

Annual Actuarial Valuation
for
The Employees Group Insurance Division
Disability Plan

As of December 31, 2020

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April 29, 2021

Ms. Dana Dale, CPA
Deputy Director, Internal Audit Division
Employees Group Insurance Division
3545 NW 58th Street, Suite 500
Oklahoma City, OK 73112

RE: Actuarial Valuation of EGID Disability Plan as of December 31, 2020

Dear Dana:

At your request, we have performed an actuarial valuation of the disability benefits provided by the Employees Group Insurance Division (the “Disability Plan”) as of December 31, 2020. Our findings are set forth in this actuary’s report. The Employees Group Insurance Division (EGID) is a separate legal trust and a component unit of the State of Oklahoma that administers, manages, and provides various insurance benefits for employees and retirees of state and education employers. The State of Oklahoma is the overall plan sponsor, and the legislature has the overall authority to create or dissolve the plan or EGID as an option for its employees.

EGID and its auditors have determined that the EGID Disability Plan is not an Other Post-Employment Benefit (OPEB), and that EGID should therefore prepare its financial statements for the Disability Plan in accordance with paragraph 138 of GASB 34, *Basic Financial Statements—and Management’s Discussion and Analysis—for State and Local Governments*, which addresses reporting by special-purpose governments engaged only in business-type activities. This report has been prepared according to this guidance.

In preparing this report, we have relied, without audit, on information (some oral and some in writing) supplied by EGID staff, its vendors, and its auditors. This information includes, but is not limited to, plan provisions, employee data, accounting guidance and financial information. In our examination of this data, we found it to be reasonably consistent and comparable with data used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, and other factors for EGID have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account



the experience of the Disability Plan and reasonable expectations); and which, in combination, offer our best estimate of anticipated experience affecting the Disability Plan, with a margin for adverse plan experience. The valuation interest rate of 3.5% was specified by EGID.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The Board of Trustees has the final decision regarding the appropriateness of assumptions.

The calculations in this report have been made for the purpose of fulfilling financial accounting requirements, and they have been made on a basis consistent with our understanding of EGID's accounting requirements and goals. Determinations for purposes other than meeting these requirements may be significantly different from the results in this report, and additional determinations may be needed for other purposes.

Note that we have not anticipated any explicit assumption adjustments due to the COVID-19 pandemic. Any impact on short-term disability claims is assumed to be reflected in the experience used to determine the short-term disability reserves as of 12/31/2020. Generally the long-term disability insurance industry has not identified significant changes in claim experience due to the pandemic, thanks in part to the long waiting period between the beginning of disability and when benefit payments may begin. Any additional mortality due to the pandemic would serve to increase claim terminations and decrease reserves. It is also possible that over the next few years the economic changes due to the pandemic may affect claim termination rates by reducing return-to-work opportunities. We will continue to closely monitor plan experience as well as the pandemic impact on the disability industry in general, and adjust valuation assumptions as needed.

Milliman's work product was prepared solely for the internal use of EGID. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third-party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions:

1. EGID may provide a copy of Milliman's work, in its entirety, to EGID's auditors who are subject to a duty of confidentiality and who agree not to rely on Milliman's work product or use Milliman's work product for any purpose other than to benefit EGID; and

2. EGID may provide a copy of Milliman’s work, in its entirety, to other governmental entities, as required by law.

No third-party recipient of Milliman’s work should rely upon Milliman’s work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are actuaries. Milliman’s advice is not intended to be a substitute for qualified legal or accounting counsel.

On the basis of the foregoing, I hereby certify that, to the best of my knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices.

I, Tasha S. Khan, FSA, MAAA, am a consulting actuary for Milliman, Inc. I am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sincerely,



Tasha S. Khan, FSA, MAAA
Principal and Consulting Actuary
Milliman, Inc.

Section I: Introduction and Executive Summary

This report contains the 12/31/2020 valuation for the EGID Disability Plan. This plan provides long-term disability (LTD) and short-term disability (STD) benefits to active members.

