



ALBERTA GRID RISK SHARING POOL

OCTOBER 2019 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS
RSP ALBERTA GRID
OPERATIONAL REPORT
OCTOBER 2019

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1 Summary

Key Points

- (a) The 2019 Q3 valuation was completed and implemented into the results this month, with a \$3.9 million favourable impact, or 0.9% of beginning policy liabilities (policy liabilities ended at \$455 million) and 2.7 points of year-to-date earned premium; and
- (b) Transfer counts and associated premium were higher-than-expected during the month (counts were up 31% vs the 21% increase expected; written premium was up 38% vs the 27% increase expected).

1.1 Valuation Schedule (Fiscal Year 2019)

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

ALBERTA GRID RISK SHARING POOL FISCAL YEAR 2019 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2018 (completed)	2.28% mfad 25 bp	Oct. 2018	updated valuation (roll forward): accident year 2018 loss ratio <u>decreased</u> 2.0 points to 89.8%; discount rate <u>increased</u> 41 basis points; no change to selected margins for adverse deviations
Dec. 31, 2018 (completed)	1.93% mfad 25 bp	Mar. 2019	updated valuation: accident year 2019 loss ratio <u>decreased</u> 0.3 points to 88.8%; discount rate <u>decreased</u> 35 basis points; no change to selected margins for adverse deviations
Mar. 31, 2019 (completed)	1.44% mfad 25 bp	May 2019	updated valuation (roll forward): accident year 2019 loss ratio <u>increased</u> 0.9 points to 89.7%; discount rate <u>decreased</u> 49 basis points; no change to selected margins for adverse deviations
Jun. 30, 2019 (completed)	1.41% mfad 25 bp	Aug. 2019	updated valuation: accident year 2019 loss ratio <u>decreased</u> 2.9 points to 86.8%; discount rate <u>decreased</u> 3 basis points; selected margins for adverse deviations were updated
Sep. 30, 2019 (completed)	1.44% mfad 25 bp	Oct. 2019	update valuation (roll forward): accident year 2019 loss ratio <u>decreased</u> 2.4 points to 84.4%; discount rate <u>increased</u> 3 basis points; no change to selected margins for adverse deviations

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

would rather “roll-forward” key assumptions from the previous valuation.

1.2 New Valuation

A valuation of the Alberta Grid Risk Sharing Pool (“RSP”) as at Sep. 30, 2019 has been completed since last month’s Operational Report and the results of that valuation have been incorporated into this month’s Report. The valuation was completed by the Facility Association’s internal actuarial group in conjunction with, and approved by, the interim 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 December 2019.

The valuation implementation impact is summarized in the tables below and on the next page, where abbreviations PAYs refers to prior accident years, CAY refers to the current accident year (2019), and Prem Def refers to premium deficiency / deferred acquisition costs impacts.

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

AB 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	857	26	883	(230)	-	653
CAY	(3,560)	(387)	(3,947)	(13)	-	(3,960)
Prem Def	(750)	229	(521)	(112)	-	(633)
TOTAL	(3,453)	(132)	(3,585)	(355)	-	(3,940)

As indicated in the table above, the incorporation of the new valuation had an estimated **\$3.9 million favourable impact** on the month’s net result from operations, subtracting an estimated 2.7 points (see table at the top of the next page) to the **year-to-date Combined Operating Ratio** to end at **108.1%**.

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.

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

AB Grid	ytd EP 146,506 (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	0.6%	-	0.6%	(0.2%)	-	0.4%
CAY	(2.4%)	(0.3%)	(2.7%)	-	-	(2.7%)
Prem Def	(0.5%)	0.2%	(0.4%)	(0.1%)	-	(0.4%)
TOTAL	(2.4%)	(0.1%)	(2.4%)	(0.2%)	-	(2.7%)

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 \$3.5 million** overall. This reflects the impact attributable to the changes in the selected ultimate loss ratios (i.e. for each accident year, it is the product of life-to-date earned premium for the accident year and the change in the selected ultimate loss ratio).

The **PAYs** overall showed a **\$0.9 million unfavourable** nominal variance or 0.4% of the PAYs nominal unpaid balance of \$234.1 million determined at the end of last month beginning, driven by favourable claims development and updates to a priori loss ratios to include more recent data and updated trends. While the valuation implementation impact does differ from the valuation changes themselves (as they apply to different periods), the valuation result by government line provides insight into the relative PAYs nominal changes. As per below, the primary changes were in relation to TPL across multiple PAYs.

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

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

Accident Year	Third Party Liability	Accident Benefits	Other Coverages	Total
2014 & Prior	504	12	(4)	512
2015	556	24	(26)	554
2016	517	(9)	(19)	489
2017	(676)	26	1	(649)
2018	(598)	(22)	-	(620)
TOTAL	303	31	(48)	286

The CAY and premium deficiency impacts are a result of the change in the selected loss ratios for accident year **2019** (decreased 2.4 points to **84.4%**); there was no change for accident year **2020** (left at **89.5%**).

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

in actuarial present value adjustments are shown in the summary tables on the two previous pages in columns [2], [4], and [5].

