



ALBERTA NON-GRID RISK SHARING POOL

MARCH 2018 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS
RSP ALBERTA NON-GRID
OPERATIONAL REPORT
MARCH 2018

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2018)

The March 2018 Operational Report incorporates the results of an updated valuation (as at December 31, 2017) – 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 2018.

ALBERTA NON-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 increased 2.9 points to 112.8%; discount rate increased by 56 basis points; no change to selected margins for adverse deviations
Dec. 31, 2017 (completed)	1.76% mfad: 25 bp	Mar. 2018	update valuation: accident year 2018 loss ratio increased 2.7 points to 108.5%; no change to selected discount rate; no change to selected margins for adverse deviations
Mar. 31, 2018		May 2018	update valuation (roll forward):
Jun. 30, 2018		Aug. 2018	update valuation:
Sep. 30, 2018		Oct. 2018	update valuation (roll forward):

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 New Valuation

A valuation of the Alberta Non-Grid Risk Sharing Pool (“RSP”) as at December 31, 2017 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 early May.

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

Summary of Impact (\$000s) of Implementing Result of Valuation as at December 31, 2017¹

AB Non-Grid	unfav / (fav) for the month and ytd					
	IMPACT in \$000s from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
[1]	[2]	[3]	[4]	[5]	[6]	
PAYs	(6,362)	(137)	(6,499)	-	-	(6,499)
CAY	658	68	726	-	-	726
Prem Def	1,295	138	1,433	-	-	1,433
TOTAL	(4,409)	69	(4,340)	-	-	(4,340)

As indicated in the table above, the incorporation of the new valuation had an estimated **\$4.3 million favourable impact** on the month’s net result from operations, subtracting an estimated 18.0 points (see table immediately below) from the **year-to-date Combined Operating Ratio** to end at **117.8%**.

Summary of Impact (% YTD EP) of Implementing Result of Valuation as at December 31, 2017

AB Non-Grid	ytd EP 24,101 (actual)					
	IMPACT unfav / (fav) as % ytd EP from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
[1]	[2]	[3]	[4]	[5]	[6]	
PAYs	(26.4%)	(0.6%)	(27.0%)	-	-	(27.0%)
CAY	2.7%	0.3%	3.0%	-	-	3.0%
Prem Def	5.4%	0.6%	5.9%	-	-	5.9%
TOTAL	(18.3%)	0.3%	(18.0%)	-	-	(18.0%)

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 \$4.4 million overall. This reflects the impact attributable to the changes in the selected ultimate loss ratios (i.e. for each accident year, it is the product of life-to-date earned premium for the accident year and the change in the selected ultimate loss ratio).

The prior accident years overall showed a \$6.4 million favourable variance. Of this amount, \$5.0 million was directly attributable to valuation adjustments made to reflect a known overstatement of a member’s reported case reserves. Specifically, as noted in the last two month’s Actuarial Highlights, FA management was notified on January 31, 2018 by a member of a potential recorded case reserve overstatement. Furthermore, during the current valuation review, FA management was advised of an additional and separate recorded case reserve understatement

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

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

primarily due to incorrect reporting after FA’s October 31, 2017 fiscal year end. Management investigated and estimated the overall overstatement for the Alberta non-Grid RSP as at December 31, 2017 as indicated in the table immediately below.

Estimated case reserve overstatement as at Dec 31, 2017

<u>overstatement / (understatement)</u>	
Accident Year	Total Case Reserve Adjustment (\$'000s)
2010	(171)
2011	(239)
2012	-
2013	(92)
2014	(104)
2015	518
2016	2,554
2017	2,529
Total	4,995

A decision was made by management and the Appointed Actuary, after receiving the initial January 2018 notification, to not make an adjustment to selected loss ratios until the 2017 Q4 RSP valuation was completed (however, for the purposes of the fiscal year-end financial reporting, an adjustment was made). With this valuation, prior accident years’ ultimates selections have now taken into account the member’s overstatement (both the original amount as notified, and the subsequent amount, with the combination of the two being summarized in the table above). FA management is working with the member on a process to correct the reported levels, and we currently anticipate that this will be either partially or entirely completed in time for the 2018 Q2 valuation.

The overall favourable prior accident years impact is 3.7% of the prior accident years’ nominal unpaid balance of \$170.8 million determined at the end of last month (February 2018). Note that even taking the case reserve overstatement issue into account, the prior accident years were still favourable by \$1.4 million on a nominal basis or 0.8% of the nominal beginning balance, whereas the valuation impact of prior accident years for the Alberta Grid RSP was unfavourable by 3.1% of its beginning nominal balance, with that RSP’s unfavourable result being attributed to adverse bodily injury development. We have not seen that same issue this valuation in relation to the Non-Grid RSP (nor with the FARM results in Alberta for recent valuations).

The current accident year and premium deficiency impacts are a result of the change in the selected loss ratio for accident year **2018** (up 2.7 points from 105.8% to **108.5%**) and **2019** (up 2.3 points from 108.4% to **110.7%**).

