ALBERTA GRID RISK SHARING POOL

AUGUST 2020 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS

RSP ALBERTA GRID

OPERATIONAL REPORT

AUGUST 2020

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1 Summary

Key Points

(a) The 2020 Q2 valuation was completed and implemented into the results this month, with a $7.9 million favourable impact, or 1.8% of beginning policy liabilities (policy liabilities ended at $442 million) and 6.0 points of year-to-date earned premium; the updated valuation loss ratios include a further assessment of the incurred impacts associated with the COVID-19 pandemic; and

(b) August's premium projections have been updated to reflect the most recent information provided by certain members. Updated claims assumptions are derived from the 2020 Q2 valuation.

1.1 Valuation Schedule (Fiscal Year 2020)

The August 2020 Operational Report incorporates the results of an updated valuation (as at June 30, 2020) – the impact of the implementation of the valuation is discussed in section 1.2. The following table summarizes the valuation implementations scheduled for fiscal year 2020.

ALBERTA GRID RISK SHARING POOL FISCAL YEAR 2020 – SCHEDULE OF VALUATIONS			
Valuation Date	**Discount Rate (per annum)**	**Operational Report**	**Description of Changes**
Sep. 30, 2019 (completed)	1.44% mfad 25 bp	Oct. 2019	updated valuation (roll forward): accident year 2019 loss ratio decreased 2.4 points to 84.4%; discount rate increased 3 basis points; no change to selected margins for adverse deviations
Dec. 31, 2019 (completed)	1.63% mfad 25 bp	Mar. 2020	update valuation: accident year 2019 loss ratio decreased 3.9 points to 80.5%; accident year 2020 loss ratio decreased 8.4 points to 81.4 %; discount rate increased 19 basis points; no change to selected margins for adverse deviations
Mar. 31, 2020 (completed)	0.63% mfad 25 bp	May. 2020	update valuation (partial roll-forward): accident year 2020 loss ratio decreased 2.9 points to 78.5%; discount rate decreased 100 basis points; no change to selected margins for adverse deviations
Jun. 30, 2020 (completed)	0.24% mfad 25 bp	Aug. 2020	update valuation: update valuation: accident year 2020 loss ratio decreased 1.6 points to 76.9%; discount rate decreased by 39 basis points; selected margins for adverse deviations were updated
Sep. 30, 2020	% mfad -- bp	Oct. 2020	update valuation (roll-forward)

Under the proposed schedule for fiscal year 2020, the off-half valuation quarters ending March 31, 2020 and September 30, 2020 would not reflect a full valuation update of assumptions, but would rather roll-forward key assumptions from the previous valuation.

1.2   New Valuation

A valuation of the Alberta Grid Risk Sharing Pool ("RSP") as at June 30, 2020 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.

The valuation implementation impact is summarized in the following two tables, where the abbreviations PAYs refers to prior accident years, CAY refers to the current accident year (2020), and "Prem Def" refers to premium deficiency / deferred acquisition costs impacts.

Summary of Impact ($000s) of Implementing Result of Valuation as at Jun. 30, 2020[1]

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	(6,875)	(765)	(7,640)	2,618	(864)	(5,886)
CAY	(2,129)	(221)	(2,350)	934	-	(1,416)
Prem Def	(1,433)	(135)	(1,568)	972	-	(596)
TOTAL	(10,437)	(1,121)	(11,558)	4,524	(864)	(7,898)

As indicated in the preceding table, the incorporation of the new valuation had an estimated ***$7.9 million favourable impact*** on the month's net result from operations, subtracting an estimated 6.0 points (see following table) from the **year-to-date Combined Operating Ratio** to end at **94.3%**.

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

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

Summary of Impact (% YTD EP) of Implementing Result of Valuation as at Jun. 30, 2020

AB Grid	ytd EP	131,676	(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	(5.2%)	(0.6%)	(5.8%)	2.0%	(0.7%)	(4.5%)
CAY	(1.6%)	(0.2%)	(1.8%)	0.7%	-	(1.1%)
Prem Def	(1.1%)	(0.1%)	(1.2%)	0.7%	-	(0.5%)
TOTAL	(7.9%)	(0.9%)	(8.8%)	3.4%	(0.7%)	(6.0%)

The impact of the **nominal changes** is shown in column [1] of the two preceding summary tables. The change in the selected nominal ultimates was **favourable by $10.4 million** overall. This reflects the impact attributable to the changes in the selected ultimate loss ratios (i.e. for each accident year, it is the product of life-to-date earned premium for the accident year and the change in the selected ultimate loss ratio).

The **PAYs** overall showed a **$6.9 million favourable** nominal variance or 2.7% of the PAYs nominal unpaid balance of $254.1 million determined at the end of last month (July 2020), 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 the following table, the primary changes were in relation to Third Party Liability (Bodily Injury) across multiple PAYs.

Valuation as at Jun. 30, 2020 – 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
2015 & Prior	73	1	(327)	(253)
2016	(661)	(9)	18	(652)
2017	(1,355)	67	(15)	(1,303)
2018	(2,649)	34	50	(2,565)
2019	(2,790)	(376)	541	(2,625)
TOTAL	**(7,382)**	**(283)**	**267**	**(7,398)**

The CAY and premium deficiency impacts are a result of the change in the selected loss ratios for accident year **2020** (decreased 1.6 points to 76.9%) and accident year **2021** (decreased 1.2 points to 79.3%).

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 preceding 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 a favourable change of $1.1 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 June 2020. Column [4] accounts for the change in the **discount rate** selected (decreased 39 basis point to **0.24%**), indicating an unfavourable impact of $4.5 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was $3.6 million at August 2020 – this compares to the $3.3 million change one would estimate as the impact by interpolation using the interest rate sensitivity table provided in last month's Actuarial Highlights.

