



ALBERTA NON-GRID RISK SHARING POOL

SEPTEMBER 2019 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS**RSP ALBERTA NON-GRID****OPERATIONAL REPORT****SEPTEMBER 2019**

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1 Summary

Key Points

- (a) Liam McFarlane has resigned as the Facility Association’s Appointed Actuary; Mr. Cosimo Pantaleo of Ernst & Young LLP has assumed the Appointed Actuary’s role (effective as of October 24, 2019), pending formal appointment by the Facility Association Board (expected at its December 12, 2019 meeting); and
- (b) There were no other specific issues or events warranting additional comment for this month – results were reasonably aligned with our expectations, other than lower-than-expected volume.

1.1 Valuation Schedule (Fiscal Year 2019)

The September 2019 Operational Report leverages actuarial assumptions consistent with last month (that is, it does not reflect the results of an updated valuation). The table 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 (roll forward): accident year 2018 loss ratio <u>decreased</u> 2.8 points to 109.3%; discount rate <u>increased</u> 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 <u>increased</u> 1.4 points to 108.5%; discount rate <u>decreased</u> 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 <u>increased</u> 0.2 points to 108.7%; discount rate <u>decreased</u> by 47 basis points; no change to selected margins for adverse deviations
Jun. 30, 2019 (completed)	1.43% mfad 25 bp	Aug. 2019	updated valuation: accident year 2019 loss ratio <u>decreased</u> 3.9 points to 104.8%; discount rate <u>decreased</u> by 3 basis points; selected margins for adverse deviations were updated
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 was Facility Association's Appointed Actuary (effective as of June 1, 2013). Mr. McFarlane has resigned his Appointment to take on a role at a different organization. Mr. Cosimo Pantaleo of Ernst & Young LLP has assumed the Appointed Actuary's role (effective as of October 24, 2019), pending formal appointment by the Facility Association Board (expected at its December 12, 2019 meeting).

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

1.3 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation¹

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 (June 30, 2019), reform adjustments related to changes in the definition of minor injuries under the MIR, were included with the updated industry trend analysis (completed using industry data as at December 31, 2018), impacting the selection of ultimates.

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

1.4 Current Provision Summary

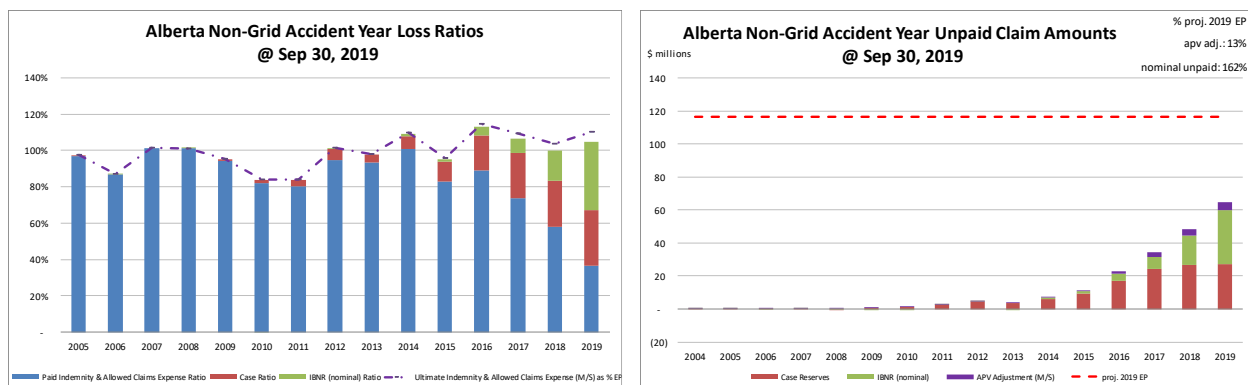
The charts at the top of the next page show the current levels of claim liabilities² booked by accident year³. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the associated dollar amounts for the components of the claim liabilities and the current projected

¹This 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>.

²Claim 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.

