

To: Participants in the Alternate Retirement Plan (ARP)

From: Higher Education Unions

RE: Exploring the Possibility of Allowing ARP Participants to Transfer to the State Employees Retirement System (SERS)

Date: June 8, 2010

In response to requests from higher education unions, SEBAC is exploring the possibility of legislation allowing ARP participants to transfer into the State Employees Retirement System (SERS). As part of this process, the unions hired an actuary to determine how such a transfer might occur at no additional cost to the State. Enclosed you will find information from the actuary that allows each ARP participant to estimate the cost of transferring to SERS.

Please note that there is currently no agreement that allows participants to change retirement plans. The only way to achieve this for all ARP participants is through state legislative action or agreement with the administration. Proposed legislation died in Committee earlier this year, but may be reintroduced in the future if it appears appropriate. The assumption that the legislation would pass (if at all) only if there were no net cost to the pension fund comes from a combination of the current budget struggles, and the approximately \$9 billion in underfunding of the pension plan. It also follows the model of similar legislation that passed in Florida, which allows individuals to transfer from their equivalent of the ARP to their equivalent of the SERS, but requires individuals to fund the full actuarial cost of that transfer.

The enclosed information enables each ARP participant to compute an approximate cost of purchasing past service credit in SERS. The employee can then determine if his or her ARP account balance is sufficient to finance the service transfer. If there are insufficient funds, the employee could either purchase less time or pay the additional cost out of pocket (the assumption is that this may be done through payroll deductions spread out over time). If there are surplus funds, the individual would keep the balance.

The actuarial information assumes employees would purchase service credit in whichever SERS Tier was available at their date of hire. Because this is a key factor in determining the cost, make sure you first determine your correct Tier.

- If you were hired before July 1, 1984, you are in either Tier I or IB. (Tier IB is with Social Security coverage).

- If you were hired July 1, 1984 or after, you would be in either Tier II or Tier IIA. There is no difference between the two in determining transfer cost.

This information concerns potential legislation. There is also a SEBAC grievance pending that seeks to allow an ARP to SERS transfer for (1) those who were improperly only provided ARP as their only choice or were put into the ARP as a condition of employment; and (2) those who were given the choice, but given inadequate or incomplete information which caused them to select the ARP. We are awaiting the outcome of this grievance. The information provided by the actuaries would not be used for the first category of grievants, if SEBAC were to prevail, since SEBAC's position is that those employees should receive full past-service credit at the State's expense, and they would have to pay only the employer's ARP contributions, and any employee contributions that would have been paid if they'd been in the applicable tier of SERS. That position, of course, would be subject to both proving the facts of how individuals were steered, and an arbitrator agreeing with SEBAC on appropriate remedy.

We encourage you to carefully look over the enclosed information and to determine how it would apply to you. Discussions concerning our next steps will be scheduled after everyone has had the opportunity to digest this material.



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May 12, 2010

Mr. Stephen Greatorex
Business Manager
Connecticut State University
American Association of University Professors
CCSU, Marcus White Hall, Room 305
New Britain, CT 06050

Subject: ARP Service Transfer Factors

Dear Steve:

As requested, we have developed cost neutral factors to be used should legislation be enacted permitting Alternate Retirement Program (ARP) participants to transfer ARP service to the Connecticut State Employees Retirement System (SERS). The results of our analysis are presented below.

Background

As noted in your February 8, 2010 letter, a substantial number of faculty members in Connecticut's higher education institutions who are currently participating in ARP would like to transfer their current account balances from ARP to SERS and purchase service credit in whichever SERS benefit tier was available at the time the employee was hired. It is further desired that the purchase of service be on a cost neutral basis. In other words SERS would be indifferent from a financial standpoint as to whether the service purchases were made or not. As a first step in this process, the State Employees Bargaining Agent Coalition (SEBAC) has requested that we develop cost neutral factors which will approximate the lump sum cost to individual ARP members for the amount of ARP service to be transferred to SERS. These lump sum amounts can then be compared to participant ARP account balances to determine whether the balances, in and of themselves, would be sufficient to finance the service transfers.

The Tier of SERS benefits that a member may be eligible to transfer service into is a key factor in determining the cost to transfer. Absent actual legislation defining the transfers and Tier eligibility, we present below the eligibility for each Tier by date of hire as contained in the most recent Summary Plan Descriptions of each Tier.

Tier I and Tier IB eligibility - Hired on or before July 1, 1984 (Tier 1B is with Social Security coverage).
Tier II - Hired on or after July 2, 1984 up to and including June 30, 1997.
Tier IIA - Hired on or after July 1, 1997 (No difference from Tier II for transfer cost).

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Parameters and Assumptions

The factors were developed using several assumptions about future events. Some, like the interest rate (8.25% per year), future salary increases (a range from 20% per year to 4% per year depending on service) and the mortality table (RP 2000 projected with Scale AA 15 years for males and 25 years for females) are the same as those utilized in the most recent actuarial valuation of SERS. In addition, assumptions had to be made about when participants who transferred service would retire. For purposes of factor development it was assumed individuals would retire when first eligible for a retirement benefit (either reduced or unreduced) under the tier they would enter in SERS. The assumed rate of future cost of living increases is the same as used in the most recent actuarial valuation (2.70% per year). Finally in order to meet legal requirements, the mortality used to develop the factors has to be a blend of the male and female rates. That blend, 40% male and 60% female, is based on ARP participant data provided by the Comptroller's Office.

Results

The tables of factors are provided in Appendix A. As can be seen, they are based on the ARP participant's current age and the amount of service they would be transferring. The following tables are provided:

Tier I - All persons eligible for Tier I (including Tier 1B) look up factors based upon current age and service and multiply factor by current annual salary (for SERS pension purposes) to arrive at results. For the best approximation we recommend interpolation for fractional years of age and service.

Tier IB Cost Reductions – Only those eligible for and electing Tier IB coverage would look up the amount of reduction from the Tier I costs determined above. The amount of reduction is not dependent upon salary and is found by cross-indexing the individual's age and service. Because the Social Security Normal Retirement Age changes based upon year of birth, the lookup age used for this table is based upon the individual's whole age as of January 1, 2011. For the best approximation we recommend interpolation for fractional years of service only.

Tier II – (Step 1) All persons eligible for Tier II (including IIA) lookup factors based upon current age and service and multiply factor by current annual salary (for SERS pension purposes) to arrive at results. For the best approximation we recommend interpolation for fractional years of age and service.

Tier II Salary above Breakpoint – (Step 2) All persons eligible for Tier II (including IIA) with current salary above the breakpoint lookup factors based upon current age and service. Then multiply factor by current annual salary (for SERS pension purposes) that is in excess of \$54,800 to arrive at results. For the best approximation we recommend interpolation for fractional years of age and service. This amount is added to the Step 1 amount to arrive at the total cost of transferring service to Tier II.



We provide the following examples of how to use the tables to approximate cost. (Note: An individual may not be eligible for the Tier in the example. We are only demonstrating how the tables are utilized in approximating the cost of transfers.)

Participant Age: 50
ARP Service to Transfer: 15 years
Current Annual Salary: \$85,000

Tier I

On the Tier I table, cross-referencing the age 50 row with the 15 years of service column results in a factor of 2.7663. The approximate cost of the service transfer is the product of the factor and current salary ($2.7663 \times \$85,000 = \$235,136$).

Tier IB

Determine the approximate cost under the Tier I table as above then subtract the amount in the Tier IB Cost Reduction table which for a 50 year old with 15 years of service equals \$1,715. The resulting cost to transfer service to Tier IB is $\$235,136 - \$1,715$ or $\$233,421$.

Tier II

For Tier II transfers, there is a two-step process to approximate the cost of transfers.

The first step is to determine the cost of the benefit not affected by the breakpoint. Under the Tier II table, cross-referencing the age 50 row with the 15 years of service column results in a factor of 1.7509. This first step results in a cost of $\$148,827$ ($1.7509 \times \$85,000$). The second step is to determine the salary above the 2010 breakpoint amount of $\$54,800$. This is $\$30,200$ ($\$85,000 - \$54,800$) and is multiplied by the factor found in the Tier II – Salary Above the Breakpoint table. The factor at age 50 with 15 years of service is .5410. The additional cost for benefits based on salary above the breakpoint is $\$16,338$ ($\$30,200 \times .5410$). Adding the resulting amounts from both steps is $\$165,165$.