Column [2] recognizes that changing the nominal selections also changed the unpaid estimates (including changes to the relative mix by government line, which had an impact on the weighted-average MfADs). It also reflects the fact that we updated the projected emergence of claims payments, resulting in a change in the projected cash flows. These changes generated a favourable change of \$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 September 2019. Column [4] accounts for the change in the **discount rate** selected (increased 3 basis point to 1.44%), indicating a favourable impact of \$0.4 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was \$0.2 million at August 2019 (projected \$0.2 million impact at December 31, 2019) – this compares to the \$0.3 million change one would estimate as the impact by interpolation using the interest rate sensitivity table provided in last month’s Actuarial Highlights.

Column [5] accounts for any changes to selected MfADs. The selected **investment rate MfAD** was **left unchanged at 25 basis points** and the selected **claims development MfADs** at the coverage and accident year level were also left unchanged (as per our usual practice, development margins are reviewed with the June 30 valuation).

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 was Facility Association’s Appointed Actuary (effective as of June 1, 2013). Mr. McFarlane has resigned his Appointment to take on a role at a different organization. Mr. Cosimo Pantaleo of Ernst & Young LLP has assumed the Appointed Actuary’s role (effective as of October 24, 2019), pending formal appointment by the Facility Association Board (expected at its December 12, 2019 meeting).

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

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

There have been no changes in these descriptions since last month’s Highlights, other than updated references to reflect the new valuation.

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.

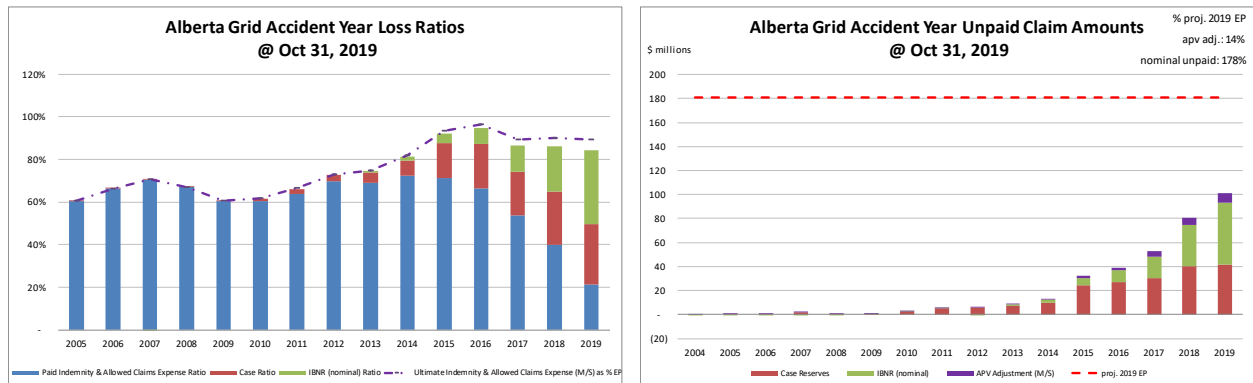
²This url to a pdf is to a helpful guide on how bills become laws: <https://www.ola.org/sites/default/files/common/how-bills-become-law-en.pdf>

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

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

1.5 Current Provision Summary

The charts 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 (\$25.4 million – see table at the top of the next page) represents 14% of the earned premium projected for the full year 2019 (see the upper right corner of the right chart above). If our current estimates of the nominal unpaid amounts prove to match actual claims payments, the actuarial present value adjustments will be released into the net operating result over future periods.

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.

claim liabilities (\$000s)

	amt	%
case	197,576	57.1%
ibnr	123,293	35.6%
M/S apv adjust.	25,396	7.3%
M/S total	346,265	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 70% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 89% of the M/S total claim

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

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

premium liabilities (\$000s)

	amt	%
unearned prem	114,793	105.6%
prem def/(dpac)	(13,284)	(12.2%)
M/S apv adjust.	7,164	6.6%
M/S total	108,673	100.0%

policy liabilities (\$000s)

	amt	%
claim	320,869	70.5%
premium	101,509	22.3%
M/S apv adjust.	32,560	7.2%
M/S total	454,938	100.0%

2 Activity During the Month of October 2019

2.1 Recorded Premium and Claims Activity

The table 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 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	(3)	(3)	4,641	1,807	(3,563)	(1,444)	1,078	363
2017	(10)	(10)	1,708	691	(908)	(685)	800	6
2018	(19)	(19)	1,176	(350)	(820)	(348)	356	(698)
2019	16,791	(178)	4,903	(12)	6,602	3,094	11,506	3,082
TOTAL	16,759	(209)	12,429	2,137	1,312	617	13,740	2,754

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

It is unusual to see actual earned premium transactions affecting prior accident years by this time in the calendar year – the prior accident years changes in the month reflect activity undertaken by a member reflecting recent audit findings.

