



ALBERTA NON-GRID RISK SHARING POOL

SEPTEMBER 2017 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

Related Bulletin: [F17-081 Alberta RSPs September 2017 Operational Reports](#)

For your convenience, bookmarks have been added to this document. To view them, please click on the BOOKMARK tab at the left.

Should you require any further information, please call Shawn Doherty, Senior Vice President Actuarial & CFO at (416) 644-4968

ACTUARIAL HIGHLIGHTS
RSP ALBERTA NON-GRID
OPERATIONAL REPORT
SEPTEMBER 2017

TABLE OF CONTENTS

1	Summary.....	3
1.1	Valuation Schedule (Fiscal Year 2017).....	3
1.2	Appointed Actuary and Hybrid Actuarial Services Model.....	3
1.3	Consideration of Recent Legal Decisions and Changes in Legislation / Regulation	4
1.4	Current Provision Summary	4
2	Activity During the Month of September 2017	5
2.1	Recorded Premium and Claims Activity	5
2.1.a	Actual vs. Projected (AvsP): Earned Premium.....	6
2.1.b	AvsP: Recorded Indemnity & Allowed Claims Expense	7
2.1.c	AvsP: Paid Indemnity & Allowed Claims Expense	9
2.2	Actuarial Provisions.....	11
3	Ultimate Loss Ratio Matching Method.....	13
4	Calendar Year-to-Date Results.....	13
5	Current Operational Report – Additional Exhibits	14
6	EXHIBITS	14

1 Summary

1.1 Valuation Schedule (Fiscal Year 2017)

The September 2017 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 2017.

ALBERTA NON-GRID RISK SHARING POOL FISCAL YEAR 2017 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2016 (completed)	0.55% mfad: 25 bp	Oct. 2016	updated valuation (roll forward): accident year 2016 loss ratio increased 7.2 points to 112.8%; discount rate decreased by 6 basis points; no change to selected margins for adverse deviations
Dec. 31, 2016 (completed)	1.08% mfad: 25 bp	Mar. 2017	updated valuation: accident year 2016 loss ratio increased 1.1 points to 113.9%; accident year 2017 loss ratio increased 5.0 points to 103.3%; discount rate increased by 53 basis points; no change to selected margins for adverse deviations
Mar. 31, 2017 (completed)	0.99% mfad: 25 bp	May 2017	updated valuation (roll forward): accident year 2017 loss ratio increased 3.1 points to 106.4%; discount rate decreased by 9 basis points; no change to selected margins for adverse deviations
Jun. 30, 2017	1.20% mfad: 25 bp	Aug. 2017	updated valuation: accident year 2017 loss ratio increased 3.5 points to 109.9%; discount rate increased by 21 basis points; selected margins for adverse deviations were updated
Sep. 30, 2017		Oct. 2017	update valuation (roll forward):

Under the proposed schedule for fiscal year 2017, the “off-half” valuation quarters ending March 31, 2017 and September 30, 2017 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

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 (there have been no changes in these descriptions since last month's Highlights).

The **Supreme Court of Canada** rendered its judgment on **Saadati v Moorhead (2017 SCC 28, rendered on Jun 2, 2017)**. Saadati was involved in a collision in July of 2005 in British Columbia and sued the at-fault driver for damages. According to the Supreme Court decision, *“The trial judge found that the ... accident caused S[aadati] psychological injuries, including personality change and cognitive difficulties. ...and awarded S[aadati] \$100,000 for non-pecuniary damages.”* The trial decision was appealed to the BC Court of Appeal where the trial's \$100,000 non-pecuniary award was dismissed. The Supreme Court upheld the \$100,000 non-pecuniary award, determining:

- *“A finding of legally compensable mental injury need not rest, in whole or in part, on the claimant proving a recognized psychiatric injury.”*
- *“...a trier of fact adjudicating a claim of mental injury is not concerned with diagnosis, but with symptoms and their effects.”*
- *“Expert evidence can assist in determining whether or not a mental injury has been shown, but where psychiatric diagnosis is unavailable, it remains open to a trier of fact to find on other evidence adduced by the claimant that he or she has proven on a balance of probabilities the occurrence of mental injury.”*