Column [5] accounts for any changes to selected MfADs. The selected **investment rate MfAD** was **left unchanged at 25 basis points,** but the selected **claims development MfADs** at the coverage and accident year level were **updated** as per usual practice with the June 30 valuation, resulting in a favourable impact of $0.9 million, as margins on older PAYs were aged.

Consideration was given to recent legal decisions and changes in legislation / regulation as noted above and outlined in section 1.4.

1.3   Appointed Actuary and Hybrid Actuarial Services Model

Mr. Cosimo Pantaleo of Ernst & Young LLP (EY) was appointed as Actuary by the FA Board at its February 18, 2020 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 / Regulation[2]

There have been no changes in these descriptions since last month's Highlights, other than the 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 (i.e. within the last five years) 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

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[2]This 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.

(MIR). With the **most recent** valuation (June 30, 2020), consideration of 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, 2019).

1.5   Current Provision Summary

The following charts show the current levels of claim liabilities[3] booked by accident year[4]. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the associated dollar amounts for the components of the claim liabilities and the current projected amount of 2020 full year earned premium (the red hash-mark line) to provide some perspective.
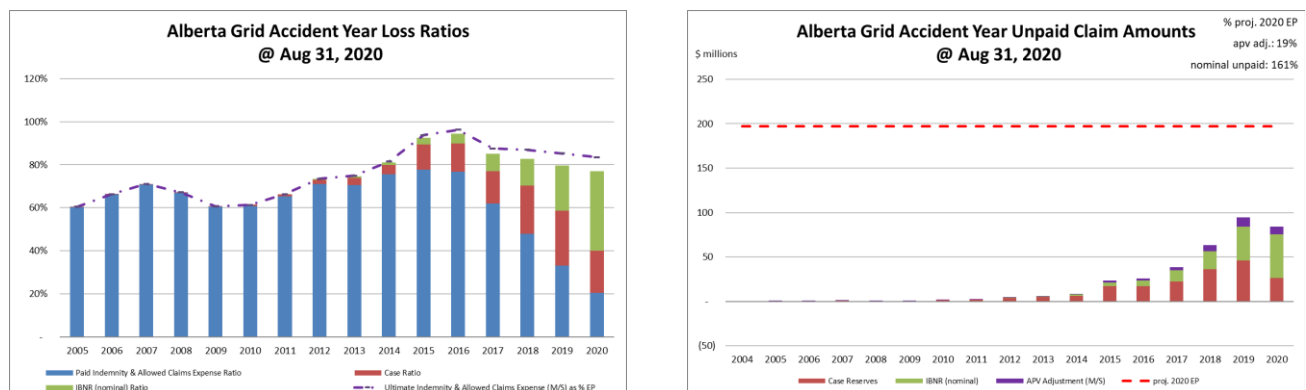
"M/S" refers to "Member Statement" values – that is, actuarial present value adjustments at the selected discount rate.

The current actuarial present value adjustments balance ($36.4 million – see the following table) represents 19% of the earned premium projected for the full year 2020 (see the upper right corner of the preceding chart on the right). 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	185,403	52.4%
ibnr	131,778	37.3%
M/S apv adjust.	36,362	10.3%
M/S total	353,543	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 66% of the IBNR balance relates to accident years 2019 and 2020 (see Exhibit B). Approximately 86% of the M/S total claim liabilities are related to accident years 2016-2020 inclusive (i.e. the most recent 5 accident years), and approximately 1% is related to accident years 2010 and prior (i.e. prior to the most recent 10 accident years).

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

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

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

premium liabilities ($000s)

	amt	%
unearned prem	102,258	115.4%
prem def/(dpac)	(22,136)	(25.0%)
M/S apv adjust.	8,479	9.6%
M/S total	88,601	100.0%

policy liabilities ($000s)

	amt	%
claim	317,181	71.7%
premium	80,122	18.1%
M/S apv adjust.	44,841	10.1%
M/S total	442,144	100.0%

2 Activity During the Month of August 2020

2.1 Recorded Premium and Claims Activity

The following table summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month's Operational Report[5].

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

Table 01	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
Accident Year	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	(0)	(0)	3,662	1,707	(2,508)	(2,027)	1,154	(320)
2018	(7)	(7)	792	139	(48)	(293)	744	(154)
2019	(41)	(41)	766	(627)	(363)	420	404	(206)
2020	16,523	(446)	4,904	(1,396)	2,054	(2,333)	6,958	(3,728)
TOTAL	16,473	(495)	10,125	(176)	(865)	(4,233)	9,259	(4,409)

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

Claims transaction activity is generally volatile; changes from one month to the next are anticipated due to this natural "process variance" (i.e. random variation). Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of the variance. Commentary from our review is provided in the sub-sections that follow.

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

The following charts 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.

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

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

*Alberta Grid RSP Actual **Earned Premium** by Calendar Month*
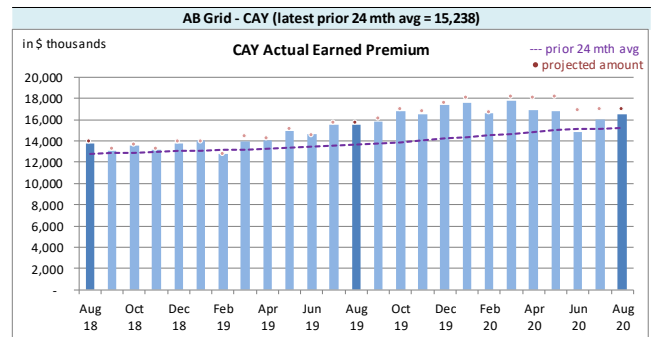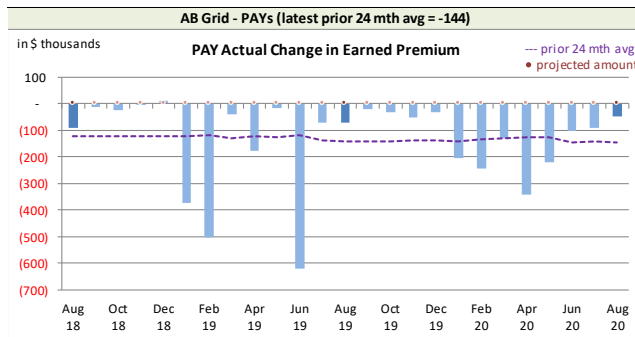
Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels generally occur at the beginning of each year.

