



ALBERTA NON-GRID RISK SHARING POOL

JUNE 2019 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2019)

The June 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 (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		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 / Regulation¹

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

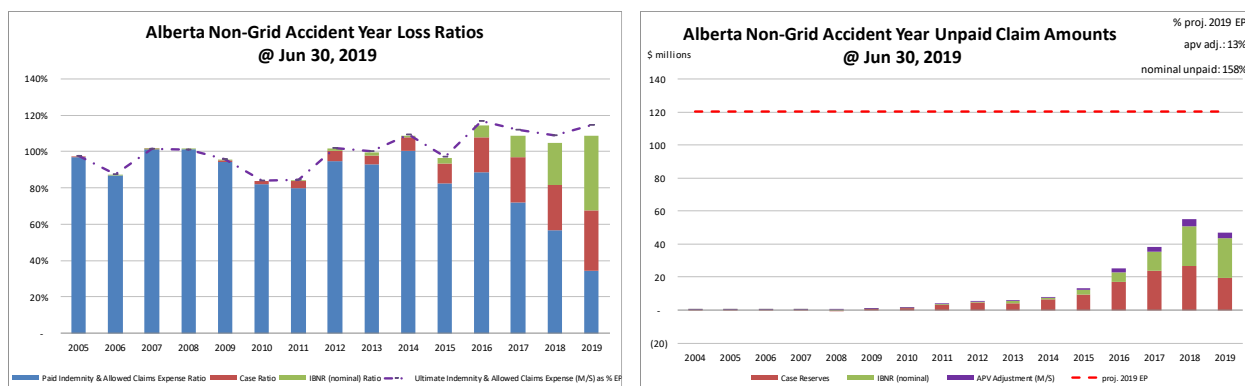
Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent changes are provided below.

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 (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 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 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 (\$15.4 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

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.

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	117,087	57.1%
ibnr	72,621	35.4%
M/S apv adjust.	15,432	7.5%
M/S total	205,140	100.0%

The table to the left breaks down the Member Statement (M/S) claim liabilities total into component parts, showing that the majority of the claim liabilities for this RSP is in case reserves. Approximately 66% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 87% 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	60,670	85.6%
prem def/(dpac)	5,865	8.3%
M/S apv adjust.	4,317	6.1%
M/S total	70,852	100.0%

policy liabilities (\$000s)

	amt	%
claim	189,708	68.7%
premium	66,535	24.1%
M/S apv adjust.	19,749	7.2%
M/S total	275,992	100.0%

2 Activity During the Month of June 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 Report⁴.

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

Table 01 Accident Year	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	(418)	(418)	1,658	159	(2,635)	(1,878)	(977)	(1,719)
2017	(717)	(717)	42	(681)	(714)	(107)	(672)	(788)
2018	(398)	(398)	424	(868)	(757)	47	(334)	(822)
2019	9,484	937	4,024	(302)	2,658	1,344	6,682	1,042
TOTAL	7,950	(597)	6,148	(1,692)	(1,448)	(595)	4,700	(2,287)

(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.

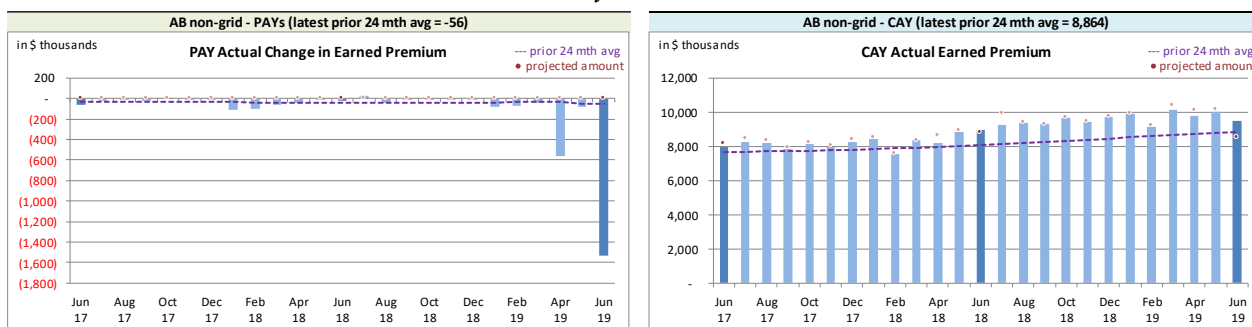
⁴There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

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.

