Basin Sustainability through a Cooperative Water Accounting Framework

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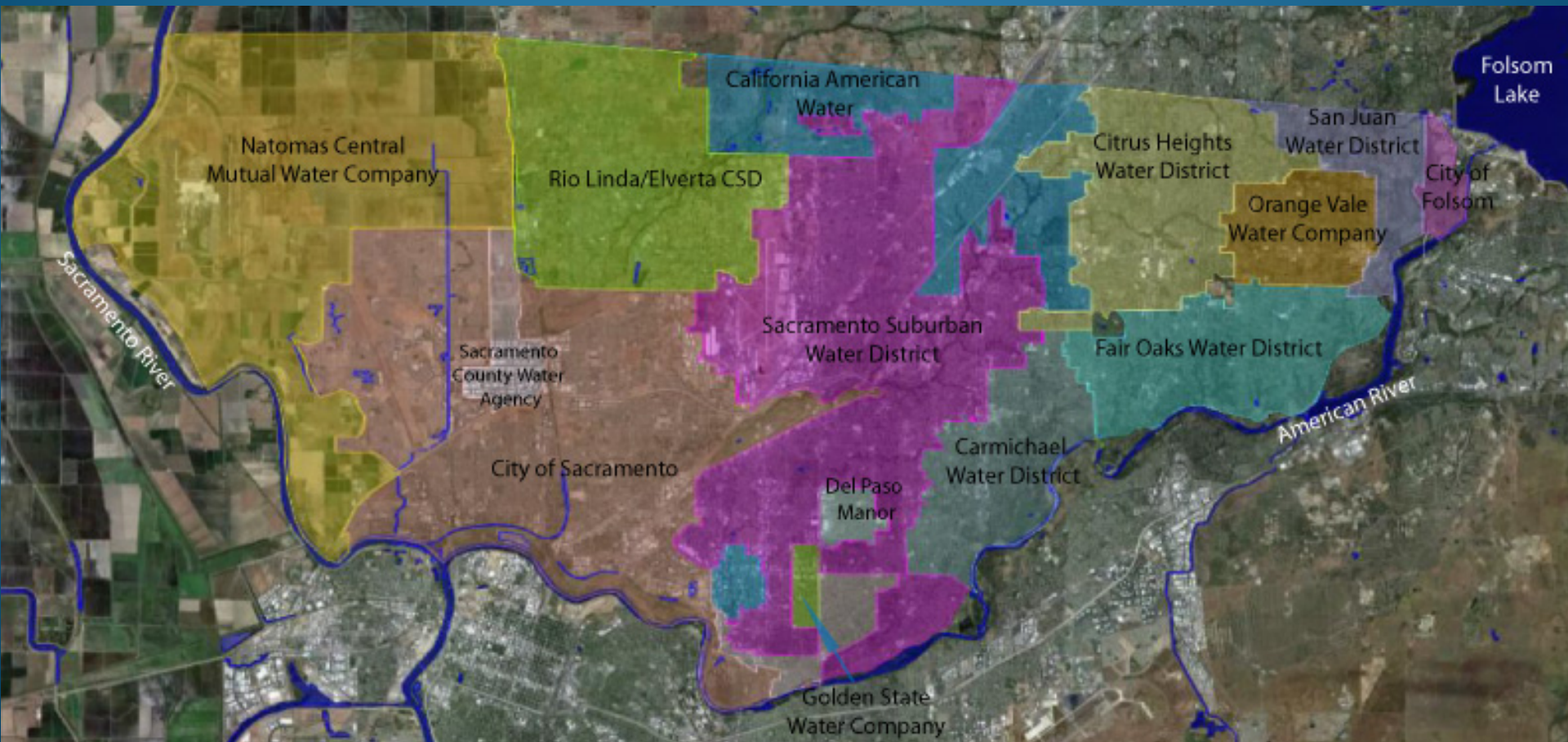
Today's Discussion

- SGA Background
- Need for Water Accounting Framework
- Changed Conditions
- Framework Approach
- Framework Principles

