

COMPOUND INTEREST AND ANNUITY TABLES -

SNAKE RIVER DAM COSTS

Beginning in 2015

All costs in Thousands of Dollars
Discount Rate: 6.880%

Total Annual Costs	Present Value	Cap. Recovery Factor	Annual Average
\$147,658,332	\$4,297,144	6.889%	\$296,030
Decommission (breach)			
Total Annual Average			\$296,030

Year	Total Annual Costs**	Present Value \$1	Total Annual Cost: Present Value	Annual Cost Categories					
				1. System Improvements	2. O&M	3. Turbine Rehab	4. Comp Plan	5. Power Services	6. Dredging
2015	\$133,691	0.93563	\$125,085		\$39,400	\$16,200	\$31,670	\$34,711	\$11,710
2016	\$136,858	0.87540	\$119,806		\$40,600	\$16,200	\$32,303	\$35,752	\$12,003
2017	\$140,177	0.81905	\$114,812		\$41,900	\$16,200	\$32,949	\$36,825	\$12,303
2018	\$170,937	0.76633	\$130,994		\$43,100	\$42,700	\$34,596	\$37,930	\$12,611
2019	\$159,220	0.71700	\$114,160		\$44,400	\$26,500	\$36,326	\$39,068	\$12,926
2020	\$163,831	0.67084	\$109,905		\$45,700	\$26,500	\$38,143	\$40,240	\$13,249
2021	\$197,177	0.62766	\$123,760		\$47,100	\$55,000	\$40,050	\$41,447	\$13,580
2022	\$176,162	0.58726	\$103,453		\$48,500	\$29,000	\$42,052	\$42,690	\$13,920
2023	\$181,394	0.54945	\$99,668		\$50,000	\$29,000	\$44,155	\$43,971	\$14,268
2024	\$218,377	0.51409	\$112,265		\$51,500	\$60,600	\$46,363	\$45,290	\$14,625
2025	\$194,920	0.48099	\$93,755		\$53,000	\$31,600	\$48,681	\$46,649	\$14,990
2026	\$248,471	0.45003	\$111,820	\$47,743	\$54,600	\$31,600	\$51,115	\$48,048	\$15,365
2027	\$290,584	0.42106	\$122,354	\$49,175	\$56,300	\$66,200	\$53,670	\$49,490	\$15,749
2028	\$266,621	0.39396	\$105,037	\$50,650	\$57,900	\$34,600	\$56,354	\$50,974	\$16,143
2029	\$274,692	0.36860	\$101,251	\$52,170	\$59,700	\$34,600	\$59,172	\$52,504	\$16,546
2030	\$320,804	0.34487	\$110,636	\$53,735	\$61,500	\$72,400	\$62,130	\$54,079	\$16,960
2031	\$294,769	0.32267	\$95,113	\$55,347	\$63,300	\$37,800	\$65,237	\$55,701	\$17,384
2032	\$303,697	0.30190	\$91,686	\$57,008	\$65,200	\$37,800	\$68,499	\$57,372	\$17,819
2033	\$354,199	0.28247	\$100,049	\$58,718	\$67,200	\$79,000	\$71,924	\$59,093	\$18,264
2034	\$325,985	0.26428	\$86,153	\$60,479	\$69,200	\$41,200	\$75,520	\$60,866	\$18,721
2035	\$335,869	0.24727	\$83,051	\$62,293	\$71,200	\$41,200	\$79,296	\$62,692	\$19,189
2036	\$327,202	0.23135	\$75,700		\$73,400	\$86,300	\$83,260	\$64,573	\$19,669
2037	\$294,794	0.21646	\$63,812		\$75,600	\$45,100	\$87,424	\$66,510	\$20,160
2038	\$301,964	0.20253	\$61,156		\$75,900	\$45,100	\$91,795	\$68,505	\$20,664
2039	\$313,426	0.18949	\$59,391		\$80,200		\$96,384	\$70,560	\$21,181
2040	\$278,191	0.17729	\$49,321		\$82,600		\$101,204	\$72,677	\$21,710
2041	\$288,474	0.16588	\$47,852		\$85,100		\$106,264	\$74,857	\$22,253
2042	\$299,090	0.15520	\$46,420		\$87,600		\$111,577	\$77,103	\$22,809
2043	\$310,152	0.14521	\$45,038		\$90,200		\$117,156	\$79,416	\$23,380
2044	\$321,777	0.13586	\$43,718		\$93,000		\$123,014	\$81,799	\$23,964
2045	\$333,780	0.12712	\$42,430		\$95,800		\$129,164	\$84,253	\$24,563
2046	\$346,180	0.11894	\$41,173		\$98,600		\$135,623	\$86,780	\$25,177
2047	\$359,194	0.11128	\$39,971		\$101,600		\$142,404	\$89,384	\$25,807
2048	\$372,641	0.10412	\$38,798		\$104,600		\$149,524	\$92,065	\$26,452
2049	\$386,741	0.09741	\$37,674		\$107,800		\$157,000	\$94,827	\$27,113
2050	\$401,313	0.09114	\$36,577		\$111,000		\$164,850	\$97,672	\$27,791
2051	\$516,533	0.08528	\$44,048	\$99,952	\$114,400		\$173,093	\$100,602	\$28,486
2052	\$535,320	0.07979	\$42,712	\$102,955	\$117,800		\$181,747	\$103,620	\$29,198
2053	\$554,830	0.07465	\$41,419	\$106,039	\$121,300		\$190,835	\$106,729	\$29,928
2054	\$575,203	0.06985	\$40,176	\$109,220	\$125,000		\$200,376	\$109,931	\$30,676
2055	\$672,963	0.06535	\$43,978	\$112,496	\$128,700	\$76,700	\$210,395	\$113,229	\$31,443
2056	\$694,941	0.06114	\$42,491	\$115,872	\$132,600	\$76,700	\$220,915	\$116,625	\$32,229
2057	\$717,668	0.05721	\$41,056	\$119,348	\$136,500	\$76,700	\$231,961	\$120,124	\$33,035
2058	\$825,305	0.05352	\$44,174	\$122,958	\$140,600	\$160,600	\$243,559	\$123,728	\$33,861
2059	\$773,300	0.05008	\$38,726	\$126,616	\$144,900	\$83,900	\$255,737	\$127,440	\$34,707
2060	\$798,876	0.04686	\$37,432	\$130,415	\$149,200	\$83,900	\$268,523	\$131,263	\$35,575
2061	\$917,142	0.04384	\$40,207	\$134,327	\$153,700	\$175,500	\$281,950	\$135,201	\$36,464
2062	\$722,680	0.04102	\$29,643		\$158,300	\$91,700	\$296,047	\$139,257	\$37,376
2063	\$747,294	0.03838	\$28,679		\$163,000	\$91,700	\$310,849	\$143,435	\$38,310
2064	\$873,098	0.03591	\$31,350		\$167,900	\$191,800	\$326,392	\$147,738	\$39,268
2065	\$808,131	0.03360	\$27,150		\$172,900	\$100,100	\$342,711	\$152,170	\$40,250
2066	\$836,038	0.03143	\$26,279		\$178,100	\$100,100	\$359,847	\$156,735	\$41,256
2067	\$974,564	0.02941	\$28,661		\$183,500	\$209,500	\$377,839	\$161,437	\$42,287
2068	\$904,756	0.02752	\$24,896		\$189,000	\$109,400	\$396,731	\$166,280	\$43,345
2069	\$936,265	0.02575	\$24,104		\$194,600	\$109,400	\$416,568	\$171,268	\$44,428
2070	\$1,088,842	0.02409	\$26,228		\$200,500	\$229,000	\$437,396	\$176,406	\$45,539
2071	\$1,013,742	0.02254	\$22,847		\$206,500	\$119,600	\$459,266	\$181,699	\$46,677
2072	\$1,049,523	0.02109	\$22,131		\$212,700	\$119,600	\$482,229	\$187,150	\$47,844
2073	\$1,217,545	0.01973	\$24,021		\$219,100	\$250,300	\$506,341	\$192,764	\$49,041
2074	\$1,136,771	0.01846	\$20,984		\$225,600	\$130,700	\$531,658	\$198,547	\$50,267
2075	\$1,386,648	0.01727	\$23,949	\$209,281	\$232,400	\$130,700	\$558,241	\$204,503	\$51,523
2076	\$1,578,062	0.01616	\$25,500	\$215,559	\$239,400	\$273,500	\$586,153	\$210,639	\$52,811
2077	\$1,497,876	0.01512	\$22,646	\$222,026	\$246,600	\$142,700	\$615,460	\$216,958	\$54,132
2078	\$1,549,952	0.01415	\$21,925	\$228,687	\$253,380	\$142,700	\$646,234	\$223,466	\$55,485
2079	\$1,604,836	0.01324	\$21,240	\$235,548	\$261,000	\$142,700	\$678,545	\$230,170	\$56,872
2080	\$1,519,256	0.01238	\$18,813	\$242,614	\$268,800		\$712,472	\$237,076	\$58,294
2081	\$1,578,827	0.01159	\$18,292	\$249,892	\$276,900		\$748,096	\$244,188	\$59,751
2082	\$1,640,848	0.01084	\$17,787	\$257,389	\$285,200		\$785,501	\$251,513	\$61,245
2083	\$1,705,422	0.01014	\$17,297	\$265,111	\$293,700		\$824,776	\$259,059	\$62,776
2084	\$1,772,755	0.00949	\$16,823	\$273,064	\$302,500		\$866,015	\$266,831	\$64,345
2085	\$1,561,705	0.00888	\$13,866		\$311,600		\$909,315	\$274,836	\$65,954
2086	\$1,626,465	0.00831	\$13,511		\$321,000		\$954,781	\$283,081	\$67,603
2087	\$1,693,986	0.00777	\$13,166		\$330,600		\$1,002,520	\$291,573	\$69,293
2088	\$1,764,492	0.00727	\$12,832		\$340,500		\$1,052,646	\$300,320	\$71,025
2089	\$1,838,109	0.00680	\$12,507		\$350,700		\$1,105,279	\$309,330	\$72,801
2090	\$1,914,973	0.00637	\$12,191		\$361,200		\$1,160,543	\$318,610	\$74,621
2091	\$1,995,324	0.00596	\$11,885		\$372,100		\$1,218,570	\$328,168	\$76,486

