ALBERTA GRID RISK SHARING POOL

MAY 2020 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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FACILITY Association

ACTUARIAL HIGHLIGHTS

RSP ALBERTA GRID

OPERATIONAL REPORT

MAY 2020

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1 Summary

Key Points

(a) The 2020 Q1 valuation was completed and implemented into the results this month, with a $5.9 million unfavourable impact, or 1.3% of beginning policy liabilities (policy liabilities ended at $439 million) and 7.0 points of year-to-date earned premium; the updated valuation loss ratios include an initial assessment of the incurred impacts associated with the COVID-19 pandemic;

(b) The month's Current Accident Year claims activities were lower than projected; the activity was reviewed and attributed to a reduction in written premium and physical damage claims experience further to the projection adjustment made last month in relation to the COVID-19 pandemic; and

(c) May's premium projections have been updated to reflect the most recent information provided by certain members. Updated claims assumptions are derived from the 2020 Q1 valuation; May's reported claims projections include an additional 10% decrease in Current Accident Year reported claims activity - reducing the projected reported activity over the next 2 months and spreading over the remainder of the year, reflecting a shift in Current Accident Year claims reporting and emergence patterns due to the COVID-19 pandemic impact.

1.1 Valuation Schedule (Fiscal Year 2020)

The May 2020 Operational Report incorporates the results of an updated valuation (as at March 31, 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

ALBERTA GRID RISK SHARING POOL FISCAL YEAR 2020 – SCHEDULE OF VALUATIONS			
Valuation Date	**Discount Rate (per annum)**	**Operational Report**	**Description of Changes**
Jun. 30, 2020	% mfad -- bp	Aug. 2020	update valuation
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. However, with disruption in the insurance environment from the COVID-19 pandemic, the current valuation (quarter ending March 31, 2020) includes a partial update of key assumptions to reflect this impact. Other assumptions are rolled-forward from the previous valuation.

1.2 New Valuation

A valuation of the Alberta Grid Risk Sharing Pool ("RSP") as at March 31, 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 Mar. 31, 2020[1]

AB Grid	unfav / (fav) for the month and ytd					
	IMPACT in $000s from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal [1]	apv adj. [2]	sub-tot [3]	apv adj. [4]	apv adj. [5]	TOTAL [6]
PAYs	(170)	101	(69)	7,448	-	7,379
CAY	(2,485)	(233)	(2,718)	1,753	-	(965)
Prem Def	(2,600)	(180)	(2,780)	2,261	-	(519)
TOTAL	(5,255)	(312)	(5,567)	11,462	-	5,895

[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.

As indicated in the preceding table, the incorporation of the new valuation had an estimated ***$5.9 million unfavourable impact*** on the month's net result from operations, adding an estimated 7.0 points (see following table) to the **year-to-date Combined Operating Ratio** to end at **92.5%**.

Summary of Impact (% YTD EP) of Implementing Result of Valuation as at Mar. 31, 2020

AB Grid	ytd EP 84,525 (actual)					
	IMPACT unfav / (fav) as % ytd EP from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal [1]	apv adj. [2]	sub-tot [3]	apv adj. [4]	apv adj. [5]	TOTAL [6]
PAYs	(0.2%)	0.1%	(0.1%)	8.8%	-	8.7%
CAY	(2.9%)	(0.3%)	(3.2%)	2.1%	-	(1.1%)
Prem Def	(3.1%)	(0.2%)	(3.3%)	2.7%	-	(0.6%)
TOTAL	(6.2%)	(0.4%)	(6.6%)	13.6%	-	7.0%

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 $5.3 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 **$0.1 million favourable** nominal variance or 0% of the PAYs nominal unpaid balance of $276.2 million determined at the end of last month (April 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 and 2019 Accident Benefits.

Valuation as at Mar. 31, 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	(263)	44	11	(208)
2016	(527)	4	3	(520)
2017	942	82	(23)	1,001
2018	(992)	(58)	56	(994)
2019	(1,789)	1,027	806	44
TOTAL	**(2,629)**	**1,099**	**853**	**(677)**

The CAY and premium deficiency impacts are a result of the change in the selected loss ratios for accident year **2020** (decreased 2.9 points to **78.5%**) and accident year **2021** (decreased 1.7 points to 80.5%).

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 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 $0.3 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 March 2020. Column [4] accounts for the change in the **discount rate** selected (decreased 100 basis point to **0.63%**), indicating an unfavourable impact of $11.5 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was $9.2 million at May 2020 – this compares to the $10.5 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).

COVID-19 impact

The current valuation includes a nominal $4.6 million favourable AY2020 adjustment related to the COVID-19 pandemic impact. This adjustment reflects a 30% reduction in a priori loss ratios for short-tailed physical damage coverages over the mid-March to end-of-June period.

Consideration of the impact of the COVID-19 pandemic was discussed with the FA Actuarial Committee and FA Audit & Risk Committee and included input and discussion with Industry stakeholders and uncertainties associated with the current RSP reporting environment, including:

- Limited experience as of Q1
- Potential delayed reporting
- Changes in claims frequency and severity
- Correlations between short-tailed coverages and long-tailed coverages
- Changes in premium volume due to refund/non-renewal/reduction in coverages
- Changes in member's participation in the Risk Sharing Pools

Given the uncertainties associated with the current RSP reporting environment, this adjustment will be revisited with the 2020 Q2 (June) valuation, which we anticipate will be implemented in the August 2020 Operational Report.

