ALBERTA NON-GRID RISK SHARING POOL

JULY 2019 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS

RSP ALBERTA NON-GRID

OPERATIONAL REPORT

JULY 2019

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2019)

The July 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.

Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
ALBERTA NON-GRID RISK SHARING POOL FISCAL YEAR 2019 – SCHEDULE OF VALUATIONS			
Sep. 30, 2018 (completed)	2.29% mfad 25 bp	Oct. 2018	updated valuation (roll forward): 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 (completed)	1.46% mfad 25 bp	May 2019	updated valuation (roll forward): accident year 2019 loss ratio increased 0.2 points to 108.7%; discount rate decreased by 47 basis points; no change to selected margins for adverse deviations
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 (March 31, 2019), reform adjustments related to changes in the definition of minor injuries under the MIR, were included with the updated industry trend analysis (completed using industry data as at 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.
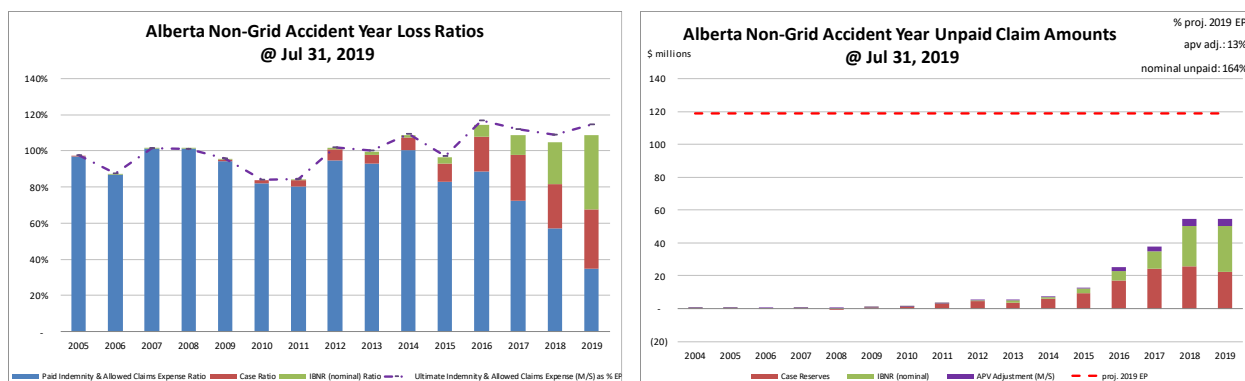
"M/S" refers to "Member Statement" values – that is, actuarial present value adjustments at the selected discount rate.

The current actuarial present value adjustments balance ($15.8 million – see table at the top of the next page) represents 13% 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 previous 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	118,646	56.3%
ibnr	76,157	36.2%
M/S apv adjust.	15,840	7.5%
M/S total	210,643	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 69% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 88% 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	61,515	85.5%
prem def/(dpac)	6,045	8.4%
M/S apv adjust.	4,384	6.1%
M/S total	71,944	100.0%

policy liabilities ($000s)

	amt	%
claim	194,803	68.9%
premium	67,560	23.9%
M/S apv adjust.	20,224	7.2%
M/S total	282,587	100.0%

2 Activity During the Month of July 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	(1)	(1)	828	(614)	(982)	117	(154)	(497)
2017	(3)	(3)	446	(260)	451	1,042	897	782
2018	(50)	(50)	560	(203)	(673)	(153)	(113)	(356)
2019	9,916	(250)	3,789	(62)	2,763	196	6,551	134
TOTAL	9,861	(304)	5,623	(1,139)	1,559	1,202	7,182	63

(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 2018 and prior accident years reflect activity undertaken by a member to remove risks from the RSP, reflecting recent audit findings.

