ALBERTA GRID RISK SHARING POOL

NOVEMBER 2018 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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FACILITY Association

ACTUARIAL HIGHLIGHTS

RSP ALBERTA GRID

OPERATIONAL REPORT

NOVEMBER 2018

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2018)

The November 2018 Operational Report leverages actuarial assumptions consistent with last month (that is, it does not reflect the results of an updated valuation). The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 2018.

ALBERTA GRID RISK SHARING POOL
FISCAL YEAR 2018 – SCHEDULE OF VALUATIONS

Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2017 (completed)	1.76% mfad: 25 bp	Oct. 2017	updated valuation (roll forward): accident year 2017 loss ratio decreased 0.3 points to 89.9%; discount rate increased by 57 basis points; no change to selected margins for adverse deviations
Dec. 31, 2017 (completed)	1.75% mfad: 25 bp	Mar. 2018	update valuation: accident year 2018 loss ratio increased 4.9 points to 90.7%; discount rate decreased by 1 basis point; no change to selected margins for adverse deviations
Mar. 31, 2018 (completed)	1.92% mfad: 25 bp	May 2018	update valuation (roll forward): accident year 2018 loss ratio increased 1.2 points to 91.9%; discount rate increased by 17 basis points; no change to selected margins for adverse deviations
Jun. 30, 2018 (completed)	1.87% mfad 25 bp	Aug. 2018	updated valuation: accident year 2018 loss ratio decreased 0.1 point to 91.8%; discount rate decreased by 5 basis points; selected margins for adverse deviations were updated
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

Under the proposed schedule for fiscal year 2018, the "off-half" valuation quarters ending March 31, 2018 and September 30, 2018 would not reflect a full valuation update of assumptions, but would rather "roll-forward" key assumptions from the previous valuation.

1.2 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.

1.3 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation

There have been no changes in these descriptions since last month's Highlights.

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 (September 30, 2018), 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, 2017), impacting the selection of ultimates.

The **Supreme Court of Canada** rendered its judgment on **Saadati v Moorhead** (**2017** SCC 28, **rendered on Jun 2, 2017**). Saadati was involved in a collision in July of 2005 in British Columbia and sued the at-fault driver for damages. According the Supreme Court decision, "*The trial judge found that the ... accident caused S[aadati] psychological injuries, including personality change and cognitive difficulties. ...and awarded S[aadati] $100,000 for non-pecuniary damages*." The trial decision was appealed to the BC Court of Appeal where the trial's $100,000 non-pecuniary award was dismissed. The Supreme Court upheld the $100,000 non-pecuniary award, determining:

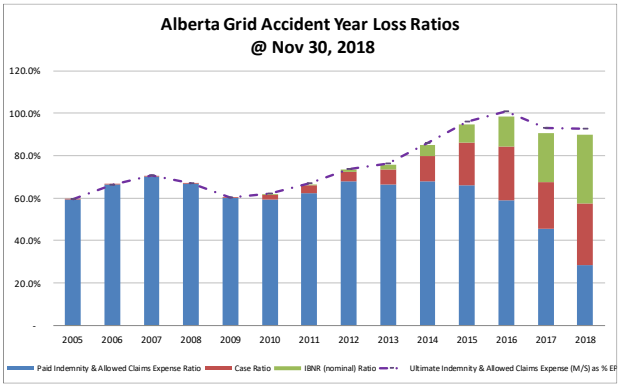
- "*A finding of legally compensable mental injury need not rest, in whole or in part, on the claimant proving a recognized psychiatric injury.*"
- "*...a trier of fact adjudicating a claim of mental injury is not concerned with diagnosis, but with symptoms and their effects.*"
- "*Expert evidence can assist in determining whether or not a mental injury has been shown, but where psychiatric diagnosis is unavailable, it remains open to a trier of fact to find on other evidence adduced by the claimant that he or she has proven on a balance of probabilities the occurrence of mental injury*."

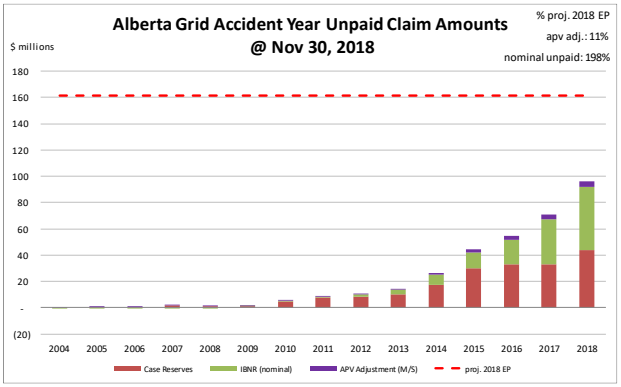
At the current time, no adjustments have been made to our valuation estimates or views based on the judgment as rendered, and at this point we do not believe this judgment will have a further impact on our valuation results.

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. At the current time, no adjustments have been made to our valuation estimates or views based on this order.

1.4 Current Provision Summary

The charts immediately below show the current levels of claim liabilities[1] booked by accident year[2]. 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 2018 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 ($17.4 million – see table immediately below) represents 11% of the earned premium projected for the full year 2018 (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	191,988	57.1%
ibnr	127,091	37.8%
M/S apv adjust.	17,352	5.2%
M/S total	336,431	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 pool is in case reserves. Approximately 65% of the IBNR balance relates to accident years 2017 and 2018 (see Exhibit B). Approximately 87% of the M/S total claim liabilities are related to accident years 2014-2018 inclusive (i.e. the most recent 5 accident years), and approximately 1% is related to accident years 2008 and prior (i.e. prior to the most recent 10 accident years).

