ALBERTA GRID RISK SHARING POOL

AUGUST 2019 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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FACILITY Association

ACTUARIAL HIGHLIGHTS

RSP ALBERTA GRID

OPERATIONAL REPORT

AUGUST 2019

TABLE OF CONTENTS

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 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)	2.28% mfad 25 bp	Oct. 2018	updated valuation (roll forward): accident year 2018 loss ratio decreased 2.0 points to 89.8%; discount rate increased by 41 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 decreased 0.3 points to 88.8%; discount rate decreased by 35 basis points; no change to selected margins for adverse deviations
Mar. 31, 2019 (completed)	1.44% mfad 25 bp	May 2019	updated valuation (roll forward): accident year 2019 loss ratio increased 0.9 points to 89.7%; discount rate decreased by 49 basis points; no change to selected margins for adverse deviations
Jun. 30, 2019 (completed)	1.41% mfad 25 bp	Aug. 2019	updated valuation: accident year 2019 loss ratio decreased 2.9 points to 86.8%; discount rate decreased 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 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, 2019[1]

AB Grid	unfav / (fav) for the month and ytd					
	IMPACT in $000s from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal [1]	apv adj. [2]	sub-tot [3]	apv adj. [4]	apv adj. [5]	TOTAL [6]
PAYs	(13,393)	(1,086)	(14,479)	243	(925)	(15,161)
CAY	(3,358)	(176)	(3,534)	87	-	(3,447)
Prem Def	(2,466)	(166)	(2,632)	102	-	(2,530)
TOTAL	(19,217)	(1,428)	(20,645)	432	(925)	(21,138)

As indicated in the table above, the incorporation of the new valuation had an estimated ***$21.1 million favourable impact*** on the month's net result from operations, subtracting an estimated 18.5 points (see table immediately below) to the **year-to-date Combined Operating Ratio** to end at **105.1%**.

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

AB Grid	ytd EP 113,980 (actual)					
	IMPACT unfav / (fav) as % ytd EP from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal [1]	apv adj. [2]	sub-tot [3]	apv adj. [4]	apv adj. [5]	TOTAL [6]
PAYs	(11.8%)	(1.0%)	(12.7%)	0.2%	(0.8%)	(13.3%)
CAY	(2.9%)	(0.2%)	(3.1%)	0.1%	-	(3.0%)
Prem Def	(2.2%)	(0.1%)	(2.3%)	0.1%	-	(2.2%)
TOTAL	(16.9%)	(1.3%)	(18.1%)	0.4%	(0.8%)	(18.5%)

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 $19.2 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 **$13.4 million favourable** nominal variance or 5.2% of the PAYs nominal unpaid balance of $257.2 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 updated trends. While the valuation implementation impact does differ from the valuation changes themselves (as they

[1]In 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.

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 Grid RSP - valuation changes in selected ultimate (favourable) / unfavourable **during Quarter**

Accident Year	Third Party Liability	Accident Benefits	Other Coverages	Total
2014 & Prior	(2,728)	168	(132)	(2,692)
2015	(2,073)	(34)	168	(1,939)
2016	(2,155)	(37)	82	(2,110)
2017	(3,593)	(36)	(24)	(3,653)
2018	(2,973)	(181)	(168)	(3,322)
TOTAL	**(13,522)**	**(120)**	**(74)**	**(13,716)**

The CAY and premium deficiency impacts are a result of the change in the selected loss ratios for accident year **2019** (decreased 2.9 points to **86.8%**).and **2020** (decreased 1.8 points to **89.5%**).

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 **1.41%**), indicating an unfavourable impact of $0.4 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was $0.3 million at August 2019 (projected $0.3 million impact at December 31, 2019) – this compares to the $0.3 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 $0.9 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 / Regulation[2]

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.

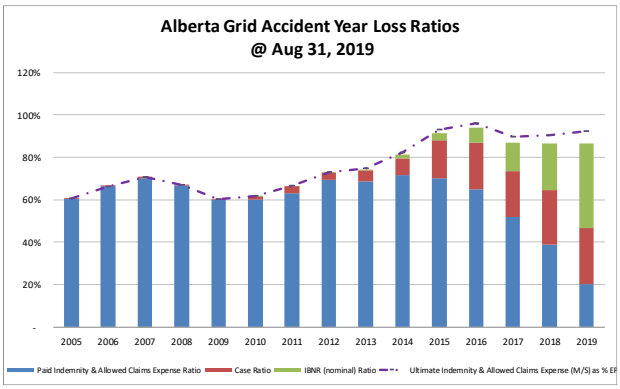
1.5 Current Provision Summary

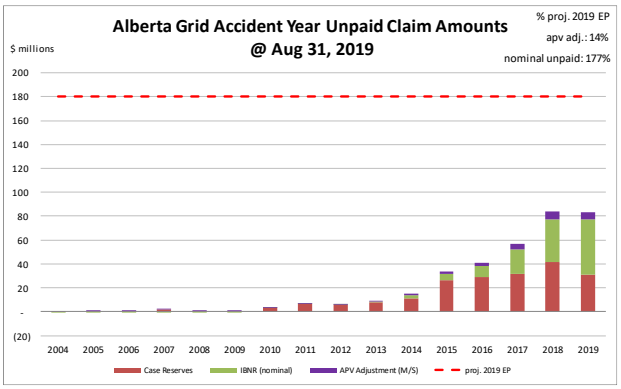
The charts at the top of the next page show the current levels of claim liabilities[3] booked by accident year[4]. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the 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.

