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Human Resource Consulting

111 SW Fifth Avenue, Suite 2800
Portland, OR 97204-3693
877 273 5941 Fax 503 273 5999
brenda.majdic@mercer.com
www.mercerHR.com

November 29, 2005

Mr. Dale S. Orr
Actuarial Services Manager
Oregon PERS
P.O. Box 23700
Tigard, OR 97281-3700

Via E-Mail

Subject:
Request Number: 2005-086M
HB 2189 — New OPSRP Survivor Benefit Option Factors

Dear Dale:

As requested, attached are tables for converting a life annuity to the OPSRP survivor option factors described in HB 2189. Table 2(c) contains factors for converting a life annuity to a 100 Percent Joint and Survivor “pop-up” benefit, and Table 2(d) contains factors for converting a life annuity to a 50 Percent Joint and Survivor “pop-up” benefit.

Our Understanding

It is our understanding that HB 2189 added two additional benefit form options under Chapter 238A (OPSRP). The benefit forms added are “pop-up” benefits for the 100 Percent and 50 Percent Joint and Survivor options. That is, if a retiree elected one of these benefit options, and his/her beneficiary died, or the relationship between the retiree and beneficiary terminated, before the retiree dies the benefit amount payable to the retiree would “pop up” to the amount that would have been payable at the effective date of retirement as a life annuity under ORS 238A.180 or ORS 238A.185 adjusted by actual cost-of-living increases since the effective date of retirement. With the addition of these forms of benefit under OPSRP, PERS needs the appropriate actuarial reduction factors to convert an OPSRP life annuity to these forms of benefit.

Methods and Assumptions

The factors were calculated using the same methods and assumptions described in the January 28, 2005, letter from Milliman regarding 2004 OPSRP Actuarial Equivalency Factors. Specifically, the mortality table used to calculate these factors is a blend of the tables shown

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below. The discount rate is 8 percent and the assumed cost-of-living adjustment is 2 percent per year. Option 2A represents the 100 Percent Joint & Survivor Pop-Up Annuity and Option 3A represents the 50 Percent Joint & Survivor Pop-Up Annuity.

Mortality Group	Mortality Table	Blending	
		Opt. 2A	Opt. 3A
State/Local General Service Males	RP-2000 Male (-1.5 years)	37%	26%
State/Local Police & Fire Males	RP-2000 Male (-1 year)	6	15
School District Males	RP-2000 Male (-2 years)	19	11
State/Local General Service Females	RP-2000 Female (-1.5 years)	18	25
State/Local Police & Fire Females	RP-2000 Female (-1.5 years)	1	1
School District Females	RP-2000 Female (-3 years)	19	22
Total		100%	100%
Male Beneficiaries	RP-2000 Male (-1.5 years)	38%	48%
Female Beneficiaries	RP-2000 Female (-1.5 years)	62	52
Total Beneficiaries		100%	100%

The Option 2A or Option 3A factor is multiplied by the Normal or Early Retirement Benefit payable as a life only benefit. The factors are shown on the attached tables. Note that Table 2(c) and Table 2(d) are identical to the 2001 Actuarial Equivalency Factors tables for Option 2A and Option 3A under PERS, respectively, as provided by Milliman in the February 24, 2003 letter.

Our analysis and conclusions are based on our understanding of the request and the methods, assumptions and provisions described above. Differences in the methods, assumptions and interpretations of the plan provisions may produce different results.

Mercer Human Resource Consulting is not a law firm and cannot provide legal advice. You may wish to have the interpretation of HB 2189 described above reviewed by your legal counsel.

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If you have any questions about our response or need any additional information, please let us know.

Sincerely,

[BJM]

Brenda J. Majdic, ASA, EA, MAAA

ADS/BJM/wrh:gjw

Enclosure

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Debra Hembree

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The information contained in this document (including any attachments) is not intended by Mercer to be used, and it cannot be used, for the purpose of avoiding penalties under the Internal Revenue Code that may be imposed on the taxpayer.