On Latest	$ thousands	
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(144)	15,238
std dev	166	1,566
A-P <> std dev	8	1
% <> std dev	32.0%	4.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	no better	better

The associated variances between the actual changes and the projections from the previous month are shown in the following charts. **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*
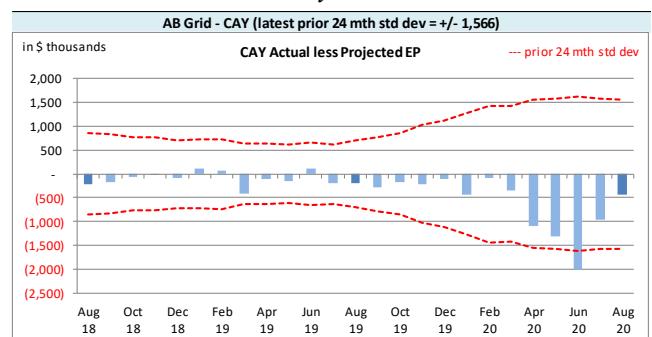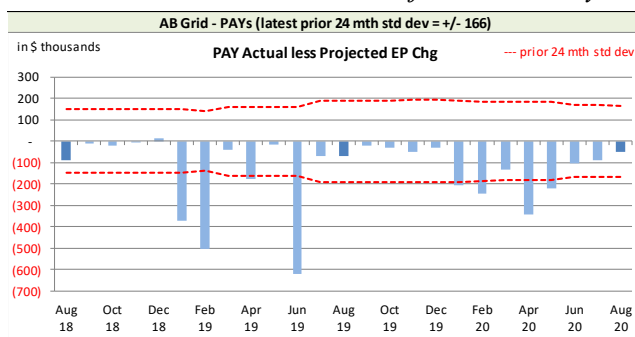
We project **earned premium** changes from known unearned premium balances and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias[7], with actuals generally lower than projected, although the magnitude is not high relative to monthly premium. In addition to the PAYs' bias, the CAY has also shown bias[8], with actuals being generally lower than projected, and while we modified our projections processes in response, bias still exists. Over time, we may consider other projection approaches to

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

[8]We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (25 in this case) and 50% probability of success. The rolling 25-month CAY variances at August 2020 has only 3 months where the actuals were higher than projected, and as the 95% confidence range is 8 to 17, bias continues to be indicated.

address the bias issue, but it has not currently deemed as a priority.

2.1.b   AvsP: Recorded Indemnity & Allowed Claims Expense

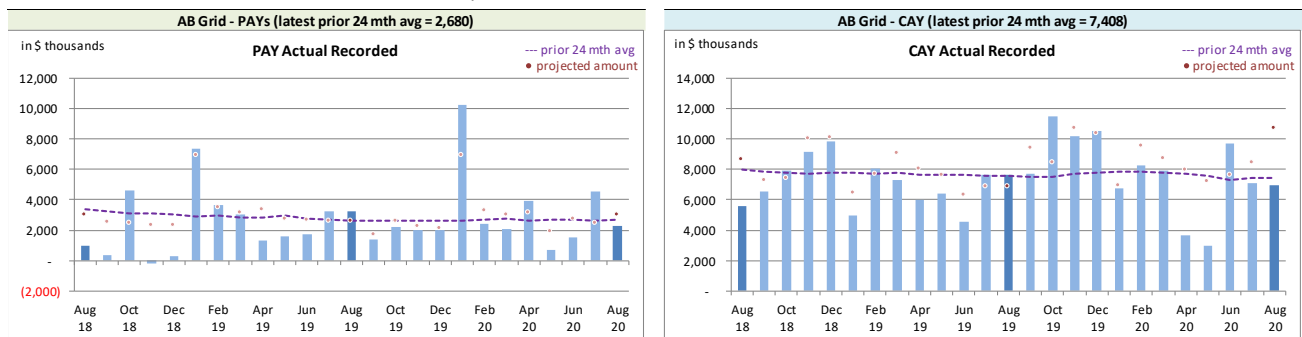The following charts show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

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

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

Alberta Grid RSP Actual vs Projected Summary: **Recorded** *Variances by Calendar Month*
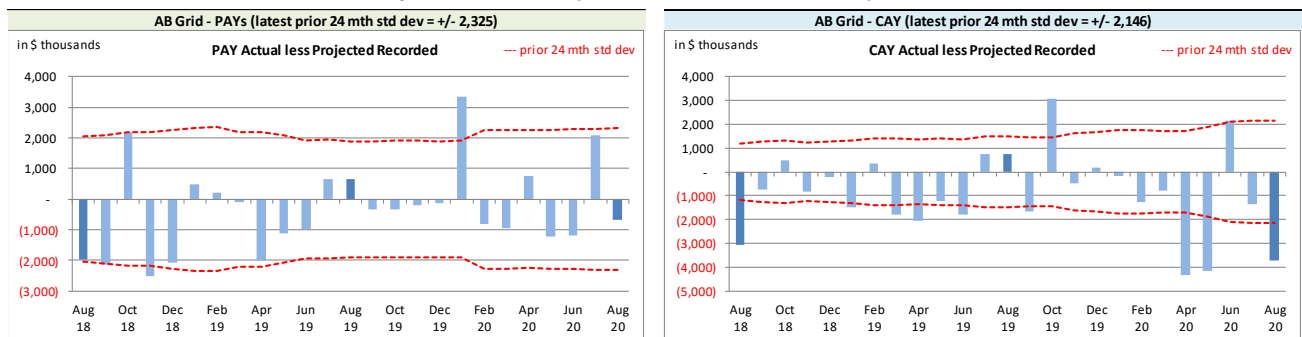
On Latest $ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	2,680	7,408
std dev	2,325	2,146
A-P <> std dev	4	11
% <> std dev	16.0%	44.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	better	worse

With respect to **recorded** indemnity & allowed claims expense activity, 16% 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[9] has not been indicated at a 95% confidence level on a rolling 25-month basis (8 of 25 variances were positive).