[2]This 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.

[3]Claim 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.

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





"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 ($25.5 million – see table immediately below) represents 14% 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	197,840	57.5%
ibnr	120,565	35.1%
M/S apv adjust.	25,544	7.4%
M/S total	343,949	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 68% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 87% 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)

	amt	%
unearned prem	103,787	105.8%
prem def/(dpac)	(12,008)	(12.2%)
M/S apv adjust.	6,325	6.4%
M/S total	98,104	100.0%

policy liabilities ($000s)

	amt	%
claim	318,405	72.0%
premium	91,779	20.8%
M/S apv adjust.	31,869	7.2%
M/S total	442,053	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 Report[5].

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

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

Table 01	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
Accident Year	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	2	2	1,682	(722)	186	1,581	1,868	859
2017	(0)	(0)	406	(430)	526	632	933	203
2018	(2)	(2)	679	(941)	(199)	638	481	(302)
2019	15,933	(107)	3,835	(112)	5,481	1,550	9,315	1,438
TOTAL	15,933	(107)	6,602	(2,204)	5,995	4,402	12,597	2,198

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

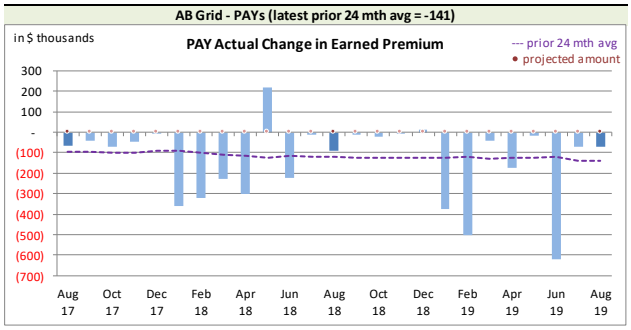
It is typically unusual to see actual earned premium transactions affecting accident years older than the first prior accident year – the changes in 2018 and prior accident years reflect activity undertaken by a member reflecting recent audit findings.

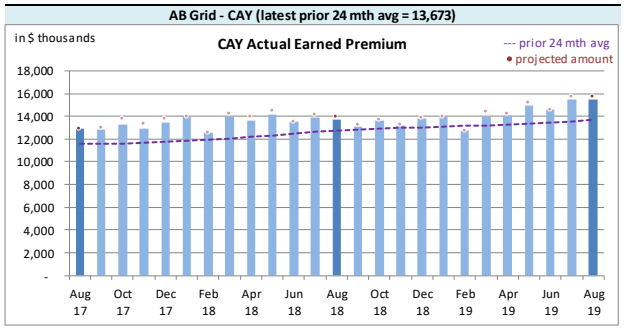
Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural "process variance" (i.e. random variation). Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of 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 Grid RSP Actual **Earned Premium** by Calendar Month*





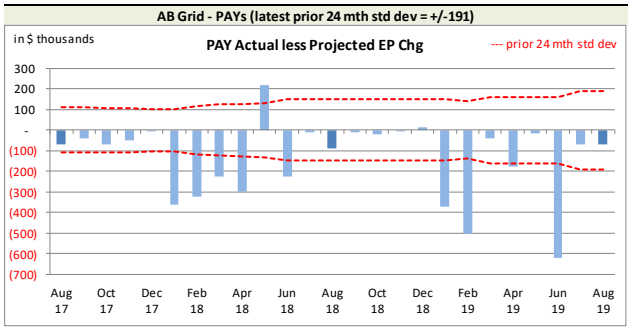
Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels generally occur at the beginning of each year.

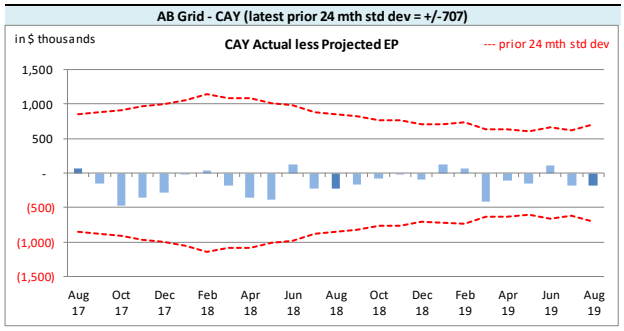
The associated variances between the actual changes and the projections from the previous month are shown in the charts immediately below. **Earned premium** change projections are all attributed to the current accident year as the projection upload does not accept earned premium changes for other accident 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

[6]Premium 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.

prior accident years.