Valuation Results at 12/31/2020

Table 1.1 below summarizes the actuarial liability for the current and prior valuations (totals may not sum due to rounding):

Table 1.1 EGID Disability Plan Liabilities		
	12/31/2019	12/31/2020
LTD Active Claims	\$7,322,407	\$6,049,645
LTD IBNR	1,792,258	1,854,500
LTD Claim Expense	501,307	434,728
LTD Overpayments Recoverable	(474,076)	(582,712)
Total LTD	\$9,141,895	\$7,756,162
STD Active Claims + IBNR	\$254,351	\$280,648
STD Claim Expense	13,989	15,436
Total STD	\$268,341	\$296,083
Total Disabled Life Liability	\$9,410,235	\$8,052,245
Premium Deficiency Liability	\$667,729	\$481,697
Total Liability	\$10,077,964	\$8,533,942

The total liability for the Disability Plan decreased by \$1.5 million from 12/31/2019 to 12/31/2020. This decrease is due primarily to the decrease in the number of open LTD claims from 436 to 369. Both the overpayment recoverable and premium deficiency liabilities also decreased. The IBNR liability increased somewhat due to an increase in covered payroll.

Table 1.2 splits the total disabled life liability into current and non-current amounts, where the current amount pertains to payments expected to be made in the 12 months following the valuation date (totals may not sum due to rounding). The full amount of any premium deficiency has been classified as a current liability.

Table 1.2 EGID Disability Plan Liabilities: Current and Non-Current		
	12/31/2019	12/31/2020
Current Liability	\$2,895,487	\$2,813,167
Non-Current Liability	7,182,477	5,720,775
Total Liability	\$10,077,964	\$8,533,942

Claim Expense Reserves

Based on an analysis of updated claim administration expenses performed last year, we have kept the claim expense assumption at 5.50% of claim liabilities.

Additional Items

In addition to the actuarial valuation results, this report contains several additional items:

Claim Termination Rate Study

The EGID plan has experienced higher-than-expected claim termination rates (i.e., deaths and recoveries among disabled lives) in recent years relative to the valuation assumptions, with actual-to-expected (A/E) ratios equaling or exceeding 100% of the valuation basis in most claim durations. This trend indicates that emerging plan costs are lower than what is expected under the current valuation assumptions. Although the EGID claim terminations have exceeded expected levels, the results should be interpreted with caution due to the small size of the block.

Since administration of EGID's LTD claims transferred to Sedgwick as of 10/1/2018, we performed a CTR study from 10/1/2018 through 12/31/2020. As more experience unfolds with this claim administrator, we plan to expand the study period in future valuations. This allows us to evaluate claim experience without conflating it with changes in the claim administrator.

Liability Runoff Studies

The liability runoff tests we performed on the LTD benefit show a liability margin of 14.8% of the 12/31/2018 liability and 10.5% of the 12/31/2019 liability over a 12-month runoff period. The combined result of the two studies is an average annual margin of 12.9%. This combined value is higher than the target range of a 1-5% annual margin. A plan of this size will experience some annual volatility, so it is important to be cautious when interpreting these results. Both the claim termination rate study and the liability runoff study suggest that the plan is performing more favorably than anticipated in the valuation basis. If this trend continues, EGID may wish to consider updating the valuation assumptions as of 12/31/2021.

Risk Based Capital

For its own management purposes in evaluating the level of assets supporting the Disability Plan, EGID makes an annual determination of the risk-based capital (RBC) attributable to the Plan. Table 1.3 below contains the RBC determination for the Disability Plan as of 12/31/2020:

Item	Value
C1: Asset Risk	\$3,834,000
C2: Insurance Risk	1,508,000
C4: Operational Risk	22,000
Subtotal ($\sqrt{C1^2+C2^2}+C4$)	\$4,142,000
Additional RBC (25% of Subtotal)	1,036,000
Total RBC	\$5,178,000

The total RBC increased by roughly \$0.6 million this year. This change was largely driven by higher asset risk, which was in turn driven by an increase in equities of approximately \$1.5 million.

The RBC formula, including calculation methods and specific factors, was provided to Milliman by EGID. The current assumptions are summarized in Appendix C. Due to the Tax Cuts and Jobs Act of 2017, the National Association of Insurance Commissioners (NAIC) has updated its guidance for calculating risk-based capital, specifically for C1 (asset risk). This change has generally resulted in an increase in required capital for most insurance companies. Given the new NAIC guidance, EGID should review its RBC formula and specifically its C1 factors to ensure that the plan's RBC calculation is providing an adequate provision for potential volatility.