As can be seen, the factors typically increase with age and service until the point where participants are eligible for immediate retirement after the transfer at which point the factors generally begin to decline to reflect the shorter life expectancy of older individuals. And, of course, the factors differ by Tier to reflect the benefit level provided under each. These tables end at age 70. For individuals over age 70, we recommend using the age 70 factors to approximate their costs. We would anticipate the actual cost of those over age 70 would be less than determined using these tables. Additionally, the Tier II cost for salaries above the breakpoint are based upon the assumption that the current amount of salary above the breakpoint remains level until retirement eligibility. If more precise calculations are performed for individuals with their actual age, service and salary information, we would anticipate that the average cost for this portion of the Tier II service transfers would be lower than will be calculated under the tables. A table could not be constructed for the Tier II benefits attributable to salary above the breakpoint that would accurately provide age and service based factors without taking into account actual salaries.

Mr. Stephen Greatorex
May 12, 2010
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Comments

As stated above, the factors are designed to approximate the cost neutral amount of the service transfer. The intention is to provide an estimate of the cost of transferring service to SERS in order to gauge the potential difference between an individual's ARP account balances and the cost to transfer the service to SERS without actuarially impacting the System. Of course, given the number of assumptions that have to be made to develop the factors, absolute cost neutrality cannot be guaranteed. As just one example, should the gender split for those who actually transfer service be different than the 40% male/60% female assumed, the results will only be cost neutral if other experience (for example actual mortality rates) offsets the difference.

The factors that have been developed provide, on average, the approximate cost to be as close as possible to the cost neutral goal and within the constraints of being somewhat simple to utilize for a broad group. There are other methods that can be used to generate the factors, some of which would reduce or eliminate the differential based on age and service. However, using factors developed in that manner will increase the likelihood of anti-selection and the probability that the actual results will not be cost neutral.

The factors provided in Appendix A provide the means to approximate the true cost for each individual in order to compare with the current ARP account balance and gauge the feasibility of an individual's transfer of service to SERS. To the extent factors are used that lower the cost for some and raise it for others, the lower cost individuals are much more likely to take advantage of the transfer than the higher cost individuals which will almost certainly guarantee that cost neutrality will not be achieved.

After consideration of the approximate cost of transfer, if it is further desired, we recommend providing more precise calculations using actual age, service and salary of all interested individuals. If you need any further information regarding this analysis, please do not hesitate to contact us. The undersigned is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Thomas J. Cavanaugh'.

Thomas J. Cavanaugh FSA, FCA, MAAA, EA
Chief Executive Officer

Enc.



Appendix A – Tables

TIER I FACTORS TO APPROXIMATE COST OF SERVICE TRANSFER

AGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
25	0.1172	0.2031	0.2880	0.3759	0.4610													
26	0.1220	0.2114	0.2998	0.3913	0.4799	0.5663												
27	0.1269	0.2200	0.3121	0.4073	0.4995	0.5895	0.6779											
28	0.1321	0.2290	0.3248	0.4239	0.5199	0.6136	0.7056	0.7950										
29	0.1375	0.2384	0.3381	0.4412	0.5411	0.6386	0.7345	0.8275	0.9177									
30	0.1432	0.2481	0.3519	0.4593	0.5633	0.6647	0.7645	0.8613	0.9552	1.0462								
31	0.1490	0.2583	0.3663	0.4780	0.5863	0.6919	0.7957	0.8965	0.9942	1.0890	1.1864							
32	0.1497	0.2688	0.3813	0.4976	0.6102	0.7202	0.8282	0.9331	1.0348	1.1335	1.2349	1.3344						
33	0.1501	0.2700	0.3968	0.5179	0.6352	0.7496	0.8621	0.9712	1.0771	1.1798	1.2854	1.3889	1.4903					
34	0.1504	0.2709	0.3986	0.5391	0.6611	0.7802	0.8973	1.0109	1.1211	1.2280	1.3379	1.4456	1.5512	1.6546				
35	0.1513	0.2713	0.3998	0.5415	0.6881	0.8121	0.9340	1.0522	1.1669	1.2782	1.3926	1.5047	1.6146	1.7222	1.8277			
36	0.1511	0.2729	0.4005	0.5432	0.6912	0.8453	0.9722	1.0952	1.2146	1.3304	1.4495	1.5662	1.6806	1.7926	1.9024	2.0292		
37	0.1506	0.2726	0.4029	0.5441	0.6933	0.8490	1.0119	1.1400	1.2643	1.3848	1.5087	1.6302	1.7492	1.8659	1.9801	2.1121	2.2441	
38	0.1509	0.2718	0.4024	0.5473	0.6945	0.8517	1.0164	1.1866	1.3159	1.4414	1.5704	1.6968	1.8207	1.9421	2.0610	2.1984	2.3358	2.4732
39	0.1499	0.2722	0.4012	0.5466	0.6987	0.8531	1.0195	1.1918	1.3697	1.5003	1.6346	1.7662	1.8951	2.0215	2.1452	2.2883	2.4313	2.5743
40	0.1496	0.2704	0.4018	0.5450	0.6978	0.8582	1.0213	1.1956	1.3758	1.5616	1.7014	1.8384	1.9726	2.1041	2.2329	2.3818	2.5306	2.6795
41	0.1479	0.2699	0.3991	0.5458	0.6957	0.8572	1.0274	1.1976	1.3801	1.5685	1.7709	1.9135	2.0532	2.1901	2.3242	2.4791	2.6340	2.7890
42	0.1445	0.2668	0.3983	0.5422	0.6968	0.8546	1.0261	1.2047	1.3824	1.5734	1.7787	1.9917	2.1371	2.2796	2.4191	2.5804	2.7417	2.9030
43	0.1418	0.2606	0.3939	0.5411	0.6921	0.8559	1.0230	1.2032	1.3907	1.5760	1.7843	2.0005	2.2244	2.3727	2.5180	2.6859	2.8537	3.0216
44	0.1377	0.2559	0.3847	0.5351	0.6908	0.8501	1.0246	1.1996	1.3889	1.5855	1.7873	2.0067	2.2343	2.4697	2.6209	2.7956	2.9703	3.1451
45	0.1344	0.2484	0.3777	0.5226	0.6830	0.8485	1.0177	1.2015	1.3847	1.5835	1.7980	2.0101	2.2413	2.4806	2.7280	2.9099	3.0917	3.2736
46	0.1295	0.2425	0.3667	0.5131	0.6671	0.8390	1.0157	1.1934	1.3869	1.5787	1.7937	2.0221	2.2450	2.4884	2.7401	3.0288	3.2181	3.4074
47	0.1351	0.2337	0.3580	0.4981	0.6550	0.8195	1.0044	1.1911	1.3775	1.5812	1.7903	2.0196	2.2585	2.4926	2.7486	3.0422	3.3496	3.5466
48	0.1405	0.2438	0.3449	0.4863	0.6359	0.8046	0.9810	1.1778	1.3749	1.5705	1.7931	2.0135	2.2556	2.5075	2.7533	3.0517	3.3644	3.6915
49	0.1479	0.2534	0.3599	0.4686	0.6208	0.7811	0.9632	1.1503	1.3595	1.5675	1.7810	2.0167	2.2488	2.5043	2.7697	3.0568	3.3749	3.7079
50	0.1574	0.2669	0.3741	0.4889	0.5981	0.7625	0.9351	1.1295	1.3279	1.5500	1.7776	2.0031	2.2524	2.4968	2.7663	3.0751	3.3806	3.7195
51	0.1663	0.2839	0.3940	0.5082	0.6241	0.7347	0.9128	1.0965	1.3038	1.5139	1.7578	1.9992	2.2372	2.5007	2.7579	3.0713	3.4008	3.7258
52	0.1770	0.3000	0.4191	0.5352	0.6487	0.7666	0.8795	1.0704	1.2657	1.4864	1.7168	1.9769	2.2329	2.4838	2.7623	3.0620	3.3966	3.7480
53	0.1870	0.3193	0.4429	0.5694	0.6832	0.7968	0.9177	1.0314	1.2356	1.4430	1.6856	1.9308	2.2079	2.4791	2.7436	3.0668	3.3863	3.7433
54	0.1964	0.3375	0.4714	0.6016	0.7268	0.8392	0.9539	1.0762	1.1905	1.4087	1.6364	1.8958	2.1565	2.4514	2.7384	3.0461	3.3917	3.7320
55	0.2051	0.3544	0.4981	0.6403	0.7680	0.8928	1.0046	1.1186	1.2423	1.3573	1.5975	1.8405	2.1173	2.3942	2.7078	3.0403	3.3688	3.7379
56	0.2132	0.3701	0.5231	0.6767	0.8174	0.9434	1.0688	1.1780	1.2912	1.4163	1.6461	1.8919	2.1712	2.4504	2.7457	3.0570	3.3843	3.7518
57	0.2080	0.3846	0.5463	0.7106	0.8638	1.0041	1.1293	1.2533	1.3598	1.4721	1.7060	1.9557	2.2041	2.4841	2.7798	3.0913	3.4186	3.7380
58	0.2028	0.3753	0.5677	0.7422	0.9071	1.0611	1.2019	1.3243	1.4467	1.5503	1.7763	2.0308	2.2841	2.5502	2.8486	3.1419	3.4480	3.7671
59	0.1975	0.3659	0.5540	0.7712	0.9474	1.1143	1.2702	1.4095	1.5287	1.6493	1.8841	2.1162	2.3751	2.6288	2.9117	3.2073	3.4941	3.8138
60	0.1920	0.3563	0.5401	0.7525	0.9845	1.1638	1.3339	1.4895	1.6270	1.7428	1.9718	2.2109	2.4598	2.7188	2.9876	3.2665	3.5553	3.8541
61	0.2331	0.3465	0.5259	0.7337	0.9606	1.2093	1.3931	1.5642	1.7193	1.8549	2.0806	2.3137	2.5700	2.8188	3.0752	3.3388	3.6097	3.9099
62	0.2392	0.4206	0.5115	0.7144	0.9365	1.1800	1.4476	1.6336	1.8056	1.9602	2.1825	2.4239	2.6570	2.9116	3.1554	3.4040	3.6777	3.9371
63	0.2455	0.4316	0.6209	0.6948	0.9120	1.1504	1.4126	1.6976	1.8858	2.0585	2.2901	2.5123	2.7521	2.9801	3.2281	3.4807	3.7181	3.9790
64	0.2519	0.4429	0.6371	0.8435	0.8869	1.1203	1.3771	1.6565	1.9595	2.1499	2.3775	2.6073	2.8246	3.0579	3.2935	3.5313	3.7715	3.9933
65	0.2584	0.4544	0.6537	0.8655	1.0767	1.0895	1.3410	1.6149	1.9121	2.2340	2.4574	2.6808	2.9042	3.1276	3.3510	3.5744	3.7978	4.0212
66	0.2645	0.4662	0.6708	0.8880	1.1048	1.3226	1.3042	1.5726	1.8641	2.1799	2.3979	2.6159	2.8339	3.0519	3.2699	3.4879	3.7059	3.9239
67	0.2566	0.4773	0.6882	0.9112	1.1336	1.3571	1.5833	1.5293	1.8153	2.1252	2.3378	2.5503	2.7628	2.9753	3.1879	3.4004	3.6129	3.8254
68	0.2485	0.4630	0.7045	0.9349	1.1631	1.3925	1.6245	1.8566	1.7653	2.0695	2.2765	2.4834	2.6904	2.8973	3.1043	3.3113	3.5182	3.7252
69	0.2403	0.4483	0.6834	0.9570	1.1935	1.4288	1.6669	1.9050	2.1431	2.0126	2.2139	2.4151	2.6164	2.8177	3.0189	3.2202	3.4215	3.6227
70	0.2319	0.4335	0.6618	0.9283	1.2217	1.4660	1.7103	1.9547	2.1990	2.4433	2.6877	2.9320	3.1763	3.4207	3.6650	3.9094	4.1537	4.3980