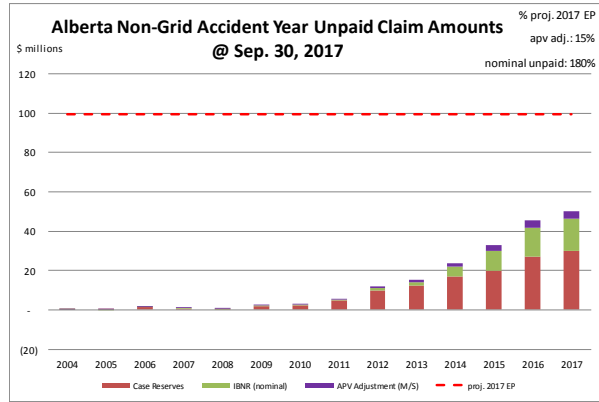
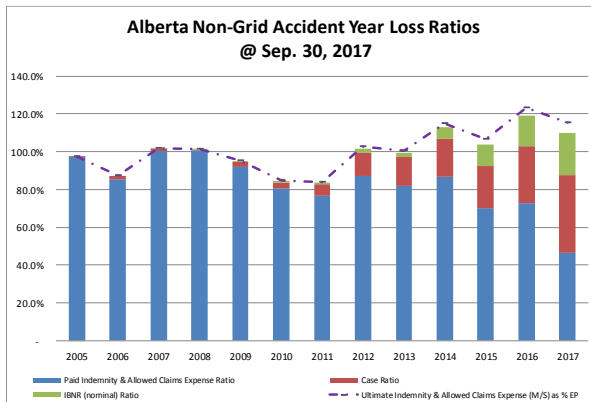
At the current time, no adjustments have been made to our valuation estimates or views based on the judgment as rendered, but we continue to review and consider the implications of the judgment.

1.4 Current Provision Summary

The charts at the top of the next page show the current levels of claim liabilities¹ booked by accident year². 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 2017 full year earned premium (the red hash-mark line) to provide some perspective.

¹Claim 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.

²Accident year 2004 was an incomplete year and therefore has been excluded from the loss ratio chart.



“M/S” refers to “Member Statement” values – that is, actuarial present value adjustments at the selected discount rate.

The current actuarial present value adjustments balance (\$15.0 million – see table immediately below) represents 15% of the earned premium projected for the full year 2017 (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	127,205	65.7%
ibnr	51,436	26.6%
M/S apv adjust.	14,916	7.7%
M/S total	193,557	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 is in case reserves for this pool. Approximately 60% of the IBNR balance relates to accident years 2016 and 2017 (see Exhibit B). Approximately 86% of the M/S total claim

liabilities are related to accident years 2013-2017 inclusive (i.e. the most recent 5 accident years).

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

premium liabilities (\$000s)			policy liabilities (\$000s)		
	amt	%		amt	%
unearned prem	48,623	84.7%	claim	178,641	71.2%
prem def/(dpac)	5,183	9.0%	premium	53,806	21.4%
M/S apv adjust.	3,634	6.3%	M/S apv adjust.	18,550	7.4%
M/S total	57,440	100.0%	M/S total	250,997	100.0%

2 Activity During the Month of September 2017

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 Report³.

³There 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)

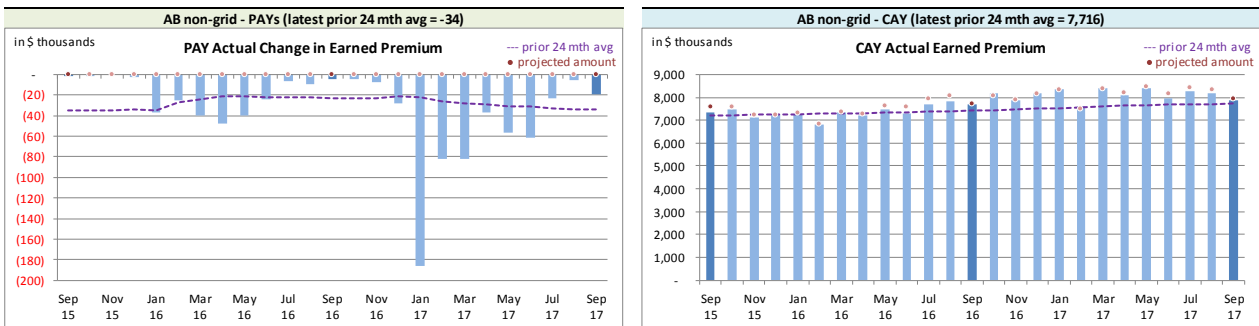
Accident Year	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	(6)	(6)	1,138	(98)	(317)	542	821	444
2015	(3)	(3)	1,283	657	(615)	(422)	668	235
2016	(9)	(9)	1,400	109	881	1,327	2,281	1,436
2017	7,861	(91)	5,120	(344)	2,162	(919)	7,282	(1,262)
TOTAL	7,842	(110)	8,942	325	2,110	528	11,053	853

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

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

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

The charts immediately below show actual **earned premium**⁴ 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 seem to occur at the beginning of each year.