[1]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.

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

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

premium liabilities ($000s)	amt	%
unearned prem	89,726	106.9%
prem def/(dpac)	(9,392)	(11.2%)
M/S apv adjust.	3,591	4.3%
M/S total	83,925	100.0%

policy liabilities ($000s)	amt	%
claim	319,079	75.9%
premium	80,334	19.1%
M/S apv adjust.	20,943	5.0%
M/S total	420,356	100.0%

2 Activity During the Month of November 2018

2.1 Recorded Premium and Claims Activity

The table immediately below summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month's Operational Report[3].

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	(7)	(7)	2,119	(2,552)	(2,383)	1,346	(264)	(1,206)
2016	(0)	(0)	1,685	617	(1,479)	(789)	206	(172)
2017	1	1	1,132	(234)	(1,237)	(896)	(105)	(1,130)
2018	13,167	(17)	4,533	(957)	4,622	124	9,155	(834)
TOTAL	13,161	(23)	9,468	(3,127)	(476)	(215)	8,991	(3,342)

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

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.

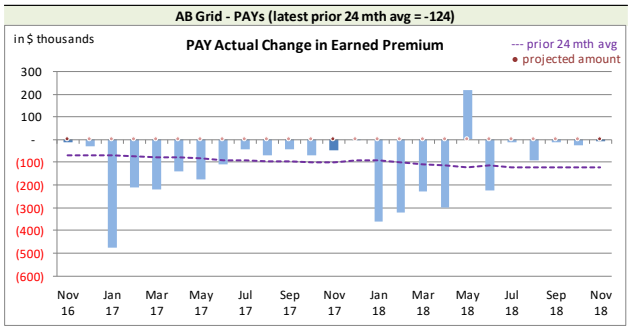
2.1.a Actual vs. Projected (AvsP): Earned Premium

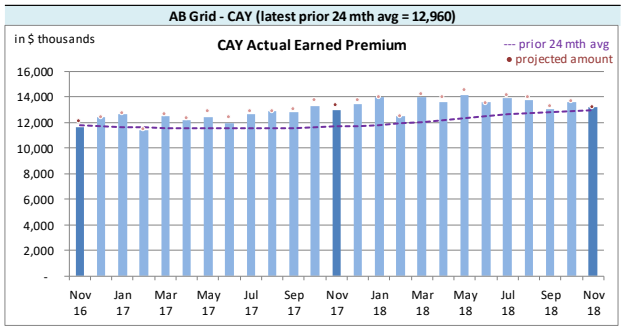
The charts at the top of the next page show actual **earned premium**[4] activity in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

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

[4]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.

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



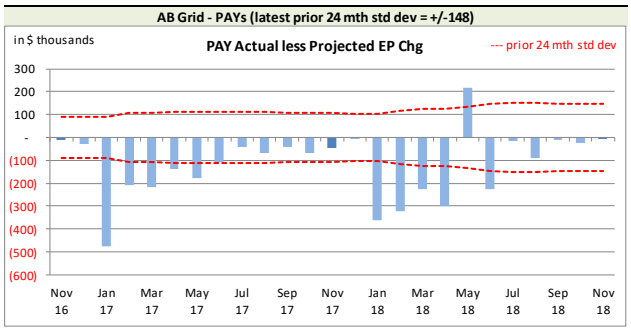


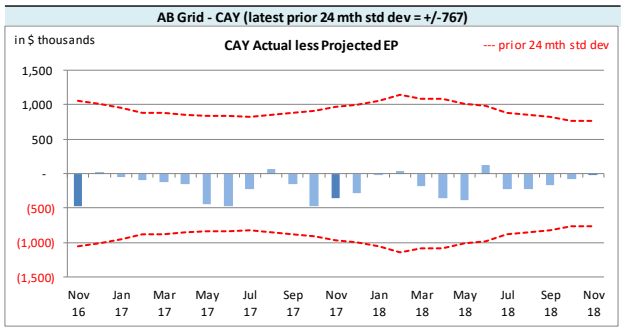
Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels seem to occur at the beginning of each year.

We have noted and have investigated the unusually high level of PAYs earned premium activity earlier in 2017 and January through August 2018, particularly with respect to one member. FA management reviewed the activity and determined the 2017 transactions were correct and valid, but continues its investigation of the 2018 transactions.

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 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)	(124)	12,960
std dev	148	767
A-P <> std dev	11	-
% <> std dev	44.0%	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[5], with actuals generally lower than projected, although the magnitude is not high relative to

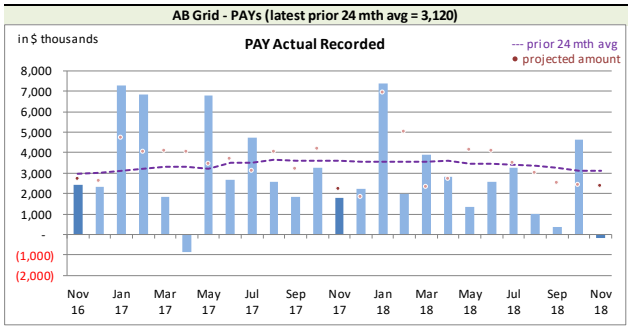
[5]The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

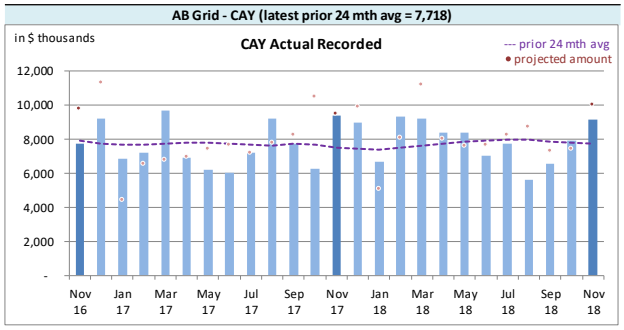
monthly premium. In addition to the PAYs' bias, the CAY has also shown bias[6], with actuals being generally lower than projected, and while we modified our projections processes in response, bias still exists. Over time, we may consider other projection approaches to narrow monthly variance levels further, 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.

