



New York State/SUNY

Development of Recommended Actuarial Assumptions for Other
Post Employment Benefit Plans Actuarial Valuations

Participating Employer Version

December 2017

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Section 1 – Executive Summary

At the request of the New York State Department of Civil Service (DCS), Aon Hewitt has developed actuarial assumptions for use by New York State and SUNY for the April 1, 2017 valuation of its obligation for postemployment benefits other than pension plans (OPEB) under Governmental Accounting Standard (GASB) Statements 45 and 75. The basis for the development of these assumptions is outlined in our September 8, 2017 report to New York State Department of Civil Service (DCS), ***New York State/SUNY Development of Recommended Actuarial Assumptions for 4/1/2017 Other Post Employment Benefit Plans Actuarial Valuations***. Employers who are Participating Employers (PEs) of the New York State Health Insurance Program (NYSHIP) may need to value their OPEB obligation under GASB 45 or GASB 75, depending on the fiscal year being valued. In order to assist PEs with their valuation, and at the request of DCS, Aon Hewitt has prepared this separate report, which presents the excerpts of our reports that may be relevant to the PEs. The assumptions in this report are a Statement of Actuarial Opinion, prepared by Tom Vicente and Betsy Hanson. Both Mr. Vicente and Ms. Hanson are Fellows of the Society of Actuaries and are Members of the American Academy of Actuaries and have met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The Actuarial Assumptions Section presents assumptions that we and/or DCS believe may be relevant to the PEs along with some basic rationale for many of the selections. The rest of the report provides more detail and support for development of certain major assumptions.

This report is being provided to PEs solely as guidance. Because Aon Hewitt prepared assumptions strictly for use by the State and SUNY in valuing its OPEB obligation, the assumptions discussed herein may or may not be appropriate for an individual PE. Each employer should assess its own demographics and health care environment in order to develop the actuarial assumptions most appropriate for its own population, in consultation with its own actuarial and financial advisors. Furthermore, because some employers provide their retirees or other former employees with other post-employment benefits not through NYSHIP, such as dental and life insurance, each PE will need to determine its own actuarial assumptions appropriate for valuing these benefits.

Section 2 – Actuarial Assumptions

Actuarial assumptions are assumptions as to the occurrence of future events affecting OPEB costs. We performed the April 1, 2017 GASB 45 and/or GASB 75 (depending on the applicable fiscal year) actuarial valuations for New York State and SUNY based on the following Actuarial Assumptions:

MEASUREMENT DATE: The valuation is performed as of April 1, 2017. In the ordinary course of our valuation work, results are to be rolled forward to establish the expense for the various Fiscal Years.

DISCOUNT RATE: Under GASB 75, since the plan is not pre-funded, this discount rate is tied to a 20-year municipal bond rate as of the Participating Agency's measurement date. New York State has selected the value of the Bond Buyer 20-Bond GO index closest to this date. Under GASB 45, 2.398% the average Short Term Investment Pool rate for the past 20 years, as developed by the Office of the State Comptroller. Since the plan is not pre-funded, the discount rate assumption is based on the yield of unrestricted employer assets.

PER-CAPITA PLAN COSTS: GASB 45 and 75 indicate that per capita plan costs should be based upon claim costs or age adjusted premiums. State enrollees comprise over 50% of the overall Empire Plan enrollment. Changes in the demographics of State employees and retirees more immediately affect overall Empire Plan costs than other, smaller groups. Therefore, we believe it is more appropriate to establish per capita plan costs for the State's valuation of its liability based on the underlying Empire Plan claim costs of the retiree groups being valued.

Note for PEs: *In the past, many PEs utilized community rated premium rates. Based on ASOP 6, this is no longer appropriate and plans should value the age related costs.*

For retirees in HMOs, the per capita costs were developed using a weighted average of the 2016 community rates based on inactive enrollment in the plans as of April 1, 2016. The rates were then trended forward to the period April 1, 2016 – March 31, 2017. The revised ASOP No. 6, section 3.7.7.b calls for consideration of age-specific costs when valuing participants in a pooled health plan such as NYSHIP. This actuarial standard is effective for any valuation with a measurement date on or after March 31, 2015. Therefore, we've added aging to the HMO per capita claim costs calculation. Please see Exhibit 2-1 for claim cost values by age.

Some of these HMOs do not offer Employer Group Waiver Programs (EGWP) plans, and instead the Retiree Drug Subsidy is requested. This revenue does not reduce the liability of the plan.

For retirees in the Empire Plan, the per capita costs were based on 2016 incurred claims, paid through March 31, 2017, for the hospital, medical, MH/SA, and prescription drug benefit programs for retired participants in the State plan (excluding PA and PE participants), along with enrollment, split between Medicare eligible and non-Medicare eligible participants. The experience was projected to the period April 1, 2017 – March 31, 2018, and adjusted as shown in the detail in Exhibit 2-1. The age 65 rates are shown below:

Coverage	Non-Medicare Eligible	Medicare Eligible	
		Before EGWP	Reflects EGWP Revenue
Medical	\$15,696	\$1,260	\$1,260
Drug	<u>\$3,553</u>	<u>\$3,553</u>	<u>\$2,582</u>
Total	\$19,249	\$4,813	\$3,842

Certain individuals are enrolled in Medicare Part D Prescription Drug Plans (generally low income individuals who qualify for various federal additional benefits). NYSHIP does not currently provide drug benefits for these individuals.

Note for PEs: NYSHIP includes the Medicare Part B Premium reimbursement as a component of cost used to calculate retiree contributions for the Participating Employer employees and retirees. The premiums shown on Exhibit 2-1 reflect this component. The Empire Plan provides drug benefits to Medicare retirees through an EGWP. We have estimated the impact of the EGWP and indicate that amount on Exhibit 2-1.

RETIREE CONTRIBUTIONS: The State sets retiree contributions as a percentage of premiums. Premiums are established for active employees and retirees combined. Retirees contribute varying percentages of premiums. The blended premium rate for valuation purposes based on the combination of the HMO plans is shown below.

	4/1/2017 - 3/31/2018 HMO Rates		
	Rates Used for Contribution Purposes		
	Non Rx	Rx	Total
Retiree/SS	\$6,497	\$1,923	\$8,420
Spouse	\$9,186	\$2,876	\$12,062

MEDICARE PART B PREMIUM: The State reimburses the Medicare Part B premium of Medicare eligible participants, the cost of which is socialized across all plan participants through plan premium rates. For Fiscal Year 2018, we project the average Medicare Part B premium to be \$1,608 per Medicare eligible individual. This amount is based on the Part B premium rate for 2017 for participants with income of less than \$85,000.

MEDICARE COORDINATION: Medicare is assumed to remain the primary payor for current and future retirees and spouses who are at least age 65. Medicare can also be the primary payor for individuals under age 65 who have been eligible to receive Social Security Disability benefits for 24 months, which in turn starts after a waiting period of 5 months of disability. For valuation purposes, Medicare is assumed to be the primary payor for current retirees and spouses under age 65 if the census data indicated that Medicare is currently the primary payor.

Certain individuals who are at least age 65 as of the valuation date are not indicated as being on Medicare in the census data. For valuation purposes, we will assume individuals who have attained age

66 as of the valuation date never go onto Medicare. Individuals who are age 65 but not coded as being on Medicare will be assumed to be affected by an administrative lag and thus are assumed to enroll in Medicare immediately.

We reviewed the census data for disability retirees who have been retired long enough to qualify for Medicare. Based on that data, we have assumed that Medicare will ultimately be the primary payor for 40% of future disabled Police and Fire Retirement System (PFRS) participants and 75% of all other future disabled participants. We have assumed for valuation purposes that the average period for qualifying for disability retirement is five months, thus we assume that Medicare commences for disability retirees once they have been on disability retirement for 24 months. We have also assumed that Medicare will be the primary payor for the same proportions of those disability retirees who have been retired less than 24 months once they have been on disability retirement for 24 months. For the remaining participants who are currently disabled or who become disabled, we have assumed that Medicare is the primary payor at age 65.

HEALTH CARE COST TREND: Per-capita retiree plan costs and premiums used to establish retiree contribution rates are assumed to increase each year in accordance with the following schedule:

From year	To year	Medical			EGWP
		<65	65+	Rx	Revenue
2017/18 ==>	2018/19	6.25%	5.20%	9.50%	9.50%
2018/19 ==>	2019/20	5.75%	5.10%	9.00%	9.00%
2019/20 ==>	2020/21	5.75%	5.00%	8.00%	8.00%
2020/21 ==>	2021/22	5.50%	4.90%	7.00%	7.00%
2021/22 ==>	2022/23	5.25%	4.80%	6.00%	6.00%
2022/23 ==>	2023/24	5.00%	4.80%	5.50%	5.50%
2023/24 ==>	2024/25	5.00%	4.75%	5.25%	5.25%
2024/25 ==>	2025/26	4.75%	4.75%	5.00%	5.00%
	2025/26+	4.50%	4.50%	4.50%	4.50%

The drug trend shown above applies to the drug costs and premiums associated with both the Empire Plan and HMOs. In addition, the non-Medicare eligible medical trend applies for those HMOs which do not distinguish different costs and premiums between non-Medicare and Medicare eligibles.

We assume that average fiscal year Medicare Part B premiums will increase at the same underlying health care trends as for Medical benefits to Medicare retirees.

AGE RELATED MORBIDITY: To reflect the differences in covered healthcare expenses due to aging, the increase in the per-capita plan costs for each age is assumed to be as follows:

Age	Medical Costs	Rx
40-44	3.0%	4.8%
45-49	3.7%	4.7%
50-54	4.2%	4.7%
55-59	4.4%	4.6%
60-64	3.7%	4.6%
65-69	2.7%	3.8%
70-74	1.8%	2.5%
75-79	2.2%	0.8%
80-84	2.8%	0.2%
85-89	1.4%	0.1%
90+	0.0%	0.0%

The age related morbidity factors are applied to the per-capita plan costs for the Empire Plan and the HMO plans.

Note for PEs: *In the past, many PEs utilized community rated premium rates. Based on updates to ASOP 6, this is no longer appropriate and plans should value the age related costs.*

HIGH COST PLAN EXCISE TAX: The Health Care Reform legislation added a new high cost plan excise tax (also known as the “Cadillac tax”). On December 18, 2015, the President signed the Consolidated Appropriations Act, 2016 into law. The new law includes provisions which impact the excise tax on high-cost group health plans introduced by the Affordable Care Act, as it will delay implementation of the excise tax for two years (i.e., from 2018 to 2020) and allow the excise tax to be deductible to the taxpayer. For valuation purposes, we will assume that the value of the tax will be passed back to NYSHIP in higher premium rates and that this additional cost is also shared with the retiree using the same contribution percentages that are applied.

The tax is 40% of the excess of a) the cost of coverage over b) the limit. We will calculate “a” (the cost of coverage) using the premiums that are the basis of retiree contributions (i.e., based on Exhibit 2-1). We will calculate “b” (the limit) starting with the statutory limits (\$10,200 single and \$27,500 family in 2018), adjusted for the following:

- Limits will increase from 2018 to 2019 by 3.50% (CPI plus 1%);
- Limits will increase after 2019 by 2.50% (CPI);
- For retirees over age 55 but not on Medicare, the limit will be increased additional dollar amount of \$1,650 for single coverage, \$3,450 for family coverage¹; and

¹ Additional Amounts are available at other ages for plans sponsored by an employer where the majority of employees are engaged in high risk professions including law enforcement officers. Since only a minority of the retirees in the NY State valuation are police, we are assuming that this exception would not apply. However it may be that a participating employer would qualify for this additional limit.

- Accumulated estimated medical/drug trend for the period from 2010 through 2018 for the federal standard Blue Cross/Blue Shield option will be compared with the assumed 55% trend increase embodied in the High Cost Plan Excise Tax statutory language, with trend in excess of 55% applied on the base amount before the additional amount for “early” retirees.

The impact of the excise tax on high cost plans is calculated as an adjustment to the trend rates. Exhibit 4-1 shows the adjusted trend rates due to the excise tax.

MORTALITY: These assumptions are based on the experience under the New York State & Local Retirement System and the New York State Teachers’ Retirement System.

In order to reflect future mortality improvement, the mortality is projected generationally using the MP-2014 projection scale. The base tables are shown in Exhibit 2-3, which were published effective 2015 for the Employees’ Retirement System (ERS) and Police and Fire Retirement System (PFRS) and 2015 for TRS. All projections to each payment year start with these tables.

SUNY Campus employees who are not clearly identifiable as PFRS members are valued using TRS assumptions.

WITHDRAWAL, DISABILITY, AND RETIREMENT: Rates of decrement as summarized in Exhibits 2-4 through 2-6. The rates are based on the experience under the New York State & Local Retirement System and the New York State Teachers’ Retirement System, except as noted.

SUNY Campus employees who are not clearly identifiable as PFRS participants are valued using TRS assumptions, with modifications to the TRS retirement rates. SUNY Hospital employee withdrawal rates are based on actual SUNY Hospital experience. Retirement rates for SUNY Syracuse Hospital employees have been modified to reflect SUNY experience. These assumptions were altered in the last valuation.

Note for PEs: Each individual PE should determine appropriate assumptions to use for its own valuation purposes. For more information on these assumptions, please see discussion in the Demographic Assumptions Section.

PROJECTED SALARY INCREASE ASSUMPTION: Based on the experience under the New York State & Local Retirement System and the New York State Teachers’ Retirement System, as summarized in Exhibit 2-7.

GENERAL INFLATION: 2.50% assumed long-term inflation.

VESTEE COVERAGE: Vestees pay 100% of premium prior to eligibility for retiree medical benefits. Beginning at age 55, we value all vestees – those in HMOs as well as those in the Empire Plan – consistent with our valuation assumption for retirees.

For current vestees, we assume all will opt to switch from vestee status to retiree status at age 55.

For future vested terminations, we have assumed that the following percentage of terminated employees (excluding those terminated due to death, disability or retirement) will elect to remain in their current medical plan option as a vestee:

Age	Percent Electing
Under 40	0%
40-43	5%
44	20%
45-46	30%
47-48	40%
49	50%
50-51	80%
52-54	100%

PLAN ELECTIONS: 100% of future retirees who are currently participating in NYSHIP coverage are assumed to participate in the retiree medical program at retirement. 100% of Active participants in the NYSHIP opt-out program are assumed to be covered under NYSHIP in retirement. We assume that all retirees (i.e., current actives and current non-Medicare eligible retirees) will participate in their current medical plan option prior to Medicare eligibility, with the exception of active participants in the NYSHIP opt-out program. Those participants are assumed to elect coverage in the Empire Plan at retirement.

For current non-Medicare eligible retirees and future retirees, all who currently participate in the Empire Plan are assumed to remain in the Empire Plan upon becoming eligible for Medicare. For those currently in HMOs, 32% of current non-Medicare retirees and 32% of future retirees will migrate to the Empire Plan upon attainment of Medicare eligibility. The HMO migration assumption for future retirees is unchanged since the previous valuation, and the assumption for current non-Medicare retirees remained the same. This is because a larger portion of current actives are already in the Empire Plan, resulting in less migration at Medicare eligibility.

In all instances, spouses are assumed to participate in the same medical plan option as the retiree. If the retiree is deceased, the spouse is assumed to participate in the same health care plan as the retiree would have been assumed to participate in if he or she were alive.

Note for PEs: *This assumption was based on the experience of the State and SUNY retirees. Plan elections and enrollment may differ for a different population.*

DEPENDENTS: For current retirees, actual data is used regarding dependent coverage. For future retirees, we modeled the percentage of active participants married as well as the age difference between the enrollee and spouse, based on data for older actives and recent retirees. We assume 60% of males and 50% of females will be married at retirement, and all married spouses will be covered under NYSHIP. Female spouses are assumed to be 3 years younger than their husbands, and male spouses are assumed to be 2 years older than their wives.

Note for PEs: *This assumption was based on the experience of the State and SUNY retirees. Each PE should consider the demographics of its own population when developing this assumption.*

ASSETS: We assume the State will not set aside any assets to prefund its retiree medical liabilities.

CENSUS DATA: Census data was provided by New York State Department of Civil Service as of April 1, 2017. Reasonable assumptions were made if any data elements are unavailable or if any data elements are not within a reasonable range.

Note for PEs: Individual agency census data will be provided by DCS upon request.

SUBSEQUENT EVENTS: The assumptions in this report were developed in August 2017. We have not revised the assumptions to reflect updated Empire Plan claim experience, Empire Plan premiums, or Medicare Part B premiums, nor any other more recent event except as noted.