The impacts related to actuarial present value (“apv”) adjustments are split into the impact prior to any change in the selected discount rate and selected margins for adverse deviations or “MfADs” (at the level they were selected i.e. coverage and accident half-year), the impact of then updating the discount rate, and finally the impact of any changes to the MfADs (at the level they were selected). The changes in actuarial present value adjustments are shown in the summary tables 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 an unfavourable change of \$0.1 million in the actuarial present value adjustments, prior to any changes in the selected discount rate and/or MfADs.

Claims payment emergence patterns were updated and cash flows were reviewed against the selected risk-free yield curve, derived from Government of Canada benchmark bond yields monthly series using values for December 2017. Column [4] accounts for any changes to the selected **discount rate**. The current selected **discount rate** was unchanged from the prior selected at **1.76%** and, as a result, there was no associated impact.

Column [5] accounts for any changes to selected MfADs. The selected **investment rate MfAD** was **left unchanged at 25 basis points** and the selected **claims development MfADs** at the coverage and accident year level were **left unchanged** as well.

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

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.

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 to 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:

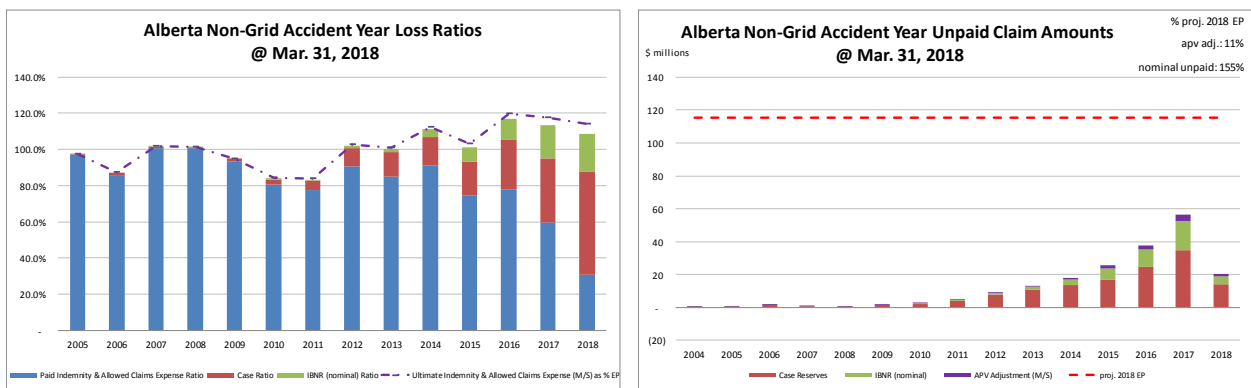
- "*A finding of legally compensable mental injury need not rest, in whole or in part, on the claimant proving a recognized psychiatric injury.*"

- “...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, but we continue to review and consider the implications of the judgment.

1.5 Current Provision Summary

The charts immediately below show the current levels of claim liabilities² booked by accident year³. 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 (\$12.6 million – see table immediately below) represents 11% of the earned premium projected for the full year 2018 (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	131,714	68.7%
ibnr	47,264	24.7%
M/S apv adjust.	12,637	6.6%
M/S total	191,615	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 is in case reserves for this pool. Approximately 49% of the IBNR balance relates to accident years 2017 and 2018 (see Exhibit B). Approximately 82% of the M/S total claim liabilities are related to accident years 2014-2018 inclusive (i.e. the most recent 5 accident years),

²Claim 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.

³Accident year 2004 was an incomplete year and therefore has been excluded from the loss ratio chart.

and approximately 1% is related to accident years 2008 and prior (i.e. prior to the most recent 10 accident years).

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

premium liabilities (\$000s)			policy liabilities (\$000s)		
	amt	%		amt	%
unearned prem	48,409	86.6%	claim	178,978	72.3%
prem def/(dpac)	4,410	7.9%	premium	52,819	21.3%
M/S apv adjust.	3,084	5.5%	M/S apv adjust.	15,721	6.4%
M/S total	55,903	100.0%	M/S total	247,518	100.0%

2 Activity During the Month of March 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 Report⁴.

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

Accident Year	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	1	1	1,431	(672)	81	1,718	1,512	1,046
2016	1	1	1,600	1,201	(136)	112	1,464	1,313
2017	(59)	(59)	1,352	(1,307)	(752)	1,729	600	422
2018	8,395	45	3,933	(179)	3,993	(444)	7,926	(623)
TOTAL	8,338	(12)	8,316	(957)	3,186	3,115	11,502	2,158

(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.

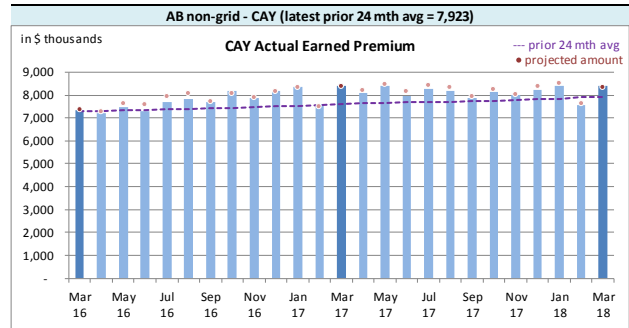
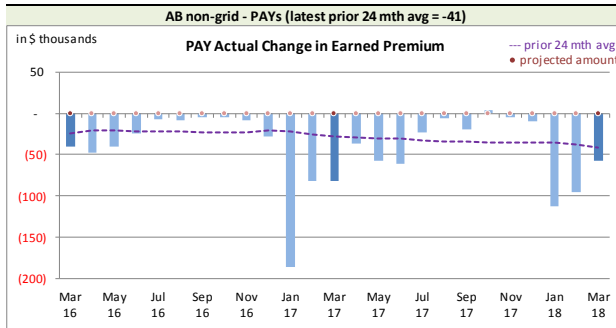
2.1.a Actual vs. Projected (AvsP): Earned Premium

The charts at the top of the next page show actual **earned premium**⁵ 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.

