



ALBERTA NON-GRID RISK SHARING POOL

MARCH 2019 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

Related Bulletin: [F19-030 Alberta RSPs March 2019 Operational Reports](#)

For your convenience, bookmarks have been added to this document. To view them, please click on the BOOKMARK tab at the left.

Should you require any further information, please call Shawn Doherty, Senior Vice President Actuarial & CFO at (416) 644-4968

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

TABLE OF CONTENTS

1	Summary.....	2
1.1	Valuation Schedule (Fiscal Year 2019).....	2
1.2	New Valuation.....	2
1.3	Appointed Actuary and Hybrid Actuarial Services Model.....	4
1.4	Consideration of Recent Legal Decisions and Changes in Legislation / Regulation	4
1.5	Current Provision Summary	5
2	Activity During the Month of March 2019.....	6
2.1	Recorded Premium and Claims Activity	6
2.1.a	Actual vs. Projected (AvsP): Earned Premium.....	7
2.1.b	AvsP: Recorded Indemnity & Allowed Claims Expense	8
2.1.c	AvsP: Paid Indemnity & Allowed Claims Expense	10
2.2	Actuarial Provisions.....	12
3	Ultimate Loss Ratio Matching Method.....	14
4	Calendar Year-to-Date Results.....	14
5	Current Operational Report – Additional Exhibits	15
6	EXHIBITS	16

1 Summary

1.1 Valuation Schedule (Fiscal Year 2019)

The March 2019 Operational Report incorporates the results of an updated valuation (as at December 31, 2018) – the impact of the implementation of the valuation is discussed in section 1.2. The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 2019.

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

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

1.2 New Valuation

A valuation of the Alberta Non-Grid Risk Sharing Pool (“RSP”) as at December 31, 2018 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 later in June 2019.

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, 2018¹

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	(10,347)	(53)	(10,400)	1,492	-	(8,908)
CAY	409	53	462	236	-	698
Prem Def	790	39	829	483	-	1,312
TOTAL	(9,148)	39	(9,109)	2,211	-	(6,898)

As indicated in the table above, the incorporation of the new valuation had an estimated **\$6.9 million favourable impact** on the month's net result from operations, subtracting an estimated 23.8 points (see table immediately below) to the **year-to-date Combined Operating Ratio** to end at **117.5%**.

Summary of Impact (% YTD EP) of Implementing Result of Valuation as at December 31, 2018

AB Non-Grid	ytd EP		29,004	(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	(35.7%)	(0.2%)	(35.9%)	5.1%	-	(30.7%)
CAY	1.4%	0.2%	1.6%	0.8%	-	2.4%
Prem Def	2.7%	0.1%	2.9%	1.7%	-	4.5%
TOTAL	(31.5%)	0.1%	(31.4%)	7.6%	-	(23.8%)

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 \$9.1 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 \$10.3 million favourable nominal variance, which is attributed to favourable claims development, particularly related to favourable bodily injury case reserves reductions across multiple companies reported during the quarter, as well as low levels of recorded comprehensive claims activity. The overall favourable prior accident years impact is 6.1% of the prior accident years' nominal unpaid balance of \$170.7 million determined at the end of last month (February 2019).

The current accident year and premium deficiency impacts are a result of the change in the selected

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.

loss ratios for accident year **2019** (up 1.4 points to **108.5%**) and reflecting **2020** (up 0.8 points to **110.4%**).

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 less than \$0.1 million in the actuarial present value adjustments, prior to any changes in the selected discount rate and/or MfADs.

Updated projected cash flows were reviewed against the selected risk-free yield curve, derived from Government of Canada benchmark bond yields monthly series using values for December 2018. Column [4] accounts for the change in the **discount rate** selected (decreased 36 basis point to **1.93%**), indicating an unfavourable impact of \$2.2 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was \$1.7 million at March 2019 – this compares to the \$1.9 million change one would estimate as the impact by interpolation using the interest rate sensitivity table provided in last month’s Actuarial Highlights.

Column [5] accounts for any changes to selected MfADs. The selected **investment rate MfAD** was **left unchanged at 25 basis points** 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 / Regulation²

The descriptions in this section have been updated to reflect the most recent valuation (December 2018) and updates arising from the most recent industry trend analyses (June 2018). Discussion

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

related to the Supreme Court of Canada Saadati v Moorhead decision (2017 SCC 28, rendered on June 2, 2017) was removed as at this point we do not believe this judgment will have a further impact on our valuation results.

