



ALBERTA NON-GRID RISK SHARING POOL

AUGUST 2019 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS**RSP ALBERTA NON-GRID****OPERATIONAL REPORT****AUGUST 2019**

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2019)

The August 2019 Operational Report incorporates the results of an updated valuation (as at June 30, 2018) – the impact of the implementation of the valuation is discussed in section 1.2. The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 2019.

ALBERTA NON-GRID RISK SHARING POOL FISCAL YEAR 2019 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2018 (completed)	2.29% mfad 25 bp	Oct. 2018	updated valuation (roll forward): accident year 2018 loss ratio <u>decreased</u> 2.8 points to 109.3%; discount rate <u>increased</u> by 42 basis points; no change to selected margins for adverse deviations
Dec. 31, 2018 (completed)	1.93% mfad 25 bp	Mar. 2019	updated valuation: accident year 2019 loss ratio <u>increased</u> 1.4 points to 108.5%; discount rate <u>decreased</u> by 36 basis points; no change to selected margins for adverse deviations
Mar. 31, 2019 (completed)	1.46% mfad 25 bp	May 2019	updated valuation (roll forward): accident year 2019 loss ratio <u>increased</u> 0.2 points to 108.7%; discount rate <u>decreased</u> by 47 basis points; no change to selected margins for adverse deviations
Jun. 30, 2019 (completed)	1.43% mfad 25 bp	Aug. 2019	updated valuation: accident year 2019 loss ratio <u>decreased</u> 3.9 points to 104.8%; discount rate <u>decreased</u> by 3 basis points; selected margins for adverse deviations were updated
Sep. 30, 2019		Oct. 2019	update valuation (roll forward)

Under the proposed schedule for fiscal year 2019, the “off-half” valuation quarters ending March 31, 2019 and September 30, 2019 would not reflect a full valuation update of assumptions, but would rather “roll-forward” key assumptions from the previous valuation.

1.2 New Valuation

A valuation of the Alberta Non-Grid Risk Sharing Pool (“RSP”) as at June 30, 2019 has been completed since last month’s Operational Report and the results of that valuation have been incorporated into this month’s Report. The valuation was completed by the Facility Association’s internal actuarial group in conjunction with, and approved by, the Appointed Actuary, under the hybrid model for actuarial services. Additional detail will be provided in an “Actuarial Highlights – Quarterly Valuation” report which we anticipate will be posted to the FA website in October 2019.

The valuation implementation impact is summarized in the tables on the next page, where

abbreviations PAYs refers to prior accident years, CAY refers to the current accident year (2019), and Prem Def refers to premium deficiency / deferred acquisition costs impacts..

Summary of Impact (\$000s) of Implementing Result of Valuation as at June 30, 2019¹

AB Non-Grid	unfav / (fav) for the month and ytd					
	IMPACT in \$000s from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
	[1]	[2]	[3]	[4]	[5]	[6]
PAYs	(12,044)	(953)	(12,997)	100	(519)	(13,416)
CAY	(3,057)	(332)	(3,389)	-	-	(3,389)
Prem Def	(2,337)	(150)	(2,487)	70	-	(2,417)
TOTAL	(17,438)	(1,435)	(18,873)	170	(519)	(19,222)

As indicated in the table above, the incorporation of the new valuation had an estimated **\$19.2 million favourable impact** on the month's net result from operations, subtracting an estimated 25.3 points (see table immediately below) to the **year-to-date Combined Operating Ratio** to end at **115.5%**.

Summary of Impact (% YTD EP) of Implementing Result of Valuation as at June 30, 2019

AB Non-Grid	ytd EP 75,946 (actual)					
	IMPACT unfav / (fav) as % ytd EP from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
	[1]	[2]	[3]	[4]	[5]	[6]
PAYs	(15.9%)	(1.3%)	(17.1%)	0.1%	(0.7%)	(17.7%)
CAY	(4.0%)	(0.4%)	(4.5%)	-	-	(4.5%)
Prem Def	(3.1%)	(0.2%)	(3.3%)	0.1%	-	(3.2%)
TOTAL	(23.0%)	(1.9%)	(24.9%)	0.2%	(0.7%)	(25.3%)

The impact of the **nominal changes** is shown in column [1] of the two preceding summary tables. The change in the selected nominal ultimates was **favourable by \$17.4 million** overall. This reflects the impact attributable to the changes in the selected ultimate loss ratios (i.e. for each accident year, it is the product of life-to-date earned premium for the accident year and the change in the selected ultimate loss ratio).

The **PAYs** overall showed a **\$12.0 million favourable** nominal variance or 8.3% of the PAYs nominal unpaid balance of \$144.2 million determined at the end of last month beginning, driven by favourable claims development and updates to a priori loss ratios to include more recent data and

¹In these tables, "PAYs" refers to prior accident years, "CAY" refers to the current accident year, and "Prem Def" refers to the provision for premium deficiency or the deferred policy acquisition asset (as applicable). "Nominal" refers to changes excluding any actuarial present value adjustments, whereas "apv adj." refers to actuarial present value adjustments.

The columns under the heading "ults & payout patterns" reflect the impact of changes in the valuation selected ultimates and claims payment patterns (i.e. based on unchanged selection of discount rates and margins for adverse deviation). The column "dsct rate" reflects the impact of the change in the selected discount rate and the column "margins" reflects the impact of any changes in selected margins for adverse deviations.

updated trends. While the valuation implementation impact does differ from the valuation changes themselves (as they apply to different periods), the valuation result by government line provides insight into the relative PAYs nominal changes. As per below, the primary changes were in relation to TPL across multiple PAYs.

Valuation as at June 30, 2019 – PAYs Nominal Changes by Government Line

Alberta Non-Grid RSP - valuation changes in selected ultimate (favourable) / unfavourable during Quarter				
Accident Year	Third Party Liability	Accident Benefits	Other Coverages	Total
2014 & Prior	(1,528)	(762)	(60)	(2,350)
2015	(1,047)	(7)	(15)	(1,069)
2016	(1,313)	(142)	(367)	(1,822)
2017	(2,928)	(23)	(183)	(3,134)
2018	(4,518)	(98)	(1,309)	(5,925)
TOTAL	(11,334)	(1,032)	(1,934)	(14,300)

The CAY and premium deficiency impacts are a result of the change in the selected loss ratios for accident year **2019** (decreased 3.9 points to **104.8%**) and **2020** (decreased 3.7 points to **106.7%**).

The impacts related to actuarial present value (“apv”) adjustments are split into the impact prior to any change in the selected discount rate and selected margins for adverse deviations or “MfADs” (at the level they were selected i.e. coverage and accident half-year), the impact of then updating the discount rate, and finally the impact of any changes to the MfADs (at the level they were selected). The changes in actuarial present value adjustments are shown in the summary tables on the previous page in columns [2], [4], and [5].