2092	\$2,079,210	0.00557	\$11,587		\$383,300	\$1,279,498	\$338,013	\$78,399	
2093	\$2,178,585	0.00521	\$11,359		\$406,600	\$1,343,473	\$348,153	\$80,359	
2094	\$2,270,412	0.00488	\$11,076		\$418,800	\$1,410,647	\$358,598	\$82,368	
2095	\$2,366,362	0.00456	\$10,801		\$431,400	\$1,481,179	\$369,356	\$84,427	
2096	\$2,466,512	0.00427	\$10,534		\$444,300	\$1,555,238	\$380,437	\$86,537	
2097	\$2,571,150	0.00400	\$10,274		\$457,600	\$1,633,000	\$391,850	\$88,701	
2098	\$2,680,501	0.00374	\$10,021		\$471,328	\$1,714,650	\$403,605	\$90,918	
2099	\$2,794,755	0.00350	\$9,776		\$485,468	\$1,800,382	\$415,713	\$93,191	
2100	\$3,352,323	0.00327	\$10,971	\$438,184.08	\$500,032	\$1,890,402	\$428,185	\$95,521	
2101	\$3,490,224	0.00306	\$10,687	\$451,329.60	\$515,033	\$1,984,922	\$441,030	\$97,909	
2102	\$3,634,139	0.00286	\$10,412	\$464,869.49	\$530,484	\$2,084,168	\$454,261	\$100,357	
2103	\$3,784,345	0.00268	\$10,144	\$478,815.58	\$546,398	\$2,188,376	\$467,889	\$102,866	
2104	\$3,941,129	0.00251	\$9,884	\$493,180.04	\$562,790	\$2,297,795	\$481,926	\$105,437	
2105	\$4,104,791	0.00235	\$9,632	\$507,975.44	\$579,674	\$2,412,685	\$496,384	\$108,073	
2106	\$4,275,648	0.00220	\$9,387	\$523,214.71	\$597,064	\$2,533,319	\$511,275	\$110,775	
2107	\$4,454,030	0.00205	\$9,149	\$538,911.15	\$614,976	\$2,659,985	\$526,613	\$113,545	
2108	\$4,640,283	0.00192	\$8,918	\$555,078.48	\$633,426	\$2,792,984	\$542,412	\$116,383	
2109	\$4,834,769	0.00180	\$8,694	\$571,730.84	\$652,428	\$2,932,633	\$558,684	\$119,293	
2110	\$4,448,986	0.00168	\$7,485		\$672,001	\$3,079,265	\$575,445	\$122,275	
2111	\$4,643,429	0.00157	\$7,309		\$692,161	\$3,233,228	\$592,708	\$125,332	
2112	\$4,846,770	0.00147	\$7,138		\$712,926	\$3,394,890	\$610,489	\$128,465	
2113	\$5,059,429	0.00138	\$6,972		\$734,314	\$3,564,634	\$628,804	\$131,677	
2114	\$5,281,846	0.00129	\$6,810		\$756,343	\$3,742,866	\$647,668	\$134,969	
2115	\$5,514,484	0.00121	\$6,652		\$779,034	\$3,930,009	\$667,098	\$138,343	
100 Yr Totals:	\$ 147,658,332		\$4,297,144	\$9,249,976	\$25,056,162	\$4,466,700	\$81,935,182	\$21,746,662	\$5,203,649
Avg Annual*:	\$ 10,172,183		\$296,030	\$20,971	\$68,398	\$28,127	\$91,442	\$60,158	\$18,149