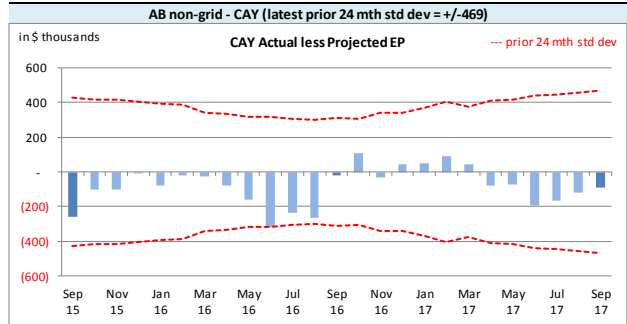
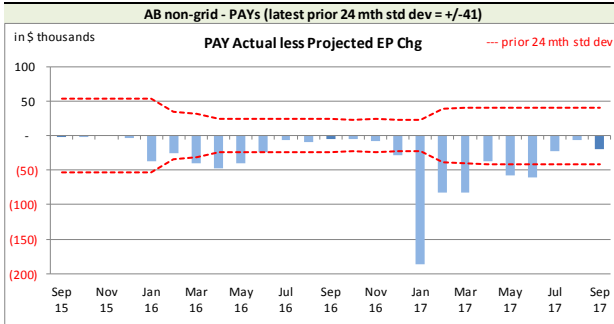
We have noted and have been investigating the unusually high level of PAYs earned premium activity so far in 2017, particularly with respect to one member and we are in discussions with that member to better understand the causes of the changes.

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**

⁴Premium 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)	(34)	7,716
std dev	41	469
A-P <> std dev	9	1
% <> std dev	36.0%	4.0%
norm <> std dev	31.7%	31.7%

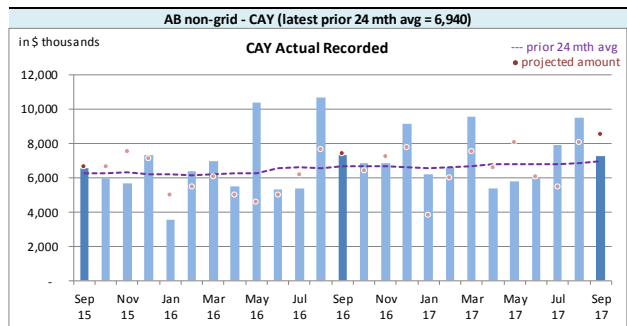
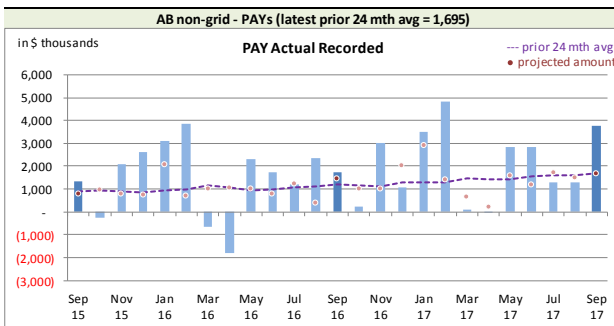
We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias⁵, with actuals generally lower than projected. However, the magnitude is not high relative to monthly

premium. In addition to the PAYs' bias, the CAY has also shown bias, with actuals being generally lower than projected. Starting with the August 2016 projections, we have modified our projection processes in an attempt to account for CAY bias. Over time, we may consider other projection approaches to narrow monthly variance levels further, 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.

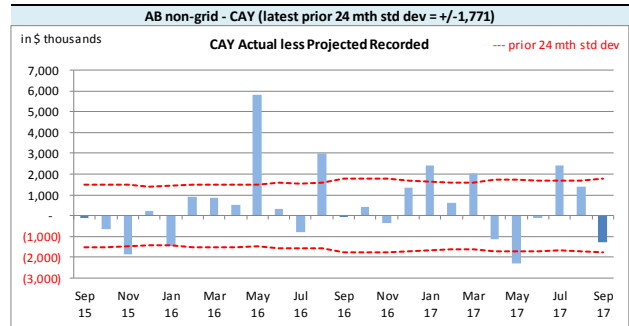
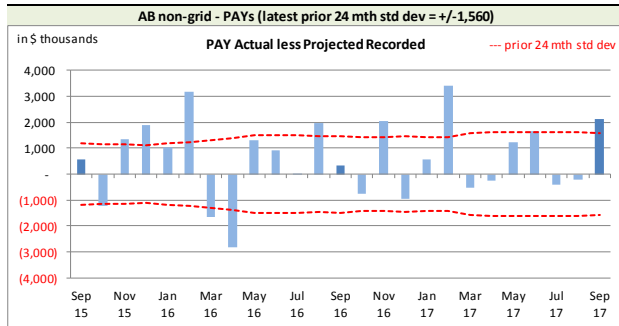
Alberta non-Grid RSP Actual Recorded by Calendar Month



Recorded activity variances from the previous month's projections are shown in the charts at the top of the next page, including the “prior 24-month standard deviation” levels to show how the variances from projection compare with historical standard deviations.

