Section 2
Baseline Conditions

This section covers two aspects of existing baseline information: the current hardware configuration on a regional basis and summary of existing legal and regulatory information.

Measurement Practices and Hardware

In order to estimate the incremental cost of achieving a measurement improvement for a location it is necessary to establish a starting point of existing measurement infrastructure and capability. Using a variety of sources, a baseline of existing measurement devices was established for the six previously defined regions (Figure 2.1) in the State. The following procedure was used to establish the baseline (summarized by region in Table 2.1.):

(1) The number of *Surface Water Diversion, and Farm-gate turnouts* was based on water supplier data compiled for a 1991 UC Berkeley study and enhanced for this work by Provost & Pritchard Engineering in 2002. This information was then linearly scaled up to develop regional estimates by using irrigated acreage from the 1997 Census of Agriculture. The tabulation of this information was then reviewed for appropriateness by the following individuals with extensive regional knowledge:

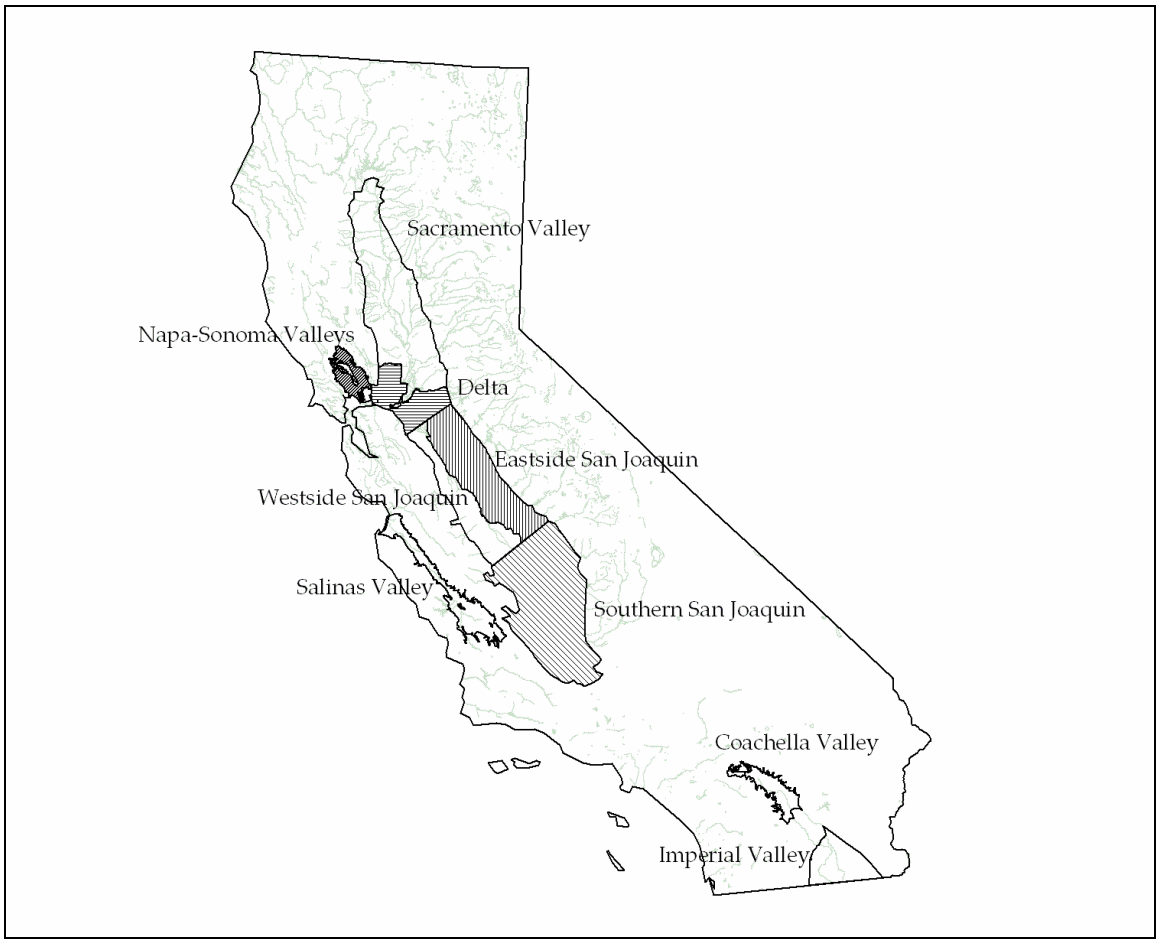
Lloyd Fryer – Southern San Joaquin Valley
Joe Lima – Eastside San Joaquin Valley
Roger Reynolds – Westside San Joaquin Valley

An additional source of review information was a database that the USBR has developed to track measurement device information for CVP contractors.