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

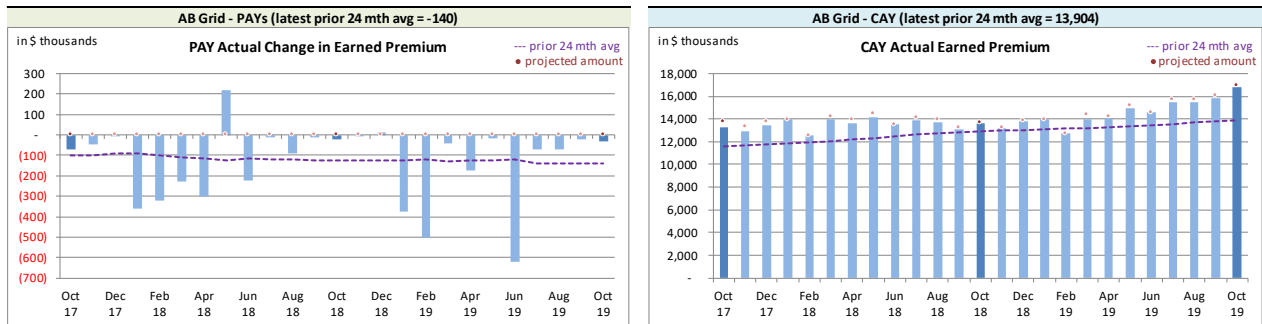
⁵There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

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

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

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

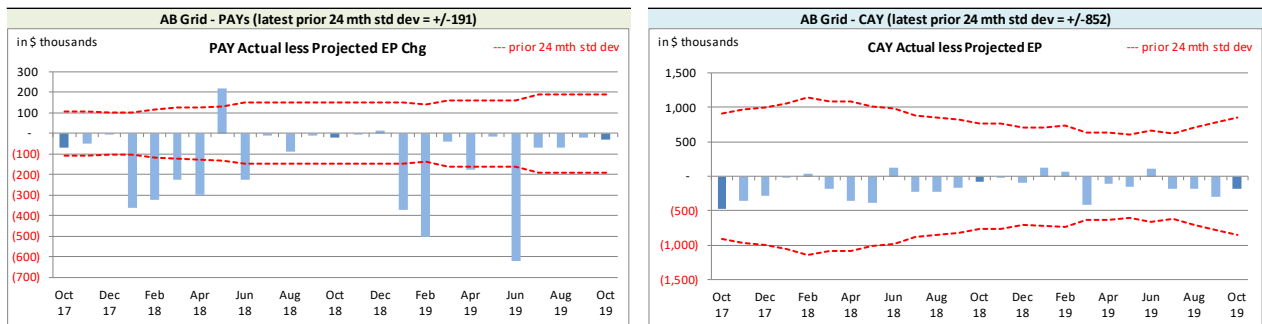
Alberta Grid RSP Actual Earned Premium by Calendar Month



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

The associated variances between the actual changes and the projections from the previous month are shown in the charts at the top of the next page. **Earned premium** change projections are all attributed to the current accident year as the projection upload does not accept earned premium changes for other accident years. We do not see this limitation as being significant for our purposes, but it does mean that the actual less projection variance will equal the actual **earned premium** change in relation to prior accident years.

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



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

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.

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

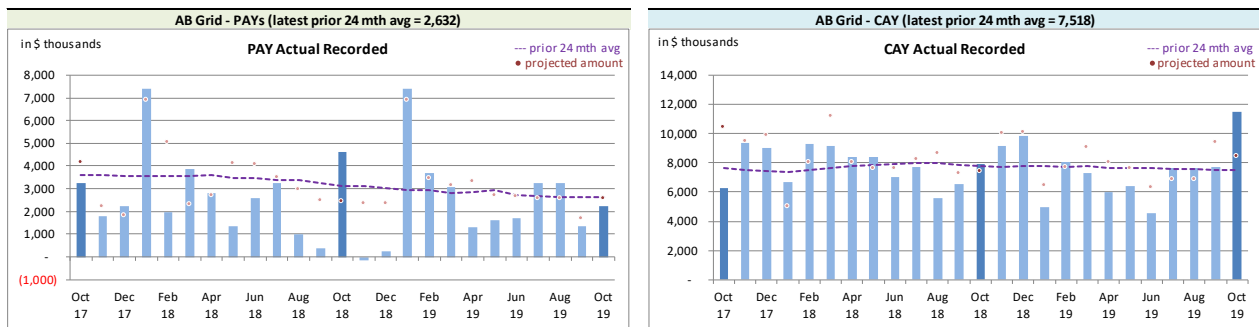
On Latest \$ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(140)	13,904
std dev	191	852
A-P <> std dev	10	-
% <> std dev	40.0%	0.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	worse	better

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, and while we modified our projections processes in response, bias still exists. Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority.