Premium Deficiency Liability

The most recent premium study, completed in August of 2020, recommended a 2021 premium rate of \$11.59 per employee per month (PEPM), for STD and LTD benefits combined, when the full credit for investment income earned on the plan's surplus was applied. The actual premium rate charged by the plan in 2021 is \$10.36, reflecting a deficiency of \$1.23 PEPM. Due to this deficiency, the premium deficiency liability as of 12/31/2020 is \$481,697 (\$1.23 PEPM * 390,456 projected 2021 EE months).

Section II: Actuarial Valuation

EGID, a component unit of the state of Oklahoma, is a special purpose state and local government and a legal trust that administers, manages and provides group health, dental, life, and disability insurance for active employees and retirees of state agencies, school districts and other governmental units of the state of Oklahoma.¹ This report provides the annual actuarial valuation for the disability benefits provided by EGID (the “Disability Plan”).

Accounting Framework

The accounting guidance from EGID and its auditors for the Disability Plan was based on the following items:

- EGID is not an OPEB trust set up for retirees.
- Assets are not accumulated for future benefits for retirees.
- EGID does not have an obligation to provide future benefits for retirees beyond what is acquired through premiums.
- EGID is not the plan sponsor and only has a piece of the overall plan administration.
- EGID’s only benefit liabilities are to those insured members who pay a premium for the month in which a loss is incurred; it has no further liabilities to the insured.

EGID and its auditors opine that the Disability Plan is a public entity risk pool created to provide insurance coverage, and that it qualifies as a single-purpose business-type activity that should report as an enterprise fund. Therefore, it should prepare its financial statements according to paragraph 138 of GASB 34, and this actuarial valuation has been performed accordingly.

Actuarial Valuation

A number of assumptions have been made in developing the liabilities shown in this report. These assumptions are described in Appendix C of this report. The projections in this report are estimates, and as such, EGID’s actual liability will vary from these estimates. The projections and assumptions should be reviewed and updated as necessary, as actual costs under this program develop.

¹ The accounting discussion in this section is based on discussions with EGID and feedback from its auditors.

Table 2.1 below summarizes the actuarial liability for the current and prior valuations (totals may not sum due to rounding):

Table 2.1 EGID Disability Plan Liabilities		
	12/31/2019	12/31/2020
LTD Active Claims	\$7,322,407	\$6,049,645
LTD IBNR	1,792,258	1,854,500
LTD Claim Expense	501,307	434,728
LTD Overpayments Recoverable	(474,076)	(582,712)
Total LTD	\$9,141,895	\$7,756,162
STD Active Claims + IBNR	\$254,351	\$280,648
STD Claim Expense	13,989	15,436
Total STD	\$268,341	\$296,083
Total Disabled Life Liability	\$9,410,235	\$8,052,245
Premium Deficiency Liability	\$667,729	\$481,697
Total Liability	\$10,077,964	\$8,533,942

The LTD plan requires that claimants be approved for Social Security in order to receive LTD benefits beyond the second year of disability, but the claim administration process allows for LTD benefits to continue while Social Security applications are pending. The LTD valuation assumptions use estimated Social Security offsets for those claims that have not yet been approved or denied for Social Security disability benefits and are not collecting pension benefits.

The total liability for the Disability Plan decreased by \$1.5 million from 12/31/2019 to 12/31/2020. This decrease is due primarily to the decrease in the number of open LTD claims from 436 to 369. Both the overpayment recoverable and premium deficiency liability also produced reserve decreases.

We calculated STD liability estimates as of December 31, 2020 based on completion factors and unit cost projection methods, using EGID's historical STD benefit payments from January 1, 2017 through December 31, 2020. For these estimates, lag triangles were developed by splitting the historical claims into incurred month and paid month. The cumulative claims were summarized by incurred month. Monthly lag factors were then calculated by dividing the cumulative claims by an estimated total incurred claim amount for each specific incurred month. Ultimate completion factors were developed using the average of the prior 24 months of lag factors excluding the minimum and maximum outlier values. In situations where the estimated credibility for the completion factors was less than 100%, we estimated the incurred claims by taking a credibility-weighted average of (a) the estimated incurred claims based on completion factors, and (b) the estimated incurred claims based on a unit cost projection method. The development of incurred

claims using the unit cost projection method takes into consideration the expected incurred cost per employee and the number of participating employees in the specific incurred month. This method also includes a 25% provision for adverse deviation.