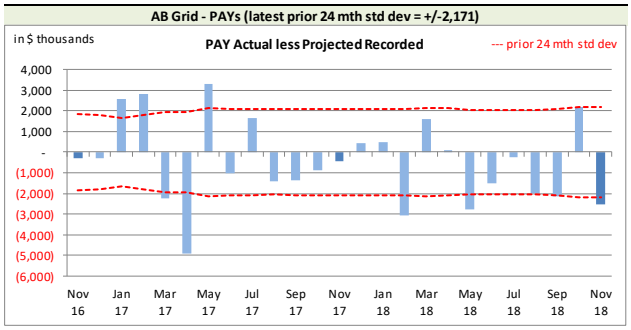
Alberta Grid RSP Actual **Recorded** *by Calendar Month*

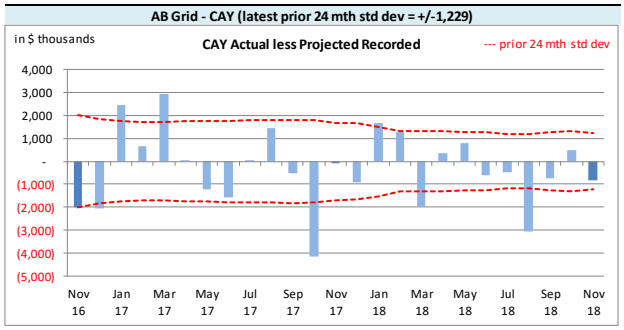




Recorded activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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





On Latest $ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	3,120	7,718
std dev	2,171	1,229
A-P <> std dev	10	8
% <> std dev	40.0%	32.0%
norm <> std dev	31.7%	31.7%

With respect to **recorded** indemnity & allowed claims expense activity, 40% 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 worse than

[6]We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (24 in this case) and 50% probability of success. The 24-month variances at November 2018 has only 4 months where the actuals were higher than projected, and as the 95% confidence range is 7 to 17, bias continues to be indicated.

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.

The PAY **recorded** variance 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) **recorded** variances fell outside of one standard deviation 32% of the time over the last 25 calendar months (see table at the bottom of the previous page), 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.

We note that there may be a change in the levels of CAY **recorded** and **paid** activity relative to year-to-date **earned premium**, as evidenced by the average of monthly ratios over the past several years shown in the tables immediately below. These tables show, in each row, the average monthly ratio for each calendar year. That is, each row in the *left* table (as at Dec) provides the average of the 12 monthly-ratios (i.e. Jan, Feb, ... Dec) for that row's calendar year, whereas each row in the *right* table (as at Nov) provides the average of the 11 monthly ratios (i.e. Jan-Nov) for that row's calendar year.

Alberta Grid RSP year-to-date CAY claims activity (ratio to EP)

CAY avg of mthly ratios for yr

as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg
Dec 2009	11.5%		4.4%	
Dec 2010	10.9%	(0.6%)	4.5%	0.1%
Dec 2011	12.8%	1.9%	4.8%	0.3%
Dec 2012	12.4%	(0.4%)	4.7%	(0.1%)
Dec 2013	12.6%	0.2%	4.8%	0.1%
Dec 2014	13.8%	1.2%	5.3%	0.5%
Dec 2015	14.4%	0.6%	5.5%	0.2%
Dec 2016	14.0%	(0.4%)	5.4%	(0.1%)
Dec 2017	15.5%	1.5%	5.6%	0.2%

CAY avg of mthly ratios for yr

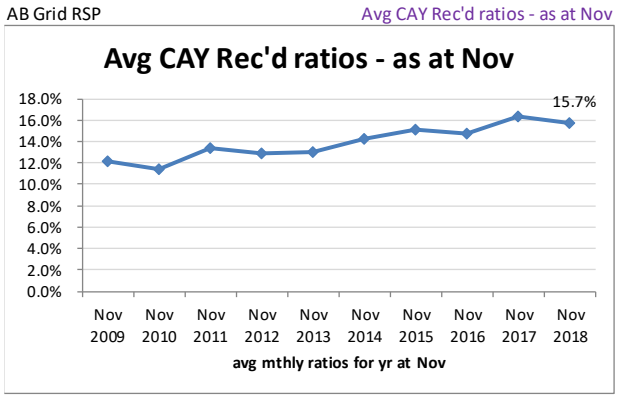
as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg
Nov 2009	12.1%		4.5%	
Nov 2010	11.4%	(0.7%)	4.6%	0.1%
Nov 2011	13.4%	2.0%	4.9%	0.3%
Nov 2012	12.9%	(0.5%)	4.9%	0.0%
Nov 2013	13.0%	0.1%	5.0%	0.1%
Nov 2014	14.3%	1.3%	5.4%	0.4%
Nov 2015	15.1%	0.8%	5.6%	0.2%
Nov 2016	14.7%	(0.4%)	5.6%	0.0%
Nov 2017	16.3%	1.6%	5.8%	0.2%
Nov 2018	15.7%	(0.6%)	5.6%	(0.2%)