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





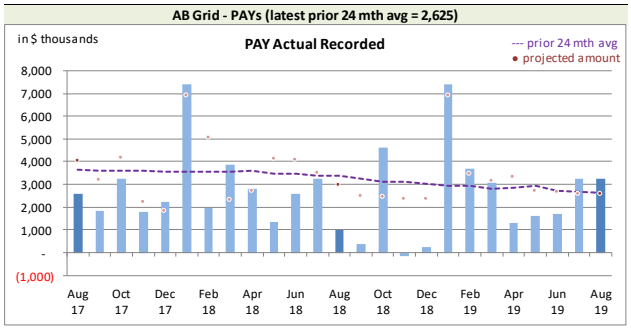
On Latest $ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(141)	13,673
std dev	191	707
A-P <> std dev	10	-
% <> std dev	40.0%	0.0%
norm <> std dev	31.7%	31.7%

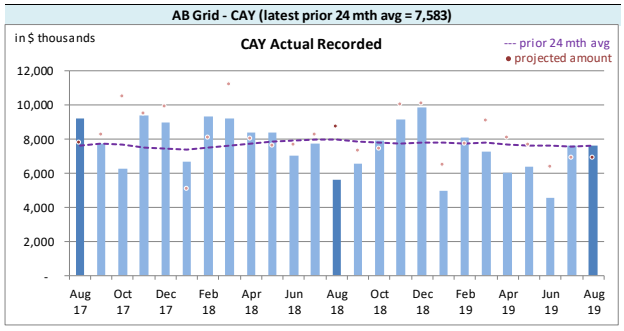
We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias[7], with actuals generally lower than projected, although the magnitude is not high relative to monthly premium. In addition to the PAYs' bias, the CAY has also shown bias[8], with actuals being generally lower than projected, and while we modified our projections processes in response, bias still exists. Over time, we may consider other projection approaches to narrow monthly variance levels further, 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 Grid RSP Actual **Recorded** *by Calendar Month*



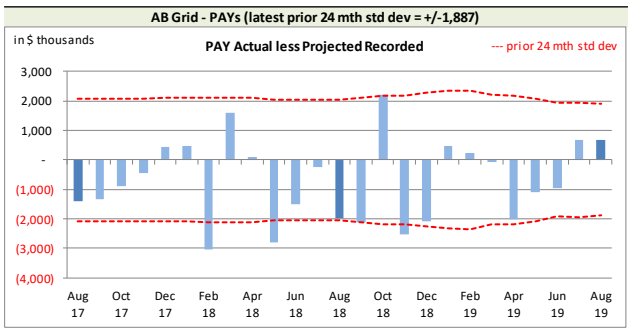


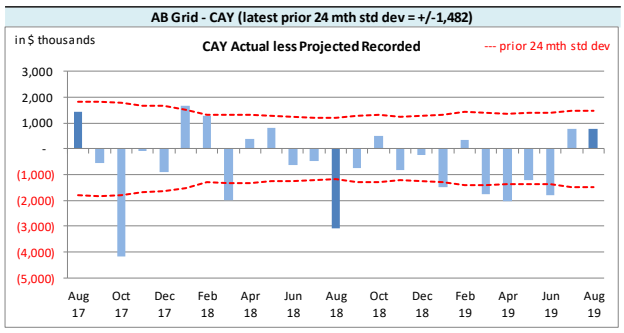
[7]The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

[8]We 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 has only 6 months where the actuals were 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 Grid RSP Actual vs Projected Summary: ***Recorded*** *Variances by Calendar Month*





On Latest $ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	2,625	7,583
std dev	1,887	1,482
A-P <> std dev	5	8
% <> std dev	20.0%	32.0%
norm <> std dev	31.7%	31.7%