⁴There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

⁵Premium 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 non-Grid RSP Actual **Earned Premium** by Calendar Month*

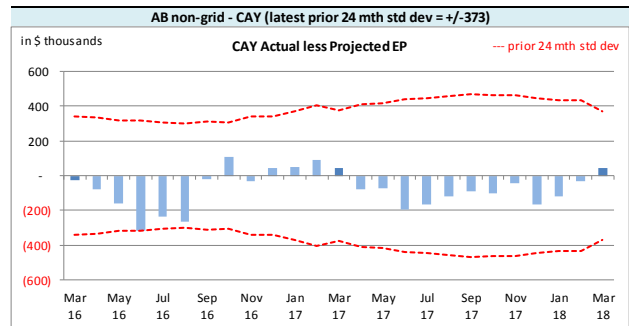
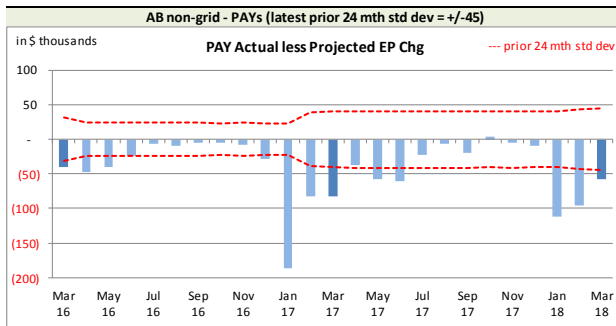


Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels seem to occur at the beginning of each year.

We have noted and investigated the unusually high level of PAYs earned premium activity earlier in 2017 and January through March 2018, particularly with respect to one member. Management reviewed and was satisfied with the appropriateness of the 2017 transactions, but continues its investigation of the 2018 transactions.

The associated variance 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 non-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)	(41)	7,923
std dev	45	373
A-P <> std dev	12	1
% <> std dev	48.0%	4.0%
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) bias⁶, with actuals generally lower than projected. However, the magnitude is not high relative to monthly

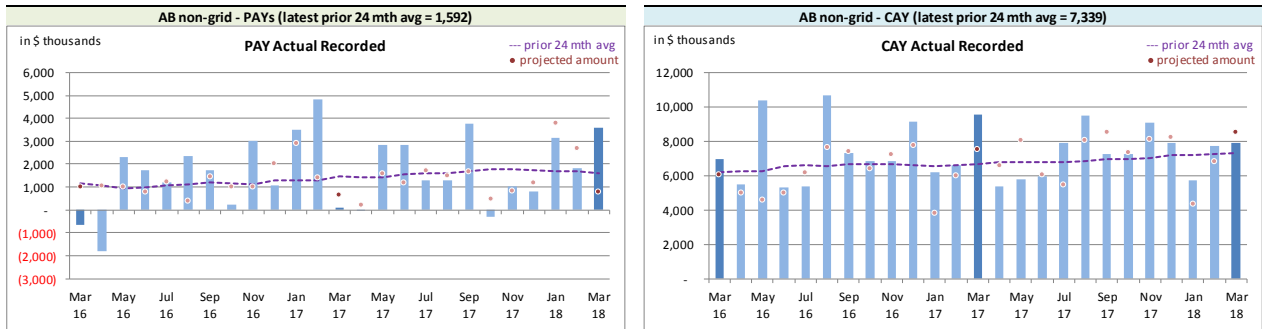
⁶The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

premium. In addition to the PAYs’ bias, the CAY has also shown bias⁷, with actuals being generally lower than projected, and we have modified our projection processes in response. 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

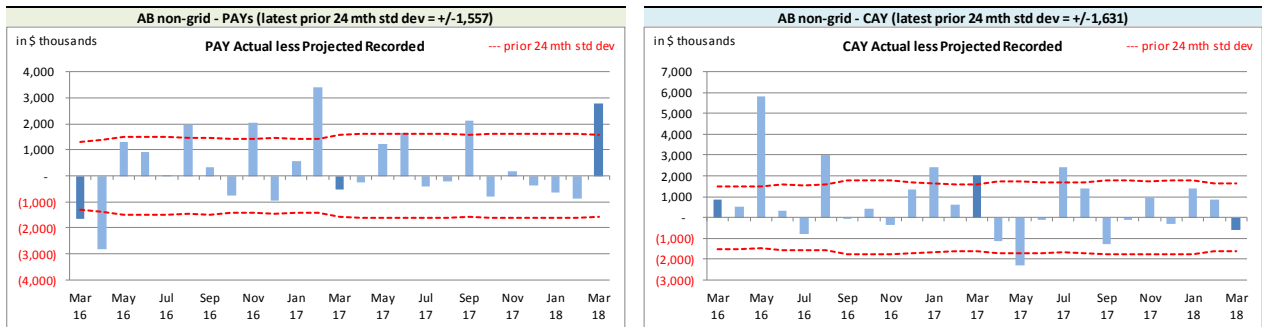
The charts immediately below show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