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 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 (MIR). With the **most recent** valuation (March 31, 2020), reform adjustments related to changes in the definition of minor injuries under the MIR, were included with the updated industry trend analysis (completed using industry data as at June 30, 2019), impacting the selection of ultimates.

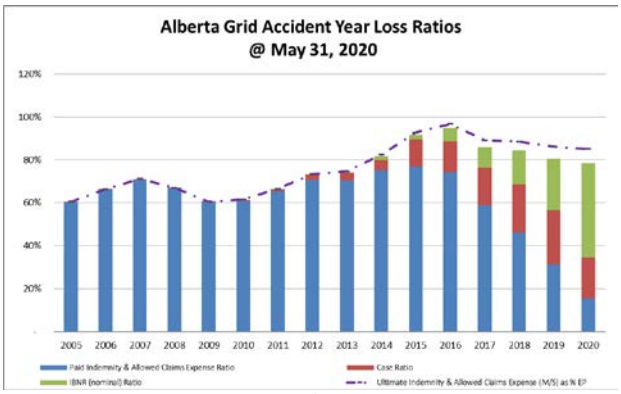
1.5 Current Provision Summary

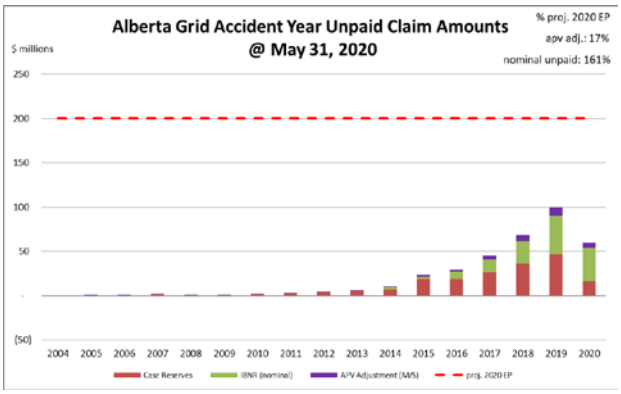
The following charts show the current levels of claim liabilities[3] booked by accident year[4]. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the associated dollar 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.

[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.

[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.





"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 ($34.1 million – see the following table) represents 17% 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	185,282	52.1%
ibnr	135,912	38.3%
M/S apv adjust.	34,128	9.6%
M/S total	355,322	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 59.6% of the IBNR balance relates to accident years 2019 and 2020 (see Exhibit B). Approximately 85% 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.

premium liabilities ($000s)

	amt	%
unearned prem	96,275	115.5%
prem def/(dpac)	(20,082)	(24.1%)
M/S apv adjust.	7,140	8.6%
M/S total	83,333	100.0%

policy liabilities ($000s)

	amt	%
claim	321,194	73.2%
premium	76,193	17.4%
M/S apv adjust.	41,268	9.4%
M/S total	438,655	100.0%

2 Activity During the Month of May 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].

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

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)	5,383	1,758	(6,085)	(3,282)	(701)	(1,523)
2018	(29)	(29)	1,627	344	(1,049)	(411)	579	(66)
2019	(191)	(191)	1,635	(648)	(832)	1,012	803	364
2020	16,782	(1,308)	2,572	(1,627)	425	(2,544)	2,997	(4,172)
TOTAL	16,562	(1,528)	11,217	(173)	(7,540)	(5,225)	3,677	(5,397)

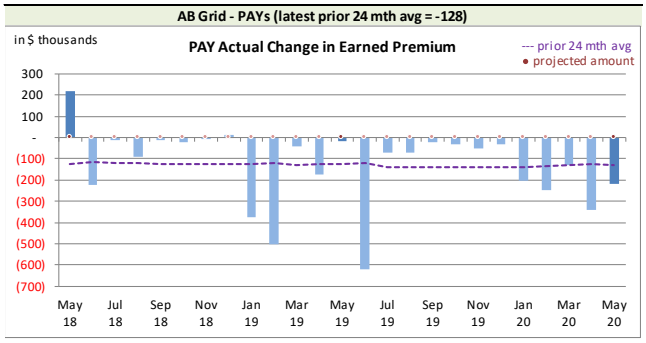
(Recorded transaction amounts exclude IBNR & other actuarial provisions)

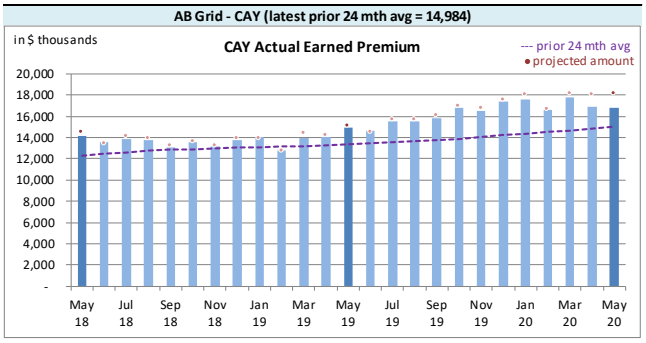
Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural "process variance" (i.e. random variation). Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of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

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

The 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.