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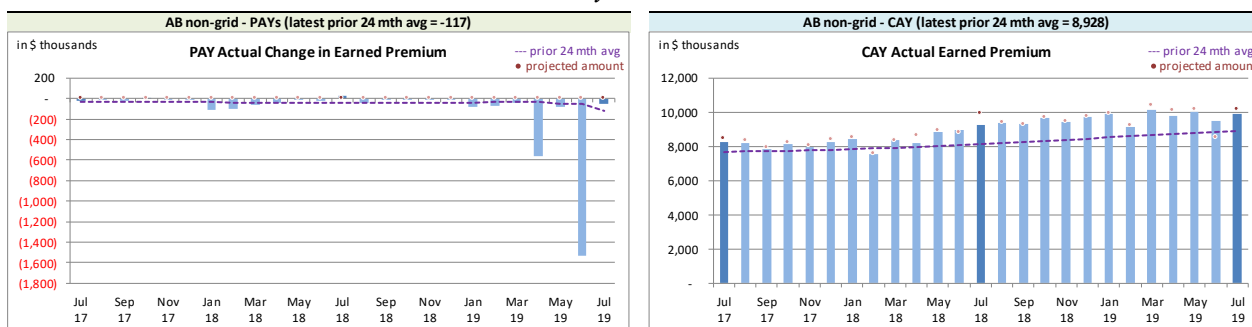
Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels generally occur at the beginning of each year.

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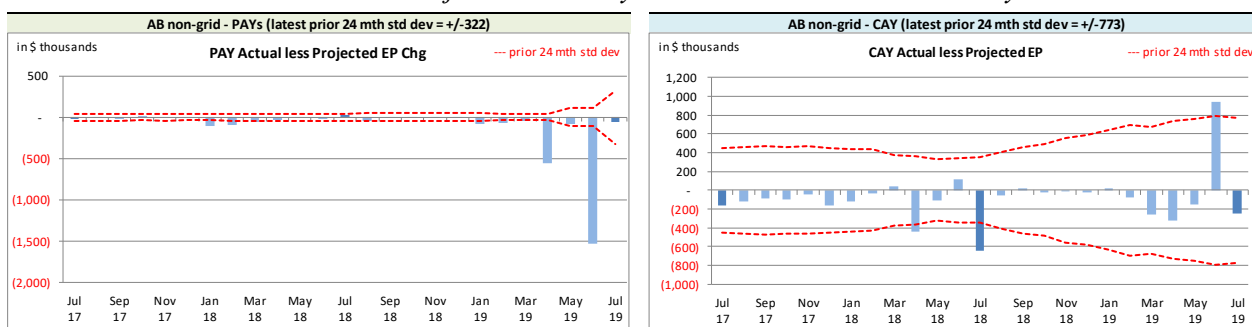
[5]Premium is earned on a daily basis based on the transaction term measured in days. As a result, months with 31 days earned relatively more than those with 30 days, and February earns the least.

On Latest $ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(117)	8,928
std dev	322	773
A-P <> std dev	8	3
% <> std dev	32.0%	12.0%
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.
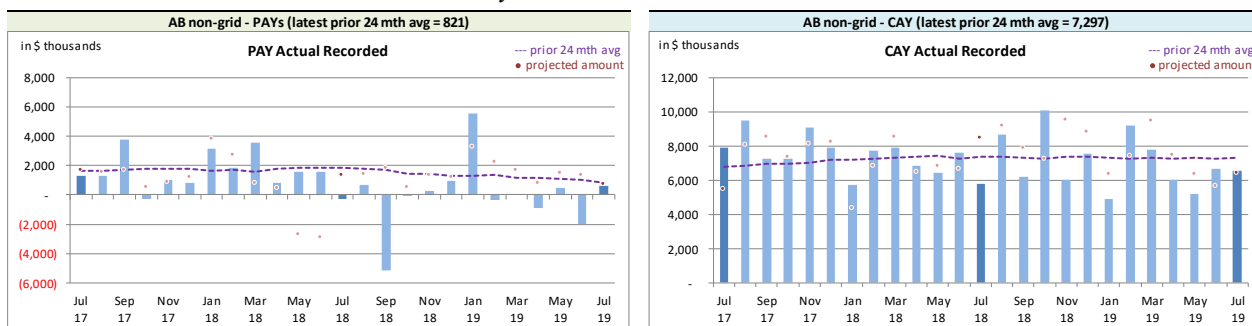
*Alberta non-Grid RSP Actual **Recorded** by Calendar Month*