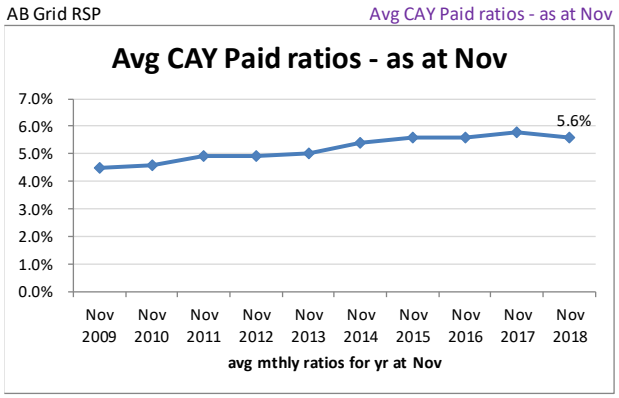
Both **recorded** and **paid** monthly average ratios for the 12-months at Dec. 2017 relative to Dec. 2009 have increased at an annual rate of almost 4% over and above any premium rate level increases. At this point, we are only monitoring, but the valuation team has been advised and is taking this information into consideration. Further, while the average of the 12 monthly ratios at December for 2016 was down from 2015, the December 12-month average ratios for calendar year 2017 were at the highest level for both **recorded** and **paid**.

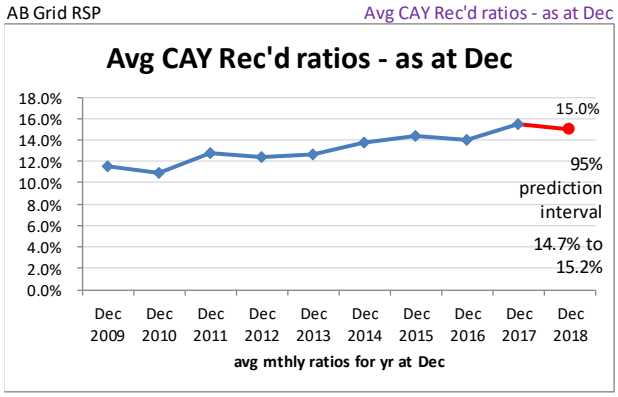
As can be seen in the *right* table above, (average of 11 months to November of each year), the **recorded** ratio is the second highest ratio in the last 10 years, (behind ratio as at Nov 2017) and the **paid** ratio is the second highest ratio in the last 10 years (tied with 2015 and 2016). There has been strong (over 99%) correlation between the ytd monthly average ratios at November each year and the corresponding monthly average ratios at December, suggesting the monthly average ratios for 2018 at November (that is, the average of the 11 monthly ratios Jan 2018 to Nov 2018) are predictive of where the 2018 monthly average ratios will be at year-end (that is, the 12 monthly ratios Jan 2018 – Dec 2018). Using simple regression, we forecast the average of the 12 monthly ratios for calendar year 2018 (i.e. the average of the monthly ratios for Jan 2018 – Dec 2018) will be 15.0% (95%

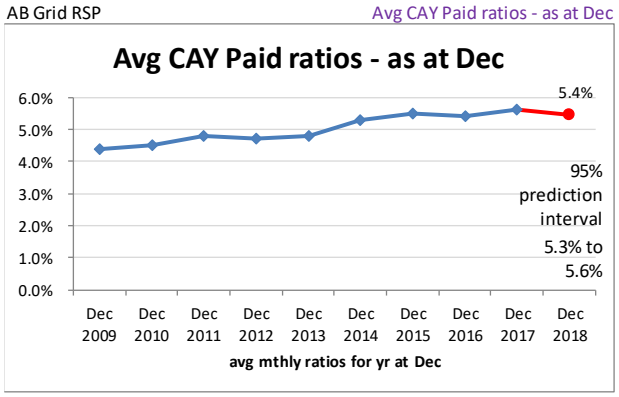
prediction interval of 14.7% to 15.2%) for recorded and 5.4% (95% prediction interval of 5.3% to 5.6%) for paid. The results are presented in charts immediately below.

Alberta Grid RSP average of monthly CAY claims activity ratios to EP







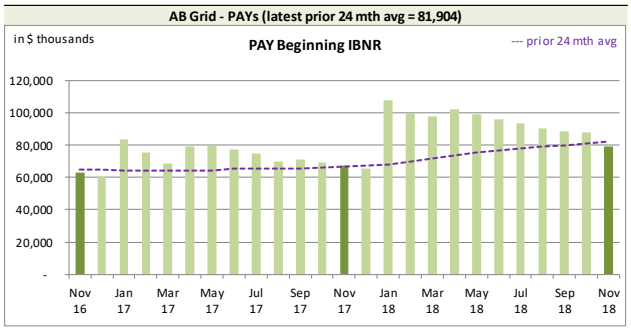


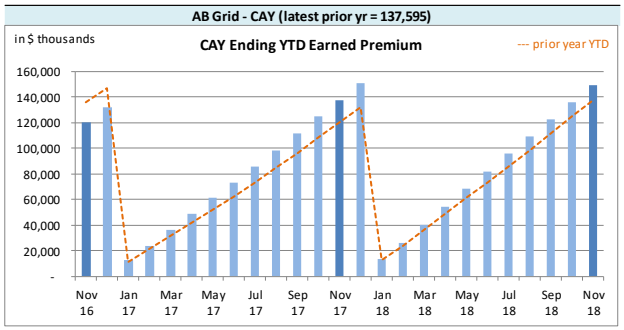
We are taking this information into consideration as part of our projection process.