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



On Latest \$ thousands			
	Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	1,592	1,592	7,339
std dev	1,557	1,557	1,631
A-P <> std dev	8	8	6
% <> std dev	32.0%	32.0%	24.0%
norm <> std dev	31.7%	31.7%	31.7%

With respect to **recorded** indemnity & allowed claims expense activity, 32% of the prior accident years’ (PAYs) variances (left chart above) fell outside of the experience period’s standard deviation, suggesting the projection process has performed no better than a projection based simply on the 24-month average. We have

⁷We 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 March 2018 has only 6 months where the projection was higher than projected, and as the 95% confidence range is 7 to 17, bias continues to be indicated.

implemented changes in an attempt to address this. No bias has been indicated at a 95% confidence level on a lagging 24-month basis.

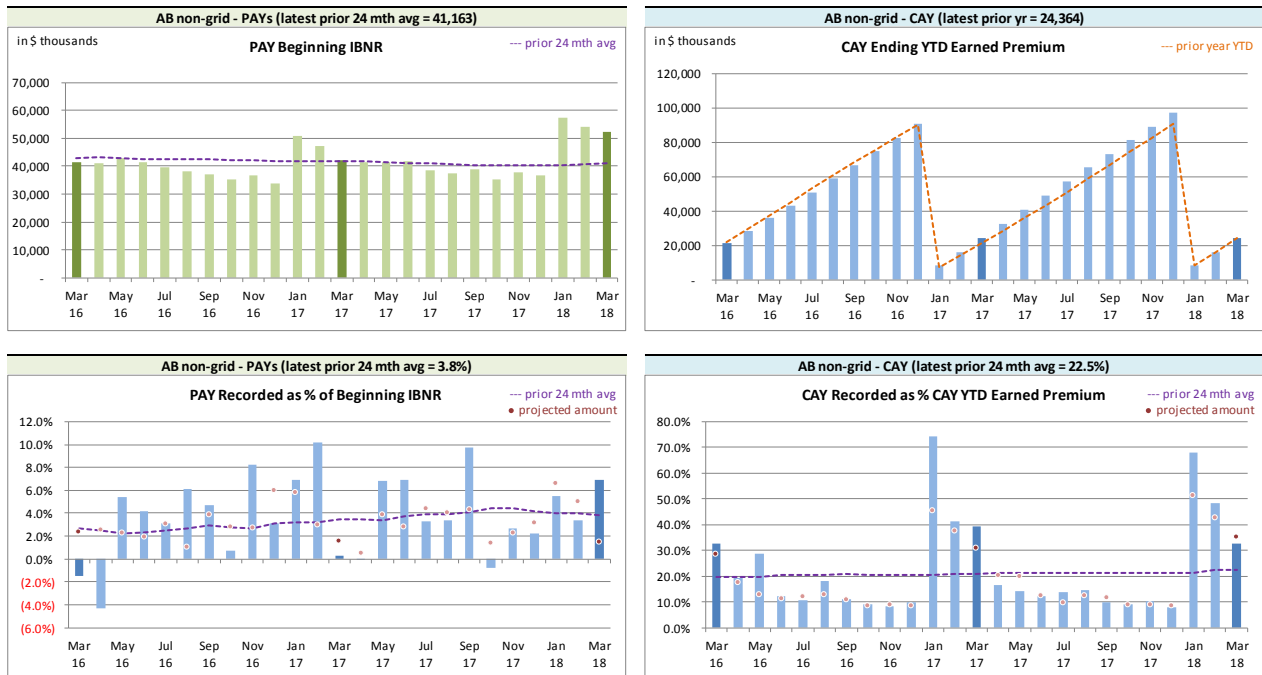
The PAY **recorded** variance was outside of one standard deviation. The activity was reviewed and confirmed, with the variance attributed to process variance.

The current accident year (CAY) **recorded** variances (right chart at the bottom of the prior page) have been greater than one standard deviation 24% of the time, suggesting that the projection process has performed better than simply projecting the most recent prior 24-month average. No bias has been indicated at a 95% confidence level on a lagging 24-month basis.

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 immediately below related to levels influencing **recorded** activity.