EXHIBIT 2-1 Per Capita Gross Plan Costs
4/1/2017-3/31/2018

<u>Age</u>	<u>PPO claim costs</u>				<u>HMO claim costs</u>		
	<u>Medical</u>	<u>Rx</u>	<u>EGWP Revenue</u>	<u>Total</u>	<u>Medical</u>	<u>Rx</u>	<u>Total</u>
1	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
2	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
3	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
4	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
5	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
6	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
7	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
8	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
9	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
10	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
11	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
12	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
13	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
14	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
15	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
16	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
17	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
18	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
19	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
20	\$3,422	\$443	n/a	\$3,865	\$3,211	\$360	\$3,570
21	\$3,524	\$465	n/a	\$3,989	\$3,307	\$377	\$3,684
22	\$3,630	\$487	n/a	\$4,117	\$3,406	\$395	\$3,801
23	\$3,739	\$510	n/a	\$4,249	\$3,508	\$414	\$3,922
24	\$3,851	\$535	n/a	\$4,386	\$3,614	\$434	\$4,047
25	\$3,967	\$561	n/a	\$4,527	\$3,722	\$455	\$4,177
26	\$4,086	\$587	n/a	\$4,673	\$3,834	\$476	\$4,310
27	\$4,208	\$616	n/a	\$4,824	\$3,949	\$499	\$4,448
28	\$4,334	\$645	n/a	\$4,980	\$4,067	\$523	\$4,591
29	\$4,464	\$676	n/a	\$5,141	\$4,189	\$548	\$4,738
30	\$4,598	\$709	n/a	\$5,307	\$4,315	\$575	\$4,890
31	\$4,736	\$743	n/a	\$5,479	\$4,444	\$602	\$5,047
32	\$4,878	\$778	n/a	\$5,657	\$4,578	\$631	\$5,209
33	\$5,025	\$816	n/a	\$5,840	\$4,715	\$662	\$5,377
34	\$5,175	\$855	n/a	\$6,030	\$4,856	\$693	\$5,550
35	\$5,331	\$896	n/a	\$6,227	\$5,002	\$727	\$5,729
36	\$5,491	\$939	n/a	\$6,429	\$5,152	\$762	\$5,914
37	\$5,655	\$984	n/a	\$6,639	\$5,307	\$798	\$6,105
38	\$5,825	\$1,031	n/a	\$6,856	\$5,466	\$836	\$6,302
39	\$6,000	\$1,081	n/a	\$7,080	\$5,630	\$877	\$6,506
40	\$6,180	\$1,132	n/a	\$7,312	\$5,799	\$919	\$6,717

**EXHIBIT 2-1 Per Capita Gross Plan Costs
4/1/2017-3/31/2018**

<u>Age</u>	<u>PPO claim costs</u>			<u>HMO claim costs</u>			
	<u>Medical</u>	<u>Rx</u>	<u>EGWP Revenue</u>	<u>Total</u>	<u>Medical</u>	<u>Rx</u>	<u>Total</u>
41	\$6,365	\$1,187	n/a	\$7,552	\$5,973	\$963	\$6,935
42	\$6,556	\$1,244	n/a	\$7,800	\$6,152	\$1,009	\$7,161
43	\$6,753	\$1,303	n/a	\$8,056	\$6,337	\$1,057	\$7,394
44	\$6,955	\$1,366	n/a	\$8,321	\$6,527	\$1,108	\$7,635
45	\$7,164	\$1,432	n/a	\$8,596	\$6,722	\$1,161	\$7,884
46	\$7,429	\$1,499	n/a	\$8,928	\$6,971	\$1,216	\$8,187
47	\$7,704	\$1,569	n/a	\$9,273	\$7,229	\$1,273	\$8,502
48	\$7,989	\$1,643	n/a	\$9,632	\$7,497	\$1,333	\$8,829
49	\$8,285	\$1,720	n/a	\$10,005	\$7,774	\$1,395	\$9,169
50	\$8,591	\$1,801	n/a	\$10,392	\$8,062	\$1,461	\$9,523
51	\$8,952	\$1,886	n/a	\$10,838	\$8,400	\$1,530	\$9,930
52	\$9,328	\$1,974	n/a	\$11,302	\$8,753	\$1,602	\$10,355
53	\$9,720	\$2,067	n/a	\$11,787	\$9,121	\$1,677	\$10,797
54	\$10,128	\$2,164	n/a	\$12,292	\$9,504	\$1,756	\$11,259
55	\$10,553	\$2,266	n/a	\$12,820	\$9,903	\$1,838	\$11,741
56	\$11,018	\$2,370	n/a	\$13,388	\$10,339	\$1,923	\$12,261
57	\$11,503	\$2,479	n/a	\$13,982	\$10,793	\$2,011	\$12,805
58	\$12,009	\$2,593	n/a	\$14,602	\$11,268	\$2,104	\$13,372
59	\$12,537	\$2,713	n/a	\$15,250	\$11,764	\$2,200	\$13,965
60	\$13,089	\$2,838	n/a	\$15,926	\$12,282	\$2,302	\$14,583
61	\$13,573	\$2,968	n/a	\$16,541	\$12,736	\$2,408	\$15,144
62	\$14,075	\$3,105	n/a	\$17,180	\$13,207	\$2,518	\$15,726
63	\$14,596	\$3,247	n/a	\$17,843	\$13,696	\$2,634	\$16,330
64	\$15,136	\$3,397	n/a	\$18,533	\$14,203	\$2,755	\$16,958
65	\$1,260	\$3,553	(\$971)	\$3,842	\$1,087	\$2,369	\$3,457
66	\$1,294	\$3,688	(\$1,008)	\$3,974	\$1,117	\$2,459	\$3,576
67	\$1,329	\$3,828	(\$1,046)	\$4,111	\$1,147	\$2,553	\$3,700
68	\$1,365	\$3,974	(\$1,086)	\$4,253	\$1,178	\$2,650	\$3,827
69	\$1,402	\$4,125	(\$1,127)	\$4,399	\$1,210	\$2,750	\$3,960
70	\$1,440	\$4,281	(\$1,170)	\$4,551	\$1,242	\$2,855	\$4,097
71	\$1,465	\$4,388	(\$1,199)	\$4,655	\$1,265	\$2,926	\$4,191
72	\$1,492	\$4,498	(\$1,229)	\$4,761	\$1,288	\$2,999	\$4,287
73	\$1,519	\$4,611	(\$1,260)	\$4,869	\$1,311	\$3,074	\$4,385
74	\$1,546	\$4,726	(\$1,292)	\$4,980	\$1,334	\$3,151	\$4,485
75	\$1,574	\$4,844	(\$1,324)	\$5,094	\$1,358	\$3,230	\$4,588
76	\$1,608	\$4,883	(\$1,334)	\$5,157	\$1,388	\$3,256	\$4,644
77	\$1,644	\$4,922	(\$1,345)	\$5,221	\$1,419	\$3,282	\$4,700
78	\$1,680	\$4,961	(\$1,356)	\$5,285	\$1,450	\$3,308	\$4,758
79	\$1,717	\$5,001	(\$1,367)	\$5,351	\$1,482	\$3,334	\$4,816
80	\$1,755	\$5,041	(\$1,378)	\$5,418	\$1,514	\$3,361	\$4,876

**EXHIBIT 2-1 Per Capita Gross Plan Costs
4/1/2017-3/31/2018**

<u>Age</u>	<u>PPO claim costs</u>				<u>HMO claim costs</u>		
	<u>Medical</u>	<u>Rx</u>	<u>EGWP Revenue</u>	<u>Total</u>	<u>Medical</u>	<u>Rx</u>	<u>Total</u>
81	\$1,804	\$5,051	(\$1,380)	\$5,474	\$1,557	\$3,368	\$4,925
82	\$1,854	\$5,061	(\$1,383)	\$5,532	\$1,600	\$3,375	\$4,975
83	\$1,906	\$5,071	(\$1,386)	\$5,592	\$1,645	\$3,381	\$5,027
84	\$1,960	\$5,081	(\$1,389)	\$5,652	\$1,691	\$3,388	\$5,079
85	\$2,015	\$5,091	(\$1,391)	\$5,715	\$1,739	\$3,395	\$5,134
86	\$2,043	\$5,097	(\$1,393)	\$5,746	\$1,763	\$3,398	\$5,161
87	\$2,071	\$5,102	(\$1,394)	\$5,779	\$1,788	\$3,402	\$5,189
88	\$2,100	\$5,107	(\$1,396)	\$5,811	\$1,813	\$3,405	\$5,218
89	\$2,130	\$5,112	(\$1,397)	\$5,845	\$1,838	\$3,409	\$5,247
90+	\$2,160	\$5,117	(\$1,398)	\$5,878	\$1,864	\$3,412	\$5,276

**Exhibit 2-2 Premium Used for Establishing Retiree Contributions
4/1/2017 - 3/31/2018**

Name	Code		Non-Medicare Eligible			Medicare Eligible		
			NonRx	Rx	Total	NonRx	Rx	Total
HIP-Downstate	50	Retiree/SS	\$8,105	\$2,052	\$10,157	\$8,105	\$2,052	\$10,157
		Spouse	\$11,449	\$2,898	\$14,347	\$11,449	\$2,898	\$14,347
MVP Rochester	58	Retiree/SS	\$6,184	\$1,909	\$8,093	\$6,184	\$1,909	\$8,093
		Spouse	\$8,091	\$2,498	\$10,589	\$8,091	\$2,498	\$10,589
Independent Health	59	Retiree/SS	\$6,112	\$1,918	\$8,031	\$6,112	\$1,918	\$8,031
		Spouse	\$8,876	\$2,786	\$11,662	\$8,876	\$2,786	\$11,662
MVP East	60	Retiree/SS	\$6,702	\$1,679	\$8,381	\$6,702	\$1,679	\$8,381
		Spouse	\$8,709	\$2,249	\$10,958	\$8,709	\$2,249	\$10,958
CDPHP Capital	63	Retiree/SS	\$6,618	\$1,708	\$8,325	\$6,618	\$1,708	\$8,325
		Spouse	\$9,606	\$2,479	\$12,085	\$9,606	\$2,479	\$12,085
Blue Choice	66	Retiree/SS	\$6,131	\$1,491	\$7,622	\$6,131	\$1,491	\$7,622
		Spouse	\$9,036	\$2,196	\$11,232	\$9,036	\$2,196	\$11,232
Community Blue	67	Retiree/SS	\$5,877	\$2,109	\$7,987	\$5,877	\$2,109	\$7,987
		Spouse	\$8,298	\$3,438	\$11,736	\$8,298	\$3,438	\$11,736
HMO Blue CNY	72	Retiree/SS	\$7,597	\$1,931	\$9,527	\$7,597	\$1,931	\$9,527
		Spouse	\$10,962	\$2,613	\$13,576	\$10,962	\$2,613	\$13,576
HMO Blue Utica/Watertown	160	Retiree/SS	\$8,115	\$1,899	\$10,014	\$8,115	\$1,899	\$10,014
		Spouse	\$12,607	\$2,776	\$15,383	\$12,607	\$2,776	\$15,383
HIP-Capital	220	Retiree/SS	\$8,125	\$2,544	\$10,668	\$8,125	\$2,544	\$10,668
		Spouse	\$11,653	\$3,433	\$15,087	\$11,653	\$3,433	\$15,087
EBCBS - Upstate	280	Retiree/SS	\$8,779	\$2,703	\$11,482	\$8,779	\$2,703	\$11,482
		Spouse	\$13,814	\$4,224	\$18,038	\$13,814	\$4,224	\$18,038
EBCBS - Downstate	290	Retiree/SS	\$11,390	\$2,913	\$14,303	\$11,390	\$2,913	\$14,303
		Spouse	\$17,938	\$4,650	\$22,588	\$17,938	\$4,650	\$22,588
CDPHP - Central	300	Retiree/SS	\$7,489	\$1,776	\$9,265	\$7,489	\$1,776	\$9,265
		Spouse	\$10,858	\$2,571	\$13,428	\$10,858	\$2,571	\$13,428
CDPHP - W Hudson Valley	310	Retiree/SS	\$8,782	\$2,043	\$10,826	\$8,782	\$2,043	\$10,826
		Spouse	\$12,847	\$2,989	\$15,835	\$12,847	\$2,989	\$15,835
EBCBS - Mid-Hudson	320	Retiree/SS	\$11,164	\$2,853	\$14,017	\$11,164	\$2,853	\$14,017
		Spouse	\$17,574	\$4,553	\$22,127	\$17,574	\$4,553	\$22,127
MVP - Central Region	330	Retiree/SS	\$7,450	\$1,859	\$9,309	\$7,450	\$1,859	\$9,309
		Spouse	\$9,806	\$2,447	\$12,254	\$9,806	\$2,447	\$12,254
MVP - Mid-Hudson Region	340	Retiree/SS	\$7,592	\$1,837	\$9,430	\$7,592	\$1,837	\$9,430
		Spouse	\$9,981	\$2,443	\$12,425	\$9,981	\$2,443	\$12,425
HIP-Hudson Valley	350	Retiree/SS	\$8,309	\$2,358	\$10,667	\$8,309	\$2,358	\$10,667
		Spouse	\$11,905	\$3,179	\$15,085	\$11,905	\$3,179	\$15,085
MVP - North	360	Retiree/SS	\$9,269	\$2,084	\$11,354	\$9,269	\$2,084	\$11,354
		Spouse	\$12,182	\$2,810	\$14,991	\$12,182	\$2,810	\$14,991
Empire PPO		Retiree/SS	\$6,358	\$2,468	\$8,825	\$6,358	\$2,468	\$8,825
		Spouse	\$10,367	\$2,955	\$13,322	\$10,367	\$2,955	\$13,322

**EXHIBIT 2-3 PRERETIREMENT MORTALITY RATES
MALES**

Age	ERS		PFRS		TRS
	Accidental Death	All other Death	Accidental Death	All other Death	Death*
15	0.001%	0.036%	0.008%	0.033%	
16	0.001%	0.036%	0.008%	0.033%	
17	0.001%	0.036%	0.008%	0.033%	
18	0.001%	0.036%	0.008%	0.033%	
19	0.001%	0.036%	0.008%	0.033%	
20	0.001%	0.036%	0.008%	0.033%	0.0189%
21	0.001%	0.036%	0.008%	0.033%	0.0212%
22	0.001%	0.036%	0.008%	0.033%	0.0233%
23	0.001%	0.036%	0.008%	0.033%	0.0258%
24	0.001%	0.036%	0.008%	0.033%	0.0281%
25	0.001%	0.036%	0.008%	0.033%	0.0286%
26	0.001%	0.036%	0.008%	0.033%	0.0286%
27	0.001%	0.036%	0.008%	0.033%	0.0287%
28	0.001%	0.036%	0.008%	0.033%	0.0288%
29	0.001%	0.036%	0.008%	0.033%	0.0290%
30	0.001%	0.036%	0.008%	0.033%	0.0293%
31	0.001%	0.037%	0.008%	0.034%	0.0298%
32	0.001%	0.039%	0.008%	0.036%	0.0305%
33	0.001%	0.042%	0.008%	0.036%	0.0314%
34	0.001%	0.048%	0.008%	0.036%	0.0326%
35	0.001%	0.053%	0.008%	0.036%	0.0342%
36	0.001%	0.059%	0.008%	0.036%	0.0361%
37	0.001%	0.063%	0.008%	0.036%	0.0384%
38	0.001%	0.065%	0.008%	0.036%	0.0410%
39	0.001%	0.067%	0.008%	0.036%	0.0441%
40	0.001%	0.069%	0.008%	0.036%	0.0474%
41	0.001%	0.072%	0.008%	0.036%	0.0510%
42	0.001%	0.077%	0.008%	0.039%	0.0548%
43	0.001%	0.083%	0.008%	0.043%	0.0586%
44	0.001%	0.090%	0.008%	0.050%	0.0624%
45	0.001%	0.098%	0.008%	0.059%	0.0661%
46	0.001%	0.107%	0.008%	0.067%	0.0697%
47	0.001%	0.116%	0.008%	0.076%	0.0732%
48	0.001%	0.126%	0.008%	0.083%	0.0765%
49	0.001%	0.135%	0.008%	0.086%	0.0800%
50	0.001%	0.145%	0.008%	0.088%	0.0836%
51	0.001%	0.153%	0.006%	0.092%	0.0876%
52	0.001%	0.161%	0.006%	0.101%	0.0923%
53	0.001%	0.169%	0.006%	0.117%	0.0979%
54	0.001%	0.175%	0.006%	0.143%	0.1050%
55	0.001%	0.182%	0.006%	0.179%	0.1139%
56	0.001%	0.190%	0.006%	0.222%	0.1251%
57	0.001%	0.199%	0.006%	0.272%	0.1391%
58	0.001%	0.210%	0.006%	0.327%	0.1565%
59	0.001%	0.223%	0.006%	0.395%	0.1779%
60	0.001%	0.238%	0.006%	0.489%	0.2039%
61	0.001%	0.256%	0.006%	0.499%	0.2349%
62	0.001%	0.276%	0.006%	0.542%	0.2716%
63	0.001%	0.297%	0.006%	0.590%	0.3143%
64	0.001%	0.318%	0.006%	0.648%	0.3636%
65	0.001%	0.343%	0.006%	0.719%	0.4197%
66	0.001%	0.371%	0.006%	0.807%	0.4828%
67	0.001%	0.401%	0.006%	0.908%	0.5370%
68	0.001%	0.433%	0.006%	1.017%	0.6058%
69	0.001%	0.467%	0.006%	1.130%	0.6834%
70	0.000%	0.000%	0.006%	1.130%	0.7709%
71	0.000%	0.000%	0.006%	1.130%	0.8696%
72	0.000%	0.000%	0.006%	1.130%	0.9810%
73	0.000%	0.000%	0.006%	1.130%	1.1066%
74	0.000%	0.000%	0.006%	1.130%	1.2483%
75	0.000%	0.000%	0.006%	1.130%	1.4082%