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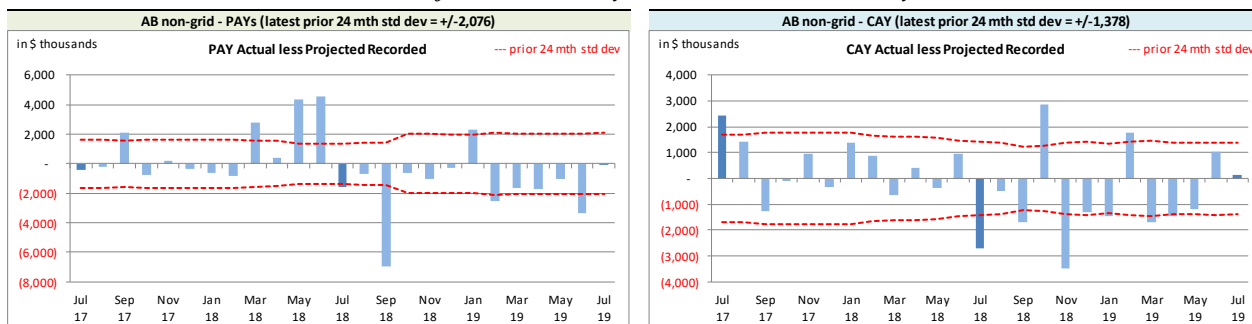
[6]The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

[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 July 2019 had only 5 months where the actuals was higher than projected, and as the 95% confidence range is 7 to 17, bias continues to be indicated.

On Latest $ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	821	7,297
std dev	2,076	1,378
A-P <> std dev	9	9
% <> std dev	36.0%	36.0%
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, but on a lagging 12-month basis, bias is indicated (our projections tend to be too high and we are considering this for future projections).

The current accident year (CAY) **recorded** variances fell outside of one standard deviation 36% of the time over the last 25 calendar months (see table above), suggesting that the projection process has performed no better 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 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 immediately below related to levels influencing **recorded** activity.

*Alberta non-Grid RSP Levels that influence[8] **Recorded** activity by Calendar Month*

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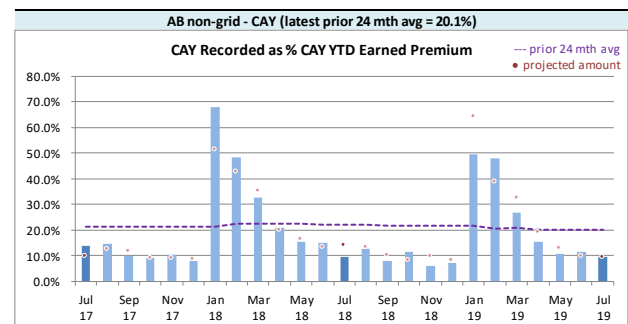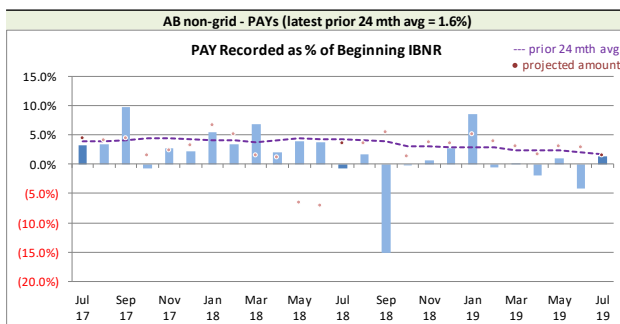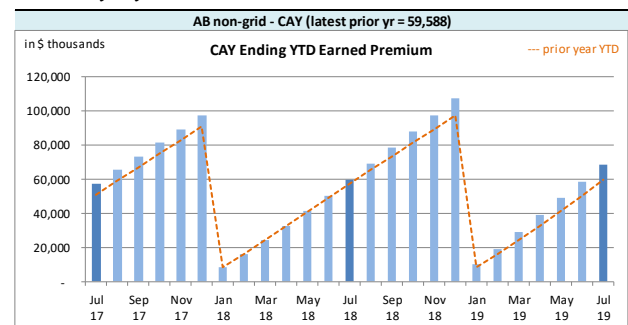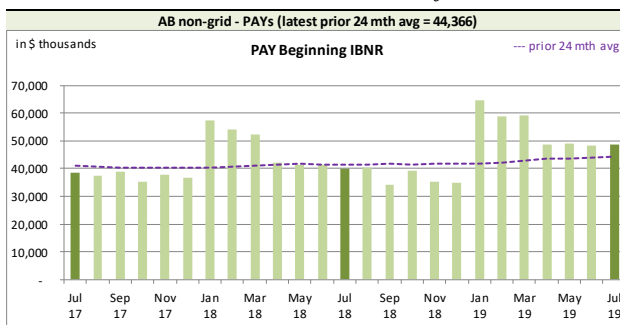
[8]Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned 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.