⁵The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

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)	1,695	6,940
std dev	1,560	1,771
A-P <> std dev	11	8
% <> std dev	44.0%	32.0%
norm <> std dev	31.7%	31.7%

With respect to **recorded** indemnity & allowed claims expense activity, 44% of the prior accident years' (PAYs) variances (left chart above) fell outside of the experience period's standard deviation, suggesting the projection process performs worse than a projection based simply on the 24-month average. We have

implemented changes in an attempt to address this.

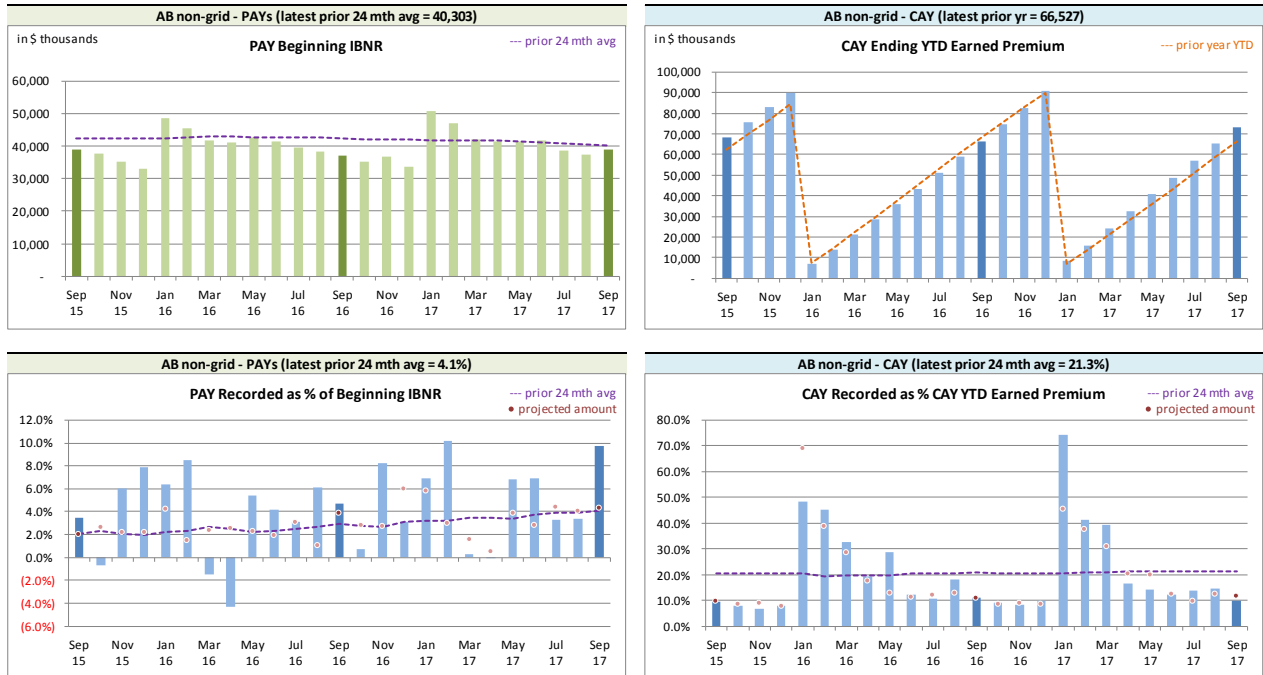
The PAYs **recorded** variance for the current month was outside the one standard deviation band. The activity was reviewed and confirmed. Through 2016 and 2017, a member has been conducting a comprehensive review of their open claims transactions as reported to the FA RSP system with correcting transactions posted in the current month (September 2017). The correcting transaction amounts were not high relative to unpaid balances, however, the corrections are being reviewed and discussed with the member, in conjunction with the FA internal audit team, to ensure our records are accurate in relation to the member's own records on their RSP claims' portfolio.

The current accident year (CAY) **recorded** variances (right chart above) have been greater than one standard deviation 32% of the time, suggesting that the projection process is no better than simply projecting the most recent prior 24-month average.

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 influence⁶ 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:

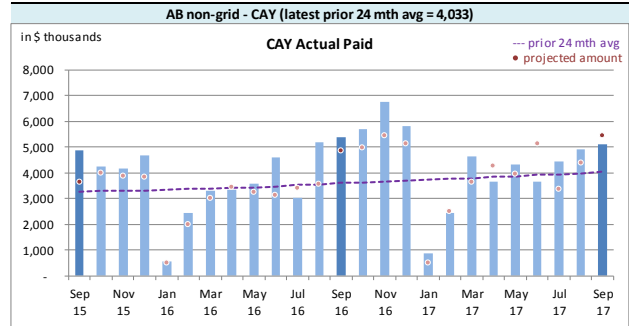
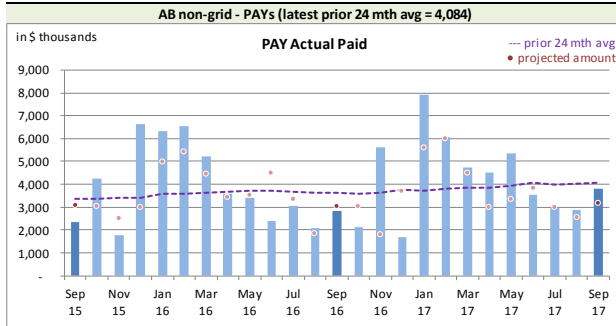
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years’ ultimate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