* Average Annual Costs calculated on each category's spreadsheet (not shown here). See individual spreadsheets.

**Total sum of costs from all categories

Revised 8 April 2014
Revised 2 May 2014
Revised 8 May 2014
Revised 30 June 2014
Revised by Chandra Johnson 13 October 2014
Revised by Jim Waddell 4 Nov 2014

COMPOUND INTEREST AND ANNUITY TABLES -

**Category 1:
Systems Improvements , Base Year 2015**

All costs in Thousands of Dollars

Discount Rate: 6.880%

CRF: 6.889%

Year	Present Value \$1	Annual Cost	Annual Cost: Present Value
2015	0.93563		
2016	0.87540		
2017	0.81905		
2018	0.76633		
2019	0.71700		
2020	0.67084		
2021	0.62766		
2022	0.58726		
2023	0.54945		
2024	0.51409		
2025	0.48099		
2026	0.45003	\$47,743	\$21,486
2027	0.42106	\$49,175	\$20,706
2028	0.39396	\$50,650	\$19,954
2029	0.36860	\$52,170	\$19,230
2030	0.34487	\$53,735	\$18,532
2031	0.32267	\$55,347	\$17,859
2032	0.30190	\$57,008	\$17,211
2033	0.28247	\$58,718	\$16,586
2034	0.26428	\$60,479	\$15,984
2035	0.24727	\$62,293	\$15,403
2036	0.23135		
2037	0.21646		
2038	0.20253		
2039	0.18949		
2040	0.17729		
2041	0.16588		
2042	0.15520		
2043	0.14521		
2044	0.13586		
2045	0.12712		
2046	0.11894		
2047	0.11128		
2048	0.10412		
2049	0.09741		

2050	0.09114		
2051	0.08528	\$99,952	\$8,524
2052	0.07979	\$102,955	\$8,215
2053	0.07465	\$106,039	\$7,916
2054	0.06985	\$109,220	\$7,629
2055	0.06535	\$112,496	\$7,352
2056	0.06114	\$115,872	\$7,085
2057	0.05721	\$119,348	\$6,828
2058	0.05352	\$122,958	\$6,581
2059	0.05008	\$126,616	\$6,341
2060	0.04686	\$130,415	\$6,111
2061	0.04384	\$134,327	\$5,889
2062	0.04102		
2063	0.03838		
2064	0.03591		
2065	0.03360		
2066	0.03143		
2067	0.02941		
2068	0.02752		
2069	0.02575		
2070	0.02409		
2071	0.02254		
2072	0.02109		
2073	0.01973		
2074	0.01846		
2075	0.01727	\$209,281	\$3,614
2076	0.01616	\$215,559	\$3,483
2077	0.01512	\$222,026	\$3,357
2078	0.01415	\$228,687	\$3,235
2079	0.01324	\$235,548	\$3,118
2080	0.01238	\$242,614	\$3,004
2081	0.01159	\$249,892	\$2,895
2082	0.01084	\$257,389	\$2,790
2083	0.01014	\$265,111	\$2,689
2084	0.00949	\$273,064	\$2,591
2085	0.00888		
2086	0.00831		
2087	0.00777		
2088	0.00727		
2089	0.00680		
2090	0.00637		
2091	0.00596		
2092	0.00557		
2093	0.00521		
2094	0.00488		