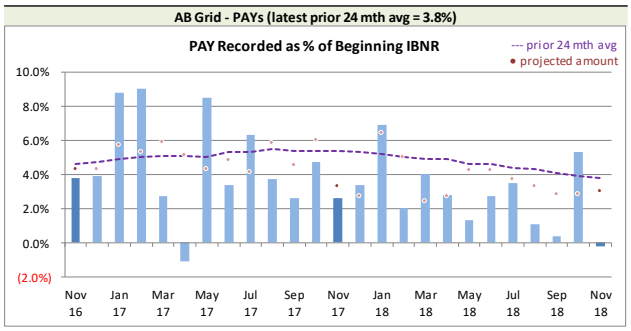
The method for establishing IBNR adjusts automatically for changes in **earned premium** and **recorded** claims activity level (see sections 2.2 and 3).

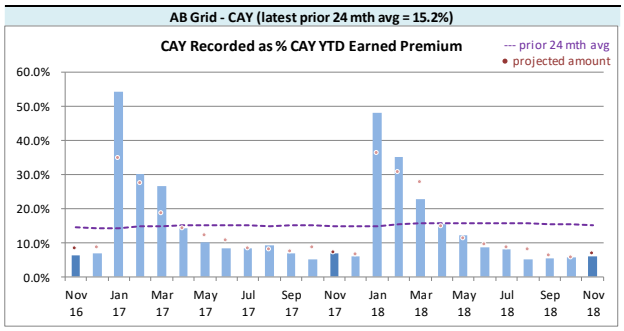
We have included, for reference, additional charts at the top of the next page related to levels influencing **recorded** activity. Note in particular the changes in the level of PAY beginning IBNR over the months, as a response to valuations and showing up as a beginning IBNR change one month after the valuation is implemented (i.e. April, June, September, and November).

Alberta Grid RSP Levels that influence[7] ***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:

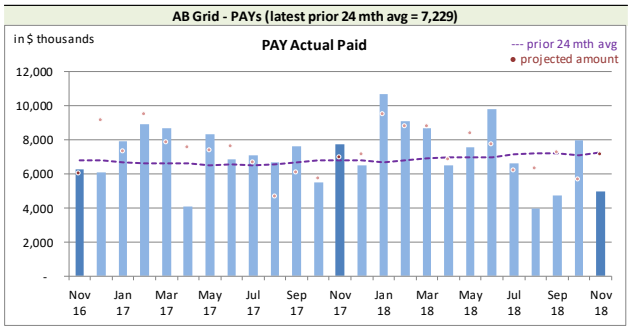
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate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

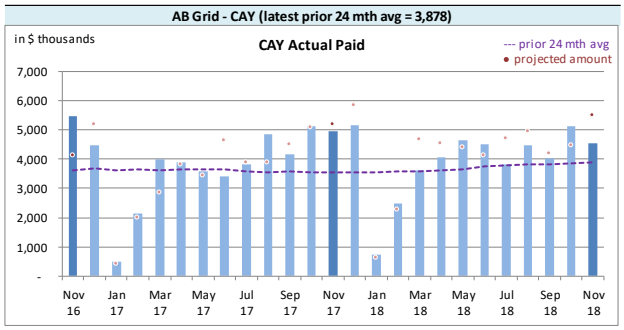
2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

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.

[7]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.

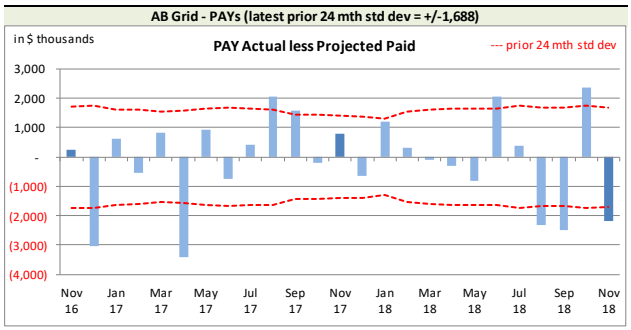
*Alberta Grid RSP Actual **Paid** activity by Calendar Month*

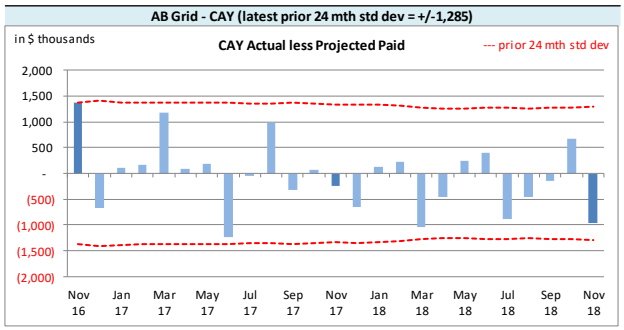




Paid activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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





On Latest $ thousands		
Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	7,229	3,878
std dev	1,688	1,285
A-P <> std dev	9	-
% <> std dev	36.0%	0.0%
norm <> std dev	31.7%	31.7%