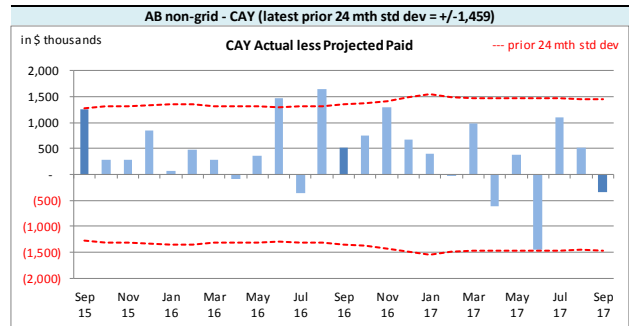
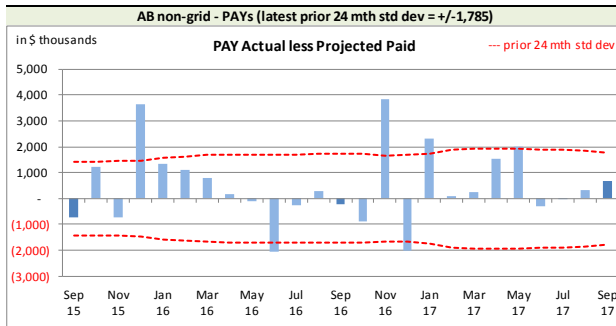
⁶Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned 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)		4,084	4,033
std dev		1,785	1,459
A-P <> std dev		6	2
% <> std dev		24.0%	8.0%
norm <> std dev		31.7%	31.7%

With respect to **paid** indemnity & allowed claims expense, the prior accident years’ variances (left chart above) do not appear to have bias and the magnitude of the variances do not appear to be an issue. With 24% of prior accident years (PAYs) **paid** variances over the last 25 calendar months falling outside of one standard deviation,

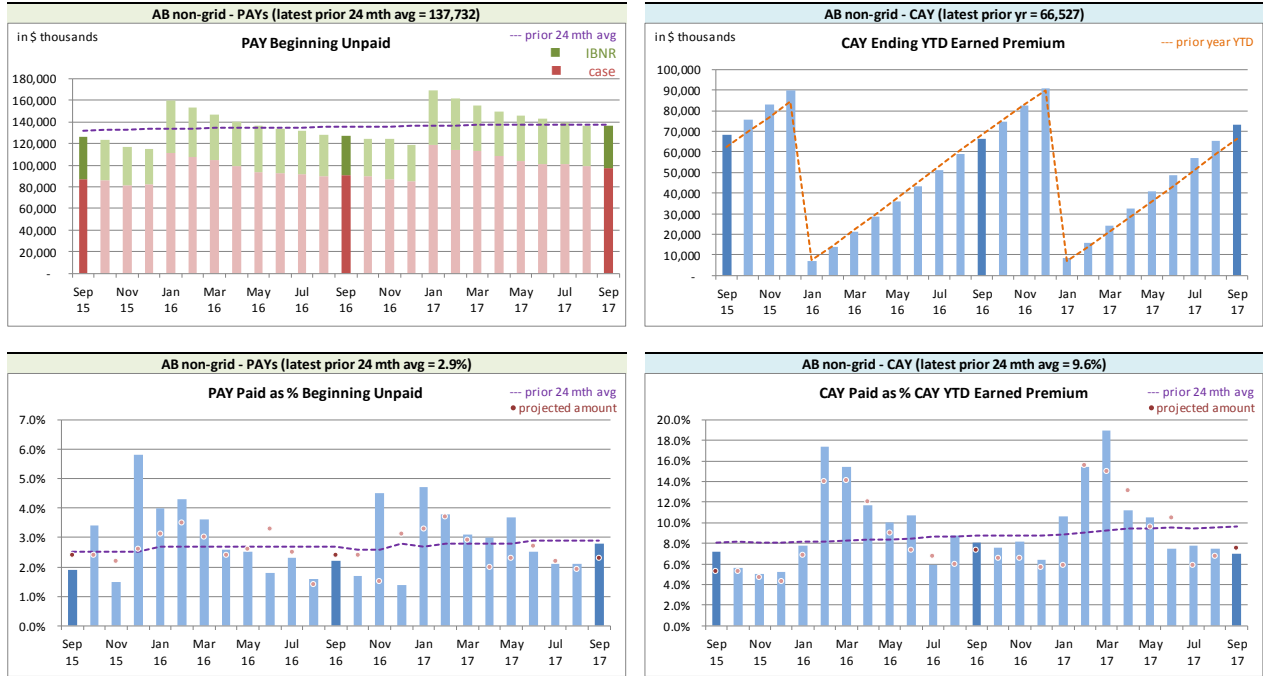
the projection process appears to have performed better than simply projecting based on a 24-month average.