Alberta non-Grid RSP Levels that influence⁸ 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

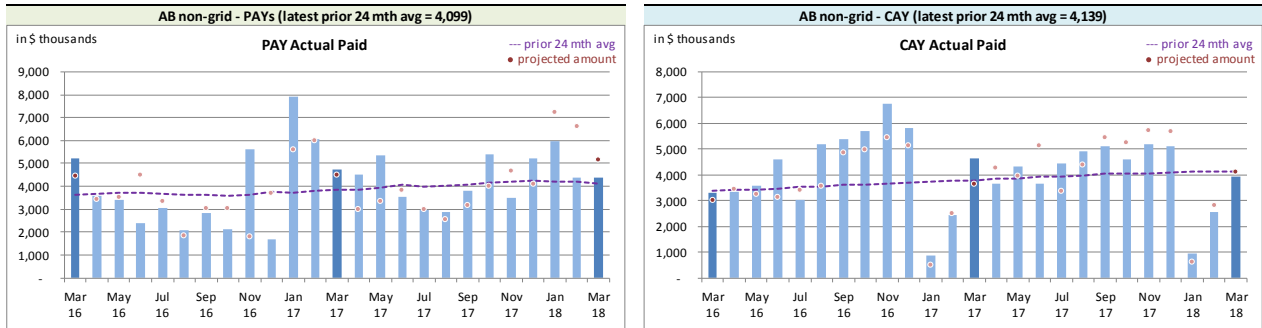
⁸Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned 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.

- 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

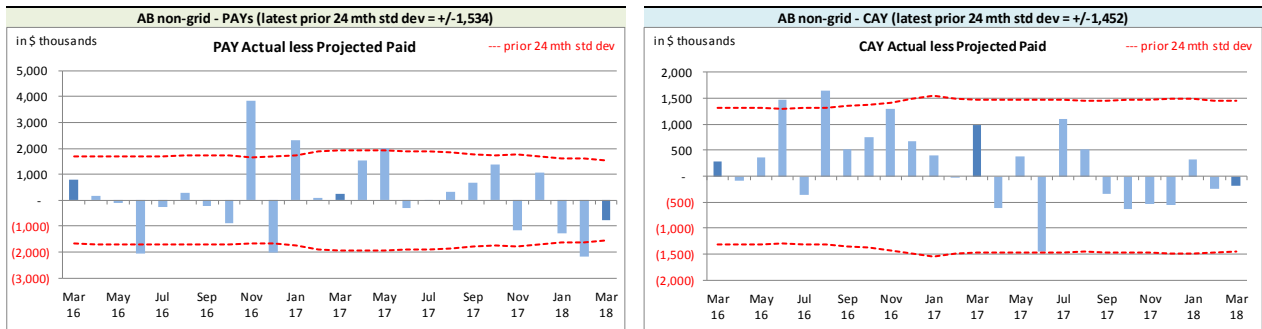
The charts immediately below show actual **paid** activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

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



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

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



On Latest \$ thousands			
	Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	4,099	4,139	
std dev	1,534	1,452	
A-P <> std dev	6	2	
% <> std dev	24.0%	8.0%	
norm <> std dev	31.7%	31.7%	

With respect to **paid** indemnity & allowed claims expense, the prior accident years’ variances (left chart above) do not appear to have bias and the magnitude of the variances do not appear to be an issue. With 24% of prior accident years (PAYs) **paid** variances over the last 25 calendar months falling outside of one

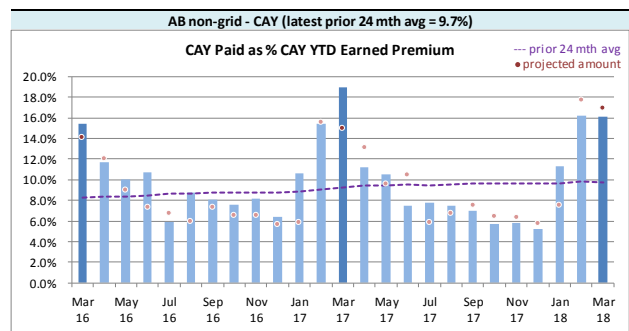
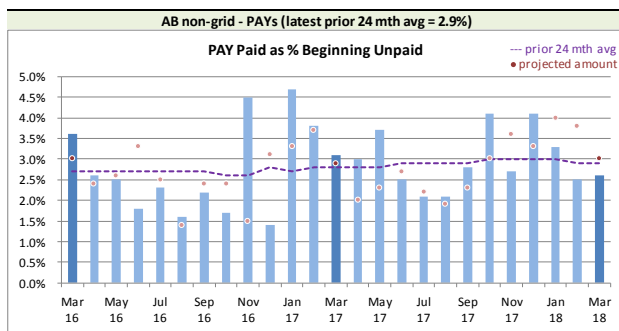
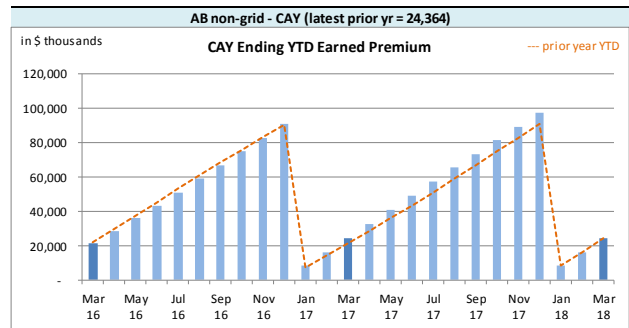
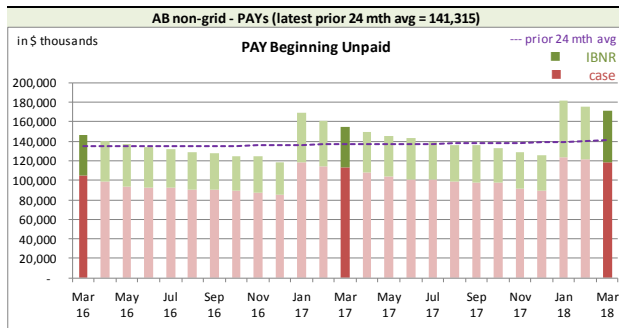
standard deviation, the projection process has performed better than simply projecting based on a 24-month average. No bias has been indicated at a 95% confidence level on a lagging 24-month basis.

