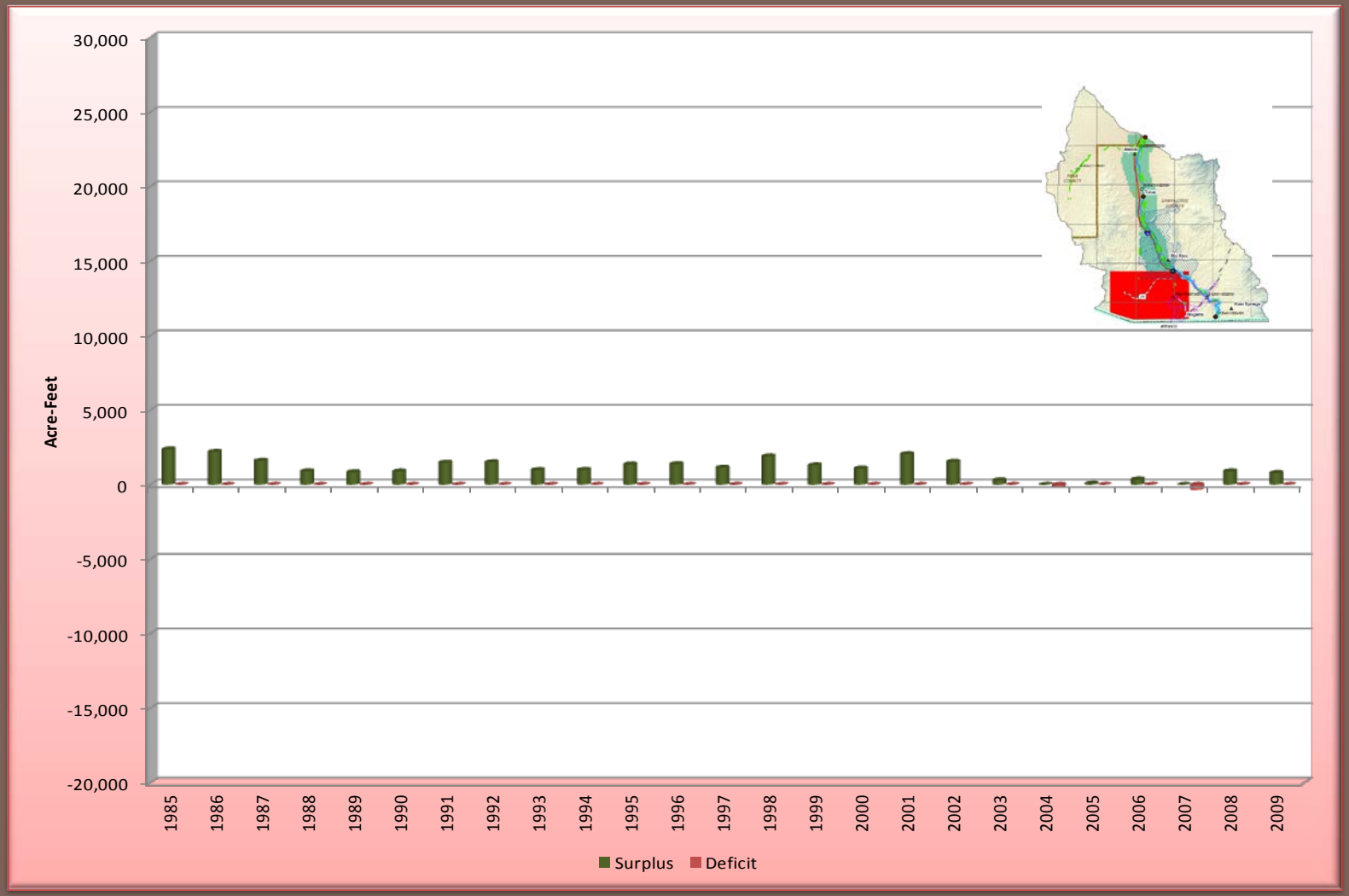
Microbasin Hydrograph 1



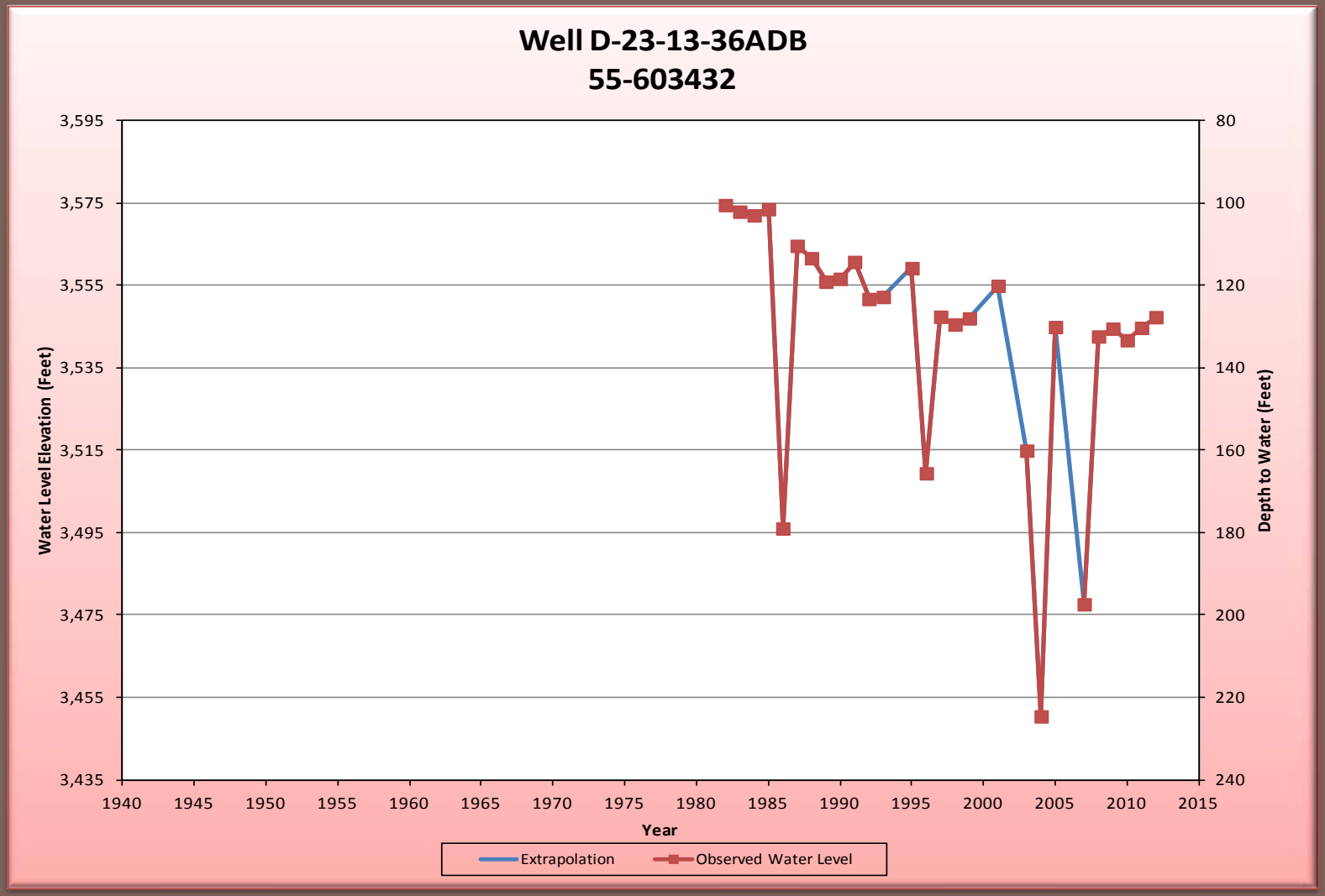
Microbasin Hydrograph 2



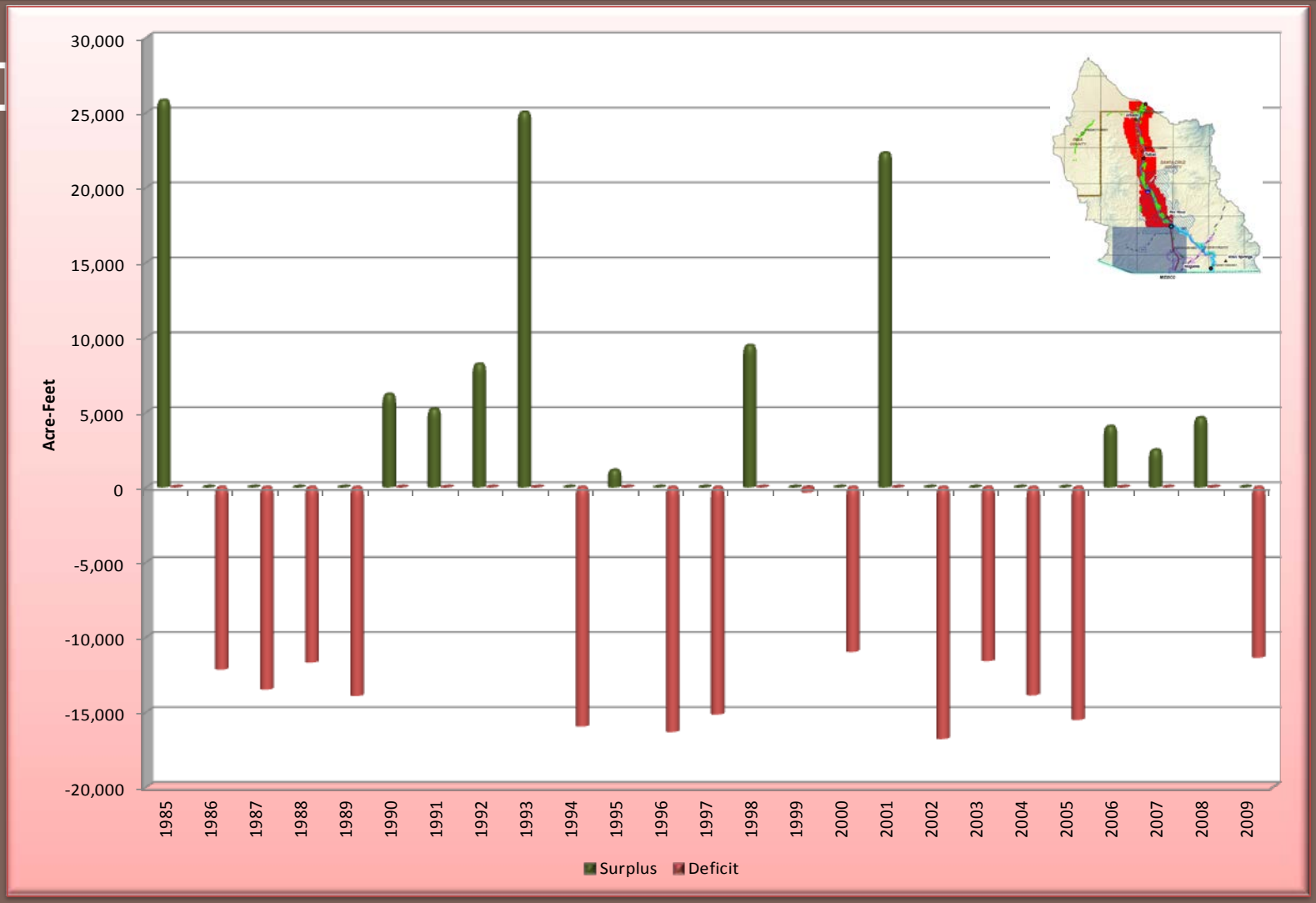
