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ALBERTA NON-GRID RISK SHARING POOL

APRIL 2019 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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FACILITY Association

ACTUARIAL HIGHLIGHTS

RSP ALBERTA NON-GRID

OPERATIONAL REPORT

APRIL 2019

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2019)

The April 2019 Operational Report leverages actuarial assumptions consistent with last month (that is, it does not reflect the results of an updated valuation). The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 2019.

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

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

1.2 Appointed Actuary and Hybrid Actuarial Services Model

Liam McFarlane of Ernst & Young LLP is Facility Association's Appointed Actuary (effective as of June 1, 2013).

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

1.3 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation[1]

There have been no changes in these descriptions since last month's Highlights.

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

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

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

1.4 Current Provision Summary

The charts immediately below show the current levels of claim liabilities[2] booked by accident year[3]. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the associated dollar amounts for the components of the claim liabilities and the current projected amount of 2019 full year earned premium (the red hash-mark line) to provide some perspective.
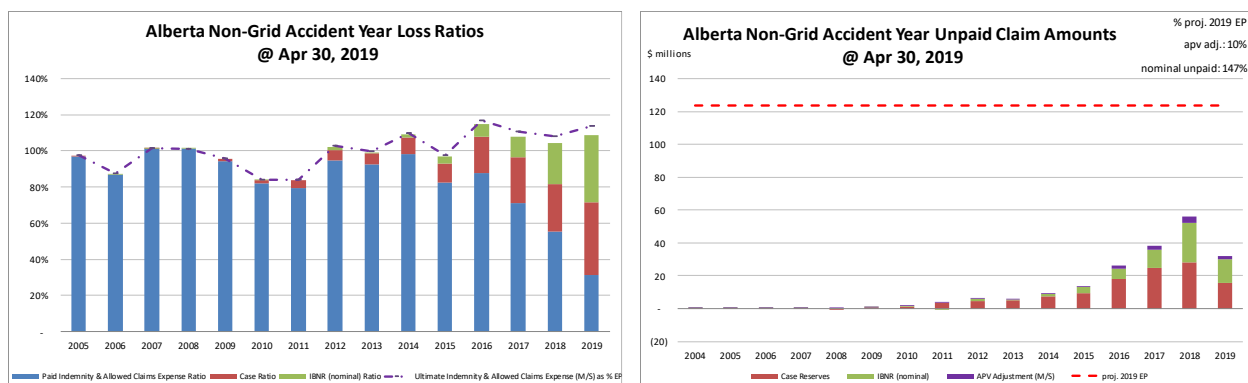
"M/S" refers to "Member Statement" values – that is, actuarial present value adjustments at the selected discount rate.

The current actuarial present value adjustments balance ($12.4 million – see table at the top of the next page) represents 10% of the earned premium projected for the full year 2019 (see the upper

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

[2]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.

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

right corner of the right chart at the bottom of the prior page). 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	119,182	61.1%
ibnr	63,390	32.5%
M/S apv adjust.	12,400	6.4%
M/S total	194,972	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 61% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 85% of the M/S total claim liabilities are related to accident years 2015-2019 inclusive (i.e. the most recent 5 accident years), and approximately 1% is related to accident years 2009 and prior (i.e. prior to the most recent 10 accident years).

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

premium liabilities ($000s)

	amt	%
unearned prem	58,268	86.7%
prem def/(dpac)	5,379	8.0%
M/S apv adjust.	3,561	5.3%
M/S total	67,208	100.0%

policy liabilities ($000s)

	amt	%
claim	182,572	69.6%
premium	63,647	24.3%
M/S apv adjust.	15,961	6.1%
M/S total	262,180	100.0%

2 Activity During the Month of April 2019

2.1 Recorded Premium and Claims Activity

The table immediately below summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month's Operational Report[4].

Alberta Non-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)	1,871	548	(2,153)	(1,028)	(282)	(480)
2017	(102)	(102)	632	(101)	138	512	770	411
2018	(458)	(458)	201	(1,385)	(1,596)	(243)	(1,396)	(1,629)
2019	9,790	(323)	4,299	150	1,702	(1,598)	6,001	(1,448)
TOTAL	9,230	(883)	7,002	(789)	(1,909)	(2,357)	5,093	(3,146)

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

It is typically unusual to see actual earned premium transactions affecting accident years older than the first prior accident year – the changes in 2017 and prior accident year reflect activity undertaken by a member to remove ineligible risks from the RSP.

