

REPAYMENT ANALYSIS

[In millions of dollars]

	Construction cost	Interest during construction	Total for repayment
Reimbursable costs:			
U.S. water supply:			
Irrigation.....	237	-----	237
Municipal and industrial.....	42	4	46
Subtotal.....	279	4	283
Nonreimbursable costs: Mexican Water Treaty.....	2,505	-----	-----
Total.....	2,784	4	283

DEVELOPMENT FUND

[In millions of dollars]

	Year 2029	Year 2059
Contributions (cumulative):		
Hoover.....	486	857
Parker-Davis.....	101	222
Intertie.....	42	130
Central Arizona project.....	-----	918
Total.....	629	2,127
Development fund: Balance after repayment of augmentation costs.....	192	1,551

INTRODUCTION

There is universal agreement that the water supply of the Colorado River is inadequate to meet developing demands. There is further widespread agreement that augmentation of the natural flows of the river will be necessary, not only as a solution to the rising water demands, but as a solution also to the controversies involving the disposition and full use of Colorado River runoff.

Of the four principal potentials for augmenting Colorado River water supply—desalting of sea water, surface water imports from basins of surplus water supply, weather modification, and water salvage measures—only the first two offer potentials of the magnitude necessary for adequate long-range solutions. Weather modification and water salvage measures may well provide the cheapest means of producing additional water supplies. As such, these potentials should be fully explored and exploited before more costly augmentation works are undertaken. There are limitations, however, on the amounts of new water available from these sources. Sooner or later, recourse must be made either to the unlimited seas or to surface water imports if the foreseeable water needs of the Colorado River Basin are to be met.

While the physical aspects of surface water imports should pose no exceptional problems, the institutional problems at this time, both national and international, are formidable. There are no bars, however, to the study of augmenting the Colorado River by desalting of sea water. The "Public Works and Atomic Energy Commission Appropriation Act, 1968" provided funds for the Central Arizona Project investigation specifically to include a reconnaissance study of Colorado River augmentation by desalting. This reconnaissance report is prepared pursuant to that provision.

Presented herein is a plan for augmenting the Colorado River water supply by desalting in amounts sufficient to assure the availability of 7.5 million acre-feet of Colorado River water for consumptive use by the Lower Basin States without calling upon the Upper Basin States to assume any portion of the obligation to deliver 1.5 million acre-feet of water annually to Mexico. The time available did not permit studies in sufficient detail to determine that the plan presented is the most economic plan available. To the contrary, there are indications that a better plan from an economic viewpoint would originate on the Gulf of California rather than the Pacific Ocean. Such a plan would require international agreements beyond the purview of a brief reconnaissance appraisal but should be explored thoroughly in any detailed studies of augmenting by desalting. A joint United States-Mexico study group is now making a preliminary assessment of the practicability of dual-purpose nuclear power and desalting plant to serve the general area of southern California, Arizona, Baja California and Sonora.