2095	0.00456		
2096	0.00427		
2097	0.00400		
2098	0.00374		
2099	0.00350		
2100	0.00327	\$438,184.08	\$1,434
2101	0.00306	\$451,329.60	\$1,382
2102	0.00286	\$464,869.49	\$1,332
2103	0.00268	\$478,815.58	\$1,283
2104	0.00251	\$493,180.04	\$1,237
2105	0.00235	\$507,975.44	\$1,192
2106	0.00220	\$523,214.71	\$1,149
2107	0.00205	\$538,911.15	\$1,107
2108	0.00192	\$555,078.48	\$1,067
2109	0.00180	\$571,730.84	\$1,028
2110	0.00168		
2111	0.00157		
2112	0.00147		
2113	0.00138		
2114	0.00129		
2115	0.00121		
Totals:		\$9,249,976	\$ 304,406
Average Annual:			\$20,971

COMPOUND INTEREST AND ANNUITY TABLES -

Category 2:
Dam O&M and Repair (Includes AFEP)
Base Year 2015
All costs in Thousands of Dollars
Discount Rate: 6.880%
CRF: 6.889%

Year	Present Value \$1	Annual Cost	Annual Cost: Present Value
2015	0.93563	\$39,400	\$36,864
2016	0.87540	\$40,600	\$35,541
2017	0.81905	\$41,900	\$34,318
2018	0.76633	\$43,100	\$33,029
2019	0.71700	\$44,400	\$31,835
2020	0.67084	\$45,700	\$30,658
2021	0.62766	\$47,100	\$29,563
2022	0.58726	\$48,500	\$28,482
2023	0.54945	\$50,000	\$27,473
2024	0.51409	\$51,500	\$26,475
2025	0.48099	\$53,000	\$25,493
2026	0.45003	\$54,600	\$24,572
2027	0.42106	\$56,300	\$23,706
2028	0.39396	\$57,900	\$22,810
2029	0.36860	\$59,700	\$22,005
2030	0.34487	\$61,500	\$21,210
2031	0.32267	\$63,300	\$20,425
2032	0.30190	\$65,200	\$19,684
2033	0.28247	\$67,200	\$18,982
2034	0.26428	\$69,200	\$18,288
2035	0.24727	\$71,200	\$17,606
2036	0.23135	\$73,400	\$16,981
2037	0.21646	\$75,600	\$16,365
2038	0.20253	\$75,900	\$15,372
2039	0.18949	\$80,200	\$15,197
2040	0.17729	\$82,600	\$14,644
2041	0.16588	\$85,100	\$14,116
2042	0.15520	\$87,600	\$13,596
2043	0.14521	\$90,200	\$13,098
2044	0.13586	\$93,000	\$12,635
2045	0.12712	\$95,800	\$12,178
2046	0.11894	\$98,600	\$11,727
2047	0.11128	\$101,600	\$11,306
2048	0.10412	\$104,600	\$10,891
2049	0.09741	\$107,800	\$10,501
2050	0.09114	\$111,000	\$10,117

2051	0.08528	\$114,400	\$9,756
2052	0.07979	\$117,800	\$9,399
2053	0.07465	\$121,300	\$9,055
2054	0.06985	\$125,000	\$8,731
2055	0.06535	\$128,700	\$8,411
2056	0.06114	\$132,600	\$8,108
2057	0.05721	\$136,500	\$7,809
2058	0.05352	\$140,600	\$7,526
2059	0.05008	\$144,900	\$7,257
2060	0.04686	\$149,200	\$6,991
2061	0.04384	\$153,700	\$6,738
2062	0.04102	\$158,300	\$6,493
2063	0.03838	\$163,000	\$6,255
2064	0.03591	\$167,900	\$6,029
2065	0.03360	\$172,900	\$5,809
2066	0.03143	\$178,100	\$5,598
2067	0.02941	\$183,500	\$5,397
2068	0.02752	\$189,000	\$5,201
2069	0.02575	\$194,600	\$5,010
2070	0.02409	\$200,500	\$4,830
2071	0.02254	\$206,500	\$4,654
2072	0.02109	\$212,700	\$4,485
2073	0.01973	\$219,100	\$4,323
2074	0.01846	\$225,600	\$4,164
2075	0.01727	\$232,400	\$4,014
2076	0.01616	\$239,400	\$3,869
2077	0.01512	\$246,600	\$3,728
2078	0.01415	\$253,380	\$3,584
2079	0.01324	\$261,000	\$3,454
2080	0.01238	\$268,800	\$3,329
2081	0.01159	\$276,900	\$3,208
2082	0.01084	\$285,200	\$3,092
2083	0.01014	\$293,700	\$2,979
2084	0.00949	\$302,500	\$2,871
2085	0.00888	\$311,600	\$2,767
2086	0.00831	\$321,000	\$2,667
2087	0.00777	\$330,600	\$2,570
2088	0.00727	\$340,500	\$2,476
2089	0.00680	\$350,700	\$2,386
2090	0.00637	\$361,200	\$2,299
2091	0.00596	\$372,100	\$2,216
2092	0.00557	\$383,300	\$2,136
2093	0.00521	\$406,600	\$2,120
2094	0.00488	\$418,800	\$2,043
2095	0.00456	\$431,400	\$1,969