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

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

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

The charts immediately below show actual **earned premium**[5] activity in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

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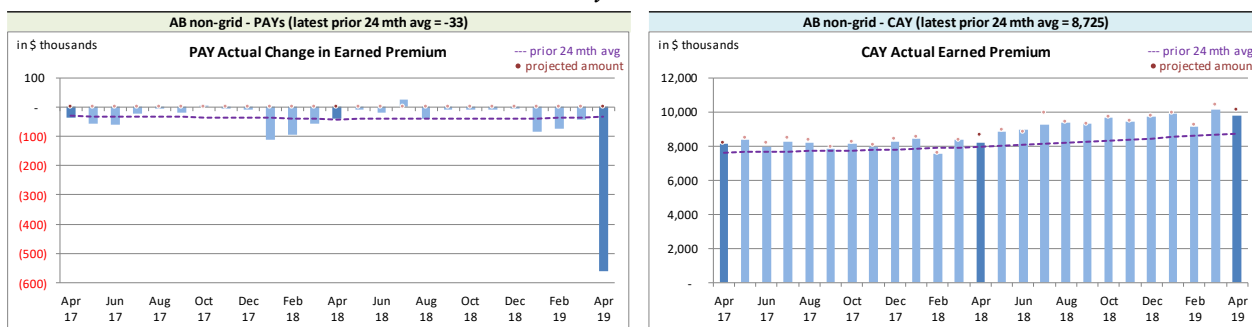

Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels generally occur at the beginning of each year.

April 2019 included an unusually high amount of prior accident year earned premium activity, related to a member removing risks from the RSP. Management is investigating these transactions.

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

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

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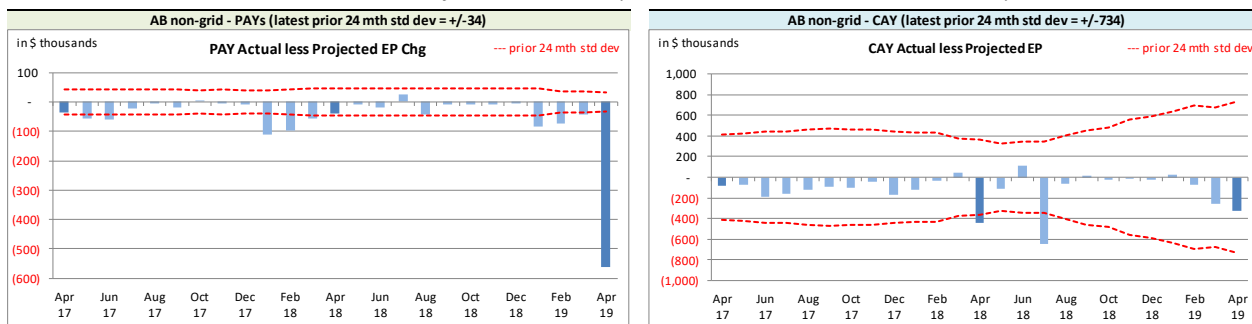
[5]Premium is earned on a daily basis based on the transaction term measured in days. As a result, months with 31 days earned relatively more than those with 30 days, and February earns the least.

| On Latest $ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(33)	8,725
std dev	34	734
A-P <> std dev	9	2
% <> std dev	36.0%	8.0%
norm <> std dev	31.7%	31.7%

We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias[6], 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[7], with actuals being generally lower than projected, modifications to our projections processes in response appears to have had a favourable impact, bias still exists. Over time, we may consider other projection approaches to narrow monthly variance levels, but it is not currently deemed a priority.