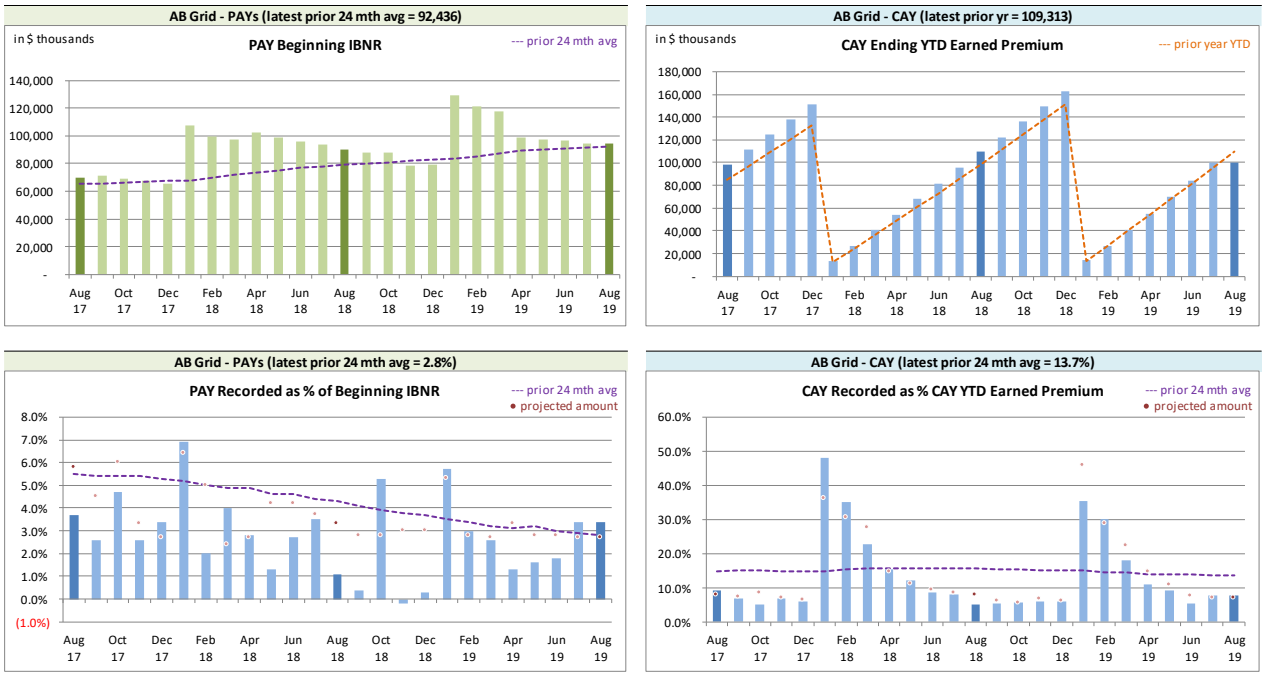
With respect to **recorded** indemnity & allowed claims expense activity, 20% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **recorded** amounts (see table on left), suggesting the projection process has performed 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 rolling 25-month basis (9 of 25 variances were 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. Bias has not been indicated at a 95% confidence level on a lagging 24-month basis (9 of 25 variances were 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. Note in particular the changes in the level of PAY beginning IBNR over the months, as a response to valuations and showing up as a beginning IBNR change one month after the valuation is implemented (i.e. April, June, September, and November).

Alberta Grid RSP Levels that influence[9] ***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:

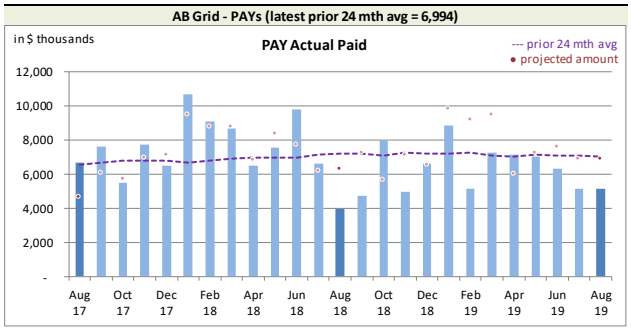
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate (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).

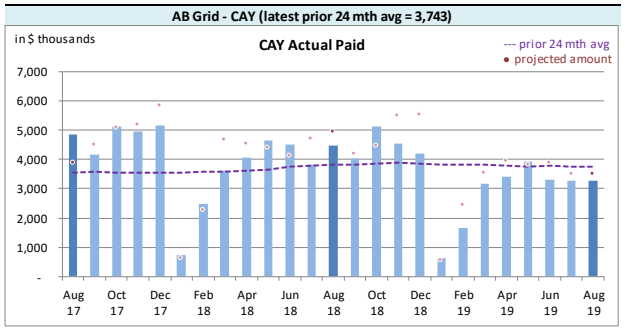
2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

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.

[9]Our 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.

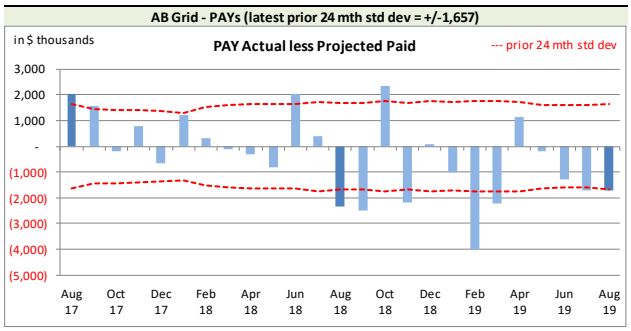
*Alberta Grid RSP Actual **Paid** activity by Calendar Month*