Although the overall PAYs **paid** variance is within the one standard deviation band, as discussed in section 2.1.b, the current month PAY paid activity was impacted by correcting transactions posted by a member during the current month. The amounts are being reviewed and discussed with the member, in conjunction with the FA internal audit team, to ensure our records are accurate in relation to the member’s own records on their RSP claims’ portfolio.

With only 8% of the current accident year (CAY) **paid** variances falling outside of one standard deviation of the experience period activity, the projection process appears to perform better than simply projecting based on a 24-month average. However, there does appear to be evidence of bias (actuals tend to be higher than our projections) and we are considering options on how to address this.

We have included, for reference, additional charts immediately below related to levels influencing **paid** activity.

Alberta non-Grid RSP Levels that influence⁷ 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 IBNR⁸, 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

⁷Our 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.

⁸For ease of discussion, “IBNR” is used in place of “provisions for incurred but not recorded (IBNR) and development”.

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 immediately below summarizes variances in provisions included in the September 2017 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	IBNR		actuarial present value adjustments				IBNR + actuarial present value adjustments	
	Actual	Actual less Projected	Discount Amount		Provisions for Adverse Deviations		Actual	Actual less Projected
			Actual	Actual less Projected	Actual	Actual less Projected		
Prior	10,381	(449)	(1,792)	(1)	6,252	10	14,841	(440)
2015	10,155	(239)	(1,021)	22	3,834	(86)	12,968	(303)
2016	14,608	(1,447)	(1,539)	5	5,342	(15)	18,411	(1,457)
2017	16,292	1,163	(1,620)	(9)	5,460	29	20,132	1,183
TOTAL	51,436	(972)	(5,972)	17	20,888	(62)	66,352	(1,017)

The IBNR provision is \$1.0 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 at the top of the next page summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in the September 2017 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:	5,183	(11)	3,634	(12)	8,817	(23)
balance as % unearned premium:	10.7%	-	7.5%	-	18.1%	-
actual unearned premium:	48,623					
less projected:	(141)					

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 loss⁹ 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 expenses¹⁰, including IBNR.

In calculating the amounts as percentages of earned premium, the calendar year-to-date earned premium has been used, which includes earned premium associated with the current accident year but also earned premium adjustments related to prior accident years. Specifically, the current accident year (CAY) ratio in the table is 110.7% rather than 109.9% (the valuation ultimate ratio for accident year 2017), 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.)

⁹“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).

¹⁰Allowed 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 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	4,771	6.6%	(6,482)	(8.9%)	(1,711)	(2.4%)	(352)	(0.3%)
CAY	80,374	110.7%	3,840	5.3%	84,214	116.0%	8,931	(0.3%)
TOTAL	85,144	117.3%	(2,642)	(3.6%)	82,502	113.7%	8,579	(0.5%)

(“% EP” based on 2017 calendar year-to-date earned premium; ratios may not total due to rounding)

The prior accident years (PAYs) changes from last month are due to the release of the actuarial present value adjustments with claims payments. The loss ratio change year-to-date 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 Aug. 2017	Actual Sep. 2017	Projected Oct. 2017	Projected Nov. 2017	Projected Dec. 2017
		2004	42	42	42	42	42
		2005	(42)	(42)	(41)	(40)	(39)
		2006	137	137	134	132	129
		2007	293	305	298	292	287
		2008	92	126	123	120	118
		2009	561	593	581	569	558
		2010	710	682	670	651	633
		2011	884	940	920	898	874
discount rate		2012	2,650	2,450	2,402	2,338	2,274
1.20%		2013	3,033	2,866	2,827	2,698	2,626
		2014	7,391	6,742	6,642	6,240	5,958
interest rate margin		2015	13,762	12,968	12,681	11,777	11,123
25 basis pts		2016	20,830	18,411	18,112	16,809	15,835
		2017	18,483	20,132	22,130	23,099	22,945
		TOTAL	68,826	66,352	67,521	65,625	63,363
		Change		(2,474)	1,169	(1,896)	