The current accident year (CAY) **recorded** variances fell inside of one standard deviation 44% of the

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[9] For the binomial distribution with 25 trials and an assumed 50% success probability, the 95% confidence range is 8 to 17 successes. That is, favourable or unfavourable counts of 0 to 7 or 18 to 25 out of 25 outcomes would suggest bias.

time over the last 25 calendar months (see preceding table on the left), suggesting that the projection process has performed worse than simply projecting the prior 24-month average amount. Bias has been indicated at a 95% confidence level on a lagging 24-month basis (7 of 25 variances were positive); however, on a lagging 12-month basis, bias has not been indicated (3 of latest 12 variances have been positive).

The CAY **recorded** variance was outside of the one standard deviation band this month (see preceding chart on the right). The lower than projected recorded activity was reviewed and 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 below related to levels influencing **recorded** activity. Note in particular the changes in the level of PAY beginning IBNR over the months, as a response to valuations and showing up as a beginning IBNR change one month after the valuation is implemented (i.e. April, June, September, and November).

*Alberta Grid RSP Levels that influence[10] **Recorded** activity by Calendar Month*
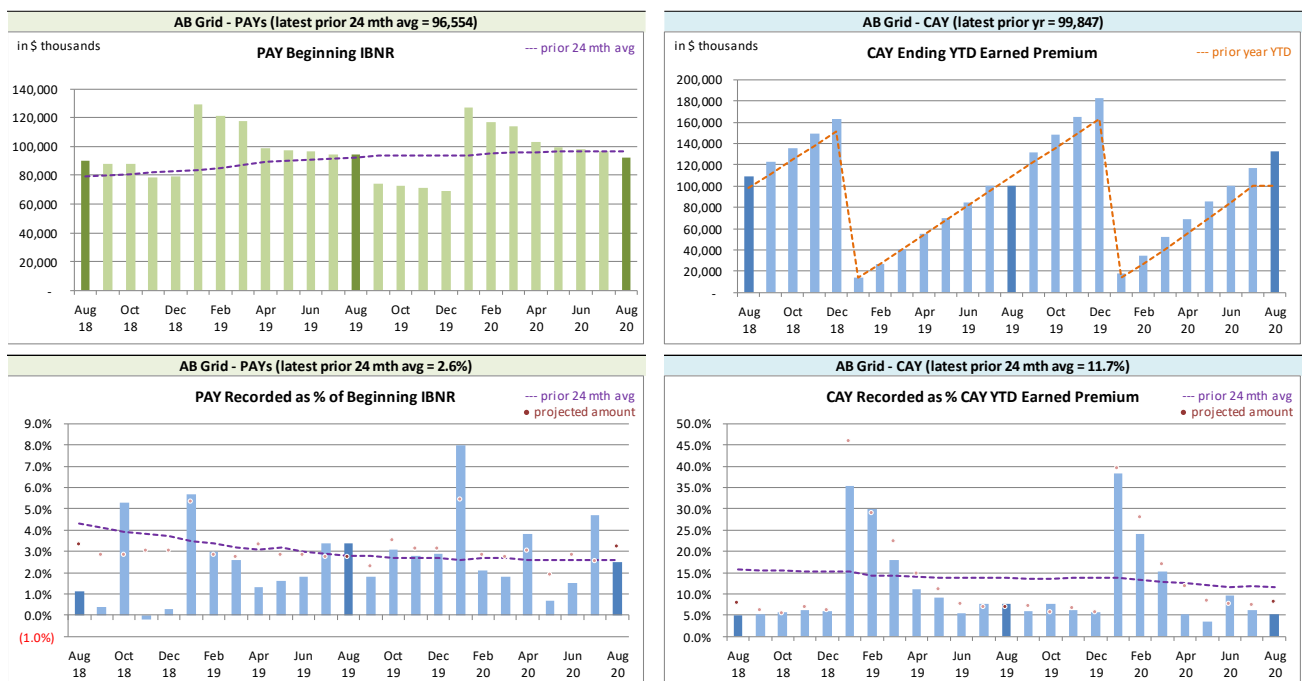
We track PAY beginning IBNR as **recorded** activity comes out of IBNR. Changes in the PAY beginning IBNR (see upper left of the preceding group of charts) occur for several possible reasons:

- to offset actual **recorded** activity (through loss ratio matching);

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

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

*Alberta Grid RSP Actual **Paid** activity by Calendar Month*
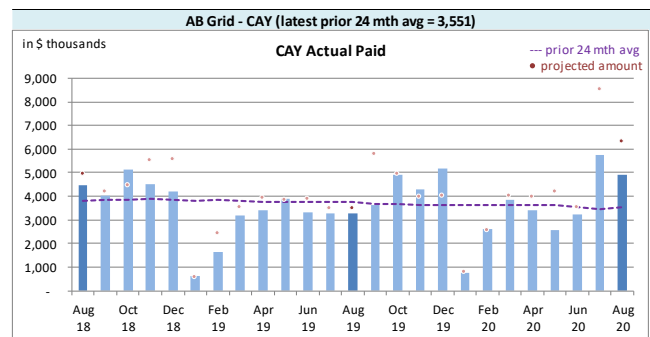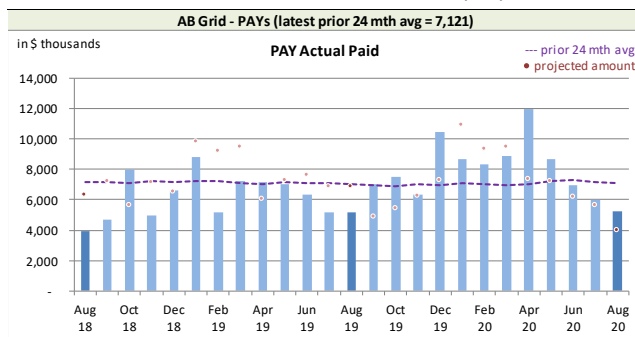
Paid activity variances from the previous month's projections shown in the following charts, including the prior 24-month standard deviation levels to show how the variances from projection compare with historical standard deviations.