*Supported by DWR AB303 and Prop 50 Planning Grants

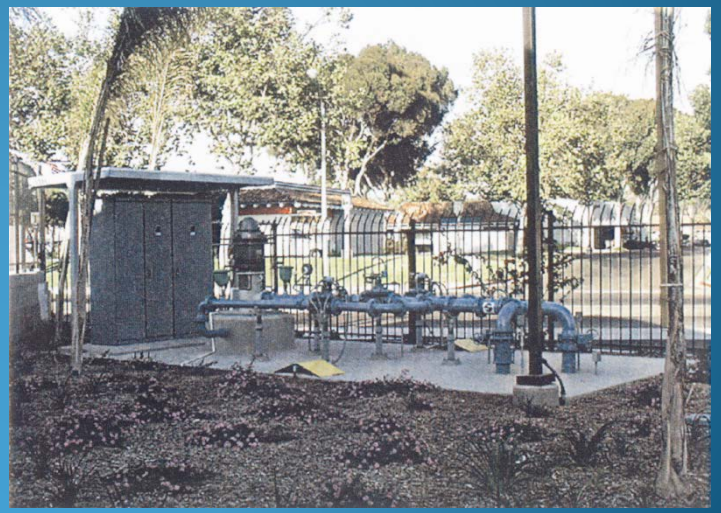
What is SGA?

- Joint powers authority by cities of Citrus Heights, Folsom, and Sacramento and Sacramento County using common police powers to manage basin.