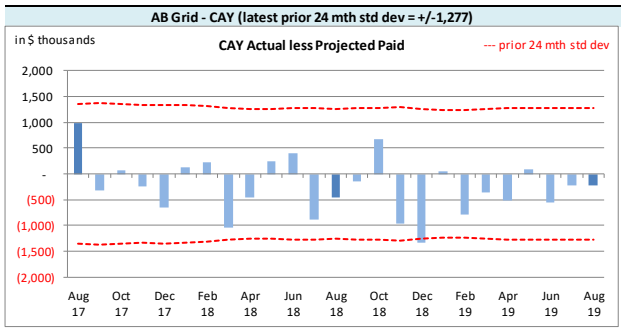




Paid activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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





On Latest $ thousands		
Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	6,994	3,743
std dev	1,657	1,277
A-P <> std dev	11	1
% <> std dev	44.0%	4.0%
norm <> std dev	31.7%	31.7%

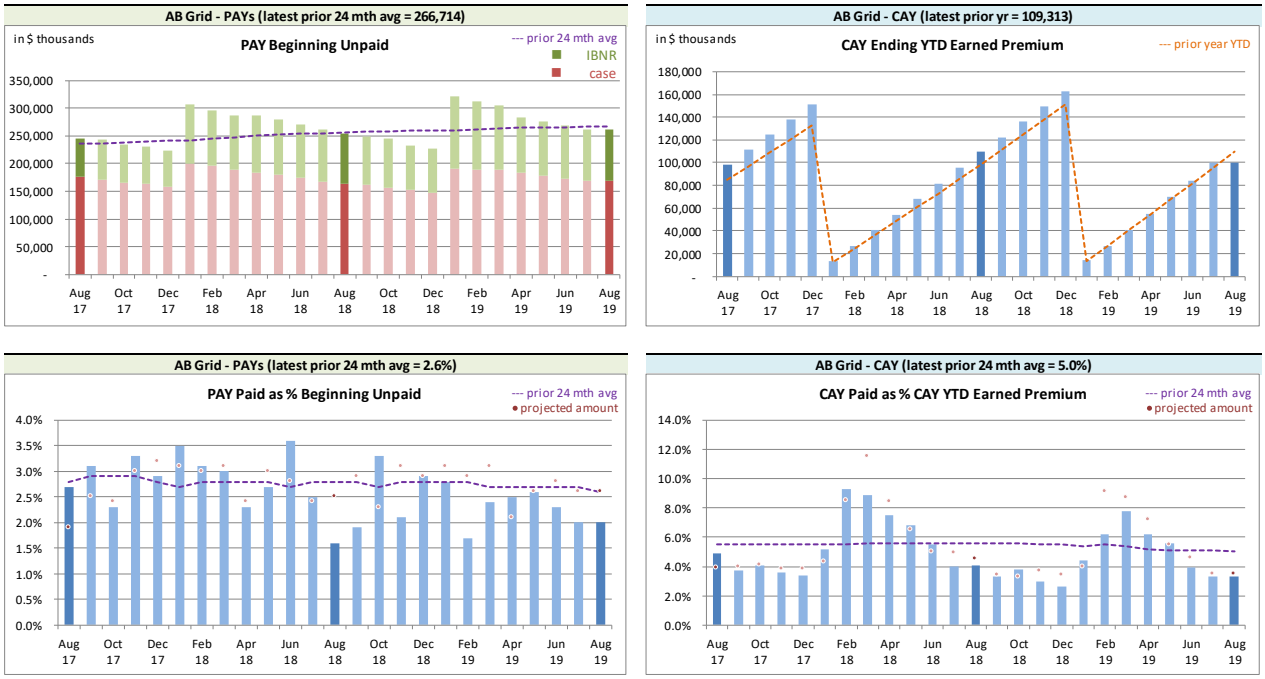
With respect to **paid** indemnity & allowed claims expense, 44% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on left), suggesting the projection process has performed worse than simply projecting the prior 24-month average amount (assuming it follows a normal distribution), and we are actively looking into the projection process for means of improving this result. Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (10 of 25 variances are positive).

The PAY **paid** variance (left chart above) was outside of one standard deviation this month. The activity was reviewed and confirmed, with the variance attributed to process variance.

The current accident year (CAY) **paid** variances fell outside 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 (9 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 Grid RSP Levels that influence[10] ***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 IBNR[11], 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 one-month

[10]Our 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.

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

projections from last month's Report.

