

ALLOCATION # 2 - NATIONAL BENEFITS PLUS REGIONAL BENEFITS

Table B - Cost allocation studies - summary of first costs, investments, and annual charges for project purposes - Pembilier Dam and Lake

Item	Two-purpose project costs											
	Multiple-purpose project cost	Single-purpose project costs			Flood control and water supply			Water supply and recreation			Separable costs	
		Flood control	Water supply	Recreation	Flood control and water supply	Flood control and recreation	Water supply and recreation	Flood control	Water supply	Recreation	Joint costs	
Direct first costs												
Lands and damages (1)	\$710,000	\$680,000	-	\$235,000	\$710,000	\$710,000	\$235,000					
Highway relocations	1,354,000	1,354,000	-	450,000	1,354,000	1,354,000	450,000					
Reservoir	178,000	0	-	178,000	178,000	178,000	196,000					
Embankment	4,807,000	4,660,000	\$685,000 (2)	1,200,000	4,807,000	4,807,000	1,200,000					
Spillway	4,778,000	4,826,000	-	2,380,000	4,778,000	4,778,000	2,380,000					
Outlet works	3,902,000	3,866,000	-	1,170,000	3,902,000	3,902,000	1,370,000					
Channels	110,000	110,000	-	-	110,000	110,000	-					
Fish and wildlife mitigation	726,000	459,000	-	630,000	726,000	726,000	630,000					
Recreation facilities (1)	1,186,000	0	-	1,186,000	-	1,186,000	1,186,000					
Total direct costs	17,751,000	15,955,000	685,000	7,429,000	16,565,000	17,751,000	7,647,000	\$10,104,000	0	\$1,186,000	\$6,461,000	
Indirect costs												
Engineering and design	1,061,000	920,000	69,000	443,000	946,000	1,061,000	456,000					
Supervision and administration	988,000	845,000	68,000	413,000	873,000	988,000	425,000					
Total indirect first costs	2,049,000	1,765,000	137,000	856,000	1,819,000	2,049,000	881,000	1,168,000	0	230,000	651,000	
Total first costs	19,800,000	17,720,000	822,000	8,285,000	18,384,000	19,800,000	8,528,000	11,272,000	0	1,416,000	7,112,000	
Project investment												
Interest during construction (5) (lands)	122,000	117,000	-	26,000	123,000	122,000	26,000	96,000	0	0	26,000	
Interest during construction (5)	1,578,000	1,470,000	49,300 (3)	399,000	1,532,000	1,572,000	413,000	1,155,000	0	46,000	367,000	
Present worth of deferred construction	0	0	170,500	0	-	-	-	0	0	0	0	
Total project investment	21,500,000	19,307,000	1,041,800	8,710,000	20,039,000	21,494,000	8,967,000	12,533,000	0	1,462,000	7,505,000	
Annual costs (1980-2080)												
Interest and amortization (5)	1,241,000	1,114,000	63,000 (3)	481,300	1,157,300	1,240,000	495,500	745,500	0	83,700	411,800	
Operation, maintenance, and replacements	74,700	28,000	54,000 (4)	49,700	63,000	74,700	49,700	25,000	0	11,700	38,000	
Total annual costs	1,315,700	1,142,000	117,000	531,000	1,220,300	1,314,900	545,200	770,500	0	95,400	449,800	
Annual benefits (6)	1,324,400	1,104,500	120,200	99,700	1,224,700	1,204,200	219,900	1,110,900	\$120,200	99,700	0	
Net benefits	8,700	-37,500	3,200	-431,300	4,400	-110,700	-325,300					
Benefit-cost ratio	1.01	0.97	1.03	0.19	1.00	0.92	0.40					

(1) Exclusive of lands for fish and wildlife mitigation, recreation development, and natural preservation areas.

(2) Total cost of channel dam and water supply network from Red River of the North to Neche.

(3) Using non-Federal interest rate of 6 percent.

(4) Includes energy and extra treatment costs.

(5) Interest rate is weighted composite of Canadian interest rate of 7 1/2 percent, U.S. Federal interest rate of 5 1/2 percent, and U.S. non-Federal interest rate of 6 percent.

(6) Flood control, water supply, and recreation benefits include \$133,200, \$3,200, and \$2,300 regional benefits, respectively.