Net Water Balance - Potrero



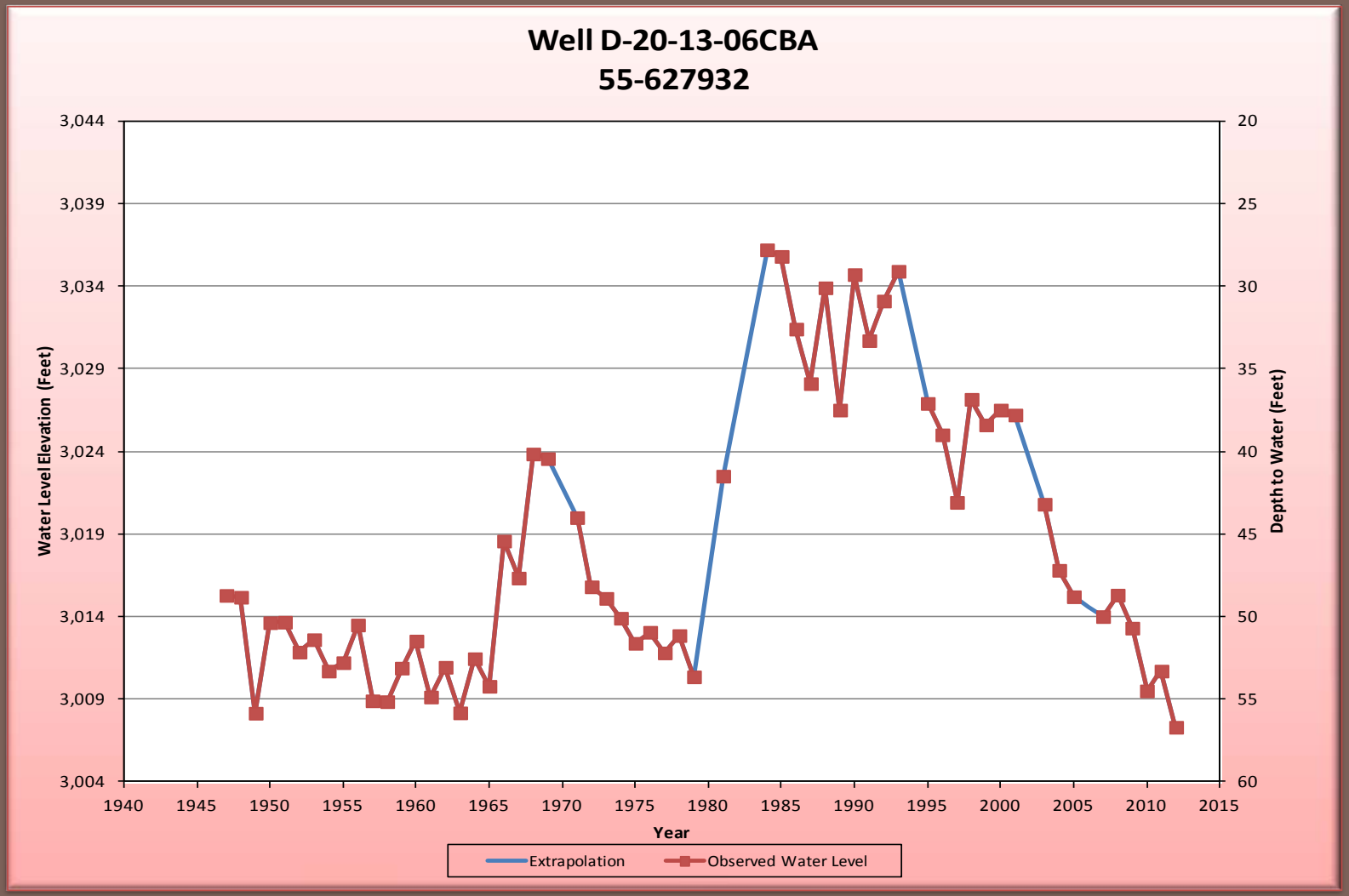
Potrero Hydrograph



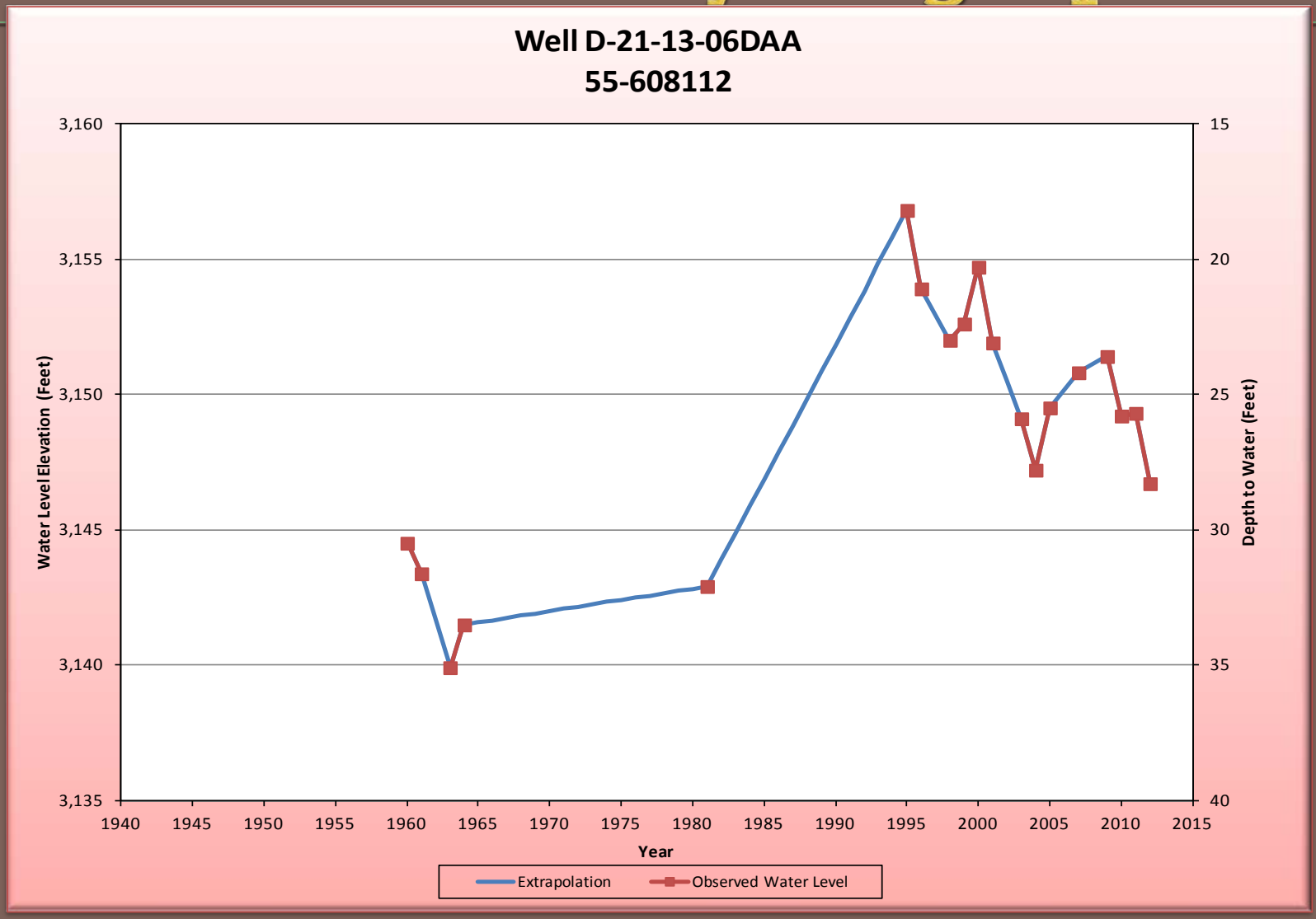
Net Water Balance - Downstream