*Alberta Grid RSP Actual vs Projected Summary: **Paid** Variances by Calendar Month*
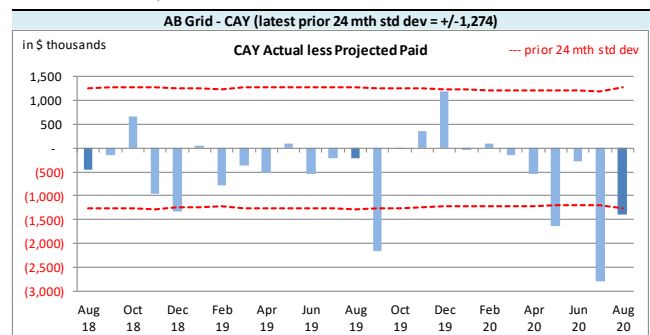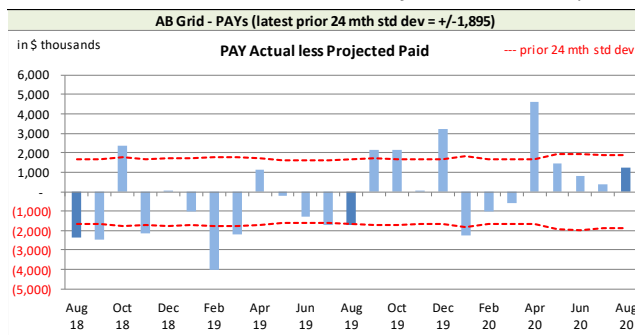
On Latest $ thousands		
Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	7,121	3,551
std dev	1,895	1,274
A-P <> std dev	13	5
% <> std dev	52.0%	20.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	worse	better

With respect to **paid** indemnity & allowed claims expense, 52% 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 (12 of 25 variances are

positive).

The current accident year (CAY) **paid** variances fell outside one standard deviation 20% of the time over the last 25 calendar months (see preceding table on the left), suggesting the projection process has performed better than simply projecting the prior 24-month average amount. Bias has been indicated at a 95% confidence level on a rolling 25-month basis (6 of 25 variances are positive)

The CAY **paid** variance was outside of the one standard deviation band this month (see preceding chart on the right). The lower than projected recorded activity was reviewed and attributed to process variance.

We have included, for reference, the following charts related to levels influencing **paid** activity.

*Alberta Grid RSP Levels that influence[11] **Paid** activity by Calendar Month*
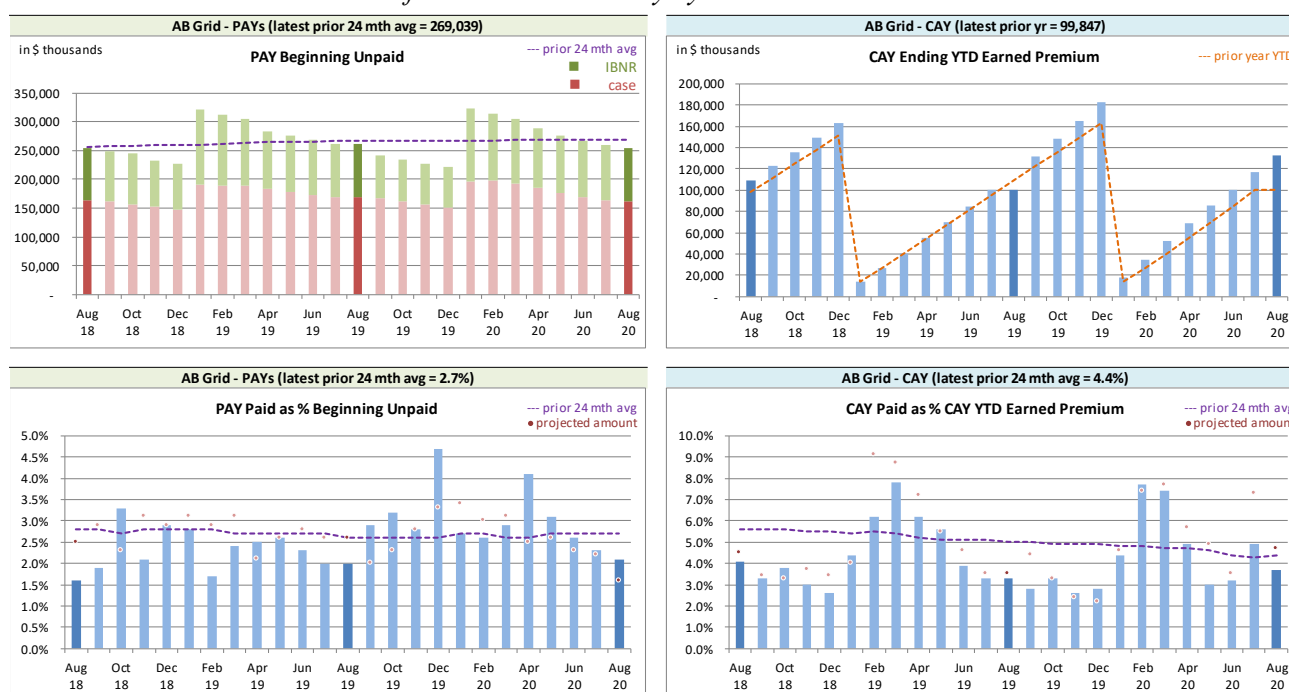
We track the PAY beginning unpaid balance (case and IBNR) as **paid** activity comes out of the unpaid balance. Changes in the PAY beginning unpaid balance (see upper left of the preceding group of charts) occur for several possible reasons:

- 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

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

valuation is implemented, i.e. the change will generally show in April, June, September, and November).