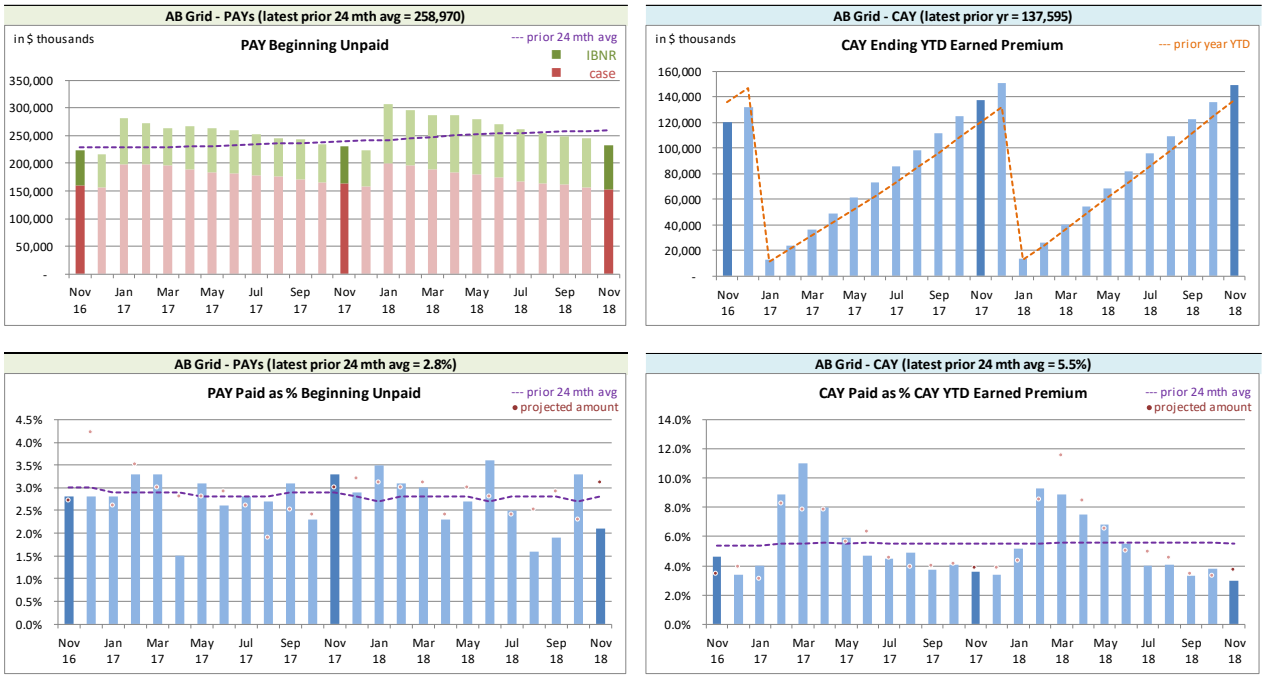
With respect to **paid** indemnity & allowed claims expense, 36% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on left), suggesting the projection process has performed no better than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

The PAY **paid** variance 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 0% 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 lagging 24-month basis.

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[8] ***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[9], 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 projections from last month's Report.

[8]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.

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

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

Table 02

	IBNR		actuarial present value adjustments: Discount Amount		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	26,044	1,202	(5,141)	(122)	10,878	260	31,781	1,340
2016	18,689	172	(3,154)	38	6,380	(76)	21,915	134
2017	34,258	1,131	(4,500)	(15)	8,303	28	38,061	1,144
2018	48,100	818	(6,248)	(64)	10,834	110	52,686	864
TOTAL	127,091	3,323	(19,043)	(163)	36,395	322	144,443	3,482

The IBNR provision is $3.3 million higher than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1.

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 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.

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:	(9,392)	(265)	3,591	103	(5,801)	(162)
balance as % unearned premium:	(10.5%)	-	4.0%	-	(6.5%)	-
actual unearned premium:	89,726					
less projected:	2,570					

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[10] 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[11], 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 90.6% rather than 89.8% (the valuation ultimate ratio for accident year 2018), 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	548	0.4%	(7,764)	(5.3%)	(7,216)	(4.9%)	(289)	0.2%
CAY	133,926	90.6%	4,586	3.1%	138,512	93.7%	12,189	(0.1%)
TOTAL	134,474	91.0%	(3,178)	(2.2%)	131,296	88.8%	11,900	0.1%

("% EP" based on 2018 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.

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.

5 Current Operational Report – Additional Exhibits

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

[10] "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).

[11] 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.

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

discount rate
2.28%

interest rate margin
25 basis pts

Accident Year	Actual Oct. 2018	Actual Nov. 2018	Projected Dec. 2018	Projected Jan. 2019	Projected Dec. 2019
2004	(71)	(71)	(71)	(71)	(71)
2005	(17)	(152)	(151)	(133)	(80)
2006	(71)	(72)	(73)	(69)	(42)
2007	(160)	(225)	(227)	(224)	(132)
2008	(9)	(13)	(15)	(14)	(5)
2009	240	180	176	177	111
2010	665	688	672	659	416
2011	846	1,372	1,344	1,317	822
2012	2,524	2,492	2,448	2,379	1,469
2013	4,056	4,260	4,192	4,165	2,562
2014	9,045	9,121	8,743	8,724	5,347
2015	14,589	14,201	13,776	13,464	8,367
2016	22,225	21,915	21,290	21,108	14,749
2017	38,020	38,061	36,959	36,298	28,149
2018	49,652	52,686	55,431	50,139	39,795
2019	-	-	-	6,334	49,565
TOTAL	141,534	144,443	144,494	144,253	151,022
Change		2,909	51	(241)	