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. 2017	Actual Sep. 2017	Projected Oct. 2017	Projected Nov. 2017	Projected Dec. 2017
	349.1%	2004	36	36	36	36	36
	97.2%	2005	(45)	(45)	(44)	(43)	(42)
	87.2%	2006	17	17	17	17	17
	101.7%	2007	214	225	220	216	212
	101.2%	2008	63	93	91	89	87
	95.0%	2009	385	426	417	409	401
	84.3%	2010	498	471	462	448	435
	83.5%	2011	496	552	541	525	509
	101.5%	2012	1,827	1,631	1,598	1,550	1,503
	99.4%	2013	1,981	1,852	1,833	1,723	1,671
	112.9%	2014	5,735	5,123	5,072	4,717	4,481
	103.6%	2015	10,827	10,155	9,952	9,156	8,607
	118.9%	2016	16,900	14,608	14,462	13,305	12,507
	109.9%	2017	14,935	16,292	17,975	18,671	18,264
		TOTAL	53,869	51,436	52,632	50,819	48,688
		Change		(2,433)	1,196	(1,813)	

Please see Exhibit G, page 2 for Components of Change during Current Month

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Aug. 2017	Actual Sep. 2017	Projected Oct. 2017	Projected Nov. 2017	Projected Dec. 2017
Premium Liabilities					
(1) unearned premium (UP)	48,654	48,623	49,959	50,587	50,265
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	118.1%	118.1%	118.2%	118.3%	118.4%
(3) expected future costs {(1) x (2)}	57,447	57,440	59,053	59,832	59,496
(4) premium deficiency / (deferred policy acquisition cost)	8,793	8,817	9,094	9,245	9,231
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	110.6%	110.7%	110.7%	110.8%	110.9%
(6) expected future costs {(1) x (5)}	53,811	53,806	55,314	56,044	55,728
(7) premium deficiency / (deferred policy acquisition cost)	5,157	5,183	5,355	5,457	5,463

EXHIBIT D

Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2017, broken down by component.

Alberta non-Grid		Projected Balances as at Dec. 31, 2017 (\$000s)						
ending 2017		nominal values			actuarial present value adjustments (apvs)			
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	Total apvs	TOTAL
2004	26	36	62	-	-	6	6	68
2005	69	(42)	27	-	-	3	3	30
2006	1,338	17	1,355	(26)	5	136	112	1,467
2007	698	212	910	(18)	4	91	75	985
2008	288	87	375	(8)	2	38	31	406
2009	1,630	401	2,031	(53)	12	203	157	2,188
2010	2,250	435	2,685	(78)	16	268	198	2,883
2011	4,489	509	4,998	(150)	30	500	365	5,363
2012	9,068	1,503	10,571	(317)	63	1,057	771	11,342
2013	11,614	1,671	13,285	(412)	80	1,328	955	14,240
2014	15,762	4,481	20,243	(607)	121	2,024	1,477	21,720
2015	18,225	8,607	26,832	(912)	188	3,354	2,516	29,348
2016	23,921	12,507	36,428	(1,348)	291	4,553	3,328	39,756
PAYs (sub-total):	89,378	30,424	119,802	(3,929)	812	13,561	9,994	129,796
CAY (2017)	38,141	18,264	56,405	(1,974)	395	6,487	4,681	61,086
claims liabilities:	127,519	48,688	176,207	(5,903)	1,207	20,048	14,675	190,882
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	Total apvs	TOTAL*
premium liabilities:	50,265	5,463	55,728	(1,331)	278	4,939	3,768	59,496
*Total may not be sum of parts, as apvs apply to future costs within UPR								
policy liabilities:			231,935	(7,234)	1,485	24,987	18,443	250,378

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, 2017 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Jun. 30, 2017)

Accident Year	Third Party Liability	Accident Benefits	Other Coverages	Total
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%	9.7%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	9.2%	10.0%
2013	10.0%	10.0%	9.8%	10.0%
2014	10.0%	10.0%	9.4%	10.0%
2015	12.5%	10.0%	12.4%	12.5%
2016	12.5%	10.0%	12.5%	12.5%
2017	12.1%	10.0%	6.2%	11.5%
2018	11.8%	10.0%	5.1%	8.9%
<u>prem liab</u>	<u>11.8%</u>	<u>10.0%</u>	<u>5.1%</u>	<u>8.9%</u>

discount rate: 1.20%
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, 2017 from the latest valuation date (projections in exhibits A to D are also to Dec. 31, 2017, but are based on more up-to-date information). We have included the most recent valuation selection (1.20%), the prior valuation assumption (0.99%) and the prior fiscal year end valuation assumption (0.55%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

