

Years 1956-2003 with Navajo inflow during Irrigation season <450 cfs (250 in Oct) and Cedar Hill <250 cfs and combined <700 cfs (500 in Oct), full HB/FP build out scenario
 direct flow = max (water budget, 4-gages+20cfs, 225 cfs)

Year	storage X=225min	modeled 5/31	storage release HB/FP	10-yr ave	depletion of release HB/FP	10-yr ave	release HB divert	charge to NIIP HB/FP	10-yr ave	release Navajo benefit
1956	5020	944,200	26844		11596		8664	14455		2122
1957	0	891,700	0		0		0	0		0
1958	0	1,685,700	222		96		0	96		0
1959	690	1,388,300	19109		8255		8330	11004		603
1960	0	1,377,700	4979		2151		562	2336		0
1961	0	1,269,600	212		92		0	92		0
1962	0	1,440,500	3855		1665		306	1766		0
1963	0	1,424,400	2383		1029		936	1338		0
1964	0	1,173,100	726		314		0	314		0
1965	0	1,145,600	0	5833	0	2520	0	0	3140	0
1966	0	1,670,900	683	3217	295	1390	0	295	1724	0
1967	0	1,360,200	0	3217	0	1390	0	0	1724	0
1968	0	1,281,300	10	3196	4	1380	0	4	1715	0
1969	0	1,393,300	0	1285	0	555	0	0	615	0
1970	0	1,481,900	113	798	49	345	0	49	386	0
1971	0	1,506,000	1210	898	523	388	0	523	429	0
1972	0	1,372,200	9025	1415	3899	611	2898	4855	738	0
1973	0	1,374,000	0	1177	0	508	0	0	604	0
1974	0	1,591,500	10179	2122	4397	917	2679	5281	1101	490
1975	0	1,325,300	0	2122	0	917	0	0	1101	0
1976	0	1,530,600	0	2054	0	887	0	0	1071	0
1977	216	1,188,900	10203	3074	4408	1328	3523	5570	1628	206
1978	0	1,085,000	7560	3829	3266	1654	1417	3733	2001	0
1979	0	1,204,500	0	3829	0	1654	0	0	2001	0
1980	0	1,451,900	0	3818	0	1649	0	0	1996	0
1981	0	1,432,300	651	3762	281	1625	0	281	1972	0
1982	0	1,502,800	0	2859	0	1235	0	0	1487	0
1983	0	1,468,100	0	2859	0	1235	0	0	1487	0
1984	0	1,654,300	0	1841	0	795	0	0	958	0
1985	0	1,567,400	0	1841	0	795	0	0	958	0
1986	0	1,429,500	0	1841	0	795	0	0	958	0
1987	0	1,571,400	0	821	0	355	0	0	401	0
1988	0	1,543,400	0	65	0	28	0	0	28	0
1989	0	1,511,800	1229	188	531	81	0	531	81	0
1990	0	1,278,400	0	188	0	81	0	0	81	0
1991	0	1,523,100	0	123	0	53	0	0	53	0
1992	0	1,542,500	0	123	0	53	0	0	53	0
1993	0	1,616,900	0	123	0	53	0	0	53	0
1994	0	0	9	124	4	53	0	4	53	0
1995	0	0	0	124	0	53	0	0	53	0
1996	0	0	4622	586	1997	253	152	2047	258	0
1997	0	0	0	586	0	253	0	0	258	0
1998	0	0	0	586	0	253	0	0	258	0
1999	0	0	0	463	0	200	0	0	205	0
2000	0	0	11059	1569	4777	678	2738	5681	773	0
2001	0	0	121	1581	52	683	0	52	778	0
2002	24239	0	45519	6133	19663	2649	23878	27543	3533	9364
2003	1800	0	12742	7407	5504	3200	4787	7084	4241	0
Avg 56-03	666		3610		1559		1268	1978		266
Avg 57-01	20		1959		846		523	1019		29

Difference between release for alternate water sourcing of HB/FP and CU (inc. ID and river loss)
 is carriage water: (1) credited to release for endangered fish flow (less 1/3rd of the amount of diversion that bypasses the Shiprock gage and is not credited under 3-gage rule); or (2) charged against NIIP diversion right if not needed or credited for fish flow.

Amount charged to NIIP assumes first 100 cfs of release used at FP, and 1/3 of HB diversion not credited to fish.
 Equals CU plus 1/3 of release HB.

Release to get total Archuleta + Cedar Hill flow to about 420 cfs solely for Navajo benefit

1712 af 56-03 avg release indirectly benefits system (1978 charged to NIIP - 266 release for Navajo)
 1444 af 56-03 avg CU indirectly benefits system (1559 charged to NIIP - 266*.98*.38*1.16 CU for Navajo)

990 af 57-01 avg release indirectly benefits system (1019 charged to NIIP - 29 release for Navajo)
 833 af 57-01 avg CU indirectly benefits system (846 charged to NIIP - 29*.98*.38*1.16 CU for Navajo)

Total: 24 years out of 48 (50%) with demand for alternate water source for HB/FP
 Storage (af) needed to maintain minimum direct flow is for 4/1-10/31

Assumptions:

Peak irrigation CU and river loss conditions apply during April-September
 Irrigation, including HB/FP, is at max cfs rate with no annual volume limit
 No inflows below Cedar Hill and Navajo Dam, inc. from La Plata
 Historic flows at Cedar Hill and above Navajo Dam