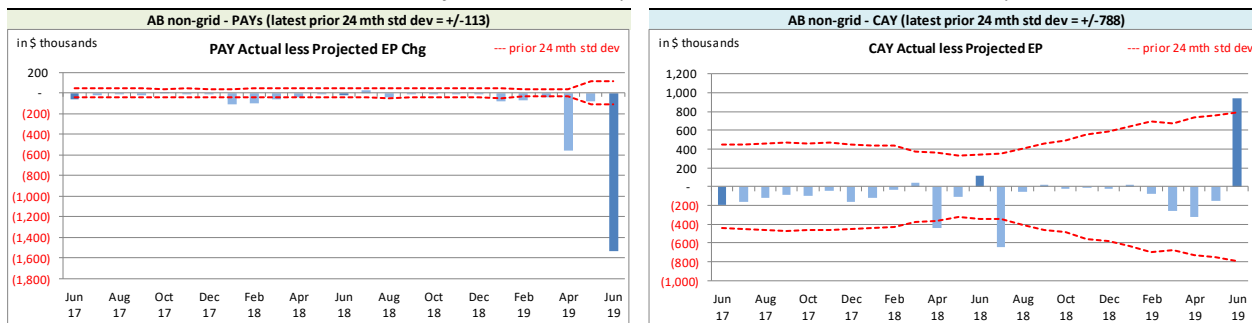
*Alberta non-Grid RSP Actual **Earned Premium** by Calendar Month*



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. As commented on earlier, this month’s variances are related to a member’s activity in relation to recent audit findings.

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*



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.

On Latest \$ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(56)	8,864
std dev	113	788
A-P \diamond std dev	9	3
% \diamond std dev	36.0%	12.0%
norm \diamond std dev	31.7%	31.7%

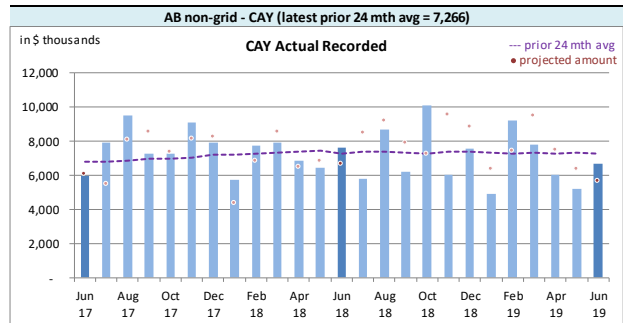
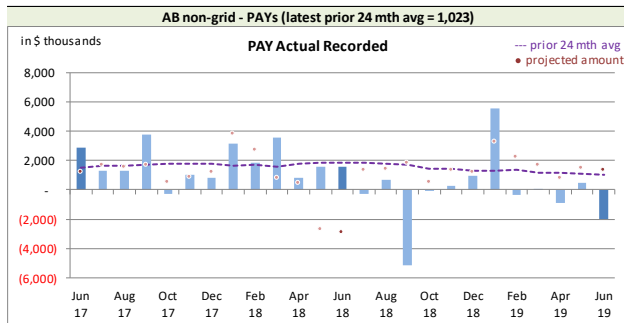
We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias⁶, with actuals generally lower than projected, although the magnitude is 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

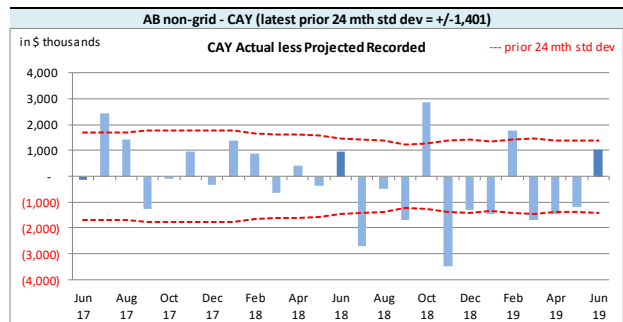
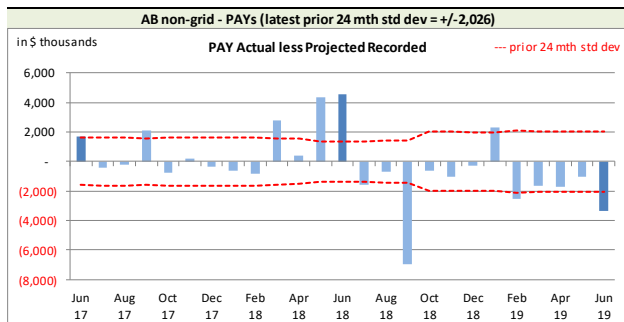
The charts immediately below show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

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



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 (24 in this case) and 50% probability of success. The 24-month variances at June 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)	1,023	7,266	
std dev	2,026	1,401	
A-P <> std dev	10	9	
% <> std dev	40.0%	36.0%	
norm <> std dev	31.7%	31.7%	

With respect to **recorded** indemnity & allowed claims expense activity, 40% 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).