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





On Latest $ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(128)	14,984
std dev	184	1,582
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

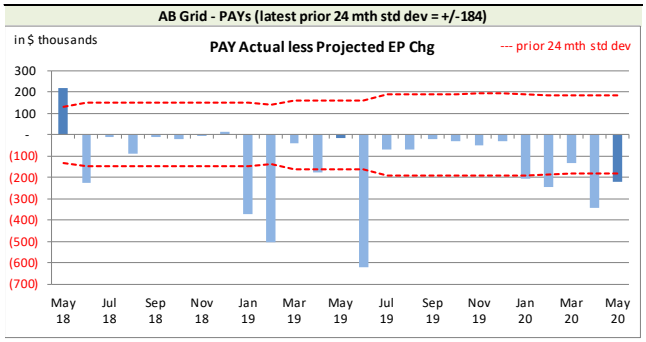
Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels generally occur at the beginning of each year.

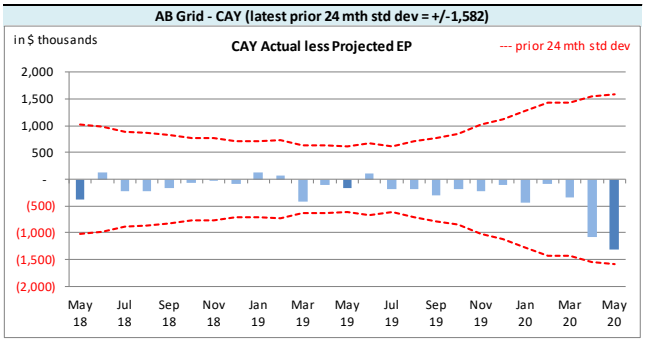
The associated variances between the actual changes and the projections from the previous month are shown in the following charts. **Earned premium** change projections are all attributed to the current accident year as the projection upload does not accept earned premium changes for other accident years.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

[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.

the actual **earned premium** change in relation to prior accident years.

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



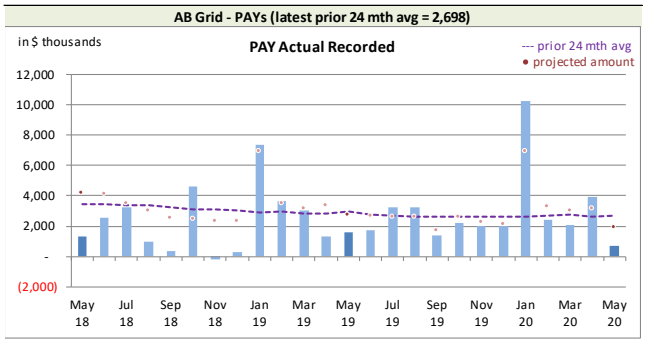


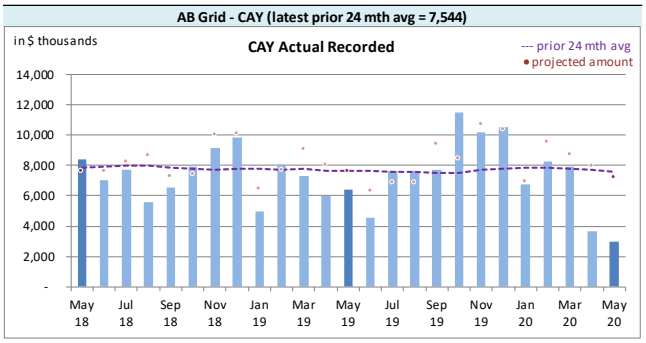
We project **earned premium** changes from known unearned premium balances and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias[7], with actuals generally lower than projected, although the 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 address the bias issue, but it is not currently deemed as 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*



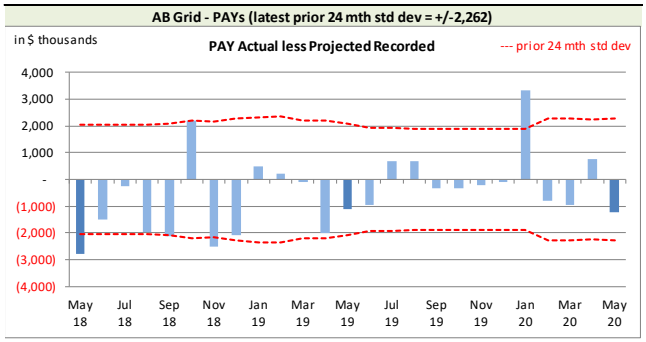


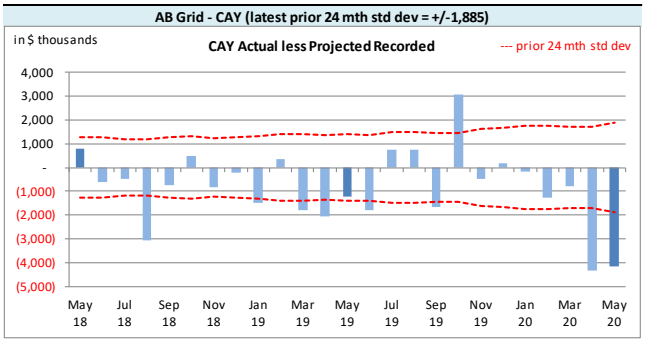
Recorded activity variances from the previous month's projections are shown in the following charts, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

[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 May 2020 has only 4 months where the actuals were higher than projected, and as the 95% confidence range is 8 to 17, bias continues to be indicated.