2.1.b   AvsP: Recorded Indemnity & Allowed Claims Expense

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

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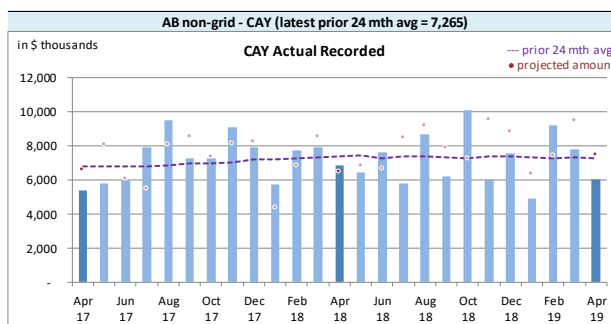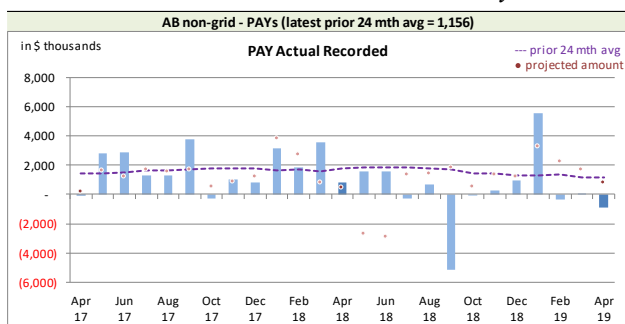
Recorded activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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

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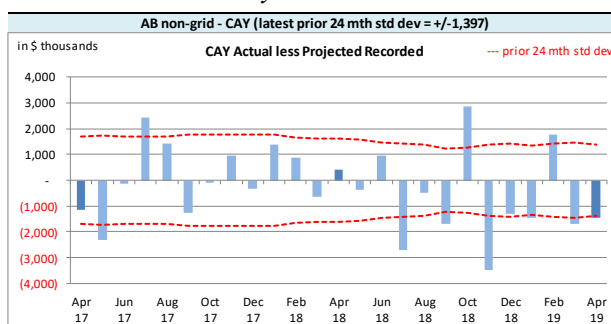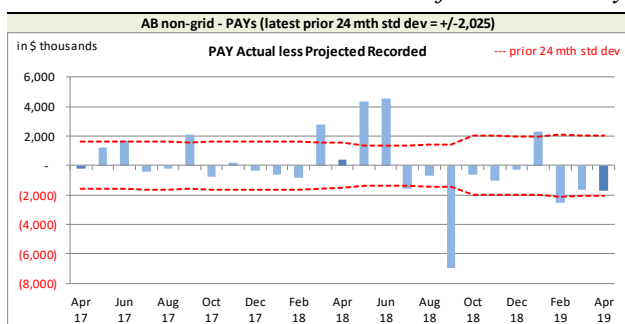
[6]The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

[7]We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (24 in this case) and 50% probability of success. The 24-month variances at April 2019 had only 4 months where the actuals was higher than projected, and as the 95% confidence range is 7 to 17, bias continues to be indicated.

On Latest $ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	1,156	7,265
std dev	2,025	1,397
A-P <> std dev	9	10
% <> std dev	36.0%	40.0%
norm <> std dev	31.7%	31.7%

With respect to **recorded** indemnity & allowed claims expense activity, 36% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **recorded** amounts (see table on left), suggesting the projection process has performed no better than simply projecting the prior 24-month average amount (assuming it follows a normal distribution). We have implemented changes in an attempt to address this. Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