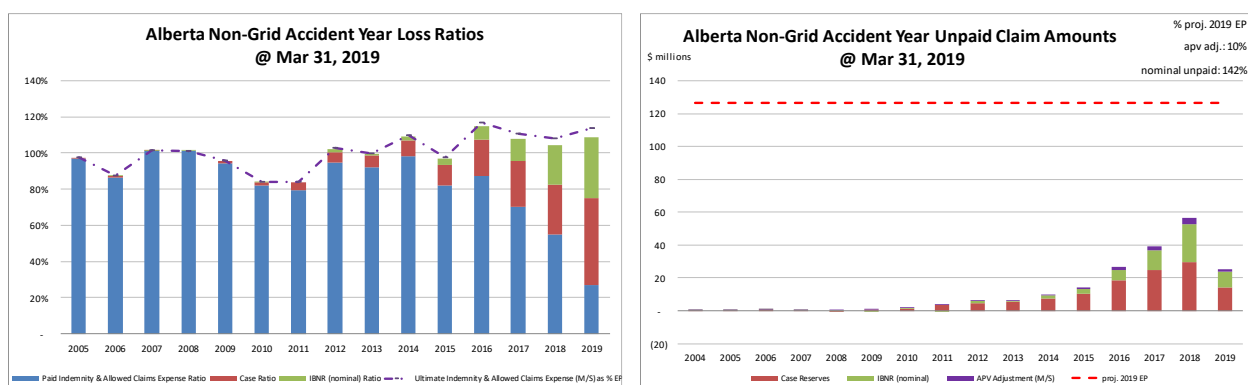
Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent changes are provided below.

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 (December 31, 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 June 30, 2018), impacting the selection of ultimates.

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

1.5 Current Provision Summary

The charts immediately below show the current levels of claim liabilities³ booked by accident year⁴. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the associated dollar amounts for the components of the claim liabilities and the current projected amount of 2019 full year earned premium (the red hash-mark line) to provide some perspective.



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

The current actuarial present value adjustments balance (\$12.2 million – see table at the top of the next page) represents 10% of the earned premium projected for the full year 2019 (see the upper right corner of the right chart above), with the increase in the actuarial present value adjustments

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

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

from last month a result of the 2018 Q4 valuation implementation, specifically the decrease in the discount rate. If our current estimates of the nominal unpaid amounts prove to match actual claims payments, the actuarial present value adjustments will be released into the net operating result over future periods.

claim liabilities (\$000s)

	amt	%
case	121,092	63.2%
ibnr	58,447	30.5%
M/S apv adjust.	12,212	6.4%
M/S total	191,751	100.0%

The table to the left breaks down the Member Statement (M/S) claim liabilities total into component parts, showing that the majority of the claim liabilities for this RSP is in case reserves. Approximately 57% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 85% of the M/S

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

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

premium liabilities (\$000s)

	amt	%
unearned prem	57,977	86.8%
prem def/(dpac)	5,298	7.9%
M/S apv adjust.	3,540	5.3%
M/S total	66,815	100.0%

policy liabilities (\$000s)

	amt	%
claim	179,539	69.4%
premium	63,275	24.5%
M/S apv adjust.	15,752	6.1%
M/S total	258,566	100.0%

2 Activity During the Month of March 2019

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 Report⁵.

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

Table 01 Accident Year	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	1	1	2,174	(65)	(1,728)	(143)	446	(208)
2017	1	1	939	(673)	(617)	244	322	(429)
2018	(43)	(43)	1,458	(1,523)	(2,189)	514	(731)	(1,009)
2019	10,134	(253)	4,947	908	2,829	(2,618)	7,776	(1,710)
TOTAL	10,092	(295)	9,519	(1,352)	(1,705)	(2,003)	7,814	(3,355)

(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

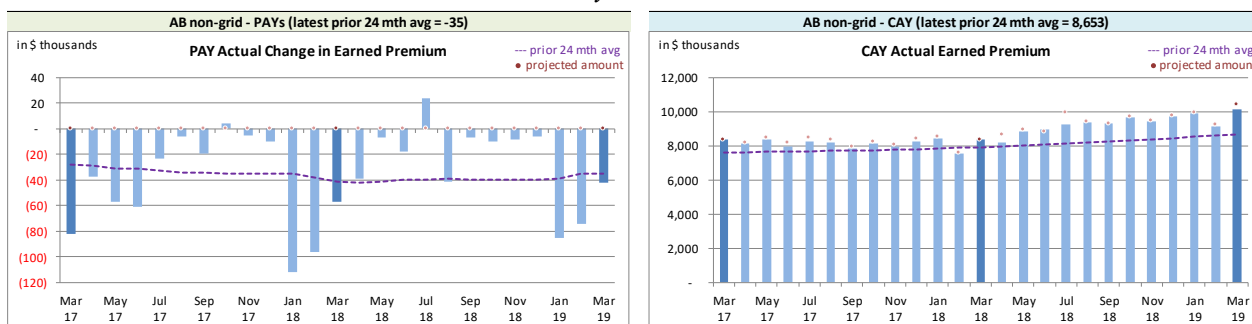
⁵There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

of the variance. Commentary from our review is provided in the sub-sections that follow.