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

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 (\$14.8 million – see table below) represents 13% of the earned premium projected for the full year 2019 (see the upper right corner of the right chart above). If our current estimates of the nominal unpaid amounts prove to match actual claims payments, the actuarial present value adjustments will be released into the net operating result over future periods.

claim liabilities (\$000s)

	amt	%
case	124,033	61.0%
ibnr	64,599	31.7%
M/S apv adjust.	14,845	7.3%
M/S total	203,477	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 79% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 89% of the M/S

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

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

premium liabilities (\$000s)

	amt	%
unearned prem	61,521	88.2%
prem def/(dpac)	3,930	5.6%
M/S apv adjust.	4,318	6.2%
M/S total	69,769	100.0%

policy liabilities (\$000s)

	amt	%
claim	188,632	69.0%
premium	65,451	24.0%
M/S apv adjust.	19,163	7.0%
M/S total	273,246	100.0%

2 Activity During the Month of September 2019

2.1 Recorded Premium and Claims Activity

The table at the top of the next page summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month’s Operational Report⁴.

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

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)	892	(179)	339	1,195	1,231	1,016
2017	(3)	(3)	362	42	28	191	390	233
2018	(17)	(17)	500	52	(177)	(90)	323	(38)
2019	9,574	(471)	4,569	(384)	2,499	157	7,067	(227)
TOTAL	9,553	(492)	6,323	(468)	2,688	1,452	9,011	984

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

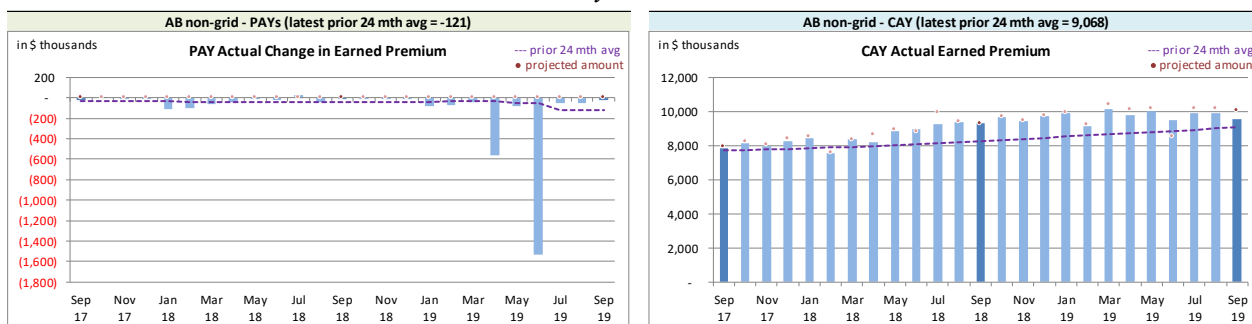
It is unusual to see actual earned premium transactions affecting prior accident years by this time in the calendar year – the prior accident years changes in the month reflect activity undertaken by a member reflecting recent audit findings.

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

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

The charts below show actual **earned premium**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*



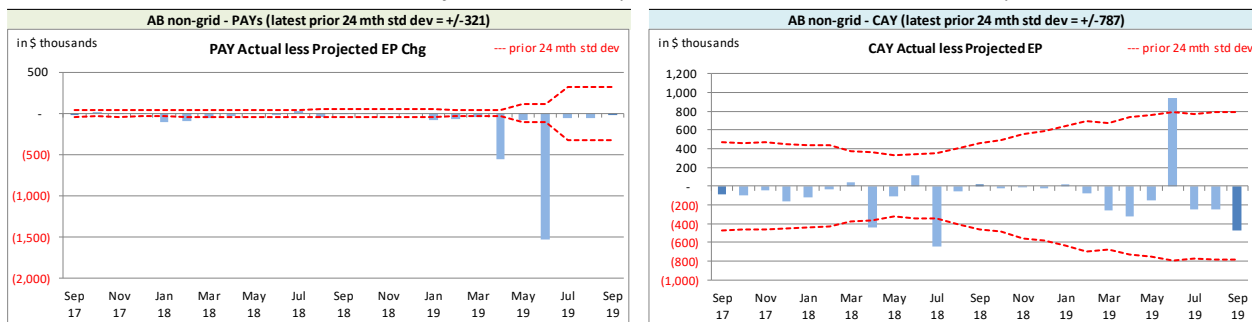
Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels generally occur at the beginning of each year.

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

⁵Premium 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.

change in relation to prior accident years.