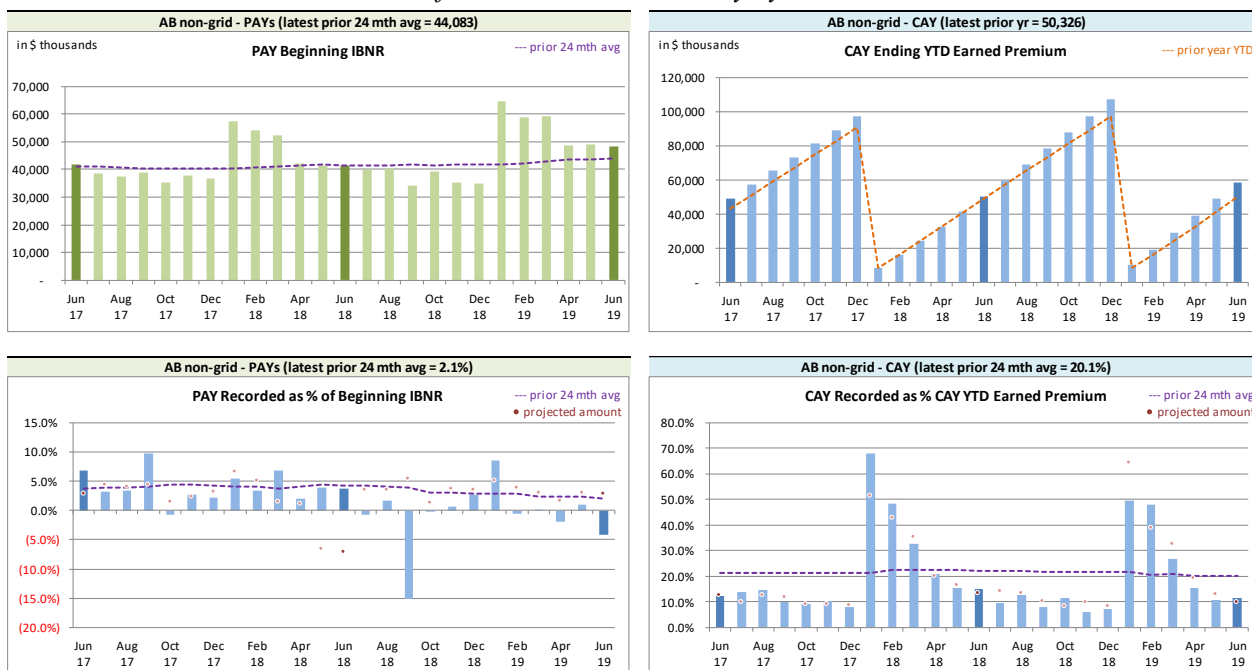
The PAY **recorded** variance (left chart above) was outside of one standard deviation this month. The activity was reviewed and confirmed, with the variance attributed to process variance.

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 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 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:

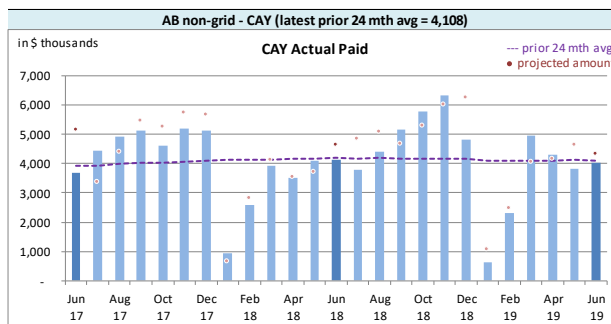
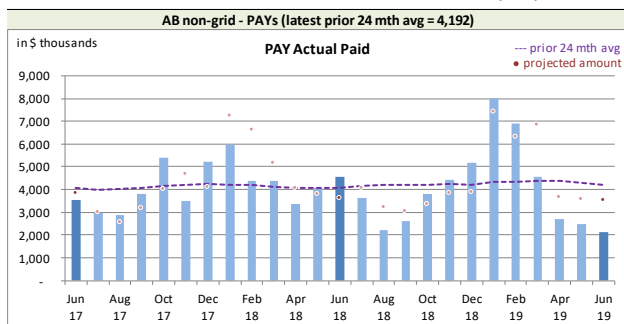
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate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