With only 8% of the current accident year (CAY) **paid** variances falling outside of one standard

deviation of the experience period activity, the projection process has performed better than simply projecting based on a 24-month average. While no bias has been indicated at a 95% confidence level on a lagging 24-month basis this month, it was indicated for each month from November 2015 through to September 2017. We made adjustments to our projection process to reflect this, and they appear to have been somewhat successful.

We have included, for reference, additional charts immediately below related to levels influencing **paid** activity.

Alberta non-Grid RSP Levels that influence⁹ 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).

⁹Our 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.

2.2 Actuarial Provisions

An “ultimate loss ratio matching method” (described in section 3) is used to determine the month’s IBNR¹⁰, 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 immediately below summarizes variances in provisions included in the March 2018 Operational Report and the associated one-month projections from last month’s Report.

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

Table 02

Accident Year	IBNR		actuarial present value adjustments				IBNR + actuarial present value adjustments	
	Actual	Actual less Projected	Discount Amount		Provisions for Adverse Deviations		Actual	Actual less Projected
			Actual	Actual less Projected	Actual	Actual less Projected		
Prior	13,965	(4,841)	(3,057)	123	7,915	(384)	18,823	(5,102)
2016	10,383	(4,560)	(1,718)	178	4,346	(554)	13,011	(4,936)
2017	17,805	192	(2,727)	(99)	6,582	623	21,660	716
2018	5,111	1,328	(930)	(7)	2,226	90	6,407	1,411
TOTAL	47,264	(7,881)	(8,432)	195	21,069	(225)	59,901	(7,911)

The IBNR provision is \$7.9 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, and 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 at the top of the next page summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in the March 2018 Operational Report and the one-month projections from last month’s Report. This RSP is in a premium deficiency position (shown as a positive amount) prior to and after actuarial present value adjustments. Actuarial present value adjustments increase the liability value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance and due to valuation implementation.

¹⁰For ease of discussion, “IBNR” is used in place of “provisions for incurred but not recorded (IBNR) and development”.

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

Table 03

	Premium Deficiency / (Deferred Policy Acquisition Costs)		actuarial present value adjustments		Premium Deficiency / (DPAC) including actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
balance:	4,410	1,344	3,084	180	7,494	1,524
balance as % unearned premium:	9.1%	2.7%	6.4%	0.3%	15.5%	3.0%
actual unearned premium:	48,409					
less projected:	694					

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 loss¹¹ 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 at the top of the next page summarizes the calendar year-to-date results for indemnity & allowed claims expenses¹², 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 109.7% rather than 108.5% (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 Non-Grid RSP Summary of Operations due to rounding.)

¹¹“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).

¹²Allowed 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.

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

Table 04	YTD Nominal Values		YTD actuarial present value adjustment		YTD Total		Change from Prior Month YTD	
	Amount	% EP	Amount	% EP	Amount	% EP	Amount	LR pts
PAYs	(6,664)	(27.6%)	(882)	(3.7%)	(7,546)	(31.3%)	(6,880)	(27.1%)
CAY	26,442	109.7%	1,296	5.4%	27,738	115.1%	9,940	2.2%
TOTAL	19,778	82.0%	414	1.7%	20,192	83.8%	3,060	(24.8%)

(“% 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 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 and due to the valuation implementation.

5 Current Operational Report – Additional Exhibits

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

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

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

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

6 EXHIBITS

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

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

EXHIBIT A

IBNR for Member Sharing – includes Actuarial Present Value Adjustments

TABLE EXHIBIT A

		Amounts in \$000s				
IBNR + M/S actuarial present value adjustments	Accident Year	Actual Feb. 2018	Actual Mar. 2018	Projected Apr. 2018	Projected May. 2018	Projected Dec. 2018
		2004	42	42	42	42
	2005	13	13	13	13	11
	2006	153	113	110	105	85
	2007	(86)	133	130	123	96
	2008	100	53	52	50	40
	2009	256	52	50	49	40
	2010	756	745	734	688	537
	2011	904	785	772	728	568
	2012	815	1,355	1,331	1,259	987
discount rate	2013	2,525	2,271	2,235	2,105	1,644
1.76%	2014	6,505	4,389	4,301	3,974	2,678
	2015	12,543	8,872	8,765	8,315	5,847
interest rate margin	2016	18,128	13,011	12,854	12,289	10,259
25 basis pts	2017	21,296	21,660	21,366	20,938	18,141
	2018	4,393	6,407	9,716	14,263	30,508
	TOTAL	68,343	59,901	62,471	64,941	71,483
	Change		(8,442)	2,570	2,470	