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

Table 02

	IBNR		actuarial present value adjustments: Discount Amount		actuarial present value adjustments: Provisions for Adverse Deviations		IBNR + actuarial present value adjustments	
Accident Year	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	18,641	(7,746)	(3,394)	187	11,478	(1,555)	26,725	(9,114)
2017	19,957	(3,636)	(1,973)	169	6,606	(375)	24,590	(3,842)
2018	35,612	(2,772)	(3,166)	167	9,798	(184)	42,244	(2,789)
2019	46,355	(4,893)	(3,170)	299	9,365	(386)	52,550	(4,980)
TOTAL	120,565	(19,047)	(11,703)	822	37,247	(2,500)	146,109	(20,725)

The IBNR provision is $19.0 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 deferred policy acquisition cost asset position (shown as a negative amount) prior to and after actuarial present value adjustments. Actuarial present value adjustments decrease the asset 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 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:	(12,008)	(2,531)	6,325	(18)	(5,683)	(2,549)
balance as % unearned premium:	(11.6%)	(2.4%)	6.1%	(0.1%)	(5.5%)	(2.5%)
actual unearned premium:	103,787					
less projected:	780					

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 loss[12] 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 expenses[13], 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 88.2% rather than 86.8% (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 Grid RSP Summary of Operations due to rounding.)

Alberta 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	(29,889)	(26.2%)	1,968	1.7%	(27,921)	(24.5%)	(15,385)	(11.7%)
CAY	100,496	88.2%	6,195	5.4%	106,691	93.6%	11,659	(3.3%)
TOTAL	70,607	61.9%	8,163	7.2%	78,770	69.1%	(3,726)	(15.0%)

("% 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).

[13]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 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 presented in section 6, Exhibit B, refer to the estimates derived on the basis of various actuarial methodologies applied to the experience of the Alberta 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

Amounts in $000s

IBNR + M/S actuarial present value adjustments	Accident Year	Actual Jul. 2019	Actual Aug. 2019	Projected Sep. 2019	Projected Oct. 2019	Projected Dec. 2019
	2004	(71)	(71)	(67)	(62)	(58)
	2005	(267)	24	24	24	20
	2006	(95)	(95)	(90)	(84)	(80)
	2007	(374)	(38)	(34)	(28)	(31)
	2008	15	41	41	41	37
	2009	228	(47)	(44)	(39)	(40)
	2010	569	385	372	357	328
	2011	566	557	539	521	473
	2012	1,298	742	714	685	627
	2013	1,470	1,424	1,366	1,304	1,204
discount rate	2014	6,955	4,111	3,925	3,720	3,462
1.41%	2015	10,172	7,545	7,235	6,815	6,235
	2016	16,572	12,147	11,835	11,229	10,537
interest rate margin	2017	29,236	24,590	23,899	22,840	21,893
25 basis pts	2018	45,952	42,244	41,755	40,566	37,962
	2019	50,206	52,550	57,782	63,010	71,874
	TOTAL	162,432	146,109	149,252	150,899	154,443
	Change		(16,323)	3,143	1,647	

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

EXHIBIT B

IBNR

TABLE EXHIBIT B — Amounts in $000s

IBNR

Ultimate Loss Ratio	Accident Year	Actual Jul. 2019	Actual Aug. 2019	Projected Sep. 2019	Projected Oct. 2019	Projected Dec. 2019
51.6%	2004	(79)	(79)	(75)	(70)	(65)
60.5%	2005	(301)	(33)	(31)	(29)	(28)
66.3%	2006	(105)	(105)	(100)	(94)	(88)
70.8%	2007	(480)	(171)	(162)	(152)	(143)
67.1%	2008	(39)	(13)	(12)	(11)	(10)
60.4%	2009	164	(92)	(87)	(82)	(77)
61.5%	2010	310	144	137	129	122
66.3%	2011	65	51	48	45	43
72.8%	2012	789	258	245	230	216
74.4%	2013	796	763	725	681	641
81.4%	2014	5,705	3,080	2,926	2,750	2,586
91.6%	2015	7,773	5,322	5,056	4,702	4,288
94.2%	2016	12,798	9,516	9,231	8,677	8,161
86.8%	2017	24,323	19,957	19,358	18,390	17,662
86.5%	2018	39,167	35,612	35,256	34,198	31,845
86.8%	2019	44,736	46,355	50,932	55,505	63,370
	TOTAL	135,622	120,565	123,447	124,869	128,523
	Change		(15,057)	2,882	1,422	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C	Amounts in $000s				
Premium Liabilities	Actual Jul. 2019	Actual Aug. 2019	Projected Sep. 2019	Projected Oct. 2019	Projected Dec. 2019
(1) unearned premium (UP)	99,516	103,787	110,937	114,324	116,136
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	96.8%	94.5%	94.9%	95.2%	96.0%
(3) expected future costs {(1) x (2)}	96,307	98,104	105,249	108,867	111,513
(4) premium deficiency / (deferred policy acquisition cost)	(3,209)	(5,683)	(5,688)	(5,457)	(4,623)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	90.6%	88.4%	88.8%	89.1%	89.8%
(6) expected future costs {(1) x (5)}	90,191	91,779	98,464	101,851	104,325
(7) premium deficiency / (deferred policy acquisition cost)	(9,325)	(12,008)	(12,473)	(12,473)	(11,811)