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



On Latest \$ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(121)	9,068
std dev	321	787
A-P <> std dev	8	3
% <> std dev	32.0%	12.0%
norm <> std dev	31.7%	31.7%

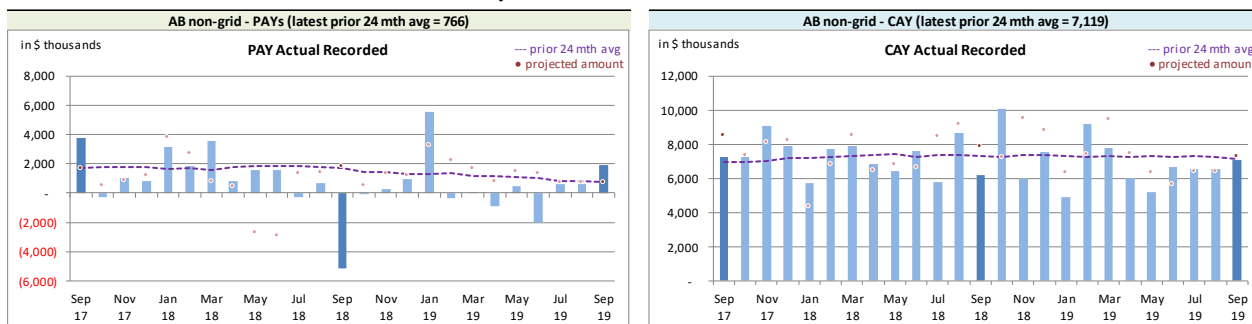
We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias⁶, with actuals generally lower than projected, although the magnitude is not high relative to

monthly premium. In addition to the PAYs' bias, the CAY has also shown bias⁷, 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 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*

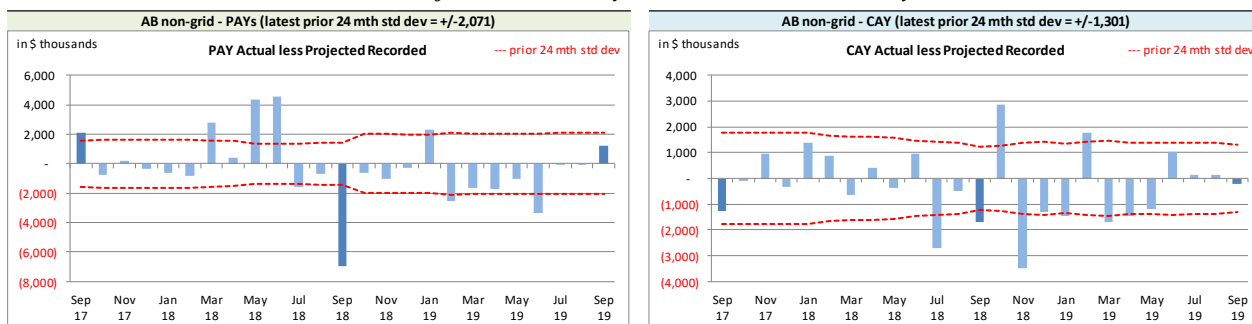


⁶The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

⁷We 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 September 2019 had only 5 months where the actuals was higher than projected, and as the 95% confidence range is 8 to 17, bias continues to be indicated.

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

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



On Latest \$ thousands			
	Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)		766	7,119
std dev		2,071	1,301
A-P <> std dev		9	8
% <> std dev		36.0%	32.0%
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