Oregon Public Service Retirement Plan

2004 OPSRP Actuarial Equivalent Factors

Table 2(c)

100% Joint and Survivor Annuity with Pop-up Feature - Option 2A

(Factor Multiplied by Normal or Early Retirement Benefit)

Beneficiary Age Difference	Attained Age at Retirement																				
	50 or less	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70 or more
15 or More	0.877	0.871	0.864	0.857	0.849	0.842	0.833	0.825	0.816	0.807	0.797	0.787	0.777	0.766	0.756	0.744	0.733	0.722	0.710	0.698	0.686
14	0.879	0.873	0.867	0.860	0.853	0.845	0.837	0.829	0.820	0.811	0.801	0.792	0.782	0.771	0.761	0.750	0.739	0.727	0.716	0.704	0.692
13	0.882	0.876	0.870	0.863	0.856	0.848	0.840	0.832	0.824	0.815	0.806	0.796	0.786	0.776	0.766	0.755	0.744	0.733	0.722	0.710	0.699
12	0.885	0.879	0.873	0.866	0.859	0.852	0.844	0.836	0.828	0.819	0.810	0.801	0.791	0.781	0.771	0.760	0.750	0.739	0.728	0.717	0.705
11	0.888	0.882	0.876	0.869	0.863	0.855	0.848	0.840	0.832	0.823	0.815	0.806	0.796	0.786	0.776	0.766	0.756	0.745	0.734	0.723	0.712
10	0.891	0.885	0.879	0.873	0.866	0.859	0.852	0.844	0.836	0.828	0.819	0.810	0.801	0.792	0.782	0.772	0.762	0.751	0.741	0.730	0.719
9	0.894	0.888	0.882	0.876	0.870	0.863	0.856	0.848	0.841	0.832	0.824	0.815	0.806	0.797	0.788	0.778	0.768	0.758	0.748	0.737	0.726
8	0.897	0.891	0.885	0.880	0.873	0.867	0.860	0.852	0.845	0.837	0.829	0.820	0.812	0.803	0.793	0.784	0.774	0.764	0.754	0.744	0.734
7	0.900	0.894	0.889	0.883	0.877	0.871	0.864	0.857	0.849	0.842	0.834	0.826	0.817	0.808	0.799	0.790	0.781	0.771	0.761	0.751	0.741
6	0.903	0.898	0.892	0.887	0.881	0.875	0.868	0.861	0.854	0.847	0.839	0.831	0.823	0.814	0.805	0.796	0.787	0.778	0.768	0.759	0.749
5	0.906	0.901	0.896	0.890	0.884	0.878	0.872	0.866	0.859	0.851	0.844	0.836	0.828	0.820	0.811	0.803	0.794	0.785	0.776	0.766	0.757
4	0.909	0.904	0.899	0.894	0.888	0.883	0.876	0.870	0.863	0.856	0.849	0.841	0.834	0.826	0.817	0.809	0.800	0.792	0.783	0.774	0.765
3	0.912	0.907	0.903	0.897	0.892	0.887	0.881	0.874	0.868	0.861	0.854	0.847	0.839	0.831	0.823	0.815	0.807	0.799	0.790	0.781	0.772
2	0.915	0.911	0.906	0.901	0.896	0.891	0.885	0.879	0.873	0.866	0.859	0.852	0.845	0.837	0.830	0.822	0.814	0.806	0.797	0.789	0.780