The total disabled life liability can be divided into the current and non-current liabilities, where the current liability pertains to payments that are expected to be made within the 12 months following the valuation date. The entire STD liability is a current amount, due to the short-term nature of the benefits. The current portion of the LTD liability is computed by valuing only the next twelve months' worth of payments. In addition, the full amount of any premium deficiency liability has been classified as a current liability. The current and non-current portions of the liability are shown below (totals may not sum due to rounding):

Table 2.2 EGID Disability Plan Liabilities: Current and Non-Current		
	12/31/2019	12/31/2020
Current Liability	\$2,895,487	\$2,813,167
Non-Current Liability	7,182,477	5,720,775
Total Liability	\$10,077,964	\$8,533,942

Section III: Discussion of LTD Liability

It is important to test the reasonableness of the assumptions used to compute the liability for LTD claims (which represents the majority of the total liability). We have done that through the use of a claim termination rate study and a liability runoff test. Table 3.1 shows the result of our claim termination rate study:

Table 3.1 EGID Long Term Disability Claims Actual-to-Expected Claim Termination Rates by Claim Count Study Period: 10/1/2018 to 12/31/2020 Expected Basis: 2012 Group Long-Term Disability Table (no Own Occ Adjustment)				
Claim Duration (Months)	Claim Exposure	Actual Terminations	Expected Terminations	A/E Ratio
7-12	787	18.00	22.63	0.80
13-18	757	14.00	12.28	1.14
19-24	733	9.00	7.66	1.17
25-36	1,115	22.00	13.90	1.58
37-48	897	10.00	5.18	1.93
49-60	692	9.00	3.17	2.84
61-120	3,474	14.00	9.93	1.41
121+	3,074	17.00	7.04	2.42
Total	11,529	113.00	81.79	1.38

Table 3.1 shows the actual claim terminations (i.e., deaths and recoveries) experienced by the EGID LTD plan since Sedgwick became the claim administrator, relative to the expected level of claim terminations based on the same table used to compute the LTD liabilities. An actual-to-expected (A/E) ratio greater than 1.00 indicates higher terminations (and lower plan costs) than anticipated in the liability calculation.

Since administration of EGID's LTD claims transferred to Sedgwick as of 10/1/2018, we began the study period at that date. This allows us to evaluate claim experience that is unaffected by changes in claim management practices.

The A/E ratios for EGID equal or exceed 1.00 in most claim durations, indicating that actual claim terminations have been higher than expected. We will continue to monitor emerging experience and evaluate the appropriateness of adjusting this table in future years.

Although the EGID claim termination experience is higher than expected in the 2012 GLTD Table, the results should be interpreted with caution. First, this is a relatively small block of claims, so the results of the study (particularly in later claim durations) cannot be considered fully credible. Second, A/E claim termination rates are only one measure of the adequacy of a valuation basis, which must also account for items such as the timing and amount of benefit offsets. Therefore, it is also useful to perform liability runoff tests.

The goal of a liability runoff test is to determine whether the liability computed on a given date with a certain set of assumptions would have been sufficient, with investment earnings, to fund the cost of actual and expected future payments for claims open on that date. Tables 3.2 and 3.3 below contain the results of our runoff tests for liabilities held at 12/31/2018 and 12/31/2019. The combined results are shown in Table 3.4 (totals may not sum due to rounding).

The second column of each table shows the liability for active LTD claims at the beginning of the period being tested. (The value was computed by Milliman using the same calculation methods and assumptions as for the 12/31/2020 liability calculations in Section 2 of this report.) The third column in each table shows the liability margin, which is computed as (a) the beginning-of-period liability, less (b) the present value of benefit payments during the period, less (c) the present value of the end-of-period liability. For the purposes of the margin calculation, items (b) and (c) include only those claims that were present in the beginning-of-period liability calculation. We have also removed the impact of overpayment offsets from the payments. All present values are computed as of the beginning of the study period using the valuation interest rate of 3.5%.

