ACTUARIAL VALUATION OF THE

STATE OF ALASKA LONG TERM CARE PROGRAM

as of 6/30/2017

L&E Actuaries & Consultants

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Table of Contents

I. Purpose and Scope

The Segal Company ("Segal") retained Lewis & Ellis, Inc. ("L&E") to perform an actuarial analysis of Alaska's Long-Term Care ("LTC") Program as of June 30, 2017. Specifically, our assignment was to develop a projection of future cash flows and to evaluate the adequacy of current assets and premium levels based on those cash flows.

This report summarizes the results of our actuarial valuation of Alaska's LTC Program as of June 30, 2017. Please note that this report is not meant to serve as complete actuarial documentation for this valuation. Additional data/information can be provided upon request.

We developed projected values using a seriatim projection model and we used those projected values along with current program financial information to determine the financial standing of the program. Consistent with the purpose of the valuation, no membership growth was assumed. The projection period is 60 years for the LTC in force. Gains and losses are accumulated at the effective earned rate over the projection period. The value at the end of the projection period could then be discounted at the earned rate to determine the magnitude of the deficiency reserve if the ending value was negative.

The projections of earnings are further dependent on numerous other assumptions that are outlined in detail in the following sections of this report. They are based on program experience where available and otherwise on our knowledge of industry experience. We have not generated liabilities and reserves consistent with statutory reporting requirements as this self-funded plan is not subject to such requirements.

Most of the data utilized by L&E in determining the values was obtained from the State of Alaska representatives. We did not attempt to audit or verify the accuracy of this data; however, we did review the information for reasonableness and consistency. Any inaccuracies in this information could affect the results of this report, perhaps materially. The type of information provided includes, but is not limited to:

1. Electronic listing of State of Alaska members;
2. Claim payments from 2009 to June 30, 2017;
3. Plan descriptions and gross premium rates for the model

plan/age cells;

4. Financial Statements for 2013-2017;

This report has been prepared for Segal and the State of Alaska. L&E has developed this report for the purpose and with the limitations stated above. Any distribution of this report must be made in its entirety.

Although the valuation projects earnings, this report should not in any way be presented or construed as an actuarial appraisal. Any reader of this report must possess a substantial level of expertise in areas relevant to this analysis to appreciate the significance of the assumptions and the impact of these assumptions on the illustrated results. This report must be read in its entirety to be understood. The reader should be advised by, among other experts, an actuary competent in the area of actuarial projections of LTC blocks of business so as not to misinterpret any of the projected results.

In addition, any third party with access to this report acknowledges, as a condition of receipt, that L&E does not make any representations or warranty as to the accuracy or completeness of this report. Any third party with access to this report cannot bring suit, claim, or action against L&E, including the individuals who authored this report, under any theory of law, related in any way to this report.

This actuarial valuation was performed based on the best estimate assumptions that are appropriate at the date of valuation. We do not reflect the potential for adverse deviations in actual future experiences in our best estimate assumptions. Assumptions could change as more information becomes known, which would impact the funded status reported in this valuation.

All source records and detail information are maintained at the Allen, Texas office of L&E, and members of L&E staff are available to explain any matter presented herein.

II. Summary

The purpose of the remainder of this report is to provide analysis of the reserve adequacy for all lines of business. Premiums, benefits and expenses were projected for 60 years for the State of Alaska's LTC program and then discounted back to June 30, 2017 at an appropriate discount rate. This present value was then compared to the total assets at June 30, 2017 to determine if the current assets are sufficient to fund future claims and expenses for the next 60 years.

The following table summarizes the present value of cash flows discounted at the net earned rates.

Valuation Results
Funded Status and Margin as of June 30, 2017

Component	($000)
1. PV of Future Benefits	$753,852
2. PV of Future Expenses	$5,096
3. PV of Future Premiums (PVFP)	$299,337
4. Valuation Liabilities (=3 – 1- 2)	($459,610)
5. Valuation Assets	$466,982
6. Valuation Margin (= 5 + 4)	$7,372
7. Margin as a % of PVFP (= 6/3)	2.5%
8. Funded Status (= 5/4)	101.6%

The Valuation Margin has fluctuated greatly over the last six years as a result of plan experience, investment returns, actuarial assumptions and the growth of the Program. The table below shows the margin/deficit for the Long-Term Care Program for the last three valuation reports ($000).

Valuation Date	Margin (Deficit)
June 30, 2009	$3,298
May 31, 2012	($70,875)
May 31, 2012 (Revised)	$30,280
June 30, 2015	$27,244
June 30, 2017	$7,372

III. Methodology

The present value calculations needed to compute Program liabilities consider expected future benefits, expenses and premium revenue discounted to the current valuation date. The present value calculations consider all future variables that affect the members’ continued participation in the LTC Program, as well as the benefits or expenses they will generate.