*Assumed all deaths are non-accidental

EXHIBIT 2-3 PRERETIREMENT MORTALITY RATES

FEMALES

Age	ERS		PFRS		TRS
	Accidental Death	All other Death	Accidental Death	All other Death	Death*
15	0.001%	0.036%	0.008%	0.033%	
16	0.001%	0.036%	0.008%	0.033%	
17	0.001%	0.036%	0.008%	0.033%	
18	0.001%	0.036%	0.008%	0.033%	
19	0.001%	0.036%	0.008%	0.033%	
20	0.001%	0.036%	0.008%	0.033%	0.0108%
21	0.001%	0.036%	0.008%	0.033%	0.0112%
22	0.001%	0.036%	0.008%	0.033%	0.0112%
23	0.001%	0.036%	0.008%	0.033%	0.0112%
24	0.001%	0.036%	0.008%	0.033%	0.0112%
25	0.001%	0.036%	0.008%	0.033%	0.0112%
26	0.001%	0.036%	0.008%	0.033%	0.0112%
27	0.001%	0.036%	0.008%	0.033%	0.0112%
28	0.001%	0.036%	0.008%	0.033%	0.0119%
29	0.001%	0.036%	0.008%	0.033%	0.0124%
30	0.001%	0.036%	0.008%	0.033%	0.0129%
31	0.001%	0.037%	0.008%	0.034%	0.0132%
32	0.001%	0.039%	0.008%	0.036%	0.0135%
33	0.001%	0.042%	0.008%	0.036%	0.0137%
34	0.001%	0.048%	0.008%	0.036%	0.0140%
35	0.001%	0.053%	0.008%	0.036%	0.0144%
36	0.001%	0.059%	0.008%	0.036%	0.0151%
37	0.001%	0.063%	0.008%	0.036%	0.0160%
38	0.001%	0.065%	0.008%	0.036%	0.0174%
39	0.001%	0.067%	0.008%	0.036%	0.0191%
40	0.001%	0.069%	0.008%	0.036%	0.0213%
41	0.001%	0.072%	0.008%	0.036%	0.0239%
42	0.001%	0.077%	0.008%	0.039%	0.0269%
43	0.001%	0.083%	0.008%	0.043%	0.0302%
44	0.001%	0.090%	0.008%	0.050%	0.0338%
45	0.001%	0.098%	0.008%	0.059%	0.0374%
46	0.001%	0.107%	0.008%	0.067%	0.0412%
47	0.001%	0.116%	0.008%	0.076%	0.0450%
48	0.001%	0.126%	0.008%	0.083%	0.0487%
49	0.001%	0.135%	0.008%	0.086%	0.0523%
50	0.001%	0.145%	0.008%	0.088%	0.0559%
51	0.001%	0.153%	0.006%	0.092%	0.0595%
52	0.001%	0.161%	0.006%	0.101%	0.0632%
53	0.001%	0.169%	0.006%	0.117%	0.0671%
54	0.001%	0.175%	0.006%	0.143%	0.0711%
55	0.001%	0.182%	0.006%	0.179%	0.0755%
56	0.001%	0.190%	0.006%	0.222%	0.0802%
57	0.001%	0.199%	0.006%	0.272%	0.0854%
58	0.001%	0.210%	0.006%	0.327%	0.0911%
59	0.001%	0.223%	0.006%	0.395%	0.0973%
60	0.001%	0.238%	0.006%	0.489%	0.1042%
61	0.001%	0.256%	0.006%	0.499%	0.1117%
62	0.001%	0.276%	0.006%	0.542%	0.1199%
63	0.001%	0.297%	0.006%	0.590%	0.1291%
64	0.001%	0.318%	0.006%	0.648%	0.1393%
65	0.001%	0.343%	0.006%	0.719%	0.1509%
66	0.001%	0.371%	0.006%	0.807%	0.1642%
67	0.001%	0.401%	0.006%	0.908%	0.1797%
68	0.001%	0.433%	0.006%	1.017%	0.1981%
69	0.001%	0.467%	0.006%	1.130%	0.2350%
70	0.000%	0.000%	0.006%	1.130%	0.2550%
71	0.000%	0.000%	0.006%	1.130%	0.2864%
72	0.000%	0.000%	0.006%	1.130%	0.3217%
73	0.000%	0.000%	0.006%	1.130%	0.3613%
74	0.000%	0.000%	0.006%	1.130%	0.4058%
75	0.000%	0.000%	0.006%	1.130%	0.4558%

*Assumed all deaths are non-accidental

**EXHIBIT 2-3 POSTRETIREMENT MORTALITY RATES
BASE TABLES**

Age	ERS*				PFRS*	
	Healthy		Disabled		Healthy	Disabled
	Males	Females	Males	Females		
15	0.0331%	0.0331%	0.3305%	0.3311%	0.0305%	0.1221%
16	0.0331%	0.0331%	0.3305%	0.3311%	0.0305%	0.1221%
17	0.0331%	0.0331%	0.3305%	0.3311%	0.0305%	0.1221%
18	0.0331%	0.0331%	0.3305%	0.3311%	0.0305%	0.1221%
19	0.0331%	0.0331%	0.3305%	0.3311%	0.0305%	0.1221%
20	0.0331%	0.0331%	0.3305%	0.3311%	0.0305%	0.1221%
21	0.0333%	0.0334%	0.3324%	0.3335%	0.0307%	0.1228%
22	0.0334%	0.0336%	0.3341%	0.3357%	0.0308%	0.1234%
23	0.0336%	0.0338%	0.3357%	0.3378%	0.0310%	0.1240%
24	0.0337%	0.0340%	0.3370%	0.3397%	0.0311%	0.1245%
25	0.0339%	0.0342%	0.3382%	0.3415%	0.0312%	0.1249%
26	0.0340%	0.0345%	0.3395%	0.3447%	0.0313%	0.1254%
27	0.0342%	0.0349%	0.3411%	0.3487%	0.0315%	0.1260%
28	0.0344%	0.0353%	0.3432%	0.3530%	0.0317%	0.1268%
29	0.0346%	0.0357%	0.3452%	0.3571%	0.0319%	0.1275%
30	0.0347%	0.0360%	0.3468%	0.3599%	0.0320%	0.1281%
31	0.0353%	0.0367%	0.3536%	0.3674%	0.0321%	0.1285%
32	0.0374%	0.0388%	0.3742%	0.3885%	0.0331%	0.1322%
33	0.0041%	0.0425%	0.4105%	0.4252%	0.0349%	0.1397%
34	0.0461%	0.0474%	0.4610%	0.4740%	0.0350%	0.1400%
35	0.0516%	0.0527%	0.5160%	0.5268%	0.0350%	0.1400%
36	0.0566%	0.0574%	0.5775%	0.6493%	0.0349%	0.1397%
37	0.0604%	0.0609%	0.6371%	0.7687%	0.0318%	0.1391%
38	0.0627%	0.0630%	0.6951%	0.8854%	0.0345%	0.1382%
39	0.0640%	0.0620%	0.7513%	1.0001%	0.0343%	0.1371%
40	0.0653%	0.0654%	0.8066%	1.1135%	0.0340%	0.1361%
41	0.0677%	0.0678%	0.8313%	1.2492%	0.0338%	0.1354%
42	0.0715%	0.0717%	0.9202%	1.4185%	0.0337%	0.1348%
43	0.0769%	0.0774%	1.0004%	1.5438%	0.0362%	0.1450%
44	0.0834%	0.0842%	1.0731%	1.6430%	0.0397%	0.1586%
45	0.0907%	0.0919%	1.2040%	1.7878%	0.0466%	0.1864%
46	0.0986%	0.1004%	1.3228%	1.9295%	0.0771%	0.2068%
47	0.1071%	0.1094%	1.4548%	2.0830%	0.1076%	0.2275%
48	0.1161%	0.1193%	1.5936%	2.2372%	0.1384%	0.2484%
49	0.1254%	0.1296%	1.7420%	2.3755%	0.1694%	0.2695%
50	0.1346%	0.1397%	1.8645%	2.4882%	0.2007%	0.2911%
51	0.2058%	2.0680%	1.9939%	2.5897%	0.2055%	0.2971%
52	0.2776%	0.2747%	2.1284%	2.6748%	0.2148%	0.3100%
53	0.3515%	0.3426%	2.2741%	2.7365%	0.2296%	0.3303%
54	0.4270%	0.4104%	2.4226%	2.7776%	0.2499%	0.3569%
55	0.5036%	0.4776%	2.5497%	2.7968%	0.2756%	0.3889%
56	0.5477%	0.5143%	2.6583%	2.7845%	0.3066%	0.4256%
57	0.5889%	0.5512%	2.7587%	2.7540%	0.3427%	0.4662%
58	0.6267%	0.5882%	2.8418%	2.7106%	0.3836%	0.5103%
59	0.6610%	0.6258%	2.9190%	2.6647%	0.4291%	0.5579%
60	0.6921%	0.6645%	2.9974%	2.6127%	0.4787%	0.6090%
61	0.7212%	0.7050%	3.0752%	2.5670%	0.5324%	0.6643%
62	0.7502%	0.7486%	3.1503%	2.5246%	0.5897%	0.7249%
63	0.7816%	0.7965%	3.2265%	2.4973%	0.6510%	0.7920%
64	0.8187%	0.8493%	3.3030%	2.4864%	0.7174%	0.8675%
65	0.8658%	0.9085%	3.3905%	2.4928%	0.7909%	0.9537%
66	0.9260%	0.9750%	3.4775%	2.5188%	0.8733%	1.0534%
67	1.0034%	1.0505%	3.5862%	2.5681%	0.9673%	1.1701%
68	0.0110%	1.1356%	3.7039%	2.6400%	1.0749%	1.3073%
69	1.2201%	1.2327%	3.8327%	2.7366%	1.1980%	1.4685%
70	1.3631%	1.3426%	3.9633%	2.8598%	1.3389%	1.6575%
71	1.5304%	1.4682%	4.1292%	3.0106%	1.5002%	1.8777%
72	1.7227%	1.6119%	4.2901%	3.1924%	1.6852%	2.1326%
73	1.9404%	1.7760%	4.4839%	3.4122%	1.8980%	2.4248%
74	2.1846%	1.9635%	4.7064%	3.6659%	2.1439%	2.7575%
75	2.4567%	2.1769%	4.9841%	3.9514%	2.4284%	3.1330%

EXHIBIT 2-3 POSTRETIREMENT MORTALITY RATES

BASE TABLES

Age	ERS*				PFRS*	
	Healthy		Disabled		Healthy	Disabled
	Males	Females	Males	Females		
76	2.7602%	2.4197%	5.3277%	4.2849%	2.7579%	3.5541%
77	3.0998%	2.6961%	5.7124%	4.6665%	3.1396%	4.0242%
78	3.4805%	3.0095%	6.1621%	5.0826%	3.5812%	4.5451%
79	3.9111%	3.3647%	6.6938%	5.5549%	4.0934%	5.1217%
80	4.3999%	3.7662%	7.3020%	6.0952%	4.6887%	5.7566%
81	4.9564%	4.2183%	7.9750%	6.6731%	5.3726%	6.4536%
82	5.5894%	4.7263%	8.7512%	7.3143%	6.9767%	7.2151%
83	6.3095%	5.2960%	9.6250%	8.0202%	7.0655%	8.0457%
84	7.1243%	5.9308%	10.6067%	8.7900%	8.0925%	8.9469%
85	8.0425%	6.6371%	11.7086%	9.6310%	9.2516%	9.9219%
86	9.0707%	7.4190%	12.8992%	10.5424%	10.5503%	10.9731%
87	10.2131%	8.2806%	14.2045%	11.5489%	11.9938%	12.1011%
88	11.4750%	9.2282%	15.6553%	12.6556%	13.5891%	13.3088%
89	12.8614%	10.2657%	17.3219%	13.8609%	15.3431%	14.5996%
90	14.3730%	11.3895%	19.0518%	15.0870%	17.2570%	15.9722%
91	16.0158%	12.6011%	20.7882%	16.3519%	19.3388%	17.4321%
92	17.7946%	13.9012%	22.5917%	17.7138%	21.5942%	18.9824%
93	19.7128%	15.2916%	24.8256%	19.2931%	24.0275%	20.6256%
94	21.7727%	16.7700%	26.9264%	20.7091%	26.6413%	22.3622%
95	23.9776%	18.3370%	29.1577%	22.0705%	29.4396%	24.1942%
96	26.2486%	20.7467%	31.2819%	24.3758%	31.5559%	26.4591%
97	28.6010%	23.2480%	33.4811%	26.7685%	33.7467%	28.8050%
98	30.9594%	25.7644%	35.6845%	29.1754%	35.9416%	31.1570%
99	33.3377%	28.2941%	37.9080%	31.5947%	38.1568%	33.5288%
100	35.7231%	30.8415%	40.1372%	34.0311%	40.3774%	35.9077%
101	38.2685%	33.5587%	42.5154%	36.6290%	42.7465%	38.4460%
102	41.0416%	36.5254%	45.1045%	39.4642%	45.3256%	41.2116%
103	44.1890%	39.8932%	48.0400%	42.6801%	48.2496%	44.3501%
104	47.8689%	43.8353%	51.4705%	46.4433%	51.6665%	48.0195%
105	52.2186%	48.4940%	55.5212%	50.8864%	55.7010%	52.3567%
106	57.5299%	54.2034%	60.4620%	56.3289%	60.6217%	57.6525%
107	64.1286%	61.2796%	66.5983%	63.0705%	66.7328%	64.2318%
108	72.5904%	70.3711%	74.4609%	71.7282%	74.5628%	72.6687%
109	83.7452%	82.3560%	84.8199%	83.1367%	84.8784%	83.7901%
110	100.0000%	100.0000%	100.0000%	100.0000%	100.0000%	100.0000%

*Apply scale MP 2014 on a generational basis with base year of 2014

EXHIBIT 2-3 POSTRETIREMENT MORTALITY RATES

BASE TABLES

Age	TRS			
	Healthy		Disabled	
	Male	Female	Male	Female
1	0.041%	0.036%		
2	0.028%	0.024%		
3	0.023%	0.018%		
4	0.018%	0.013%		
5	0.016%	0.012%		
6	0.014%	0.011%		
7	0.012%	0.010%		
8	0.011%	0.009%		
9	0.009%	0.009%		
10	0.007%	0.008%		
11	0.008%	0.008%		
12	0.011%	0.010%		
13	0.015%	0.011%		
14	0.018%	0.012%		
15	0.022%	0.013%		
16	0.025%	0.014%		
17	0.029%	0.015%		
18	0.026%	0.014%		
19	0.029%	0.015%		
20	0.032%	0.015%		
21	0.035%	0.015%		
22	0.038%	0.015%		
23	0.040%	0.015%		
24	0.040%	0.016%		
25	0.038%	0.016%		
26	0.036%	0.016%		
27	0.035%	0.017%		
28	0.035%	0.018%		
29	0.035%	0.019%		
30	0.035%	0.020%	18.001%	10.649%
31	0.036%	0.021%	18.001%	10.649%
32	0.037%	0.022%	18.001%	10.649%
33	0.038%	0.024%	18.001%	10.328%
34	0.040%	0.025%	17.327%	10.008%
35	0.041%	0.026%	16.652%	9.691%
36	0.042%	0.028%	15.977%	9.376%
37	0.043%	0.029%	15.302%	9.068%
38	0.045%	0.031%	14.628%	8.767%
39	0.046%	0.033%	13.958%	8.475%
40	0.049%	0.036%	13.294%	8.193%
41	0.052%	0.040%	12.640%	7.920%
42	0.057%	0.044%	12.001%	7.655%
43	0.062%	0.048%	11.380%	7.397%
44	0.068%	0.054%	10.780%	7.143%
45	0.076%	0.060%	10.203%	6.894%
46	0.085%	0.067%	9.650%	6.648%
47	0.095%	0.075%	9.124%	6.406%
48	0.106%	0.083%	8.623%	6.168%
49	0.118%	0.092%	8.148%	5.931%
50	0.132%	0.101%	7.696%	5.695%
51	0.146%	0.110%	7.264%	5.454%
52	0.162%	0.120%	6.849%	5.205%
53	0.195%	0.142%	6.450%	4.942%
54	0.231%	0.165%	6.064%	4.666%
55	0.252%	0.181%	5.694%	4.381%

EXHIBIT 2-3 POSTRETIREMENT MORTALITY RATES
BASE TABLES

Age	TRS			
	Healthy		Disabled	
	Male	Female	Male	Female
56	0.275%	0.198%	5.344%	4.095%
57	0.300%	0.217%	5.022%	3.817%
58	0.328%	0.238%	4.731%	3.558%
59	0.358%	0.261%	4.476%	3.325%
60	0.391%	0.287%	4.260%	3.126%
61	0.426%	0.305%	4.083%	2.967%
62	0.465%	0.330%	3.946%	2.852%
63	0.505%	0.360%	3.846%	2.785%
64	0.556%	0.398%	3.783%	2.766%
65	0.620%	0.442%	3.755%	2.796%
66	0.698%	0.493%	3.762%	2.870%
67	0.789%	0.552%	3.804%	2.985%
68	0.894%	0.620%	3.880%	3.135%
69	1.015%	0.698%	3.989%	3.314%
70	1.152%	0.786%	4.133%	3.520%
71	1.307%	0.887%	4.314%	3.751%
72	1.482%	1.003%	4.534%	4.008%
73	1.679%	1.135%	4.793%	4.294%
74	1.901%	1.286%	5.089%	4.611%
75	2.152%	1.460%	5.422%	4.963%
76	2.438%	1.660%	5.788%	5.356%
77	2.763%	1.891%	6.187%	5.793%
78	3.135%	2.157%	6.616%	6.279%
79	3.559%	2.463%	7.074%	6.816%
80	4.045%	2.816%	7.560%	7.400%
81	4.600%	3.223%	8.073%	8.029%
82	5.234%	3.690%	8.613%	8.696%
83	5.959%	4.227%	8.793%	9.397%
84	6.784%	4.841%	10.004%	10.132%
85	7.725%	5.542%	11.374%	10.902%
86	8.793%	6.340%	12.921%	11.707%
87	10.004%	7.247%	14.171%	12.204%
88	11.374%	8.272%	15.813%	13.852%
89	12.921%	9.431%	17.529%	15.700%
90	14.171%	10.736%	19.313%	17.770%
91	15.813%	12.204%	21.167%	19.148%
92	17.529%	13.852%	23.098%	21.024%
93	19.313%	15.700%	25.111%	23.000%
94	21.167%	17.770%	27.211%	25.072%
95	23.098%	19.148%	29.385%	27.086%
96	25.111%	21.024%	31.399%	29.104%
97	27.211%	23.000%	33.437%	31.144%
98	29.385%	25.072%	35.460%	33.190%
99	31.399%	27.086%	37.452%	35.223%
100	33.437%	29.104%	39.398%	37.227%
101	35.460%	31.144%	41.283%	39.186%
102	37.452%	33.190%	43.095%	41.085%
103	39.398%	35.223%	44.823%	42.911%
104	41.283%	37.227%	46.459%	44.654%
105	43.095%	39.186%	47.999%	46.306%
106	44.823%	41.085%	49.438%	47.860%
107	46.459%	42.911%	50.000%	47.860%
108	47.999%	44.654%	50.000%	47.860%
109	49.438%	46.306%	50.000%	47.860%
110	50.000%	47.860%	50.000%	47.860%