Appendix A – Tables

TIER I FACTORS TO APPROXIMATE COST OF SERVICE TRANSFER

AGE	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
25																	
26																	
27																	
28																	
29																	
30																	
31																	
32																	
33																	
34																	
35																	
36																	
37																	
38																	
39	2.7173																
40	2.8283	2.9772															
41	2.9439	3.0989	3.2538														
42	3.0642	3.2255	3.3868	3.5481													
43	3.1895	3.3573	3.5252	3.6931	3.8609												
44	3.3198	3.4945	3.6692	3.8440	4.0187	4.1934											
45	3.4555	3.6373	3.8192	4.0011	4.1829	4.3648	4.5467										
46	3.5967	3.7860	3.9753	4.1646	4.3539	4.5432	4.7325	4.9218									
47	3.7436	3.9407	4.1377	4.3347	4.5318	4.7288	4.9259	5.1229	5.3199								
48	3.8966	4.1017	4.3068	4.5119	4.7170	4.9221	5.1271	5.3322	5.5373	5.7424							
49	4.0559	4.2693	4.4828	4.6963	4.9097	5.1232	5.3367	5.5501	5.7636	5.9771	6.1905						
50	4.0739	4.4438	4.6660	4.8882	5.1104	5.3326	5.5548	5.7769	5.9991	6.2213	6.4435	6.6657					
51	4.0865	4.4635	4.8567	5.0879	5.3192	5.5505	5.7818	6.0130	6.2443	6.4756	6.7068	6.9381	7.1694				
52	4.0935	4.4774	4.8782	5.2959	5.5366	5.7773	6.0180	6.2587	6.4995	6.7402	6.9809	7.2216	7.4624	7.7031			
53	4.1179	4.4850	4.8934	5.3194	5.7628	6.0134	6.2640	6.5145	6.7651	7.0156	7.2662	7.5167	7.7673	8.0179	8.2684		
54	4.1128	4.5118	4.9017	5.3359	5.7884	6.2591	6.5199	6.7807	7.0415	7.3023	7.5631	7.8239	8.0847	8.3455	8.6063	8.8671	
55	4.1003	4.5062	4.9310	5.3449	5.8064	6.2869	6.7864	7.0578	7.3293	7.6007	7.8722	8.1436	8.4151	8.6866	8.9580	9.2295	9.5009
56	4.1125	4.4893	4.8821	5.2909	5.7465	6.1888	6.6805	6.9477	7.2149	7.4821	7.7494	8.0166	8.2838	8.5510	8.8182	9.0855	9.3527
57	4.0955	4.4687	4.8578	5.2626	5.6529	6.0880	6.5717	6.8345	7.0974	7.3603	7.6231	7.8860	8.1489	8.4117	8.6746	8.9375	9.2003
58	4.1237	4.4699	4.8291	5.2296	5.6158	6.0150	6.4594	6.7178	6.9762	7.2346	7.4930	7.7513	8.0097	8.2681	8.5265	8.7848	9.0432
59	4.1221	4.4659	4.8224	5.1637	5.5443	5.9072	6.3436	6.5974	6.8511	7.1049	7.3586	7.6124	7.8661	8.1199	8.3736	8.6274	8.8811
60	4.1628	4.4815	4.8101	5.1487	5.4973	5.8558	6.2243	6.4732	6.7222	6.9712	7.2201	7.4691	7.7181	7.9671	8.2160	8.4650	8.7140
61	4.1966	4.4907	4.7922	5.1009	5.4450	5.7696	6.1016	6.3456	6.5897	6.8337	7.0778	7.3219	7.5659	7.8100	8.0540	8.2981	8.5422
62	4.2239	4.4940	4.7689	5.0749	5.3606	5.6797	5.9761	6.2152	6.4542	6.6932	6.9323	7.1713	7.4104	7.6494	7.8885	8.1275	8.3666
63	4.2222	4.4912	4.7649	5.0176	5.2994	5.5779	5.8480	6.0819	6.3158	6.5497	6.7836	7.0176	7.2515	7.4854	7.7193	7.9532	8.1872
64	4.2369	4.4828	4.7309	4.9814	5.2078	5.4617	5.7178	5.9465	6.1753	6.4040	6.6327	6.8614	7.0901	7.3188	7.5475	7.7762	8.0050
65	4.2446	4.4680	4.6914	4.9148	5.1382	5.3616	5.5850	5.8084	6.0318	6.2552	6.4786	6.7020	6.9254	7.1488	7.3722	7.5956	7.8190
66	4.1419	4.3599	4.5779	4.7959	5.0139	5.2319	5.4498	5.6678	5.8858	6.1038	6.3218	6.5398	6.7578	6.9758	7.1938	7.4118	7.6298
67	4.0379	4.2505	4.4630	4.6755	4.8880	5.1006	5.3131	5.5256	5.7381	5.9507	6.1632	6.3757	6.5882	6.8008	7.0133	7.2258	7.4383
68	3.9321	4.1391	4.3460	4.5530	4.7599	4.9669	5.1738	5.3808	5.5877	5.7947	6.0016	6.2086	6.4156	6.6225	6.8295	7.0364	7.2434
69	3.8240	4.0252	4.2265	4.4278	4.6290	4.8303	5.0316	5.2328	5.4341	5.6353	5.8366	6.0379	6.2391	6.4404	6.6417	6.8429	7.0442
70	4.6424	4.8867	4.8867	4.8867	4.8867	4.8867	4.8867	5.0822	5.2776	5.4731	5.6686	5.8640	6.0595	6.2550	6.4504	6.6459	6.8414