2.2 Actuarial Provisions

An ultimate loss ratio matching method (described in section 3) is used to determine the month's IBNR[12], 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 based on the applicable valuation.

The following table 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			actuarial present value adjustments					
	IBNR		Discount Amount		Provisions for Adverse Deviations		IBNR + actuarial present value adjustments	
Accident Year	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	24,953	(1,960)	(526)	920	10,657	(1,245)	35,084	(2,285)
2018	19,859	(2,273)	(337)	662	7,317	(312)	26,839	(1,923)
2019	38,031	(2,000)	(589)	953	11,027	(89)	48,469	(1,136)
2020	48,935	1,249	(527)	923	9,340	(100)	57,748	2,072
TOTAL	131,778	(4,984)	(1,979)	3,458	38,341	(1,746)	168,140	(3,272)

The IBNR provision is $5.0 million lower than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1, and due to the valuation implementation.

Exhibit G shows the accident years IBNR amount change from last month to this month are broken down:

  (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 following table 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

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

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:	(22,136)	(1,679)	8,479	927	(13,657)	(752)
balance as % unearned premium:	(21.6%)	(1.4%)	8.3%	0.8%	(13.4%)	(0.6%)
actual unearned premium:	102,258					
less projected:	1,211					

3   Ultimate Loss Ratio Matching Method

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

- (a)   Earned premium to-date
- (b)   Ultimate loss[13] 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 following table summarizes the calendar year-to-date results for indemnity & allowed claims expenses[14], 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 77.7% rather than 76.9% (the valuation ultimate ratio for accident year 2020), 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.)

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[13]"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).

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

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	(16,574)	(12.6%)	1,920	1.5%	(14,654)	(11.1%)	(6,444)	(4.0%)
CAY	102,326	77.7%	8,813	6.7%	111,139	84.4%	12,398	(1.3%)
TOTAL	85,751	65.1%	10,733	8.2%	96,484	73.3%	5,953	(5.3%)

("% EP" based on 2020 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 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 shown in the Operational Report as "Undiscounted IBNR".

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

6   EXHIBITS

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

EXHIBIT A   IBNR for Member Sharing – includes Actuarial Present Value Adjustments

EXHIBIT B   IBNR

EXHIBIT C   Premium Liabilities

EXHIBIT D   Projected Year-end Policy Liabilities

EXHIBIT E   Discount Rate & Margins for Adverse Deviations

EXHIBIT F   Interest Rate Sensitivity

EXHIBIT G   Components of IBNR Change During Month

EXHIBIT A

IBNR for Member Sharing – includes Actuarial Present Value Adjustments

TABLE EXHIBIT A	Amounts in $000s				

IBNR + M/S actuarial present value adjustments	Accident Year	Actual Jul. 2020	Actual Aug. 2020	Projected Sep. 2020	Projected Oct. 2020	Projected Dec. 2020
	2004	(71)	(70)	(66)	(65)	(61)
	2005	12	13	13	13	10
	2006	(119)	(118)	(111)	(109)	(102)
	2007	155	161	155	150	138
	2008	(105)	(107)	(101)	(99)	(94)
	2009	(174)	30	29	28	26
	2010	428	(297)	(278)	(272)	(259)
	2011	822	179	174	168	151
	2012	683	899	861	835	773
	2013	1,035	1,412	1,349	1,311	1,215
	2014	3,872	2,466	2,351	2,286	2,126
discount rate	2015	4,843	6,605	6,298	6,123	5,694
0.24%	2016	9,597	8,277	7,961	7,744	7,016
	2017	18,055	15,634	15,345	14,955	13,971
interest rate margin	2018	29,735	26,839	26,396	25,762	24,934
25 basis pts	2019	50,370	48,469	47,836	46,476	43,848
	2020	52,308	57,748	62,258	65,666	69,154
	TOTAL	171,446	168,140	170,470	170,972	168,540
	Change		(3,306)	2,330	502	

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

EXHIBIT B

IBNR

TABLE EXHIBIT B			Amounts in $000s				

IBNR	Ultimate Loss Ratio	Accident Year	Actual Jul. 2020	Actual Aug. 2020	Projected Sep. 2020	Projected Oct. 2020	Projected Dec. 2020
	51.6%	2004	(79)	(78)	(74)	(72)	(68)
	60.5%	2005	(27)	(27)	(26)	(25)	(24)
	66.3%	2006	(128)	(128)	(121)	(118)	(111)
	71.1%	2007	81	82	78	76	71
	67.1%	2008	(131)	(134)	(127)	(124)	(117)
	60.6%	2009	(184)	8	8	8	8
	61.3%	2010	290	(402)	(380)	(370)	(348)
	66.2%	2011	594	(6)	(6)	(6)	(6)
	73.3%	2012	319	487	461	449	423
	74.5%	2013	527	841	796	776	732
	81.0%	2014	3,028	1,690	1,599	1,559	1,469
	92.4%	2015	2,981	4,478	4,236	4,130	3,893
	94.5%	2016	7,280	5,962	5,694	5,552	5,021
	85.2%	2017	13,836	12,180	11,936	11,638	10,869
	82.7%	2018	23,030	19,859	19,541	19,052	18,522
	79.5%	2019	40,641	38,031	37,575	36,410	34,151
	76.9%	2020	45,052	48,935	52,642	55,276	56,459
		TOTAL	137,110	131,778	133,832	134,211	130,944
		Change		(5,332)	2,054	379	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C	Amounts in $000s				
Premium Liabilities	Actual Jul. 2020	Actual Aug. 2020	Projected Sep. 2020	Projected Oct. 2020	Projected Dec. 2020
(1) unearned premium (UP)	98,670	102,258	106,420	108,597	108,211
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	87.0%	86.6%	87.0%	87.3%	88.0%
(3) expected future costs {(1) x (2)}	85,826	88,601	92,533	94,800	95,264
(4) premium deficiency / (deferred policy acquisition cost)	(12,844)	(13,657)	(13,887)	(13,797)	(12,947)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	79.5%	78.4%	78.6%	78.9%	79.6%
(6) expected future costs {(1) x (5)}	78,472	80,122	83,677	85,728	86,146
(7) premium deficiency / (deferred policy acquisition cost)	(20,198)	(22,136)	(22,743)	(22,869)	(22,065)