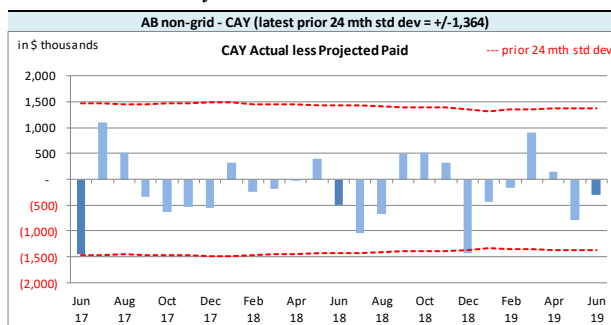
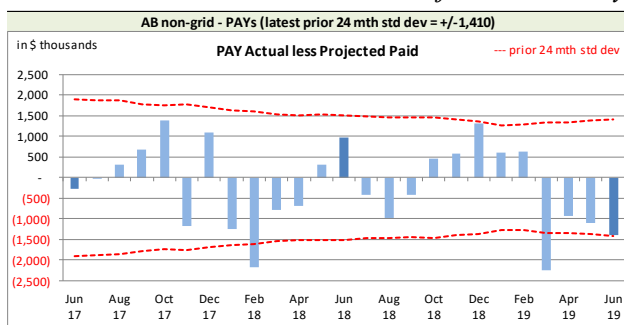
⁸Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned 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 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)		4,192	4,108
std dev		1,410	1,364
A-P <> std dev		2	1
% <> std dev		8.0%	4.0%
norm <> std dev		31.7%	31.7%

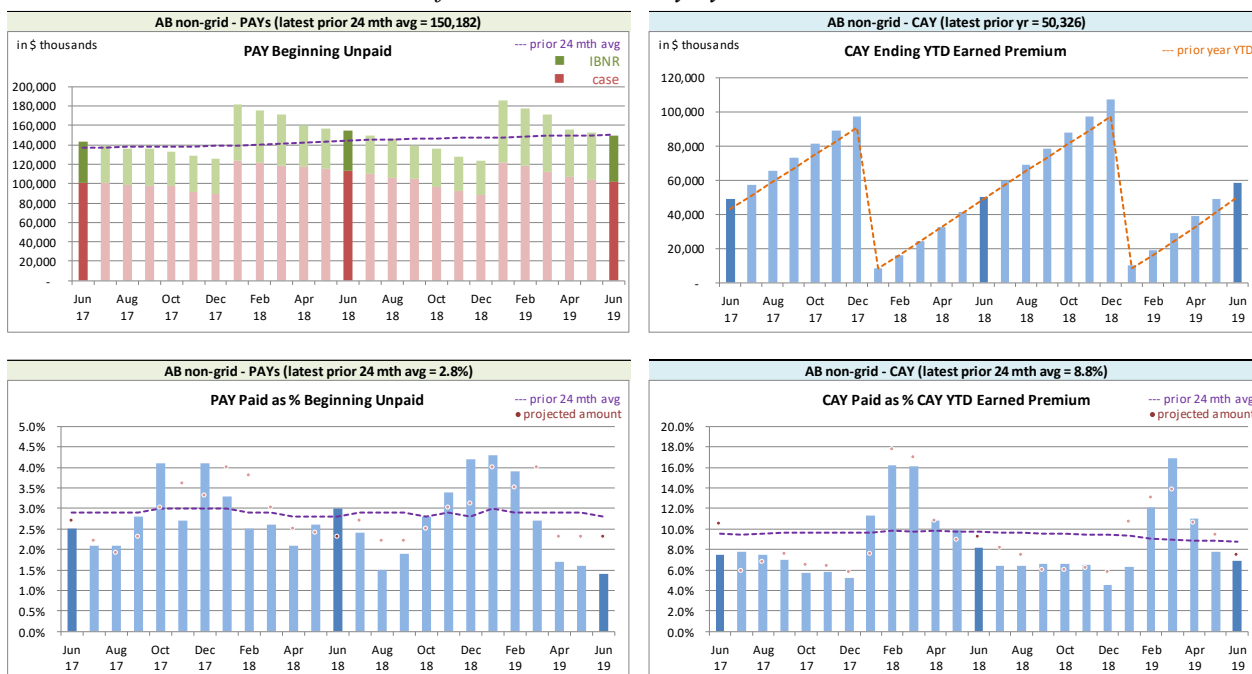
With respect to **paid** indemnity & allowed claims expense, 8% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on left), suggesting the projection process has performed better than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

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 influence⁹ 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 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 Operational Report and the associated

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”.