Appendix A – Tables

TIER IB – COST REDUCTION

AGE*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
25	19	38	57	76	95	123												
26	21	41	62	82	103	133												
27	22	44	67	89	111	133	156											
28	24	48	72	96	120	145	169	193										
29	26	52	78	104	130	156	183	209	235									
30	28	56	85	113	141	169	198	226	254	282								
31	31	61	92	122	153	183	214	244	275	306	336							
32	32	66	99	132	165	198	231	265	298	331	364	397						
33	33	69	107	143	179	215	251	286	322	358	394	430	465					
34	35	72	112	155	194	233	271	310	349	388	426	465	504	543				
35	36	75	117	162	210	252	294	336	378	420	461	503	545	587	629			
36	38	79	122	169	219	272	318	363	409	454	500	545	590	636	681	727		
37	39	82	128	176	229	285	344	393	442	492	541	590	639	688	737	787	836	
38	41	85	133	184	238	297	359	426	479	532	585	639	692	745	798	851	905	958
39	42	88	137	191	249	309	375	445	518	576	634	691	749	806	864	922	979	1,037
40	44	91	143	198	259	324	391	464	542	624	686	748	811	873	935	998	1,060	1,122
41	45	94	148	207	268	336	409	483	565	651	742	810	877	945	1,012	1,080	1,147	1,215
42	46	97	153	213	279	349	425	506	589	680	776	877	950	1,023	1,096	1,169	1,242	1,315
43	47	100	158	221	289	363	440	525	616	708	809	916	1,028	1,107	1,186	1,266	1,345	1,424
44	48	103	162	228	300	375	459	545	640	741	843	956	1,074	1,199	1,284	1,370	1,456	1,541
45	50	105	167	234	308	389	474	567	663	769	882	995	1,121	1,252	1,390	1,483	1,576	1,668
46	50	107	170	241	316	400	492	586	691	798	916	1,041	1,167	1,306	1,452	1,605	1,766	1,806
47	58	109	174	245	326	411	506	608	714	831	950	1,082	1,221	1,361	1,515	1,677	1,846	1,955
48	66	125	176	252	332	423	518	625	741	858	989	1,122	1,269	1,424	1,578	1,749	1,929	2,116
49	76	143	202	255	340	431	535	641	762	891	1,022	1,168	1,315	1,479	1,651	1,823	2,012	2,211
50	90	165	231	292	344	442	545	661	781	916	1,061	1,207	1,370	1,533	1,715	1,907	2,096	2,306
51	106	198	274	340	402	456	568	687	820	957	1,111	1,276	1,441	1,627	1,811	2,017	2,234	2,447
52	127	235	327	401	468	532	586	717	851	1,005	1,160	1,336	1,523	1,711	1,921	2,129	2,362	2,606
53	152	280	387	479	553	620	684	738	888	1,042	1,217	1,394	1,594	1,807	2,019	2,258	2,492	2,755
54	178	333	463	569	660	731	796	861	914	1,086	1,262	1,462	1,663	1,891	2,132	2,373	2,641	2,906
55	210	393	550	680	782	872	939	1,002	1,067	1,118	1,316	1,516	1,744	1,972	2,230	2,504	2,776	3,079
56	246	463	650	807	935	1,034	1,120	1,181	1,241	1,305	1,516	1,743	2,000	2,257	2,529	2,816	3,117	3,456
57	266	533	751	938	1,092	1,215	1,306	1,386	1,439	1,492	1,729	1,982	2,234	2,518	2,818	3,133	3,465	3,789
58	260	577	865	1,085	1,269	1,419	1,534	1,615	1,687	1,731	1,983	2,267	2,550	2,847	3,180	3,507	3,849	4,205
59	253	562	937	1,249	1,467	1,649	1,792	1,898	1,967	2,029	2,318	2,604	2,922	3,235	3,583	3,947	4,299	4,693
60	246	548	913	1,352	1,690	1,906	2,082	2,217	2,312	2,366	2,677	3,001	3,339	3,691	4,056	4,434	4,826	5,232
61	299	533	889	1,318	1,829	2,195	2,407	2,576	2,700	2,781	3,119	3,468	3,853	4,226	4,610	5,005	5,411	5,861
62	323	647	865	1,283	1,783	2,376	2,772	2,978	3,137	3,248	3,616	4,016	4,402	4,824	5,228	5,640	6,093	6,523
63	350	700	1,050	1,248	1,737	2,317	3,001	3,430	3,627	3,773	4,197	4,605	5,044	5,462	5,916	6,379	6,815	7,293
64	379	758	1,136	1,515	1,689	2,256	2,926	3,713	4,177	4,363	4,824	5,291	5,732	6,205	6,683	7,166	7,653	8,103
65	410	820	1,230	1,640	2,050	2,194	2,849	3,620	4,521	5,024	5,526	6,029	6,531	7,033	7,536	8,038	8,541	9,043
66	444	888	1,332	1,776	2,220	2,663	3,525	4,408	5,438	5,982	6,526	7,070	7,614	8,158	8,701	9,245	9,789	10,332
67	431	961	1,442	1,922	2,403	2,883	3,364	4,228	4,292	5,302	5,832	6,362	6,892	7,423	7,953	8,483	9,013	9,543
68	417	932	1,561	2,081	2,601	3,121	3,641	4,161	4,174	5,163	5,679	6,195	6,712	7,228	7,744	8,261	8,777	9,293
69	403	903	1,514	2,252	2,815	3,379	3,942	4,505	5,068	5,021	5,523	6,025	6,527	7,029	7,531	8,033	8,536	9,038
70	389	873	1,466	2,185	3,048	3,657	4,267	4,876	5,486	6,095	6,705	7,315	7,924	8,534	9,143	9,753	10,362	10,972