EXHIBIT D

Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2020, broken down by component.

Alberta Grid	Projected Balances as at Dec. 31, 2020 ($000s)									
ending 2020	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	2	(68)	(66)	-	-	7	-	7	7	(59)
2005	364	(24)	340	-	-	34	-	34	34	374
2006	196	(111)	85	-	-	9	-	9	9	94
2007	597	71	668	(2)	2	67	-	67	67	735
2008	343	(117)	226	(1)	1	23	-	23	23	249
2009	175	8	183	(1)	1	18	-	18	18	201
2010	1,238	(348)	890	(4)	4	89	-	89	89	979
2011	1,583	(6)	1,577	(6)	6	158	(1)	157	157	1,734
2012	3,086	423	3,509	(14)	14	351	(1)	350	350	3,859
2013	4,118	732	4,850	(19)	19	485	(2)	483	483	5,333
2014	5,133	1,469	6,602	(33)	33	660	(3)	657	657	7,259
2015	14,205	3,893	18,098	(90)	90	1,810	(9)	1,801	1,801	19,899
2016	15,029	5,021	20,050	(100)	100	2,005	(10)	1,995	1,995	22,045
2017	20,338	10,869	31,207	(187)	187	3,121	(19)	3,102	3,102	34,309
2018	33,085	18,522	51,607	(310)	310	6,451	(39)	6,412	6,412	58,019
2019	43,969	34,151	78,120	(547)	547	9,765	(68)	9,697	9,697	87,817
PAYs (sub-total):	143,461	74,485	217,946	(1,314)	1,314	25,053	(152)	24,901	24,901	242,847
CAY (2020)	51,881	56,459	108,340	(758)	758	12,784	(89)	12,695	12,695	121,035
claims liabilities:	195,342	130,944	326,286	(2,072)	2,072	37,837	(241)	37,596	37,596	363,882

	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	108,211	(22,065)	86,146	(601)	601	9,182	(64)	9,118	9,118	95,264

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

			Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL
policy liabilities:			412,432	(2,673)	2,673	47,019	(305)	46,714	46,714	459,146

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, 2020 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Accident Year	Selected Claims Development MfADs (Jun. 30, 2020)			
	Third Party Liability	Accident Benefits	Other Coverages	Total
	Margins	Margins	Margins	Margins
2004	10.0%	10.0%	10.0%	10.0%
2005	10.0%	10.0%	10.0%	10.0%
2006	10.0%	10.0%	10.0%	10.0%
2007	10.0%	10.0%	10.0%	10.0%
2008	10.0%	10.0%	10.0%	10.0%
2009	10.0%	10.0%	10.0%	10.0%
2010	10.0%	10.0%	10.0%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	10.0%	10.0%	10.0%	10.0%
2014	10.0%	10.0%	10.0%	10.0%
2015	10.0%	10.0%	10.0%	10.0%
2016	10.0%	10.0%	9.8%	10.0%
2017	10.0%	10.0%	10.0%	10.0%
2018	12.5%	10.0%	12.5%	12.5%
2019	12.5%	10.0%	12.5%	12.5%
2020	12.2%	10.0%	5.8%	11.8%
2021	12.0%	10.0%	5.8%	10.7%
prem liab	12.0%	10.0%	5.8%	10.7%