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

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

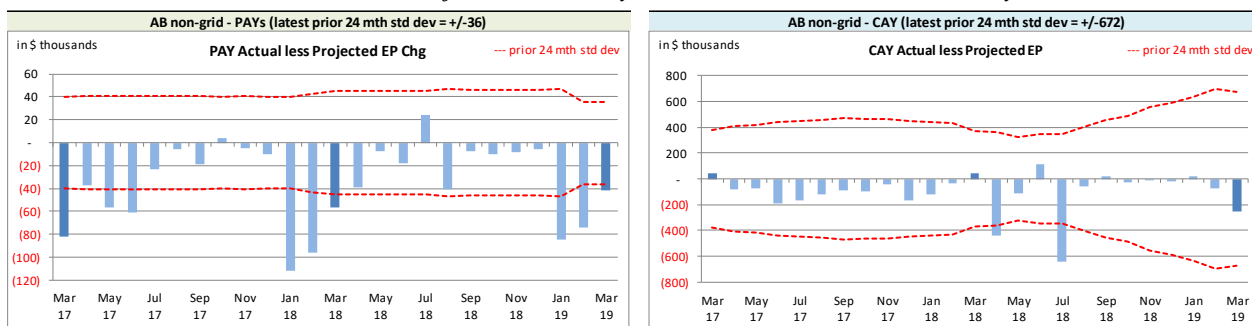
Alberta non-Grid RSP Actual Earned Premium by Calendar Month



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

The associated variance between the actual changes and the projections from the previous month are shown in the charts 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



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

On Latest \$ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(35)	8,653
std dev	36	672
A-P <> std dev	9	2
% <> std dev	36.0%	8.0%
norm <> std dev	31.7%	31.7%

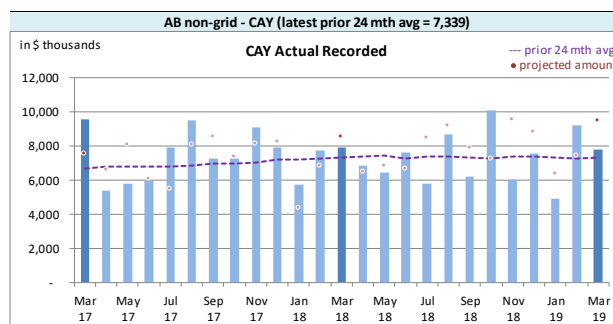
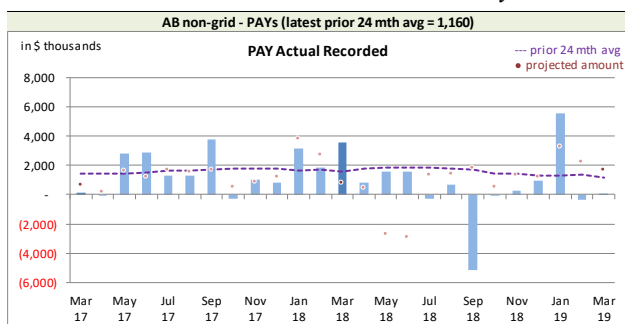
We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias⁷, with actuals generally lower than projected, although the magnitude is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

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

2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

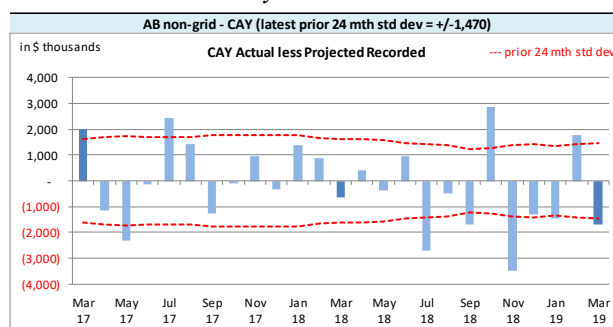
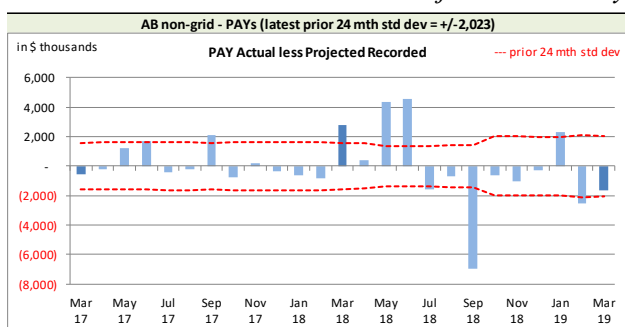
The charts immediately below show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

Alberta non-Grid RSP Actual Recorded by Calendar Month



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



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

⁸We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (24 in this case) and 50% probability of success. The 24-month variances at March 2019 had only 5 months where the actuals was higher than projected, and as the 95% confidence range is 7 to 17, bias continues to be indicated.