2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

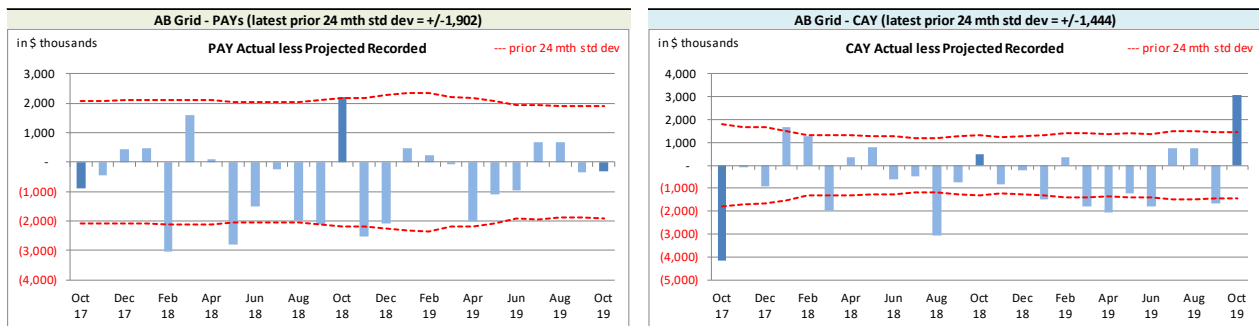
The charts below show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

Alberta Grid RSP Actual Recorded by Calendar Month



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

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



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

On Latest \$ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	2,632	7,518
std dev	1,902	1,444
A-P <> std dev	5	10
% <> std dev	20.0%	40.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	better	worse

With respect to **recorded** indemnity & allowed claims expense activity, 20% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **recorded** amounts (see table on left), suggesting the projection process has performed better than simply projecting the prior 24-month average amount (assuming it

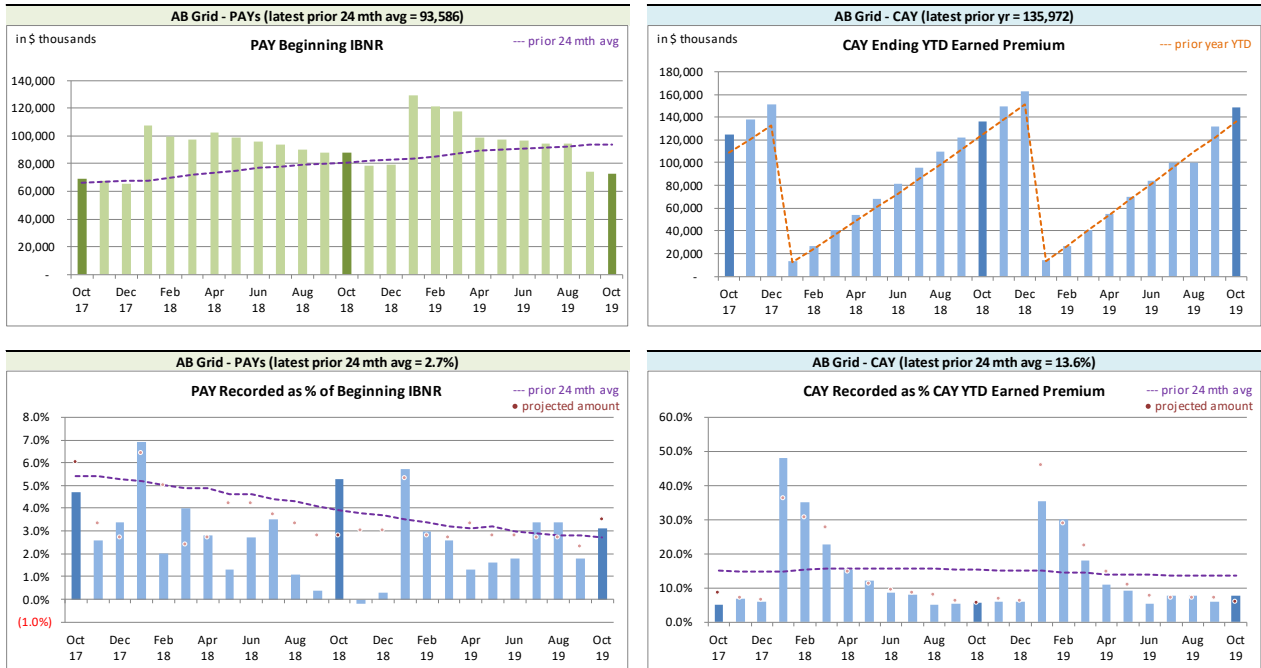
follows a normal distribution). Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (9 of 25 variances were positive).

The current accident year (CAY) **recorded** variances fell outside of one standard deviation 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. Bias has not been indicated at a 95% confidence level on a lagging 24-month basis (9 of 25 variances were positive).

The CAY **recorded** variance (right chart at the bottom of the previous page) was outside of one standard deviation this month. The activity was reviewed and confirmed, with the variance attributed in part to process variance, but we would also attribute some of the variance to a poor projection in retrospect.