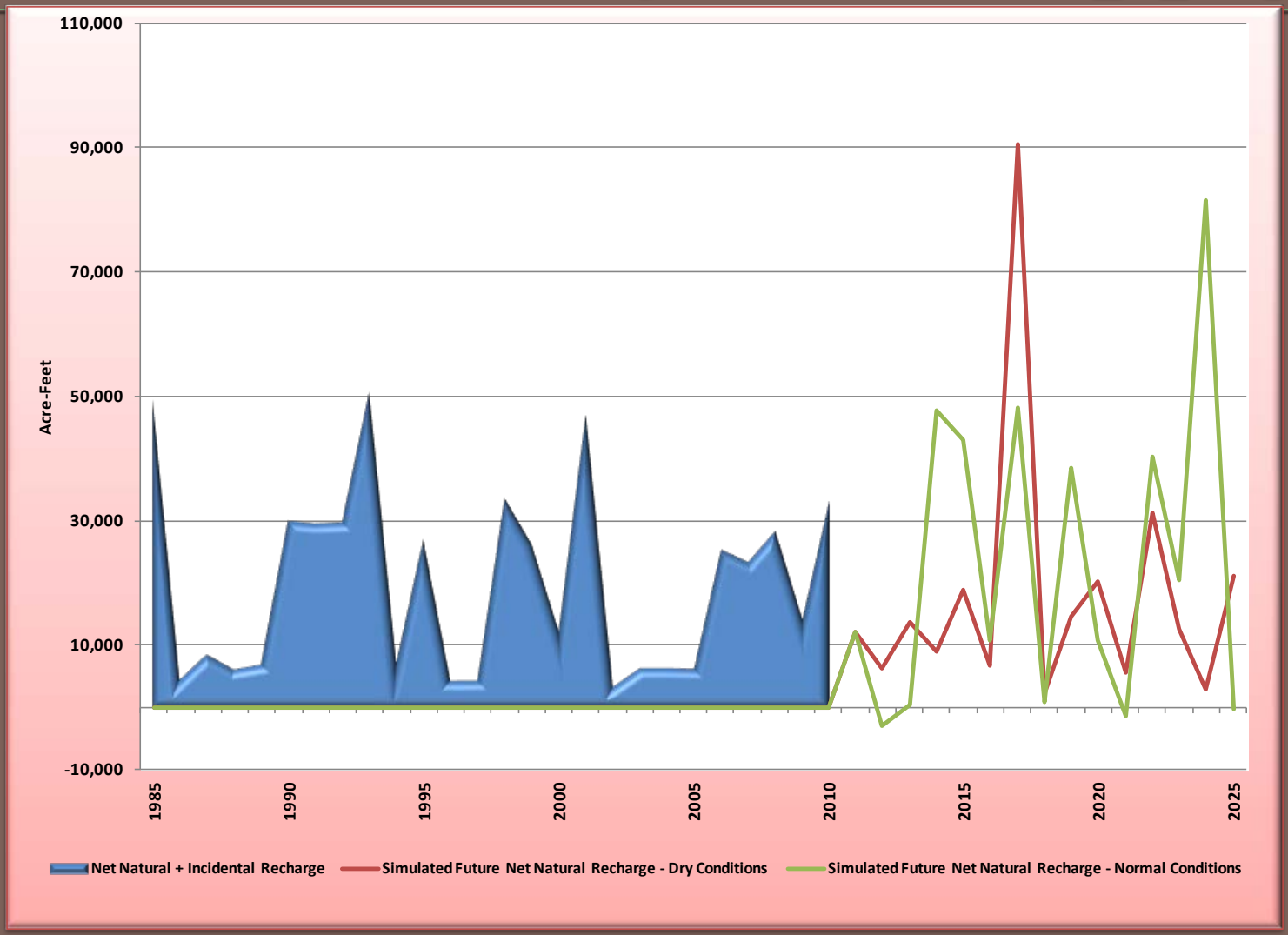
Downstream Hydrograph 1



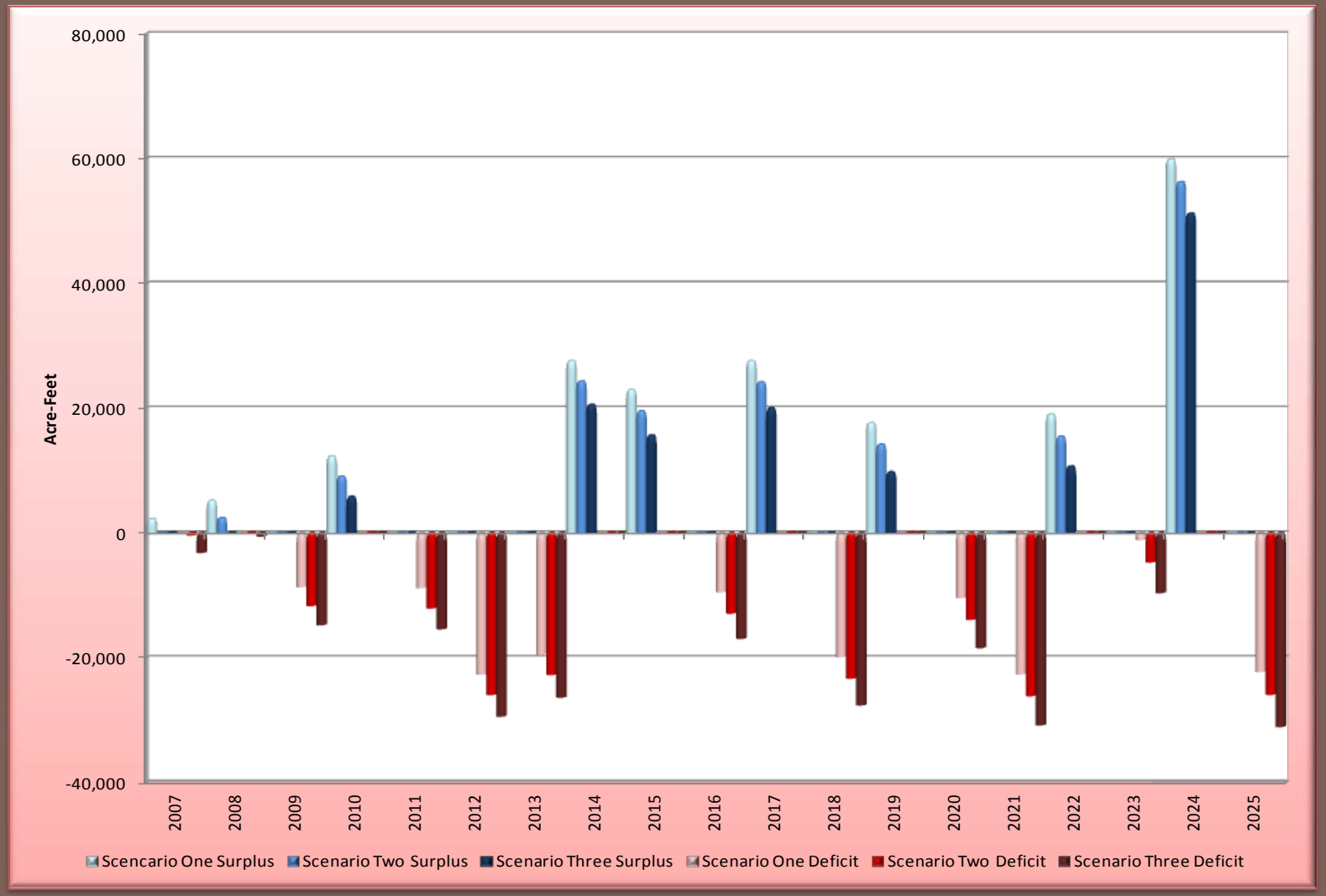
Downstream Hydrograph 2



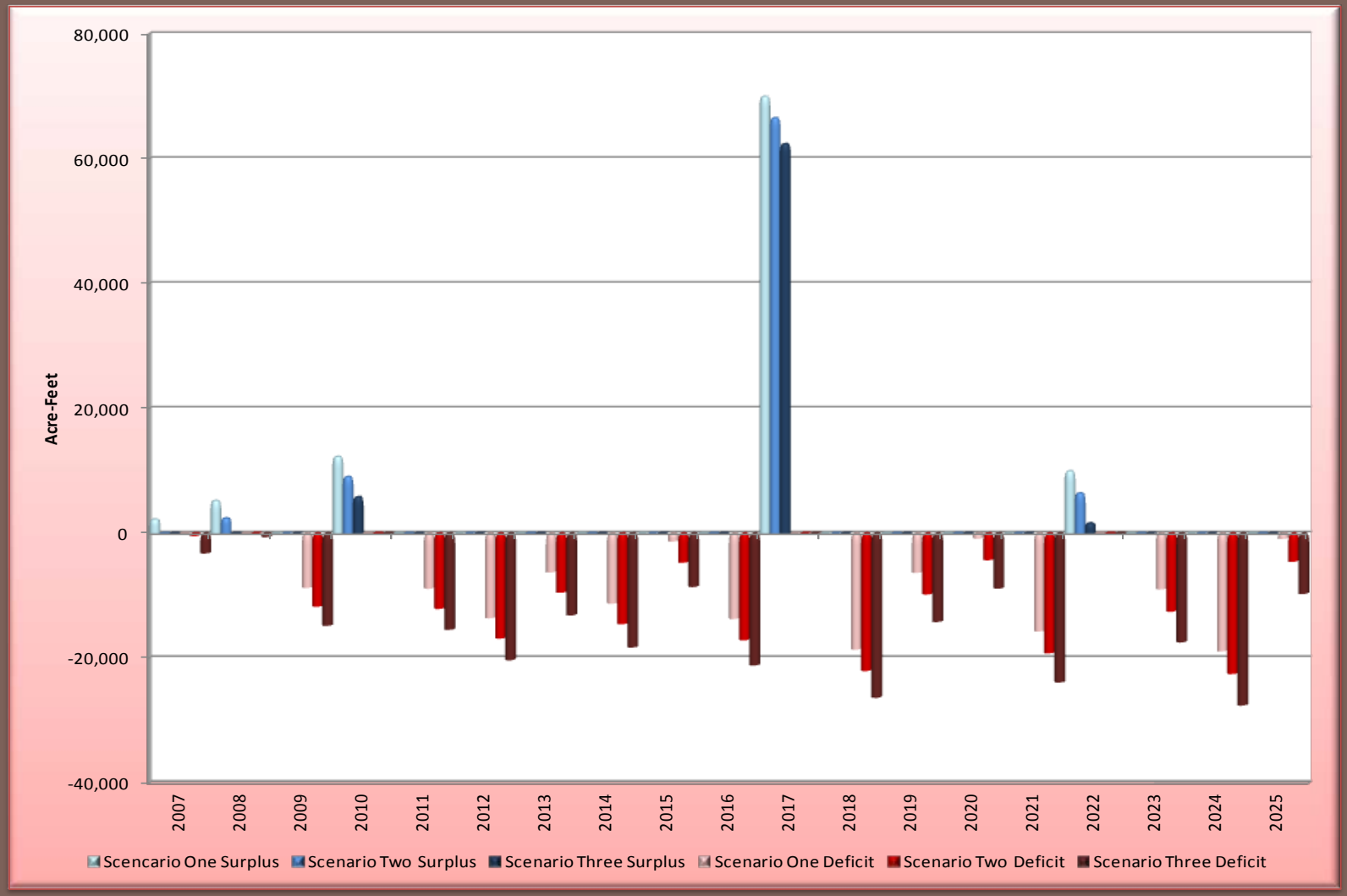
Historic & Projected Supply



Predictive Simulations-Normal



Predictive Simulations-Dry



Water User Options & Response

- Limited Flexibility Today
  - Reduce Demands
  - Curtail Deliveries
  - Shift Supplies
    - Largely Limited to Nogales, AZ
      - Move Pumping from Microbasins to Potrero
- Future Options
  - Increase Reclaimed Water Utilization
    - Lack of Infrastructure
    - Downstream Consequences
  - Supply Importation
  - Rainwater Harvesting?

Regulatory & Planning Issues

- Reliability of Supplies
- Availability of Additional Renewable Supplies
- Lack of Suitable Locations for Storage
- Impact of Diverting Supplies from Current Uses/Discharges
- Limited Non-Potable Reuse Opportunities
- Fate of NIWWTP Effluent
- Challenges with Physical, Legal & Continuous Availability under AWS Rules
  - Lack of Local Rules
  - Moratorium

Questions?

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