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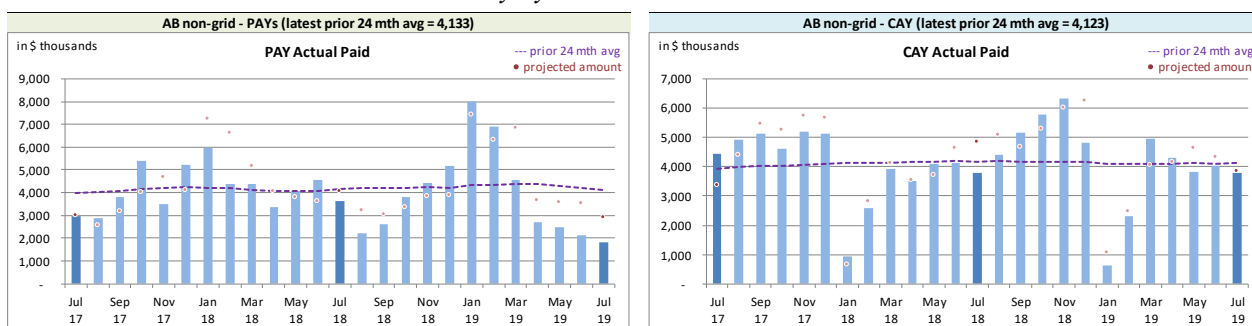
Paid activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

*Alberta non-Grid RSP Actual vs Projected Summary: **Paid** Variances by Calendar Month*
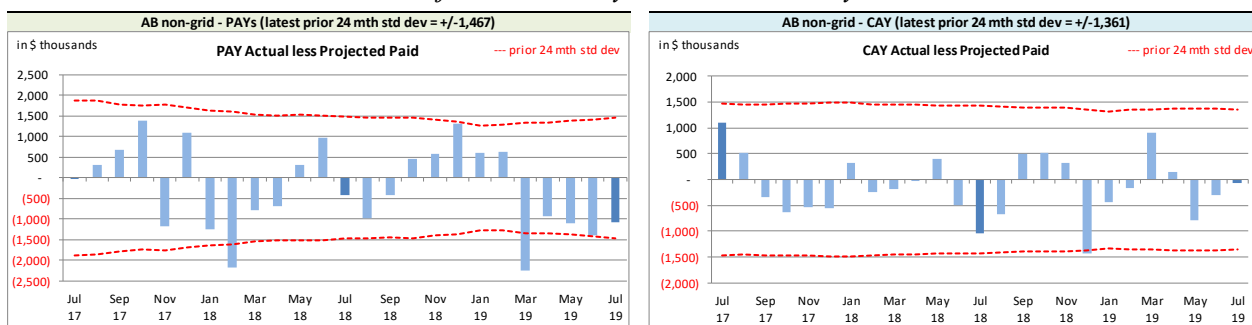
On Latest $ thousands		
Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	4,133	4,123
std dev	1,467	1,361
A-P <> std dev	2	1
% <> std dev	8.0%	4.0%
norm <> std dev	31.7%	31.7%