EXHIBIT 2-4 WITHDRAWAL RATES

Age	ERS Years of Service					
	< 2	2 - 2.99	3 - 3.99	4 - 4.99	5 - 9.99	> = 10
15	25.066%	12.991%	7.721%	6.550%	4.365%	1.510%
16	25.066%	12.991%	7.721%	6.550%	4.365%	1.510%
17	25.066%	12.991%	7.721%	6.550%	4.365%	1.510%
18	25.066%	12.991%	7.721%	6.550%	4.365%	1.510%
19	25.066%	12.991%	7.721%	6.550%	4.365%	1.510%
20	25.050%	12.991%	7.721%	6.550%	4.365%	1.510%
21	24.783%	12.991%	7.721%	6.550%	4.365%	1.510%
22	24.260%	12.991%	7.721%	6.550%	4.365%	1.510%
23	23.454%	13.701%	9.013%	6.943%	4.456%	1.510%
24	22.346%	14.193%	9.850%	7.243%	4.510%	1.510%
25	20.978%	0.145%	10.279%	7.437%	4.528%	1.510%
26	19.494%	14.689%	10.441%	7.543%	4.516%	1.510%
27	18.113%	14.683%	10.472%	7.601%	4.481%	1.510%
28	17.029%	14.473%	10.452%	7.643%	4.434%	1.510%
29	16.305%	14.055%	10.406%	7.684%	4.386%	1.523%
30	15.870%	13.472%	10.331%	7.712%	4.347%	1.558%
31	15.602%	12.814%	10.215%	7.702%	4.325%	1.618%
32	15.404%	12.190%	10.052%	7.623%	4.328%	1.700%
33	15.239%	11.689%	9.838%	7.454%	4.355%	1.793%
34	15.102%	11.330%	9.573%	7.197%	4.398%	1.877%
35	14.988%	11.073%	9.256%	6.877%	4.439%	1.934%
36	14.874%	10.849%	8.888%	6.536%	4.454%	1.950%
37	14.723%	10.603%	8.481%	6.223%	4.421%	1.921%
38	14.516%	10.318%	8.058%	5.972%	4.332%	1.856%
39	14.261%	10.012%	7.649%	5.793%	4.200%	1.773%
40	13.991%	9.714%	7.283%	5.674%	4.048%	1.692%
41	13.741%	9.446%	6.981%	5.594%	3.905%	1.630%
42	13.530%	9.211%	6.753%	5.535%	3.790%	1.594%
43	13.363%	9.004%	6.595%	5.488%	3.709%	1.582%
44	13.237%	8.819%	6.494%	5.449%	3.655%	1.583%
45	13.150%	8.652%	6.433%	5.413%	3.614%	1.582%
46	13.108%	8.506%	6.395%	5.375%	3.571%	1.561%
47	13.123%	8.382%	6.365%	5.325%	3.515%	1.515%
48	13.199%	8.279%	6.339%	5.260%	3.443%	1.448%
49	13.328%	8.198%	6.316%	5.180%	3.362%	1.374%
50	13.485%	8.135%	6.301%	5.101%	3.283%	1.308%
51	13.633%	8.089%	6.301%	5.038%	3.219%	1.260%
52	13.733%	8.060%	6.320%	5.010%	3.187%	1.229%
53	13.762%	8.048%	6.362%	5.026%	3.199%	1.211%
54	13.721%	8.056%	6.427%	5.086%	3.253%	1.202%
55	13.641%	8.095%	6.520%	5.181%	3.320%	1.198%
56	13.571%	8.188%	6.645%	5.298%	3.337%	1.196%
57	13.573%	8.364%	6.810%	5.424%	3.247%	1.196%
58	13.702%	8.653%	7.024%	5.553%	3.033%	1.196%
59	13.993%	9.081%	7.293%	5.684%	2.720%	1.196%
60	14.448%	9.655%	7.617%	5.821%	2.363%	1.196%
61	15.016%	10.356%	7.985%	5.962%	2.045%	1.196%
62	15.582%	11.118%	8.365%	6.096%	1.874%	1.196%
63	15.971%	11.118%	8.365%	6.096%	1.874%	1.196%
64	15.971%	11.118%	8.365%	6.096%	1.874%	1.196%
65	15.971%	11.118%	8.365%	6.096%	1.874%	1.196%
66	15.971%	11.118%	8.365%	6.096%	1.874%	1.196%
67	15.971%	11.118%	8.365%	6.096%	1.874%	1.196%
68	15.971%	11.118%	8.365%	6.096%	1.874%	1.196%
69	15.971%	11.118%	8.365%	6.096%	1.874%	1.196%
70	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%

Note for Tiers 5 and up, for Service=5-9.99, multiply the above rate by 0.6. For Service=10, multiply by 2

EXHIBIT 2-4 WITHDRAWAL RATES

Age	Upstate (Syracuse) Medical Center					
	Years of Service					
	< 2	2 - 2.99	3 - 3.99	4 - 4.99	5 - 9.99	> = 10
15	21.00%	22.00%	26.00%	24.00%	16.00%	7.00%
16	21.00%	22.00%	26.00%	24.00%	16.00%	7.00%
17	21.00%	22.00%	26.00%	24.00%	16.00%	7.00%
18	21.00%	22.00%	26.00%	24.00%	16.00%	7.00%
19	21.00%	22.00%	26.00%	24.00%	16.00%	7.00%
20	21.00%	22.00%	26.00%	24.00%	16.00%	7.00%
21	20.00%	22.00%	26.00%	24.00%	16.00%	7.00%
22	20.00%	22.00%	26.00%	24.00%	16.00%	7.00%
23	20.00%	24.00%	40.00%	24.00%	16.00%	7.00%
24	20.00%	24.00%	40.00%	20.00%	16.00%	7.00%
25	20.00%	24.00%	40.00%	20.00%	16.00%	7.00%
26	20.00%	24.00%	40.00%	20.00%	16.00%	7.00%
27	16.00%	24.00%	40.00%	19.60%	15.00%	7.00%
28	16.00%	24.00%	40.00%	12.60%	15.00%	7.00%
29	16.00%	24.00%	40.00%	40.00%	15.00%	7.00%
30	16.00%	15.70%	40.00%	59.20%	20.00%	7.00%
31	16.00%	15.70%	40.00%	45.20%	20.00%	7.00%
32	16.00%	15.70%	40.00%	51.50%	20.00%	6.90%
33	16.00%	15.70%	40.00%	45.20%	20.00%	6.70%
34	16.50%	15.70%	40.00%	32.50%	20.00%	6.50%
35	16.50%	15.70%	40.00%	32.50%	18.00%	6.30%
36	16.50%	15.70%	40.00%	22.50%	18.00%	6.10%
37	16.50%	15.70%	40.00%	24.40%	18.00%	5.80%
38	16.50%	15.70%	40.00%	46.50%	18.00%	5.40%
39	16.50%	15.70%	40.00%	45.20%	9.00%	5.00%
40	16.50%	15.70%	40.00%	38.80%	9.00%	4.60%
41	16.50%	15.70%	40.00%	13.40%	9.00%	4.20%
42	16.50%	15.70%	27.50%	10.60%	9.00%	4.00%
43	16.50%	12.50%	35.00%	10.60%	9.00%	4.00%
44	16.50%	12.50%	24.00%	15.00%	9.00%	4.00%
45	16.50%	12.50%	24.00%	25.00%	9.00%	6.00%
46	16.50%	12.50%	24.00%	25.00%	9.00%	6.00%
47	16.50%	12.50%	24.00%	25.00%	9.00%	6.00%
48	16.50%	8.00%	24.00%	19.40%	9.00%	6.00%
49	16.50%	8.00%	15.50%	19.40%	9.00%	6.00%
50	16.50%	8.00%	15.50%	19.40%	9.00%	6.00%
51	16.50%	8.00%	15.50%	19.40%	5.00%	6.00%
52	10.00%	8.00%	15.50%	19.40%	5.00%	6.00%
53	10.00%	8.00%	15.50%	14.70%	5.00%	6.00%
54	10.00%	8.00%	15.50%	5.70%	5.00%	6.00%
55	10.00%	8.00%	15.50%	30.00%	5.00%	0.00%
56	10.00%	8.00%	15.50%	30.00%	5.00%	0.00%
57	10.00%	8.00%	17.00%	12.50%	3.50%	0.00%
58	8.00%	8.00%	17.00%	12.50%	3.50%	0.00%
59	8.00%	8.00%	17.00%	12.50%	3.50%	0.00%
60	8.00%	11.00%	17.00%	12.50%	3.50%	0.00%
61	8.00%	11.00%	17.00%	12.50%	3.50%	0.00%
62	8.00%	11.00%	17.00%	12.50%	3.50%	0.00%
63	3.90%	11.00%	17.00%	12.50%	3.50%	0.00%
64	3.90%	11.00%	17.00%	12.50%	3.50%	0.00%
65	3.90%	11.00%	4.50%	3.50%	3.50%	0.00%
66	3.90%	11.00%	4.50%	3.50%	3.50%	0.00%
67	3.90%	11.00%	4.50%	3.50%	3.50%	0.00%
68	3.90%	11.00%	4.50%	3.50%	3.50%	0.00%
69	3.90%	11.00%	4.50%	3.50%	3.50%	0.00%
70	0.00%	0.00%	4.50%	0.00%	0.00%	0.00%

EXHIBIT 2-4 WITHDRAWAL RATES

Age	Brooklyn Hospital & Stony Brook Hospital					
	Years of Service					
	≤ 2	2 - 2.99	3 - 3.99	4 - 4.99	5 - 9.99	≥ 10
15	11.00%	28.00%	15.00%	16.00%	15.00%	7.00%
16	11.00%	28.00%	15.00%	16.00%	15.00%	7.00%
17	11.00%	28.00%	15.00%	16.00%	15.00%	7.00%
18	11.00%	28.00%	15.00%	16.00%	15.00%	7.00%
19	11.00%	28.00%	15.00%	16.00%	15.00%	7.00%
20	11.00%	28.00%	15.00%	16.00%	15.00%	7.00%
21	10.00%	30.00%	15.00%	16.00%	15.00%	7.00%
22	10.00%	30.00%	15.00%	16.00%	15.00%	7.00%
23	10.00%	30.00%	15.00%	16.00%	15.00%	7.00%
24	10.00%	30.00%	15.00%	16.00%	15.00%	7.00%
25	13.00%	30.00%	15.00%	16.00%	15.00%	7.00%
26	13.00%	40.00%	15.00%	22.00%	15.00%	7.00%
27	13.00%	40.00%	44.00%	40.00%	11.00%	7.00%
28	13.00%	40.00%	44.00%	40.00%	10.00%	7.00%
29	13.00%	38.00%	44.00%	40.00%	10.00%	7.00%
30	18.00%	40.00%	44.00%	40.00%	11.00%	6.00%
31	18.00%	50.00%	50.00%	34.00%	12.00%	5.80%
32	18.00%	50.00%	50.00%	34.00%	18.00%	5.60%
33	13.00%	36.00%	44.00%	34.00%	18.00%	5.40%
34	13.00%	36.00%	44.00%	34.00%	17.00%	4.80%
35	13.00%	36.00%	44.00%	34.00%	18.00%	4.20%
36	13.00%	26.00%	44.00%	34.00%	18.00%	3.60%
37	13.00%	26.00%	30.00%	30.00%	18.00%	3.00%
38	13.00%	24.00%	28.00%	29.00%	18.00%	3.00%
39	8.00%	24.00%	28.00%	29.00%	10.00%	3.00%
40	8.00%	24.00%	28.00%	18.00%	10.00%	3.00%
41	8.00%	24.00%	28.00%	18.00%	10.00%	3.00%
42	7.00%	24.00%	28.00%	17.00%	10.00%	3.00%
43	7.00%	24.00%	25.00%	17.00%	10.00%	3.00%
44	7.00%	24.00%	25.00%	17.00%	10.00%	3.00%
45	5.50%	20.00%	25.00%	17.00%	10.00%	3.00%
46	5.50%	20.00%	12.50%	17.00%	10.00%	3.00%
47	5.50%	20.00%	12.50%	16.00%	10.00%	3.00%
48	5.50%	20.00%	12.50%	16.00%	8.00%	3.00%
49	4.00%	18.00%	9.80%	16.00%	8.00%	3.00%
50	4.00%	15.00%	9.80%	16.00%	8.00%	3.00%
51	4.00%	14.00%	9.80%	15.00%	8.00%	3.00%
52	4.00%	14.00%	9.80%	15.00%	8.00%	3.00%
53	3.00%	14.00%	8.00%	15.00%	8.00%	3.00%
54	3.00%	16.00%	8.00%	5.70%	8.00%	3.00%
55	3.00%	16.00%	8.00%	13.40%	8.00%	0.00%
56	2.00%	20.00%	8.00%	5.00%	7.00%	0.00%
57	2.00%	20.00%	8.00%	5.00%	7.00%	0.00%
58	2.00%	20.00%	8.00%	5.00%	7.00%	0.00%
59	2.00%	20.00%	8.00%	5.00%	5.00%	0.00%
60	2.00%	20.00%	8.00%	5.00%	5.00%	0.00%
61	2.00%	4.00%	8.00%	5.00%	5.00%	0.00%
62	2.00%	4.00%	8.00%	5.00%	5.00%	0.00%
63	1.75%	4.00%	8.00%	5.00%	5.00%	0.00%
64	1.75%	4.00%	8.00%	5.00%	5.00%	0.00%
65	1.75%	4.00%	8.00%	5.00%	5.00%	0.00%
66	1.75%	4.00%	8.00%	5.00%	5.00%	0.00%
67	1.75%	4.00%	8.00%	5.00%	5.00%	0.00%
68	1.75%	4.00%	8.00%	5.00%	5.00%	0.00%
69	1.75%	4.00%	8.00%	5.00%	5.00%	0.00%
70	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

EXHIBIT 2-4 WITHDRAWAL RATES

Years of Service	PRFS
0	7.107%
1	4.974%
2	3.305%
3	2.203%
4	1.557%
5	1.175%
6	0.941%
7	0.792%
8	0.695%
9	0.622%
10	0.550%
11	0.474%
12	0.402%
13	0.345%
14	0.303%
15	0.277%
16	0.254%
17	0.233%
18	0.221%
19	0.221%
20	0.221%
21	0.221%
22	0.221%
23	0.221%
24	0.221%
25	0.221%
26	0.221%
27	0.221%
28	0.221%
29	0.221%
30	0.221%
31	0.221%
32	0.221%
33	0.221%
34	0.221%
35	0.221%
36	0.221%
37	0.221%
38	0.221%
39	0.221%
41	0.221%
42	0.221%
43	0.221%
44	0.221%
45	0.221%
46	0.221%
47	0.221%
48	0.221%
49	0.221%
50+	0.221%