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 Oct. 2018	Actual Nov. 2018	Projected Dec. 2018	Projected Jan. 2019	Projected Dec. 2019
51.6%	2004	(79)	(79)	(79)	(79)	(79)
59.4%	2005	(69)	(194)	(192)	(188)	(116)
66.3%	2006	(80)	(81)	(80)	(78)	(48)
70.6%	2007	(235)	(300)	(297)	(291)	(176)
67.1%	2008	(89)	(93)	(92)	(90)	(54)
60.4%	2009	177	117	116	114	69
61.9%	2010	352	375	371	364	222
66.7%	2011	346	874	865	848	513
73.5%	2012	1,882	1,874	1,855	1,818	1,100
75.8%	2013	3,235	3,470	3,435	3,366	2,035
85.2%	2014	7,744	7,847	7,533	7,382	4,464
94.7%	2015	12,600	12,234	11,867	11,392	6,824
98.6%	2016	18,895	18,689	18,128	17,584	11,927
90.6%	2017	34,152	34,258	33,230	32,233	24,758
89.8%	2018	45,431	48,100	50,500	45,450	36,375
89.1%	2019	-	-	-	5,743	44,373
	TOTAL	124,262	127,091	127,160	125,568	132,187
	Change		2,829	69	(1,592)	

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 Oct. 2018	Actual Nov. 2018	Projected Dec. 2018	Projected Jan. 2019	Projected Dec. 2019
(1) unearned premium (UP)	88,089	89,726	86,494	82,770	91,409
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	93.6%	93.5%	93.4%	93.4%	95.1%
(3) expected future costs {(1) x (2)}	82,480	83,925	80,801	77,332	86,928
(4) premium deficiency / (deferred policy acquisition cost)	(5,609)	(5,801)	(5,693)	(5,438)	(4,481)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	89.6%	89.5%	89.4%	89.4%	91.0%
(6) expected future costs {(1) x (5)}	78,951	80,334	77,344	74,024	83,210
(7) premium deficiency / (deferred policy acquisition cost)	(9,138)	(9,392)	(9,150)	(8,746)	(8,199)

EXHIBIT D

Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2018, broken down by component.

Alberta Grid	Projected Balances as at Dec. 31, 2018 ($000s)									
ending 2018	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	-	(79)	(79)	-	-	8	-	8	8	(71)
2005	753	(192)	561	(15)	2	56	(2)	54	41	602
2006	202	(80)	122	(5)	-	12	-	12	7	129
2007	1,378	(297)	1,081	(38)	4	108	(4)	104	70	1,151
2008	1,280	(92)	1,188	(43)	5	119	(4)	115	77	1,265
2009	879	116	995	(40)	4	100	(4)	96	60	1,055
2010	4,637	371	5,008	(200)	20	501	(20)	481	301	5,309
2011	7,115	865	7,980	(319)	32	798	(32)	766	479	8,459
2012	7,689	1,855	9,544	(363)	38	954	(36)	918	593	10,137
2013	9,678	3,435	13,113	(551)	52	1,311	(55)	1,256	757	13,870
2014	16,153	7,533	23,686	(1,161)	118	2,369	(116)	2,253	1,210	24,896
2015	29,080	11,867	40,947	(2,211)	246	4,095	(221)	3,874	1,909	42,856
2016	32,549	18,128	50,677	(3,091)	304	6,335	(386)	5,949	3,162	53,839
2017	32,598	33,230	65,828	(4,410)	461	8,229	(551)	7,678	3,729	69,557
PAYs (sub-total):	143,991	76,660	220,651	(12,447)	1,286	24,995	(1,431)	23,564	12,403	233,054
CAY (2018)	48,304	50,500	98,804	(6,719)	692	11,758	(800)	10,958	4,931	103,735
claims liabilities:	192,295	127,160	319,455	(19,166)	1,978	36,753	(2,231)	34,522	17,334	336,789
	Unearned Premium	Premium Defiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	86,494	(9,150)	77,344	(4,547)	462	8,015	(473)	7,542	3,457	80,801
										*Total may not be sum of parts, as apvs apply to future costs within UPR
policy liabilities:			**396,799**	**(23,713)**	**2,440**	**44,768**	**(2,704)**	**42,064**	**20,791**	**417,590**

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, 2018 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Sep. 30, 2018)

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%	8.5%	10.0%
2013	10.0%	10.0%	9.9%	10.0%
2014	10.0%	10.0%	10.0%	10.0%
2015	10.0%	10.0%	10.0%	10.0%
2016	12.5%	10.0%	12.5%	12.5%
2017	12.4%	10.0%	12.5%	12.5%
2018	12.2%	10.0%	8.2%	11.9%
2019	11.8%	10.0%	5.1%	10.4%
prem liab	11.8%	10.0%	5.1%	10.4%