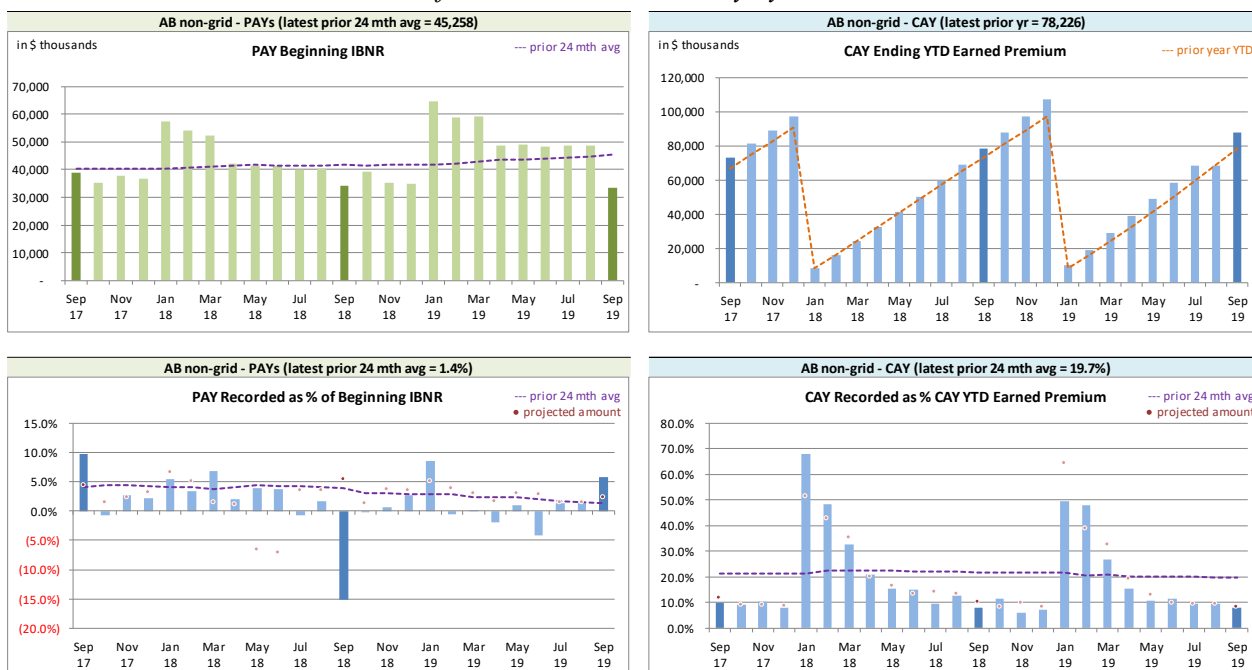
the prior 24-month average amount (assuming it follows a normal distribution). We have implemented changes in an attempt to address this. Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (8 of 25 variances are positive), but bias has been indicated at a 95% confidence level on a rolling 12-month basis (2 of 12 variances are positive, where the 95% confidence range is 3 to 9). We have made adjustments to our projection process in an attempt to address this.

The current accident year (CAY) **recorded** variances fell outside of one standard deviation 32% 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 rolling 25-month basis (10 of 25 variances are positive), nor on a rolling 12-month basis (5 of 12 positive).

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 influence⁸ 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:

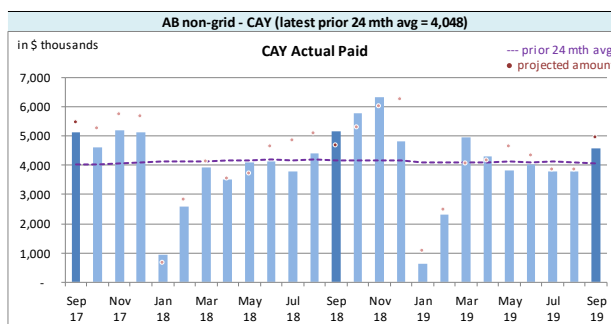
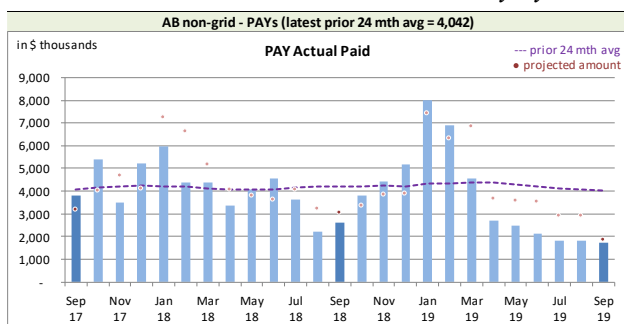
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years’ ultimate (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.