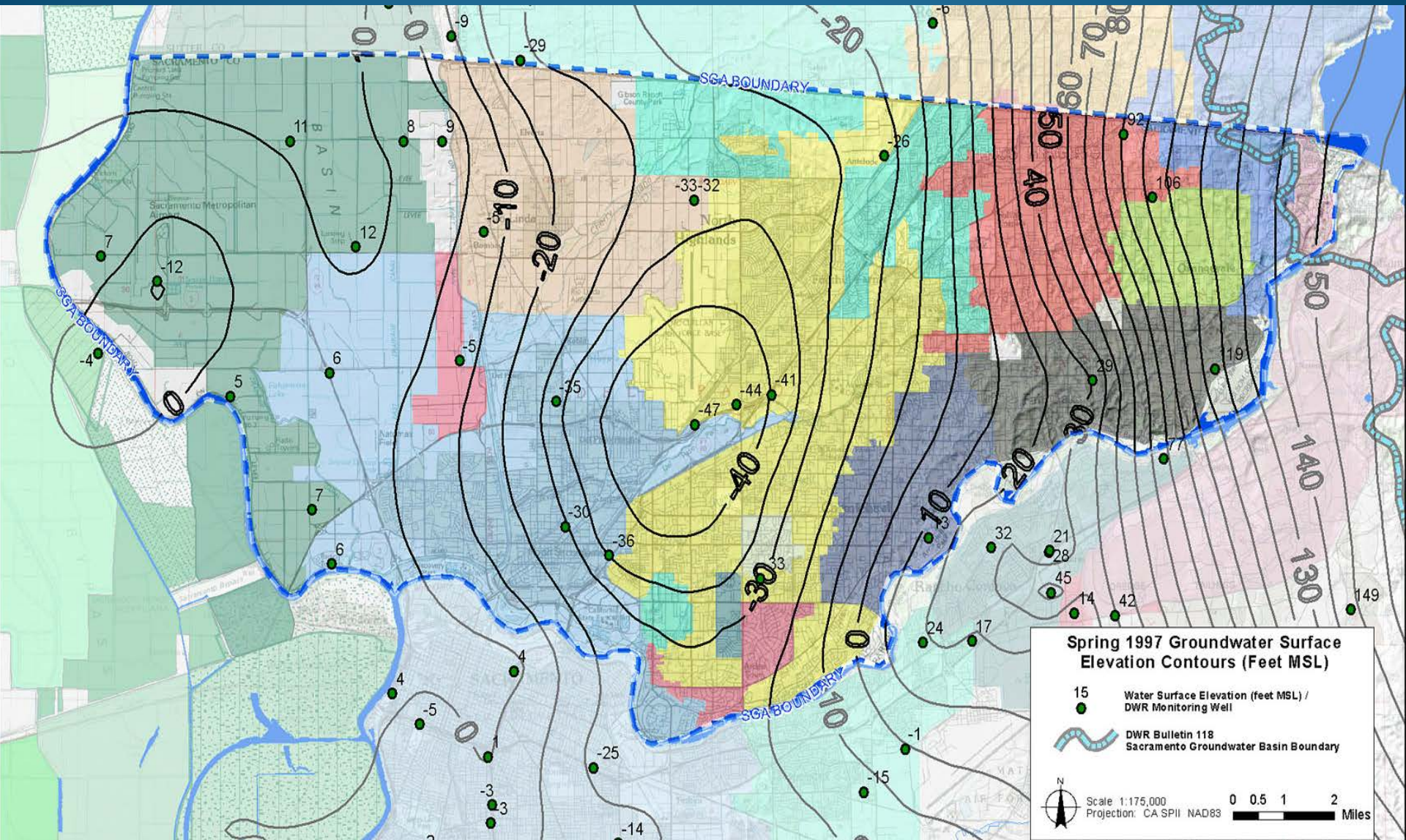


What is SGA? (continued)

- SGA formed :
  - To maintain the long-term sustainable yield of the North Area Basin.