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





On Latest $ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	2,698	7,544
std dev	2,262	1,885
A-P <> std dev	5	9
% <> std dev	20.0%	36.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	better	no better

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[9] has been indicated at a 95% confidence level on a rolling 25-month basis (7 of 25 variances were positive); however, on a lagging 12-month basis, bias has not been indicated (4 of latest 12 variances have been positive).

The current accident year (CAY) **recorded** variances fell outside of one standard deviation 36% of the time over the last 25 calendar months (see preceding table on the left), suggesting that the projection process has performed no better 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 (4 of latest 12 variances have been positive).

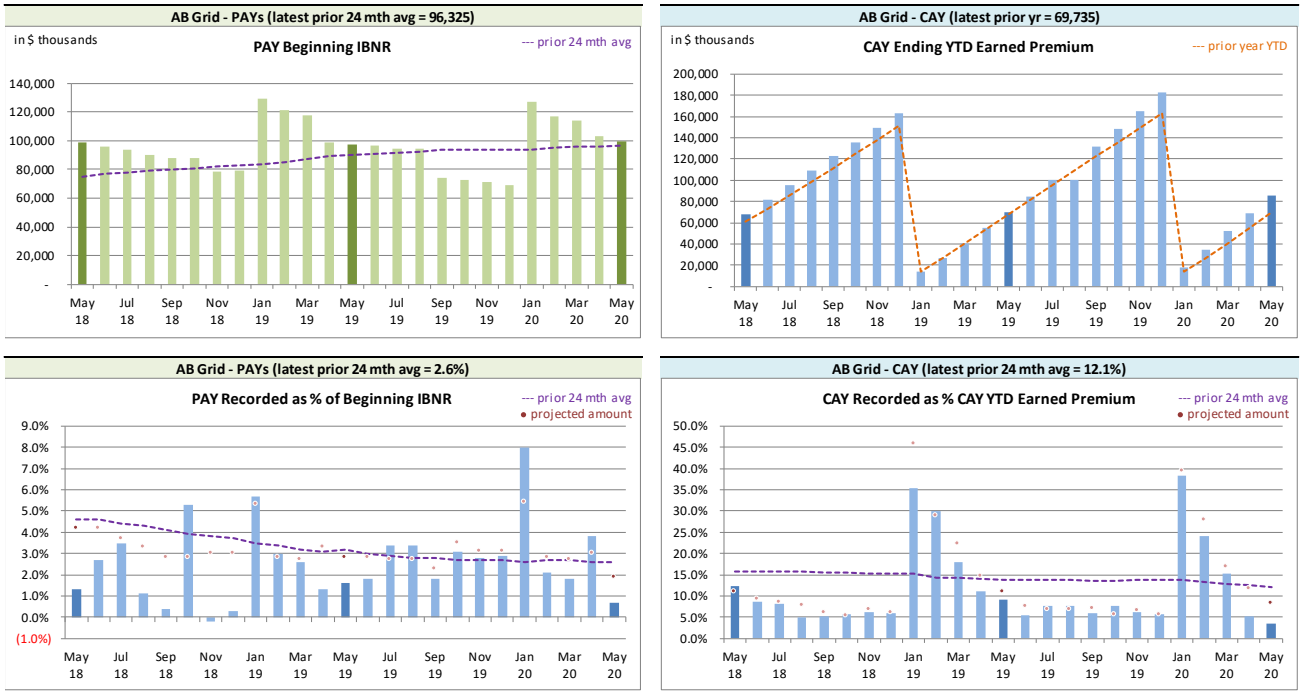
The CAY **recorded** variance was outside of the one standard deviation band this month (see preceding chart on the right). The significant lower than projected recorded activity was reviewed, and attributed to a reduction in written premium and physical damage claims experience in the month further to the projection adjustment made last month in relation to COVID-19 pandemic. The current month's projection of future **recorded** activity is based on updated assumptions under the new valuation (as at March 31, 2020) which includes key assumptions updated to reflect the COVID-19 impact.

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).

[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.

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 chart above) occur for several possible reasons:

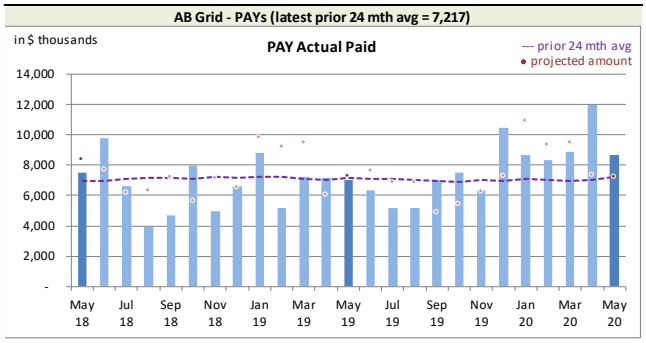
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a CAY becomes a PAY (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs' ultimates (will show up as a beginning IBNR change one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