With respect to **paid** indemnity & allowed claims expense, 8% 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, however, the 5 recent misses as all too high projections suggest potential bias has crept into the process, and we are taking this into consideration.

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 immediately below related to levels influencing **paid** activity.

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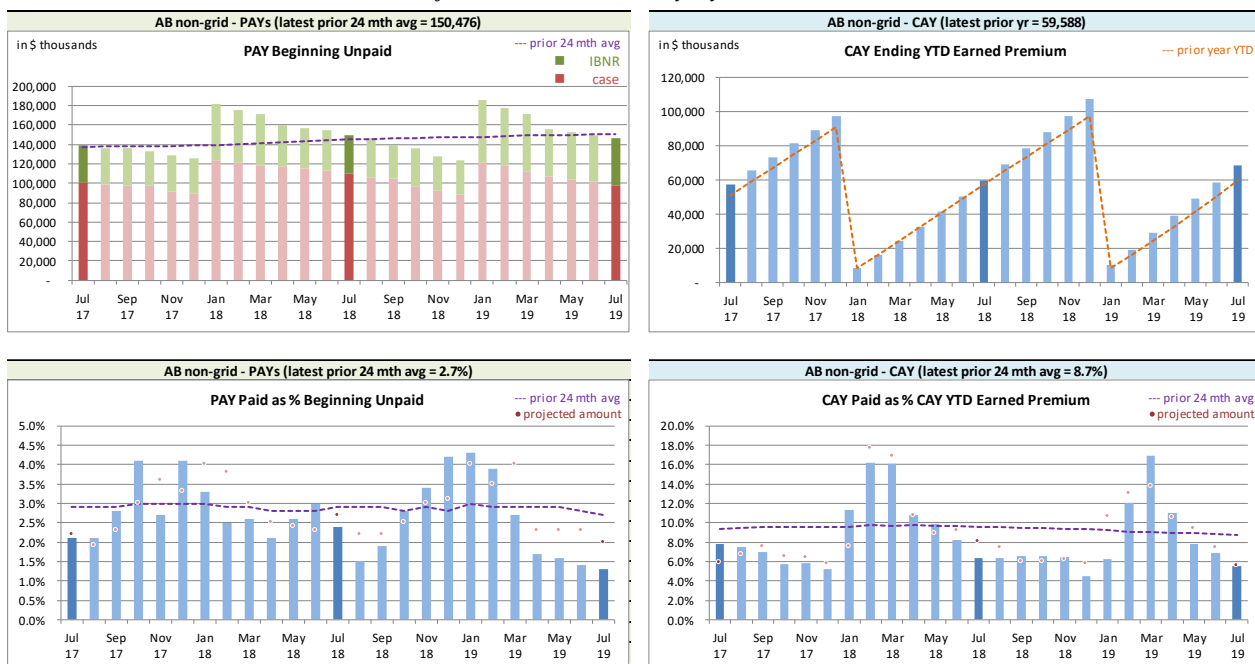
We track beginning prior accident years' unpaid balance (case and IBNR) as **paid** activity "comes out of" the unpaid balance. Changes in the prior accident years' beginning unpaid balance (see upper left chart above) occur for several possible reasons:

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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.