  - To facilitate implementation of an appropriate conjunctive use program by water purveyors.



Need for a Framework



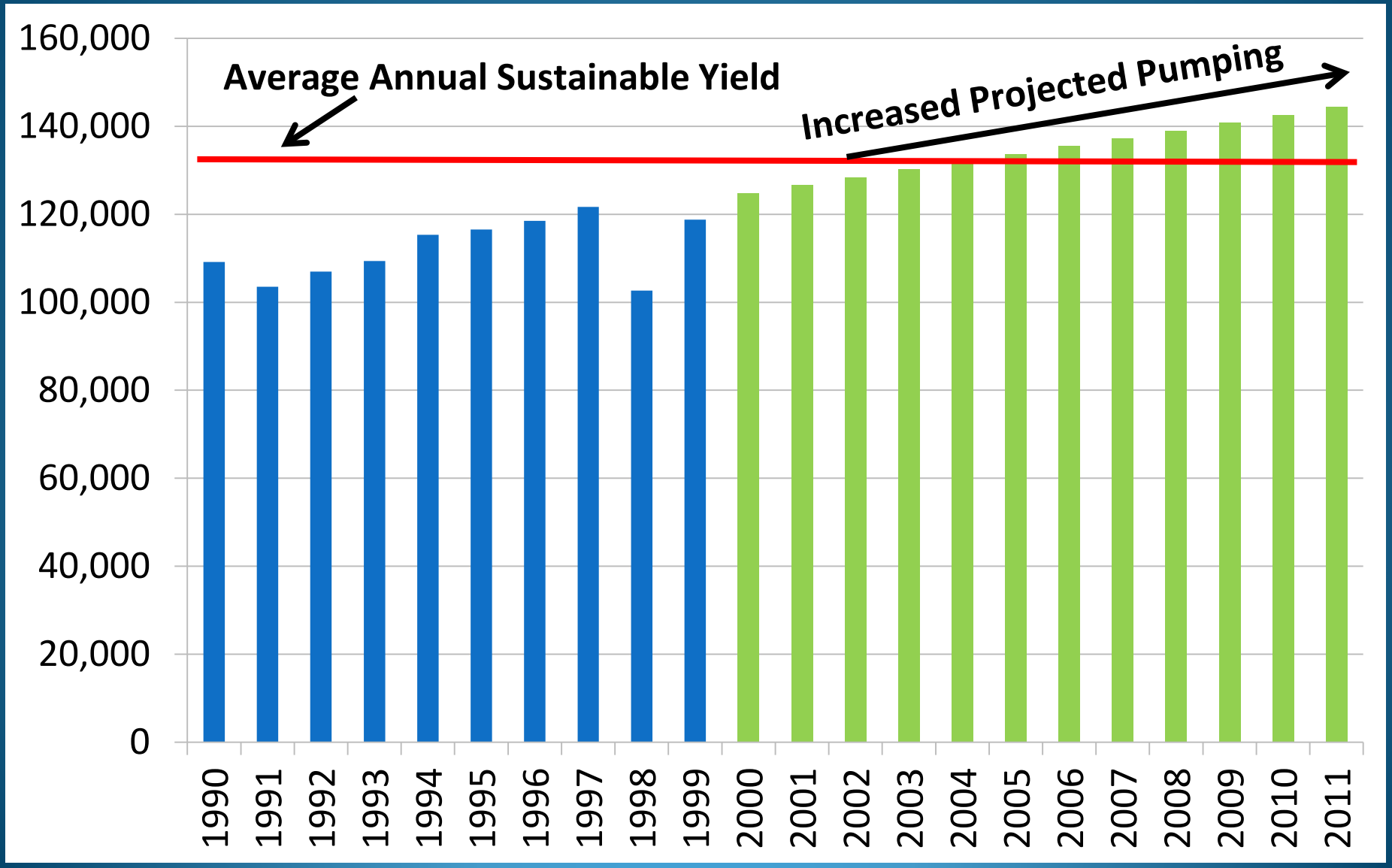
Need for a Framework (continued)