Information was provided to Lewis & Ellis regarding product specifications and in force business. The information was all as of June 30, 2017. Seriatim records were used to project future premiums and claims using proprietary software and then summarized by various plans in spreadsheets. All items of income and expenses were projected, as well as all items affecting cash flows. The models recognize the timing of benefit payments, premium income, expenses and other significant cash flow items.

Appropriate considerations in plan modeling to major plans include the following:

a. Type of coverage (nursing home, home health care, or both); Benefit period;
b. Presence (or absence) of automatic inflation benefit;
c. Level of premiums;
d. Issue age range; and,
e. Gender.

All of the above considerations were taken into account in determining the modeling for each individual.

Assumptions

L&E relied on Alaska personnel to provide a variety of information and data on the LTC insurance business in force. Although we did not independently verify nor audit this information supplied, we did review the information for reasonableness and consistency.

Alaska personnel supplied us with information regarding the gross premium rates, benefits, and coverage outlines for all of the LTC plans currently in force. The information was transmitted to us electronically.

Prior valuation studies were utilized when available and assumptions were validated against recent company experience. Future experience is based on projected future claim costs. Actual results will almost certainly differ from projected results. Each assumption utilized for completing the calculations is shown in detail in the remainder of this section.

Loss ratios on Long Term Care business are typically quite low in the early durations, but increase significantly by policy duration and as the insured ages. Alaska's experience has been consistent with this pattern. The State of Alaska has established the Retiree LTC Insurance Fund to support future LTC liabilities. At June 30, 2017, the fund was approximately $467 million.

Except where the plan provides for an automatic increase in the claim costs, neither the claim costs nor gross premiums have been adjusted for possible future claims inflation.

Model Plans

The following model plans are listed with a brief description of each plan.

Benefit	**Benefit Summary by Plan Option**			
	Bronze	**Silver**	**Gold**	**Platinum**
Lifetime Max	$200,000*	$400,000	$300,000	$300,000
Inflation Protection	None	None	5% Simple to age 85	5% Compound to Age 85
Elimination Period	90 Day	90 Day	90 Day	90 Day
Benefit Trigger	2 of 5 ADLs	2 of 6 ADLs or CI	2 of 6 ADLs or CI	2 of 6 ADLs or CI
NH Daily Benefit	$125 in-state, $75 out-of-state	$200	$200	$200
ALF Daily Benefit	If approved	$150	$150	$150
HHC Daily Benefit	$75 in-state, $40 out-of-state	$125	$125	$125
Hospice Daily Benefit	Not covered	$125	$125	$125
Respite Benefit	Not covered	Up to $200 daily, 14 days per calendar year	Up to $200 daily, 14 days per calendar year	Up to $200 daily, 14 days per calendar year

Distribution

The following tables outline the distribution of business for the existing in-force:

Benefit Option	Lives	Distribution
Bronze	6,879	25.5%
Silver	10,404	38.5%
Gold	6,636	24.6%
Platinum	3,078	11.4%
Total	26,997	100.0%

Gender	Lives	Distribution
Female	14,449	53.5%
Male	12,548	46.5%
Total	26,997	100.0%

Issue Year	Lives	Distribution
<1990	1,742	6.5%
1990-1994	1,712	6.3%
1995-1999	5,192	19.2%
2000-2004	5,334	19.8%
2005-2009	5,637	20.9%
2010-2014	5,822	21.6%
2015	437	1.6%
2016	559	2.1%
2017	562	2.1%
Total	26,997	100.0%

Lapses

The lapse assumption reflects the expected portion of participants who terminate their policies each year by not paying the renewal premiums. Lapse assumptions can vary based on a wide variety of factors, including the participants' age at enrollment and the number of years participants have their policies. In general, it is assumed that the longer that participants keep their policies, the less likely they are to lapse. Lapse rate assumptions greatly affect long-term care insurance premiums because when individuals lapse, future liabilities are immediately reduced although current assets are not affected.

Prior valuations have utilized ultimate lapse rate of 0.5%. We believe this is an appropriate ultimate lapse rate and therefore the lapse assumptions are consistent with the prior actuarial valuation.

Policy Year	Voluntary Lapse Rate
1	2.3%
2	1.2%
3	1.0%
4	0.9%
5	0.8%
6	0.7%
7	0.6%
8+	0.5%

Mortality Sex distinct 1994 GAM Table

Morbidity

For Long-Term Care insurance products, the substantial financial risks lie in morbidity assumptions. The morbidity assumptions reflect the amount of claim costs expected for participants. The key components driving claim costs are:

- Claim Incidence, which is the probability of going on claim
- Claim continuance, which is the length of time staying on claim, and
- Utilization, which is the level of claim payment.