Column [2] recognizes that changing the nominal selections also changed the unpaid estimates (including changes to the relative mix by government line, which had an impact on the weighted-average MfADs). It also reflects the fact that we updated the projected emergence of claims payments, resulting in a change in the projected cash flows. These changes generated a favourable change of \$1.4 million in the actuarial present value adjustments, prior to any changes in the selected discount rate and/or MfADs.

Updated projected cash flows were reviewed against the selected risk-free yield curve, derived from Government of Canada benchmark bond yields monthly series using values for June 2019. Column [4] accounts for the change in the **discount rate** selected (decreased 3 basis point to **1.43%**), indicating an unfavourable impact of \$0.2 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was \$0.1 million at August 2019 (projected \$0.9 million impact at December 31, 2019) – this compares to the \$0.2 million change one would estimate as the impact by interpolation using the interest rate sensitivity table provided in last month’s Actuarial Highlights.

Column [5] accounts for any changes to selected MfADs. The selected **investment rate MfAD** was **left unchanged at 25 basis points** but the selected **claims development MfADs** at the coverage and accident year level were **updated** as per usual practice with the June 30 valuation, resulting in a favourable impact of \$0.5 million, as margins on older PAYs were aged.

Consideration was given to recent legal decisions and changes in legislation / regulation as noted above and outlined in section 1.4.

1.3 Appointed Actuary and Hybrid Actuarial Services Model

Liam McFarlane of Ernst & Young LLP is Facility Association's Appointed Actuary (effective as of June 1, 2013).

Facility Association operates under a "hybrid" model in relation to the management and provision of actuarial services. Under this model, actuarial services are performed by both Facility Association's internal staff and its external actuarial consulting firm. The hybrid model approach maximizes the efficiency of resource allocation while providing access to additional expertise and capacity as needed.

1.4 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation²

There have been no changes in these descriptions since last month's Highlights other than updated valuation and trend references, and recognition of the lapsing of Order 14/2018.

Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent changes are provided below.

In the **Alberta Treasury Board and Finance Notice 04-2018** (Clarification of Minor Injury Regulation), dated **May 17, 2018**, the Alberta Superintendent of Insurance advised that clarifying amendments have been made to the definition of minor injuries under the Minor Injury Regulation (MIR). With the **most recent** valuation (June 30, 2019), reform adjustments related to changes in the definition of minor injuries under the MIR, were included with the updated industry trend analysis (completed using industry data as at December 31, 2018), impacting the selection of ultimates.

The **Minister of Treasury Board and Finance issued Ministerial Order 14/2018**, on **October 31, 2018**, which states unless otherwise directed by the Minister, the AIRB may not approve filings from insurers for cumulative rate increases on private passenger vehicles greater than +5.0% during the period between December 1, 2018 and August 31, 2019. **This order lapsed in August 2019.** At the current time, no explicit adjustments have been made to our valuation estimates or views based on this order.

1.5 Current Provision Summary

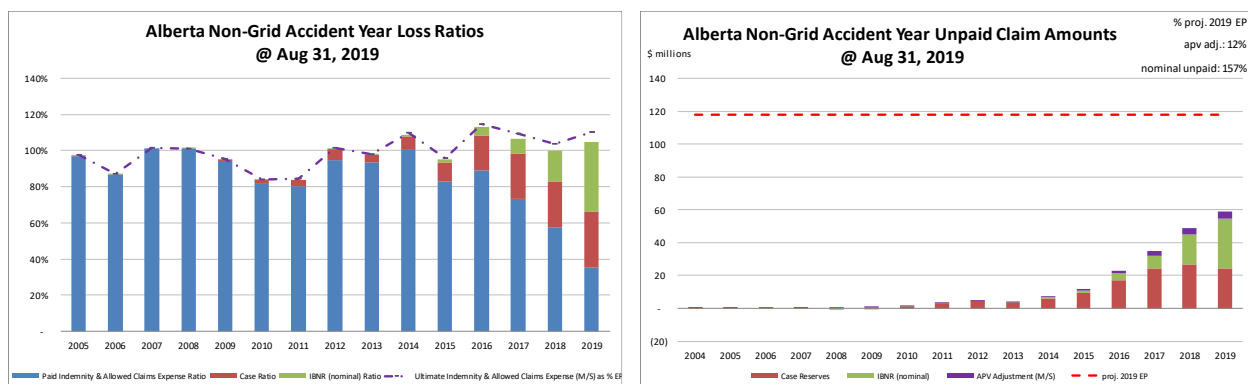
The charts at the top of the next page show the current levels of claim liabilities³ booked by accident year⁴. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the

²This link is to a helpful guide on how bills become laws: <http://www.ontla.on.ca/lao/en/media/laointernet/pdf/bills-and-lawmaking-background-documents/how-bills-become-law-en.pdf>.

³Claim liabilities refer to provision for unpaid indemnity and allowed claims expenses. Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this discussion.

⁴Accident year 2004 was an incomplete year and therefore has been excluded from the loss ratio chart.

associated dollar amounts for the components of the claim liabilities and the current projected amount of 2019 full year earned premium (the red hash-mark line) to provide some perspective.



“M/S” refers to “Member Statement” values – that is, actuarial present value adjustments at the selected discount rate.

The current actuarial present value adjustments balance (\$14.6 million – see table immediately below) represents 12% of the earned premium projected for the full year 2019 (see the upper right corner of the right chart above). If our current estimates of the nominal unpaid amounts prove to match actual claims payments, the actuarial present value adjustments will be released into the net operating result over future periods.

claim liabilities (\$000s)			
	amt	%	
case	121,345	60.8%	
ibnr	63,598	31.9%	
M/S apv adjust.	14,553	7.3%	
M/S total	199,496	100.0%	

The table to the left breaks down the Member Statement (M/S) claim liabilities total into component parts, showing that the majority of the claim liabilities for this RSP is in case reserves. Approximately 76% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 89% of the M/S

total claim liabilities are related to accident years 2015-2019 inclusive (i.e. the most recent 5 accident years), and approximately 1% is related to accident years 2009 and prior (i.e. prior to the most recent 10 accident years).

The tables immediately below summarize the premium liabilities and the total policy liabilities.

premium liabilities (\$000s)			policy liabilities (\$000s)		
	amt	%		amt	%
unearned prem	61,067	88.4%	claim	184,943	68.9%
prem def/(dpac)	3,771	5.5%	premium	64,838	24.1%
M/S apv adjust.	4,279	6.2%	M/S apv adjust.	18,832	7.0%
M/S total	69,117	100.0%	M/S total	268,613	100.0%

2 Activity During the Month of August 2019

2.1 Recorded Premium and Claims Activity

The table at the top of the next page summarizes the extent to which premiums and claims amounts

recorded during the month differ from projections reflected in the prior month's Operational Report⁵.