- Water Forum Agreement of April, 2000

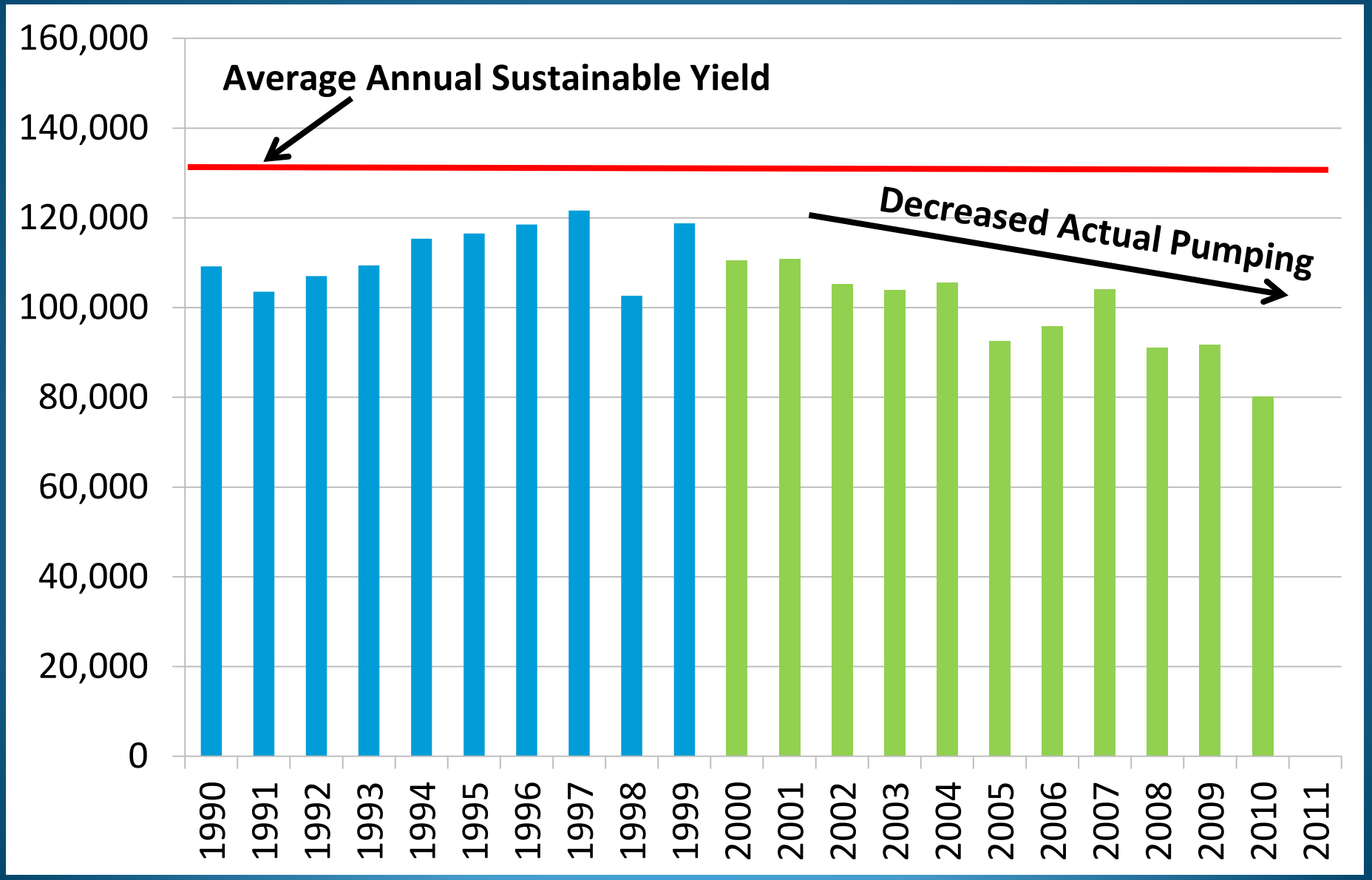
Provide reliable water supply for 2030 demands and protect lower American River