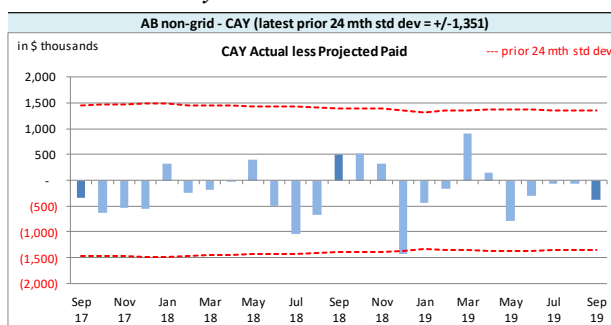
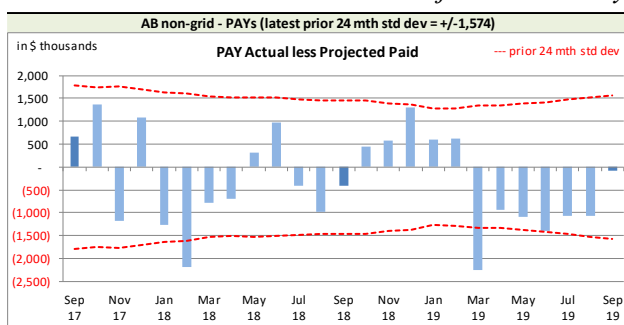
⁸Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned 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 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)		4,042	4,048
std dev		1,574	1,351
A-P <> std dev		2	1
% <> std dev		8.0%	4.0%
norm <> std dev		31.7%	31.7%

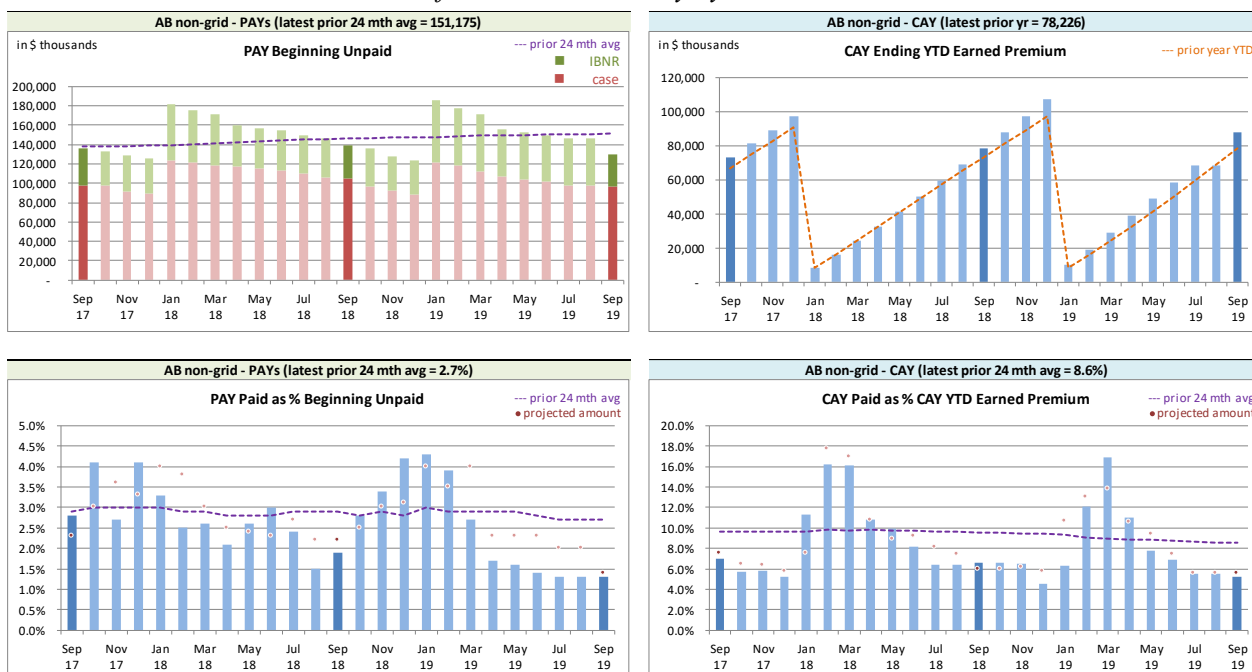
With respect to **paid** indemnity & allowed claims expense, 8% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on left), suggesting the projection process has performed better than 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 (10 of 25 variances are positive).

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 been indicated at a 95% confidence level on a rolling 25-month basis (7 of 25 variances are positive), and management is considering ways to address this.

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 influence⁹ **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 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 IBNR¹⁰, 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

⁹Our 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.