On Latest \$ thousands			
	Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)		1,160	7,339
std dev		2,023	1,470
A-P <> std dev		9	10
% <> std dev		36.0%	40.0%
norm <> std dev		31.7%	31.7%

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

simply projecting the prior 24-month average amount (assuming it follows a normal distribution). We have implemented changes in an attempt to address this. Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

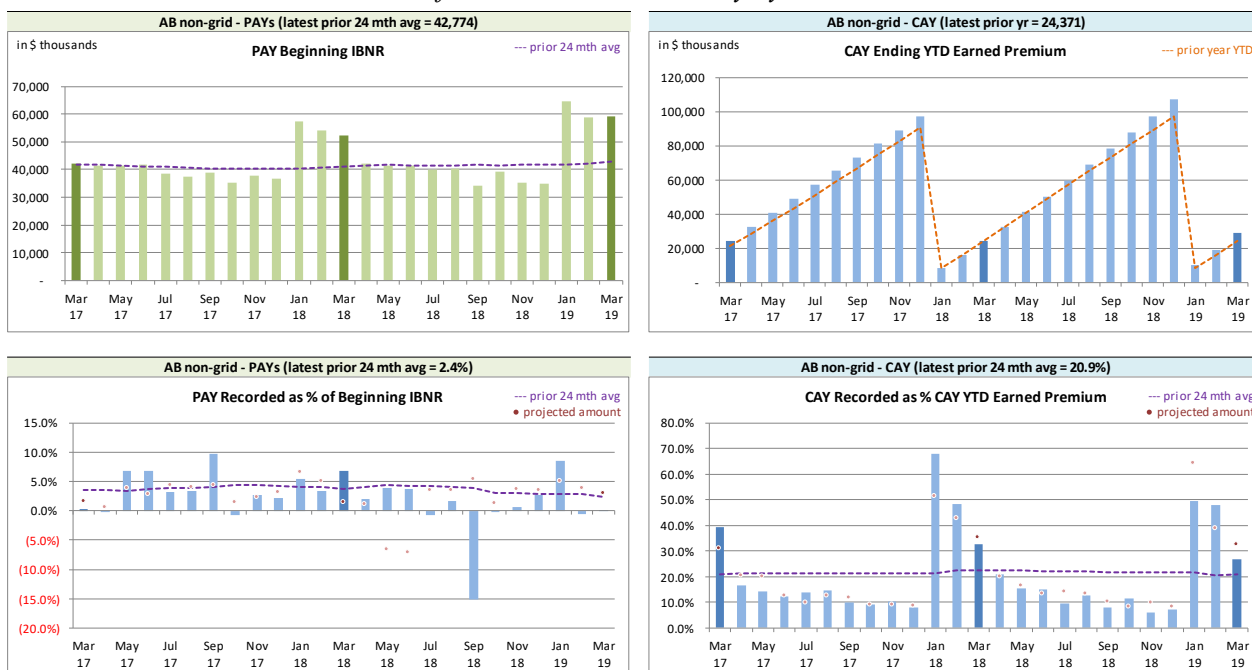
The current accident year (CAY) **recorded** variances fell outside of one standard deviation 40% of the time over the last 25 calendar months (see table above), suggesting that the projection process has performed worse than simply projecting the prior 24-month average amount. We believe this result is in part related to volume increases, but management is considering ways of improving CAY variances. Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

The CAY **recorded** variance (see right chart at the bottom of the previous page) was outside of one standard deviation. The activity was reviewed and confirmed, with the variance attributed to process variance.

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

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

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



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

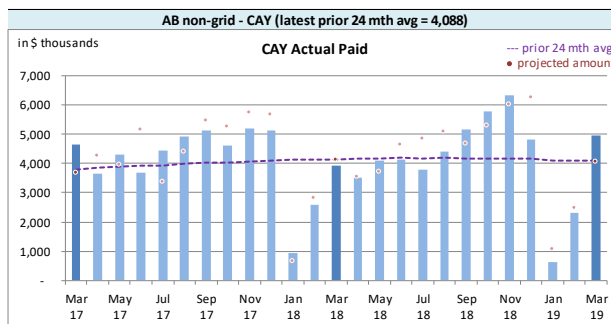
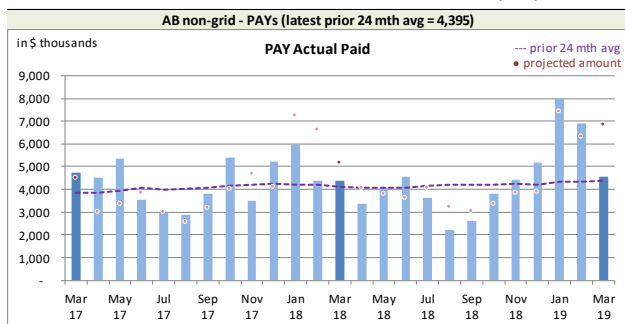
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate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