- 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 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	13,042	493	(2,147)	(21)	6,615	72	17,510	544
2017	10,621	(786)	(1,360)	(10)	4,398	32	13,659	(764)
2018	24,384	304	(2,009)	(6)	6,328	19	28,703	317
2019	28,110	(407)	(1,972)	8	5,987	(25)	32,125	(424)
TOTAL	76,157	(396)	(7,488)	(29)	23,328	98	91,997	(327)

The IBNR provision is $0.4 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.

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.

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

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:	6,045	(180)	4,384	(129)	10,429	(309)
balance as % unearned premium:	9.8%	-	7.1%	-	17.0%	-
actual unearned premium:	61,515					
less projected:	(1,792)					

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 at the top of the next page 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 112.7% rather than 108.7% (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

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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.

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	(12,922)	(19.6%)	1,690	2.6%	(11,232)	(17.0%)	(207)	2.6%
CAY	74,380	112.7%	4,015	6.1%	78,395	118.8%	11,332	(0.7%)
TOTAL	61,459	93.1%	5,705	8.6%	67,164	101.8%	11,126	2.0%

("% 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.

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 Jun. 2019	Actual Jul. 2019	Projected Aug. 2019	Projected Sep. 2019	Projected Dec. 2019
	2004	42	42	42	42	42
	2005	13	13	13	13	13
	2006	483	498	492	486	430
	2007	85	152	151	151	134
	2008	64	64	63	62	54
	2009	181	180	178	175	156
	2010	108	112	111	109	98
	2011	502	474	469	462	410
	2012	1,083	1,012	997	986	875
	2013	1,972	1,851	1,829	1,809	1,601
discount rate	2014	1,270	1,404	1,386	1,370	1,216
1.46%	2015	3,637	3,656	3,612	3,431	3,111
	2016	7,975	8,052	7,793	7,416	6,941
interest rate margin	2017	14,599	13,659	13,523	13,057	12,068
25 basis pts	2018	28,695	28,703	28,415	28,111	27,154
	2019	27,344	32,125	35,439	39,465	46,212
	TOTAL	88,053	91,997	94,513	97,145	100,515
	Change		3,944	2,516	2,632	

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 Jun. 2019	Actual Jul. 2019	Projected Aug. 2019	Projected Sep. 2019	Projected Dec. 2019
	349.1%	2004	36	36	36	36	36
	97.4%	2005	5	5	5	5	5
	87.5%	2006	445	460	455	450	397
	101.4%	2007	72	139	138	137	122
	101.1%	2008	61	61	60	59	52
	95.5%	2009	111	110	109	108	96
	83.8%	2010	17	21	21	21	19
	84.3%	2011	268	260	257	254	224
	101.5%	2012	713	643	637	631	558
	99.6%	2013	1,612	1,506	1,491	1,476	1,304
	108.8%	2014	790	933	924	915	809
	96.3%	2015	2,844	2,873	2,844	2,673	2,413
	114.4%	2016	5,918	5,995	5,755	5,410	5,091
	108.7%	2017	11,522	10,621	10,515	10,094	9,307
	104.7%	2018	24,323	24,384	24,140	23,899	23,189
	108.7%	2019	23,884	28,110	30,892	34,407	39,695
		TOTAL	72,621	76,157	78,279	80,575	83,317
		Change		3,536	2,122	2,296	

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 Jun. 2019	Actual Jul. 2019	Projected Aug. 2019	Projected Sep. 2019	Projected Dec. 2019
(1) unearned premium (UP)	60,670	61,515	64,541	68,092	71,514
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	116.8%	117.0%	117.2%	117.4%	118.1%
(3) expected future costs {(1) x (2)}	70,852	71,944	75,616	79,922	84,471
(4) premium deficiency / (deferred policy acquisition cost)	10,182	10,429	11,075	11,830	12,957
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	109.7%	109.8%	110.0%	110.2%	110.9%
(6) expected future costs {(1) x (5)}	66,535	67,560	71,007	75,051	79,323
(7) premium deficiency / (deferred policy acquisition cost)	5,865	6,045	6,466	6,959	7,809