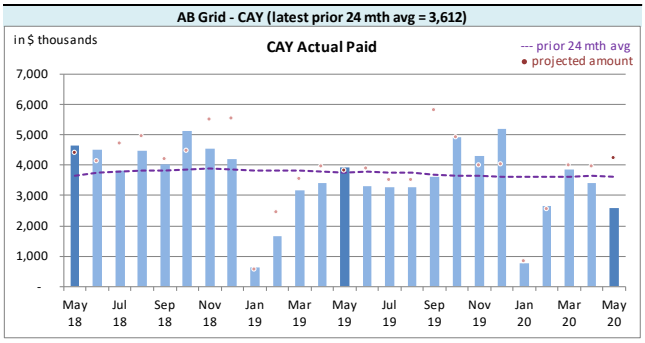
2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

The 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.

[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.

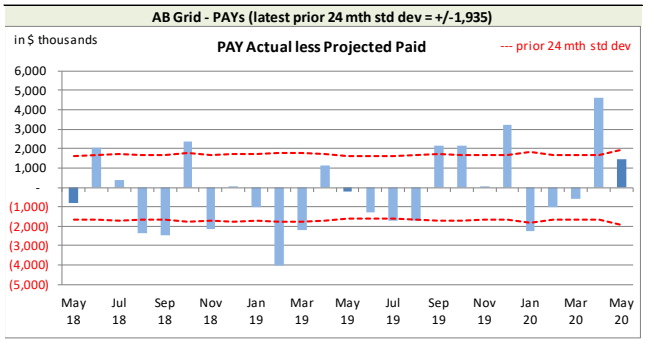
*Alberta Grid RSP Actual **Paid** activity by Calendar Month*

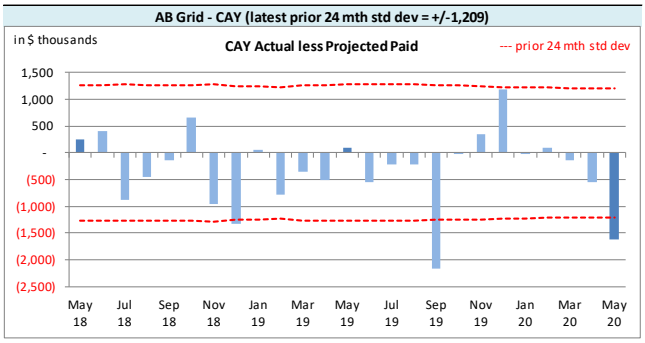




Paid activity variances from the previous month's projections are shown in the following charts, including the prior 24-month standard deviation levels to show how the variances from projection compare with historical standard deviations.

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





On Latest $ thousands		
Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	7,217	3,612
std dev	1,935	1,209
A-P <> std dev	14	3
% <> std dev	56.0%	12.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	worse	better

With respect to **paid** indemnity & allowed claims expense, 56% 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 (11 of 25 variances are positive).

The current accident year (CAY) **paid** variances fell outside one standard deviation 12% 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 not been indicated at a 95% confidence level on a rolling 25-month basis (8 of 25 variances are positive).

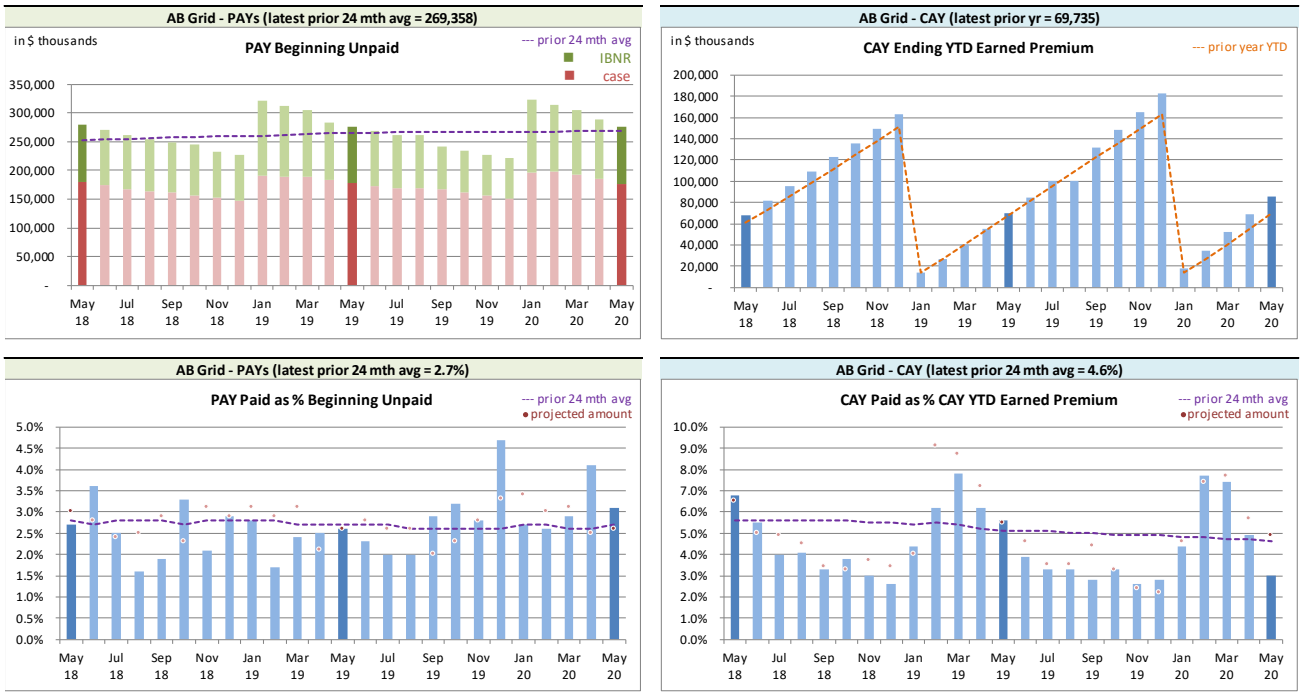
The CAY **paid** variance was outside of the one standard deviation band this month (see preceding chart on the right). The lower than projected paid activity was reviewed, and attributed to a reduction in written premium and physical damage claims experience in the month further to the projection