2096	0.00427	\$444,300	\$1,897
2097	0.00400	\$457,600	\$1,828
2098	0.00374	\$471,328	\$1,762
2099	0.00350	\$485,468	\$1,698
2100	0.00327	\$500,032	\$1,636
2101	0.00306	\$515,033	\$1,577
2102	0.00286	\$530,484	\$1,520
2103	0.00268	\$546,398	\$1,465
2104	0.00251	\$562,790	\$1,411
2105	0.00235	\$579,674	\$1,360
2106	0.00220	\$597,064	\$1,311
2107	0.00205	\$614,976	\$1,263
2108	0.00192	\$633,426	\$1,217
2109	0.00180	\$652,428	\$1,173
2110	0.00168	\$672,001	\$1,131
2111	0.00157	\$692,161	\$1,090
2112	0.00147	\$712,926	\$1,050
2113	0.00138	\$734,314	\$1,012
2114	0.00129	\$756,343	\$975
2115	0.00121	\$779,034	\$940
Totals:		\$25,056,162	\$992,863
Average Annual:			\$68,398

COMPOUND INTEREST AND ANNUITY TABLES -

Category 3:

Turbine Rehabs and Upgrades, Base Year 2015

All costs in Thousands of Dollars

Discount Rate: 6.880%

CRF: 6.889%

Year	Present Value \$1	Annual Cost	Annual Cost: Present Value
2015	0.93563	\$16,200	\$15,157
2016	0.87540	\$16,200	\$14,181
2017	0.81905	\$16,200	\$13,269
2018	0.76633	\$42,700	\$32,722
2019	0.71700	\$26,500	\$19,000
2020	0.67084	\$26,500	\$17,777
2021	0.62766	\$55,000	\$34,521
2022	0.58726	\$29,000	\$17,030
2023	0.54945	\$29,000	\$15,934
2024	0.51409	\$60,600	\$31,154
2025	0.48099	\$31,600	\$15,199
2026	0.45003	\$31,600	\$14,221
2027	0.42106	\$66,200	\$27,874
2028	0.39396	\$34,600	\$13,631
2029	0.36860	\$34,600	\$12,754
2030	0.34487	\$72,400	\$24,969
2031	0.32267	\$37,800	\$12,197
2032	0.30190	\$37,800	
2033	0.28247	\$79,000	
2034	0.26428	\$41,200	
2035	0.24727	\$41,200	
2036	0.23135	\$86,300	
2037	0.21646	\$45,100	
2038	0.20253	\$45,100	
2039	0.18949	\$45,100	
2040	0.17729		
2041	0.16588		
2042	0.15520		
2043	0.14521		
2044	0.13586		
2045	0.12712		
2046	0.11894		\$0
2047	0.11128		\$0
2048	0.10412		\$0
2049	0.09741		\$0
2050	0.09114		\$0

2051	0.08528		\$0
2052	0.07979		\$0
2053	0.07465		\$0
2054	0.06985		\$0
2055	0.06535	\$76,700	\$5,012
2056	0.06114	\$76,700	\$4,690
2057	0.05721	\$76,700	\$4,388
2058	0.05352	\$160,600	\$8,596
2059	0.05008	\$83,900	\$4,202
2060	0.04686	\$83,900	\$3,931
2061	0.04384	\$175,500	\$7,694
2062	0.04102	\$91,700	\$3,761
2063	0.03838	\$91,700	\$3,519
2064	0.03591	\$191,800	\$6,887
2065	0.03360	\$100,100	\$3,363
2066	0.03143	\$100,100	\$3,146
2067	0.02941	\$209,500	\$6,161
2068	0.02752	\$109,400	\$3,010
2069	0.02575	\$109,400	\$2,817
2070	0.02409	\$229,000	\$5,516
2071	0.02254	\$119,600	
2072	0.02109	\$119,600	
2073	0.01973	\$250,300	
2074	0.01846	\$130,700	
2075	0.01727	\$130,700	
2076	0.01616	\$273,500	
2077	0.01512	\$142,700	
2078	0.01415	\$142,700	
2079	0.01324	\$142,700	
2080	0.01238		
2081	0.01159		
2082	0.01084		
2083	0.01014		
2084	0.00949		
2085	0.00888		
2086	0.00831		
2087	0.00777		
2088	0.00727		
2089	0.00680		
2090	0.00637		
2091	0.00596		
2092	0.00557		
2093	0.00521		
2094	0.00488		
2095	0.00456		

2096	0.00427		
2097	0.00400		
2098	0.00374		
2099	0.00350		
2100	0.00327		
2101	0.00306		
2102	0.00286		
2103	0.00268		
2104	0.00251		
2105	0.00235		
2106	0.00220		
2107	0.00205		
2108	0.00192		
2109	0.00180		
2110	0.00168		
2111	0.00157		
2112	0.00147		
2113	0.00138		
2114	0.00129		
2115	0.00121		
Totals:		\$4,466,700	\$408,285
Average Annual:			\$28,127

COMPOUND INTEREST AND ANNUITY TABLES -

Category 4:

**Lower Snake Comp Plan: Hatchery O&M, R,R,
(BPA Funded) Base Year 2015**

All costs in Thousands of Dollars

Discount Rate: 6.880%

CRF: 6.889%

Year	Present Value \$1	Annual Cost	Annual Cost: Present Value
2015	0.93563	\$31,670	\$29,631
2016	0.87540	\$32,303	\$28,278
2017	0.81905	\$32,949	\$26,987
2018	0.76633	\$34,596	\$26,512
2019	0.71700	\$36,326	\$26,046
2020	0.67084	\$38,143	\$25,588
2021	0.62766	\$40,050	\$25,138
2022	0.58726	\$42,052	\$24,695
2023	0.54945	\$44,155	\$24,261
2024	0.51409	\$46,363	\$23,834
2025	0.48099	\$48,681	\$23,415
2026	0.45003	\$51,115	\$23,003
2027	0.42106	\$53,670	\$22,599
2028	0.39396	\$56,354	\$22,201
2029	0.36860	\$59,172	\$21,811
2030	0.34487	\$62,130	\$21,427
2031	0.32267	\$65,237	\$21,050
2032	0.30190	\$68,499	\$20,680
2033	0.28247	\$71,924	\$20,316
2034	0.26428	\$75,520	\$19,959
2035	0.24727	\$79,296	\$19,608
2036	0.23135	\$83,260	\$19,263
2037	0.21646	\$87,424	\$18,924
2038	0.20253	\$91,795	\$18,591
2039	0.18949	\$96,384	\$18,264
2040	0.17729	\$101,204	\$17,943
2041	0.16588	\$106,264	\$17,627
2042	0.15520	\$111,577	\$17,317
2043	0.14521	\$117,156	\$17,012
2044	0.13586	\$123,014	\$16,713
2045	0.12712	\$129,164	\$16,419
2046	0.11894	\$135,623	\$16,130
2047	0.11128	\$142,404	\$15,847
2048	0.10412	\$149,524	\$15,568
2049	0.09741	\$157,000	\$15,294
2050	0.09114	\$164,850	\$15,025

2051	0.08528	\$173,093	\$14,761
2052	0.07979	\$181,747	\$14,501
2053	0.07465	\$190,835	\$14,246
2054	0.06985	\$200,376	\$13,996
2055	0.06535	\$210,395	\$13,749
2056	0.06114	\$220,915	\$13,507
2057	0.05721	\$231,961	\$13,270
2058	0.05352	\$243,559	\$13,036
2059	0.05008	\$255,737	\$12,807
2060	0.04686	\$268,523	\$12,582
2061	0.04384	\$281,950	\$12,361
2062	0.04102	\$296,047	\$12,143
2063	0.03838	\$310,849	\$11,930
2064	0.03591	\$326,392	\$11,720
2065	0.03360	\$342,711	\$11,514
2066	0.03143	\$359,847	\$11,311
2067	0.02941	\$377,839	\$11,112
2068	0.02752	\$396,731	\$10,917
2069	0.02575	\$416,568	\$10,725
2070	0.02409	\$437,396	\$10,536
2071	0.02254	\$459,266	\$10,351
2072	0.02109	\$482,229	\$10,169
2073	0.01973	\$506,341	\$9,990
2074	0.01846	\$531,658	\$9,814
2075	0.01727	\$558,241	\$9,641
2076	0.01616	\$586,153	\$9,472
2077	0.01512	\$615,460	\$9,305
2078	0.01415	\$646,234	\$9,141
2079	0.01324	\$678,545	\$8,981
2080	0.01238	\$712,472	\$8,823
2081	0.01159	\$748,096	\$8,668
2082	0.01084	\$785,501	\$8,515
2083	0.01014	\$824,776	\$8,365
2084	0.00949	\$866,015	\$8,218
2085	0.00888	\$909,315	\$8,074
2086	0.00831	\$954,781	\$7,932
2087	0.00777	\$1,002,520	\$7,792
2088	0.00727	\$1,052,646	\$7,655
2089	0.00680	\$1,105,279	\$7,520
2090	0.00637	\$1,160,543	\$7,388
2091	0.00596	\$1,218,570	\$7,258
2092	0.00557	\$1,279,498	\$7,130
2093	0.00521	\$1,343,473	\$7,005
2094	0.00488	\$1,410,647	\$6,882
2095	0.00456	\$1,481,179	\$6,761

2096	0.00427	\$1,555,238	\$6,642
2097	0.00400	\$1,633,000	\$6,525
2098	0.00374	\$1,714,650	\$6,410
2099	0.00350	\$1,800,382	\$6,297
2100	0.00327	\$1,890,402	\$6,187
2101	0.00306	\$1,984,922	\$6,078
2102	0.00286	\$2,084,168	\$5,971
2103	0.00268	\$2,188,376	\$5,866
2104	0.00251	\$2,297,795	\$5,763
2105	0.00235	\$2,412,685	\$5,661
2106	0.00220	\$2,533,319	\$5,562
2107	0.00205	\$2,659,985	\$5,464
2108	0.00192	\$2,792,984	\$5,368
2109	0.00180	\$2,932,633	\$5,273
2110	0.00168	\$3,079,265	\$5,181
2111	0.00157	\$3,233,228	\$5,090
2112	0.00147	\$3,394,890	\$5,000
2113	0.00138	\$3,564,634	\$4,912
2114	0.00129	\$3,742,866	\$4,826
2115	0.00121	\$3,930,009	\$4,741
Totals:		\$81,935,182	\$1,327,364
Average Annual:			\$91,442