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	-	397	397	(7)	1	40	(1)	39	33	430
2007	19	122	141	(3)	1	14	-	14	12	153
2008	(30)	52	22	-	-	2	-	2	2	24
2009	696	96	792	(21)	4	79	(2)	77	60	852
2010	1,130	19	1,149	(39)	7	115	(4)	111	79	1,228
2011	2,627	224	2,851	(108)	20	285	(11)	274	186	3,037
2012	3,927	558	4,485	(139)	22	448	(14)	434	317	4,802
2013	3,244	1,304	4,548	(168)	27	455	(17)	438	297	4,845
2014	5,321	809	6,130	(221)	37	613	(22)	591	407	6,537
2015	8,431	2,413	10,844	(401)	65	1,074	(40)	1,034	698	11,542
2016	15,637	5,091	20,728	(788)	145	2,591	(98)	2,493	1,850	22,578
2017	22,371	9,307	31,678	(1,235)	190	3,960	(154)	3,806	2,761	34,439
2018	22,905	23,189	46,094	(1,844)	277	5,762	(230)	5,532	3,965	50,059
PAYs (sub-total):	86,379	43,622	130,001	(4,974)	796	15,452	(593)	14,859	10,681	140,682
CAY (2019)	42,341	39,695	82,036	(3,199)	492	9,598	(374)	9,224	6,517	88,553
claims liabilities:	128,720	83,317	212,037	(8,173)	1,288	25,050	(967)	24,083	17,198	229,235

	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	71,514	7,809	79,323	(2,369)	395	7,342	(220)	7,122	5,148	84,471

*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:			291,360	(10,542)	1,683	32,392	(1,187)	31,205	22,346	313,706

EXHIBIT E

Discount Rate & Margins for Adverse Deviations

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

Selected Claims Development MfADs (Mar. 31, 2019)

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%	5.0%	10.0%
2013	10.0%	10.0%	9.2%	10.0%
2014	10.0%	10.0%	8.5%	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	12.4%	10.0%	12.5%	12.5%
2019	12.1%	10.0%	7.9%	11.7%
2020	11.9%	10.0%	5.2%	9.3%
prem liab	11.9%	10.0%	5.2%	9.3%

discount rate:	1.46%
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 (1.46%), the prior valuation assumption (1.93%) 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

AY	0.46%	0.96%	1.46%	1.96%	2.46%	2.96%	1.93%	2.29%
	Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2019 projected Unpaid							
2004 & prior	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	640	636	632	628	624	620	628	625
2007	73	72	72	71	71	70	71	71
2008	-	-	-	-	-	-	-	-
2009	845	837	830	822	815	808	823	817
2010	1,185	1,171	1,158	1,144	1,131	1,118	1,145	1,136
2011	2,442	2,410	2,379	2,348	2,318	2,290	2,350	2,329
2012	4,154	4,110	4,067	4,024	3,984	3,943	4,027	3,997
2013	5,469	5,397	5,328	5,261	5,195	5,131	5,264	5,217
2014	7,398	7,304	7,212	7,123	7,035	6,951	7,128	7,065
2015	10,827	10,684	10,547	10,412	10,283	10,155	10,421	10,327
2016	21,405	21,122	20,847	20,581	20,322	20,071	20,598	20,410
2017	32,002	31,560	31,133	30,715	30,309	29,915	30,742	30,448
2018	50,616	49,901	49,213	48,541	47,890	47,259	48,585	48,108
2019	82,947	81,808	80,706	79,631	78,597	77,589	79,701	78,946
Total	220,003	217,012	214,124	211,301	208,574	205,920	211,483	209,496
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

AY	0.46%	0.96%	1.46%	1.96%	2.46%	2.96%	1.93%	2.29%
	Dollar Impact Relative to Valuation Assumption							
Total	5,879	2,888	-	(2,823)	(5,550)	(8,204)	(2,641)	(4,628)
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