adjustment made last month in relation to COVID-19 pandemic.

As discussed with respect to projected CAY recorded claims activity, the current month's projection of future paid activity is based on updated assumptions under the new valuation (as at March 31, 2020) which includes key assumptions updated to reflect the COVID-19 impact.

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 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

[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.

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 were 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	29,631	1,960	(1,580)	2,506	13,057	139	41,108	4,605
2018	25,311	(927)	(1,046)	1,595	7,994	86	32,259	754
2019	43,319	(155)	(1,618)	2,567	11,664	519	53,365	2,931
2020	37,651	622	(1,026)	1,659	6,683	(99)	43,308	2,182
TOTAL	135,912	1,500	(5,270)	8,327	39,398	645	170,040	10,472

The IBNR provision is $1.5 million higher than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1, 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 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 obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance, and due to the valuation implementation.

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

Alberta Grid RSP Actual vs Projected Summary: 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:	(20,082)	(1,578)	7,140	1,783	(12,942)	205
balance as % unearned premium:	(20.9%)	(2.7%)	7.4%	2.2%	(13.4%)	(0.5%)
actual unearned premium:	96,275					
less projected:	(5,674)					

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 79.6% rather than 78.5% (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.)

[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	(9,506)	(11.2%)	2,842	3.4%	(6,664)	(7.9%)	6,508	11.5%
CAY	67,251	79.6%	5,657	6.7%	72,908	86.3%	13,508	(1.1%)
TOTAL	57,746	68.3%	8,499	10.1%	66,245	78.4%	20,016	10.4%

("% 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 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

IBNR + M/S actuarial present value adjustments

discount rate
0.63%

interest rate margin
25 basis pts

Amounts in $000s					
Accident Year	Actual Apr. 2020	Actual May. 2020	Projected Jun. 2020	Projected Jul. 2020	Projected Dec. 2020
2004	(71)	(71)	(67)	(67)	(55)
2005	17	12	12	10	8
2006	(102)	(119)	(113)	(112)	(93)
2007	(472)	300	288	280	234
2008	(74)	(105)	(100)	(99)	(83)
2009	(162)	(180)	(171)	(169)	(141)
2010	285	630	601	587	492
2011	329	812	776	758	635
2012	360	629	601	582	487
2013	1,622	1,036	990	964	805
2014	3,037	3,953	3,773	3,692	3,095
2015	4,608	4,645	4,435	4,323	3,618
2016	10,633	10,428	9,921	9,498	7,667
2017	17,585	19,138	18,586	18,246	15,568
2018	32,257	32,259	31,735	30,868	27,744
2019	51,052	53,365	52,114	51,010	45,563
2020	32,797	43,308	49,988	55,671	70,161
TOTAL	153,701	170,040	173,369	176,042	175,705
Change		16,339	3,329	2,673	

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 Apr. 2020	Actual May. 2020	Projected Jun. 2020	Projected Jul. 2020	Projected Dec. 2020
51.6%	2004	(79)	(79)	(75)	(74)	(61)
60.5%	2005	(22)	(27)	(26)	(26)	(22)
66.3%	2006	(113)	(129)	(123)	(121)	(101)
71.1%	2007	(580)	138	132	130	110
67.1%	2008	(97)	(131)	(125)	(123)	(103)
60.5%	2009	(173)	(189)	(180)	(177)	(148)
61.5%	2010	118	467	445	437	367
66.5%	2011	102	583	556	547	459
73.2%	2012	43	220	210	206	173
74.3%	2013	1,133	499	476	468	392
81.9%	2014	2,310	3,068	2,924	2,874	2,414
91.5%	2015	3,124	2,701	2,574	2,530	2,125
95.0%	2016	8,758	8,028	7,570	7,191	5,723
86.1%	2017	13,969	14,482	14,004	13,738	11,596
84.2%	2018	26,883	25,311	24,906	24,134	21,632
80.7%	2019	43,913	43,319	42,279	41,391	36,762
78.5%	2020	29,471	37,651	43,310	47,984	58,419
	TOTAL	128,760	135,912	138,857	141,109	139,737
	Change		7,152	2,945	2,252	