2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

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

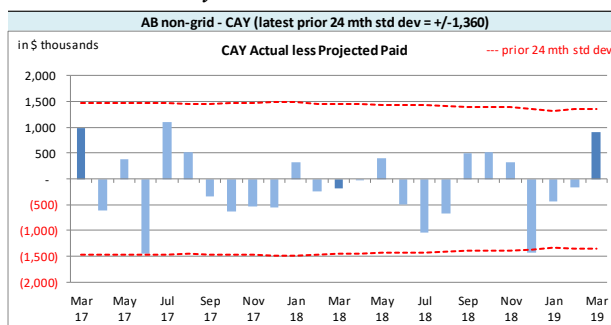
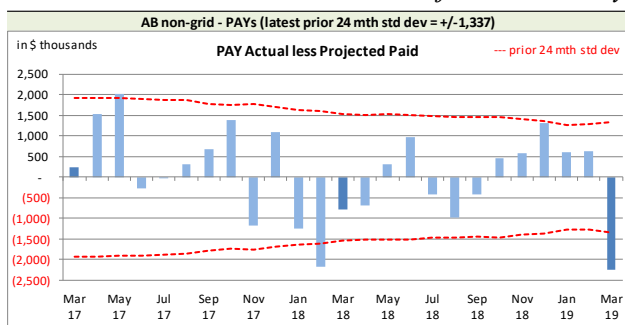
⁹Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned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

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



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

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



On Latest \$ thousands			
	Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)		4,395	4,088
std dev		1,337	1,360
A-P <> std dev		3	1
% <> std dev		12.0%	4.0%
norm <> std dev		31.7%	31.7%

With respect to **paid** indemnity & allowed claims expense, 12% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on left), suggesting the projection process has performed better than simply projecting the prior

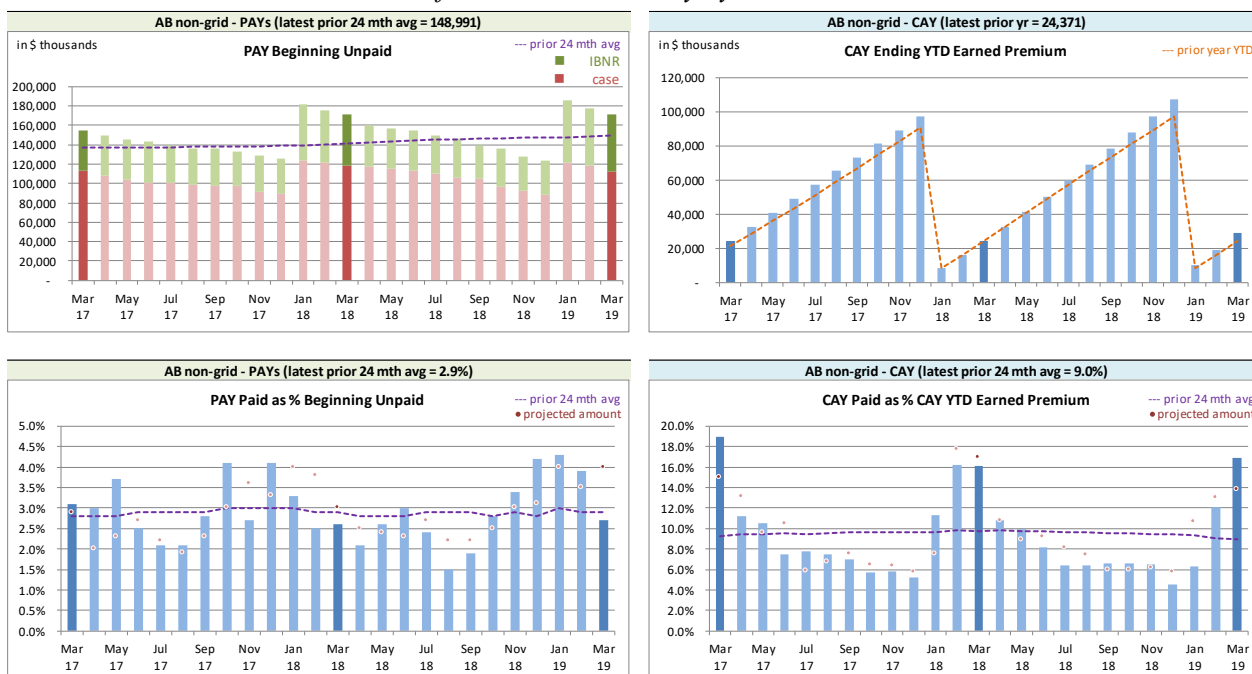
24-month average amount (assuming it follows a normal distribution). Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

The PAYs **paid** variance was outside of one standard deviation this month. The activity was reviewed and confirmed, with the variance attributed to a relatively poor projection in hindsight (although the same projection approach appeared to have worked well for January and February of 2019).

The current accident year (CAY) **paid** variances fell outside of one standard deviation 4% of the time over the last 25 calendar months (see table above), suggesting the projection process has performed better than simply projecting the prior 24-month average amount. Bias has not been indicated at a 95% confidence level on a 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 non-Grid RSP Levels that influence¹⁰ Paid activity by Calendar Month



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

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

2.2 Actuarial Provisions

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

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

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

projections from last month's Report.