Alberta Non-Grid RSP Actual vs Projected Summary: Recorded Transaction Amounts (\$ thousands)

Table 01 Accident Year	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	1	1	810	(140)	(205)	435	604	294
2017	(0)	(0)	699	350	(118)	125	581	475
2018	(9)	(9)	412	(90)	931	1,189	1,343	1,099
2019	9,961	(336)	3,659	(839)	2,092	(1,822)	5,751	(2,661)
TOTAL	9,953	(345)	5,579	(719)	2,699	(74)	8,279	(793)

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

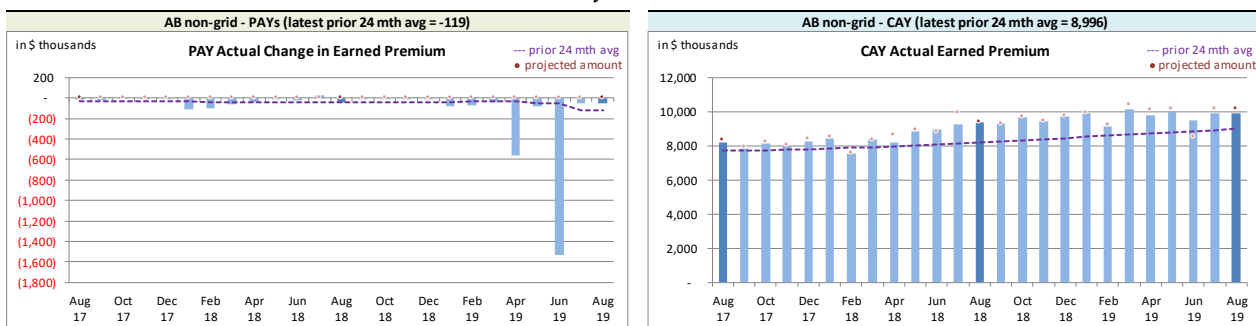
It is typically unusual to see actual earned premium transactions affecting accident years older than the first prior accident year, the changes in 2018 and prior accident years reflect activity undertaken by a member reflecting recent audit findings.

Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural “process variance” (i.e. random variation). Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of the variance. Commentary from our review is provided in the sub-sections that follow.

2.1.a Actual vs. Projected (AvsP): Earned Premium

The charts immediately below show actual **earned premium**⁶ activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month's actual compares with the average amount of the preceding 24 calendar months.

*Alberta non-Grid RSP Actual **Earned Premium** by Calendar Month*



Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels generally occur at the beginning of each year.

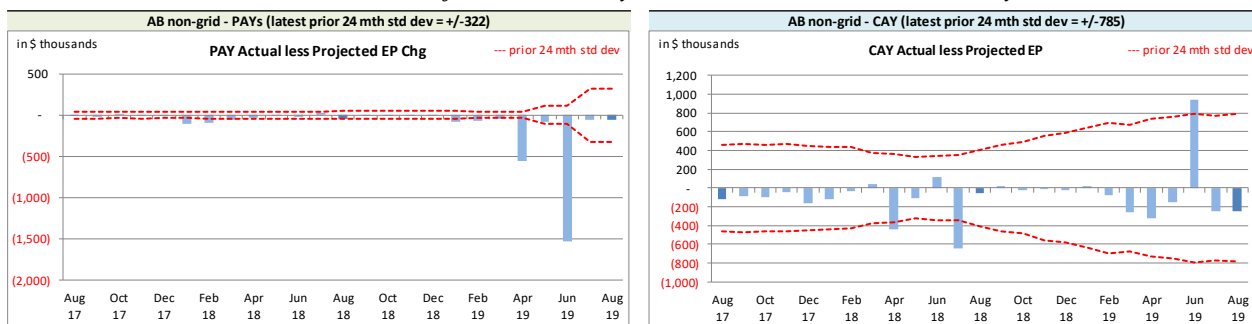
The associated variance between the actual changes and the projections from the previous month are shown in the charts at the top of the next page. **Earned premium** change projections are all attributed to the current accident year as the projection upload does not accept **earned premium**

⁵There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

⁶Premium is earned on a daily basis based on the transaction term measured in days. As a result, months with 31 days earned relatively more than those with 30 days, and February earns the least.

changes for other accident years. We do not see this limitation as being significant for our purposes, but it does mean that the actual less projection variance will equal the actual **earned premium** change in relation to prior accident years.

*Alberta non-Grid RSP Actual vs. Projected Summary: **Earned Premium** Variances by Calendar Month*



On Latest \$ thousands		
	Earned Premium	
Mthly Avg EP Chg (prior 24 mths)	(119)	8,996
std dev	322	785
A-P <> std dev	8	3
% <> std dev	32.0%	12.0%
norm <> std dev	31.7%	31.7%

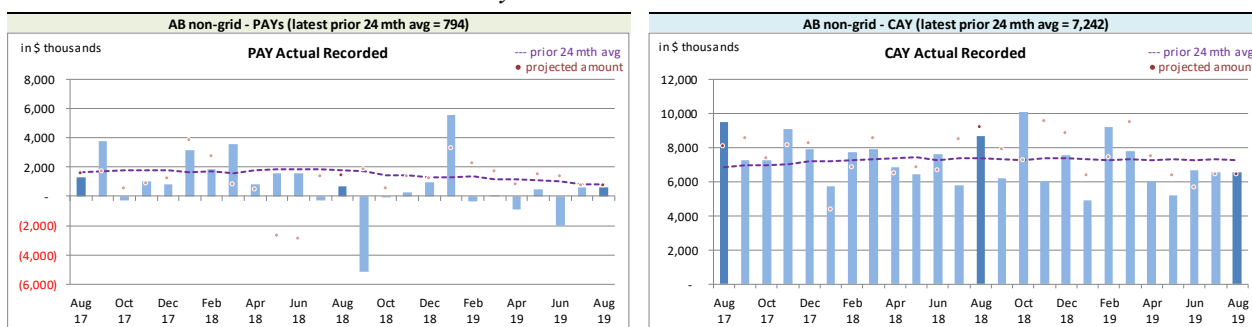
We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias⁷, with actuals generally lower than projected, although the magnitude is not high relative to

monthly premium. In addition to the PAYs' bias, the CAY has also shown bias⁸, with actuals being generally lower than projected, modifications to our projections processes in response appears to have had a favourable impact, bias still exists. Over time, we may consider other projection approaches to narrow monthly variance levels, but it is not currently deemed a priority.