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

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

Accident Year	actuarial present value adjustments							
	IBNR		Discount Amount		Provisions for Adverse Deviations		IBNR + actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	6,355	(1,017)	(1,885)	(5)	5,377	19	9,847	(1,003)
2017	7,434	(236)	(1,201)	1	4,020	(6)	10,253	(241)
2018	17,713	20	(1,772)	3	5,626	(10)	21,567	13
2019	33,097	(267)	(2,225)	4	6,905	(11)	37,777	(274)
TOTAL	64,599	(1,500)	(7,083)	3	21,928	(8)	79,444	(1,505)

The IBNR provision is \$1.5 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.

The table 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:	3,930	(286)	4,318	(286)	8,248	(572)
balance as % unearned premium:	6.4%	-	7.0%	(0.1%)	13.4%	(0.1%)
actual unearned premium:	61,521					
less projected:	(4,042)					

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 loss¹¹ 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 expenses¹², 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 107.8% rather than 104.8% (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	(24,995)	(29.2%)	30	-	(24,965)	(29.2%)	(158)	3.5%
CAY	92,185	107.8%	4,680	5.5%	96,865	113.3%	10,461	(0.5%)
TOTAL	67,190	78.6%	4,710	5.5%	71,900	84.1%	10,304	3.0%

(“% 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.

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).

¹²Allowed 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
**IBNR + M/S actuarial present
 value adjustments**

 discount rate
 1.43%

 interest rate margin
 25 basis pts

Amounts in \$000s					
Accident Year	Actual Aug. 2019	Actual Sep. 2019	Projected Oct. 2019	Projected Nov. 2019	Projected Dec. 2019
2004	42	42	41	40	39
2005	13	13	13	12	12
2006	97	97	93	89	87
2007	11	12	12	12	12
2008	64	65	63	61	58
2009	30	34	32	31	30
2010	190	(47)	(45)	(44)	(42)
2011	215	211	203	197	188
2012	595	588	565	548	526
2013	331	218	208	203	195
2014	1,516	1,324	1,271	1,233	1,184
2015	2,285	1,884	1,827	1,807	1,736
2016	5,745	5,406	5,244	5,139	4,984
2017	10,680	10,253	10,076	9,774	9,579
2018	21,954	21,567	21,176	20,752	20,337
2019	34,383	37,777	41,478	44,942	48,398
TOTAL	78,151	79,444	82,257	84,796	87,323
Change		1,293	2,813	2,539	

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 Aug. 2019	Actual Sep. 2019	Projected Oct. 2019	Projected Nov. 2019	Projected Dec. 2019
349.1%	2004	36	36	35	34	33
97.4%	2005	5	5	5	5	5
87.0%	2006	90	90	86	83	80
101.4%	2007	9	10	10	10	10
101.1%	2008	61	62	60	58	56
95.3%	2009	(28)	(25)	(24)	(23)	(22)
83.8%	2010	106	(131)	(126)	(122)	(117)
84.0%	2011	13	21	20	19	18
101.0%	2012	255	249	239	232	223
97.8%	2013	83	(29)	(28)	(27)	(26)
109.0%	2014	1,039	861	827	802	770
95.1%	2015	1,577	1,190	1,154	1,142	1,096
112.9%	2016	4,341	4,016	3,896	3,818	3,703
106.4%	2017	7,827	7,434	7,285	7,066	6,925
100.0%	2018	18,054	17,713	17,359	17,012	16,672
104.8%	2019	30,130	33,097	36,356	39,404	42,469
	TOTAL	63,598	64,599	67,154	69,513	71,895
	Change		1,001	2,555	2,359	

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 Aug. 2019	Actual Sep. 2019	Projected Oct. 2019	Projected Nov. 2019	Projected Dec. 2019
(1) unearned premium (UP)	61,067	61,521	64,927	67,657	69,503
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	113.2%	113.4%	113.7%	114.0%	114.3%
(3) expected future costs {(1) x (2)}	69,117	69,769	73,827	77,122	79,438
(4) premium deficiency / (deferred policy acquisition cost)	8,050	8,248	8,900	9,465	9,935
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	106.2%	106.4%	106.7%	106.9%	107.2%
(6) expected future costs {(1) x (5)}	64,838	65,451	69,258	72,350	74,521
(7) premium deficiency / (deferred policy acquisition cost)	3,771	3,930	4,331	4,693	5,018