| | discount rate: | 0.24% |
| | 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, 2020 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2020, and are based on more up-to-date information). We have included the most recent valuation selection (0.24%), the prior valuation assumption (0.63%) and the prior fiscal year end valuation assumption (1.44%) 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, 2020 projected Unpaid							
AY	0.00%	0.00%	0.24%	0.74%	1.24%	1.74%	0.63%	1.44%
2004	-	-	-	-	-	-	-	-
2005	178	178	178	178	178	177	178	178
2006	189	189	189	189	188	187	189	188
2007	653	653	653	649	646	642	650	644
2008	267	267	267	265	263	261	265	262
2009	260	260	260	258	256	254	259	256
2010	802	802	802	795	788	781	796	785
2011	1,827	1,827	1,826	1,810	1,794	1,778	1,814	1,788
2012	3,663	3,663	3,662	3,631	3,600	3,571	3,638	3,589
2013	5,386	5,386	5,384	5,338	5,293	5,250	5,348	5,276
2014	7,954	7,954	7,951	7,872	7,794	7,718	7,889	7,764
2015	19,130	19,130	19,121	18,909	18,699	18,495	18,956	18,616
2016	23,304	23,304	23,294	23,041	22,787	22,544	23,095	22,690
2017	35,167	35,167	35,148	34,735	34,324	33,927	34,827	34,163
2018	56,786	56,786	56,748	56,019	55,289	54,591	56,180	55,008
2019	87,769	87,769	87,701	86,436	85,180	83,980	86,720	84,701
2020	118,160	118,160	118,072	116,340	114,624	112,973	116,716	113,956
Total	361,495	361,495	361,256	356,465	351,703	347,129	357,520	349,864
	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	0.00%	0.00%	0.24%	0.74%	1.24%	1.74%	0.63%	1.44%
Total	239	239	-	(4,791)	(9,553)	(14,127)	(3,736)	(11,392)
	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	0.00%	0.00%	0.24%	0.74%	1.24%	1.74%	0.63%	1.44%
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	(0.6%)	-	(0.5%)
2006	-	-	-	-	(0.5%)	(1.1%)	-	(0.5%)
2007	-	-	-	(0.6%)	(1.1%)	(1.7%)	(0.5%)	(1.4%)
2008	-	-	-	(0.7%)	(1.5%)	(2.2%)	(0.7%)	(1.9%)
2009	-	-	-	(0.8%)	(1.5%)	(2.3%)	(0.4%)	(1.5%)
2010	-	-	-	(0.9%)	(1.7%)	(2.6%)	(0.7%)	(2.1%)
2011	0.1%	0.1%	-	(0.9%)	(1.8%)	(2.6%)	(0.7%)	(2.1%)
2012	0.0%	0.0%	-	(0.8%)	(1.7%)	(2.5%)	(0.7%)	(2.0%)
2013	0.0%	0.0%	-	(0.9%)	(1.7%)	(2.5%)	(0.7%)	(2.0%)
2014	0.0%	0.0%	-	(1.0%)	(2.0%)	(2.9%)	(0.8%)	(2.4%)
2015	0.0%	0.0%	-	(1.1%)	(2.2%)	(3.3%)	(0.9%)	(2.6%)
2016	0.0%	0.0%	-	(1.1%)	(2.2%)	(3.2%)	(0.9%)	(2.6%)
2017	0.1%	0.1%	-	(1.2%)	(2.3%)	(3.5%)	(0.9%)	(2.8%)
2018	0.1%	0.1%	-	(1.3%)	(2.6%)	(3.8%)	(1.0%)	(3.1%)
2019	0.1%	0.1%	-	(1.4%)	(2.9%)	(4.2%)	(1.1%)	(3.4%)
2020	0.1%	0.1%	-	(1.5%)	(2.9%)	(4.3%)	(1.1%)	(3.5%)
Total	0.1%	0.1%	-	(1.3%)	(2.6%)	(3.9%)	(1.0%)	(3.2%)
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

Page 1 of 2

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

RSP	**Alberta Grid**						
AccountCode Desc	**IBNR - Discounted**						M/S IBNR - in $000s

	Values						
AccYear	**Sum of Prior Month Actual Amount**	**Sum of Projected Change**	**Sum of Change Due to AvsP Variances**	**Sum of Change Due to Valuation Implementation**	**Sum of Total Change**	**Sum of % Total Change**	**Sum of Current Month Final Amount**
2004	(71)	3	(2)	-	1	(1.4%)	(70)
2005	12	1	(1)	1	1	8.3%	13
2006	(119)	6	(6)	1	1	(0.8%)	(118)
2007	155	(4)	5	5	6	3.9%	161
2008	(105)	4	(7)	1	(2)	1.9%	(107)
2009	(174)	7	(81)	278	204	(117.2%)	30
2010	428	(14)	(241)	(470)	(725)	(169.4%)	(297)
2011	822	(28)	28	(643)	(643)	(78.2%)	179
2012	683	(19)	4	231	216	31.6%	899
2013	1,035	(29)	41	365	377	36.4%	1,412
2014	3,872	(136)	93	(1,363)	(1,406)	(36.3%)	2,466
2015	4,843	(150)	282	1,630	1,762	36.4%	6,605
2016	9,597	(437)	(400)	(483)	(1,320)	(13.8%)	8,277
2017	18,055	(868)	456	(2,009)	(2,421)	(13.4%)	15,634
2018	29,735	(973)	132	(2,055)	(2,896)	(9.7%)	26,839
2019	50,370	(765)	239	(1,375)	(1,901)	(3.8%)	48,469
2020	52,308	3,368	3,488	(1,416)	5,440	10.4%	57,748
Grand Total	**171,446**	**(34)**	**4,030**	**(7,302)**	**(3,306)**	**(1.9%)**	**168,140**

EXHIBIT G

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

RSP	Alberta Grid						
AccountCode Desc	IBNR - Undiscounted						IBNR - in $000s

| AccYear | **Values** | | | | | | |
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
2004	(79)	3	(2)	-	1	(1.3%)	(78)
2005	(27)	1	(1)	-	-	-	(27)
2006	(128)	5	(5)	-	-	-	(128)
2007	81	(3)	4	-	1	1.2%	82
2008	(131)	5	(8)	-	(3)	2.3%	(134)
2009	(184)	7	(75)	260	192	(104.3%)	8
2010	290	(12)	(242)	(438)	(692)	(238.6%)	(402)
2011	594	(24)	24	(600)	(600)	(101.0%)	(6)
2012	319	(13)	(2)	183	168	52.7%	487
2013	527	(21)	41	294	314	59.6%	841
2014	3,028	(121)	86	(1,303)	(1,338)	(44.2%)	1,690
2015	2,981	(119)	296	1,320	1,497	50.2%	4,478
2016	7,280	(393)	(271)	(654)	(1,318)	(18.1%)	5,962
2017	13,836	(789)	476	(1,343)	(1,656)	(12.0%)	12,180
2018	23,030	(898)	148	(2,421)	(3,171)	(13.8%)	19,859
2019	40,641	(610)	173	(2,173)	(2,610)	(6.4%)	38,031
2020	45,052	2,634	3,378	(2,129)	3,883	8.6%	48,935
Grand Total	**137,110**	**(348)**	**4,020**	**(9,004)**	**(5,332)**	**(3.9%)**	**131,778**