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

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

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

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

*Alberta non-Grid RSP Levels that influence[8] **Recorded** activity by Calendar Month*
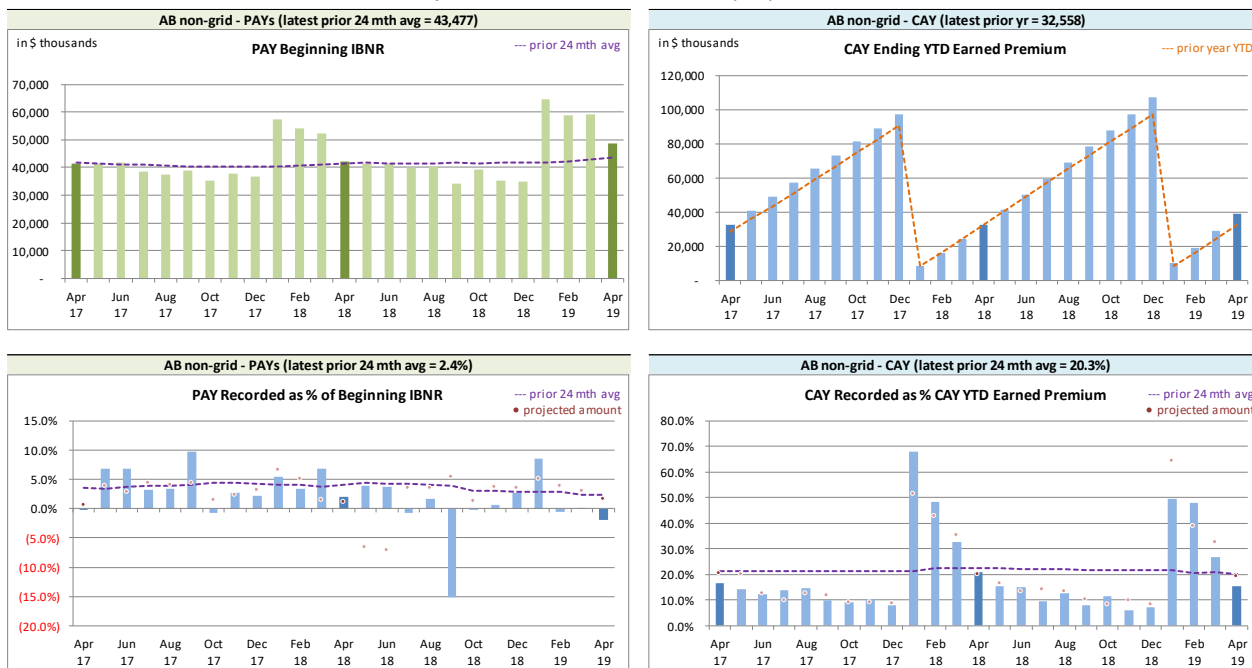
We track beginning prior accident years' IBNR as **recorded** activity "comes out of" IBNR. Changes in the prior accident years' beginning IBNR (see upper left chart above) occur for several possible reasons:

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

- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and

- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate (will show up as a beginning IBNR change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

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

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[8]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 non-Grid RSP Actual **Paid** activity by Calendar Month*
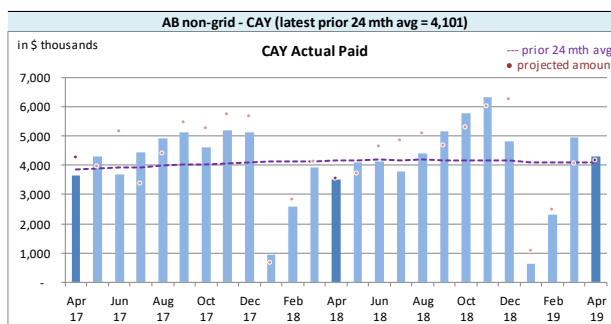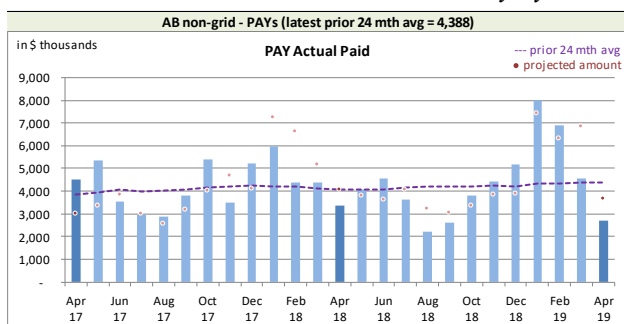
Paid activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