2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

The charts immediately below show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

*Alberta non-Grid RSP Actual **Recorded** by Calendar Month*

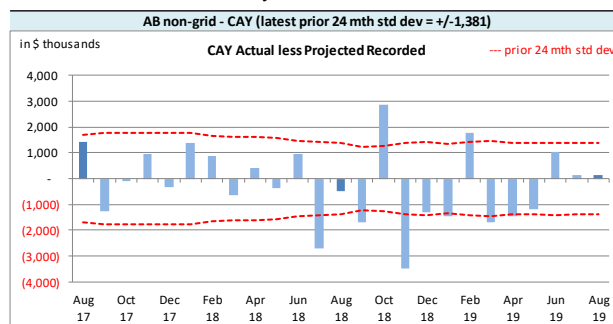
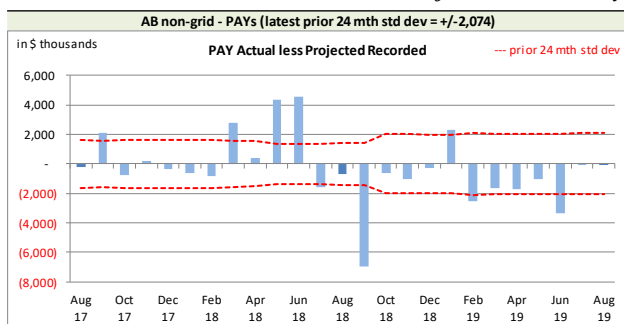


⁷The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

⁸We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (25 in this case) and 50% probability of success. The rolling 25-month variances at August 2019 had only 5 months where the actuals was higher than projected, and as the 95% confidence range is 8 to 17, bias continues to be indicated.

Recorded activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

*Alberta non-Grid RSP Actual vs Projected Summary: **Recorded** Variances by Calendar Month*



On Latest \$ thousands			
	Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)		794	7,242
std dev		2,074	1,381
A-P <> std dev		9	8
% <> std dev		36.0%	32.0%
norm <> std dev		31.7%	31.7%

With respect to **recorded** indemnity & allowed claims expense activity, 36% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **recorded** amounts (see table on left), suggesting the projection process has performed no better than

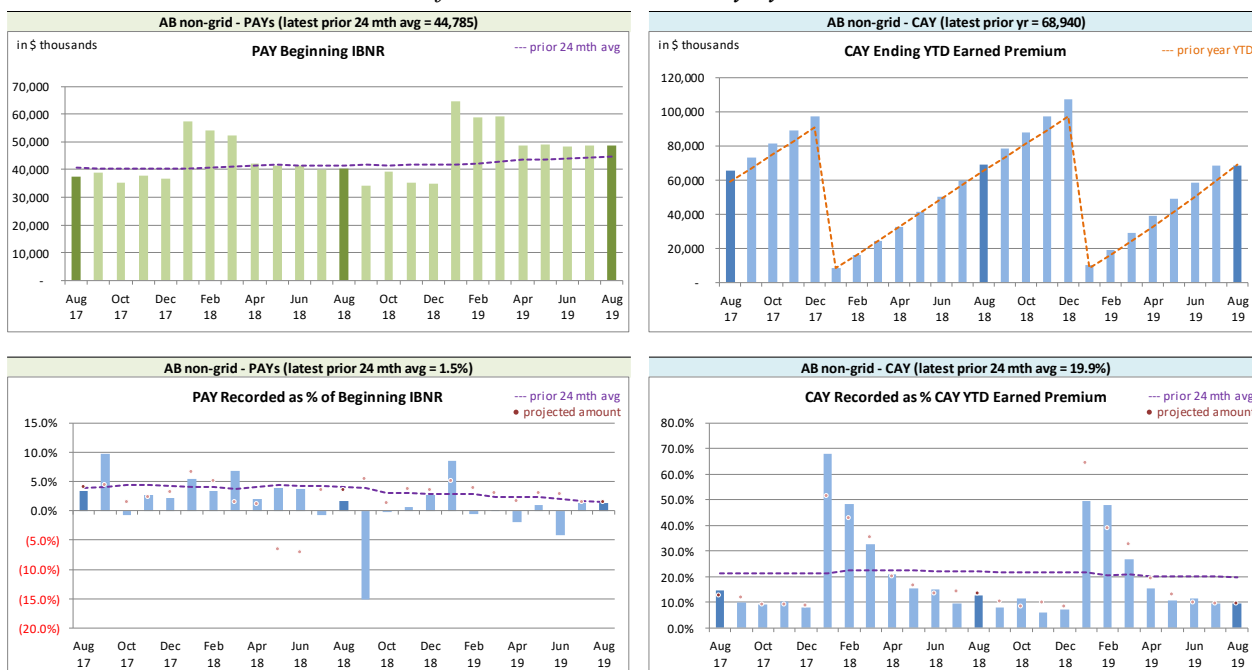
simply projecting the prior 24-month average amount (assuming it follows a normal distribution). We have implemented changes in an attempt to address this. Bias has been indicated at a 95% confidence level on a rolling 25-month basis (7 of 25 variances are positive).

The current accident year (CAY) **recorded** variances fell outside of one standard deviation 32% of the time over the last 25 calendar months (see table above), suggesting that the projection process has performed no better than simply projecting the prior 24-month average amount. We believe this result is in part related to volume increases, but management is considering ways of improving CAY variances. Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (11 of 25 variances are positive).

The method for establishing IBNR adjusts automatically for changes in **earned premium** and **recorded** claims activity level (see sections 2.2 and 3).

We have included, for reference, additional charts at the top of the next page related to levels influencing **recorded** activity.

Alberta non-Grid RSP Levels that influence⁹ Recorded activity by Calendar Month



We track beginning prior accident years' IBNR as **recorded** activity "comes out of" IBNR. Changes in the prior accident years' beginning IBNR (see upper left chart above) occur for several possible reasons:

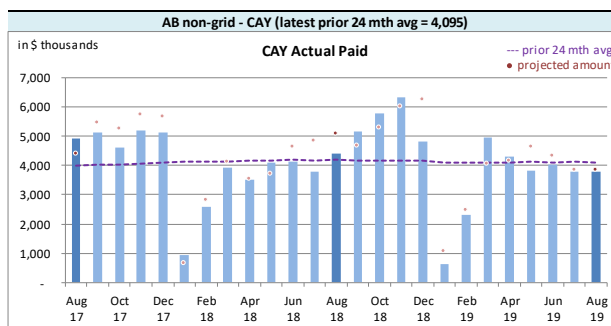
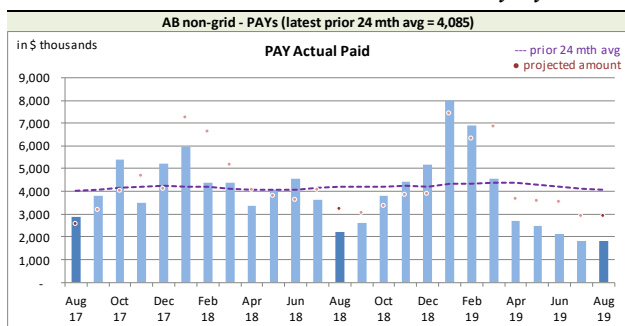
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate (will show up as a beginning IBNR change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