*Age is the whole age as of January 1, 2011



Appendix A – Tables

TIER IB – COST REDUCTION

AGE*	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
25																	
26																	
27																	
28																	
29																	
30																	
31																	
32																	
33																	
34																	
35																	
36																	
37																	
38																	
39	1,094																
40	1,185	1,247															
41	1,282	1,350	1,417														
42	1,388	1,461	1,534	1,608													
43	1,503	1,582	1,661	1,740	1,819												
44	1,627	1,712	1,798	1,884	1,969	2,055											
45	1,761	1,854	1,946	2,039	2,132	2,224	2,317										
46	1,906	2,007	2,107	2,207	2,308	2,408	2,508	2,609									
47	2,064	2,172	2,281	2,389	2,498	2,607	2,715	2,824	2,932								
48	2,234	2,351	2,469	2,587	2,704	2,822	2,939	3,057	3,174	3,292							
49	2,418	2,545	2,673	2,800	2,927	3,054	3,182	3,309	3,436	3,564	3,691						
50	2,526	2,755	2,893	3,031	3,169	3,306	3,444	3,582	3,720	3,858	3,995	4,133					
51	2,684	2,932	3,190	3,341	3,493	3,645	3,797	3,949	4,101	4,253	4,404	4,556	4,709				
52	2,846	3,113	3,392	3,683	3,849	4,017	4,185	4,352	4,519	4,687	4,854	5,022	5,188	5,356			
53	3,031	3,301	3,602	3,915	4,242	4,426	4,610	4,795	4,979	5,164	5,348	5,532	5,717	5,901	6,086		
54	3,202	3,514	3,817	4,155	4,508	4,874	5,077	5,281	5,484	5,687	5,890	6,093	6,296	6,499	6,702	6,905	
55	3,378	3,712	4,062	4,403	4,783	5,179	5,590	5,814	6,038	6,262	6,485	6,709	6,932	7,156	7,379	7,603	7,827
56	3,788	4,135	4,497	4,874	5,293	5,701	6,154	6,400	6,646	6,892	7,138	7,384	7,630	7,877	8,123	8,369	8,615
57	4,151	4,530	4,924	5,334	5,730	6,171	6,661	6,928	7,194	7,461	7,727	7,993	8,260	8,526	8,793	9,059	9,326
58	4,603	4,990	5,391	5,838	6,269	6,715	7,211	7,499	7,788	8,076	8,365	8,653	8,941	9,230	9,518	9,807	10,095
59	5,072	5,495	5,934	6,354	6,822	7,269	7,806	8,118	8,430	8,742	9,055	9,367	9,679	9,991	10,304	10,616	10,928
60	5,651	6,084	6,530	6,990	7,463	7,949	8,450	8,788	9,126	9,464	9,802	10,140	10,478	10,816	11,154	11,492	11,830
61	6,291	6,732	7,184	7,647	8,163	8,649	9,147	9,513	9,878	10,244	10,610	10,976	11,342	11,708	12,074	12,440	12,805
62	6,998	7,446	7,901	8,408	8,882	9,410	9,901	10,297	10,693	11,090	11,486	11,882	12,278	12,674	13,070	13,466	13,862
63	7,739	8,232	8,733	9,196	9,713	10,187	10,718	11,147	11,576	12,004	12,433	12,862	13,291	13,719	14,148	14,577	15,006
64	8,597	9,096	9,600	10,108	10,568	11,083	11,602	12,067	12,531	12,995	13,459	13,923	14,387	14,851	15,315	15,779	16,243
65	9,545	10,048	10,550	11,053	11,555	12,057	12,560	13,062	13,564	14,067	14,569	15,072	15,574	16,076	16,579	17,081	17,584
66	10,333	10,877	11,421	11,964	12,508	13,052	13,596	14,140	14,684	15,227	15,771	16,315	16,859	17,403	17,947	18,490	19,034
67	10,074	10,604	11,134	11,664	12,194	12,724	13,255	13,785	14,315	14,845	15,375	15,906	16,436	16,966	17,496	18,026	18,557
68	9,810	10,326	10,842	11,358	11,875	12,391	12,907	13,424	13,940	14,456	14,972	15,489	16,005	16,521	17,038	17,554	18,070
69	9,540	10,042	10,544	11,046	11,548	12,050	12,552	13,054	13,557	14,059	14,561	15,063	15,565	16,067	16,569	17,071	17,573
70	11,581	12,191	12,800	13,410	14,020	14,629	15,239	15,848	16,458	17,067	17,677	18,286	18,896	19,505	20,115	20,725	21,334

*Age is the whole age as of January 1, 2011



TIER II FACTORS TO APPROXIMATE COST OF SERVICE TRANSFER

AGE	SERVICE																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
25	0.0662	0.1148	0.1628	0.2125	0.2606													
26	0.0689	0.1195	0.1695	0.2212	0.2712	0.3201												
27	0.0718	0.1244	0.1764	0.2302	0.2823	0.3332	0.3832											
28	0.0747	0.1295	0.1836	0.2396	0.2939	0.3468	0.3989	0.4494										
29	0.0777	0.1348	0.1911	0.2494	0.3059	0.3610	0.4152	0.4677	0.5187									
30	0.0809	0.1403	0.1989	0.2596	0.3184	0.3757	0.4321	0.4868	0.5399	0.5914								
31	0.0842	0.1460	0.2070	0.2702	0.3314	0.3911	0.4498	0.5067	0.5620	0.6155	0.6706							
32	0.0815	0.1520	0.2155	0.2813	0.3449	0.4071	0.4682	0.5274	0.5849	0.6407	0.6980	0.7542						
33	0.0848	0.1470	0.2243	0.2927	0.3590	0.4237	0.4873	0.5490	0.6088	0.6669	0.7266	0.7851	0.8424					
34	0.0883	0.1530	0.2170	0.3047	0.3737	0.4410	0.5072	0.5714	0.6337	0.6941	0.7563	0.8171	0.8768	0.9353				
35	0.0919	0.1593	0.2259	0.2948	0.3890	0.4590	0.5279	0.5948	0.6596	0.7225	0.7872	0.8505	0.9126	0.9735	1.0331			
36	0.0956	0.1658	0.2351	0.3068	0.3763	0.4478	0.5195	0.5895	0.6596	0.7299	0.7999	0.8683	0.9359	1.0033	1.0753	1.1470		
37	0.0995	0.1725	0.2447	0.3194	0.3917	0.4622	0.5320	0.6014	0.6706	0.7396	0.8087	0.8777	0.9461	1.0140	1.0815	1.1488	1.2159	1.2828
38	0.1036	0.1796	0.2547	0.3324	0.4077	0.4811	0.5533	0.6240	0.6936	0.7624	0.8307	0.8985	0.9658	1.0327	1.0992	1.1654	1.2313	1.2969
39	0.1078	0.1869	0.2651	0.3460	0.4243	0.5008	0.5759	0.6495	0.7218	0.7936	0.8649	0.9357	1.0061	1.0761	1.1458	1.2152	1.2843	1.3531
40	0.1123	0.1946	0.2759	0.3601	0.4417	0.5212	0.5995	0.6754	0.7490	0.8219	0.8942	0.9660	1.0374	1.1084	1.1790	1.2493	1.3193	1.3890
41	0.1168	0.2025	0.2872	0.3749	0.4597	0.5425	0.6240	0.7030	0.7796	0.8539	0.9270	1.0000	1.0728	1.1453	1.2176	1.2897	1.3615	1.4331
42	0.1205	0.2108	0.2970	0.3902	0.4785	0.5647	0.6495	0.7318	0.8114	0.8888	0.9641	1.0392	1.1141	1.1888	1.2633	1.3376	1.4117	1.4856
43	0.1242	0.2173	0.3112	0.4061	0.4981	0.5878	0.6760	0.7616	0.8446	0.9251	1.0079	1.0891	1.1699	1.2504	1.3307	1.4108	1.4907	1.5704
44	0.1280	0.2241	0.3208	0.4227	0.5184	0.6118	0.7036	0.7927	0.8791	0.9629	1.0491	1.1336	1.2164	1.2987	1.3806	1.4621	1.5433	1.6243
45	0.1320	0.2310	0.3307	0.4358	0.5396	0.6368	0.7324	0.8251	0.9150	1.0023	1.0920	1.1799	1.2661	1.3505	1.4348	1.5189	1.6027	1.6863
46	0.1361	0.2381	0.3410	0.4493	0.5563	0.6628	0.7623	0.8588	0.9524	1.0432	1.1366	1.2281	1.3178	1.4057	1.4917	1.5769	1.6614	1.7456
47	0.1390	0.2455	0.3515	0.4632	0.5735	0.6833	0.7935	0.8939	0.9914	1.0858	1.1831	1.2783	1.3717	1.4631	1.5527	1.6406	1.7278	1.8143
48	0.1418	0.2509	0.3624	0.4775	0.5913	0.7045	0.8180	0.9304	1.0319	1.1302	1.2314	1.3306	1.4277	1.5229	1.6161	1.7079	1.7983	1.8883
49	0.1443	0.2558	0.3703	0.4923	0.6096	0.7263	0.8433	0.9592	1.0740	1.1764	1.2817	1.3849	1.4861	1.5851	1.6822	1.7783	1.8735	1.9678
50	0.1465	0.2603	0.3776	0.5030	0.6284	0.7488	0.8694	0.9889	1.1073	1.2245	1.3341	1.4415	1.5468	1.6499	1.7509	1.8676	1.9844	2.1011
51	0.1485	0.2644	0.3842	0.5129	0.6421	0.7720	0.8964	1.0195	1.1416	1.2624	1.3886	1.5004	1.6100	1.7173	1.8225	1.9440	2.0655	2.1870
52	0.1502	0.2679	0.3902	0.5220	0.6548	0.7888	0.9241	1.0511	1.1769	1.3015	1.4316	1.5618	1.6758	1.7875	1.8969	2.0234	2.1499	2.2763
53	0.1517	0.2710	0.3955	0.5301	0.6663	0.8043	0.9442	1.0836	1.2133	1.3417	1.4759	1.6101	1.7443	1.8606	1.9745	2.1061	2.2377	2.3694
54	0.1556	0.2737	0.4001	0.5373	0.6767	0.8185	0.9628	1.1072	1.2509	1.3833	1.5216	1.6599	1.7983	1.9366	2.0551	2.1922	2.3292	2.4662
55	0.1597	0.2808	0.4040	0.5435	0.6858	0.8312	0.9798	1.1291	1.2781	1.4261	1.5687	1.7113	1.8539	1.9965	2.1391	2.2817	2.4244	2.5670
56	0.1639	0.2881	0.4145	0.5488	0.6938	0.8425	0.9950	1.1489	1.3033	1.4571	1.6029	1.7486	1.8943	2.0400	2.1857	2.3314	2.4771	2.6229
57	0.1681	0.2956	0.4253	0.5631	0.7005	0.8522	1.0085	1.1668	1.3263	1.4859	1.6344	1.7830	1.9316	2.0802	2.2288	2.3774	2.5260	2.6745
58	0.1721	0.3033	0.4364	0.5777	0.7188	0.8605	1.0202	1.1826	1.3469	1.5120	1.6632	1.8144	1.9656	2.1168	2.2680	2.4192	2.5704	2.7216
59	0.1684	0.3105	0.4478	0.5928	0.7375	0.8829	1.0301	1.1963	1.3651	1.5355	1.6891	1.8427	1.9962	2.1498	2.3033	2.4569	2.6104	2.7640
60	0.1647	0.3039	0.4584	0.6083	0.7567	0.9059	1.0569	1.2079	1.3809	1.5563	1.7119	1.8672	2.0232	2.1788	2.3345	2.4901	2.6457	2.8014
61	0.1608	0.2971	0.4485	0.6226	0.7765	0.9296	1.0845	1.2394	1.3943	1.5743	1.7318	1.8892	2.0466	2.2041	2.3615	2.5189	2.6763	2.8338
62	0.1570	0.2902	0.4385	0.6093	0.7948	0.9538	1.1128	1.2717	1.4307	1.5896	1.7486	1.9076	2.0665	2.2255	2.3845	2.5434	2.7024	2.8614
63	0.1530	0.2832	0.4284	0.5957	0.7778	0.9333	1.0889	1.2444	1.4000	1.5556	1.7111	1.8667	2.0222	2.1778	2.3333	2.4889	2.6445	2.8000
64	0.1490	0.2761	0.4180	0.5819	0.7605	0.9126	1.0647	1.2168	1.3688	1.5209	1.6730	1.8251	1.9772	2.1293	2.2814	2.4335	2.5856	2.7377
65	0.1449	0.2688	0.4075	0.5678	0.7428	0.8914	1.0399	1.1885	1.3371	1.4856	1.6342	1.7827	1.9313	2.0799	2.2284	2.3770	2.5255	2.6741
66	0.1407	0.2614	0.3968	0.5536	0.7248	0.8698	1.0148	1.1597	1.3047	1.4497	1.5946	1.7396	1.8846	2.0295	2.1745	2.3195	2.4644	2.6094
67	0.1365	0.2539	0.3859	0.5391	0.7066	0.8480	0.9893	1.1306	1.2720	1.4133	1.5546	1.6959	1.8373	1.9786	2.1199	2.2613	2.4026	2.5439
68	0.1322	0.2463	0.3748	0.5242	0.6881	0.8287	0.9634	1.1010	1.2386	1.3762	1.5139	1.6515	1.7891	1.9267	2.0644	2.2020	2.3396	2.4772
69	0.1278	0.2385	0.3636	0.5091	0.6692	0.8030	0.9369	1.0707	1.2046	1.3384	1.4722	1.6061	1.7399	1.8738	2.0076	2.1414	2.2753	2.4091
70	0.1234	0.2306	0.3521	0.4939	0.6499	0.7799	0.9099	1.0399	1.1699	1.2999	1.4298	1.5598	1.6898	1.8198	1.9498	2.0798	2.2098	2.3397