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	23	33	56	-	-	6	-	6	6	62
2005	67	5	72	-	-	7	-	7	7	79
2006	1	80	81	(1)	-	8	-	8	7	88
2007	21	10	31	(1)	-	3	-	3	2	33
2008	(32)	56	24	-	-	2	-	2	2	26
2009	716	(22)	694	(18)	3	69	(2)	67	52	746
2010	1,177	(117)	1,060	(34)	6	106	(3)	103	75	1,135
2011	2,502	18	2,520	(88)	15	252	(9)	243	170	2,690
2012	4,060	223	4,283	(133)	21	428	(13)	415	303	4,586
2013	3,341	(26)	3,315	(119)	20	332	(12)	320	221	3,536
2014	5,472	770	6,242	(231)	44	624	(23)	601	414	6,656
2015	8,832	1,096	9,928	(367)	60	983	(36)	947	640	10,568
2016	15,917	3,703	19,620	(726)	118	1,962	(73)	1,889	1,281	20,901
2017	22,809	6,925	29,734	(1,130)	208	3,717	(141)	3,576	2,654	32,388
2018	25,453	16,672	42,125	(1,685)	295	5,266	(211)	5,055	3,665	45,790
PAYs (sub-total):	90,359	29,426	119,785	(4,533)	790	13,765	(523)	13,242	9,499	129,284
CAY (2019)	33,725	42,469	76,194	(2,819)	457	8,610	(319)	8,291	5,929	82,123
claims liabilities:	124,084	71,895	195,979	(7,352)	1,247	22,375	(842)	21,533	15,428	211,407
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	69,503	5,018	74,521	(2,151)	371	6,897	(200)	6,697	4,917	79,438
*Total may not be sum of parts, as apvs apply to future costs within UPR										
policy liabilities:			270,500	(9,503)	1,618	29,272	(1,042)	28,230	20,345	290,845

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 (Jun. 30,
 2019)**

Accident Year	Third Party Liability Margins	Accident Benefits Margins	Other Coverages Margins	Total Margins
2004	10.0%	10.0%	10.0%	10.0%
2005	10.0%	10.0%	10.0%	10.0%
2006	10.0%	10.0%	10.0%	10.0%
2007	10.0%	10.0%	10.0%	10.0%
2008	10.0%	10.0%	10.0%	10.0%
2009	10.0%	10.0%	10.0%	10.0%
2010	10.0%	10.0%	10.0%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	10.0%	10.0%	10.0%	10.0%
2014	10.0%	10.0%	9.6%	10.0%
2015	10.0%	10.0%	8.8%	9.9%
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	12.2%	10.0%	5.9%	11.3%
2020	11.9%	10.0%	5.2%	9.3%
prem liab	11.9%	10.0%	5.2%	9.3%