1	0.918	0.914	0.909	0.905	0.900	0.895	0.889	0.883	0.877	0.871	0.864	0.858	0.851	0.843	0.836	0.828	0.820	0.813	0.805	0.797	0.788
0	0.921	0.917	0.913	0.908	0.904	0.899	0.893	0.888	0.882	0.876	0.870	0.863	0.856	0.849	0.842	0.835	0.827	0.820	0.812	0.804	0.796
-1	0.924	0.921	0.916	0.912	0.907	0.903	0.898	0.892	0.887	0.881	0.875	0.868	0.862	0.855	0.848	0.841	0.834	0.827	0.819	0.812	0.804
-2	0.927	0.924	0.920	0.916	0.911	0.907	0.902	0.897	0.891	0.886	0.880	0.874	0.867	0.861	0.854	0.847	0.841	0.834	0.827	0.820	0.812
-3	0.931	0.927	0.923	0.919	0.915	0.911	0.906	0.901	0.896	0.890	0.885	0.879	0.873	0.867	0.860	0.854	0.847	0.841	0.834	0.827	0.820
-4	0.934	0.930	0.927	0.923	0.919	0.914	0.910	0.905	0.900	0.895	0.890	0.884	0.878	0.872	0.866	0.860	0.854	0.847	0.841	0.835	0.828
-5	0.936	0.933	0.930	0.926	0.922	0.918	0.914	0.909	0.905	0.900	0.895	0.889	0.884	0.878	0.872	0.866	0.860	0.854	0.848	0.842	0.836
-6	0.939	0.936	0.933	0.930	0.926	0.922	0.918	0.914	0.909	0.904	0.899	0.894	0.889	0.883	0.878	0.872	0.867	0.861	0.855	0.849	0.843
-7	0.942	0.939	0.936	0.933	0.929	0.926	0.922	0.918	0.913	0.909	0.904	0.899	0.894	0.889	0.884	0.878	0.873	0.867	0.862	0.856	0.851
-8	0.945	0.942	0.939	0.936	0.933	0.929	0.925	0.922	0.917	0.913	0.909	0.904	0.899	0.894	0.889	0.884	0.879	0.874	0.869	0.863	0.858
-9	0.948	0.945	0.942	0.939	0.936	0.933	0.929	0.925	0.921	0.917	0.913	0.909	0.904	0.899	0.895	0.890	0.885	0.880	0.875	0.870	0.865
-10	0.950	0.948	0.945	0.942	0.939	0.936	0.933	0.929	0.925	0.922	0.918	0.913	0.909	0.904	0.900	0.895	0.891	0.886	0.882	0.877	0.872
-11	0.953	0.950	0.948	0.945	0.942	0.939	0.936	0.933	0.929	0.926	0.922	0.918	0.914	0.909	0.905	0.901	0.896	0.892	0.888	0.883	0.879
-12	0.955	0.953	0.951	0.948	0.945	0.943	0.940	0.936	0.933	0.930	0.926	0.922	0.918	0.914	0.910	0.906	0.902	0.898	0.894	0.890	0.885
-13	0.958	0.955	0.953	0.951	0.948	0.946	0.943	0.940	0.937	0.933	0.930	0.926	0.923	0.919	0.915	0.911	0.907	0.903	0.899	0.896	0.892
-14	0.960	0.958	0.956	0.954	0.951	0.949	0.946	0.943	0.940	0.937	0.934	0.930	0.927	0.923	0.920	0.916	0.912	0.909	0.905	0.901	0.898
-15 or More	0.962	0.960	0.958	0.956	0.954	0.951	0.949	0.946	0.943	0.941	0.937	0.934	0.931	0.928	0.924	0.921	0.917	0.914	0.910	0.907	0.903