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					
Accident Year	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	12,892	1,245	(2,177)	24	6,700	(68)	17,415 1,201
2017	11,522	9	(1,378)	3	4,455	(13)	14,599 (1)
2018	24,323	405	(2,033)	(18)	6,405	57	28,695 444
2019	23,884	(23)	(1,699)	(51)	5,159	156	27,344 82
TOTAL	72,621	1,636	(7,287)	(42)	22,719	132	88,053 1,726

The IBNR provision is \$1.6 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:		5,865	(317)	4,317	(230)	10,182	(547)
balance as % unearned premium:		9.7%	-	7.1%	-	16.8%	-
actual unearned premium:		60,670					
less projected:		(3,197)					

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 113.3% 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 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	(12,862)	(22.9%)	1,837	3.3%	(11,025)	(19.6%)	(1,967)	(0.8%)
CAY	63,603	113.3%	3,460	6.2%	67,063	119.5%	10,807	2.7%
TOTAL	50,741	90.4%	5,297	9.4%	56,038	99.8%	8,841	1.8%

(“% 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
 1.46%

 interest rate margin
 25 basis pts

Amounts in \$000s					
Accident Year	Actual May. 2019	Actual Jun. 2019	Projected Jul. 2019	Projected Aug. 2019	Projected Dec. 2019
2004	42	42	42	42	42
2005	13	13	13	13	13
2006	483	483	473	468	410
2007	84	85	85	84	73
2008	64	64	63	61	53
2009	183	181	176	173	153
2010	152	108	106	105	91
2011	478	502	491	484	423
2012	1,093	1,083	1,056	1,044	914
2013	1,820	1,972	1,928	1,906	1,669
2014	1,397	1,270	1,240	1,222	1,070
2015	3,627	3,637	3,536	3,493	3,005
2016	7,629	7,975	7,757	7,279	6,477
2017	14,778	14,599	14,423	14,279	12,723
2018	28,850	28,695	28,386	28,101	26,831
2019	23,219	27,344	32,549	35,961	46,646
TOTAL	83,912	88,053	92,324	94,715	100,593
Change		4,141	4,271	2,391	

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

EXHIBIT B
IBNR
TABLE EXHIBIT B

TABLE EXHIBIT B		Amounts in \$000s					
IBNR	Ultimate Loss Ratio	Accident Year	Actual May. 2019	Actual Jun. 2019	Projected Jul. 2019	Projected Aug. 2019	Projected Dec. 2019
	349.1%	2004	36	36	36	36	36
	97.4%	2005	5	5	5	5	5
	87.5%	2006	445	445	436	432	379
	101.4%	2007	71	72	71	70	61
	101.1%	2008	61	61	60	59	51
	95.5%	2009	113	111	109	108	95
	83.8%	2010	58	17	17	17	15
	84.3%	2011	244	268	263	260	227
	101.5%	2012	723	713	699	692	605
	99.6%	2013	1,459	1,612	1,580	1,564	1,369
	108.8%	2014	825	790	774	766	670
	96.3%	2015	2,825	2,844	2,759	2,731	2,317
	114.4%	2016	5,524	5,918	5,740	5,281	4,672
	108.7%	2017	11,629	11,522	11,407	11,293	9,997
	104.7%	2018	24,406	24,323	24,080	23,839	22,900
	108.7%	2019	20,257	23,884	28,517	31,379	40,068
	TOTAL	68,681	72,621	76,553	78,532	83,467	
	Change		3,940	3,932	1,979		

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 May. 2019	Actual Jun. 2019	Projected Jul. 2019	Projected Aug. 2019	Projected Dec. 2019
(1) unearned premium (UP)	59,598	60,670	63,308	66,002	72,412
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	116.6%	116.8%	117.0%	117.2%	118.1%
(3) expected future costs {(1) x (2)}	69,515	70,852	74,046	77,330	85,534
(4) premium deficiency / (deferred policy acquisition cost)	9,917	10,182	10,738	11,328	13,122
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	109.5%	109.7%	109.8%	110.0%	110.9%
(6) expected future costs {(1) x (5)}	65,278	66,535	69,533	72,617	80,320
(7) premium deficiency / (deferred policy acquisition cost)	5,680	5,865	6,225	6,615	7,908