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

Table 02		actuarial present value adjustments					
Accident Year	IBNR		Discount Amount		Provisions for Adverse Deviations		IBNR + actuarial present value adjustments
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual Actual less Projected
Prior	13,353	(2,187)	(3,075)	660	7,284	(143)	17,562 (1,670)
2017	11,976	(2,287)	(1,905)	455	4,562	(211)	14,633 (2,043)
2018	23,289	(4,276)	(2,802)	823	6,579	(19)	27,066 (3,472)
2019	9,829	1,847	(1,238)	286	2,807	(63)	11,398 2,070
TOTAL	58,447	(6,903)	(9,020)	2,224	21,232	(436)	70,659 (5,115)

The IBNR provision is \$6.9 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 this month's Operational Report and the one-month projections from last month's Report. This RSP is in a premium deficiency position (shown as a positive amount) prior to and after actuarial present value adjustments. Actuarial present value adjustments increase the liability value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance, and due to the valuation implementation.

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

Table 03

	Premium Deficiency / (Deferred Policy Acquisition Costs)		actuarial present value adjustments		Premium Deficiency / (DPAC) including actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
balance:	5,298	600	3,540	398	8,838	998
balance as % unearned premium:	9.1%	1.3%	6.1%	0.9%	15.2%	2.2%
actual unearned premium:	57,977					
less projected:	(2,368)					

3 Ultimate Loss Ratio Matching Method

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

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

4 Calendar Year-to-Date Results

The table at the top of the next page summarizes the calendar year-to-date results for indemnity & allowed claims expenses¹³, including IBNR.

In calculating the amounts as percentages of earned premium, the calendar year-to-date earned premium has been used, which includes earned premium associated with the current accident year but also earned premium adjustments related to prior accident years. Specifically, the current accident year (CAY) ratio in the table is 109.3% rather than 108.5% (the valuation ultimate ratio for accident year 2019), as the calendar year-to-date earned premium includes prior accident year earned premium adjustments. (Note that the ratios in this table may differ slightly from those shown in the Alberta Non-Grid RSP Summary of Operations due to rounding.)

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

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

*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	(10,566)	(36.4%)	508	1.8%	(10,058)	(34.7%)	(9,214)	(30.2%)
CAY	31,687	109.3%	1,569	5.4%	33,256	114.7%	11,874	1.6%
TOTAL	21,121	72.8%	2,077	7.2%	23,198	80.0%	2,660	(28.6%)

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

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

For the current accident year (CAY), changes in the year-to-date total reflects the additional month's exposure and regular changes to actuarial present value adjustments as the year ages, 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
**IBNR + M/S actuarial present
 value adjustments**

 discount rate
 1.93%

 interest rate margin
 25 basis pts

Amounts in \$000s					
Accident Year	Actual Feb. 2019	Actual Mar. 2019	Projected Apr. 2019	Projected May. 2019	Projected Dec. 2019
2004	42	42	42	42	42
2005	13	13	13	13	13
2006	54	143	141	136	109
2007	305	83	81	80	63
2008	62	63	61	60	48
2009	(110)	58	57	55	44
2010	64	225	222	215	174
2011	12	(109)	(111)	(110)	(87)
2012	1,500	1,752	1,730	1,692	1,354
2013	448	868	857	838	670
2014	2,827	2,252	2,224	2,175	1,740
2015	4,578	3,857	3,811	3,642	2,721
2016	10,216	8,315	8,147	7,653	5,741
2017	17,528	14,633	14,221	13,678	11,748
2018	30,974	27,066	26,720	26,378	24,391
2019	7,300	11,398	15,372	20,047	39,918
TOTAL	75,813	70,659	73,588	76,594	88,689
Change		(5,154)	2,929	3,006	

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

EXHIBIT B
IBNR
TABLE EXHIBIT B

TABLE EXHIBIT B		Amounts in \$000s					
IBNR	Ultimate	Accident	Actual	Actual	Projected	Projected	Projected
	Loss Ratio	Year	Feb. 2019	Mar. 2019	Apr. 2019	May. 2019	Dec. 2019
	349.1%	2004	36	36	36	36	36
	97.4%	2005	5	5	5	5	5
	87.5%	2006	3	77	76	74	59
	101.4%	2007	280	70	69	68	53
	101.1%	2008	60	60	59	58	46
	95.5%	2009	(180)	(3)	(3)	(3)	(3)
	83.9%	2010	(7)	140	139	136	109
	83.6%	2011	(120)	(281)	(278)	(272)	(218)
	102.3%	2012	1,252	1,399	1,385	1,357	1,083
	99.3%	2013	171	549	544	533	425
	109.2%	2014	2,409	1,751	1,733	1,698	1,356
	96.9%	2015	3,858	3,155	3,123	2,967	2,154
	114.7%	2016	8,427	6,395	6,267	5,828	4,189
	107.9%	2017	15,014	11,976	11,617	11,152	9,578
	104.4%	2018	27,843	23,289	23,056	22,825	21,275
	108.5%	2019	6,343	9,829	13,353	17,563	34,465
		TOTAL	65,394	58,447	61,181	64,025	74,612
		Change		(6,947)	2,734	2,844	