EXHIBIT 2-4 WITHDRAWAL RATES

Age	Campus - ORD											
	0 Years of Service	1 Year of Service	2 Years of Service	3 Years of Service	4 Years of Service	5 Years of Service	6 Years of Service	7Years of Service	8 Years of Service	9 Years of Service	At least 10 Years of Service	
15	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	28.0%	28.0%	24.0%	24.0%	22.0%	15.0%
16	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	28.0%	28.0%	24.0%	24.0%	22.0%	15.0%
17	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	28.0%	28.0%	24.0%	24.0%	22.0%	15.0%
18	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	28.0%	28.0%	24.0%	24.0%	22.0%	15.0%
19	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	28.0%	28.0%	24.0%	24.0%	22.0%	15.0%
20	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	28.0%	28.0%	24.0%	24.0%	22.0%	15.0%
21	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	28.0%	28.0%	24.0%	24.0%	22.0%	15.0%
22	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	28.0%	28.0%	24.0%	24.0%	22.0%	15.0%
23	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	28.0%	28.0%	24.0%	24.0%	22.0%	15.0%
24	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	28.0%	28.0%	24.0%	24.0%	22.0%	15.0%
25	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	28.0%	28.0%	24.0%	24.0%	22.0%	15.0%
26	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	28.0%	28.0%	24.0%	24.0%	22.0%	15.0%
27	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	28.0%	28.0%	24.0%	24.0%	22.0%	15.0%
28	19.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	24.0%	24.0%	22.0%	15.0%
29	19.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	24.0%	22.0%	15.0%
30	19.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	24.0%	22.0%	13.0%
31	19.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	24.0%	22.0%	13.0%
32	17.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	24.0%	22.0%	13.0%
33	17.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	24.0%	22.0%	13.0%
34	17.0%	28.0%	28.0%	28.0%	28.0%	24.0%	24.0%	25.0%	26.0%	24.0%	22.0%	13.0%
35	14.0%	28.0%	28.0%	28.0%	28.0%	24.0%	24.0%	25.0%	26.0%	24.0%	22.0%	13.0%
36	14.0%	28.0%	28.0%	28.0%	28.0%	24.0%	24.0%	25.0%	26.0%	24.0%	17.0%	13.0%
37	14.0%	28.0%	28.0%	28.0%	28.0%	24.0%	24.0%	25.0%	26.0%	24.0%	17.0%	13.0%
38	14.0%	28.0%	28.0%	28.0%	28.0%	24.0%	24.0%	25.0%	26.0%	22.0%	17.0%	13.0%
39	14.0%	28.0%	28.0%	28.0%	28.0%	21.0%	21.0%	25.0%	21.0%	21.0%	17.0%	13.0%
40	14.0%	28.0%	28.0%	28.0%	28.0%	21.0%	21.0%	21.0%	21.0%	21.0%	17.0%	13.0%
41	14.0%	28.0%	28.0%	28.0%	28.0%	21.0%	21.0%	21.0%	21.0%	21.0%	17.0%	13.0%
42	22.0%	28.0%	28.0%	28.0%	28.0%	21.0%	21.0%	21.0%	21.0%	21.0%	17.0%	13.0%
43	22.0%	28.0%	28.0%	28.0%	28.0%	21.0%	21.0%	21.0%	21.0%	21.0%	17.0%	13.0%
44	22.0%	28.0%	28.0%	28.0%	28.0%	21.0%	21.0%	21.0%	21.0%	21.0%	17.0%	13.0%
45	22.0%	26.0%	26.0%	25.0%	21.0%	21.0%	21.0%	20.0%	21.0%	19.0%	13.0%	13.0%
46	22.0%	26.0%	26.0%	25.0%	21.0%	21.0%	21.0%	20.0%	21.0%	19.0%	13.0%	13.0%
47	22.0%	26.0%	26.0%	25.0%	21.0%	21.0%	21.0%	20.0%	21.0%	19.0%	13.0%	13.0%
48	22.0%	26.0%	26.0%	25.0%	21.0%	22.0%	20.0%	21.0%	19.0%	13.0%	13.0%	13.0%
49	22.0%	26.0%	26.0%	25.0%	21.0%	22.0%	20.0%	21.0%	19.0%	13.0%	13.0%	13.0%
50	22.0%	26.0%	26.0%	25.0%	21.0%	22.0%	20.0%	21.0%	19.0%	13.0%	13.0%	13.0%
51	22.0%	26.0%	26.0%	25.0%	21.0%	22.0%	20.0%	21.0%	19.0%	13.0%	13.0%	13.0%
52	22.0%	26.0%	26.0%	25.0%	21.0%	22.0%	20.0%	21.0%	19.0%	10.0%	12.0%	12.0%
53	22.0%	26.0%	26.0%	25.0%	21.0%	22.0%	20.0%	21.0%	19.0%	10.0%	12.0%	12.0%
54	22.0%	26.0%	26.0%	26.0%	21.0%	22.0%	20.0%	23.0%	19.0%	10.0%	10.0%	12.0%
55	22.0%	26.0%	26.0%	26.0%	21.0%	22.0%	20.0%	23.0%	19.0%	10.0%	10.0%	0.0%
56	22.0%	26.0%	26.0%	26.0%	21.0%	22.0%	20.0%	23.0%	19.0%	10.0%	10.0%	0.0%
57	21.0%	21.0%	21.0%	20.0%	21.0%	22.0%	21.0%	20.0%	19.0%	10.0%	10.0%	0.0%
58	21.0%	21.0%	21.0%	20.0%	21.0%	22.0%	21.0%	20.0%	19.0%	10.0%	10.0%	0.0%
59	21.0%	21.0%	21.0%	20.0%	21.0%	22.0%	21.0%	20.0%	19.0%	10.0%	10.0%	0.0%
60	19.0%	21.0%	21.0%	20.0%	21.0%	22.0%	21.0%	20.0%	19.0%	10.0%	10.0%	0.0%
61	19.0%	21.0%	21.0%	13.0%	21.0%	22.0%	21.0%	13.0%	13.0%	10.0%	10.0%	0.0%
62	19.0%	21.0%	21.0%	13.0%	21.0%	22.0%	21.0%	13.0%	13.0%	10.0%	10.0%	0.0%
63	19.0%	17.0%	17.0%	13.0%	21.0%	20.0%	21.0%	13.0%	13.0%	10.0%	10.0%	0.0%
64	19.0%	17.0%	17.0%	13.0%	21.0%	20.0%	21.0%	13.0%	13.0%	10.0%	10.0%	0.0%
65	19.0%	17.0%	17.0%	13.0%	21.0%	20.0%	20.0%	13.0%	13.0%	10.0%	10.0%	0.0%
66	19.0%	17.0%	17.0%	13.0%	21.0%	20.0%	20.0%	13.0%	13.0%	10.0%	10.0%	0.0%
67	19.0%	17.0%	17.0%	13.0%	21.0%	20.0%	20.0%	13.0%	13.0%	10.0%	10.0%	0.0%
68	19.0%	17.0%	17.0%	13.0%	21.0%	20.0%	20.0%	13.0%	13.0%	10.0%	10.0%	0.0%
69	19.0%	17.0%	17.0%	13.0%	21.0%	20.0%	20.0%	13.0%	13.0%	10.0%	10.0%	0.0%
70	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

EXHIBIT 2-4 WITHDRAWAL RATES

Age	TRS-Male										
	0 Years of Service	1 Year of Service	2 Years of Service	3 Years of Service	4 Years of Service	5 Years of Service	6 Years of Service	7 Years of Service	8 Years of Service	9 Years of Service	At least 10 Years of Service
20	25.4275%	16.5892%	11.6327%	9.4647%	5.7858%	3.5354%	2.0319%	1.1763%	1.0924%	0.7796%	0.8873%
21	25.4275%	13.9607%	11.6327%	9.4647%	5.7858%	3.5354%	2.0319%	1.1763%	1.0924%	0.7796%	0.8873%
22	25.8777%	12.6464%	11.6327%	9.4647%	5.7858%	3.5354%	2.0319%	1.1763%	1.0924%	0.7796%	0.8873%
23	26.7780%	12.4274%	11.6327%	9.4647%	5.7858%	3.5354%	2.0319%	1.1763%	1.0924%	0.7796%	0.8873%
24	28.1285%	13.3035%	11.9082%	8.8647%	5.7858%	3.5354%	2.0319%	1.1763%	1.0924%	0.7796%	0.8873%
25	29.4790%	16.8083%	12.4171%	8.1761%	5.7858%	3.5354%	2.0319%	1.1763%	1.0924%	0.7796%	0.8873%
26	30.8295%	18.5606%	12.8845%	7.7761%	5.7858%	3.6379%	2.0319%	1.1763%	1.1922%	0.7796%	0.8873%
27	31.9549%	19.4368%	13.1962%	8.0715%	5.9296%	3.6635%	2.0319%	1.1763%	1.2975%	0.7796%	0.8873%
28	32.5176%	19.6558%	13.4039%	8.3668%	6.1071%	3.6892%	2.0319%	1.1763%	1.3931%	0.7796%	0.8873%
29	32.8927%	19.4368%	13.5424%	8.6621%	6.4622%	3.7533%	2.1368%	1.2912%	1.4537%	0.7796%	0.8873%
30	33.0803%	19.0091%	13.6168%	8.9575%	6.8227%	4.0481%	2.5825%	1.9809%	1.5106%	0.7796%	0.8873%
31	32.2070%	18.7568%	13.1286%	9.3049%	6.9540%	4.3533%	3.1397%	2.2317%	1.5955%	0.7796%	0.8873%
32	31.3337%	18.5045%	12.5654%	9.6523%	7.0854%	4.6585%	3.6969%	2.3571%	1.8078%	0.7796%	0.8873%
33	30.4605%	18.2523%	12.3777%	9.9997%	7.2167%	4.9638%	3.9754%	2.3884%	2.0201%	0.8513%	0.8873%
34	29.5872%	18.0000%	12.6812%	10.3470%	7.3481%	5.2690%	4.1147%	2.3963%	2.2323%	1.1216%	0.8873%
35	28.7140%	17.7477%	13.3047%	10.5207%	7.4794%	5.5742%	4.1993%	2.3963%	2.3738%	1.5946%	0.8508%
36	28.6690%	17.1821%	13.8075%	10.4196%	7.7092%	6.0321%	4.1209%	2.3963%	2.4021%	1.9585%	0.8299%
37	28.6241%	16.6165%	13.5561%	10.1447%	7.6326%	6.4899%	4.0425%	2.3963%	2.4163%	2.0908%	0.8091%
38	28.5791%	16.0509%	13.0616%	9.8699%	7.5560%	6.7189%	3.9641%	2.5293%	2.4233%	2.1664%	0.7882%
39	28.5342%	15.4853%	13.0202%	9.5950%	7.4219%	6.7761%	3.8857%	3.4440%	2.4269%	2.1916%	0.7673%
40	28.4892%	15.2025%	12.9787%	9.3202%	6.9959%	6.7904%	3.8073%	3.7085%	2.5711%	2.1664%	0.7464%
41	28.9068%	15.2732%	13.2358%	9.4006%	6.7933%	6.4863%	3.5133%	3.7747%	2.7438%	2.1286%	0.7534%
42	29.3244%	15.6266%	13.4928%	9.4810%	6.6920%	5.7260%	3.3664%	3.7747%	2.9166%	2.0625%	0.7638%
43	29.7420%	15.9800%	13.7499%	9.5614%	6.5907%	5.3458%	3.5133%	3.7747%	3.0893%	1.8971%	0.7795%
44	30.1596%	16.3334%	14.0070%	9.6418%	6.4894%	5.2983%	3.8073%	3.7747%	3.2620%	1.6781%	0.8147%
45	30.3684%	16.6868%	14.2640%	8.6769%	6.3881%	5.2698%	4.5610%	3.7747%	3.3484%	1.5314%	0.8659%
46	29.7917%	16.9216%	14.2902%	7.7120%	6.4110%	5.4366%	5.3147%	3.7747%	3.2404%	1.4047%	0.8915%
47	29.0062%	17.1564%	14.3164%	7.3904%	6.7541%	5.5072%	6.0684%	3.7747%	2.9166%	1.4943%	0.9043%
48	28.2207%	17.3912%	14.3426%	7.7120%	7.0973%	5.7785%	6.4453%	3.8438%	2.7546%	2.0435%	0.9106%
49	27.4352%	17.6260%	14.3687%	9.2398%	7.2689%	5.9956%	6.5709%	4.2311%	2.8356%	2.2630%	0.9170%
50	26.6497%	17.8609%	14.3949%	9.9585%	7.2689%	6.1041%	6.5709%	4.4893%	3.2404%	2.3728%	0.9227%
51	25.8643%	17.8609%	14.4211%	10.6772%	7.2689%	6.1041%	6.5709%	4.5754%	3.6452%	2.3728%	0.9227%
52	25.0788%	17.8609%	14.4211%	11.0366%	7.2689%	6.1041%	6.5709%	4.7475%	3.7465%	2.3728%	0.9227%
53	24.6860%	17.8609%	14.4211%	11.0366%	7.2689%	6.1041%	6.5709%	4.8336%	3.7754%	2.3728%	0.9227%
54	24.6860%	17.8609%	14.4211%	11.0366%	7.2689%	6.1041%	6.5709%	5.1133%	3.7754%	2.3728%	0.9227%

EXHIBIT 2-4 WITHDRAWAL RATES

Age	TRS-Female										
	0 Years of Service	1 Year of Service	2 Years of Service	3 Years of Service	4 Years of Service	5 Years of Service	6 Years of Service	7Years of Service	8 Years of Service	9 Years of Service	At least 10 Years of Service
20	22.1624%	11.1743%	10.0290%	5.9871%	7.9156%	5.7015%	4.1279%	3.0151%	3.7037%	2.2766%	1.9527%
21	22.2584%	10.2302%	10.0290%	5.9871%	7.9156%	5.7015%	4.1279%	3.0151%	3.7037%	2.2766%	1.9527%
22	22.7539%	10.0414%	10.0290%	5.9871%	7.9156%	5.7015%	4.1279%	3.0151%	3.7037%	2.2766%	1.9527%
23	24.1991%	10.7967%	10.0290%	5.9871%	7.9156%	5.7015%	4.1279%	3.0151%	3.7037%	2.2766%	1.9527%
24	30.6350%	13.0625%	10.0290%	5.9474%	7.9156%	5.7015%	4.1279%	3.0151%	3.7037%	2.2766%	1.9527%
25	33.2325%	17.5943%	10.2290%	6.4680%	4.2156%	5.1015%	4.0469%	3.0151%	3.7037%	2.2766%	1.9527%
26	35.3217%	18.9852%	10.6684%	7.2489%	4.8382%	4.7684%	3.9012%	3.0151%	3.7037%	2.2766%	1.9527%
27	36.0933%	19.8520%	12.7538%	8.0297%	5.1495%	3.9255%	3.7846%	3.0151%	3.7037%	2.2766%	1.9527%
28	36.0817%	20.2853%	14.1441%	8.8106%	5.4608%	4.2029%	3.7458%	3.0151%	3.5810%	2.2766%	1.9527%
29	35.4235%	20.5020%	14.1602%	9.5915%	5.7721%	4.8963%	3.9012%	3.1232%	3.2407%	2.2766%	1.9527%
30	34.6747%	20.2316%	13.9988%	9.9819%	7.3286%	5.3123%	4.2120%	3.3722%	2.9005%	2.2766%	1.9527%
31	34.3752%	19.9612%	13.6830%	10.6115%	7.6094%	6.0404%	5.1611%	3.6984%	2.9725%	2.4035%	1.9527%
32	33.5848%	19.5888%	13.3673%	10.9263%	7.8901%	6.7684%	5.6356%	4.0686%	3.2607%	2.6574%	1.9527%
33	32.7944%	19.2164%	13.0516%	11.2411%	8.1709%	7.1845%	5.8505%	4.3387%	3.5489%	2.7589%	1.9527%
34	32.0040%	18.8440%	12.7358%	11.3290%	8.4516%	7.2885%	6.0654%	4.5088%	3.8371%	3.0635%	1.9527%
35	31.2137%	18.1656%	12.4201%	11.3729%	8.7323%	7.3130%	6.1088%	4.6793%	3.9811%	3.3681%	1.8793%
36	30.4496%	17.4543%	12.2312%	11.0640%	8.6076%	7.0552%	5.8894%	4.8497%	4.0833%	3.5204%	1.7327%
37	29.6856%	16.7429%	12.0422%	10.5598%	8.4828%	6.7974%	5.6701%	4.8838%	4.0413%	3.4443%	1.5860%
38	28.9215%	16.0316%	11.8533%	10.0557%	8.2956%	6.5396%	5.4507%	4.9179%	3.9994%	3.3681%	1.4393%
39	28.1575%	15.3202%	11.6644%	9.5515%	8.0149%	6.2819%	5.2314%	4.9213%	3.9574%	3.1777%	1.2192%
40	27.3935%	14.6089%	11.4754%	9.2994%	7.3750%	6.0241%	5.0120%	4.9359%	3.9155%	3.0254%	1.1459%
41	26.9779%	14.4793%	11.1172%	9.1252%	7.4162%	5.9860%	4.8675%	4.4929%	3.7437%	3.0242%	1.1182%
42	26.5623%	14.3498%	10.7590%	9.2030%	7.4575%	5.9479%	4.7230%	4.0499%	3.5718%	3.0230%	1.0905%
43	26.1467%	14.2203%	10.4009%	9.2809%	7.4987%	5.9098%	4.5785%	3.6070%	3.4000%	3.0218%	1.0628%
44	25.7311%	14.0908%	10.0427%	9.3587%	7.5400%	5.8717%	4.4339%	3.5516%	3.2282%	3.0207%	1.0351%
45	25.3155%	14.0260%	9.8636%	9.4366%	7.5812%	5.8336%	4.3617%	3.8284%	3.0564%	3.0195%	1.0074%
46	25.7124%	14.2616%	9.9349%	9.5174%	7.4383%	5.8048%	4.4604%	3.8381%	3.0284%	2.9256%	0.9941%
47	26.7047%	14.3794%	10.1854%	9.5983%	7.2954%	5.7761%	4.6315%	3.8478%	3.0004%	2.8317%	0.9808%
48	27.6970%	14.7033%	10.4358%	9.6791%	7.1525%	5.7474%	4.8025%	3.8574%	2.9724%	2.7377%	0.9675%
49	28.6893%	15.1626%	10.6862%	9.7600%	7.0096%	5.7187%	4.9735%	3.8671%	2.9444%	2.6438%	0.9542%
50	29.6815%	15.4630%	10.9367%	9.8408%	6.8667%	5.6900%	5.1446%	3.8767%	2.9164%	2.5499%	0.9409%
51	29.9296%	15.7633%	11.1871%	9.8408%	6.7238%	5.6900%	5.1446%	3.8767%	2.9164%	2.5499%	0.9409%
52	29.9296%	16.0636%	11.1871%	9.8408%	6.7238%	5.6900%	5.1446%	3.8767%	2.9164%	2.5499%	0.9409%
53	29.9296%	16.2138%	11.1871%	9.8408%	6.7238%	5.6900%	5.1446%	3.8767%	2.9164%	2.5499%	0.9409%
54	29.9296%	16.2138%	11.1871%	9.8408%	6.7238%	5.6900%	5.1446%	3.8767%	2.9164%	2.5499%	0.9409%