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 Grid	Projected Balances as at Dec. 31, 2019 ($000s)									
ending 2019	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	(3)	(65)	(68)	-	-	7	-	7	7	(61)
2005	562	(28)	534	(5)	1	53	(1)	52	48	582
2006	191	(88)	103	(2)	-	10	-	10	8	111
2007	1,528	(143)	1,385	(29)	6	138	(3)	135	112	1,497
2008	595	(10)	585	(13)	2	59	(1)	58	47	632
2009	561	(77)	484	(12)	2	48	(1)	47	37	521
2010	2,521	122	2,643	(63)	11	264	(6)	258	206	2,849
2011	5,576	43	5,619	(140)	22	562	(14)	548	430	6,049
2012	5,002	216	5,218	(120)	21	522	(12)	510	411	5,629
2013	6,715	641	7,356	(191)	37	736	(19)	717	563	7,919
2014	9,389	2,586	11,975	(347)	60	1,198	(35)	1,163	876	12,851
2015	23,211	4,288	27,499	(880)	165	2,750	(88)	2,662	1,947	29,446
2016	26,484	8,161	34,645	(1,178)	208	3,464	(118)	3,346	2,376	37,021
2017	29,735	17,662	47,397	(1,801)	332	5,925	(225)	5,700	4,231	51,628
2018	39,382	31,845	71,227	(2,920)	499	8,903	(365)	8,538	6,117	77,344
PAYs (sub-total):	151,449	65,153	216,602	(7,701)	1,366	24,639	(888)	23,751	17,416	234,018
CAY (2019)	42,775	63,370	106,145	(4,352)	743	12,631	(518)	12,113	8,504	114,649
claims liabilities:	194,224	128,523	322,747	(12,053)	2,109	37,270	(1,406)	35,864	25,920	348,667
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	116,136	(11,811)	104,325	(3,846)	624	10,810	(400)	10,410	7,188	111,513
										*Total may not be sum of parts, as apvs apply to future costs within UPR
policy liabilities:			**427,072**	**(15,899)**	**2,733**	**48,080**	**(1,806)**	**46,274**	**33,108**	**460,180**

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	Accident Benefits	Other Coverages	Total
	Margins	Margins	Margins	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%	8.7%	10.0%
2013	10.0%	10.0%	10.0%	10.0%
2014	10.0%	10.0%	9.9%	10.0%
2015	10.0%	10.0%	9.3%	10.0%
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	12.1%	10.0%	6.9%	11.9%
2020	11.9%	10.0%	5.1%	10.4%
prem liab	11.9%	10.0%	5.1%	10.4%

discount rate:	1.41%
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 (1.44%), the prior valuation assumption (1.93%) and the prior fiscal year end valuation assumption (2.28%) 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	0.41%	0.91%	1.41%	1.91%	2.41%	2.91%	1.44%	2.28%
2004	-	-	-	-	-	-	-	-
2005	602	600	598	596	594	592	598	595
2006	209	207	206	205	204	202	206	204
2007	1,399	1,389	1,379	1,369	1,359	1,349	1,378	1,361
2008	605	600	595	591	586	581	595	587
2009	609	604	598	593	588	583	598	589
2010	3,171	3,143	3,116	3,090	3,064	3,039	3,115	3,071
2011	5,011	4,966	4,922	4,879	4,837	4,796	4,920	4,848
2012	5,920	5,871	5,823	5,776	5,729	5,685	5,820	5,741
2013	7,863	7,791	7,720	7,652	7,584	7,518	7,717	7,602
2014	13,853	13,708	13,566	13,427	13,290	13,158	13,557	13,325
2015	29,012	28,675	28,351	28,034	27,724	27,424	28,331	27,805
2016	38,146	37,679	37,225	36,787	36,354	35,935	37,202	36,465
2017	51,420	50,715	50,035	49,379	48,727	48,102	50,001	48,898
2018	81,217	80,012	78,851	77,733	76,622	75,559	78,784	76,910
2019	118,232	116,448	114,731	113,067	111,430	109,866	114,633	111,854
Total	357,269	352,408	347,716	343,178	338,692	334,389	347,455	339,855
	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	0.41%	0.91%	1.41%	1.91%	2.41%	2.91%	1.44%	2.28%
Total	9,553	4,692	-	(4,538)	(9,024)	(13,327)	(261)	(7,861)
	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	0.41%	0.91%	1.41%	1.91%	2.41%	2.91%	1.44%	2.28%
2004	-	-	-	-	-	-	-	-
2005	0.7%	0.3%	-	(0.3%)	(0.7%)	(1.0%)	-	(0.5%)
2006	1.5%	0.5%	-	(0.5%)	(1.0%)	(1.9%)	-	(1.0%)
2007	1.5%	0.7%	-	(0.7%)	(1.5%)	(2.2%)	(0.1%)	(1.3%)
2008	1.7%	0.8%	-	(0.7%)	(1.5%)	(2.4%)	-	(1.3%)
2009	1.8%	1.0%	-	(0.8%)	(1.7%)	(2.5%)	-	(1.5%)
2010	1.8%	0.9%	-	(0.8%)	(1.7%)	(2.5%)	(0.0%)	(1.4%)
2011	1.8%	0.9%	-	(0.9%)	(1.7%)	(2.6%)	(0.0%)	(1.5%)
2012	1.7%	0.8%	-	(0.8%)	(1.6%)	(2.4%)	(0.1%)	(1.4%)
2013	1.9%	0.9%	-	(0.9%)	(1.8%)	(2.6%)	(0.0%)	(1.5%)
2014	2.1%	1.0%	-	(1.0%)	(2.0%)	(3.0%)	(0.1%)	(1.8%)
2015	2.3%	1.1%	-	(1.1%)	(2.2%)	(3.3%)	(0.1%)	(1.9%)
2016	2.5%	1.2%	-	(1.2%)	(2.3%)	(3.5%)	(0.1%)	(2.0%)
2017	2.8%	1.4%	-	(1.3%)	(2.6%)	(3.9%)	(0.1%)	(2.3%)
2018	3.0%	1.5%	-	(1.4%)	(2.8%)	(4.2%)	(0.1%)	(2.5%)
2019	3.1%	1.5%	-	(1.5%)	(2.9%)	(4.2%)	(0.1%)	(2.5%)
Total	2.7%	1.3%	-	(1.3%)	(2.6%)	(3.8%)	(0.1%)	(2.3%)
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