(2) Groundwater Use, only a few water suppliers (Kaweah-Delta and Kern County Water Agency) were found to be developing or using sub-basin hydrologic balances to estimate net groundwater extraction. For counts of metered and unmetered groundwater wells by region a custom data extract from the 1997 USDA Farm and Ranch Irrigation Survey was used. The USDA updates this data seton a five-year time step from "real" information collected by the Farm Services Agencies. This information was compared with counts of groundwater wells that are tracked by the DWR through well log completion.

(3) *Counts of active and inactive stream gauge stations* are from data provided by USGS, DWR, and US Army Corps of Engineers.

Figure 2.1. Approximate boundary of regions used in baseline information collection.



Legal Description

As set forth in greater detail in Sections 6 and 7, water use measurement in California is associated not only with state law, but also with voluntary efforts and federal requirements. Particular areas of the California Water Code currently include provisions relating in various ways to the topic of measurement, which may suggest potential locations for grouping any future measurement-related provisions. The California Department of Water Resources and State Water Resources Control Board have certain existing authorities related to inquiries into or required statements and notices about current water use.

A number of counties have been identified in state statutes as meriting special attention due to concerns about groundwater. There, certain extractors subject to the requirement must report to the State Water Resources Control Board the quantities of water extracted from the ground as well as the quantities diverted from surface sources. Where a local agency voluntarily adopts a groundwater management plan, the agency may impose an annual fee to pay for

implementation of the plan. The fee is to be based on the amount of groundwater extracted from the basin.

In connection with transfers or conjunctive use, depending on the particular mechanism used, the person sending the water may be required to demonstrate that their transfer would not injure another water user, which may be helped by a showing of prior consumptive use of the water proposed to be transferred. To protect their water rights, the person sending water also may be required in certain instances to file reports describing their reduction in water use, a description that would be facilitated by having documentation of previous and current use.

Table 2.1. Regional summary of baseline hardware information by generic measurement location.

	Irrigated	Adjusted Quantity					
Region	Acres 1/	Basic.	High	*HTP	Basic	High	HTP
Diversions (assumed = 1 major diversion per district)							
Sac Valley	1,623,670	5	5	41	10%	10%	80%
Delta	451,548	0	0	11	0%	0%	100%
East SJ	1,321,948	0	2	15	0%	11%	89%
West SJ	906,329	0	0	12	0%	0%	100%
South SJ	2,305,163	0	14	38	0%	27%	73%
Other	1,556,832	0	2	30	0%	7%	93%
Total	8,165,489	7	29	140	4%	16%	80%
Grand Total		175					
Wells							
Sac Valley	1,623,670		7,900	400	0%	95%	5%
Delta	451,548		2,200	2,200	0%	50%	50%
East SJ	1,321,948		5,000	2,100	0%	70%	30%
West SJ	906,329		3,300	1,500	0%	69%	31%
South SJ	2,305,163		9,500	3,400	0%	74%	26%
Other	1,556,832		5,600	3,500	0%	62%	38%
Total	8,165,489		33,500	13,100	0%	72%	28%
Grand Total		46,600					
Farm Gates							
Sac Valley	1,623,670	7,808	23,423	7,808	20%	60%	20%
Delta	451,548	1,612	3,322	4,813	17%	34%	49%
East SJ	1,321,948	5,285	15,854	5,285	20%	60%	20%
West SJ	906,329	2,957	316	13,485	18%	2%	80%
South SJ	2,305,163	983	38,432	15,579	2%	70%	28%
Other	1,556,832	0	14,654	7,601	0%	66%	34%
Total	8,165,489	5,552	99,406	64,256	3%	59%	38%
Grand Total		169,214					

*HTP: Highest Technically Practical