EXHIBIT 2-5 DISABILITY RATES

Age	ERS			PFRS		TRS	
	Accidental Disability Tiers 1 & 2	Accidental Disability Tiers 3, 4, 5	All Other Disability	Accidental Disability*	All Other Disability	Male Disability **	Female Disability **
15	0.020%	0.001%	0.049%	0.053%	0.047%		
16	0.020%	0.001%	0.049%	0.053%	0.047%		
17	0.020%	0.001%	0.049%	0.053%	0.047%		
18	0.020%	0.001%	0.049%	0.053%	0.047%		
19	0.020%	0.001%	0.049%	0.053%	0.047%		
20	0.020%	0.001%	0.049%	0.053%	0.047%		
21	0.020%	0.001%	0.049%	0.053%	0.047%		
22	0.020%	0.001%	0.049%	0.053%	0.047%		
23	0.020%	0.001%	0.049%	0.053%	0.047%		
24	0.020%	0.001%	0.049%	0.053%	0.047%		
25	0.020%	0.001%	0.049%	0.053%	0.047%		
26	0.020%	0.001%	0.049%	0.053%	0.047%		
27	0.020%	0.001%	0.049%	0.053%	0.047%		
28	0.020%	0.001%	0.049%	0.056%	0.047%		
29	0.020%	0.001%	0.049%	0.060%	0.047%		
30	0.020%	0.001%	0.049%	0.065%	0.047%	0.0003%	0.0005%
31	0.020%	0.001%	0.049%	0.087%	0.047%	0.0008%	0.0008%
32	0.020%	0.001%	0.055%	0.114%	0.047%	0.0015%	0.0010%
33	0.020%	0.001%	0.065%	0.146%	0.047%	0.0024%	0.0037%
34	0.020%	0.001%	0.077%	0.181%	0.047%	0.0040%	0.0076%
35	0.020%	0.003%	0.087%	0.219%	0.047%	0.0062%	0.0098%
36	0.020%	0.004%	0.095%	0.261%	0.047%	0.0091%	0.0102%
37	0.020%	0.004%	0.099%	0.303%	0.047%	0.0126%	0.0105%
38	0.020%	0.004%	0.101%	0.345%	0.047%	0.0164%	0.0126%
39	0.020%	0.004%	0.103%	0.386%	0.047%	0.0196%	0.0159%
40	0.020%	0.004%	0.108%	0.424%	0.038%	0.0226%	0.0214%
41	0.020%	0.004%	0.119%	0.464%	0.032%	0.0245%	0.0274%
42	0.020%	0.004%	0.137%	0.507%	0.029%	0.0278%	0.0310%
43	0.020%	0.004%	0.160%	0.555%	0.031%	0.0330%	0.0376%
44	0.020%	0.004%	0.185%	0.610%	0.037%	0.0398%	0.0452%
45	0.020%	0.005%	0.212%	0.666%	0.047%	0.0470%	0.0501%
46	0.020%	0.005%	0.240%	0.714%	0.059%	0.0530%	0.0522%
47	0.020%	0.006%	0.270%	0.747%	0.073%	0.0569%	0.0568%
48	0.020%	0.006%	0.299%	0.758%	0.079%	0.0611%	0.0666%
49	0.020%	0.006%	0.326%	0.763%	0.086%	0.0707%	0.0818%
50	0.020%	0.005%	0.348%	0.762%	0.092%	0.0889%	0.0986%
51	0.020%	0.005%	0.364%	0.758%	0.100%	0.1091%	0.1187%
52	0.020%	0.005%	0.374%	0.754%	0.108%	0.1190%	0.1325%
53	0.020%	0.004%	0.404%	0.751%	0.116%	0.1250%	0.1380%
54	0.020%	0.004%	4.370%	0.748%	0.126%	0.1225%	0.1375%
55	0.015%	0.003%	0.472%	0.745%	0.136%		
56	0.015%	0.002%	0.509%	0.743%	0.147%		
57	0.015%	0.002%	0.550%	0.742%	0.158%		
58	0.015%	0.001%	0.594%	0.742%	0.171%		
59	0.015%	0.001%	0.642%	0.742%	0.185%		
60	0.015%	0.001%	0.693%	0.742%	0.200%		
61	0.015%	0.001%	0.748%	0.742%	0.216%		
62	0.015%	0.001%	0.808%	0.742%	0.233%		
63	0.015%	0.001%	0.873%	0.742%	0.251%		
64	0.015%	0.001%	0.943%	0.742%	0.272%		
65	0.015%	0.001%	1.018%	0.742%	0.293%		
66	0.015%	0.001%	1.100%	0.742%	0.317%		
67	0.015%	0.001%	1.188%	0.742%	0.342%		
68	0.015%	0.001%	1.283%	0.742%	0.369%		
69	0.015%	0.001%	1.385%	0.742%	0.399%		
70	0.000%	0.000%	0.000%	0.000%	0.000%		

* Includes performance of duty

** Assumes all disabilities are non-coincidental

EXHIBIT 2-6 RETIREMENT RATES

Age	ERS – Tier 1 Years of Service			Age	ERS Tiers 2, 3 & 4 Years of Service		
	<20	20-29.99	> = 30		<20	20-29.99	> = 30
55	16.985%	34.977%	77.499%	55	5.709%	9.699%	49.644%
56	9.286%	13.929%	26.808%	56	3.790%	5.833%	18.949%
57	7.541%	11.619%	23.320%	57	3.798%	6.138%	19.353%
58	9.055%	12.956%	21.587%	58	4.130%	6.845%	18.667%
59	10.371%	15.469%	21.164%	59	4.706%	7.568%	20.626%
60	10.331%	17.394%	21.365%	60	5.402%	8.467%	21.232%
61	13.785%	21.229%	24.184%	61	8.467%	18.948%	25.166%
62	19.152%	34.528%	35.390%	62	14.854%	37.678%	34.932%
63	15.155%	25.017%	23.024%	63	11.136%	24.518%	26.016%
64	17.236%	29.052%	23.115%	64	12.653%	24.300%	22.955%
65	22.845%	29.262%	26.254%	65	16.595%	28.931%	22.940%
66	23.898%	31.788%	26.292%	66	18.398%	32.495%	26.979%
67	19.844%	28.362%	22.238%	67	16.206%	27.929%	25.803%
68	15.865%	31.095%	20.547%	68	15.145%	27.447%	22.906%
69	19.512%	26.244%	18.605%	69	15.375%	26.557%	24.605%
70	100.000%	100.000%	100.000%	70	100.000%	100.000%	100.000%

Age	ERS – Tier 5 Years of Service			Age	ERS-Tier 6 Years of Service		
	<20	20-29.99	> = 30		<20	20-29.99	> = 30
55	4.567%	7.759%	9.699%	55	4.567%	7.759%	9.699%
56	3.032%	4.666%	5.833%	56	3.032%	4.666%	5.833%
57	3.038%	4.910%	6.138%	57	3.038%	4.910%	6.138%
58	3.304%	5.476%	6.845%	58	3.304%	5.476%	6.845%
59	3.765%	6.054%	7.568%	59	3.765%	6.054%	7.568%
60	4.322%	6.774%	8.467%	60	4.322%	6.774%	8.467%
61	6.774%	15.158%	18.948%	61	6.774%	15.158%	18.948%
62	34.854%	47.678%	42.932%	62	9.854%	17.678%	27.678%
63	11.136%	24.518%	26.016%	63	36.136%	54.518%	35.016%
64	12.653%	24.300%	22.955%	64	12.653%	24.300%	22.955%
65	16.595%	28.931%	22.940%	65	16.595%	28.931%	22.940%
66	18.398%	32.495%	26.979%	66	18.398%	32.495%	26.979%
67	16.206%	27.929%	25.803%	67	16.206%	27.929%	25.803%
68	15.145%	27.447%	22.906%	68	15.145%	27.447%	22.906%
69	15.375%	26.557%	24.605%	69	15.375%	26.557%	24.605%
70	100.000%	100.000%	100.000%	70	100.000%	100.000%	100.000%

EXHIBIT 2-6 RETIREMENT RATES

<u>Age</u>	<u>PFRS – Tier 1 Years of Service</u>			<u>Age</u>	<u>PFRS Tiers 2+ Years of Service</u>		
	<u><20</u>	<u>20-29.99</u>	<u>> = 30</u>		<u><20</u>	<u>20-29.99</u>	<u>> = 30</u>
55	16.9850%	34.9770%	77.4990%	55	16.9850%	34.9770%	34.9770%
56	9.2860%	13.9290%	26.8080%	56	9.2860%	13.9290%	13.9290%
57	7.5410%	11.6190%	23.3200%	57	7.5410%	11.6190%	11.6190%
58	9.0550%	12.9560%	21.5870%	58	9.0550%	12.9560%	12.9560%
59	10.3710%	15.4690%	21.1640%	59	10.3710%	15.4690%	15.4690%
60	10.3310%	17.3940%	21.3650%	60	10.3310%	17.3940%	17.3940%
61	13.7850%	21.2290%	24.1840%	61	13.7850%	21.2290%	21.2290%
62	19.1520%	34.5280%	35.3900%	62	19.1520%	34.5280%	34.5280%
63	15.1550%	25.0170%	23.0240%	63	15.1550%	25.0170%	25.0170%
64	17.2360%	29.0520%	23.1150%	64	17.2360%	29.0520%	29.0520%
65	22.8450%	29.2620%	26.2540%	65	22.8450%	29.2620%	29.2620%
66	23.8980%	31.7880%	26.2920%	66	23.8980%	31.7880%	31.7880%
67	19.8440%	28.3620%	22.2380%	67	19.8440%	28.3620%	28.3620%
68	15.8650%	31.0950%	20.5470%	68	15.8650%	31.0950%	31.0950%
69	19.5120%	26.2440%	18.6050%	69	19.5120%	26.2440%	26.2440%
70	100.0000%	100.0000%	100.0000%	70	100.000%	100.000%	100.000%

<u>Age</u>	<u>Campus- ORD Gender</u>	
	<u>Male</u>	<u>Female</u>
55	14.9660%	42.3520%
56	15.6730%	6.8110%
57	13.7650%	11.3590%
58	14.1260%	15.3500%
59	8.7310%	14.7200%
60	15.9830%	32.1530%
61	9.1370%	7.2390%
62	23.2370%	45.4750%
63	30.2020%	33.5850%
64	25.3080%	23.1600%
65	37.7420%	53.2100%
66	80.4840%	74.4940%
67	71.5000%	78.2187%
68	45.7670%	82.1296%
69	53.2900%	86.2361%
70	100.0000%	100.0000%

EXHIBIT 2-6 RETIREMENT RATES

Age	Stony Brook Hospital and Brooklyn Hospital Years of Service			Age	Syracuse Hospital Years of Service		
	<20	20-29.99	> = 30		<20	20-29.99	> = 30
55	3.638%	6.021%	11.535%	55	3.280%	8.177%	45.994%
56	2.598%	3.479%	7.116%	56	2.667%	6.296%	20.528%
57	0.749%	2.088%	16.905%	57	5.452%	11.468%	23.624%
58	3.227%	4.447%	10.315%	58	6.580%	14.904%	10.557%
59	1.988%	3.078%	9.547%	59	4.765%	4.257%	16.795%
60	3.316%	4.060%	7.418%	60	6.750%	15.016%	18.350%
61	3.506%	1.826%	15.485%	61	17.361%	1.192%	16.334%
62	16.651%	27.625%	19.936%	62	35.591%	37.295%	57.204%
63	10.340%	5.067%	17.625%	63	22.540%	19.553%	42.265%
64	16.173%	11.397%	25.838%	64	29.289%	23.624%	42.265%
65	17.935%	16.318%	33.333%	65	47.777%	29.289%	13.397%
66	19.936%	52.860%	51.962%	66	47.777%	62.204%	39.706%
67	35.242%	8.974%	15.485%	67	13.397%	42.265%	29.289%
68	18.350%	57.360%	46.548%	68	29.289%	21.250%	20.472%
69	24.407%	10.557%	45.870%	69	29.289%	21.250%	20.472%
70	100.000%	100.000%	100.000%	70	100.000%	100.000%	100.000%

Years of Service	ERS (Corrections)	ERS (Corrections)
	Tiers 1 & 2	Tier 3
25	20.915%	28.858%
26	22.135%	20.282%
27	22.418%	15.548%
28	21.834%	14.194%
29	20.314%	14.808%
30	18.023%	15.703%
31	15.638%	15.953%
32	15.787%	15.952%
33	18.173%	16.334%
34	20.559%	17.794%
35	23.067%	20.875%
36	27.093%	25.848%
37	33.205%	32.815%
38	38.247%	32.815%
39	39.053%	32.815%
40	39.053%	32.815%
41	39.053%	32.815%
42	39.053%	32.815%
43	39.053%	32.815%
44	39.053%	32.815%
45	39.053%	32.815%
46	39.053%	32.815%
47	39.053%	32.815%
48	39.053%	32.815%
49	39.053%	32.815%
50	100.000%	100.000%

EXHIBIT 2-6 RETIREMENT RATES

Age	Tier 1		TRS Tiers 2, 3, 4, SVC<30		TRS Tiers 2, 3, 4, SVC=30+	
	Males	Females	Males	Females	Males	Females
	55	30.6695%	31.3992%	3.1965%	3.4565%	30.6695%
56	28.0779%	28.8116%	3.1782%	3.5761%	28.0779%	28.8116%
57	25.2448%	26.9473%	3.6262%	4.1750%	25.2448%	26.9473%
58	25.9437%	26.1016%	4.3899%	4.6349%	25.9437%	26.1016%
59	28.6545%	26.8785%	5.6398%	6.0339%	28.6545%	26.8785%
60	31.1011%	27.9410%	6.3578%	7.0415%	31.1011%	27.9410%
61	32.0232%	27.7166%	7.2217%	8.2590%	32.0232%	27.7166%
62	27.0303%	25.7157%	27.0303%	25.7157%	27.0303%	25.7157%
63	22.9352%	23.2947%	22.9352%	23.2947%	22.9352%	23.2947%
64	20.6863%	21.9224%	20.6863%	21.9224%	20.6863%	21.9224%
65	20.9678%	23.8272%	20.9678%	23.8272%	20.9678%	23.8272%
66	21.7437%	24.4523%	21.7437%	24.4523%	21.7437%	24.4523%
67	21.6934%	23.6791%	21.6934%	23.6791%	21.6934%	23.6791%
68	20.8294%	22.0367%	20.8294%	22.0367%	20.8294%	22.0367%
69	18.7086%	23.0935%	18.7086%	23.0935%	18.7086%	23.0935%
70	16.3555%	22.9295%	16.3555%	22.9295%	16.3555%	22.9295%
71	14.6721%	21.2056%	14.6721%	21.2056%	14.6721%	21.2056%
72	16.9602%	18.0451%	16.9602%	18.0451%	16.9602%	18.0451%
73	16.7377%	18.3107%	16.7377%	18.3107%	16.7377%	18.3107%
74	16.4226%	19.2125%	16.4226%	19.2125%	16.4226%	19.2125%
75	13.3890%	19.0633%	13.3890%	19.0633%	13.3890%	19.0633%
76	100.0000%	100.0000%	100.0000%	100.0000%	100.0000%	100.0000%

Age	Tier 5, SVC<30		TRS Tier 5, SVC=30+		Tier 6	
	Males	Females	Males	Females	Males	Females
	55	1.5983%	1.7283%	1.5983%	1.7283%	1.5983%
56	1.5891%	1.7881%	1.5891%	1.7881%	1.5891%	1.7881%
57	1.8131%	2.0875%	30.6695%	31.3992%	1.8131%	2.0875%
58	2.1950%	2.3175%	28.0779%	28.8116%	2.1950%	2.3175%
59	2.8199%	3.0170%	25.2448%	26.9473%	2.8199%	3.0170%
60	3.1789%	3.5208%	25.9437%	26.1016%	3.1789%	3.5208%
61	3.6109%	4.1295%	28.6545%	26.8785%	3.6109%	4.1295%
62	27.0303%	25.7157%	27.0303%	25.7157%	3.9942%	4.6683%
63	22.9352%	23.2947%	22.9352%	23.2947%	30.6695%	31.3992%
64	20.6863%	21.9224%	20.6863%	21.9224%	28.0779%	28.8116%
65	20.9678%	23.8272%	20.9678%	23.8272%	25.2448%	26.9473%
66	21.7437%	24.4523%	21.7437%	24.4523%	25.9437%	26.1016%
67	21.6934%	23.6791%	21.6934%	23.6791%	28.6545%	26.8785%
68	20.8294%	22.0367%	20.8294%	22.0367%	31.1011%	27.9410%
69	18.7086%	23.0935%	18.7086%	23.0935%	32.0232%	27.7166%
70	16.3555%	22.9295%	16.3555%	22.9295%	27.0303%	25.7157%
71	14.6721%	21.2056%	14.6721%	21.2056%	22.9352%	23.2947%
72	16.9602%	18.0451%	16.9602%	18.0451%	20.6863%	21.9224%
73	16.7377%	18.3107%	16.7377%	18.3107%	20.9678%	23.8272%
74	16.4226%	19.2125%	16.4226%	19.2125%	21.7437%	24.4523%
75	13.3890%	19.0633%	13.3890%	19.0633%	21.6934%	23.6791%
76	100.0000%	100.0000%	100.0000%	100.0000%	100.0000%	100.0000%