discount rate:	2.28%
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, 2018 from the latest valuation date (projections in exhibits A to D are also to Dec. 31, 2018, but are based on more up-to-date information). We have included the most recent valuation selection (2.28%), the prior valuation assumption (1.87%) and the prior fiscal year end valuation assumption (1.76%) 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, 2018 projected Unpaid							
AY	1.28%	1.78%	2.28%	2.78%	3.28%	3.78%	1.87%	1.76%
2004	-	-	-	-	-	-	-	-
2005	837	832	827	822	817	812	831	832
2006	255	253	251	249	247	245	252	253
2007	1,249	1,240	1,230	1,221	1,212	1,203	1,238	1,240
2008	1,192	1,182	1,173	1,163	1,154	1,146	1,180	1,182
2009	916	908	900	893	885	878	907	909
2010	5,995	5,943	5,891	5,840	5,791	5,742	5,933	5,945
2011	7,863	7,793	7,725	7,659	7,594	7,530	7,781	7,797
2012	10,131	10,046	9,962	9,880	9,800	9,722	10,030	10,049
2013	14,396	14,262	14,130	14,001	13,876	13,751	14,237	14,267
2014	26,583	26,298	26,014	25,739	25,473	25,209	26,245	26,309
2015	43,967	43,445	42,925	42,423	41,938	41,458	43,345	43,464
2016	55,220	54,473	53,736	53,024	52,332	51,654	54,338	54,500
2017	71,927	70,852	69,801	68,789	67,805	66,843	70,660	70,899
2018	104,823	103,231	101,676	100,169	98,718	97,302	102,946	103,299
Total	345,354	340,758	336,241	331,872	327,642	323,495	339,923	340,945
	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	1.28%	1.78%	2.28%	2.78%	3.28%	3.78%	1.87%	1.76%
Total	9,113	4,517	-	(4,369)	(8,599)	(12,746)	3,682	4,704
	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	1.28%	1.78%	2.28%	2.78%	3.28%	3.78%	1.87%	1.76%
2004	-	-	-	-	-	-	-	-
2005	1.2%	0.6%	-	(0.6%)	(1.2%)	(1.8%)	0.5%	0.6%
2006	1.6%	0.8%	-	(0.8%)	(1.6%)	(2.4%)	0.4%	0.8%
2007	1.5%	0.8%	-	(0.7%)	(1.5%)	(2.2%)	0.7%	0.8%
2008	1.6%	0.8%	-	(0.9%)	(1.6%)	(2.3%)	0.6%	0.8%
2009	1.8%	0.9%	-	(0.8%)	(1.7%)	(2.4%)	0.8%	1.0%
2010	1.8%	0.9%	-	(0.9%)	(1.7%)	(2.5%)	0.7%	0.9%
2011	1.8%	0.9%	-	(0.9%)	(1.7%)	(2.5%)	0.7%	0.9%
2012	1.7%	0.8%	-	(0.8%)	(1.6%)	(2.4%)	0.7%	0.9%
2013	1.9%	0.9%	-	(0.9%)	(1.8%)	(2.7%)	0.8%	1.0%
2014	2.2%	1.1%	-	(1.1%)	(2.1%)	(3.1%)	0.9%	1.1%
2015	2.4%	1.2%	-	(1.2%)	(2.3%)	(3.4%)	1.0%	1.3%
2016	2.8%	1.4%	-	(1.3%)	(2.6%)	(3.9%)	1.1%	1.4%
2017	3.0%	1.5%	-	(1.4%)	(2.9%)	(4.2%)	1.2%	1.6%
2018	3.1%	1.5%	-	(1.5%)	(2.9%)	(4.3%)	1.2%	1.6%
Total	2.7%	1.3%	-	(1.3%)	(2.6%)	(3.8%)	1.1%	1.4%
	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 - Discou :d**

M/S 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	(71)	-	-	-	-	-	(71)
2005	(17)	2	(137)	-	(135)	794.1%	(152)
2006	(71)	4	(5)	-	(1)	1.4%	(72)
2007	(160)	9	(74)	-	(65)	40.6%	(225)
2008	(9)	2	(6)	-	(4)	44.4%	(13)
2009	240	(14)	(46)	-	(60)	(25.0%)	180
2010	665	(37)	60	-	23	3.5%	688
2011	846	(46)	572	-	526	62.2%	1,372
2012	2,524	(145)	113	-	(32)	(1.3%)	2,492
2013	4,056	(236)	440	-	204	5.0%	4,260
2014	9,045	(297)	373	-	76	0.8%	9,121
2015	14,589	(438)	50	-	(388)	(2.7%)	14,201
2016	22,225	(444)	134	-	(310)	(1.4%)	21,915
2017	38,020	(1,103)	1,144	-	41	0.1%	38,061
2018	49,652	2,170	864	-	3,034	6.1%	52,686
Grand Total	**141,534**	**(573)**	**3,482**	**-**	**2,909**	**2.1%**	**144,443**

EXHIBIT G

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

RSP	Alberta Grid
AccountCode Desc	IBNR - Undisc nted

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	(79)	-	-	-	-	-	(79)
2005	(69)	4	(129)	-	(125)	181.2%	(194)
2006	(80)	5	(6)	-	(1)	1.3%	(81)
2007	(235)	14	(79)	-	(65)	27.7%	(300)
2008	(89)	5	(9)	-	(4)	4.5%	(93)
2009	177	(11)	(49)	-	(60)	(33.9%)	117
2010	352	(21)	44	-	23	6.5%	375
2011	346	(21)	549	-	528	152.6%	874
2012	1,882	(113)	105	-	(8)	(0.4%)	1,874
2013	3,235	(194)	429	-	235	7.3%	3,470
2014	7,744	(232)	335	-	103	1.3%	7,847
2015	12,600	(378)	12	-	(366)	(2.9%)	12,234
2016	18,895	(378)	172	-	(206)	(1.1%)	18,689
2017	34,152	(1,025)	1,131	-	106	0.3%	34,258
2018	45,431	1,851	818	-	2,669	5.9%	48,100
Grand Total	**124,262**	**(494)**	**3,323**	**-**	**2,829**	**2.3%**	**127,091**