*Alberta non-Grid RSP Actual vs Projected Summary: **Paid** Variances by Calendar Month*
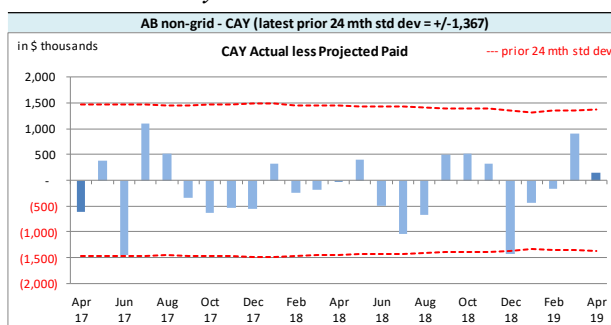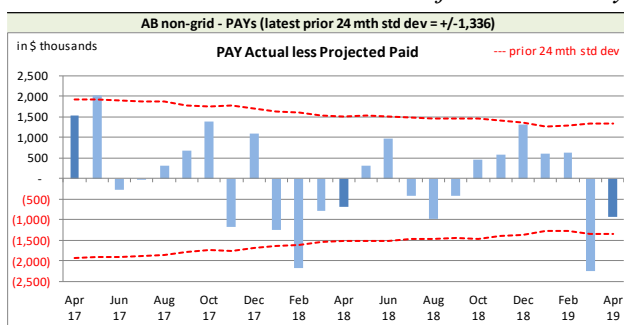
On Latest $ thousands		
Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	4,388	4,101
std dev	1,336	1,367
A-P <> std dev	3	1
% <> std dev	12.0%	4.0%
norm <> std dev	31.7%	31.7%

With respect to **paid** indemnity & allowed claims expense, 12% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on left), suggesting the projection process has performed better than simply projecting the prior 24-month average amount (assuming it follows a normal distribution). Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

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

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

*Alberta non-Grid RSP Levels that influence[9] **Paid** activity by Calendar Month*
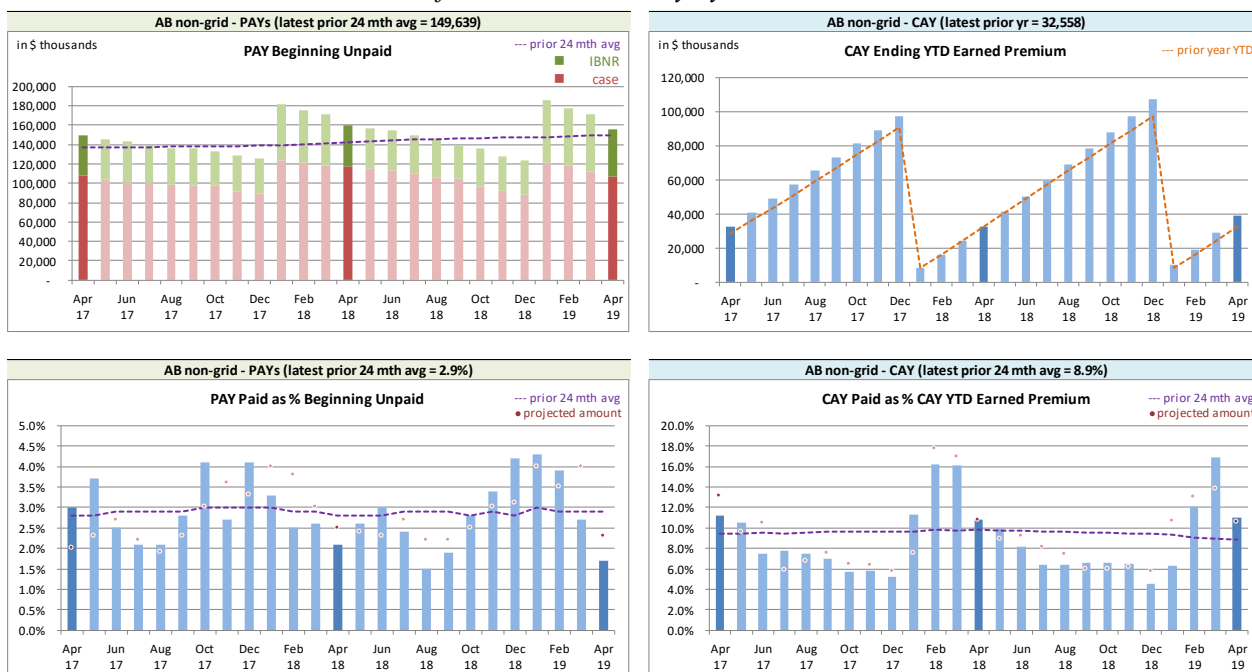
We track beginning prior accident years' unpaid balance (case and IBNR) as **paid** activity "comes out of" the unpaid balance. Changes in the prior accident years' beginning unpaid balance (see upper left chart above) occur for several possible reasons:

- to offset actual **paid** activity (may reduce case or IBNR or both);

- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and

- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate (will show up as a beginning unpaid balance change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

2.2 Actuarial Provisions

An "ultimate loss ratio matching method" (described in section 3) is used to determine the month's IBNR[10], and factors are applied to the nominal unpaid claims liability (case plus IBNR) to determine the discount amount (shown as a negative value to indicate its impact of reducing the liability) and the Provisions for Adverse Deviations. The loss ratios and the factors used to determine the projections and actuals were based on the applicable valuation. The table at the top of the next page summarizes variances in provisions included in this month's Operational Report and the associated

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[9]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.