AY	0.46%	0.96%	1.46%	1.96%	2.46%	2.96%	1.93%	2.29%
	Percentage Impact Relative to Valuation Assumption							
2004 & prior	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	1.3%	0.6%	-	(0.6%)	(1.3%)	(1.9%)	(0.6%)	(1.1%)
2007	1.4%	-	-	(1.4%)	(1.4%)	(2.8%)	(1.4%)	(1.4%)
2008	-	-	-	-	-	-	-	-
2009	1.8%	0.8%	-	(1.0%)	(1.8%)	(2.7%)	(0.8%)	(1.6%)
2010	2.3%	1.1%	-	(1.2%)	(2.3%)	(3.5%)	(1.1%)	(1.9%)
2011	2.6%	1.3%	-	(1.3%)	(2.6%)	(3.7%)	(1.2%)	(2.1%)
2012	2.1%	1.1%	-	(1.1%)	(2.0%)	(3.0%)	(1.0%)	(1.7%)
2013	2.6%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(1.2%)	(2.1%)
2014	2.6%	1.3%	-	(1.2%)	(2.5%)	(3.6%)	(1.2%)	(2.0%)
2015	2.7%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(1.2%)	(2.1%)
2016	2.7%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(1.2%)	(2.1%)
2017	2.8%	1.4%	-	(1.3%)	(2.6%)	(3.9%)	(1.3%)	(2.2%)
2018	2.9%	1.4%	-	(1.4%)	(2.7%)	(4.0%)	(1.3%)	(2.2%)
2019	2.8%	1.4%	-	(1.3%)	(2.6%)	(3.9%)	(1.2%)	(2.2%)
Total	2.7%	1.3%	-	(1.3%)	(2.6%)	(3.8%)	(1.2%)	(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

Page 1 of 2

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	483	(10)	25	-	15	3.1%	498
2007	85	-	67	-	67	78.8%	152
2008	64	(1)	1	-	-	-	64
2009	181	(5)	4	-	(1)	(0.6%)	180
2010	108	(2)	6	-	4	3.7%	112
2011	502	(11)	(17)	-	(28)	(5.6%)	474
2012	1,083	(27)	(44)	-	(71)	(6.6%)	1,012
2013	1,972	(44)	(77)	-	(121)	(6.1%)	1,851
2014	1,270	(30)	164	-	134	10.6%	1,404
2015	3,637	(101)	120	-	19	0.5%	3,656
2016	7,975	(218)	295	-	77	1.0%	8,052
2017	14,599	(176)	(764)	-	(940)	(6.4%)	13,659
2018	28,695	(309)	317	-	8	-	28,703
2019	27,344	5,205	(424)	-	4,781	17.5%	32,125
Grand Total	**88,053**	**4,271**	**(327)**	**-**	**3,944**	**4.5%**	**91,997**

EXHIBIT G

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

RSP	Alberta Non-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	36	-	-	-	-	-	36
2005	5	-	-	-	-	-	5
2006	445	(9)	24	-	15	3.4%	460
2007	72	(1)	68	-	67	93.1%	139
2008	61	(1)	1	-	-	-	61
2009	111	(2)	1	-	(1)	(0.9%)	110
2010	17	-	4	-	4	23.5%	21
2011	268	(5)	(3)	-	(8)	(3.0%)	260
2012	713	(14)	(56)	-	(70)	(9.8%)	643
2013	1,612	(32)	(74)	-	(106)	(6.6%)	1,506
2014	790	(16)	159	-	143	18.1%	933
2015	2,844	(85)	114	-	29	1.0%	2,873
2016	5,918	(178)	255	-	77	1.3%	5,995
2017	11,522	(115)	(786)	-	(901)	(7.8%)	10,621
2018	24,323	(243)	304	-	61	0.3%	24,384
2019	23,884	4,633	(407)	-	4,226	17.7%	28,110
Grand Total	72,621	3,932	(396)	-	3,536	4.9%	76,157