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. 2019	Actual Mar. 2019	Projected Apr. 2019	Projected May. 2019	Projected Dec. 2019
Premium Liabilities					
(1) unearned premium (UP)	58,673	57,977	60,745	62,661	71,854
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	112.9%	115.2%	115.4%	115.5%	117.1%
(3) expected future costs {(1) x (2)}	66,235	66,815	70,073	72,366	84,159
(4) premium deficiency / (deferred policy acquisition cost)	7,562	8,838	9,328	9,705	12,305
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	107.7%	109.1%	109.2%	109.4%	110.9%
(6) expected future costs {(1) x (5)}	63,183	63,275	66,361	68,533	79,700
(7) premium deficiency / (deferred policy acquisition cost)	4,510	5,298	5,616	5,872	7,846

EXHIBIT D
Projected Year-end Policy Liabilities

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

Alberta non-Grid ending 2019		Projected Balances as at Dec. 31, 2019 (\$000s)								
nominal values				actuarial present value adjustments (apvs)						
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL
2005	75	5	80	-	-	8	-	8	8	88
2006	601	59	660	(16)	2	66	(2)	64	50	710
2007	73	53	126	(4)	1	13	-	13	10	136
2008	(28)	46	18	-	-	2	-	2	2	20
2009	716	(3)	713	(25)	3	71	(2)	69	47	760
2010	1,008	109	1,117	(49)	7	112	(5)	107	65	1,182
2011	2,732	(218)	2,514	(123)	15	251	(12)	239	131	2,645
2012	3,441	1,083	4,524	(185)	23	452	(19)	433	271	4,795
2013	4,086	425	4,511	(212)	27	451	(21)	430	245	4,756
2014	5,727	1,356	7,083	(333)	42	708	(33)	675	384	7,467
2015	8,716	2,154	10,870	(522)	65	1,076	(52)	1,024	567	11,437
2016	15,960	4,189	20,149	(967)	121	2,519	(121)	2,398	1,552	21,701
2017	20,349	9,578	29,927	(1,556)	180	3,741	(195)	3,546	2,170	32,097
2018	22,351	21,275	43,626	(2,312)	305	5,410	(287)	5,123	3,116	46,742
PAYS (sub-total):	85,833	40,147	125,980	(6,304)	791	14,886	(749)	14,137	8,624	134,604
CAY (2019)	48,250	34,465	82,715	(4,301)	579	9,678	(503)	9,175	5,453	88,168
claims liabilities:	134,083	74,612	208,695	(10,605)	1,370	24,564	(1,252)	23,312	14,077	222,772
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	71,854	7,846	79,700	(3,173)	397	7,536	(301)	7,235	4,459	84,159
*Total may not be sum of parts, as apvs apply to future costs within UPR										
policy liabilities:			288,395	(13,778)	1,767	32,100	(1,553)	30,547	18,536	306,931

EXHIBIT E

Discount Rate & Margins for Adverse Deviations

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

Accident Year	Selected Claims Development MfADs (Dec. 31, 2018)			Total
	Third Party Liability	Accident Benefits	Other Coverages	
	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%	10.0%	10.0%
2013	10.0%	10.0%	8.1%	10.0%
2014	10.0%	10.0%	8.8%	10.0%
2015	10.0%	10.0%	8.8%	9.9%
2016	12.5%	10.0%	12.5%	12.5%
2017	12.5%	10.0%	12.5%	12.5%
2018	12.5%	10.0%	12.5%	12.4%
2019	12.1%	10.0%	8.3%	11.7%
prem liab	11.8%	10.0%	5.2%	9.5%

discount rate: 1.93%
margin (basis points): 25

EXHIBIT F
Interest Rate Sensitivity

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

\$ Format: \$000s

Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2019 projected Unpaid								
AY	0.93%	1.43%	1.93%	2.43%	2.93%	3.43%	2.29%	2.29%
2004 & prior	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	572	569	565	562	558	555	563	563
2007	134	133	132	131	130	129	131	131
2008	-	-	-	-	-	-	-	-
2009	1,165	1,154	1,144	1,133	1,124	1,114	1,136	1,136
2010	1,183	1,170	1,156	1,143	1,130	1,118	1,147	1,147
2011	2,050	2,023	1,997	1,972	1,948	1,924	1,979	1,979
2012	4,729	4,678	4,628	4,579	4,531	4,485	4,592	4,592
2013	6,235	6,158	6,084	6,011	5,940	5,871	6,031	6,031
2014	7,524	7,431	7,341	7,252	7,167	7,082	7,277	7,277
2015	10,503	10,371	10,243	10,117	9,995	9,876	10,152	10,152
2016	22,441	22,159	21,885	21,618	21,357	21,103	21,692	21,692
2017	31,076	30,650	30,236	29,828	29,438	29,054	29,943	29,943
2018	50,265	49,564	48,890	48,233	47,594	46,976	48,415	48,415
2019	84,009	82,868	81,763	80,686	79,649	78,630	80,993	80,993
Total	221,886	218,928	216,064	213,265	210,561	207,917	214,051	214,051
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