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

one-month projections from last month's Report.

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

Table 02			actuarial present value adjustments					
	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	13,636	481	(2,996)	20	7,079	(57)	17,719	444
2017	11,096	(521)	(1,867)	-	4,470	(1)	13,699	(522)
2018	24,207	1,151	(2,766)	(48)	6,494	112	27,935	1,215
2019	14,451	1,098	(1,567)	26	3,553	(59)	16,437	1,065
TOTAL	63,390	2,209	(9,196)	(2)	21,596	(5)	75,790	2,202

The IBNR provision is $2.2 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.

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

(i)   the change projected last month;

(ii)   the additional change due to variances in earned premium (because we apply a loss ratio to earned premium in determining ultimate level) and/or recorded claims (as IBNR is calculated as ultimate less recorded) differences; and

(iii)   the additional change due to valuation implementation impacts (as applicable)

The variances associated with (ii) above are discussed in sections 2.1.a and 2.1.b.

The table immediately below summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in this month's Operational Report and the one-month projections from last month's Report. This RSP is in a premium deficiency position (shown as a positive amount) prior to and after actuarial present value adjustments. Actuarial present value adjustments increase the liability value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance.

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

Table 03	Premium Deficiency / (Deferred Policy Acquisition Costs)		actuarial present value adjustments		Premium Deficiency / (DPAC) including actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
balance:	5,379	(237)	3,561	(151)	8,940	(388)
balance as % unearned premium:	9.2%	-	6.1%	(0.1%)	15.3%	(0.1%)
actual unearned premium:	58,268					
less projected:	(2,477)					

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[11] ratio per latest valuation
- (c) Estimated ultimate incurred = (a) x (b)
- (d) Recorded indemnity & allowed claims expense to-date
- (e) IBNR = (c) – (d)

4 Calendar Year-to-Date Results

The table below summarizes the calendar year-to-date results for indemnity & allowed claims expenses[12], 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 110.7% rather than 108.5% (the valuation ultimate ratio for accident year 2019), as the calendar year-to-date earned premium includes prior accident year earned premium adjustments. (Note that the ratios in this table may differ slightly from those shown in the Alberta Non-Grid RSP Summary of Operations due to rounding.)

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

Table 04	YTD Nominal Values		YTD actuarial present value adjustment		YTD Total		Change from Prior Month YTD	
	Amount	% EP	Amount	% EP	Amount	% EP	Amount	LR pts
PAYs	(11,153)	(29.2%)	279	0.7%	(10,874)	(28.4%)	(816)	6.3%
CAY	42,310	110.7%	1,986	5.2%	44,296	115.9%	11,040	1.2%
TOTAL	31,157	81.5%	2,265	5.9%	33,422	87.4%	10,224	7.4%

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

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

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.

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

[12]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.