discount rate: 1.43%
 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

Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2019 projected Unpaid								
AY	0.43%	0.93%	1.43%	1.93%	2.43%	2.93%	1.46%	2.29%
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	15	15	14	14	14	14	14	14
2007	77	76	76	75	74	74	76	75
2008	-	-	-	-	-	-	-	-
2009	771	764	757	750	743	737	756	745
2010	1,296	1,281	1,267	1,253	1,239	1,226	1,266	1,243
2011	2,718	2,684	2,651	2,619	2,588	2,557	2,649	2,596
2012	4,417	4,368	4,320	4,273	4,227	4,183	4,317	4,240
2013	3,917	3,866	3,817	3,770	3,723	3,678	3,815	3,736
2014	7,014	6,922	6,833	6,746	6,661	6,580	6,828	6,685
2015	9,964	9,833	9,705	9,582	9,461	9,346	9,698	9,495
2016	19,822	19,561	19,309	19,065	18,826	18,597	19,296	18,894
2017	30,733	30,319	29,917	29,531	29,151	28,785	29,897	29,256
2018	46,843	46,179	45,536	44,923	44,315	43,734	45,505	44,482
2019	82,099	81,018	79,972	78,966	77,977	77,034	79,919	78,259
Total	209,686	206,886	204,174	201,567	198,999	196,545	204,036	199,720
	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	0.43%	0.93%	1.43%	1.93%	2.43%	2.93%	1.46%	2.29%
Total	5,512	2,712	-	(2,607)	(5,175)	(7,629)	(138)	(4,454)
	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	0.43%	0.93%	1.43%	1.93%	2.43%	2.93%	1.46%	2.29%
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	7.1%	7.1%	-	-	-	-	-	-
2007	1.3%	-	-	(1.3%)	(2.6%)	(2.6%)	-	(1.3%)
2008	-	-	-	-	-	-	-	-
2009	1.8%	0.9%	-	(0.9%)	(1.8%)	(2.6%)	(0.1%)	(1.6%)
2010	2.3%	1.1%	-	(1.1%)	(2.2%)	(3.2%)	(0.1%)	(1.9%)
2011	2.5%	1.2%	-	(1.2%)	(2.4%)	(3.5%)	(0.1%)	(2.1%)
2012	2.2%	1.1%	-	(1.1%)	(2.2%)	(3.2%)	(0.1%)	(1.9%)
2013	2.6%	1.3%	-	(1.2%)	(2.5%)	(3.6%)	(0.1%)	(2.1%)
2014	2.6%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(0.1%)	(2.2%)
2015	2.7%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(0.1%)	(2.2%)
2016	2.7%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(0.1%)	(2.1%)
2017	2.7%	1.3%	-	(1.3%)	(2.6%)	(3.8%)	(0.1%)	(2.2%)
2018	2.9%	1.4%	-	(1.3%)	(2.7%)	(4.0%)	(0.1%)	(2.3%)
2019	2.7%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(0.1%)	(2.1%)
Total	2.7%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(0.1%)	(2.2%)
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

Page 1 of 2

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

 RSP
 AccountCode Desc **Alberta Non-Grid
 IBNR - Discounted**

M/S IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2004	42	(1)	1	-	-	-	42
2005	13	-	-	-	-	-	13
2006	97	(3)	3	-	-	-	97
2007	11	-	1	-	1	9.1%	12
2008	64	(2)	3	-	1	1.6%	65
2009	30	-	4	-	4	13.3%	34
2010	190	(5)	(232)	-	(237)	(124.7%)	(47)
2011	215	(4)	-	-	(4)	(1.9%)	211
2012	595	(15)	8	-	(7)	(1.2%)	588
2013	331	(7)	(106)	-	(113)	(34.1%)	218
2014	1,516	(40)	(152)	-	(192)	(12.7%)	1,324
2015	2,285	(92)	(309)	-	(401)	(17.5%)	1,884
2016	5,745	(115)	(224)	-	(339)	(5.9%)	5,406
2017	10,680	(186)	(241)	-	(427)	(4.0%)	10,253
2018	21,954	(400)	13	-	(387)	(1.8%)	21,567
2019	34,383	3,668	(274)	-	3,394	9.9%	37,777
Grand Total	78,151	2,798	(1,505)	-	1,293	1.7%	79,444

EXHIBIT G

Page 2 of 2

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

 RSP **Alberta Non-Grid**
 AccountCode Desc **IBNR - Undiscounted**

IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2004	36	(1)	1	-	-	-	36
2005	5	-	-	-	-	-	5
2006	90	(3)	3	-	-	-	90
2007	9	-	1	-	1	11.1%	10
2008	61	(2)	3	-	1	1.6%	62
2009	(28)	1	2	-	3	(10.7%)	(25)
2010	106	(3)	(234)	-	(237)	(223.6%)	(131)
2011	13	-	8	-	8	61.5%	21
2012	255	(8)	2	-	(6)	(2.4%)	249
2013	83	(2)	(110)	-	(112)	(134.9%)	(29)
2014	1,039	(31)	(147)	-	(178)	(17.1%)	861
2015	1,577	(79)	(308)	-	(387)	(24.5%)	1,190
2016	4,341	(87)	(238)	-	(325)	(7.5%)	4,016
2017	7,827	(157)	(236)	-	(393)	(5.0%)	7,434
2018	18,054	(361)	20	-	(341)	(1.9%)	17,713
2019	30,130	3,234	(267)	-	2,967	9.8%	33,097
Grand Total	63,598	2,501	(1,500)	-	1,001	1.6%	64,599