EXHIBIT 2-7SALARY SCALE

Service	ERS	PFRS
0	8.00%	27.00%
1	8.00%	27.00%
2	7.00%	13.50%
3	6.00%	11.50%
4	5.00%	9.50%
5	4.50%	7.50%
6	4.20%	5.30%
7	4.10%	4.40%
8	4.00%	4.30%
9	3.90%	4.20%
10	3.80%	4.10%
11	3.70%	4.00%
12	3.60%	3.90%
13	3.50%	3.80%
14	3.40%	3.70%
15	3.30%	3.60%
16	3.20%	3.50%
17	3.10%	3.40%
18	3.00%	3.30%
19	3.00%	3.30%
20	3.00%	3.30%
21	3.00%	3.30%
22	3.00%	3.30%
23	3.00%	3.30%
24	3.00%	3.30%
25	3.00%	3.30%
26	3.00%	3.30%
27	3.00%	3.30%
28	3.00%	3.30%
29	3.00%	3.30%
30	3.00%	3.30%
31	3.00%	3.30%
32	3.00%	3.30%
33	3.00%	3.30%
34	3.00%	3.30%
35	3.00%	3.30%
36	3.00%	3.30%
37	3.00%	3.30%
38	3.00%	3.30%
39	3.00%	3.30%
40	3.00%	3.30%
41	3.00%	3.30%
42	3.00%	3.30%
43	3.00%	3.30%
44	3.00%	3.30%
45	3.00%	3.30%
46	3.00%	3.30%
47	3.00%	3.30%
48	3.00%	3.30%
49	3.00%	3.30%
50	3.00%	3.30%
51	3.00%	3.30%
52	3.00%	3.30%
53	3.00%	3.30%
54	3.00%	3.30%
55	3.00%	3.30%

EXHIBIT 2-7 SALARY SCALE

<u>Duration</u>	<u>TRS Rate</u>
1	10.00%
2	7.00%
3	6.06%
4	5.22%
5	4.72%
6	4.45%
7	4.31%
8	4.22%
9	4.15%
10	4.07%
11	3.98%
12	3.87%
13	3.75%
14	3.61%
15	3.46%
16	3.31%
17	3.17%
18	3.04%
19	2.93%
20	2.82%
21	2.72%
22	2.63%
23	2.54%
24	2.45%
25	2.37%
26	2.29%
27	2.22%
28	2.15%
29	2.10%
30	2.06%
31	2.02%
32	2.00%
33	1.95%
34	1.93%
35	1.90%
36	1.86%
37	1.80%
38	1.76%
39	1.76%

Section 3 – Per Capita Plan Costs

Exhibit 3-1 provides support for the development of the recommended Empire Plan per capita plan costs. We developed the FY2018 costs by:

- Calculating claims incurred for 2016 separately by program and for non-Medicare vs. Medicare eligible retirees for State retirees.
- In the case of Medical Program claims, adjusting claims for the impact of credits (primarily claims paid outside the claim system) and Basic Medical network access fees;
- Estimating the impact of plan changes (see Exhibit 3-2 for details on changes to the plan);
- Increasing the claim costs for administrative expenses and risk charges;
- Increasing the claim costs for New York State indigent care and GME surcharges;
- Lowering the drug claim costs for manufacturer rebates; and
- Trending the results 15 months to FY2018.

Using the aging factors, we adjusted the resulting costs to age 65 for valuation purposes. Drug costs for non-Medicare and Medicare eligibles were blended for age adjustment to keep values consistent. EGWP revenue estimates were made based on Caremark reports for 2016.

As noted on the bottom of Exhibit 3-1, the results are below expected trend for medical but higher than expected trend for Rx relative to the per capita costs from the 4/1/2016 valuation.

**Exhibit 3-1 Development of Empire Plan Retiree Gross Per Capita Plan Cost
States -- 4/1/2017 - 3/31/2018**

			<u>Non-Medicare</u>		<u>Medicare</u>		<u>Total</u>
2016 Claims Incurred Before Adjustments	Hospital		\$ 257,345,899		\$ 70,334,894		\$ 327,680,793
	Medical		235,186,364		88,069,666		323,256,030
	MH/SA		<u>13,659,297</u>		<u>1,553,706</u>		<u>15,213,003</u>
	Total Medical		\$ 506,191,560		\$ 159,958,267		\$ 666,149,827
	Rx		<u>163,055,560</u>		<u>533,229,279</u>		<u>696,284,839</u>
	Total Medical & Rx		\$ 669,247,120		\$ 693,187,545		\$ 1,362,434,666
Basic Medical Fee	Medical		\$ 2,099,421		\$ 0		\$ 2,099,421
2016 Claims Incurred After Adjustments	Hospital		\$ 257,345,899		\$ 70,334,894		\$ 327,680,793
	Medical		\$ 237,285,785		\$ 88,069,666		\$ 325,355,452
	MH/SA		<u>13,659,297</u>		<u>1,553,706</u>		<u>15,213,003</u>
	Total Medical		\$ 508,290,981		\$ 159,958,267		\$ 668,249,248
	Rx		<u>163,055,560</u>		<u>533,229,279</u>		<u>696,284,839</u>
	Total Medical & Rx		\$ 671,346,541		\$ 693,187,545		\$ 1,364,534,087
2016 Average Enrollment	Hospital		44,740		141,677		186,417
	Medical		46,709		138,775		185,484
	MH/SA		47,677		134,503		182,180
	Rx		47,601		136,006		183,606
2016 Claims PMPM	Hospital		\$ 479.34		\$ 41.37		\$ 146.48
	Medical		\$ 423.34		\$ 52.89		\$ 146.18
	MH/SA		<u>\$ 23.87</u>		<u>\$ 0.96</u>		<u>\$ 6.96</u>
	Total Medical		\$ 26.55		\$ 95.22		\$ 299.62
	Rx		<u>\$ 285.46</u>		<u>\$ 326.72</u>		<u>\$ 316.02</u>
	Total Medical & Rx		\$ 1,212.01		\$ 421.94		\$ 615.64
4/1/2017 - 3/31/2018 PMPM	<u>15 Months Trend</u>						
	7.64%	7.64%	Hospital	\$ 515.96	\$ 44.53		\$ 157.67
	8.24%	8.24%	Medical	458.22	57.25		158.22
	11.09%	11.09%	MH/SA	<u>26.52</u>	<u>1.07</u>		<u>7.73</u>
			Total Medical	\$ 1,000.70	\$ 102.85		\$ 323.62
	12.51%	12.51%	Rx	<u>321.18</u>	<u>367.60</u>		<u>355.57</u>
		Total Medical & Rx	\$ 1,321.88	\$ 470.45		\$ 679.19	
4/1/2017 - 3/31/2018 PMPM After Plan Changes	<u>Adjustment %</u>						
	0.00%	0.00%	Hospital	\$ 515.96	\$ 44.53		\$ 157.67
	-0.26%	-0.26%	Medical	\$ 457.02	\$ 57.10		157.81
	0.00%	0.00%	MH/SA	<u>26.52</u>	<u>1.07</u>		<u>7.73</u>
			Total Medical	\$ 999.51	\$ 102.70		\$ 323.21
	0.00%	0.00%	Rx	<u>321.18</u>	<u>367.60</u>		<u>355.91</u>
		Total Medical & Rx	\$ 1,320.68	\$ 470.30		\$ 679.12	

**Exhibit 3-1 Development of Empire Plan Retiree Gross Per Capita Plan Cost
States -- 4/1/2017 – 3/31/2018**

	<u>% Claims</u>		<u>Non-Medicare</u>	<u>Medicare</u>	<u>Total</u>
Retention ¹	5.6%	Hospital	\$ 7.63	\$ 9.30	\$ 8.90
	12.2%	Medical	16.59	20.22	19.30
	19.2%	MH/SA	1.28	1.56	1.49
		Total Medical	\$ 25.50	\$ 31.08	\$ 29.69
	1.1%	Rx	1.57	4.52	3.76
		Total Medical & Rx	\$ 27.07	\$ 35.60	\$ 33.45
Indigent Care Surcharge ¹	<u>% Claims</u>				
	4.2%	Hospital	\$ 27.70	\$ 0.00	\$ 6.65
	0.4%	Medical	2.68	0.00	0.67
	1.5%	MH/SA	0.43	0.00	0.11
		Total Medical	\$ 30.81	\$ 0.00	\$ 7.44
	0.0%	Rx	0.00	0.00	0.00
	Total Medical & Rx	\$ 30.81	\$ 0.00	\$ 7.44	
Graduate Medical Expense Assessment¹		Hospital	\$ 5.78	\$ 0.00	\$ 1.39
		Medical	0.00	0.00	0.00
		MH/SA	0.00	0.00	0.00
		Total Medical	\$ 5.78	\$ 0.00	\$ 1.39
		Rx	0.00	0.00	0.00
		Total Medical & Rx	\$ 5.78	\$ 0.00	\$ 1.39
Rx Rebates ^{1,2}	<u>% Claims</u>				
	-5.6%	Rx	\$ (14.96)	\$ (21.68)	\$ (19.93)
4/1/2017 - 3/31/2018 Gross Cost PMPM Before NYBEAS		Hospital	\$ 557.08	\$ 53.83	\$ 174.61
		Medical	476.29	77.32	177.79
		MH/SA	28.23	2.63	9.33
		Total Medical	\$ 1,061.60	\$ 133.77	\$ 361.72
		Rx	307.79	350.45	339.73
		Total Medical & Rx	\$ 1,369.39	\$ 484.22	\$ 701.45
NYBEAS Admin Fee		Total Medical	\$ 0.04	\$ 0.04	0.04
4/1/2017 - 3/31/2018 Gross Cost PMPM After NYBEAS		Total Medical	\$ 1,061.64	\$ 133.81	\$ 361.76
		Rx	307.79	350.45	339.73
		Total Medical & Rx	\$ 1,369.43	\$ 484.26	\$ 701.50
Aging Factor (to age 65)			0.81167	1.27427	1.14732
4/1/2017 - 3/31/2018 Gross Cost PMPM After NYBEAS		Total Medical	\$1,307.97	\$105.01	
		Rx			\$ 296.11

¹ Based on projected figures for 2017 and 2018

² Percentage of claims before adjustment for plan changes

**Exhibit 3-1 Development of Empire Plan Retiree Gross Per Capita Plan Cost
 States -- 4/1/2017 – 3/31/2018**

		<u>Non-Medicare</u>		<u>Medicare</u>
@ Age 65	Total Medical	\$ 15,969		\$ 1,260
PMPY Before EGWP Revenue	Rx	3,553		3,553
	Total Medical & Rx	\$ 19,249		\$ 4,813
	% Drug	18%		74%
EGWP Revenue @ Average Age	Direct Subsidy		\$ (211)	
	Coverage Gap		(520)	
	Catastrophic		(511)	
	Total EGWP Revenue		\$ (1,242)	
Aging Factor				1,27862
EGWP @ Age 65				\$ (971)
@ Age 65	Total Medical	\$ 15,696		\$ 1,260
For Valuation (PMPY)	Rx	3,553		2,582
	Total Medical & Rx	\$ 19,249		\$ 3,842
	% Drug	18%		67%
4/1/2016 - 3/31/2017 Gross	Total Medical	\$ 15,643		\$ 1,171
Cost PMPY After NYBEAS	Rx	3,462		2,550
@ Age 65 (reflects EGWP Revenue)	Total Medical & Rx	\$ 19,105		\$ 3,721
Trend	2016 / 2017			
	Total Medical	6.75%		5.30%
	Rx	10.00%		10.00%
Expected 4/1/2017 - 3/31/2018	Total Medical	\$ 16,699		\$ 1,233
Gross after EGWP Revenue	Rx	3,808		2,085
	Total Medical & Rx	\$ 20,507		\$ 4,038
Actual Reflecting EGWP Revenue / Expected	Total Medical	-6.0%		2.2%
	Rx	-6.7%		-8.0%
	Total Medical & Rx	-6.1%		-4.9%

Exhibit 3-2 Empire Plan Changes

- **In-network Out-of-Pocket Limit** – For 2017, the maximum out-of-pocket limit for covered, in-network services under The Empire Plan was updated from \$6,850 to \$7,150 for Individual Coverage and from \$13,700 to \$14,300 for Family coverage, split between the Hospital, Medical/Surgical, Mental Health and Substance Abuse and Prescription Drug Programs
- **Infertility and Genetic Testing** – As of November 1, 2016, the definition of infertility has been broadened to align with the American Society for Reproductive Medicine. Benefits for qualified procedures continue to be subject to the \$50,000 lifetime maximum per covered individual. In addition, Pre-implantation Genetic Diagnosis (PGD) testing for the diagnosis of known genetic disorders in limited circumstances is now a covered benefit.

Section 4 – Health Care Trend

The Health Care Cost Trend assumption is used to project the current year per capita plan costs, premium rates, and Medicare Part B premiums into the future. These costs are applied to the surviving covered population to determine the stream of future payments. GASB 45 states that “The selection of all actuarial assumptions, including the health care cost trend rate... should be guided by actuarial standards” and should be based on actual experience of the covered group to the extent the experience of the group is credible. GASB 45 defines the Health Care Cost Trend rate as:

- The rate of change in per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.

Increases in medical costs can be volatile, as a result, this assumption is subject to wide variation and there can be a wide range of acceptable assumptions. In addition, our experience has shown that past cost increases are not necessarily indicative of future cost increases. Therefore, judgment is required in developing this assumption.

Based on a detailed analysis of the trend assumption, which considered the Actuarial Standard of Practice No. 6 (ASOP #6) - *Measuring Retiree Group Benefit Obligations*, research published by the Society of Actuaries entitled *Modeling Long Term Healthcare Cost Trends*, and other publications by actuaries and health care professionals regarding short-term medical cost increases and expected long-term health care spending, we believe that an appropriate trend assumption for valuing retiree health care liabilities should:

- Consider separate short-term trend rates for major cost components such as medical and prescription drug services;
- Be based primarily on the “core” trend components - medical inflation, utilization, and intensity of services, and exclude the impact of the aging of the covered population;
- Include short-term rates established with an emphasis towards the influences of the health care marketplace as a whole, while also considering the cost characteristics of the plan;
- Assume that over the long-term, health care costs ultimately will be constrained by the public’s ability and willingness to pay the higher cost of medical services; and
- Reflect the effect of future technology improvements on the long-term health care costs.

A typical retiree medical valuation uses health care trend rates that initially reflect recent experience in conjunction with the overall health care marketplace. Estimated marketplace trends are developed using a consistent series of market-wide data including: S&P Healthcare Economic Index, Carrier Surveys, CMS National Health Expenditures, Client Experience Monitoring Reports, CMS Trustees Report, Healthcare Components of CPI-W, and Pharmacy Benefit Manager Trend Reports. A separate trend assumption has been added to estimate the growth in expected EGWP revenue.

Initial trend rates are then assumed to grade down to an ultimate level that implies the National Health Expenditure (NHE) stabilizes as a percentage of Gross Domestic Product (GDP). In other words, the ultimate trend rate is equal to price inflation plus real GDP growth plus any allowances for leveraging of plan design variables, Medicare integration, and other cost drivers. The length of the select period — the period of time before the ultimate trend rate is reached — and the trend rate pattern during the select period have been developed by taking into account reasonable expectations for the ultimate portion of GDP consumed by the Health Care sector.

Exhibit 4-1 Medical Trend Assumption as Adjusted for Excise Tax Computations

NYS Empire Plan

<u>Year</u>	<u>Adjusted Trend</u>				<u>EGWP</u>
	<u>Pre-65</u>		<u>Post-65</u>		
	<u>Med</u>	<u>RX</u>	<u>Med</u>	<u>RX</u>	
2017/18	6.25%	9.50%	5.20%	9.50%	9.50%
2018/19	5.75%	9.00%	5.10%	9.00%	9.00%
2019/20	5.75%	8.00%	5.00%	8.00%	8.00%
2020/21	5.50%	7.00%	4.90%	7.00%	7.00%
2021/22	5.25%	6.00%	4.80%	6.00%	6.00%
2022/23	5.00%	5.50%	4.80%	5.50%	5.50%
2023/24	5.00%	5.25%	4.75%	5.25%	5.25%
2024/25	4.75%	5.00%	4.75%	5.00%	5.00%
2025/26	4.50%	4.50%	4.50%	4.50%	4.50%
2026/27	4.50%	4.50%	4.50%	4.50%	4.50%
2027/28	4.50%	4.50%	4.50%	4.50%	4.50%
2028/29	4.50%	4.50%	4.50%	4.50%	4.50%
2029/30	4.50%	4.50%	4.50%	4.50%	4.50%
2030/31	4.50%	4.50%	4.50%	4.50%	4.50%
2031/32	4.50%	4.50%	4.50%	4.50%	4.50%
2032/33	4.50%	4.50%	4.50%	4.50%	4.50%
2033/34	4.50%	4.50%	4.50%	4.50%	4.50%
2034/35	4.50%	4.50%	4.50%	4.50%	4.50%
2035/36	4.50%	4.50%	4.50%	4.50%	4.50%
2036/37	4.50%	4.50%	4.50%	4.50%	4.50%
2037/38	4.50%	4.50%	4.50%	4.50%	4.50%
2038/39	4.50%	4.50%	4.50%	4.50%	4.50%
2039/40	4.50%	4.50%	4.50%	4.50%	4.50%
2040/41	4.50%	4.50%	4.50%	4.50%	4.50%
2041/42	4.70%	4.70%	4.90%	5.01%	4.50%
2042/43	5.10%	5.10%	5.20%	5.39%	4.50%
2043/44	5.30%	5.30%	5.30%	5.52%	4.50%
2044/45	5.30%	5.30%	5.30%	5.51%	4.50%
2045/46	5.20%	5.20%	5.20%	5.39%	4.50%
2046/47	5.20%	5.20%	5.20%	5.38%	4.50%