5   Current Operational Report – Additional Exhibits

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

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

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

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

6   EXHIBITS

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

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

EXHIBIT B   IBNR

EXHIBIT C   Premium Liabilities

EXHIBIT D   Projected Year-end Policy Liabilities

EXHIBIT E   Discount Rate & Margins for Adverse Deviations

EXHIBIT F   Interest Rate Sensitivity

EXHIBIT G   Components of IBNR Change During Month

EXHIBIT A

IBNR for Member Sharing – includes Actuarial Present Value Adjustments

TABLE EXHIBIT A	Amounts in $000s				
IBNR + M/S actuarial present value adjustments	Accident Year	Actual Mar. 2019	Actual Apr. 2019	Projected May. 2019	Projected Jun. 2019	Projected Dec. 2019
	2004	42	42	42	42	42
	2005	13	13	13	13	13
	2006	143	483	473	447	378
	2007	83	83	81	77	64
	2008	63	63	61	57	48
	2009	58	75	73	69	59
	2010	225	225	218	208	176
	2011	(109)	(109)	(109)	(98)	(85)
	2012	1,752	1,750	1,713	1,620	1,369
	2013	868	748	731	697	586
discount rate	2014	2,252	2,145	2,097	1,987	1,678
1.93%	2015	3,857	4,153	3,965	3,655	2,955
	2016	8,315	8,048	7,560	7,007	5,674
interest rate margin	2017	14,633	13,699	13,092	12,936	11,245
25 basis pts	2018	27,066	27,935	27,619	27,029	25,315
	2019	11,398	16,437	21,565	26,030	39,225
	TOTAL	70,659	75,790	79,194	81,776	88,742
	Change		5,131	3,404	2,582	

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 Mar. 2019	Actual Apr. 2019	Projected May. 2019	Projected Jun. 2019	Projected Dec. 2019
	349.1%	2004	36	36	36	36	36
	97.4%	2005	5	5	5	5	5
	87.5%	2006	77	448	439	413	351
	101.4%	2007	70	70	69	65	54
	101.1%	2008	60	60	59	55	46
	95.5%	2009	(3)	14	14	13	11
	83.9%	2010	140	140	137	129	110
	83.6%	2011	(281)	(280)	(274)	(258)	(218)
	102.3%	2012	1,399	1,398	1,370	1,288	1,093
	99.3%	2013	549	450	441	415	352
	109.2%	2014	1,751	1,650	1,617	1,520	1,290
	96.9%	2015	3,155	3,472	3,298	3,001	2,394
	114.7%	2016	6,395	6,173	5,741	5,224	4,127
	107.9%	2017	11,976	11,096	10,541	10,436	9,054
	104.4%	2018	23,289	24,207	23,965	23,486	22,111
	108.5%	2019	9,829	14,451	19,156	23,215	33,868
		TOTAL	58,447	63,390	66,614	69,043	74,684
		Change		4,943	3,224	2,429	

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 Mar. 2019	Actual Apr. 2019	Projected May. 2019	Projected Jun. 2019	Projected Dec. 2019
(1) unearned premium (UP)	57,977	58,268	60,644	63,163	71,253
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	115.2%	115.3%	115.5%	115.6%	117.1%
(3) expected future costs {(1) x (2)}	66,815	67,208	70,036	73,047	83,455
(4) premium deficiency / (deferred policy acquisition cost)	8,838	8,940	9,392	9,884	12,202
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	109.1%	109.2%	109.4%	109.5%	110.9%
(6) expected future costs {(1) x (5)}	63,275	63,647	66,325	69,178	79,035
(7) premium deficiency / (deferred policy acquisition cost)	5,298	5,379	5,681	6,015	7,782

EXHIBIT D

Projected Year-end Policy Liabilities

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

Alberta non-Grid ending 2019	Projected Balances as at Dec. 31, 2019 ($000s)									
	nominal values			actuarial present value adjustments (apvs)						
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL
2004	26	36	62	-	-	6	-	6	6	68
2005	75	5	80	-	-	8	-	8	8	88
2006	14	351	365	(9)	1	36	(1)	35	27	392
2007	75	54	129	(4)	1	13	-	13	10	139
2008	(27)	46	19	-	-	2	-	2	2	21
2009	717	11	728	(25)	3	73	(3)	70	48	776
2010	1,030	110	1,140	(50)	7	114	(5)	109	66	1,206
2011	2,784	(218)	2,566	(126)	15	257	(13)	244	133	2,699
2012	3,517	1,093	4,610	(189)	23	461	(19)	442	276	4,886
2013	3,960	352	4,312	(203)	26	431	(20)	411	234	4,546
2014	5,858	1,290	7,148	(336)	43	715	(34)	681	388	7,536
2015	8,351	2,394	10,745	(516)	64	1,064	(51)	1,013	561	11,306
2016	15,962	4,127	20,089	(964)	121	2,511	(121)	2,390	1,547	21,636
2017	21,175	9,054	30,229	(1,572)	181	3,779	(197)	3,582	2,191	32,420
2018	22,743	22,111	44,854	(2,377)	314	5,562	(295)	5,267	3,204	48,058
PAYs (sub-total):	86,260	40,816	127,076	(6,371)	799	15,032	(759)	14,273	8,701	135,777
CAY (2019)	47,415	33,868	81,283	(4,227)	569	9,510	(495)	9,015	5,357	86,640
claims liabilities:	133,675	74,684	208,359	(10,598)	1,368	24,542	(1,254)	23,288	14,058	222,417