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

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

Alberta Grid RSP Levels that influence⁹ Recorded activity by Calendar Month


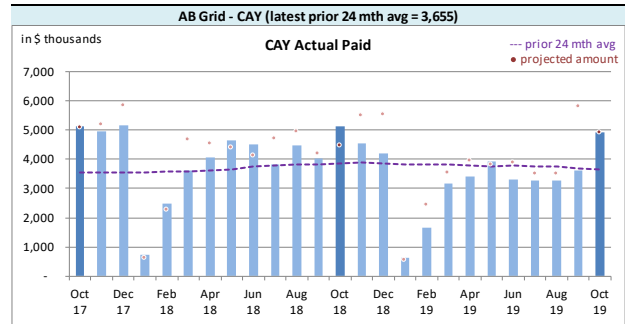
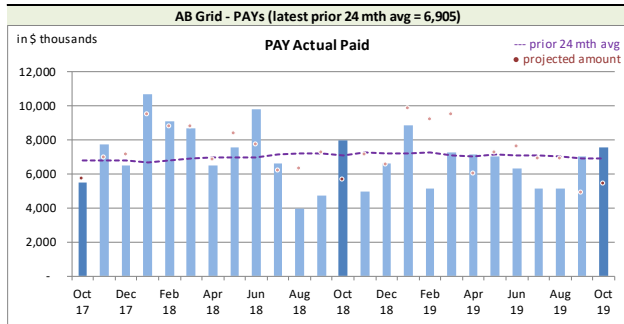
We track PAY beginning IBNR as **recorded** activity comes out of IBNR. Changes in the PAY beginning IBNR (see upper left chart above) occur for several possible reasons:

- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a CAY becomes a PAY (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs’ ultimates (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).

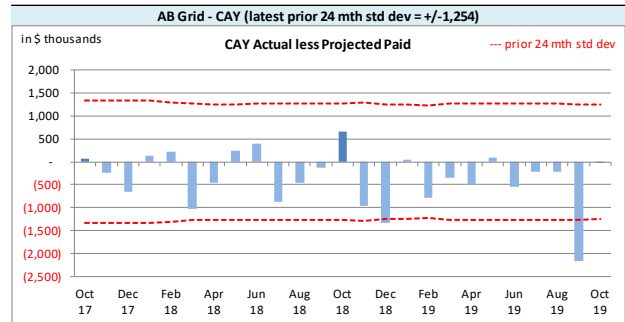
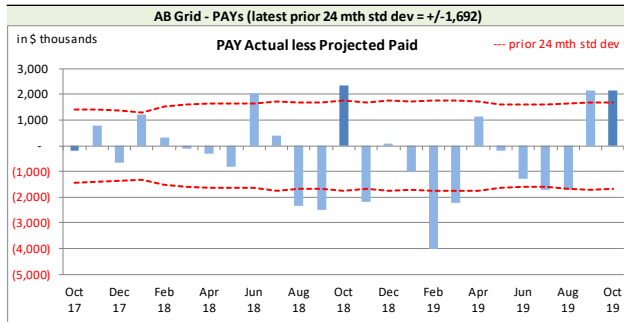
2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

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 Grid RSP Actual *Paid* activity by Calendar Month


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

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


On Latest \$ thousands			
Paid	PAYS	CAY	
Mthly Avg Paid (prior 24 mths)	6,905	3,655	
std dev	1,692	1,254	
A-P <> std dev	11	2	
% <> std dev	44.0%	8.0%	
norm <> std dev	31.7%	31.7%	
performance vs 24-mth avg:	worse	better	

With respect to **paid** indemnity & allowed claims expense, 44% of the prior accident years’ (PAYS) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on left), suggesting the projection process has performed worse than simply projecting the prior 24-month average amount (assuming it follows a normal

distribution), and we are actively looking into the projection process for means of improving this result. Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (10 of 25 variances are positive).

The PAY **paid** variance (left chart above) was outside of one standard deviation again this month. The activity was reviewed and confirmed, with the variance attributed in part to process variance, but also in part to a poor projection in retrospect.

The current accident year (CAY) **paid** variances fell outside one standard deviation 8% of the time over the last 25 calendar months (see table above), suggesting the projection process has performed better than simply projecting the prior 24-month average amount. Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (8 of 25 variances are positive). However, bias is indicated on a rolling-12 month basis, with only 2 of the latest 12 variances being positive.

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

Alberta Grid RSP Levels that influence¹⁰ Paid activity by Calendar Month



We track the PAY beginning unpaid balance (case and IBNR) as **paid** activity comes out of the unpaid balance. Changes in the PAY 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 CAY becomes a PAY (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs' ultimates (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.

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".

The table below summarizes variances in provisions included in this month’s Operational Report and the associated one-month projections from last month’s Report.

Alberta 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	18,702	1,573	(3,203)	(25)	10,619	(81)	26,118	1,467
2017	18,442	(612)	(1,845)	49	6,127	(215)	22,724	(778)
2018	34,283	196	(3,133)	(68)	9,455	(29)	40,605	99
2019	51,866	(6,797)	(4,021)	(35)	11,397	(377)	59,242	(7,209)
TOTAL	123,293	(5,640)	(12,202)	(79)	37,598	(702)	148,689	(6,421)

The IBNR provision is \$5.6 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 deferred policy acquisition cost asset position (shown as a negative amount) prior to and after actuarial present value adjustments. Actuarial present value adjustments decrease the asset value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance, and due to the valuation implementation.