Table 3.2 Long Term Disability Liability Runoff Test for Active Claims Only Study Period: 12/31/2018 to 12/31/2019 Does Not Include Overpayment Offsets			
Claim Duration (Yrs)	Starting Liability	Liability Margin	Margin as % Starting Liability
1	\$1,249,319	\$218,873	17.5%
2	1,416,574	58,790	4.2%
3	1,057,378	504,063	47.7%
4	1,078,098	134,572	12.5%
5	660,795	(33,150)	-5.0%
6-10	2,211,199	393,199	17.8%
11+	1,453,125	76,981	5.3%
Total	\$9,126,487	\$1,353,328	14.8%

Table 3.3 Long Term Disability Liability Runoff Test for Active Claims Only Study Period: 12/31/2019 to 12/31/2020 Does Not Include Overpayment Offsets			
Claim Duration (Yrs)	Starting Liability	Liability Margin	Margin as % Starting Liability
1	\$792,581	\$(73,821)	-9.3%
2	1,095,764	26,295	2.4%
3	790,789	372,467	47.1%
4	365,394	134,848	36.9%
5	786,212	144,449	18.4%
6-10	1,846,091	(30,532)	-1.7%
11+	1,645,576	192,636	11.7%
Total	\$7,322,407	\$766,342	10.5%

Table 3.4 Long Term Disability Liability Runoff Test for Active Claims Only Study Period: Combined Results of Two Prior Years Does Not Include Overpayment Offsets			
Claim Duration (Yrs)	Starting Liability	Liability Margin	Average Annual Margin as % Starting Liability
1	\$2,041,900	\$145,051	7.1%
2	2,512,338	85,085	3.4%
3	1,848,167	876,530	47.4%
4	1,443,492	269,420	18.7%
5	1,447,006	111,299	7.7%
6-10	4,057,290	362,668	8.9%
11+	3,098,701	269,617	8.7%
Total	\$16,448,893	\$2,119,669	12.9%

An annual liability margin of 1-5% of the starting liability balance is a reasonable target for this type of plan. It is important to note, however, that experience will vary from year to year, meaning that a margin outside of this range for a given time period does not necessarily indicate that the assumptions used to compute the liability are unreasonable. In addition, the liability runoff studies shown above use an interest rate of 3.5% to determine the reserve margins, in order to obtain the best indication of the reasonableness of the other assumptions. To the extent that the assets supporting the plan earn a lower (or higher) interest rate, then the actual liability margin may fall below (or exceed) that shown in the studies.

The liability runoff tests show a liability margin of 14.8% of the 12/31/2018 liability and 10.5% of the 12/31/2019 liability, in each case reflecting a 12-month runout period. The combined result of the two studies is a margin of 12.9%. This combined value is higher than the target range of a 1-5% annual margin. A plan of this size will experience some annual volatility, so it is important to be cautious when interpreting these results. Both the claim termination rate study and the liability runout study suggest that the plan is performing more favorably than anticipated in the valuation basis. If this trend continues, EGID may wish to consider updating the valuation assumptions as of 12/31/2021.

Section IV: Additional Items

Risk Based Capital

For its own management purposes in evaluating the level of assets supporting the Disability Plan, EGID makes an annual determination of the risk-based capital (RBC) attributable to the Plan. This determination is made based on a simplified version of the RBC formula used by the National Association of Insurance Commissioners (NAIC) to determine RBC requirements for disability insurance companies.

Table 4.1 below contains the RBC determination for the Disability Plan as of 12/31/2020, with the prior year shown for comparison purposes:

Item	12/31/2019	12/31/2020
C1: Asset Risk	\$3,353,000	\$3,834,000
C2: Insurance Risk	1,412,000	1,508,000
C4: Operational Risk	19,000	22,000
Subtotal ($\sqrt{C1^2+C2^2}+C4$)	\$3,657,000	\$4,142,000
Additional RBC (25% of Subtotal)	914,000	1,036,000
Total RBC	\$4,571,000	\$5,178,000

The total RBC increased by roughly \$0.6 million this year. This change was largely driven by higher asset risk, which was in turn driven by an increase in equities of approximately \$1.5 million.

The RBC formula, including calculation methods and specific factors, was provided to Milliman by EGID. The current assumptions are summarized in Appendix C. Due to the Tax Cuts and Jobs Act of 2017, the National Association of Insurance Commissioners (NAIC) has updated its guidance for calculating risk-based capital, specifically for C1 (asset risk). This change has generally resulted in an increase in required capital for most insurance companies. Given the new NAIC guidance, EGID should review its RBC formula and specifically its C1 factors to ensure that the plan's RBC calculation is providing an adequate provision for potential volatility.