It would be preferable to use the experience from the Alaska LTC Program. However, there have been less than 1,200 claims since the inception of the Program in 1987. Since this data is not fully credible the expected claim costs were developed from L&E's expected incidence rates and continuance tables and adjusted for State of Alaska's experience relative to L&E's expected costs.

Claim Reserve (Claims Payable)

The financial statements included a liability of claims payable. We calculated the claim liability by using the seriatim listing that was provided that contained Pending Claims as of the valuation date. We used this L&E continuance tables in order to calculate the present value of amounts not yet due (PVANYD). There were only 329 open claims which limits the credibility of the experience. We also reviewed the overall experience of the Alaska LTC Program Experience by calendar year.

Fiscal Year	Claims Payable ($000)	Source
2013	16,822	Alaska
2014	21,612	Alaska
2015	26,630	L&E
2016	28,574	L&E
2017	31,352	L&E

Actual Experience to Projected Values

The Alaska LTC Program covers less than 27,000 lives. In addition, LTC experience fluctuates on several factors including demographics, the economy and access to facilities. We compared the prior valuation to recent experience:

	Paid Claims			
Fiscal Year	Actual	Projected	Actual - Projected	Actual/ Projected
2016	14,566	14,058	507	103.6%
2017	12,272	14,563	(2,291)	84.3%

Claim costs were developed based on a combination of Alaska experience, industry experience, client data and actuarial judgment. In order to project the future experience we set our calibrated our claim cost models to produce loss ratios that are similar to recent experience:

	Incurred Claims		
Fiscal Year	Actual	Projected	Loss Ratio
2016	16,509		57%
2017	15,050		49%
2018		14,326	50%
2019		16,064	57%
2020		17,992	66%

The future projected claims were generated by applying the claim costs to the 6/30/2017 census. The projected claims (which are used in the actuarial valuation) are somewhat greater than recent experience. The incurred loss ratios are consistent with recent experience.

Expenses

We reviewed the actual expenses provided in the financial statements. The administrative expenses have averaged 1.4% for fiscal years 2013 through 2017. Typical LTC insurance industry expense assumptions are significantly higher than this. This projection assumes administration expenses of 1.5% of premium increasing by 1.5% per year.

Discount Rate Assumes a level 5.0% earned interest rate.

The discount rate is a major component of the valuation process and is used to determine present values of the future premiums, expenses and benefits. We reviewed the Program investment returns over the last five three fiscal years. We calculated investment returns based on investment income and the average balance of the fund at the beginning and end of each fiscal year:

	Investment Results ($000)		
Fiscal Year	Net Investment Income	Average Fund Balance	Fund Return
2013	16,961	274,218	6.2%
2014	36,114	305,279	11.8%
2015	10,182	341,080	3.0%
2016	14,478	376,669	3.8%
2017	28,892	415,207	7.0%
Average	21,343	348,556	6.1%

Based on recent investment experience, the prior valuation rate and input from the State of Alaska we selected a 5.0% earned rate for the LTC valuation. This rate was assumed for all future years of the projection.

The assumed discount rate is 25 basis points less than the expected return of the Retiree LTC Insurance Investment Guidelines. The discount rate is also 110 basis points less than the average return over the last five years. The Sensitivity Analysis section includes results based on changing the discount rate.

Rate Increases

If the State of Alaska LTC Program has a deficit[i] (liabilities in excess of assets) it can be recovered only through actuarial gains or increases in future premiums. The actuarial valuation does not dictate a premium adjustment at this time. It is important that the financial progress of the Program be monitored closely so that the State of Alaska can act quickly to adjust future premiums to maintain the Program's solvency.

Regarding all assumptions previously discussed, actual experience may differ from that assumed in the projections. To the extent actual experience is different from the assumptions underlying this report, so will actual results differ from the projected results shown here. Sensitivity of results to changes in assumptions is provided in the Sensitivity Analysis section.

[i] Commercial LTC insurance programs are required to maintain statutory reserves and additional surplus. These two items could be another resource to mitigate rate increases.

IV. Sensitivity Analysis

We ran sensitivity tests to determine if the reported assets are sufficient with respect to morbidity, voluntary lapses, mortality, and investment earning. Results are highly sensitive to the assumptions underlying the calculations.