* 15 or More use A-B(Y), where Y=Age Difference in Years; Add five years to a disabled member's age.

(A)	0.9070	0.9025	0.8970	0.8915	0.8850	0.8795	0.8720	0.8655	0.8595	0.8520	0.8435	0.8365	0.8280	0.8185	0.8115	0.8025	0.7930	0.7850	0.7745	0.7655	0.7565
(B)	0.0020	0.0021	0.0022	0.0023	0.0024	0.0025	0.0026	0.0027	0.0029	0.0030	0.0031	0.0033	0.0034	0.0035	0.0037	0.0039	0.0040	0.0042	0.0043	0.0045	0.0047

Oregon Public Service Retirement Plan

2004 OPSRP Actuarial Equivalent Factors

Table 2(d)

50% Joint and Survivor Annuity with Pop-up Feature - Option 3A

(Factor Multiplied by Normal or Early Retirement Benefit)

Beneficiary Age Difference	Attained Age at Retirement																				
	50 or less	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70 or more
15 or More	0.936	0.932	0.929	0.925	0.920	0.916	0.911	0.906	0.901	0.895	0.890	0.884	0.877	0.871	0.864	0.857	0.850	0.842	0.834	0.826	0.818
14	0.937	0.934	0.930	0.926	0.922	0.918	0.913	0.908	0.903	0.898	0.892	0.886	0.880	0.874	0.867	0.860	0.853	0.846	0.838	0.830	0.822
13	0.939	0.935	0.932	0.928	0.924	0.920	0.915	0.911	0.906	0.900	0.895	0.889	0.883	0.877	0.870	0.864	0.857	0.850	0.842	0.835	0.827
12	0.940	0.937	0.934	0.930	0.926	0.922	0.918	0.913	0.908	0.903	0.898	0.892	0.886	0.880	0.874	0.867	0.861	0.854	0.847	0.839	0.832
11	0.942	0.939	0.935	0.932	0.928	0.924	0.920	0.915	0.911	0.906	0.900	0.895	0.889	0.883	0.877	0.871	0.864	0.858	0.851	0.844	0.836
10	0.944	0.940	0.937	0.934	0.930	0.926	0.922	0.918	0.913	0.908	0.903	0.898	0.892	0.887	0.881	0.875	0.868	0.862	0.855	0.848	0.841
9	0.945	0.942	0.939	0.936	0.932	0.928	0.924	0.920	0.916	0.911	0.906	0.901	0.896	0.890	0.884	0.878	0.872	0.866	0.859	0.853	0.846
8	0.947	0.944	0.941	0.938	0.934	0.930	0.927	0.922	0.918	0.914	0.909	0.904	0.899	0.893	0.888	0.882	0.876	0.870	0.864	0.857	0.851
7	0.949	0.946	0.943	0.940	0.936	0.933	0.929	0.925	0.921	0.916	0.912	0.907	0.902	0.897	0.892	0.886	0.880	0.874	0.868	0.862	0.856
6	0.950	0.947	0.945	0.942	0.938	0.935	0.931	0.927	0.923	0.919	0.915	0.910	0.905	0.900	0.895	0.890	0.884	0.879	0.873	0.867	0.861
5	0.952	0.949	0.946	0.944	0.940	0.937	0.934	0.930	0.926	0.922	0.918	0.913	0.909	0.904	0.899	0.894	0.888	0.883	0.877	0.872	0.866
4	0.954	0.951	0.948	0.946	0.943	0.939	0.936	0.932	0.929	0.925	0.921	0.916	0.912	0.907	0.902	0.898	0.892	0.887	0.882	0.876	0.871
3	0.955	0.953	0.950	0.948	0.945	0.942	0.938	0.935	0.931	0.928	0.924	0.920	0.915	0.911	0.906	0.901	0.897	0.892	0.886	0.881	0.876
2	0.957	0.955	0.952	0.950	0.947	0.944	0.941	0.937	0.934	0.930	0.927	0.923	0.919	0.914	0.910	0.905	0.901	0.896	0.891	0.886	0.881