Premium Deficiency Liability

EGID makes an annual determination of the premium rates for the Disability Plan based on a premium analysis performed on the prior year's experience. The most recent premium analysis was performed by Milliman in August, 2020, and the next analysis will be performed in July, 2021.

EGID has historically determined its annual premium rates so that they will exceed the greater of (1) the present-value cost of newly incurred claims, excluding expenses, in the upcoming plan year, and (2) the expected benefits and expenses to be paid by the plan in the upcoming year. A credit equal to some or all of the expected investment income earned on the plan's surplus may be applied to these premium rate determinations. At each year-end, to the extent that the premium rates are expected to be inadequate, EGID establishes a "premium deficiency liability" to make explicit recognition of the anticipated shortfall.

The most recent premium study, completed in August of 2020, recommended a 2021 premium rate of \$11.59 per employee per month (PEPM), for STD and LTD benefits combined, when the full credit for investment income earned on the plan's surplus was applied. The actual premium rate charged by the plan in 2021 is \$10.36, reflecting a deficit of \$1.23 PEPM. Due to this difference, the premium deficiency liability as of 12/31/2020 is \$481,697 ($\$1.23 \text{ PEPM} * 390,456 \text{ projected 2021 employee months}$).

Appendix A: Plan Description

The EGID Disability Plan provides both long-term and short-term disability benefits, as summarized below:

Short Term Disability

- Benefit Amount: 60% of base salary, reduced by offsets, described below.
- Maximum Monthly Benefit: \$2,500 for disabilities incurred 1/1/2007 and later. \$1,800 for disabilities incurred prior to 1/1/2007.
- Minimum Monthly Benefit: \$0.
- Elimination Period: 30 days.
- Definition of Disability: You are considered disabled if, as a result of injury or illness, you are unable to perform the material duties of your own occupation. A qualified physician must objectively document and certify your disability. The cause of your disability may or may not be related to your employment.
- Maximum Benefit Period: 180 days from the date of disability.

Long Term Disability

- Benefit Amount: 60% of base salary, reduced by offsets, described below.
- Maximum Monthly Benefit: \$3,000 for disabilities incurred 7/1/1998 and later. \$2,000 for disabilities incurred prior to 7/1/1998.
- Minimum Monthly Benefit: \$50.
- Elimination Period: 180 Days.
- Definition of Disability: You are considered disabled if, as a result of injury or illness, you are unable to perform the material duties of your own occupation. A qualified physician must objectively document and certify your disability. The cause of your disability may or may not be related to your employment. After 24 months, disability is defined as the inability to perform each of the material duties of any gainful occupation you are qualified for, or may become qualified for, through training, education, or experience.

- **Maximum Benefit Period:** Generally 24 months from the date of disability for participants with fewer than 5 years of service, and To Age 65 for participants with 5 or more years of service. Shorter benefit periods apply for disabilities incurred at attained age 60 and higher. The maximum benefit period for disabilities due to mental disorders or substance abuse is 24 months from the date of disability per occurrence, with a maximum lifetime benefit period of 60 months from the date of disability.
- **Social Security Requirement:** If, after 24 months of disability, the claimant has not been found eligible for Social Security Disability benefits, then the claimant will no longer be eligible for benefits from the EGID plan.

Benefit Offsets

- Sick leave
- Salary, wage, holiday pay, commission, or similar earnings from gainful employment, including salary increases and shared leave benefits
- Unemployment compensation benefits
- Social Security benefits related to the disability
- Benefits received under the provisions of the State of Oklahoma or any county retirement system, except those benefits that began prior to the onset of disability
- Workers' Compensation benefits
- 50% of any earnings while partially disabled or during rehabilitative employment
- Disability benefits paid by another group plan
- Subrogation
- Any overpayment of previous disability payments including retroactive Social Security Disability awards

Appendix B: Data for Valuation

Data on Disabled Lives at 12/31/2020

Year of Disability	Male	Female	Total
2001 and earlier	4	6	10
2002	0	3	3
2003	0	5	5
2004	1	6	7
2005	3	5	8
2006	6	8	14
2007	2	12	14
2008	2	14	16
2009	4	14	18
2010	6	12	18
2011	6	16	22
2012	8	22	30
2013	3	13	16
2014	8	11	19
2015	7	15	22
2016	7	18	25
2017	14	16	30
2018	5	23	28
2019	11	22	33
2020	12	19	31
Total	109	260	369