	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	71,253	7,782	79,035	(3,147)	393	7,473	(299)	7,174	4,420	83,455

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

policy liabilities:			287,394	(13,745)	1,761	32,015	(1,553)	30,462	18,478	305,872

EXHIBIT E

Discount Rate & Margins for Adverse Deviations

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

Accident Year	Selected Claims Development MfADs (Dec. 31, 2018)			Total
	Third Party Liability	Accident Benefits	Other Coverages	
	Margins	Margins	Margins	Margins
2004	10.0%	10.0%	10.0%	10.0%
2005	10.0%	10.0%	10.0%	10.0%
2006	10.0%	10.0%	10.0%	10.0%
2007	10.0%	10.0%	10.0%	10.0%
2008	10.0%	10.0%	10.0%	10.0%
2009	10.0%	10.0%	10.0%	10.0%
2010	10.0%	10.0%	10.0%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	10.0%	10.0%	8.1%	10.0%
2014	10.0%	10.0%	8.8%	10.0%
2015	10.0%	10.0%	8.8%	9.9%
2016	12.5%	10.0%	12.5%	12.5%
2017	12.5%	10.0%	12.5%	12.5%
2018	12.5%	10.0%	12.5%	12.4%
2019	12.1%	10.0%	8.3%	11.7%
prem liab	11.8%	10.0%	5.2%	9.5%

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

EXHIBIT F

Interest Rate Sensitivity

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

$ Format: $000s

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

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

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

EXHIBIT G

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

RSP	Alberta Non-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	42	-	-	-	-	-	42
2005	13	-	-	-	-	-	13
2006	143	(2)	342	-	340	237.8%	483
2007	83	(2)	2	-	-	-	83
2008	63	(2)	2	-	-	-	63
2009	58	(1)	18	-	17	29.3%	75
2010	225	(3)	3	-	-	-	225
2011	(109)	(2)	2	-	-	-	(109)
2012	1,752	(22)	20	-	(2)	(0.1%)	1,750
2013	868	(11)	(109)	-	(120)	(13.8%)	748
2014	2,252	(28)	(79)	-	(107)	(4.8%)	2,145
2015	3,857	(46)	342	-	296	7.7%	4,153
2016	8,315	(168)	(99)	-	(267)	(3.2%)	8,048
2017	14,633	(412)	(522)	-	(934)	(6.4%)	13,699
2018	27,066	(346)	1,215	-	869	3.2%	27,935
2019	11,398	3,974	1,065	-	5,039	44.2%	16,437
Grand Total	**70,659**	**2,929**	**2,202**	**-**	**5,131**	**7.3%**	**75,790**

EXHIBIT G

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

RSP	Alberta Non-Grid						
AccountCode Desc	IBNR - Undiscounted						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	36	-	-	-	-	-	36
2005	5	-	-	-	-	-	5
2006	77	(1)	372	-	371	481.8%	448
2007	70	(1)	1	-	-	-	70
2008	60	(1)	1	-	-	-	60
2009	(3)	-	17	-	17	(566.7%)	14
2010	140	(1)	1	-	-	-	140
2011	(281)	3	(2)	-	1	(0.4%)	(280)
2012	1,399	(14)	13	-	(1)	(0.1%)	1,398
2013	549	(5)	(94)	-	(99)	(18.0%)	450
2014	1,751	(18)	(83)	-	(101)	(5.8%)	1,650
2015	3,155	(32)	349	-	317	10.0%	3,472
2016	6,395	(128)	(94)	-	(222)	(3.5%)	6,173
2017	11,976	(359)	(521)	-	(880)	(7.3%)	11,096
2018	23,289	(233)	1,151	-	918	3.9%	24,207
2019	9,829	3,524	1,098	-	4,622	47.0%	14,451
Grand Total	**58,447**	**2,734**	**2,209**	**-**	**4,943**	**8.5%**	**63,390**