\$ Format: \$000s

AY	Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2017 projected Unpaid							
	0.70%	1.20%	1.70%	2.20%	2.70%	3.20%	0.99%	0.55%
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	1,171	1,162	1,152	1,143	1,134	1,125	1,166	1,174
2007	735	729	723	718	712	706	732	737
2008	724	718	712	706	699	694	721	726
2009	2,420	2,394	2,369	2,344	2,320	2,296	2,405	2,428
2010	2,662	2,630	2,599	2,569	2,539	2,510	2,644	2,672
2011	4,810	4,749	4,689	4,631	4,574	4,519	4,775	4,829
2012	10,472	10,341	10,215	10,092	9,972	9,856	10,396	10,512
2013	13,049	12,878	12,711	12,550	12,394	12,242	12,950	13,101
2014	22,331	22,048	21,774	21,508	21,249	20,998	22,167	22,417
2016	44,758	44,067	43,403	42,759	42,129	41,524	44,361	44,969
2017	65,995	65,037	64,117	63,226	62,358	61,524	65,441	66,289
Total	201,307	198,478	195,750	193,106	190,527	188,037	199,675	202,171
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

AY	Dollar Impact Relative to Valuation Assumption							
	0.70%	1.20%	1.70%	2.20%	2.70%	3.20%	0.99%	0.55%
Total	2,829	-	(2,728)	(5,372)	(7,951)	(10,441)	1,197	3,693
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

AY	Percentage Impact Relative to Valuation Assumption							
	0.70%	1.20%	1.70%	2.20%	2.70%	3.20%	0.99%	0.55%
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	0.8%	-	(0.9%)	(1.6%)	(2.4%)	(3.2%)	0.3%	1.0%
2007	0.8%	-	(0.8%)	(1.5%)	(2.3%)	(3.2%)	0.4%	1.1%
2008	0.8%	-	(0.8%)	(1.7%)	(2.6%)	(3.3%)	0.4%	1.1%
2009	1.1%	-	(1.0%)	(2.1%)	(3.1%)	(4.1%)	0.5%	1.4%
2010	1.2%	-	(1.2%)	(2.3%)	(3.5%)	(4.6%)	0.5%	1.6%
2011	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(4.8%)	0.5%	1.7%
2012	1.3%	-	(1.2%)	(2.4%)	(3.6%)	(4.7%)	0.5%	1.7%
2013	1.3%	-	(1.3%)	(2.5%)	(3.8%)	(4.9%)	0.6%	1.7%
2014	1.3%	-	(1.2%)	(2.4%)	(3.6%)	(4.8%)	0.5%	1.7%
2016	1.6%	-	(1.5%)	(3.0%)	(4.4%)	(5.8%)	0.7%	2.0%
2017	1.5%	-	(1.4%)	(2.8%)	(4.1%)	(5.4%)	0.6%	1.9%
Total	1.4%	-	(1.4%)	(2.7%)	(4.0%)	(5.3%)	0.6%	1.9%
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

EXHIBIT G

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

RSP		Alberta Non-Grid						M/S IBNR - in \$000s
AccountCode Desc		IBNR - Discou						
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	42	-	-	-	-	-	42	
2005	(42)	1	(1)	-	-	-	(42)	
2006	137	(3)	3	-	-	-	137	
2007	293	(6)	18	-	12	4.1%	305	
2008	92	(2)	36	-	34	37.0%	126	
2009	561	(13)	45	-	32	5.7%	593	
2010	710	(14)	(14)	-	(28)	(3.9%)	682	
2011	884	(17)	73	-	56	6.3%	940	
2012	2,650	(53)	(147)	-	(200)	(7.5%)	2,450	
2013	3,033	(99)	(68)	-	(167)	(5.5%)	2,866	
2014	7,391	(264)	(385)	-	(649)	(8.8%)	6,742	
2015	13,762	(491)	(303)	-	(794)	(5.8%)	12,968	
2016	20,830	(962)	(1,457)	-	(2,419)	(11.6%)	18,411	
2017	18,483	466	1,183	-	1,649	8.9%	20,132	
Grand Total	68,826	(1,457)	(1,017)	-	(2,474)	(3.6%)	66,352	

EXHIBIT G

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

RSP AccountCode Desc		Alberta Non-Grid		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	(45)	1	(1)	-	-	-	(45)
2006	17	-	-	-	-	-	17
2007	214	(4)	15	-	11	5.1%	225
2008	63	(1)	31	-	30	47.6%	93
2009	385	(8)	49	-	41	10.6%	426
2010	498	(10)	(17)	-	(27)	(5.4%)	471
2011	496	(10)	66	-	56	11.3%	552
2012	1,827	(37)	(159)	-	(196)	(10.7%)	1,631
2013	1,981	(79)	(50)	-	(129)	(6.5%)	1,852
2014	5,735	(229)	(383)	-	(612)	(10.7%)	5,123
2015	10,827	(433)	(239)	-	(672)	(6.2%)	10,155
2016	16,900	(845)	(1,447)	-	(2,292)	(13.6%)	14,608
2017	14,935	194	1,163	-	1,357	9.1%	16,292
Grand Total	53,869	(1,461)	(972)	-	(2,433)	(4.5%)	51,436