- Allowed for increased diversions for growth
- But required diversion cutbacks in dry periods

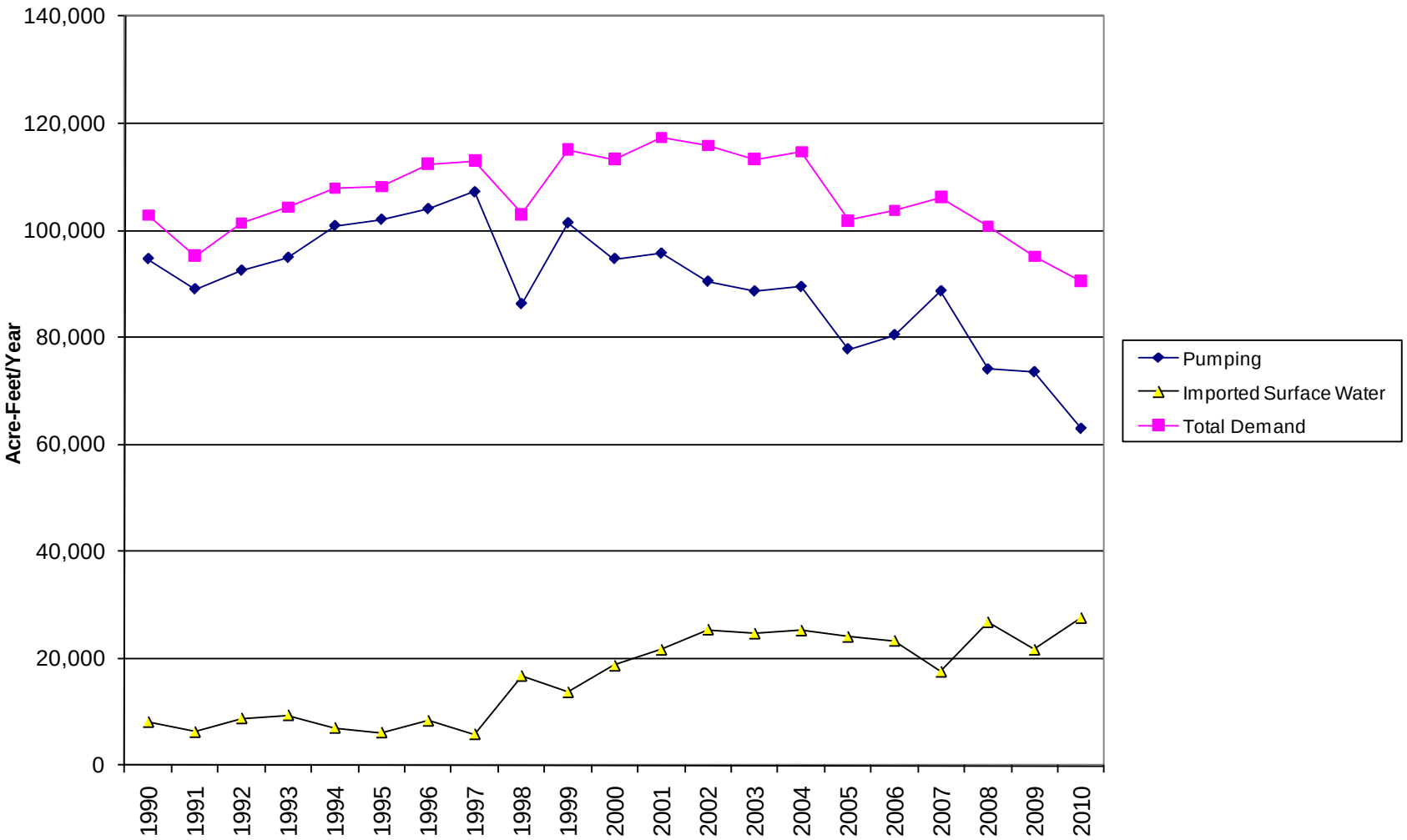
What We Thought Circa 2000



Changed Conditions



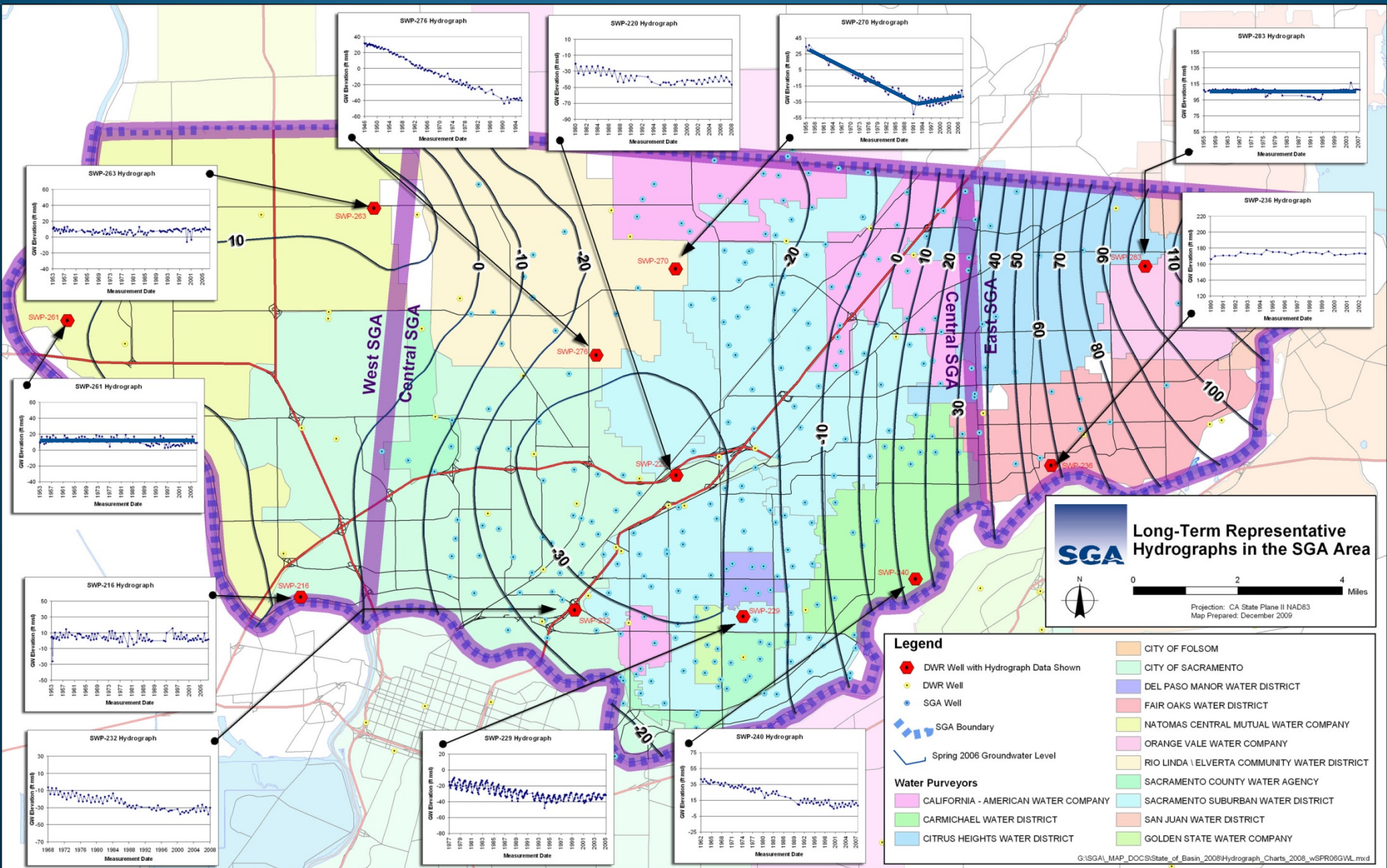
Dramatic Change in Central Area