Appendix A – Tables

TIER II FACTORS TO APPROXIMATE COST OF SERVICE TRANSFER

AGE	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
25																	
26																	
27																	
28																	
29																	
30																	
31																	
32																	
33																	
34																	
35																	
36																	
37																	
38																	
39	1.5360																
40	1.5987	1.6829															
41	1.6641	1.7516	1.8392														
42	1.7321	1.8232	1.9144	2.0055													
43	1.8028	1.8977	1.9926	2.0875	2.1824												
44	1.8765	1.9753	2.0740	2.1728	2.2716	2.3703											
45	1.9532	2.0560	2.1588	2.2616	2.3644	2.4672	2.5700										
46	2.0330	2.1400	2.2470	2.3540	2.4610	2.5680	2.6750	2.7820									
47	2.1161	2.2275	2.3388	2.4502	2.5616	2.6730	2.7843	2.8957	3.0071								
48	2.2026	2.3185	2.4344	2.5503	2.6663	2.7822	2.8981	3.0140	3.1300	3.2459							
49	2.2926	2.4132	2.5339	2.6546	2.7752	2.8959	3.0166	3.1372	3.2579	3.3785	3.4992						
50	2.2178	2.5119	2.6375	2.7630	2.8886	3.0142	3.1398	3.2654	3.3910	3.5166	3.6422	3.7678					
51	2.3085	2.4300	2.7452	2.8760	3.0067	3.1374	3.2681	3.3989	3.5296	3.6603	3.7910	3.9218	4.0525				
52	2.4028	2.5293	2.6557	2.9935	3.1296	3.2656	3.4017	3.5378	3.6738	3.8099	3.9460	4.0820	4.2181	4.3542			
53	2.5010	2.6326	2.7642	2.8959	3.2574	3.3991	3.5407	3.6823	3.8240	3.9656	4.1072	4.2488	4.3905	4.5321	4.6737		
54	2.6032	2.7402	2.8772	3.0142	3.1512	3.3380	3.6854	3.8328	3.9802	4.1276	4.2751	4.4225	4.5699	4.7173	4.8647	5.0121	
55	2.7096	2.8522	2.9948	3.1374	3.2800	3.4226	3.8360	3.9894	4.1429	4.2963	4.4498	4.6032	4.7566	4.9101	5.0635	5.2170	5.3704
56	2.7686	2.9143	3.0600	3.2057	3.3514	3.4972	3.9094	4.0658	4.2222	4.3785	4.5349	4.6913	4.8477	5.0041	5.1604	5.3168	5.4732
57	2.8231	2.9717	3.1203	3.2689	3.4175	3.5660	3.9768	4.1359	4.2950	4.4541	4.6131	4.7722	4.9313	5.0904	5.2494	5.4085	5.5676
58	2.8728	3.0241	3.1753	3.3265	3.4777	3.6289	4.0378	4.1993	4.3608	4.5223	4.6838	4.8454	5.0069	5.1684	5.3299	5.4914	5.6529
59	2.9175	3.0711	3.2246	3.3782	3.5317	3.6853	4.0920	4.2556	4.4193	4.5830	4.7467	4.9104	5.0740	5.2377	5.4014	5.5651	5.7288
60	2.9570	3.1126	3.2683	3.4239	3.5795	3.7352	4.1391	4.3047	4.4703	4.6358	4.8014	4.9670	5.1325	5.2981	5.4637	5.6292	5.7948
61	2.9912	3.1486	3.3061	3.4635	3.6209	3.7784	4.1575	4.2198	4.3821	4.5444	4.7067	4.8690	5.0313	5.1936	5.3559	5.5182	5.6805
62	3.0203	3.1793	3.3383	3.4972	3.6562	3.8151	3.9741	4.1331	4.2920	4.4510	4.6100	4.7689	4.9279	5.0869	5.2458	5.4048	5.5638
63	2.9556	3.1111	3.2667	3.4222	3.5778	3.7333	3.8889	4.0445	4.2000	4.3556	4.5111	4.6667	4.8222	4.9778	5.1333	5.2889	5.4445
64	2.8898	3.0419	3.1940	3.3461	3.4982	3.6503	3.8024	3.9544	4.1065	4.2586	4.4107	4.5628	4.7149	4.8670	5.0191	5.1712	5.3233
65	2.8227	2.9712	3.1198	3.2684	3.4169	3.5655	3.7140	3.8626	4.0112	4.1597	4.3083	4.4569	4.6054	4.7540	4.9025	5.0511	5.1997
66	2.7544	2.8993	3.0443	3.1893	3.3342	3.4792	3.6241	3.7691	3.9141	4.0590	4.2040	4.3490	4.4939	4.6389	4.7839	4.9288	5.0738
67	2.6856	2.8266	2.9679	3.1092	3.2505	3.3919	3.5332	3.6745	3.8158	3.9572	4.0985	4.2398	4.3812	4.5225	4.6638	4.8052	4.9465
68	2.6149	2.7525	2.8901	3.0277	3.1654	3.3030	3.4406	3.5782	3.7158	3.8535	3.9911	4.1287	4.2663	4.4040	4.5416	4.6792	4.8168
69	2.5429	2.6768	2.8106	2.9445	3.0783	3.2121	3.3460	3.4798	3.6137	3.7475	3.8813	4.0152	4.1490	4.2829	4.4167	4.5505	4.6844
70	2.4697	2.5997	2.7297	2.8597	2.9897	3.1197	3.2496	3.3796	3.5096	3.6396	3.7696	3.8996	4.0296	4.1595	4.2895	4.4195	4.5495



