



Item #9

## Regional Planning Partnership

October 20, 2005

### Blueprint Water Demand Analysis

**Issue:** How do Blueprint development patterns change water demand, compared to the Base Case?

**Recommendation:** None, this item is informational.

**Discussion:** SACOG has evaluated the Base Case and Preferred Alternative land use scenarios for their potential water demand. The analysis was conducted in response to suggestions from various water planning groups that Blueprint also address the impacts of growth on water needs in the region. The analysis relies on water demand factors that have been provided by water planning agencies, including the Water Forum, Placer County Water Agency, and water agencies in Sutter, Yolo, and Yuba counties. Those factors have been applied to land use outputs from PLACE<sup>3</sup>S to estimate total and per unit water demand (reported as acre-feet per year; 1 ac-ft = 326,000 gallons) for the 2050 land use scenarios. Water planners throughout the region reviewed the study methodology and initial results. Comments from those meetings have been incorporated to the final results.

Residential savings mainly result from decreases in landscaped areas as lot sizes decrease. Water consumption within multifamily dwellings is assumed to be slightly lower than single-family units due to lower average persons per household. For employment, the Preferred Alternative increases building Floor Area Ratios (FAR) (i.e., taller buildings), thereby decreasing the amount land needed by roughly 10,000 acres. Savings result again from reductions in irrigation needed for landscaping, while consumption per employee is assumed to be the same.

The analysis finds a substantial decrease from the Base Case to the Preferred Alternative in total and per unit water demand as shown in the attached summaries. For the 2050 growth increment, the region could reduce its annual water needs by 31%. Considering all urbanized area, including existing development, yields a total savings of 17% per year, which staff still considers significant. These results are consistent with many studies showing a reduction in water consumption as development densities increase.

DS:ts

#### Attachment

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# Blueprint 2050 Water Demand Analysis

## Incremental Demand for Base Case & Preferred

8/19/2005

Region		Base Case (acre-feet/year)	Preferred Scenario (acre-feet/year)	% Difference
Residential	Incremental Demand	661,125	408,362	-38%
	Demand Per Unit	0.86	0.50	-42%
Employment	Incremental Demand	199,817	181,611	-9%
	Demand Per Employee	0.22	0.18	-20%
Total	Total Incremental Demand	860,942	589,973	-31%

### Sacramento

Residential	Incremental Demand	318,829	210,463	-34%
	Demand Per Unit	0.79	0.42	-46%
Employment	Incremental Demand	90,952	103,379	14%
	Demand Per Employee	0.20	0.18	-7%
Total	Total Incremental Demand	409,780	313,840	-23%

### Placer

Residential	Incremental Demand	161,903	100,793	-38%
	Demand Per Unit	1.03	0.62	-40%
Employment	Incremental Demand	67,821	47,259	-30%
	Demand Per Employee	0.29	0.19	-33%
Total	Total Incremental Demand	229,724	148,052	-36%

### Sutter

Residential	Incremental Demand	51,398	40,777	-21%
	Demand Per Unit	1.06	1.01	-4%
Employment	Incremental Demand	7,762	9,558	23%
	Demand Per Employee	0.24	0.16	-34%
Total	Total Incremental Demand	59,160	50,336	-15%

### Yolo

Residential	Incremental Demand	66,394	100,793	38%
	Demand Per Unit	1.03	0.62	-40%
Employment	Incremental Demand	67,821	47,259	-30%
	Demand Per Employee	0.29	0.19	-33%
Total	Total Incremental Demand	229,724	148,052	-36%

### Yuba

Residential	Incremental Demand	62,602	17,250	-72%
	Demand Per Unit	1.00	0.56	-44%
Employment	Incremental Demand	14,883	8,515	-56%
	Demand Per Employee	0.35	0.16	-56%
Total	Total Incremental Demand	77,485	23,765	-69%