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

Table 03

	Premium Deficiency / (Deferred Policy Acquisition Costs)		actuarial present value adjustments		Premium Deficiency / (DPAC) including actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
balance:	(13,284)	(957)	7,164	231	(6,120)	(726)
balance as % unearned premium:	(11.6%)	(0.7%)	6.2%	0.2%	(5.3%)	(0.5%)
actual unearned premium:	114,793					
less projected:	1,828					

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 85.5% rather than 84.4% (the valuation ultimate ratio for accident year 2019), as the calendar year-to-date earned premium includes prior accident year earned premium adjustments. (Note that the ratios in this table may differ slightly from those shown in the Alberta Grid RSP Summary of Operations due to rounding.)

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

Table 04	YTD Nominal Values		YTD actuarial present value adjustment		YTD Total		Change from Prior Month YTD	
	Amount	% EP	Amount	% EP	Amount	% EP	Amount	LR pts
PAYs	(29,083)	(19.9%)	639	0.4%	(28,444)	(19.4%)	36	2.6%
CAY	125,214	85.5%	7,376	5.0%	132,590	90.5%	11,387	(2.9%)
TOTAL	96,131	65.6%	8,015	5.5%	104,146	71.1%	11,422	(0.4%)

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

6 EXHIBITS

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

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

EXHIBIT A

IBNR for Member Sharing – includes Actuarial Present Value Adjustments

TABLE EXHIBIT A

		Amounts in \$000s				
IBNR + M/S actuarial present value adjustments	Accident Year	Actual Sep. 2019	Actual Oct. 2019	Projected Nov. 2019	Projected Dec. 2019	Projected Dec. 2020
	2004	(71)	(71)	(68)	(68)	(47)
	2005	15	15	14	12	10
	2006	(99)	(100)	(97)	(96)	(66)
	2007	(354)	(137)	(131)	(135)	(92)
	2008	44	(53)	(50)	(51)	(35)
	2009	(378)	160	154	150	103
	2010	380	310	297	284	190
	2011	472	486	465	441	302
	2012	711	402	386	359	236
	2013	1,340	1,474	1,415	1,371	944
discount rate	2014	4,014	3,386	3,251	3,174	2,193
1.44%	2015	7,337	8,250	7,920	7,543	5,190
	2016	12,157	11,996	11,445	11,283	6,981
interest rate margin	2017	24,387	22,724	22,270	21,785	15,057
25 basis pts	2018	41,691	40,605	39,451	37,997	28,370
	2019	59,361	59,242	63,492	67,574	49,154
	TOTAL	151,007	148,689	150,214	151,623	190,115
	Change		(2,318)	1,525	1,409	

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 Sep. 2019	Actual Oct. 2019	Projected Nov. 2019	Projected Dec. 2019	Projected Dec. 2020
	51.6%	2004	(79)	(79)	(76)	(75)	(52)
	60.5%	2005	(24)	(24)	(23)	(23)	(15)
	66.3%	2006	(109)	(110)	(106)	(105)	(72)
	70.9%	2007	(455)	(247)	(237)	(235)	(161)
	67.1%	2008	(10)	(78)	(75)	(74)	(52)
	60.6%	2009	(391)	128	123	122	84
	61.5%	2010	139	99	95	94	62
	66.3%	2011	76	91	87	86	59
	72.8%	2012	252	(49)	(47)	(47)	(33)
	74.6%	2013	699	847	813	805	552
	81.2%	2014	3,009	2,482	2,383	2,359	1,620
	92.0%	2015	5,143	6,128	5,883	5,589	3,835
	94.6%	2016	9,594	9,514	9,038	8,948	5,203
	86.4%	2017	19,848	18,442	18,073	17,712	11,770
	86.2%	2018	35,141	34,283	33,255	31,925	23,307
	84.4%	2019	52,358	51,866	55,315	58,576	42,712
		TOTAL	125,191	123,293	124,501	125,657	159,321
		Change		(1,898)	1,208	1,156	

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

EXHIBIT C
Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Sep. 2019	Actual Oct. 2019	Projected Nov. 2019	Projected Dec. 2019	Projected Dec. 2020
Premium Liabilities					
(1) unearned premium (UP)	109,592	114,793	116,022	113,677	122,953
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	94.9%	94.7%	95.4%	96.2%	97.8%
(3) expected future costs {(1) x (2)}	103,957	108,673	110,663	109,321	120,192
(4) premium deficiency / (deferred policy acquisition cost)	(5,635)	(6,120)	(5,359)	(4,356)	(2,761)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	88.7%	88.4%	89.1%	89.8%	91.3%
(6) expected future costs {(1) x (5)}	97,255	101,509	103,370	102,116	112,268
(7) premium deficiency / (deferred policy acquisition cost)	(12,337)	(13,284)	(12,652)	(11,561)	(10,685)