Dollar Impact Relative to Valuation Assumption								
AY	0.93%	1.43%	1.93%	2.43%	2.93%	3.43%	2.29%	2.29%
Total	5,822	2,864	-	(2,799)	(5,503)	(8,147)	(2,013)	(2,013)
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

Percentage Impact Relative to Valuation Assumption								
AY	0.93%	1.43%	1.93%	2.43%	2.93%	3.43%	2.29%	2.29%
2004 & prior	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	1.2%	0.7%	-	(0.5%)	(1.2%)	(1.8%)	(0.4%)	(0.4%)
2007	1.5%	0.8%	-	(0.8%)	(1.5%)	(2.3%)	(0.8%)	(0.8%)
2008	-	-	-	-	-	-	-	-
2009	1.8%	0.9%	-	(1.0%)	(1.7%)	(2.6%)	(0.7%)	(0.7%)
2010	2.3%	1.2%	-	(1.1%)	(2.2%)	(3.3%)	(0.8%)	(0.8%)
2011	2.7%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(0.9%)	(0.9%)
2012	2.2%	1.1%	-	(1.1%)	(2.1%)	(3.1%)	(0.8%)	(0.8%)
2013	2.5%	1.2%	-	(1.2%)	(2.4%)	(3.5%)	(0.9%)	(0.9%)
2014	2.5%	1.2%	-	(1.2%)	(2.4%)	(3.5%)	(0.9%)	(0.9%)
2015	2.5%	1.2%	-	(1.2%)	(2.4%)	(3.6%)	(0.9%)	(0.9%)
2016	2.5%	1.3%	-	(1.2%)	(2.4%)	(3.6%)	(0.9%)	(0.9%)
2017	2.8%	1.4%	-	(1.3%)	(2.6%)	(3.9%)	(1.0%)	(1.0%)
2018	2.8%	1.4%	-	(1.3%)	(2.7%)	(3.9%)	(1.0%)	(1.0%)
2019	2.7%	1.4%	-	(1.3%)	(2.6%)	(3.8%)	(0.9%)	(0.9%)
Total	2.7%	1.3%	-	(1.3%)	(2.5%)	(3.8%)	(0.9%)	(0.9%)
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

Page 1 of 2

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

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

M/S IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2004	42	-	-	-	-	-	42
2005	13	-	-	-	-	-	13
2006	54	(1)	1	89	89	164.8%	143
2007	305	(5)	7	(224)	(222)	(72.8%)	83
2008	62	(2)	2	1	1	1.6%	63
2009	(110)	-	89	79	168	(152.7%)	58
2010	64	(3)	4	160	161	251.6%	225
2011	12	(3)	(393)	275	(121)	(1,008.3%)	(109)
2012	1,500	(20)	13	259	252	16.8%	1,752
2013	448	(10)	130	300	420	93.8%	868
2014	2,827	(36)	39	(578)	(575)	(20.3%)	2,252
2015	4,578	(207)	462	(976)	(721)	(15.7%)	3,857
2016	10,216	(492)	(143)	(1,266)	(1,901)	(18.6%)	8,315
2017	17,528	(852)	472	(2,515)	(2,895)	(16.5%)	14,633
2018	30,974	(436)	1,040	(4,512)	(3,908)	(12.6%)	27,066
2019	7,300	2,028	1,372	698	4,098	56.1%	11,398
Grand Total	75,813	(39)	3,095	(8,210)	(5,154)	(6.8%)	70,659

EXHIBIT G

Page 2 of 2

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

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

IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2004	36	-	-	-	-	-	36
2005	5	-	-	-	-	-	5
2006	3	-	-	74	74	2,466.7%	77
2007	280	(3)	5	(212)	(210)	(75.0%)	70
2008	60	(1)	1	-	-	-	60
2009	(180)	2	103	72	177	(98.3%)	(3)
2010	(7)	-	2	145	147	(2,100.0%)	140
2011	(120)	1	(397)	235	(161)	134.2%	(281)
2012	1,252	(13)	6	154	147	11.7%	1,399
2013	171	(2)	137	243	378	221.1%	549
2014	2,409	(24)	38	(672)	(658)	(27.3%)	1,751
2015	3,858	(193)	478	(988)	(703)	(18.2%)	3,155
2016	8,427	(421)	(167)	(1,444)	(2,032)	(24.1%)	6,395
2017	15,014	(751)	430	(2,717)	(3,038)	(20.2%)	11,976
2018	27,843	(278)	961	(5,237)	(4,554)	(16.4%)	23,289
2019	6,343	1,639	1,438	409	3,486	55.0%	9,829
Grand Total	65,394	(44)	3,035	(9,938)	(6,947)	(10.6%)	58,447