Sensitivity Results
($000)

Scenario	Sufficiency (Deficiency)	
	5.0%	5.25%
Base	7,371	35,340
Increase morbidity by 3.5%	(19,013)	10,152
Increase morbidity by 5.0%	(30,320)	(641)
Voluntary lapse @ 150%	34,775	60,953
Voluntary lapse @ 50%	(21,939)	7,955
Mortality @ 90%	(58,835)	(26,371)

Stress Testing

We ran sensitivity tests to determine what investment rate would be required if the assumptions were all equally adverse. The 4% adverse projections assumed that claims and expenses are 4% greater and that the termination[ii] (lapse and mortality) rates are 96% of projected. We also tested the projected experience as 5% adverse. We then determined what investment rate would be required so that there is no future deficiency:

Adverse Experience	Required Investment Return
4.00%	5.43%
5.00%	5.55%

[ii] Lower lapse and mortality rates increase future claims since more future policyholders will go on claim.

Appendix A

State of Alaska LTC Program Actuarial Valuation Summary of Yearly Cash Flows at 6/30/2017

Fiscal Year	Lives	Earned Premium	Expenses	Paid Claims	Incurred Claims	Loss Ratio
2018	26,187	28,703,111	430,547	12,800,773	14,326,154	50%
2019	25,489	27,938,294	425,361	12,791,406	16,064,154	57%
2020	24,788	27,169,326	419,858	20,523,907	17,992,334	66%
2021	24,073	26,386,039	413,870	20,511,398	20,121,422	76%
2022	23,343	25,585,494	407,333	21,780,300	22,454,687	88%
2023	22,595	24,766,313	400,205	21,101,484	24,998,426	101%
2024	21,831	23,928,245	392,463	23,514,528	27,752,253	116%
2025	21,049	23,071,420	384,085	26,138,344	30,729,520	133%
2026	20,250	22,195,825	375,051	28,979,329	33,935,456	153%
2027	19,435	21,301,940	365,346	32,040,822	37,353,106	175%
2028	18,604	20,391,090	354,970	35,318,525	40,972,202	201%
2029	17,759	19,464,803	343,928	38,797,369	44,744,660	230%
2030	16,901	18,524,830	332,229	42,455,508	48,662,803	263%
2031	16,033	17,573,182	319,890	46,260,895	52,648,931	300%
2032	15,156	16,612,243	306,933	50,175,250	56,682,788	341%
2033	14,273	15,644,877	293,396	54,152,055	60,690,719	388%
2034	13,388	14,674,375	279,324	58,139,324	64,607,031	440%
2035	12,503	13,704,429	264,774	62,067,370	68,324,005	499%
2036	11,622	12,739,123	249,816	65,856,652	71,766,441	563%
2037	10,750	11,782,923	234,530	69,425,112	74,862,540	635%
2038	9,890	10,840,671	219,012	72,692,179	77,515,826	715%
2039	9,048	9,917,433	203,366	75,578,191	79,673,253	803%
2040	8,228	9,018,342	187,703	78,016,937	81,307,993	902%
2041	7,434	8,148,473	172,142	79,941,118	82,267,932	1010%
2042	6,672	7,312,726	156,803	81,277,591	82,552,835	1129%
2043	5,945	6,515,693	141,809	81,962,730	82,103,350	1260%
2044	5,257	5,761,543	127,276	81,965,745	80,974,087	1405%
2045	4,611	5,053,924	113,319	81,264,206	79,090,407	1565%
2046	4,011	4,395,874	100,043	79,849,568	76,512,320	1741%
2047	3,458	3,789,729	87,542	77,735,691	73,321,567	1935%
2048	2,953	3,237,005	75,895	74,964,604	69,532,740	2148%
2049	2,498	2,738,318	65,166	71,591,613	65,285,452	2384%
2050	2,092	2,293,356	55,396	67,679,802	60,579,274	2642%
2051	1,734	1,900,899	46,605	63,303,089	55,559,592	2923%
2052	1,422	1,558,888	38,793	58,553,053	50,372,798	3231%
2053	1,154	1,264,517	31,939	53,551,210	45,134,428	3569%
2054	925	1,014,369	26,005	48,420,515	39,973,346	3941%
2055	734	804,568	20,936	43,281,251	34,987,506	4349%
2056	576	630,930	16,664	38,241,620	30,244,536	4794%
2057	446	489,129	13,113	33,391,937	25,824,567	5280%
2058	342	374,867	10,200	28,811,446	21,789,070	5812%
2059	259	284,025	7,844	24,565,005	18,160,003	6394%
2060	194	212,767	5,964	20,696,470	14,954,061	7028%
2061	144	157,613	4,485	17,234,455	12,188,590	7733%
2062	105	115,482	3,335	14,192,076	9,828,689	8511%
2063	76	83,710	2,454	11,562,082	7,843,496	9370%
2064	55	60,049	1,787	9,322,812	6,206,926	10337%
2063+	-	136,370	4,247	31,335,604	19,371,827	14205%
	Total PV Future:	299,337,054	5,095,753	753,851,795	784,962,114	262%