EXHIBIT D

Projected Year-end Policy Liabilities

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

Alberta Grid ending 2019		Projected Balances as at Dec. 31, 2019 (\$000s)									
		nominal values			actuarial present value adjustments (apvs)						
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL	
2004	4	(75)	(71)	-	-	7	-	7	7	(64)	
2005	398	(23)	375	(4)	1	38	-	38	35	410	
2006	212	(105)	107	(2)	-	11	-	11	9	116	
2007	1,472	(235)	1,237	(26)	5	124	(3)	121	100	1,337	
2008	372	(74)	298	(7)	1	30	(1)	29	23	321	
2009	247	122	369	(9)	1	37	(1)	36	28	397	
2010	2,360	94	2,454	(59)	10	245	(6)	239	190	2,644	
2011	4,567	86	4,653	(121)	23	465	(12)	453	355	5,008	
2012	5,288	(47)	5,241	(126)	21	524	(13)	511	406	5,647	
2013	6,707	805	7,512	(195)	30	751	(20)	731	566	8,078	
2014	8,964	2,359	11,323	(340)	57	1,132	(34)	1,098	815	12,138	
2015	22,415	5,589	28,004	(896)	140	2,800	(90)	2,710	1,954	29,958	
2016	25,597	8,948	34,545	(1,175)	173	3,454	(117)	3,337	2,335	36,880	
2017	28,430	17,712	46,142	(1,753)	277	5,768	(219)	5,549	4,073	50,215	
2018	39,719	31,925	71,644	(3,009)	502	8,955	(376)	8,579	6,072	77,716	
PAVs (sub-total):	146,752	67,081	213,833	(7,722)	1,241	24,341	(892)	23,449	16,968	230,801	
CAY (2019)	55,493	58,576	114,069	(4,905)	913	13,574	(584)	12,990	8,998	123,067	
claims liabilities:	202,245	125,657	327,902	(12,627)	2,154	37,915	(1,476)	36,439	25,966	353,868	
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*	
premium liabilities:	113,677	(11,561)	102,116	(3,968)	712	10,886	(425)	10,461	7,205	109,321	
*Total may not be sum of parts, as apvs apply to future costs within UPR											
policy liabilities:			430,018	(16,595)	2,866	48,801	(1,901)	46,900	33,171	463,189	

EXHIBIT E

Discount Rate & Margins for Adverse Deviations

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

Selected Claims Development MfADs (Sep. 30,
2019)

Accident Year	Third Party Liability Margins	Accident Benefits Margins	Other Coverages Margins	Total Margins
2004	10.0%	10.0%	10.0%	10.0%
2005	10.0%	10.0%	10.0%	10.0%
2006	10.0%	10.0%	10.0%	10.0%
2007	10.0%	10.0%	10.0%	10.0%
2008	10.0%	10.0%	10.0%	10.0%
2009	10.0%	10.0%	10.0%	10.0%
2010	10.0%	10.0%	10.0%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	8.6%	10.0%
2013	10.0%	10.0%	9.5%	10.0%
2014	10.0%	10.0%	9.9%	10.0%
2015	10.0%	10.0%	9.4%	10.0%
2016	10.0%	10.0%	9.8%	10.0%
2017	12.5%	10.0%	12.5%	12.5%
2018	12.4%	10.0%	12.5%	12.5%
2019	12.2%	10.0%	8.4%	11.9%
2020	11.8%	10.0%	5.1%	10.7%
<u>prem liab</u>	<u>11.8%</u>	<u>10.0%</u>	<u>5.1%</u>	<u>10.7%</u>

discount rate: 1.44%
margin (basis points): 25

EXHIBIT F

Interest Rate Sensitivity

The tables below present sensitivity to the member statement claims liability as projected to Dec. 31, 2019 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2019, and are based on more up-to-date information). We have included the most recent valuation selection (1.44%), the prior valuation assumption (1.4%) and the prior fiscal year end valuation assumption (2.28%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