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 Apr. 2020	Actual May. 2020	Projected Jun. 2020	Projected Jul. 2020	Projected Dec. 2020
(1) unearned premium (UP)	98,202	96,275	96,296	95,169	106,181
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	87.0%	86.6%	86.7%	86.9%	88.4%
(3) expected future costs {(1) x (2)}	85,474	83,333	83,518	82,741	93,845
(4) premium deficiency / (deferred policy acquisition cost)	(12,728)	(12,942)	(12,778)	(12,428)	(12,336)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	81.8%	79.1%	79.3%	79.5%	80.8%
(6) expected future costs {(1) x (5)}	80,318	76,193	76,363	75,652	85,805
(7) premium deficiency / (deferred policy acquisition cost)	(17,884)	(20,082)	(19,933)	(19,517)	(20,376)

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	-	(61)	(61)	-	-	6	-	6	6	(55)
2005	334	(22)	312	(1)	-	31	-	31	30	342
2006	176	(101)	75	-	-	8	-	8	8	83
2007	1,212	110	1,322	(11)	4	132	(1)	131	124	1,446
2008	310	(103)	207	(2)	1	21	-	21	20	227
2009	226	(148)	78	(1)	-	8	-	8	7	85
2010	994	367	1,361	(15)	5	136	(1)	135	125	1,486
2011	1,438	459	1,897	(21)	9	190	(2)	188	176	2,073
2012	3,243	173	3,416	(38)	14	342	(4)	338	314	3,730
2013	4,096	392	4,488	(49)	18	449	(5)	444	413	4,901
2014	5,005	2,414	7,419	(89)	37	742	(9)	733	681	8,100
2015	14,359	2,125	16,484	(231)	99	1,648	(23)	1,625	1,493	17,977
2016	15,977	5,723	21,700	(304)	108	2,170	(30)	2,140	1,944	23,644
2017	23,202	11,596	34,798	(522)	209	4,350	(65)	4,285	3,972	38,770
2018	32,511	21,632	54,143	(920)	379	6,768	(115)	6,653	6,112	60,255
2019	41,999	36,762	78,761	(1,418)	551	9,845	(177)	9,668	8,801	87,562
PAYs (sub-total):	145,082	81,318	226,400	(3,622)	1,434	26,846	(432)	26,414	24,226	250,626
CAY (2020)	53,682	58,419	112,101	(2,130)	785	13,340	(253)	13,087	11,742	123,843
claims liabilities:	198,764	139,737	338,501	(5,752)	2,219	40,186	(685)	39,501	35,968	374,469
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	106,181	(20,376)	85,805	(1,539)	598	9,146	(165)	8,981	8,040	93,845
									*Total may not be sum of parts, as apvs apply to future costs within UPR	
policy liabilities:			**424,306**	**(7,291)**	**2,817**	**49,332**	**(850)**	**48,482**	**44,008**	**468,314**

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.

Selected Claims Development MfADs (Mar. 31, 2020)

Accident Year	Third Party Liability	Accident Benefits	Other Coverages	Total
	Margins	Margins	Margins	Margins
2004	10.0%	10.0%	10.0%	10.0%
2005	10.0%	10.0%	10.0%	10.0%
2006	10.0%	10.0%	10.0%	10.0%
2007	10.0%	10.0%	10.0%	10.0%
2008	10.0%	10.0%	10.0%	10.0%
2009	10.0%	10.0%	10.0%	10.0%
2010	10.0%	10.0%	10.0%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	10.0%	10.0%	9.6%	10.0%
2014	10.0%	10.0%	9.9%	10.0%
2015	10.0%	10.0%	9.8%	10.0%
2016	10.0%	10.0%	10.0%	10.0%
2017	12.5%	10.0%	12.5%	12.5%
2018	12.5%	10.0%	12.5%	12.5%
2019	12.5%	10.0%	12.5%	12.5%
2020	12.2%	10.0%	7.5%	11.9%
2021	11.9%	10.0%	5.9%	10.7%
prem liab	11.9%	10.0%	5.9%	10.7%