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	5	379	384	(7)	1	38	(1)	37	31	415
2007	75	61	136	(3)	1	14	-	14	12	148
2008	(30)	51	21	-	-	2	-	2	2	23
2009	670	95	765	(21)	4	77	(2)	75	58	823
2010	1,096	15	1,111	(38)	7	111	(4)	107	76	1,187
2011	2,774	227	3,001	(114)	21	300	(11)	289	196	3,197
2012	3,731	605	4,336	(134)	22	434	(13)	421	309	4,645
2013	3,218	1,369	4,587	(170)	28	459	(17)	442	300	4,887
2014	5,357	670	6,027	(217)	36	603	(22)	581	400	6,427
2015	8,377	2,317	10,694	(396)	64	1,059	(39)	1,020	688	11,382
2016	15,545	4,672	20,217	(768)	142	2,527	(96)	2,431	1,805	22,022
2017	21,290	9,997	31,287	(1,220)	188	3,911	(153)	3,758	2,726	34,013
2018	22,822	22,900	45,722	(1,829)	274	5,715	(229)	5,486	3,931	49,653
PAYs (sub-total):	85,031	43,399	128,430	(4,917)	788	15,264	(587)	14,677	10,548	138,978
CAY (2019)	42,739	40,068	82,807	(3,229)	497	9,688	(378)	9,310	6,578	89,385
claims liabilities:	127,770	83,467	211,237	(8,146)	1,285	24,952	(965)	23,987	17,126	228,363
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	72,412	7,908	80,320	(2,398)	400	7,435	(223)	7,212	5,214	85,534
*Total may not be sum of parts, as apvs apply to future costs within UPR										
policy liabilities:			291,557	(10,544)	1,685	32,387	(1,188)	31,199	22,340	313,897

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 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%	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

Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2019 projected Unpaid								
AY	0.46%	0.96%	1.46%	1.96%	2.46%	2.96%	1.93%	2.29%
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

Dollar Impact Relative to Valuation Assumption								
AY	0.46%	0.96%	1.46%	1.96%	2.46%	2.96%	1.93%	2.29%
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

Percentage Impact Relative to Valuation Assumption								
AY	0.46%	0.96%	1.46%	1.96%	2.46%	2.96%	1.93%	2.29%
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
 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	-	-	-	-	-	42
2005	13	-	-	-	-	-	13
2006	483	(28)	28	-	-	-	483
2007	84	(3)	4	-	1	1.2%	85
2008	64	(4)	4	-	-	-	64
2009	183	(9)	7	-	(2)	(1.1%)	181
2010	152	(6)	(38)	-	(44)	(28.9%)	108
2011	478	(21)	45	-	24	5.0%	502
2012	1,093	(54)	44	-	(10)	(0.9%)	1,083
2013	1,820	(99)	251	-	152	8.4%	1,972
2014	1,397	(68)	(59)	-	(127)	(9.1%)	1,270
2015	3,627	(186)	196	-	10	0.3%	3,637
2016	7,629	(373)	719	-	346	4.5%	7,975
2017	14,778	(178)	(1)	-	(179)	(1.2%)	14,599
2018	28,850	(599)	444	-	(155)	(0.5%)	28,695
2019	23,219	4,043	82	-	4,125	17.8%	27,344
Grand Total	83,912	2,415	1,726	-	4,141	4.9%	88,053

EXHIBIT G

Page 2 of 2

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

 RSP
 AccountCode Desc

Alberta Non-Grid
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	-	-	-	-	-	36
2005	5	-	-	-	-	-	5
2006	445	(27)	27	-	-	-	445
2007	71	(4)	5	-	1	1.4%	72
2008	61	(4)	4	-	-	-	61
2009	113	(7)	5	-	(2)	(1.8%)	111
2010	58	(3)	(38)	-	(41)	(70.7%)	17
2011	244	(15)	39	-	24	9.8%	268
2012	723	(43)	33	-	(10)	(1.4%)	713
2013	1,459	(88)	241	-	153	10.5%	1,612
2014	825	(50)	15	-	(35)	(4.2%)	790
2015	2,825	(170)	189	-	19	0.7%	2,844
2016	5,524	(331)	725	-	394	7.1%	5,918
2017	11,629	(116)	9	-	(107)	(0.9%)	11,522
2018	24,406	(488)	405	-	(83)	(0.3%)	24,323
2019	20,257	3,650	(23)	-	3,627	17.9%	23,884
Grand Total	68,681	2,304	1,636	-	3,940	5.7%	72,621