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

RSP	**Alberta Grid**
AccountCode Desc	**IBNR - Discounted**

M/S IBNR - in $000s

	Values						
AccYear	**Sum of Prior Month Actual Amount**	**Sum of Projected Change**	**Sum of Change Due to AvsP Variances**	**Sum of Change Due to Valuation Implementation**	**Sum of Total Change**	**Sum of % Total Change**	**Sum of Current Month Final Amount**
2004	(71)	-	-	-	-	-	(71)
2005	(267)	-	(1)	292	291	(109.0%)	24
2006	(95)	4	(4)	-	-	-	(95)
2007	(374)	17	(16)	335	336	(89.8%)	(38)
2008	15	1	25	-	26	173.3%	41
2009	228	(8)	11	(278)	(275)	(120.6%)	(47)
2010	569	(18)	70	(236)	(184)	(32.3%)	385
2011	566	(14)	(2)	7	(9)	(1.6%)	557
2012	1,298	(40)	(129)	(387)	(556)	(42.8%)	742
2013	1,470	(46)	1	(1)	(46)	(3.1%)	1,424
2014	6,955	(251)	220	(2,813)	(2,844)	(40.9%)	4,111
2015	10,172	(321)	(141)	(2,165)	(2,627)	(25.8%)	7,545
2016	16,572	(523)	(832)	(3,070)	(4,425)	(26.7%)	12,147
2017	29,236	(804)	(165)	(3,677)	(4,646)	(15.9%)	24,590
2018	45,952	(919)	379	(3,168)	(3,708)	(8.1%)	42,244
2019	50,206	7,324	(1,533)	(3,447)	2,344	4.7%	52,550
Grand Total	**162,432**	**4,402**	**(2,117)**	**(18,608)**	**(16,323)**	**(10.0%)**	**146,109**

EXHIBIT G

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

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

IBNR - in $000s

AccYear	Values Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
2004	(79)	-	-	-	-	-	(79)
2005	(301)	-	-	268	268	(89.0%)	(33)
2006	(105)	4	(4)	-	-	-	(105)
2007	(480)	19	(18)	308	309	(64.4%)	(171)
2008	(39)	2	24	-	26	(66.7%)	(13)
2009	164	(7)	10	(259)	(256)	(156.1%)	(92)
2010	310	(12)	65	(219)	(166)	(53.5%)	144
2011	65	(3)	(11)	-	(14)	(21.5%)	51
2012	789	(32)	(133)	(366)	(531)	(67.3%)	258
2013	796	(32)	(1)	-	(33)	(4.1%)	763
2014	5,705	(228)	207	(2,604)	(2,625)	(46.0%)	3,080
2015	7,773	(272)	(125)	(2,054)	(2,451)	(31.5%)	5,322
2016	12,798	(448)	(872)	(1,962)	(3,282)	(25.6%)	9,516
2017	24,323	(730)	(203)	(3,433)	(4,366)	(18.0%)	19,957
2018	39,167	(783)	300	(3,072)	(3,555)	(9.1%)	35,612
2019	44,736	6,512	(1,535)	(3,358)	1,619	3.6%	46,355
Grand Total	**135,622**	**3,990**	**(2,296)**	**(16,751)**	**(15,057)**	**(11.1%)**	**120,565**