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 Feb. 2018	Actual Mar. 2018	Projected Apr. 2018	Projected May. 2018	Projected Dec. 2018
	349.1%	2004	36	36	36	36	36
	97.4%	2005	5	5	5	5	5
	87.2%	2006	9	9	9	8	7
	101.8%	2007	(122)	84	83	77	60
	101.2%	2008	72	39	39	36	28
	94.9%	2009	166	(33)	(33)	(31)	(24)
	84.1%	2010	583	587	581	540	418
	83.4%	2011	631	533	528	491	379
	101.9%	2012	333	828	820	763	590
	100.2%	2013	1,784	1,571	1,555	1,446	1,117
	111.0%	2014	5,460	3,372	3,305	3,008	1,865
	101.0%	2015	10,315	6,934	6,865	6,453	4,264
	117.0%	2016	15,094	10,383	10,279	9,765	8,135
	113.5%	2017	17,791	17,805	17,627	17,274	14,992
	108.5%	2018	3,497	5,111	8,021	12,120	25,782
		TOTAL	55,654	47,264	49,720	51,991	57,654
		Change		(8,390)	2,456	2,271	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Feb. 2018	Actual Mar. 2018	Projected Apr. 2018	Projected May. 2018	Projected Dec. 2018
Premium Liabilities					
(1) unearned premium (UP)	48,139	48,409	54,440	61,431	65,686
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	112.4%	115.5%	115.6%	115.8%	117.7%
(3) expected future costs {(1) x (2)}	54,118	55,903	62,953	71,154	77,294
(4) premium deficiency / (deferred policy acquisition cost)	5,979	7,494	8,513	9,723	11,608
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	106.3%	109.1%	109.3%	109.4%	111.2%
(6) expected future costs {(1) x (5)}	51,191	52,819	59,481	67,229	73,029
(7) premium deficiency / (deferred policy acquisition cost)	3,052	4,410	5,041	5,798	7,343

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 non-Grid ending 2018		Projected Balances as at Dec. 31, 2018 (\$000s)									
Acc Yr	nominal values			actuarial present value adjustments (apvs)						TOTAL	
	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs		
2004	26	36	62	-	-	6	-	6	6	68	
2005	55	5	60	-	-	6	-	6	6	66	
2006	1,073	7	1,080	(31)	4	108	(3)	105	78	1,158	
2007	457	60	517	(16)	2	52	(2)	50	36	553	
2008	122	28	150	(4)	1	15	-	15	12	162	
2009	983	(24)	959	(33)	4	96	(3)	93	64	1,023	
2010	1,501	418	1,919	(77)	12	192	(8)	184	119	2,038	
2011	3,045	379	3,424	(158)	21	342	(16)	326	189	3,613	
2012	6,037	590	6,627	(278)	40	663	(28)	635	397	7,024	
2013	8,213	1,117	9,330	(420)	56	933	(42)	891	527	9,857	
2014	11,496	1,865	13,361	(548)	80	1,336	(55)	1,281	813	14,174	
2015	15,126	4,264	19,390	(834)	116	2,404	(103)	2,301	1,583	20,973	
2016	20,201	8,135	28,336	(1,388)	198	3,485	(171)	3,314	2,124	30,460	
2017	27,847	14,992	42,839	(2,228)	300	5,355	(278)	5,077	3,149	45,988	
PAYs (sub-total):	96,182	31,872	128,054	(6,015)	834	14,993	(709)	14,284	9,103	137,157	
CAY (2018)	43,389	25,782	69,171	(3,389)	484	8,024	(393)	7,631	4,726	73,897	
claims liabilities:	139,571	57,654	197,225	(9,404)	1,318	23,017	(1,102)	21,915	13,829	211,054	
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*	
premium liabilities:	65,686	7,343	73,029	(2,618)	364	6,762	(243)	6,519	4,265	77,294	
policy liabilities:			270,254	(12,022)	1,682	29,779	(1,345)	28,434	18,094	288,348	

*Total may not be sum of parts, as apvs apply to future costs within UPR

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 (Dec. 31, 2017)

Accident Year	Third Party Liability	Accident Benefits	Other Coverages	Total
2004	10.0%	10.0%	10.0%	10.0%
2005	10.0%	10.0%	10.0%	10.0%
2006	10.0%	10.0%	10.0%	10.0%
2007	10.0%	10.0%	10.0%	10.0%
2008	10.0%	10.0%	10.0%	10.0%
2009	10.0%	10.0%	10.0%	10.0%
2010	10.0%	10.0%	10.0%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	10.0%	10.0%	9.3%	10.0%
2014	10.0%	10.0%	9.9%	10.0%
2015	12.5%	10.0%	11.4%	12.4%
2016	12.5%	10.0%	8.8%	12.3%
2017	12.4%	10.0%	12.5%	12.5%
2018	12.2%	10.0%	7.4%	11.6%
prem liab	11.8%	10.0%	5.2%	9.3%

discount rate: 1.76%
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 (1.76%), the prior valuation assumption (1.76%) 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