The charts at the top of the next page show actual **paid** activity in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

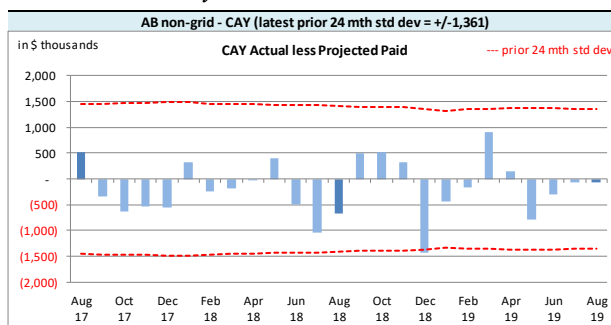
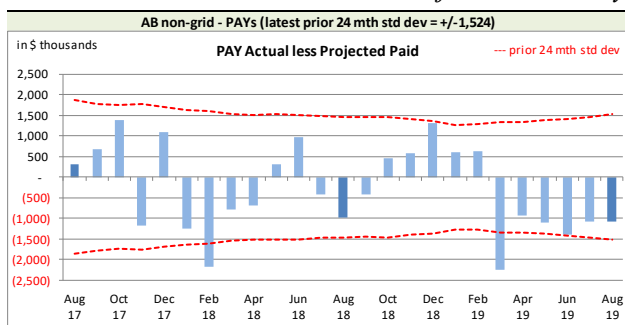
⁹Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned premium), deriving year-to-date recorded as selected ultimate less IBNR. In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.

*Alberta non-Grid RSP Actual **Paid** activity by Calendar Month*



Paid activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

*Alberta non-Grid RSP Actual vs Projected Summary: **Paid** Variances by Calendar Month*



On Latest \$ thousands			
	Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)		4,085	4,095
std dev		1,524	1,361
A-P <> std dev		2	1
% <> std dev		8.0%	4.0%
norm <> std dev		31.7%	31.7%

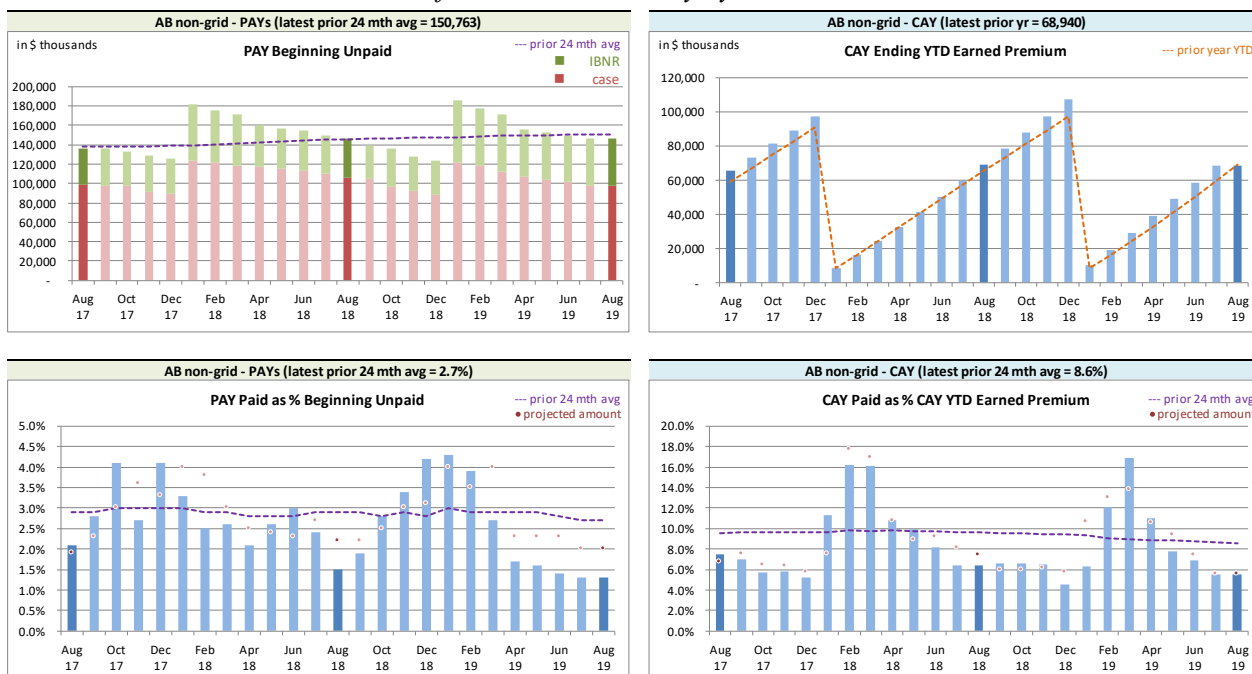
With respect to **paid** indemnity & allowed claims expense, 8% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on left), suggesting the projection process has performed better than simply projecting the prior 24-month

average amount (assuming it follows a normal distribution). Bias has not been indicated at a 95% confidence level on a lagging 24-month basis (11 of 25 variances are positive).

The current accident year (CAY) **paid** variances fell outside of one standard deviation 4% of the time over the last 25 calendar months (see table above), suggesting the projection process has performed better than simply projecting the prior 24-month average amount. Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (8 of 25 variances are positive).

We have included, for reference, additional charts at the top of the next page related to levels influencing **paid** activity.

Alberta non-Grid RSP Levels that influence¹⁰ Paid activity by Calendar Month



We track beginning prior accident years' unpaid balance (case and IBNR) as **paid** activity “comes out of” the unpaid balance. Changes in the prior accident years' beginning unpaid balance (see upper left chart above) occur for several possible reasons:

- to offset actual **paid** activity (may reduce case or IBNR or both);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate (will show up as a beginning unpaid balance change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

2.2 Actuarial Provisions

An “ultimate loss ratio matching method” (described in section 3) is used to determine the month's IBNR¹¹, and factors are applied to the nominal unpaid claims liability (case plus IBNR) to determine the discount amount (shown as a negative value to indicate its impact of reducing the liability) and the Provisions for Adverse Deviations. The loss ratios and the factors used to determine the projections and actuals were based on the applicable valuation. The table at the top of the next page summarizes variances in provisions included in this month's Operational Report and the associated

¹⁰Our paid projections for the prior accident years are based on selected ratios of paid to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date paid to year-to-date selected ultimate indemnity (i.e. selected LR x earned premium). In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.