Year of Disability	Male	Female	Total
2001 and earlier	\$296	\$1,482	\$1,778
2002	0	150	150
2003	0	1,217	1,217
2004	50	427	477
2005	577	1,304	1,881
2006	1,354	3,077	4,431
2007	100	2,364	2,464
2008	265	5,206	5,471
2009	200	4,698	4,898
2010	1,734	1,919	3,653
2011	683	3,806	4,489
2012	1,005	4,979	5,983
2013	150	1,697	1,847
2014	1,224	5,205	6,429
2015	2,849	4,824	7,673
2016	1,436	2,552	3,987
2017	1,576	4,710	6,286
2018	651	8,415	9,066
2019	3,705	14,224	17,929
2020	13,626	15,763	29,389
Total	\$31,480	\$88,019	\$119,499

Age at Disability	Male	Female	Total
< 20	0	0	0
20-24	0	0	0
25-29	2	2	4
30-34	2	10	12
35-39	9	17	26
40-44	14	38	52
45-49	21	57	78
50-54	28	72	100
55-59	23	44	67
60-64	8	18	26
65+	2	2	4
Total	109	260	369

Table 4 Total Net Monthly Benefit by Age at Disability			
Age at Disability	Male	Female	Total
< 20	\$0	\$0	\$0
20-24	0	0	0
25-29	1,049	2,875	3,924
30-34	483	3,767	4,250
35-39	3,616	6,492	10,108
40-44	2,271	9,693	11,963
45-49	5,970	19,307	25,277
50-54	8,480	22,727	31,206
55-59	7,856	11,713	19,569
60-64	921	9,957	10,878
65+	835	1,489	2,324
Total	\$31,480	\$88,019	\$119,499

Appendix C: Actuarial Methods and Assumptions

General

- Valuation Date: 12/31/2020
- Discount Rate: 3.50%, specified by EGID
- Claim Expenses: 5.50% of benefit liabilities

Long Term Disability

- Claim Termination Rates: 100% of 2012 Group Long-Term Disability Table, with no Own Occupation Period Adjustment
- Future Offset Approval Rates: 85% of currently unapproved claimants employed 5 years or more. 50% of currently unapproved claimants employed less than 5 years. No future offsets are assumed on claimants with mental disorders, or on claimants disabled more than three years, except to the extent that specific situations are discussed and reviewed with EGID.
- Future Offset Amounts: 85% of the gross benefit
- Incurred But Not Reported Claims: 50% of the estimated LTD incurred claims for the current year, as determined from the prior year's premium study
- Overpayments Recoverable: 45% of the outstanding overpayment balance on active LTD claims as of the valuation date

Short Term Disability

- Liability for Active and Incurred But Not Reported Claims (combined): Hybrid method based on completion factors and unit cost projection methods. Ultimate completion factors are developed using the average of the prior twenty-four months of lag factors excluding the minimum and maximum outlier values. In situations where the estimated credibility of the completion factors is less than 100%, a

credibility weighted average of the incurred claims based on completion factors and incurred claims based on a unit cost projection method is used. This method includes a 25% provision for adverse deviation.

Risk Based Capital

- Asset Risk: 30.0% of equities, 1.5% of fixed income securities, and 0.4% of cash
- Pricing Risk: 25% of prior year's premium, plus 5% of year-end liabilities
- Operational Risk: 0.5% of prior year's premium
- Total RBC: The square root of the sum of Asset Risk squared and Pricing Risk squared, plus Operational Risk, multiplied by 125%

Appendix D: Reliance Items

In preparing this summary report, we have relied on many sources of information provided to us by EGID and Sedgwick, the principal items of which are listed below:

- The EGID Disability Handbook and Agency Rules
- Disability claim listings from 12/31/2007 through 12/31/2020, including manual calculations on benefit amounts for specific claimants
- Detail on overpayment balances and offsets from 12/31/2007 through 12/31/2020
- The risk-based capital spreadsheet, including the assumptions used in the calculation and the 12/31/2020 asset and premium values
- Various financial items, including historical premiums, benefits, and expenses
- Written and oral communications with EGID staff, its auditors, and its other actuaries, including specific guidance from the auditors on the applicable accounting standards