COMPOUND INTEREST AND ANNUITY TABLES -

Category 5:

**Power Services (Including System Improvements
and BPA's Dam O,M&R Costs). Base Year 2015**

All costs in Thousands of Dollars

Discount Rate: 6.880%

CRF: 6.889%

Year	Present Value \$1	Annual Cost	Annual Cost: Present Value
2015	0.93563	\$34,711	\$32,477
2016	0.87540	\$35,752	\$31,298
2017	0.81905	\$36,825	\$30,161
2018	0.76633	\$37,930	\$29,067
2019	0.71700	\$39,068	\$28,011
2020	0.67084	\$40,240	\$26,994
2021	0.62766	\$41,447	\$26,014
2022	0.58726	\$42,690	\$25,070
2023	0.54945	\$43,971	\$24,160
2024	0.51409	\$45,290	\$23,283
2025	0.48099	\$46,649	\$22,438
2026	0.45003	\$48,048	\$21,623
2027	0.42106	\$49,490	\$20,838
2028	0.39396	\$50,974	\$20,082
2029	0.36860	\$52,504	\$19,353
2030	0.34487	\$54,079	\$18,650
2031	0.32267	\$55,701	\$17,973
2032	0.30190	\$57,372	\$17,321
2033	0.28247	\$59,093	\$16,692
2034	0.26428	\$60,866	\$16,086
2035	0.24727	\$62,692	\$15,502
2036	0.23135	\$64,573	\$14,939
2037	0.21646	\$66,510	\$14,397
2038	0.20253	\$68,505	\$13,874
2039	0.18949	\$70,560	\$13,371
2040	0.17729	\$72,677	\$12,885
2041	0.16588	\$74,857	\$12,417
2042	0.15520	\$77,103	\$11,967
2043	0.14521	\$79,416	\$11,532
2044	0.13586	\$81,799	\$11,114
2045	0.12712	\$84,253	\$10,710
2046	0.11894	\$86,780	\$10,321
2047	0.11128	\$89,384	\$9,947
2048	0.10412	\$92,065	\$9,586
2049	0.09741	\$94,827	\$9,238
2050	0.09114	\$97,672	\$8,902

2051	0.08528	\$100,602	\$8,579
2052	0.07979	\$103,620	\$8,268
2053	0.07465	\$106,729	\$7,967
2054	0.06985	\$109,931	\$7,678
2055	0.06535	\$113,229	\$7,399
2056	0.06114	\$116,625	\$7,131
2057	0.05721	\$120,124	\$6,872
2058	0.05352	\$123,728	\$6,623
2059	0.05008	\$127,440	\$6,382
2060	0.04686	\$131,263	\$6,150
2061	0.04384	\$135,201	\$5,927
2062	0.04102	\$139,257	\$5,712
2063	0.03838	\$143,435	\$5,505
2064	0.03591	\$147,738	\$5,305
2065	0.03360	\$152,170	\$5,112
2066	0.03143	\$156,735	\$4,927
2067	0.02941	\$161,437	\$4,748
2068	0.02752	\$166,280	\$4,575
2069	0.02575	\$171,268	\$4,409
2070	0.02409	\$176,406	\$4,249
2071	0.02254	\$181,699	\$4,095
2072	0.02109	\$187,150	\$3,946
2073	0.01973	\$192,764	\$3,803
2074	0.01846	\$198,547	\$3,665
2075	0.01727	\$204,503	\$3,532
2076	0.01616	\$210,639	\$3,404
2077	0.01512	\$216,958	\$3,280
2078	0.01415	\$223,466	\$3,161
2079	0.01324	\$230,170	\$3,046
2080	0.01238	\$237,076	\$2,936
2081	0.01159	\$244,188	\$2,829
2082	0.01084	\$251,513	\$2,726
2083	0.01014	\$259,059	\$2,628
2084	0.00949	\$266,831	\$2,532
2085	0.00888	\$274,836	\$2,440
2086	0.00831	\$283,081	\$2,352
2087	0.00777	\$291,573	\$2,266
2088	0.00727	\$300,320	\$2,184
2089	0.00680	\$309,330	\$2,105
2090	0.00637	\$318,610	\$2,028
2091	0.00596	\$328,168	\$1,955
2092	0.00557	\$338,013	\$1,884
2093	0.00521	\$348,153	\$1,815
2094	0.00488	\$358,598	\$1,749
2095	0.00456	\$369,356	\$1,686

2096	0.00427	\$380,437	\$1,625
2097	0.00400	\$391,850	\$1,566
2098	0.00374	\$403,605	\$1,509
2099	0.00350	\$415,713	\$1,454
2100	0.00327	\$428,185	\$1,401
2101	0.00306	\$441,030	\$1,350
2102	0.00286	\$454,261	\$1,301
2103	0.00268	\$467,889	\$1,254
2104	0.00251	\$481,926	\$1,209
2105	0.00235	\$496,384	\$1,165
2106	0.00220	\$511,275	\$1,122
2107	0.00205	\$526,613	\$1,082
2108	0.00192	\$542,412	\$1,042
2109	0.00180	\$558,684	\$1,005
2110	0.00168	\$575,445	\$968
2111	0.00157	\$592,708	\$933
2112	0.00147	\$610,489	\$899
2113	0.00138	\$628,804	\$866
2114	0.00129	\$647,668	\$835
2115	0.00121	\$667,098	\$805
Totals:		\$21,746,662	\$873,251
Average Annual:			\$60,158