¹¹For ease of discussion, “IBNR” is used in place of “provisions for incurred but not recorded (IBNR) and development”.

one-month projections from last month's Report.

Alberta Non-Grid RSP Actual vs Projected Summary: IBNR and APV Amounts (\$ thousands)

Table 02

Accident Year	actuarial present value adjustments							
	IBNR		Discount Amount		Provisions for Adverse Deviations		IBNR + actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	7,587	(5,145)	(1,919)	193	5,466	(1,050)	11,134	(6,002)
2017	7,827	(2,688)	(1,214)	132	4,067	(287)	10,680	(2,843)
2018	18,054	(6,086)	(1,793)	196	5,693	(571)	21,954	(6,461)
2019	30,130	(762)	(2,023)	210	6,276	(504)	34,383	(1,056)
TOTAL	63,598	(14,681)	(6,949)	731	21,502	(2,412)	78,151	(16,362)

The IBNR provision is \$14.7 million lower than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1, but primarily due to the valuation implementation.

Exhibit G shows the accident year IBNR amount change from last month to this month broken down into:

- (i) the change projected last month;
- (ii) the additional change due to variances in earned premium (because we apply a loss ratio to earned premium in determining ultimate level) and/or recorded claims (as IBNR is calculated as ultimate less recorded) differences; and
- (iii) the additional change due to valuation implementation impacts (as applicable)

The variances associated with (ii) above are discussed in sections 2.1.a and 2.1.b.

The table immediately below summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in this month's Operational Report and the one-month projections from last month's Report. This RSP is in a premium deficiency position (shown as a positive amount) prior to and after actuarial present value adjustments. Actuarial present value adjustments increase the liability value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance and due to the valuation implementation.

Alberta Non-Grid RSP Actual vs Projected Summary: Premium Deficiency / (DPAC) Amounts (\$ thousands)

Table 03

	Premium Deficiency / (Deferred Policy Acquisition Costs)		actuarial present value adjustments		Premium Deficiency / (DPAC) including actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
balance:	3,771	(2,695)	4,279	(330)	8,050	(3,025)
balance as % unearned premium:	6.2%	(3.8%)	7.0%	(0.2%)	13.2%	(4.0%)
actual unearned premium:	61,067					
less projected:	(3,474)					

3 Ultimate Loss Ratio Matching Method

An “ultimate loss ratio matching method” continues to be applied to the current month and two projected months shown in the Operational Reports, with IBNR determined by accident year as follows:

- (a) Earned premium to-date
- (b) Ultimate loss¹² ratio per latest valuation
- (c) Estimated ultimate incurred = (a) x (b)
- (d) Recorded indemnity & allowed claims expense to-date
- (e) IBNR = (c) – (d)

4 Calendar Year-to-Date Results

The table below summarizes the calendar year-to-date results for indemnity & allowed claims expenses¹³, including IBNR.

In calculating the amounts as percentages of earned premium, the calendar year-to-date earned premium has been used, which includes earned premium associated with the current accident year but also earned premium adjustments related to prior accident years. Specifically, the current accident year (CAY) ratio in the table is 108.2% rather than 104.8% (the valuation ultimate ratio for accident year 2019), as the calendar year-to-date earned premium includes prior accident year earned premium adjustments. (Note that the ratios in this table may differ slightly from those shown in the Alberta Non-Grid RSP Summary of Operations due to rounding.)

Alberta Non-Grid RSP Calendar Year-to-Date Indemnity & Allowed Claims Expense Summary
 (\$ thousands)

Table 04	YTD Nominal Values		YTD actuarial present value adjustment		YTD Total		Change from Prior Month YTD	
	Amount	% EP	Amount	% EP	Amount	% EP	Amount	LR pts
PAYs	(24,972)	(32.9%)	165	0.2%	(24,807)	(32.7%)	(13,576)	(15.7%)
CAY	82,151	108.2%	4,253	5.6%	86,404	113.8%	8,009	(5.0%)
TOTAL	57,178	75.3%	4,418	5.8%	61,596	81.1%	(5,567)	(20.7%)

(“% EP” based on 2019 calendar year-to-date earned premium; ratios may not total due to rounding)

In general, prior accident years (PAYs) changes from last month are due to the release of the actuarial present value adjustments with claims payments, except when valuations are implemented. The loss ratio change year-to-date in Table 04 reflects not only changes in the prior accident year levels, but also the increase in the calendar year-to-date earned premium with an additional month’s earned premium and due to the valuation implementation.

For the current accident year (CAY), changes in the year-to-date total reflects the additional month’s exposure and regular changes to actuarial present value adjustments as the year ages.

¹²“Loss” here refers to indemnity and allowed claims expenses, but does not include the claims expense allowance included in member company overall expense allowances (“Expense Allowance” in the Operational Report).

¹³Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this analysis.

5 Current Operational Report – Additional Exhibits

Section 6 provides exhibits pertaining to the actuarial provisions reflected in the current month's Operational Report.

IBNR (including actuarial present value adjustments) presented in section 6, Exhibit A, were derived on a discounted basis, and therefore reflect the time value of money and include an explicit provision for adverse deviations in accordance with accepted actuarial practice in Canada.

IBNR presented in section 6, Exhibit B, does NOT include any actuarial present value adjustments. The "Total IBNR" from this exhibit is shown in the Operational Report as "Undiscounted IBNR".

The ultimate loss ratios detailed in section 6, Exhibit B, refer to the estimates derived on the basis of various actuarial methodologies applied to the experience of the Alberta Non-Grid Risk Sharing Pool for the purposes of the most recent quarterly valuation. As discussed in section 3, IBNR reflected in the current month's Operational Report was derived as the difference between the estimated ultimate for the claims amount (i.e. earned premium x ultimate loss ratio) and the associated current recorded amounts (life-to-date payments plus current case reserves).