\$ Format: \$000s

Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2019 projected Unpaid								
AY	0.44%	0.94%	1.44%	1.94%	2.44%	2.94%	1.41%	2.28%
2004	-	-	-	-	-	-	-	-
2005	467	466	464	462	461	459	464	461
2006	225	223	222	221	219	218	222	220
2007	1,574	1,562	1,551	1,540	1,529	1,518	1,552	1,532
2008	636	631	626	621	616	612	626	618
2009	256	254	251	249	247	245	252	248
2010	3,012	2,987	2,962	2,937	2,913	2,889	2,963	2,920
2011	4,611	4,569	4,528	4,488	4,448	4,410	4,531	4,461
2012	5,752	5,704	5,657	5,611	5,566	5,522	5,660	5,580
2013	8,558	8,479	8,401	8,326	8,252	8,179	8,405	8,275
2014	13,773	13,626	13,485	13,345	13,209	13,077	13,493	13,253
2015	30,635	30,285	29,943	29,608	29,285	28,964	29,961	29,386
2016	38,627	38,157	37,703	37,254	36,821	36,400	37,726	36,959
2017	51,099	50,404	49,728	49,067	48,429	47,804	49,762	48,631
2018	81,014	79,810	78,650	77,525	76,424	75,363	78,717	76,775
2019	120,415	118,584	116,811	115,092	113,438	111,823	116,912	113,957
Total	360,654	355,741	350,982	346,346	341,857	337,483	351,246	343,276
	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	0.44%	0.94%	1.44%	1.94%	2.44%	2.94%	1.41%	2.28%
Total	9,672	4,759	-	(4,636)	(9,125)	(13,499)	264	(7,706)
	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	0.44%	0.94%	1.44%	1.94%	2.44%	2.94%	1.41%	2.28%
2004	-	-	-	-	-	-	-	-
2005	0.6%	0.4%	-	(0.4%)	(0.6%)	(1.1%)	-	(0.6%)
2006	1.4%	0.5%	-	(0.5%)	(1.4%)	(1.8%)	-	(0.9%)
2007	1.5%	0.7%	-	(0.7%)	(1.4%)	(2.1%)	0.1%	(1.2%)
2008	1.6%	0.8%	-	(0.8%)	(1.6%)	(2.2%)	-	(1.3%)
2009	2.0%	1.2%	-	(0.8%)	(1.6%)	(2.4%)	0.4%	(1.2%)
2010	1.7%	0.8%	-	(0.8%)	(1.7%)	(2.5%)	0.0%	(1.4%)
2011	1.8%	0.9%	-	(0.9%)	(1.8%)	(2.6%)	0.1%	(1.5%)
2012	1.7%	0.8%	-	(0.8%)	(1.6%)	(2.4%)	0.1%	(1.4%)
2013	1.9%	0.9%	-	(0.9%)	(1.8%)	(2.6%)	0.0%	(1.5%)
2014	2.1%	1.0%	-	(1.0%)	(2.0%)	(3.0%)	0.1%	(1.7%)
2015	2.3%	1.1%	-	(1.1%)	(2.2%)	(3.3%)	0.1%	(1.9%)
2016	2.5%	1.2%	-	(1.2%)	(2.3%)	(3.5%)	0.1%	(2.0%)
2017	2.8%	1.4%	-	(1.3%)	(2.6%)	(3.9%)	0.1%	(2.2%)
2018	3.0%	1.5%	-	(1.4%)	(2.8%)	(4.2%)	0.1%	(2.4%)
2019	3.1%	1.5%	-	(1.5%)	(2.9%)	(4.3%)	0.1%	(2.4%)
Total	2.8%	1.4%	-	(1.3%)	(2.6%)	(3.8%)	0.1%	(2.2%)
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

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

RSP **Alberta Grid**
AccountCode Desc **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	(71)	3	(3)	-	-	-	(71)
2005	15	(1)	1	-	-	-	15
2006	(99)	4	(5)	-	(1)	1.0%	(100)
2007	(354)	16	(131)	332	217	(61.3%)	(137)
2008	44	(1)	(95)	(1)	(97)	(220.5%)	(53)
2009	(378)	16	(15)	537	538	(142.3%)	160
2010	380	(12)	(58)	-	(70)	(18.4%)	310
2011	472	(15)	29	-	14	3.0%	486
2012	711	(24)	(279)	(6)	(309)	(43.5%)	402
2013	1,340	(46)	(127)	307	134	10.0%	1,474
2014	4,014	(150)	(153)	(325)	(628)	(15.6%)	3,386
2015	7,337	(272)	586	599	913	12.4%	8,250
2016	12,157	(435)	(248)	522	(161)	(1.3%)	11,996
2017	24,387	(885)	(77)	(701)	(1,663)	(6.8%)	22,724
2018	41,691	(1,185)	710	(611)	(1,086)	(2.6%)	40,605
2019	59,361	7,090	(3,249)	(3,960)	(119)	(0.2%)	59,242
Grand Total	151,007	4,103	(3,114)	(3,307)	(2,318)	(1.5%)	148,689

EXHIBIT G

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

RSP		Alberta Grid						IBNR - in \$000s
AccountCode Desc		IBNR - Undiscounted						
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	(79)	3	(3)	-	-	-	(79)	
2005	(24)	1	(1)	-	-	-	(24)	
2006	(109)	4	(5)	-	(1)	0.9%	(110)	
2007	(455)	18	(118)	308	208	(45.7%)	(247)	
2008	(10)	-	(68)	-	(68)	680.0%	(78)	
2009	(391)	16	(15)	518	519	(132.7%)	128	
2010	139	(6)	(34)	-	(40)	(28.8%)	99	
2011	76	(3)	18	-	15	19.7%	91	
2012	252	(10)	(291)	-	(301)	(119.4%)	(49)	
2013	699	(28)	(117)	293	148	21.2%	847	
2014	3,009	(120)	(117)	(290)	(527)	(17.5%)	2,482	
2015	5,143	(206)	604	587	985	19.2%	6,128	
2016	9,594	(384)	(219)	523	(80)	(0.8%)	9,514	
2017	19,848	(794)	(15)	(597)	(1,406)	(7.1%)	18,442	
2018	35,141	(1,054)	681	(485)	(858)	(2.4%)	34,283	
2019	52,358	6,305	(3,237)	(3,560)	(492)	(0.9%)	51,866	
Grand Total	125,191	3,742	(2,937)	(2,703)	(1,898)	(1.5%)	123,293	