TIER II (SALARY ABOVE THE BREAKPOINT) FACTORS TO APPROXIMATE COST OF SERVICE TRANSFER

AGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
25	0.0053	0.0107	0.0160	0.0214	0.0267													
26	0.0058	0.0116	0.0174	0.0232	0.0289	0.0347												
27	0.0063	0.0125	0.0188	0.0251	0.0313	0.0376	0.0439											
28	0.0068	0.0136	0.0204	0.0271	0.0339	0.0407	0.0475	0.0543										
29	0.0073	0.0147	0.0220	0.0294	0.0367	0.0441	0.0514	0.0588	0.0661									
30	0.0079	0.0159	0.0238	0.0318	0.0397	0.0477	0.0556	0.0636	0.0715	0.0795								
31	0.0086	0.0172	0.0258	0.0344	0.0430	0.0516	0.0602	0.0688	0.0775	0.0861	0.0947							
32	0.0087	0.0186	0.0279	0.0373	0.0466	0.0559	0.0652	0.0745	0.0838	0.0932	0.1025	0.1118						
33	0.0094	0.0187	0.0303	0.0403	0.0504	0.0605	0.0706	0.0807	0.0908	0.1008	0.1109	0.1210	0.1311					
34	0.0101	0.0203	0.0304	0.0437	0.0546	0.0655	0.0764	0.0873	0.0982	0.1092	0.1201	0.1310	0.1419	0.1528				
35	0.0110	0.0220	0.0329	0.0439	0.0591	0.0709	0.0827	0.0945	0.1064	0.1182	0.1300	0.1418	0.1536	0.1654	0.1773			
36	0.0119	0.0238	0.0357	0.0476	0.0594	0.0717	0.0835	0.0953	0.1071	0.1189	0.1307	0.1425	0.1543	0.1661	0.1779	0.1897	0.2015	0.2133
37	0.0129	0.0257	0.0386	0.0515	0.0643	0.0772	0.0901	0.1030	0.1159	0.1288	0.1417	0.1546	0.1675	0.1804	0.1933	0.2062	0.2191	0.2320
38	0.0139	0.0279	0.0418	0.0557	0.0697	0.0836	0.0975	0.1114	0.1253	0.1392	0.1531	0.1670	0.1809	0.1948	0.2087	0.2226	0.2365	0.2504
39	0.0151	0.0302	0.0452	0.0603	0.0754	0.0905	0.1056	0.1207	0.1358	0.1509	0.1660	0.1811	0.1962	0.2113	0.2264	0.2415	0.2566	0.2717
40	0.0163	0.0326	0.0490	0.0653	0.0816	0.0979	0.1143	0.1306	0.1469	0.1632	0.1795	0.1958	0.2121	0.2284	0.2447	0.2610	0.2773	0.2936
41	0.0177	0.0353	0.0530	0.0707	0.0884	0.1060	0.1237	0.1414	0.1590	0.1767	0.1944	0.2121	0.2298	0.2475	0.2652	0.2829	0.3006	0.3183
42	0.0191	0.0383	0.0574	0.0765	0.0956	0.1148	0.1339	0.1530	0.1722	0.1913	0.2104	0.2295	0.2486	0.2677	0.2868	0.3059	0.3250	0.3441
43	0.0207	0.0414	0.0621	0.0828	0.1035	0.1242	0.1450	0.1657	0.1864	0.2071	0.2278	0.2485	0.2692	0.2899	0.3106	0.3313	0.3520	0.3727
44	0.0224	0.0448	0.0672	0.0897	0.1121	0.1345	0.1569	0.1793	0.2017	0.2242	0.2466	0.2690	0.2914	0.3138	0.3362	0.3586	0.3810	0.4034
45	0.0243	0.0485	0.0728	0.0971	0.1213	0.1456	0.1699	0.1941	0.2184	0.2427	0.2669	0.2912	0.3154	0.3397	0.3640	0.3883	0.4126	0.4369
46	0.0263	0.0525	0.0788	0.1051	0.1313	0.1576	0.1839	0.2101	0.2364	0.2627	0.2889	0.3152	0.3415	0.3677	0.3940	0.4202	0.4465	0.4728
47	0.0268	0.0569	0.0853	0.1137	0.1422	0.1706	0.1990	0.2275	0.2559	0.2843	0.3128	0.3412	0.3696	0.3981	0.4265	0.4549	0.4834	0.5118
48	0.0274	0.0581	0.0923	0.1231	0.1539	0.1847	0.2155	0.2462	0.2770	0.3078	0.3386	0.3694	0.4001	0.4309	0.4617	0.4925	0.5233	0.5541
49	0.0279	0.0593	0.0944	0.1333	0.1666	0.1999	0.2332	0.2666	0.2999	0.3332	0.3665	0.3998	0.4332	0.4665	0.4998	0.5331	0.5664	0.5997
50	0.0283	0.0603	0.0962	0.1362	0.1803	0.2164	0.2525	0.2885	0.3246	0.3607	0.3968	0.4328	0.4689	0.5050	0.5410	0.5771	0.6132	0.6492
51	0.0287	0.0612	0.0979	0.1389	0.1843	0.2343	0.2733	0.3124	0.3514	0.3904	0.4295	0.4685	0.5076	0.5466	0.5857	0.6247	0.6637	0.7028
52	0.0290	0.0621	0.0994	0.1413	0.1879	0.2394	0.2959	0.3381	0.3804	0.4227	0.4649	0.5072	0.5494	0.5917	0.6340	0.6762	0.7185	0.7608
53	0.0293	0.0628	0.1008	0.1435	0.1912	0.2441	0.3023	0.3660	0.4118	0.4575	0.5033	0.5490	0.5948	0.6405	0.6863	0.7320	0.7778	0.8235
54	0.0317	0.0634	0.1019	0.1454	0.1942	0.2484	0.3083	0.3740	0.4457	0.4953	0.5448	0.5943	0.6438	0.6934	0.7429	0.7924	0.8419	0.8915
55	0.0343	0.0686	0.1029	0.1471	0.1968	0.2522	0.3137	0.3814	0.4554	0.5361	0.5897	0.6433	0.6970	0.7506	0.8042	0.8578	0.9114	0.9650
56	0.0371	0.0743	0.1114	0.1486	0.1991	0.2557	0.3186	0.3881	0.4644	0.5478	0.6026	0.6574	0.7121	0.7669	0.8217	0.8765	0.9313	0.9860
57	0.0402	0.0804	0.1206	0.1608	0.2010	0.2586	0.3229	0.3941	0.4726	0.5586	0.6145	0.6703	0.7262	0.7820	0.8379	0.8937	0.9496	1.0055
58	0.0435	0.0870	0.1306	0.1741	0.2176	0.2611	0.3266	0.3994	0.4799	0.5684	0.6253	0.6821	0.7390	0.7958	0.8526	0.9095	0.9663	1.0232
59	0.0426	0.0942	0.1413	0.1884	0.2356	0.2827	0.3298	0.4041	0.4864	0.5773	0.6350	0.6927	0.7505	0.8082	0.8659	0.9236	0.9814	1.0391
60	0.0416	0.0922	0.1530	0.2040	0.2550	0.3060	0.3570	0.4080	0.4921	0.5851	0.6436	0.7021	0.7606	0.8191	0.8776	0.9361	0.9946	1.0531
61	0.0407	0.0902	0.1497	0.2208	0.2760	0.3312	0.3864	0.4417	0.4969	0.5919	0.6510	0.7102	0.7694	0.8286	0.8878	0.9470	1.0061	1.0653
62	0.0397	0.0881	0.1464	0.2161	0.2988	0.3586	0.4183	0.4781	0.5378	0.5976	0.6574	0.7171	0.7769	0.8367	0.8964	0.9562	1.0159	1.0757
63	0.0387	0.0859	0.1430	0.2113	0.2924	0.3509	0.4094	0.4678	0.5263	0.5848	0.6433	0.7018	0.7602	0.8187	0.8772	0.9357	0.9942	1.0526
64	0.0377	0.0838	0.1395	0.2064	0.2859	0.3431	0.4002	0.4574	0.5146	0.5718	0.6290	0.6861	0.7433	0.8005	0.8577	0.9149	0.9720	1.0292
65	0.0366	0.0816	0.1360	0.2014	0.2793	0.3371	0.3910	0.4468	0.5027	0.5585	0.6144	0.6702	0.7261	0.7819	0.8378	0.8936	0.9495	1.0053
66	0.0356	0.0793	0.1325	0.1963	0.2725	0.3270	0.3815	0.4360	0.4905	0.5450	0.5995	0.6540	0.7085	0.7630	0.8175	0.8720	0.9265	0.9810
67	0.0345	0.0770	0.1288	0.1912	0.2657	0.3188	0.3719	0.4250	0.4782	0.5313	0.5844	0.6375	0.6907	0.7438	0.7970	0.8502	0.9033	0.9564
68	0.0334	0.0747	0.1251	0.1859	0.2587	0.3104	0.3622	0.4139	0.4656	0.5174	0.5691	0.6209	0.6726	0.7243	0.7761	0.8278	0.8796	0.9313
69	0.0323	0.0724	0.1214	0.1806	0.2516	0.3019	0.3522	0.4025	0.4528	0.5032	0.5535	0.6038	0.6541	0.7044	0.7547	0.8050	0.8554	0.9057
70	0.0312	0.0700	0.1175	0.1752	0.2443	0.2932	0.3421	0.3909	0.4398	0.4887	0.5375	0.5864	0.6353	0.6841	0.7330	0.7819	0.8307	0.8796