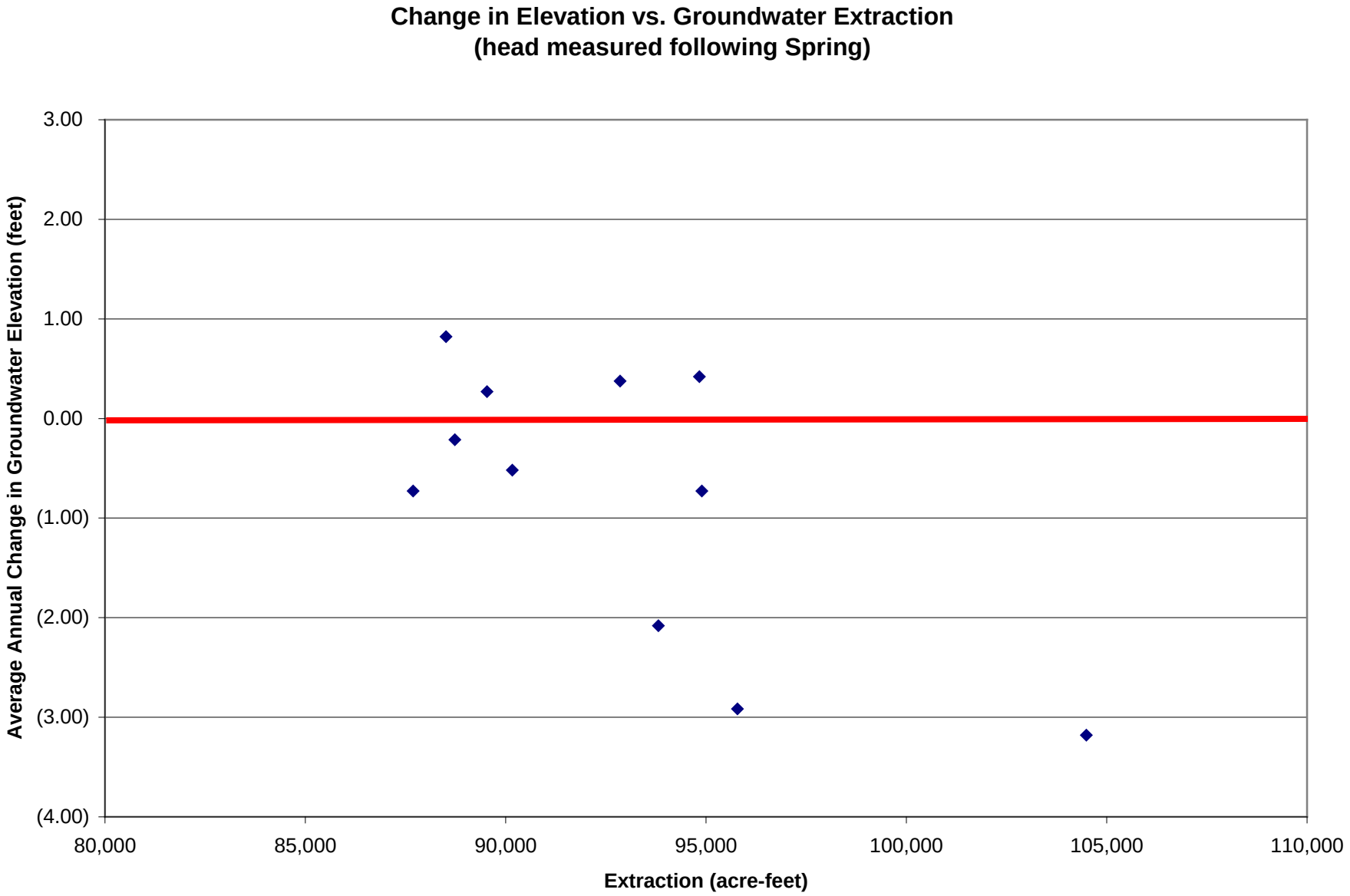
But Still Needed a Framework

- Actions taken mostly by one agency
  - Invested in facilities
  - Surface water more costly than groundwater, so impacts to rates
  - How was this “appropriate” and equitable?
- Began renewed effort in 2005