6 EXHIBITS

The exhibits listed below are provided on the pages that follow:

- EXHIBIT A IBNR for Member Sharing – includes Actuarial Present Value Adjustments
- EXHIBIT B IBNR
- EXHIBIT C Premium Liabilities
- EXHIBIT D Projected Year-end Policy Liabilities
- EXHIBIT E Discount Rate & Margins for Adverse Deviations
- EXHIBIT F Interest Rate Sensitivity
- EXHIBIT G Components of IBNR Change During Month

EXHIBIT A
IBNR for Member Sharing – includes Actuarial Present Value Adjustments
TABLE EXHIBIT A
**IBNR + M/S actuarial present
 value adjustments**

 discount rate
 1.43%

 interest rate margin
 25 basis pts

Amounts in \$000s					
Accident Year	Actual Jul. 2019	Actual Aug. 2019	Projected Sep. 2019	Projected Oct. 2019	Projected Dec. 2019
2004	42	42	41	40	38
2005	13	13	13	12	12
2006	498	97	94	90	85
2007	152	11	11	11	11
2008	64	64	62	59	55
2009	180	30	30	29	27
2010	112	190	185	178	166
2011	474	215	211	202	189
2012	1,012	595	580	557	519
2013	1,851	331	324	311	290
2014	1,404	1,516	1,476	1,417	1,319
2015	3,656	2,285	2,193	2,128	2,021
2016	8,052	5,745	5,630	5,461	5,192
2017	13,659	10,680	10,494	10,313	9,803
2018	28,703	21,954	21,554	21,161	20,322
2019	32,125	34,383	38,051	41,838	48,920
TOTAL	91,997	78,151	80,949	83,807	88,969
Change		(13,846)	2,798	2,858	

Please see Exhibit G, page 1 for Components of Change during Current Month

EXHIBIT B
IBNR
TABLE EXHIBIT B

TABLE EXHIBIT B		Amounts in \$000s					
IBNR	Ultimate	Accident	Actual	Actual	Projected	Projected	Projected
	Loss Ratio	Year	Jul. 2019	Aug. 2019	Sep. 2019	Oct. 2019	Dec. 2019
	349.1%	2004	36	36	35	34	32
	97.4%	2005	5	5	5	5	5
	87.0%	2006	460	90	87	84	78
	101.4%	2007	139	9	9	9	9
	101.1%	2008	61	61	59	57	53
	95.3%	2009	110	(28)	(27)	(26)	(24)
	83.8%	2010	21	106	103	99	92
	84.0%	2011	260	13	13	12	12
	101.0%	2012	643	255	247	237	221
	97.8%	2013	1,506	83	81	78	73
	109.0%	2014	933	1,039	1,008	968	901
	95.1%	2015	2,873	1,577	1,498	1,453	1,380
	112.9%	2016	5,995	4,341	4,254	4,126	3,922
	106.4%	2017	10,621	7,827	7,670	7,517	7,145
	100.0%	2018	24,384	18,054	17,693	17,339	16,652
	104.8%	2019	28,110	30,130	33,364	36,707	43,014
		TOTAL	76,157	63,598	66,099	68,699	73,565
		Change		(12,559)	2,501	2,600	

Please see Exhibit G, page 2 for Components of Change during Current Month

EXHIBIT C
Premium Liabilities
TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Jul. 2019	Actual Aug. 2019	Projected Sep. 2019	Projected Oct. 2019	Projected Dec. 2019
Premium Liabilities					
(1) unearned premium (UP)	61,515	61,067	65,563	68,893	73,294
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	117.0%	113.2%	113.5%	113.7%	114.3%
(3) expected future costs {(1) x (2)}	71,944	69,117	74,383	78,344	83,771
(4) premium deficiency / (deferred policy acquisition cost)	10,429	8,050	8,820	9,451	10,477
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	109.8%	106.2%	106.4%	106.7%	107.2%
(6) expected future costs {(1) x (5)}	67,560	64,838	69,779	73,494	78,586
(7) premium deficiency / (deferred policy acquisition cost)	6,045	3,771	4,216	4,601	5,292

EXHIBIT D
Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2019, broken down by component.

Alberta non-Grid ending 2019		Projected Balances as at Dec. 31, 2019 (\$000s)								
nominal values				actuarial present value adjustments (apvs)						
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL
2004	23	32	55	-	-	6	-	6	6	61
2005	65	5	70	-	-	7	-	7	7	77
2006	1	78	79	(1)	-	8	-	8	7	86
2007	20	9	29	(1)	-	3	-	3	2	31
2008	(31)	53	22	-	-	2	-	2	2	24
2009	704	(24)	680	(18)	3	68	(2)	66	51	731
2010	948	92	1,040	(33)	6	104	(3)	101	74	1,114
2011	2,600	12	2,612	(91)	16	261	(9)	252	177	2,789
2012	3,982	221	4,203	(130)	21	420	(13)	407	298	4,501
2013	3,197	73	3,270	(118)	20	327	(12)	315	217	3,487
2014	5,413	901	6,314	(234)	44	631	(23)	608	418	6,732
2015	8,570	1,380	9,950	(368)	60	985	(36)	949	641	10,591
2016	15,515	3,922	19,437	(719)	117	1,944	(72)	1,872	1,270	20,707
2017	22,631	7,145	29,776	(1,131)	208	3,722	(141)	3,581	2,658	32,434
2018	25,539	16,652	42,191	(1,688)	295	5,274	(211)	5,063	3,670	45,861
PAYs (sub-total):	89,177	30,551	119,728	(4,532)	790	13,762	(522)	13,240	9,498	129,226
CAY (2019)	32,893	43,014	75,907	(2,809)	455	8,577	(317)	8,260	5,906	81,813
claims liabilities:	122,070	73,565	195,635	(7,341)	1,245	22,339	(839)	21,500	15,404	211,039
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	73,294	5,292	78,586	(2,268)	391	7,273	(211)	7,062	5,185	83,771
*Total may not be sum of parts, as apvs apply to future costs within UPR										
policy liabilities:			274,221	(9,609)	1,636	29,612	(1,050)	28,562	20,589	294,810

EXHIBIT E
Discount Rate & Margins for Adverse Deviations

The tables below present selected margins for adverse development by coverage (the total is a weighted average, based on the unpaid claims projection for December 31, 2019 from the valuation), followed by the selected discount rate and the associated margin for investment income.

