

## VII. WATER RECLAMATION AND REUSE (WATER RECYCLING) APPROACH

Water reclamation and reuse, referred to as "water recycling," is a safe, reliable, and locally controlled water supply. Tertiary treated, disinfected recycled water is permitted for all non-potable uses in California through Title 22, Health and Safety Code. Moreover, under specific conditions, advanced treated reclaimed water can be used to augment ground or surface drinking water sources. <sup>A.T.R.W.</sup> It is presently under consideration for regulation in the groundwater case, and <sup>for</sup> demonstration projects in the surface water augmentation case.

Recycled water supplies are projected to grow. In fact, recycled water supplies are the only new supply of water that is projected to grow in the future. The California Department of Water Resources, reports from its 1996 Survey of Water Recycling Potential, the following recycling plans.

Respondents listed projects by stages of planning. These were *conceptual, feasibility study, preliminary design, final design, and construction*. "Baseline conditions" were defined as all projects that were in existence when the Survey was taken. Baseline conditions included actual 1996 recycling of 349,300 acre-feet. "Existing conditions" include baseline plus all projects that were under construction at the time of the survey and total 486,800 acre-feet. These projects were expected to be operational by 2000.

Projections of future recycling are divided into two groups, Group 1 and Group 2. Projections are based on respondents' plans in for years 2000, 2005, 2010, 2020, and "the vision." Group 1 includes projects in each phase of planning; feasibility study, preliminary design, and final design, but not conceptual and construction. Group 2 includes the conceptual level of planning. The "vision" reports on respondents' view of the future beyond the 2020 planning horizon.

Table 1 reports the projections for each period for Group 1 and Group 2 in acre-feet.

Year:	1996	2000	2005	2010	2020	The Vision
Existing	346,428	514,080	514,080	514,080	514,080	514,080
Group 1		290,058	571,949	789,810	909,399	1,146,761
Group 2		58,391	100,683	129,841	155,285	224,042
Total:	346,428	862,529	1,186,712	1,433,731	1,578,764	1,884,883

It should be noted, that these projected reuse totals represent the plans of local water and sanitary agencies. They do not necessarily represent the total recyclable waste stream, or *actual potential reuse*. The California Department of Water Resources is presently calculating the actual potential total recycled water supply in conjunction with its Bulletin 160-98, *California Water Plan Update*.

Present estimates of the total wastewater flow to the ocean and other saline water bodies are estimated to be 3 million acre-feet.<sup>1</sup> This waste stream, or some economic portion of it, better approximates the potential for water recycling. This number, as stated above, will be updated by DWR for its *California Water Plan Update*.

Policies that encourage development of water recycling projects must include an education component along with financial incentives. DWR reports in its draft evaluations of water recycling potential, that local agencies' plans and their actual project development diverge for a number of illuminating reasons.

For example, the WaterReuse Association's 1993 Survey reported local agency plans to reuse over 650,000 acre-feet of reclaimed water by 1995. This level of reuse did not materialize. The DWR 1996 Survey reports total 1996 reuse of 346,428 acre-feet. This total is slightly over half of the total quantity of expected 1995 reuse reported in the 1993 Survey.

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The most obvious reason for the shortfall between 1993 projections for 1995 and the actual 1996 usage, stems from the fact that when the 1993 Survey was being prepared, the memory of the 1987-92 drought was vivid. By 1996, wet years may have ~~drowned out the burning desire to~~ *diminished the support for projects* recycle water. When asked about the factors that affect water recycling decisions, respondents reported that "memory of the last drought" and "concern over long-term supply" were both weighted more heavily than other factors as "most likely" to affect recycling decisions. "Budget problems" and "recession" were identified as the least likely to affect recycling decisions. These responses would suggest that even in relatively wet years, recycled water plans would go forward. Since many projects that were anticipated did not actually get constructed by 1995 as planned, it is not clear what caused such a large discrepancy between plans and reality. More evaluation of the DWR data base may provide further explanation.

The most obvious characteristic of recycled water project development is that it is a very local decision. In some regions of California, larger water wholesaling agencies have local project programs that provide a financial contribution for each new acre-foot of water that their member agencies develop. These local project programs have had excellent success encouraging water recycling programs.

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<sup>1</sup> WaterReuse Association of California, *Survey of Water Recycling Potential*, 1993.