COMPOUND INTEREST AND ANNUITY TABLES -

**Category 6:
Dredging, Base Year 2015**

All costs in Thousands of Dollars

Discount Rate: 6.880%

CRF: 6.889%

Year	Present Value \$1	Annual Cost	Annual Cost: Present Value
2015	0.93563	\$11,710	\$ 10,957
2016	0.87540	\$12,003	\$ 10,508
2017	0.81905	\$12,303	\$ 10,077
2018	0.76633	\$12,611	\$ 9,664
2019	0.71700	\$12,926	\$ 9,268
2020	0.67084	\$13,249	\$ 8,888
2021	0.62766	\$13,580	\$ 8,524
2022	0.58726	\$13,920	\$ 8,175
2023	0.54945	\$14,268	\$ 7,840
2024	0.51409	\$14,625	\$ 7,518
2025	0.48099	\$14,990	\$ 7,210
2026	0.45003	\$15,365	\$ 6,915
2027	0.42106	\$15,749	\$ 6,631
2028	0.39396	\$16,143	\$ 6,360
2029	0.36860	\$16,546	\$ 6,099
2030	0.34487	\$16,960	\$ 5,849
2031	0.32267	\$17,384	\$ 5,609
2032	0.30190	\$17,819	\$ 5,379
2033	0.28247	\$18,264	\$ 5,159
2034	0.26428	\$18,721	\$ 4,948
2035	0.24727	\$19,189	\$ 4,745
2036	0.23135	\$19,669	\$ 4,550
2037	0.21646	\$20,160	\$ 4,364
2038	0.20253	\$20,664	\$ 4,185
2039	0.18949	\$21,181	\$ 4,014
2040	0.17729	\$21,710	\$ 3,849
2041	0.16588	\$22,253	\$ 3,691
2042	0.15520	\$22,809	\$ 3,540
2043	0.14521	\$23,380	\$ 3,395
2044	0.13586	\$23,964	\$ 3,256
2045	0.12712	\$24,563	\$ 3,122
2046	0.11894	\$25,177	\$ 2,995
2047	0.11128	\$25,807	\$ 2,872
2048	0.10412	\$26,452	\$ 2,754
2049	0.09741	\$27,113	\$ 2,641
2050	0.09114	\$27,791	\$ 2,533

2051	0.08528	\$28,486	\$	2,429
2052	0.07979	\$29,198	\$	2,330
2053	0.07465	\$29,928	\$	2,234
2054	0.06985	\$30,676	\$	2,143
2055	0.06535	\$31,443	\$	2,055
2056	0.06114	\$32,229	\$	1,971
2057	0.05721	\$33,035	\$	1,890
2058	0.05352	\$33,861	\$	1,812
2059	0.05008	\$34,707	\$	1,738
2060	0.04686	\$35,575	\$	1,667
2061	0.04384	\$36,464	\$	1,599
2062	0.04102	\$37,376	\$	1,533
2063	0.03838	\$38,310	\$	1,470
2064	0.03591	\$39,268	\$	1,410
2065	0.03360	\$40,250	\$	1,352
2066	0.03143	\$41,256	\$	1,297
2067	0.02941	\$42,287	\$	1,244
2068	0.02752	\$43,345	\$	1,193
2069	0.02575	\$44,428	\$	1,144
2070	0.02409	\$45,539	\$	1,097
2071	0.02254	\$46,677	\$	1,052
2072	0.02109	\$47,844	\$	1,009
2073	0.01973	\$49,041	\$	968
2074	0.01846	\$50,267	\$	928
2075	0.01727	\$51,523	\$	890
2076	0.01616	\$52,811	\$	853
2077	0.01512	\$54,132	\$	818
2078	0.01415	\$55,485	\$	785
2079	0.01324	\$56,872	\$	753
2080	0.01238	\$58,294	\$	722
2081	0.01159	\$59,751	\$	692
2082	0.01084	\$61,245	\$	664
2083	0.01014	\$62,776	\$	637
2084	0.00949	\$64,345	\$	611
2085	0.00888	\$65,954	\$	586
2086	0.00831	\$67,603	\$	562
2087	0.00777	\$69,293	\$	539
2088	0.00727	\$71,025	\$	517
2089	0.00680	\$72,801	\$	495
2090	0.00637	\$74,621	\$	475
2091	0.00596	\$76,486	\$	456
2092	0.00557	\$78,399	\$	437
2093	0.00521	\$80,359	\$	419
2094	0.00488	\$82,368	\$	402
2095	0.00456	\$84,427	\$	385

2096	0.00427	\$86,537	\$	370
2097	0.00400	\$88,701	\$	354
2098	0.00374	\$90,918	\$	340
2099	0.00350	\$93,191	\$	326
2100	0.00327	\$95,521	\$	313
2101	0.00306	\$97,909	\$	300
2102	0.00286	\$100,357	\$	288
2103	0.00268	\$102,866	\$	276
2104	0.00251	\$105,437	\$	264
2105	0.00235	\$108,073	\$	254
2106	0.00220	\$110,775	\$	243
2107	0.00205	\$113,545	\$	233
2108	0.00192	\$116,383	\$	224
2109	0.00180	\$119,293	\$	215
2110	0.00168	\$122,275	\$	206
2111	0.00157	\$125,332	\$	197
2112	0.00147	\$128,465	\$	189
2113	0.00138	\$131,677	\$	181
2114	0.00129	\$134,969	\$	174
2115	0.00121	\$138,343	\$	167
Totals:		\$5,203,649	\$	263,455
Average Annual:				\$18,149