TIER II (SALARY ABOVE THE BREAKPOINT) FACTORS TO APPROXIMATE COST OF SERVICE TRANSFER

AGE	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
25																	
26																	
27																	
28																	
29																	
30																	
31																	
32																	
33																	
34																	
35																	
36																	
37																	
38																	
39	0.3083																
40	0.3337	0.3513															
41	0.3613	0.3803	0.3993														
42	0.3911	0.4116	0.4322	0.4528													
43	0.4233	0.4456	0.4679	0.4902	0.5124												
44	0.4583	0.4824	0.5065	0.5306	0.5547	0.5788											
45	0.4961	0.5222	0.5483	0.5744	0.6005	0.6266	0.6527										
46	0.5370	0.5652	0.5935	0.6218	0.6500	0.6783	0.7066	0.7348									
47	0.5813	0.6119	0.6425	0.6731	0.7037	0.7343	0.7648	0.7954	0.8260								
48	0.6292	0.6624	0.6955	0.7286	0.7617	0.7948	0.8279	0.8611	0.8942	0.9273							
49	0.6812	0.7170	0.7529	0.7887	0.8246	0.8604	0.8963	0.9321	0.9680	1.0038	1.0397						
50	0.6853	0.7762	0.8150	0.8538	0.8926	0.9314	0.9702	1.0090	1.0478	1.0866	1.1254	1.1642					
51	0.7418	0.7809	0.8222	0.9242	0.9662	1.0082	1.0502	1.0922	1.1343	1.1763	1.2183	1.2603	1.3023				
52	0.8030	0.8453	0.8876	1.0005	1.0459	1.0914	1.1369	1.1824	1.2278	1.2733	1.3188	1.3643	1.4097	1.4552			
53	0.8693	0.9150	0.9608	1.0065	1.1322	1.1814	1.2307	1.2799	1.3291	1.3783	1.4276	1.4768	1.5260	1.5753	1.6245		
54	0.9410	0.9905	1.0401	1.0896	1.1391	1.2789	1.3322	1.3855	1.4388	1.4921	1.5453	1.5986	1.6519	1.7052	1.7585	1.8118	
55	1.0186	1.0722	1.1259	1.1795	1.2331	1.2867	1.4421	1.4998	1.5575	1.6152	1.6728	1.7305	1.7882	1.8459	1.9036	1.9613	2.0189
56	1.0408	1.0956	1.1504	1.2052	1.2599	1.3147	1.4697	1.5285	1.5873	1.6461	1.7049	1.7636	1.8224	1.8812	1.9400	1.9988	2.0576
57	1.0613	1.1172	1.1730	1.2289	1.2848	1.3406	1.4951	1.5549	1.6147	1.6745	1.7343	1.7941	1.8539	1.9137	1.9735	2.0333	2.0931
58	1.0800	1.1369	1.1937	1.2505	1.3074	1.3642	1.5180	1.5787	1.6394	1.7001	1.7608	1.8216	1.8823	1.9430	2.0037	2.0644	2.1252
59	1.0968	1.1545	1.2123	1.2700	1.3277	1.3855	1.5383	1.5999	1.6614	1.7229	1.7845	1.8460	1.9075	1.9691	2.0306	2.0921	2.1537
60	1.1117	1.1702	1.2287	1.2872	1.3457	1.4042	1.5561	1.6183	1.6806	1.7428	1.8050	1.8673	1.9295	1.9918	2.0540	2.1163	2.1785
61	1.1245	1.1837	1.2429	1.3021	1.3613	1.4204	1.5254	1.5864	1.6474	1.7084	1.7695	1.8305	1.8915	1.9525	2.0135	2.0745	2.1355
62	1.1355	1.1952	1.2550	1.3147	1.3745	1.4343	1.4940	1.5538	1.6135	1.6733	1.7331	1.7928	1.8526	1.9124	1.9721	2.0319	2.0916
63	1.1111	1.1696	1.2281	1.2866	1.3450	1.4035	1.4620	1.5205	1.5790	1.6374	1.6959	1.7544	1.8129	1.8713	1.9298	1.9883	2.0468
64	1.0864	1.1436	1.2007	1.2579	1.3151	1.3723	1.4295	1.4866	1.5438	1.6010	1.6582	1.7153	1.7725	1.8297	1.8869	1.9441	2.0012
65	1.0612	1.1170	1.1729	1.2287	1.2846	1.3404	1.3963	1.4521	1.5080	1.5638	1.6197	1.6755	1.7314	1.7872	1.8431	1.8989	1.9548
66	1.0355	1.0900	1.1445	1.1990	1.2535	1.3080	1.3625	1.4170	1.4715	1.5260	1.5805	1.6350	1.6895	1.7440	1.7985	1.8529	1.9074
67	1.0095	1.0626	1.1157	1.1689	1.2220	1.2751	1.3283	1.3814	1.4345	1.4877	1.5408	1.5939	1.6471	1.7002	1.7533	1.8065	1.8596
68	0.9830	1.0348	1.0865	1.1382	1.1900	1.2417	1.2935	1.3452	1.3969	1.4487	1.5004	1.5522	1.6039	1.6556	1.7074	1.7591	1.8108
69	0.9560	1.0063	1.0566	1.1069	1.1573	1.2076	1.2579	1.3082	1.3585	1.4088	1.4592	1.5095	1.5598	1.6101	1.6604	1.7107	1.7610
70	0.9285	0.9773	1.0262	1.0751	1.1239	1.1728	1.2217	1.2705	1.3194	1.3683	1.4171	1.4660	1.5149	1.5637	1.6126	1.6615	1.7103



Example of interpolation for fractional age and service:

Using Tier I table when age is 55.25 years and service is 15.75 years

Look up the four factors (underlined and bold type) from the table Tier I of factors. The lookup age and years of service are the integer values which the actual age and years of service are between.

	Service	
Age	15	16
55	<u>2.7078</u>	<u>3.0403</u>
56	<u>2.7457</u>	<u>3.0570</u>
55.25	2.7172	3.0445

The age 55.25 interpolated value is 75% of the Age 55 factor and 25% of the Age 56 factor. (Age 55.25 is 25% of the difference between age 55 and age 56) These two interpolated factors are then used to interpolate based on service.

Taking the resulting age interpolated factors to further interpolate based on service:

	Service	
Age	15	16
55.25	2.7172	3.0445
		15.75
		2.9627

The final interpolated factor is 25% of the 15 year factor and 75% of the 16 year factor. (15.75 years is 75% of the difference between 15 and 16 years of service.)