**Selected Claims Development MfADs (Jun. 30,
 2019)**

Accident Year	Third Party Liability Margins	Accident Benefits Margins	Other Coverages Margins	Total Margins
2004	10.0%	10.0%	10.0%	10.0%
2005	10.0%	10.0%	10.0%	10.0%
2006	10.0%	10.0%	10.0%	10.0%
2007	10.0%	10.0%	10.0%	10.0%
2008	10.0%	10.0%	10.0%	10.0%
2009	10.0%	10.0%	10.0%	10.0%
2010	10.0%	10.0%	10.0%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	10.0%	10.0%	10.0%	10.0%
2014	10.0%	10.0%	9.6%	10.0%
2015	10.0%	10.0%	8.8%	9.9%
2016	10.0%	10.0%	10.0%	10.0%
2017	12.5%	10.0%	12.5%	12.5%
2018	12.5%	10.0%	12.5%	12.5%
2019	12.2%	10.0%	5.9%	11.3%
2020	11.9%	10.0%	5.2%	9.3%
prem liab	11.9%	10.0%	5.2%	9.3%

discount rate: 1.43%
 margin (basis points): 25

EXHIBIT F

Interest Rate Sensitivity

The tables below present sensitivity to the member statement claims liability as projected to Dec. 31, 2019 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2019, and are based on more up-to-date information). We have included the most recent valuation selection (1.46%), the prior valuation assumption (1.93%) and the prior fiscal year end valuation assumption (2.29%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

\$ Format: \$000s

Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2019 projected Unpaid								
AY	0.43%	0.93%	1.43%	1.93%	2.43%	2.93%	1.46%	2.29%
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	15	15	14	14	14	14	14	14
2007	77	76	76	75	74	74	76	75
2008	-	-	-	-	-	-	-	-
2009	771	764	757	750	743	737	756	745
2010	1,296	1,281	1,267	1,253	1,239	1,226	1,266	1,243
2011	2,718	2,684	2,651	2,619	2,588	2,557	2,649	2,596
2012	4,417	4,368	4,320	4,273	4,227	4,183	4,317	4,240
2013	3,917	3,866	3,817	3,770	3,723	3,678	3,815	3,736
2014	7,014	6,922	6,833	6,746	6,661	6,580	6,828	6,685
2015	9,964	9,833	9,705	9,582	9,461	9,346	9,698	9,495
2016	19,822	19,561	19,309	19,065	18,826	18,597	19,296	18,894
2017	30,733	30,319	29,917	29,531	29,151	28,785	29,897	29,256
2018	46,843	46,179	45,536	44,923	44,315	43,734	45,505	44,482
2019	82,099	81,018	79,972	78,966	77,977	77,034	79,919	78,259
Total	209,686	206,886	204,174	201,567	198,999	196,545	204,036	199,720
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

Dollar Impact Relative to Valuation Assumption								
AY	0.43%	0.93%	1.43%	1.93%	2.43%	2.93%	1.46%	2.29%
Total	5,512	2,712	-	(2,607)	(5,175)	(7,629)	(138)	(4,454)
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

Percentage Impact Relative to Valuation Assumption								
AY	0.43%	0.93%	1.43%	1.93%	2.43%	2.93%	1.46%	2.29%
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	7.1%	7.1%	-	-	-	-	-	-
2007	1.3%	-	-	(1.3%)	(2.6%)	(2.6%)	-	(1.3%)
2008	-	-	-	-	-	-	-	-
2009	1.8%	0.9%	-	(0.9%)	(1.8%)	(2.6%)	(0.1%)	(1.6%)
2010	2.3%	1.1%	-	(1.1%)	(2.2%)	(3.2%)	(0.1%)	(1.9%)
2011	2.5%	1.2%	-	(1.2%)	(2.4%)	(3.5%)	(0.1%)	(2.1%)
2012	2.2%	1.1%	-	(1.1%)	(2.2%)	(3.2%)	(0.1%)	(1.9%)
2013	2.6%	1.3%	-	(1.2%)	(2.5%)	(3.6%)	(0.1%)	(2.1%)
2014	2.6%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(0.1%)	(2.2%)
2015	2.7%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(0.1%)	(2.2%)
2016	2.7%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(0.1%)	(2.1%)
2017	2.7%	1.3%	-	(1.3%)	(2.6%)	(3.8%)	(0.1%)	(2.2%)
2018	2.9%	1.4%	-	(1.3%)	(2.7%)	(4.0%)	(0.1%)	(2.3%)
2019	2.7%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(0.1%)	(2.1%)
Total	2.7%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(0.1%)	(2.2%)
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

Page 1 of 2

Components of Member Statement IBNR (i.e. “Discounted”) Change During Month

 RSP
 AccountCode Desc

**Alberta Non-Grid
 IBNR - Discounted**

M/S IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2004	42	-	-	-	-	-	42
2005	13	-	-	-	-	-	13
2006	498	(6)	6	(401)	(401)	(80.5%)	97
2007	152	(1)	(140)	-	(141)	(92.8%)	11
2008	64	(1)	1	-	-	-	64
2009	180	(2)	8	(156)	(150)	(83.3%)	30
2010	112	(1)	77	2	78	69.6%	190
2011	474	(5)	(10)	(244)	(259)	(54.6%)	215
2012	1,012	(15)	11	(413)	(417)	(41.2%)	595
2013	1,851	(22)	53	(1,551)	(1,520)	(82.1%)	331
2014	1,404	(18)	(47)	177	112	8.0%	1,516
2015	3,656	(44)	(178)	(1,149)	(1,371)	(37.5%)	2,285
2016	8,052	(259)	(65)	(1,983)	(2,307)	(28.7%)	5,745
2017	13,659	(136)	(506)	(2,337)	(2,979)	(21.8%)	10,680
2018	28,703	(288)	(1,100)	(5,361)	(6,749)	(23.5%)	21,954
2019	32,125	3,314	2,333	(3,389)	2,258	7.0%	34,383
Grand Total	91,997	2,516	443	(16,805)	(13,846)	(15.1%)	78,151

EXHIBIT G

Page 2 of 2

Components of IBNR (i.e. “Undiscounted”) Change During Month

 RSP **Alberta Non-Grid**
 AccountCode Desc **IBNR - Undiscounted**

IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2004	36	-	-	-	-	-	36
2005	5	-	-	-	-	-	5
2006	460	(5)	5	(370)	(370)	(80.4%)	90
2007	139	(1)	(129)	-	(130)	(93.5%)	9
2008	61	(1)	1	-	-	-	61
2009	110	(1)	7	(144)	(138)	(125.5%)	(28)
2010	21	-	85	-	85	404.8%	106
2011	260	(3)	(9)	(235)	(247)	(95.0%)	13
2012	643	(6)	4	(386)	(388)	(60.3%)	255
2013	1,506	(15)	52	(1,460)	(1,423)	(94.5%)	83
2014	933	(9)	(53)	168	106	11.4%	1,039
2015	2,873	(29)	(189)	(1,078)	(1,296)	(45.1%)	1,577
2016	5,995	(240)	(66)	(1,348)	(1,654)	(27.6%)	4,341
2017	10,621	(106)	(475)	(2,213)	(2,794)	(26.3%)	7,827
2018	24,384	(244)	(1,108)	(4,978)	(6,330)	(26.0%)	18,054
2019	28,110	2,782	2,295	(3,057)	2,020	7.2%	30,130
Grand Total	76,157	2,122	420	(15,101)	(12,559)	(16.5%)	63,598