discount rate:	0.63%
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 (0.63%), the prior valuation assumption (1.63%) 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%	0.13%	0.63%	1.13%	1.63%	2.13%	1.63%	1.44%
2004	-	-	-	-	-	-	-	-
2005	146	146	146	146	146	146	146	146
2006	167	167	167	166	165	165	165	166
2007	1,436	1,436	1,429	1,420	1,412	1,403	1,412	1,415
2008	236	236	235	233	231	230	231	232
2009	186	186	185	184	182	181	182	183
2010	1,546	1,546	1,535	1,521	1,508	1,495	1,508	1,513
2011	2,288	2,287	2,272	2,253	2,234	2,216	2,234	2,241
2012	3,162	3,161	3,140	3,113	3,087	3,062	3,087	3,097
2013	4,966	4,965	4,931	4,889	4,848	4,808	4,848	4,864
2014	9,132	9,130	9,060	8,975	8,889	8,806	8,889	8,922
2015	19,262	19,257	19,090	18,882	18,679	18,480	18,679	18,756
2016	25,461	25,454	25,230	24,950	24,676	24,409	24,676	24,779
2017	38,387	38,374	38,005	37,548	37,099	36,663	37,099	37,270
2018	60,008	59,988	59,352	58,571	57,813	57,071	57,813	58,102
2019	90,172	90,132	89,090	87,789	86,536	85,300	86,536	87,008
2020	134,333	134,276	132,660	130,659	128,721	126,828	128,721	129,446
Total	390,888	390,741	386,527	381,299	376,226	371,263	376,226	378,140
	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%	0.13%	0.63%	1.13%	1.63%	2.13%	1.63%	1.44%
Total	4,361	4,214	-	(5,228)	(10,301)	(15,264)	(10,301)	(8,387)
	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%	0.13%	0.63%	1.13%	1.63%	2.13%	1.63%	1.44%
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	-	-	-	(0.6%)	(1.2%)	(1.2%)	(1.2%)	(0.6%)
2007	0.5%	0.5%	-	(0.6%)	(1.2%)	(1.8%)	(1.2%)	(1.0%)
2008	0.4%	0.4%	-	(0.9%)	(1.7%)	(2.1%)	(1.7%)	(1.3%)
2009	0.5%	0.5%	-	(0.5%)	(1.6%)	(2.2%)	(1.6%)	(1.1%)
2010	0.7%	0.7%	-	(0.9%)	(1.8%)	(2.6%)	(1.8%)	(1.4%)
2011	0.7%	0.7%	-	(0.8%)	(1.7%)	(2.5%)	(1.7%)	(1.4%)
2012	0.7%	0.7%	-	(0.9%)	(1.7%)	(2.5%)	(1.7%)	(1.4%)
2013	0.7%	0.7%	-	(0.9%)	(1.7%)	(2.5%)	(1.7%)	(1.4%)
2014	0.8%	0.8%	-	(0.9%)	(1.9%)	(2.8%)	(1.9%)	(1.5%)
2015	0.9%	0.9%	-	(1.1%)	(2.2%)	(3.2%)	(2.2%)	(1.7%)
2016	0.9%	0.9%	-	(1.1%)	(2.2%)	(3.3%)	(2.2%)	(1.8%)
2017	1.0%	1.0%	-	(1.2%)	(2.4%)	(3.5%)	(2.4%)	(1.9%)
2018	1.1%	1.1%	-	(1.3%)	(2.6%)	(3.8%)	(2.6%)	(2.1%)
2019	1.2%	1.2%	-	(1.5%)	(2.9%)	(4.3%)	(2.9%)	(2.3%)
2020	1.3%	1.2%	-	(1.5%)	(3.0%)	(4.4%)	(3.0%)	(2.4%)
Total	1.1%	1.1%	-	(1.4%)	(2.7%)	(3.9%)	(2.7%)	(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

	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)	2	(2)	-	-	-	(71)
2005	17	-	(6)	1	(5)	(29.4%)	12
2006	(102)	2	(20)	1	(17)	16.7%	(119)
2007	(472)	12	72	688	772	(163.6%)	300
2008	(74)	1	(37)	5	(31)	41.9%	(105)
2009	(162)	2	(22)	2	(18)	11.1%	(180)
2010	285	(8)	319	34	345	121.1%	630
2011	329	(11)	448	46	483	146.8%	812
2012	360	(12)	5	276	269	74.7%	629
2013	1,622	(45)	(13)	(528)	(586)	(36.1%)	1,036
2014	3,037	(83)	645	354	916	30.2%	3,953
2015	4,608	(130)	119	48	37	0.8%	4,645
2016	10,633	(366)	98	63	(205)	(1.9%)	10,428
2017	17,585	(456)	(227)	2,236	1,553	8.8%	19,138
2018	32,257	(752)	10	744	2	-	32,259
2019	51,052	(618)	(478)	3,409	2,313	4.5%	53,365
2020	32,797	8,329	3,147	(965)	10,511	32.0%	43,308
Grand Total	**153,701**	**5,867**	**4,058**	**6,414**	**16,339**	**10.6%**	**170,040**

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)	2	(2)	-	-	-	(79)
2005	(22)	1	(6)	-	(5)	22.7%	(27)
2006	(113)	3	(19)	-	(16)	14.2%	(129)
2007	(580)	15	87	616	718	(123.8%)	138
2008	(97)	2	(36)	-	(34)	35.1%	(131)
2009	(173)	4	(20)	-	(16)	9.2%	(189)
2010	118	(3)	352	-	349	295.8%	467
2011	102	(3)	484	-	481	471.6%	583
2012	43	(1)	(5)	183	177	411.6%	220
2013	1,133	(28)	(19)	(587)	(634)	(56.0%)	499
2014	2,310	(58)	672	144	758	32.8%	3,068
2015	3,124	(78)	96	(441)	(423)	(13.5%)	2,701
2016	8,758	(315)	108	(523)	(730)	(8.3%)	8,028
2017	13,969	(363)	(168)	1,044	513	3.7%	14,482
2018	26,883	(645)	41	(968)	(1,572)	(5.8%)	25,311
2019	43,913	(439)	(517)	362	(594)	(1.4%)	43,319
2020	29,471	7,558	3,107	(2,485)	8,180	27.8%	37,651
Grand Total	**128,760**	**5,652**	**4,155**	**(2,655)**	**7,152**	**5.6%**	**135,912**