AOFF Consulting Executive Summary

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Overview

Over the past few years, the pension plan at Climate Enterprises has experienced some unexpected demographic movement. In order to resolve this issue, AOFF Consulting has been asked to look at previous years' data and explain/resolve this peculiar movement.

Data Analysis/Methodology

To provide a credible pension plan, CliEnt's member data from years 2012-2017 were utilized. This collection of data included active, terminated, and retired members' company ID numbers and EEIDs. Also provided, on an inconsistent basis, were the date of births and date of hire for some, not all, of the members. In order to create our own assumptions the changes in status were carefully manipulated. Expected and actual liabilities are a very important, if not the most important, part of any pension plan. These were used to make adjustments to our assumptions. Expected liabilities were calculated by using the gender-blended mortality tables for each year of data, probability of retirement, probability of termination, and benefit paid out if an employee were to collect retirement benefits that year.

Result

According to the data analysis, we found that most of the active retirement rates are higher than the actuarial assumption in the appendix B. However, the active retirement rate is much lower at age 65, which means most people at age 65 choose to stay with company instead of retire. A similar trend is shown in appendix A for the Terminated Vested Retirement Rates.

In appendix C, based on the data, we found that the Active Termination Rates were miscalculated as they only depend on age.

Recommended Action

We believe the best course of action is to use the new proposed assumption rates as opposed to the current assumptions. Due to a changing demographic not only at Client Enterprises, but in most of the world, many people are retiring later. Our proposed assumptions for Active and Terminated Vested Retirement Rates would extend rates to stretch to 70 years rather than 65, and as a result, this would increase our expected liability. For Active Termination Rates, we propose changing the way these rates are found by making them dependent on both age and years of service. Specifically, we calculated new rates for those who have worked less than 5 years by separating the ages into groups of 10 and determining the rates based off the age group as well as their years of service. The result of this change would be a major decrease in liabilities due to the significant decrease in rates, which would offset the increase of the change in Active and Terminated Vested Retirement Rates. The overall result of all our changes would

be a decrease in liability, as needed to match our data. An exact layout of our proposed assumptions against the current assumptions can be found below.

Active & Terminated Vested Retirement Rates

		55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
ARR	Current	5%	5%	5%	5%	5%	10%	10%	20%	30%	40%	100%	N/A	N/A	N/A	N/A	N/A
	Proposed	5%	5%	5%	10%	15%	25%	25%	25%	30%	30%	30%	44%	58%	72%	86%	100%
TVRR	Current	5%	5%	5%	5%	5%	5%	5%	20%	20%	20%	100%	N/A	N/A	N/A	N/A	N/A
	Proposed	5%	5%	5%	5%	20%	20%	20%	20%	20%	20%	20%	36%	52%	68%	84%	100%

Active Termination Rates

Age	Current ATR
25-30	15%
31-34	12%
35-39	10%
40	9%
41	8%
42	7%
43	6%
44-54	5%

Proposed ATR				
Age		25-34	35-44	45-54
Years of Service	1	0.58%	8.09%	2.89%
	2	6.36%	14.45%	8.09%
	3	10.98%	15.03%	5.20%
	4	6.94%	6.94%	0.58%