1	0.959	0.956	0.954	0.952	0.949	0.946	0.943	0.940	0.937	0.933	0.930	0.926	0.922	0.918	0.913	0.909	0.905	0.900	0.895	0.891	0.886
0	0.960	0.958	0.956	0.954	0.951	0.948	0.945	0.942	0.939	0.936	0.932	0.929	0.925	0.921	0.917	0.913	0.909	0.904	0.900	0.895	0.891
-1	0.962	0.960	0.958	0.955	0.953	0.950	0.948	0.945	0.942	0.939	0.935	0.932	0.928	0.924	0.921	0.917	0.913	0.908	0.904	0.900	0.895
-2	0.964	0.962	0.960	0.957	0.955	0.953	0.950	0.947	0.944	0.941	0.938	0.935	0.931	0.928	0.924	0.920	0.916	0.912	0.908	0.904	0.900
-3	0.965	0.963	0.961	0.959	0.957	0.955	0.952	0.950	0.947	0.944	0.941	0.938	0.934	0.931	0.927	0.924	0.920	0.916	0.913	0.909	0.905
-4	0.967	0.965	0.963	0.961	0.959	0.957	0.954	0.952	0.949	0.947	0.944	0.941	0.937	0.934	0.931	0.927	0.924	0.920	0.917	0.913	0.909
-5	0.968	0.967	0.965	0.963	0.961	0.959	0.957	0.954	0.952	0.949	0.946	0.943	0.940	0.937	0.934	0.931	0.928	0.924	0.921	0.917	0.914
-6	0.970	0.968	0.967	0.965	0.963	0.961	0.959	0.956	0.954	0.952	0.949	0.946	0.943	0.940	0.937	0.934	0.931	0.928	0.925	0.922	0.918
-7	0.971	0.970	0.968	0.966	0.965	0.963	0.961	0.959	0.956	0.954	0.951	0.949	0.946	0.943	0.941	0.938	0.935	0.932	0.929	0.926	0.923
-8	0.973	0.971	0.970	0.968	0.966	0.965	0.963	0.961	0.959	0.956	0.954	0.951	0.949	0.946	0.944	0.941	0.938	0.935	0.932	0.930	0.927
-9	0.974	0.973	0.971	0.970	0.968	0.966	0.965	0.963	0.961	0.959	0.956	0.954	0.952	0.949	0.947	0.944	0.941	0.939	0.936	0.933	0.931
-10	0.975	0.974	0.973	0.971	0.970	0.968	0.967	0.965	0.963	0.961	0.959	0.956	0.954	0.952	0.949	0.947	0.945	0.942	0.940	0.937	0.935
-11	0.977	0.976	0.974	0.973	0.971	0.970	0.968	0.967	0.965	0.963	0.961	0.959	0.957	0.954	0.952	0.950	0.948	0.945	0.943	0.941	0.938
-12	0.978	0.977	0.976	0.974	0.973	0.972	0.970	0.968	0.967	0.965	0.963	0.961	0.959	0.957	0.955	0.953	0.951	0.948	0.946	0.944	0.942
-13	0.979	0.978	0.977	0.976	0.975	0.973	0.972	0.970	0.969	0.967	0.965	0.963	0.961	0.959	0.957	0.955	0.953	0.951	0.949	0.947	0.945
-14	0.980	0.979	0.978	0.977	0.976	0.975	0.973	0.972	0.970	0.969	0.967	0.965	0.964	0.962	0.960	0.958	0.956	0.954	0.952	0.950	0.949
-15 or More	0.981	0.980	0.980	0.978	0.977	0.976	0.975	0.974	0.972	0.971	0.969	0.967	0.966	0.964	0.962	0.960	0.959	0.957	0.955	0.953	0.952

* 15 or More use A-B(Y), where Y=Age Difference in Years; Add five years to a disabled member's age.

(A)	0.9525	0.9500	0.9485	0.9460	0.9410	0.9385	0.9350	0.9315	0.9280	0.9235	0.9200	0.9155	0.9100	0.9070	0.9015	0.8975	0.8920	0.8855	0.8805	0.8755	0.8705
(B)	0.0011	0.0012	0.0013	0.0014	0.0014	0.0015	0.0016	0.0017	0.0018	0.0019	0.0020	0.0021	0.0022	0.0024	0.0025	0.0027	0.0028	0.0029	0.0031	0.0033	0.0035