AY	Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2018 projected Unpaid							
	0.76%	1.26%	1.76%	2.26%	2.76%	3.26%	1.76%	1.76%
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	861	854	847	840	833	826	847	847
2007	331	328	325	322	319	317	325	325
2008	225	223	222	220	218	216	222	222
2009	1,190	1,179	1,168	1,157	1,147	1,137	1,168	1,168
2010	2,047	2,025	2,003	1,982	1,962	1,942	2,003	2,003
2011	2,944	2,903	2,864	2,825	2,787	2,750	2,864	2,864
2012	6,507	6,424	6,344	6,266	6,190	6,116	6,344	6,344
2013	9,413	9,285	9,164	9,045	8,930	8,817	9,164	9,164
2014	13,466	13,304	13,149	12,996	12,848	12,705	13,149	13,149
2015	21,631	21,356	21,096	20,837	20,588	20,346	21,096	21,096
2016	32,743	32,274	31,825	31,384	30,955	30,543	31,825	31,825
2017	47,560	46,833	46,139	45,457	44,795	44,159	46,139	46,139
2018	70,886	69,869	68,899	67,946	67,024	66,137	68,899	68,899
Total	209,804	206,857	204,045	201,277	198,596	196,011	204,045	204,045
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

AY	Dollar Impact Relative to Valuation Assumption							
	0.76%	1.26%	1.76%	2.26%	2.76%	3.26%	1.76%	1.76%
Total	5,759	2,812	-	(2,768)	(5,449)	(8,034)	-	-
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

AY	Percentage Impact Relative to Valuation Assumption							
	0.76%	1.26%	1.76%	2.26%	2.76%	3.26%	1.76%	1.76%
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	1.7%	0.8%	-	(0.8%)	(1.7%)	(2.5%)	-	-
2007	1.8%	0.9%	-	(0.9%)	(1.8%)	(2.5%)	-	-
2008	1.4%	0.5%	-	(0.9%)	(1.8%)	(2.7%)	-	-
2009	1.9%	0.9%	-	(0.9%)	(1.8%)	(2.7%)	-	-
2010	2.2%	1.1%	-	(1.0%)	(2.0%)	(3.0%)	-	-
2011	2.8%	1.4%	-	(1.4%)	(2.7%)	(4.0%)	-	-
2012	2.6%	1.3%	-	(1.2%)	(2.4%)	(3.6%)	-	-
2013	2.7%	1.3%	-	(1.3%)	(2.6%)	(3.8%)	-	-
2014	2.4%	1.2%	-	(1.2%)	(2.3%)	(3.4%)	-	-
2015	2.5%	1.2%	-	(1.2%)	(2.4%)	(3.6%)	-	-
2016	2.9%	1.4%	-	(1.4%)	(2.7%)	(4.0%)	-	-
2017	3.1%	1.5%	-	(1.5%)	(2.9%)	(4.3%)	-	-
2018	2.9%	1.4%	-	(1.4%)	(2.7%)	(4.0%)	-	-
Total	2.8%	1.4%	-	(1.4%)	(2.7%)	(3.9%)	-	-
	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 Non-Grid						M/S IBNR - in \$000s
AccountCode Desc		IBNR - Discou						
AccYear	Values							Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change		
2004	42	-	-	-	-	-	42	
2005	13	-	-	-	-	-	13	
2006	153	(6)	6	(40)	(40)	(26.1%)	113	
2007	(86)	(1)	(4)	224	219	(254.7%)	133	
2008	100	(4)	(43)	-	(47)	(47.0%)	53	
2009	256	(5)	(196)	(3)	(204)	(79.7%)	52	
2010	756	(13)	163	(161)	(11)	(1.5%)	745	
2011	904	(17)	(82)	(20)	(119)	(13.2%)	785	
2012	815	(22)	(112)	674	540	66.3%	1,355	
2013	2,525	(48)	(264)	58	(254)	(10.1%)	2,271	
2014	6,505	(359)	(142)	(1,615)	(2,116)	(32.5%)	4,389	
2015	12,543	(126)	(337)	(3,208)	(3,671)	(29.3%)	8,872	
2016	18,128	(181)	(1,404)	(3,532)	(5,117)	(28.2%)	13,011	
2017	21,296	(352)	(408)	1,124	364	1.7%	21,660	
2018	4,393	603	685	726	2,014	45.8%	6,407	
Grand Total	68,343	(531)	(2,138)	(5,773)	(8,442)	(12.4%)	59,901	

EXHIBIT G

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

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

IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2004	36	-	-	-	-	-	36
2005	5	-	-	-	-	-	5
2006	9	-	-	-	-	-	9
2007	(122)	1	(6)	211	206	(168.9%)	84
2008	72	(1)	(32)	-	(33)	(45.8%)	39
2009	166	(2)	(197)	-	(199)	(119.9%)	(33)
2010	583	(6)	156	(146)	4	0.7%	587
2011	631	(6)	(92)	-	(98)	(15.5%)	533
2012	333	(3)	(121)	619	495	148.6%	828
2013	1,784	(18)	(276)	81	(213)	(11.9%)	1,571
2014	5,460	(328)	(163)	(1,597)	(2,088)	(38.2%)	3,372
2015	10,315	(103)	(314)	(2,964)	(3,381)	(32.8%)	6,934
2016	15,094	(151)	(1,313)	(3,247)	(4,711)	(31.2%)	10,383
2017	17,791	(178)	(489)	681	14	0.1%	17,805
2018	3,497	286	670	658	1,614	46.2%	5,111
Grand Total	55,654	(509)	(2,177)	(5,704)	(8,390)	(15.1%)	47,264