Exhibit 4-1 Medical Trend Assumption as Adjusted for Excise Tax Computations

NYS Empire Plan

<u>Year</u>	<u>Adjusted Trend</u>				<u>EGWP</u>
	<u>Pre-65</u>		<u>Post-65</u>		
	<u>Med</u>	<u>RX</u>	<u>Med</u>	<u>RX</u>	
2047/48	5.20%	5.20%	5.20%	5.38%	4.50%
2048/49	5.20%	5.20%	5.20%	5.38%	4.50%
2049/50	5.20%	5.20%	5.20%	5.38%	4.50%
2050/51	5.10%	5.10%	5.10%	5.25%	4.50%
2051/52	5.10%	5.10%	5.10%	5.25%	4.50%
2052/53	5.10%	5.10%	5.10%	5.25%	4.50%
2053/54	5.10%	5.10%	5.10%	5.25%	4.50%
2054/55	5.10%	5.10%	5.10%	5.25%	4.50%
2055/56	5.10%	5.10%	5.10%	5.25%	4.50%
2056/57	5.10%	5.10%	5.10%	5.25%	4.50%
2057/58	5.00%	5.00%	5.00%	5.12%	4.50%
2058/59	5.00%	5.00%	5.00%	5.12%	4.50%
2059/60	5.00%	5.00%	5.00%	5.12%	4.50%
2060/61	5.00%	5.00%	5.00%	5.12%	4.50%
2061/62	5.00%	5.00%	5.00%	5.12%	4.50%
2062/63	5.00%	5.00%	5.00%	5.12%	4.50%
2063/64	5.00%	5.00%	5.00%	5.12%	4.50%
2064/65	5.00%	5.00%	5.00%	5.12%	4.50%
2065/66	4.90%	4.90%	4.90%	4.99%	4.50%
2066/67	4.90%	4.90%	4.90%	4.99%	4.50%
2067/68	4.90%	4.90%	4.90%	4.99%	4.50%
2068/69	4.90%	4.90%	4.90%	4.99%	4.50%
2069/70	4.90%	4.90%	4.90%	4.99%	4.50%
2070/71	4.90%	4.90%	4.90%	4.99%	4.50%
2071/72	4.90%	4.90%	4.90%	4.99%	4.50%
2072/73	4.90%	4.90%	4.90%	4.99%	4.50%
2073/74	4.90%	4.90%	4.90%	4.99%	4.50%
2074/75	4.90%	4.90%	4.90%	4.99%	4.50%
2075/76	4.90%	4.90%	4.90%	4.99%	4.50%
2076/77	4.80%	4.80%	4.80%	4.87%	4.50%
2077/78	4.80%	4.80%	4.80%	4.87%	4.50%
2078/79	4.80%	4.80%	4.80%	4.87%	4.50%
2079/80	4.80%	4.80%	4.80%	4.86%	4.50%

Exhibit 4-1 Medical Trend Assumption as Adjusted for Excise Tax Computations

NYS Empire Plan

<u>Year</u>	<u>Adjusted Trend</u>				<u>EGWP</u>
	<u>Pre-65</u>		<u>Post-65</u>		
	<u>Med</u>	<u>RX</u>	<u>Med</u>	<u>RX</u>	
2080/81	4.80%	4.80%	4.80%	4.86%	4.50%
2081/82	4.80%	4.80%	4.80%	4.86%	4.50%
2082/83	4.80%	4.80%	4.80%	4.86%	4.50%
2083/84	4.80%	4.80%	4.80%	4.86%	4.50%
2084/85	4.80%	4.80%	4.80%	4.86%	4.50%
2085/86	4.80%	4.80%	4.80%	4.86%	4.50%
2086/87	4.80%	4.80%	4.80%	4.86%	4.50%
2087/88	4.80%	4.80%	4.80%	4.86%	4.50%
2088/89	4.80%	4.80%	4.80%	4.86%	4.50%
2089/90	4.80%	4.80%	4.80%	4.86%	4.50%
2090/91	4.80%	4.80%	4.80%	4.86%	4.50%
2091/92	4.70%	4.70%	4.70%	4.74%	4.50%
2092/93	4.70%	4.70%	4.70%	4.74%	4.50%
2093/94	4.70%	4.70%	4.70%	4.74%	4.50%
2094/95	4.70%	4.70%	4.70%	4.74%	4.50%
2095/96	4.70%	4.70%	4.70%	4.74%	4.50%
2096/97	4.70%	4.70%	4.70%	4.74%	4.50%
2097/98	4.70%	4.70%	4.70%	4.74%	4.50%
2098/99	4.70%	4.70%	4.70%	4.74%	4.50%
2099/100	4.70%	4.70%	4.70%	4.74%	4.50%

Exhibit 4-1 Medical Trend Assumption as Adjusted for Excise Tax Computations

NYS HMOs

<u>Year</u>	<u>Adjusted Trend</u>				<u>EGWP</u>
	<u>Pre-65</u>		<u>Post-65</u>		
	<u>Med</u>	<u>RX</u>	<u>Med</u>	<u>RX</u>	
2017/18	6.25%	9.50%	5.20%	9.50%	9.50%
2018/19	5.75%	9.00%	5.10%	9.00%	9.00%
2019/20	5.75%	8.00%	5.00%	8.00%	8.00%
2020/21	5.50%	7.00%	4.90%	7.00%	7.00%
2021/22	5.25%	6.00%	4.80%	6.00%	6.00%
2022/23	5.00%	5.50%	4.80%	5.50%	5.50%
2023/24	5.00%	5.25%	4.75%	5.25%	5.25%
2024/25	4.75%	5.00%	4.75%	5.00%	5.00%
2025/26	4.50%	4.50%	4.50%	4.50%	4.50%
2026/27	4.50%	4.50%	4.50%	4.50%	4.50%
2027/28	4.50%	4.50%	4.50%	4.50%	4.50%
2028/29	4.50%	4.50%	4.50%	4.50%	4.50%
2029/30	4.50%	4.50%	4.50%	4.50%	4.50%
2030/31	4.50%	4.50%	4.50%	4.50%	4.50%
2031/32	4.50%	4.50%	4.50%	4.50%	4.50%
2032/33	4.50%	4.50%	4.50%	4.50%	4.50%
2033/34	4.50%	4.50%	4.50%	4.50%	4.50%
2034/35	4.50%	4.50%	4.50%	4.50%	4.50%
2035/36	4.50%	4.50%	4.50%	4.50%	4.50%
2036/37	4.50%	4.50%	4.50%	4.50%	4.50%
2037/38	4.50%	4.50%	4.50%	4.50%	4.50%
2038/39	4.50%	4.50%	4.50%	4.50%	4.50%
2039/40	4.50%	4.50%	4.50%	4.50%	4.50%
2040/41	4.50%	4.50%	4.50%	4.50%	4.50%
2041/42	4.50%	4.50%	4.50%	4.50%	4.50%
2042/43	4.50%	4.50%	4.50%	4.50%	4.50%
2043/44	4.50%	4.50%	4.50%	4.50%	4.50%
2044/45	4.50%	4.50%	4.50%	4.50%	4.50%
2045/46	4.50%	4.50%	4.50%	4.50%	4.50%
2046/47	4.70%	4.70%	4.90%	4.90%	4.50%

Exhibit 4-1 Medical Trend Assumption as Adjusted for Excise Tax Computations

NYS HMOs

<u>Year</u>	<u>Adjusted Trend</u>				<u>EGWP</u>
	<u>Pre-65</u>		<u>Post-65</u>		
	<u>Med</u>	<u>RX</u>	<u>Med</u>	<u>RX</u>	
2047/48	4.90%	4.90%	5.00%	5.00%	4.50%
2048/49	5.30%	5.30%	5.30%	5.30%	4.50%
2049/50	5.30%	5.30%	5.30%	5.30%	4.50%
2050/51	5.20%	5.20%	5.20%	5.20%	4.50%
2051/52	5.20%	5.20%	5.20%	5.20%	4.50%
2052/53	5.20%	5.20%	5.20%	5.20%	4.50%
2053/54	5.20%	5.20%	5.20%	5.20%	4.50%
2054/55	5.20%	5.20%	5.20%	5.20%	4.50%
2055/56	5.20%	5.20%	5.10%	5.10%	4.50%
2056/57	5.10%	5.10%	5.10%	5.10%	4.50%
2057/58	5.10%	5.10%	5.10%	5.10%	4.50%
2058/59	5.10%	5.10%	5.10%	5.10%	4.50%
2059/60	5.10%	5.10%	5.10%	5.10%	4.50%
2060/61	5.10%	5.10%	5.10%	5.10%	4.50%
2061/62	5.10%	5.10%	5.10%	5.10%	4.50%
2062/63	5.00%	5.00%	5.00%	5.00%	4.50%
2063/64	5.00%	5.00%	5.00%	5.00%	4.50%
2064/65	5.00%	5.00%	5.00%	5.00%	4.50%
2065/66	5.00%	5.00%	5.00%	5.00%	4.50%
2066/67	5.00%	5.00%	5.00%	5.00%	4.50%
2067/68	5.00%	5.00%	5.00%	5.00%	4.50%
2068/69	5.00%	5.00%	5.00%	5.00%	4.50%
2069/70	5.00%	5.00%	5.00%	5.00%	4.50%
2070/71	5.00%	5.00%	4.90%	4.90%	4.50%
2071/72	4.90%	4.90%	4.90%	4.90%	4.50%
2072/73	4.90%	4.90%	4.90%	4.90%	4.50%
2073/74	4.90%	4.90%	4.90%	4.90%	4.50%
2074/75	4.90%	4.90%	4.90%	4.90%	4.50%
2075/76	4.90%	4.90%	4.90%	4.90%	4.50%
2076/77	4.90%	4.90%	4.90%	4.90%	4.50%
2077/78	4.90%	4.90%	4.90%	4.90%	4.50%
2078/79	4.90%	4.90%	4.90%	4.90%	4.50%
2079/80	4.90%	4.90%	4.90%	4.90%	4.50%

Exhibit 4-1 Medical Trend Assumption as Adjusted for Excise Tax Computations

NYS HMOs

<u>Year</u>	<u>Adjusted Trend</u>				<u>EGWP</u>
	<u>Pre-65</u>		<u>Post-65</u>		
	<u>Med</u>	<u>RX</u>	<u>Med</u>	<u>RX</u>	
2080/81	4.90%	4.90%	4.90%	4.90%	4.50%
2081/82	4.80%	4.80%	4.80%	4.80%	4.50%
2082/83	4.80%	4.80%	4.80%	4.80%	4.50%
2083/84	4.80%	4.80%	4.80%	4.80%	4.50%
2084/85	4.80%	4.80%	4.80%	4.80%	4.50%
2085/86	4.80%	4.80%	4.80%	4.80%	4.50%
2086/87	4.80%	4.80%	4.80%	4.80%	4.50%
2087/88	4.80%	4.80%	4.80%	4.80%	4.50%
2088/89	4.80%	4.80%	4.80%	4.80%	4.50%
2089/90	4.80%	4.80%	4.80%	4.80%	4.50%
2090/91	4.80%	4.80%	4.80%	4.80%	4.50%
2091/92	4.80%	4.80%	4.80%	4.80%	4.50%
2092/93	4.80%	4.80%	4.80%	4.80%	4.50%
2093/94	4.80%	4.80%	4.80%	4.80%	4.50%
2094/95	4.80%	4.80%	4.80%	4.80%	4.50%
2095/96	4.80%	4.80%	4.80%	4.80%	4.50%
2096/97	4.80%	4.80%	4.70%	4.70%	4.50%
2097/98	4.70%	4.70%	4.70%	4.70%	4.50%
2098/99	4.70%	4.70%	4.70%	4.70%	4.50%
2099/100	4.70%	4.70%	4.70%	4.70%	4.50%
2080/81	4.90%	4.90%	4.90%	4.90%	4.50%

Section 5 – Demographic Assumptions

Demographic assumptions are rates of mortality, disability, withdrawal and retirement. With the exception of SUNY Campus employees, most State employees are covered by ERS and, to a lesser extent, by the PFRS. We reviewed the 2015 demographic assumptions adopted for use by the New York State & Local Retirement System to value participants in ERS and PFRS and concluded that these assumptions generally form a reasonable basis for our valuation. These assumptions are different than what was used for prior year valuations, reflecting a study of the experience from April 1, 2010 through March 31, 2015.

Note for PEs: *The New York State & Local Retirement System applied mortality improvement by projecting the rates using Scale MP 2014 generationally for the post-retirement mortality of current retirees. Each individual PE should determine the assumption about mortality improvement after consulting with their actuary.*

We did not examine the detailed experience underlying the development of those assumptions. The assumptions were based on the experience of ERS and PFRS as a whole, and do not reflect any potential differences in termination rates between State employees and employees of PAs and PEs. No adjustments were made for the possibility that an employee could terminate from the State but remain covered under ERS or PFRS with a different employer.

Since census data relating to job type was not readily available to Aon Hewitt, we used a blended postretirement mortality assumption in past years by assuming that retirees were split as follows:

Gender	Clerks	Laborers
Males	85.0%	15.0%
Females	92.5%	7.5%

Note for PEs: *These blended assumptions were based on the proportion of State retirees who were clerks as compared to laborers and may differ for a particular PE.*

The New York State & Local Retirement System actuary determined this population split.

The New York State & Local Retirement System values ERS and PFRS beneficiaries using a separate mortality table. However, because the beneficiary population is not fully credible and because beneficiaries under a retirement plan can be other than the retiree's spouse, we did not use the beneficiary mortality table but rather used the retiree table.

At the request of SUNY, for the 2008 valuation, the plan performed a study of the withdrawal and retirement rates for the three SUNY hospitals. The hospitals proved to have significantly higher withdrawal rates than would have been expected based on the overall experience under the New York State & Local Retirement System, even after adjusting for the anticipated numbers of terminations due to death or disability. The overall number of terminations for each hospital was credible, although the various age and service cells were not necessarily credible on their own. Based on the separate data provided, but with consideration of the experience at the other hospitals and of NYS ERS rates used in 2008, the plan developed three separate withdrawal assumption tables. This experience has been reviewed for the 2016 valuation and updated tables are included in Exhibit 2-4. We will continue using

separate assumptions for these populations for the April 1, 2017 valuation.

Given the relative smaller number of SUNY hospital employees who terminated with age and service that would qualify them for retirement benefits, the plan has not developed a complete set of retirement rates for each of the three hospitals for each tier level. The rates developed combine Brooklyn Hospital and Stony Brook Hospital. The rates for Syracuse Hospital remain separate since they differ enough from the other hospitals

While some SUNY campus employees – primarily staff and not the professors – are in ERS, many are in the New York State Teachers' Retirement System (TRS), with the majority purchasing an annuity from TIAA-CREF. The plan completed an experience study of the withdrawal and retirement rates for SUNY Campus-ORD members who participate in TIAA/CREF and has developed separate tables for this population for the 2017 valuation. These group specific tables will be used for participants who are specifically noted as TIAA/CREF in the data. We will continue to recommend using the TRS assumptions for valuing SUNY Campus employees who are not clearly identified as ERS, PFRS, or TIAA/CREF.

Note for PEs: *The SUNY Hospital and SUNY Campus- ORD assumptions are based on the experience of particular employers and are not likely to be representative of the experience of any other particular PE.*

Section 6 – Health Care Reform Considerations

The Patient Protection and Affordable Care Act (PPACA), was signed March 23, 2010, with further changes enacted by the Health Care and Education Reconciliation Act (HCERA), signed March 30, 2010. This report has discussed various assumptions that were modified based on considerations under Health Care Reform legislation. This section discusses particular legislative changes that were reflected in our assumptions. We have not identified any other specific provision of Health Care Reform that would be expected to have a significant impact on the measured obligation. As additional guidance on the legislation is issued, we will continue to monitor any potential impacts.

Expansion of Child Coverage to Age 26 — Health Care Reform mandates that coverage be offered to any child, dependent or not, through age 26, consistent with coverage for any other dependent. New York State insurance law mandates coverage to age 29, but on a fully contributory basis. We have assumed that the impact of this increase is reflected in the underlying rates and the claims experience.

High Cost Plan Excise Tax — Health Care Reform includes various revenue raisers, one of which is the high cost plan excise tax. The expected impact of the excise tax on high cost health plans was reflected through adjusted trend rates. For the excise tax, the per capita claim amounts used in the valuation were trended forward using the unleveraged trend rates from the valuation and compared to the statutory threshold levels indexed at CPI (except for 2019 where an additional 1% was applied, per the statute). Any excess of the indexed plan costs over the indexed statutory threshold level (in 2020 and after) had a 40% tax applied. The unleveraged trend rates for 2019 and after were then adjusted to reflect any additional costs due to the excise tax to produce the leveraged trend rates used for the valuation.

Section 7 – Qualifications

Aon Hewitt has developed these recommended actuarial assumptions solely for the purpose of enabling New York State to value its obligation under GASB 45 and 75. Use of this report for any other purpose may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. No one may make any representations or warranties based on any statements or conclusions contained in this report without the written consent of Aon Hewitt.

Our projections are based on plan provisions, premium, claim and enrollment data provided to us by the Department of Civil Service and the four Empire Plan insurers. In selecting the discount rate assumption, we relied upon information provided to us by the Office of State Comptroller. In selecting the demographic assumptions, we relied upon analyses of historic experience and recommendations for assumptions under the New York State Employees Retirement System and the New York State Teachers' Retirement System prepared by the actuaries for those Systems, as well as census information provided to us by SUNY.

The recommendations in this report are a Statement of Actuarial Opinion, prepared by Tom Vicente and Betsy Hanson. Both Ms. Hanson and Mr. Vicente are Fellows of the Society of Actuaries and are Members of the American Academy of Actuaries and have met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.