Framework Approach



Level Analysis (’95 - ’05 data)



Sustainability Goal

Agency	Pumping Prior to SGA (ac-ft)	Sustainability Reduction (ac-ft)	Sustainable Target (ac-ft)
Carmichael WD	7,516	870	6,646
City of Sacramento	23,287	2,696	20,591
California American Water	20,351	2,356	17,995
Del Paso Manor WD	1,657	192	1,465
Golden State WC	1,242	144	1,098
Rio Linda/Elverta Community WD	3,259	377	2,882
Sacramento County WA	4,850	562	4,288
Sacramento Suburban WD	39,622	4,587	35,035
Total	101,784	11,784	90,000

Framework Elements

- Model Groundwater Banking Program
  - Conducted surveys of eight other “banks” in state
  - Coordinated with state and federal agencies
- Determine Losses of Banked Water
  - Surveys of other banks
  - Regional groundwater model simulations
- Volume of Water Available for Exchange
  - Timing
  - Baseline Responsibility

Framework Principles

- Addresses all Agencies, but Sustainability Goals only in Central Area

- Create and Track two Balances
  - Basin sustainability goal – a reduction in the demand for groundwater in the basin
  - Exchangeable water – imported surface water in excess of that needed to meet basin sustainability goal

Principles (continued)

- Two years before beginning implementation (2012)
- Sustainability goal can be met simply by pumping less than target
- Agencies start with a zero balance for basin sustainability goal
- Negative sustainability balances can accumulate
- Basin sustainability balances are not transferrable

Principles (continued)

- Exchangeable water balance may be transferred to meet sustainability balances
- Surface water deliveries in excess of goal after 1998 credited to exchangeable water
- Must have sustainability balance to transfer exchangeable water outside basin
- 5% loss factor applies to exchanges outside basin
- Revisit Framework every five years

Example of Accounting Tracking

Basin Sustainability Goal						Exchangeable Water				
Agency X	Target Pumping	Actual GW Pumped	Total Delivery	Transfer	Sustain-ability Balance	Surface Water Delivery	Water Transfer (out of basin)	Credits transferred (in-basin)	Net Banked Water	Exchangeable Water Balance
	20,000				0					5,000
2012		21,000	21,000	1,000	0	0	0	1,000	0	4,000
2013		18,000	18,000	0	2,000	0	0	0	0	4,000
2014		21,000	21,000	0	1,000	0	-1,000	0	-1,050	2,950
2015		17,000	22,000	0	4,000	5,000	0	0	3,000	5,950

Example of Accounting Using 2011 Reported Water Use

Basin Sustainability Goal							Exchangeable Water				
Central Area 2011 Reported Water Use	Target Pumping	Actual GW Pumped	Total Demand	Transfer of Credits	Basin Sustainability Balance		Surface Water Use	Water Transfer (out of basin)	Credits Transferred	Net Banked Water	Exchangeable Water Balance
Carmichael WD	6,646	1,469	9,319	0	5,177		7,850	0	0	5,177	N/A
City of Sacramento	20,591	18,656	36,263	0	1,935		17,607	0	0	1,935	N/A
California American	17,995	11,605	13,704	0	6,390		2,099	0	0	2,099	N/A
Del Paso Manor WD	1,465	1,428	1,428	0	37		0	0	0	0	N/A
Golden State WC	1,098	1,041	1,041	0	57		0	0	0	0	N/A
Rio Linda/Elverta CWD	2,882	2,544	2,544	0	338		0	0	0	0	N/A
Sacramento County WA	4,288	4,663	4,663	0	-375		0	0	0	0	N/A
Sacramento Suburban WD	35,035	19,119	35,828	0	15,916		16,709	0	0	15,916	N/A

Benefits of Framework

- Provides incentives for taking actions that result in basin sustainability
  - Relatively easy to comply for most agencies
  - Opportunities for those doing more than their share
- Provides greater certainty to potential future banking/exchange partners
- Provides assurance to neighboring groundwater users that water transfers result in no net-take

Additional Information

Framework available on-line at: www.sgah20.org

or

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