



ALBERTA NON-GRID RISK SHARING POOL

AUGUST 2017 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

Related Bulletin: [F17-075 Alberta RSPs August 2017 Operational Reports](#)

Related Quarterly Valuation Highlights:

[Actuarial Quarterly Valuation Highlights Risk Sharing Pools as at June 30, 2017](#)

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ACTUARIAL HIGHLIGHTS
RSP ALBERTA NON-GRID
OPERATIONAL REPORT
AUGUST 2017

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2017)

The August 2017 Operational Report incorporates the results of an updated valuation (as at June 30, 2017) – the impact of the implementation of the valuation is discussed in section 1.2. 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 New Valuation

A valuation of the Alberta Non-Grid Risk Sharing Pool (“RSP”) as at June 30, 2017 has been completed since last month’s Operational Report and the results of that valuation have been incorporated into this month’s Report. The valuation was completed by the Facility Association’s internal actuarial group in conjunction with, and approved by, the appointed actuary, under the hybrid model for actuarial services. Additional detail will be provided in an “Actuarial Highlights – Quarterly Valuation” report to be posted to the FA website at the same time as this report.

The valuation implementation impact is summarized in the tables below.

Summary of Impact (\$000s) of Implementing Result of Valuation as at June 30, 2017¹

AB Non-Grid	unfav / (fav) for the month and ytd					
	IMPACT in \$000s from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
[1]	[2]	[3]	[4]	[5]	[6]	
PAYs	2,848	366	3,214	(856)	(550)	1,808
CAY	2,285	126	2,411	(285)	-	2,126
Prem Def	1,967	195	2,162	(235)	-	1,927
TOTAL	7,100	687	7,787	(1,376)	(550)	5,861

As indicated in the table above, the incorporation of the new valuation had an estimated **\$5.9 million unfavourable impact** on the month's net result from operations, adding an estimated 9.1 points (see table immediately below) to the **year-to-date Combined Operating Ratio** to end at **152.7%**.

Summary of Impact (% YTD EP) of Implementing Result of Valuation as at June 30, 2017

AB Non-Grid	ytd EP 64,739 (actual)					
	IMPACT unfav / (fav) as % ytd EP from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
[1]	[2]	[3]	[4]	[5]	[6]	
PAYs	4.4%	0.6%	5.0%	(1.3%)	(0.8%)	2.8%
CAY	3.5%	0.2%	3.7%	(0.4%)	-	3.3%
Prem Def	3.0%	0.3%	3.3%	(0.4%)	-	3.0%
TOTAL	11.0%	1.1%	12.0%	(2.1%)	(0.8%)	9.1%

The impact of the nominal changes is shown in column [1] of the two preceding summary tables. The change in the selected nominal ultimates was unfavourable by \$7.1 million overall. This reflects the impact attributable to the changes in the selected ultimate loss ratios (i.e. for each accident year, it is the product of life-to-date earned premium for the accident year and the change in the selected ultimate loss ratio).

The prior accident years overall showed a \$2.8 million unfavourable variance, as recorded claims activity continues to show unfavourable actual experience relative to recorded activity projected from the previous valuation, particularly with respect to bodily injury (within third party liability) recorded activity. This unfavourable change is 2.1% of the prior accident years' nominal unpaid

¹In these tables, "PAYs" refers to prior accident years, "CAY" refers to the current accident year, and "Prem Def" refers to the provision for premium deficiency or the deferred policy acquisition asset (as applicable). "Nominal" refers to changes excluding any actuarial present value adjustments, whereas "apv adj." refers to actuarial present value adjustments.

The columns under the heading "ults & payout patterns" reflect the impact of changes in the valuation selected ultimates and claims payment patterns (i.e. based on unchanged selection of discount rates and margins for adverse deviation). The column "dsct rate" reflects the impact of the change in the selected discount rate and the column "margins" reflects the impact of any changes in selected margins for adverse deviations.

balance of \$136.3 million determined at the end of last month (July 2017).

The current accident year and premium deficiency impacts are a result of the changes in the selected loss ratios for accident year **2017** (up 3.5 points from 106.4% to **109.9%**) and **2018** (up 4.7 points from 105.7% to **110.4%**). These changes reflect various updated assumptions, and are beyond what we would “expect” in terms of point movements of estimated “mean” loss ratios, as the updated assumptions reflect the impact of unfavourable recorded activity variances.

The impacts related to actuarial present value (“apv”) adjustments are split into the impact prior to any change in the selected discount rate and selected margins for adverse deviations or “MfADs” (at the level they were selected i.e. coverage and accident half-year), the impact of then updating the discount rate, and finally the impact of any changes to the MfADs (at the level they were selected). The changes in actuarial present value adjustments are shown in the summary tables in columns [2], [4], and [5].

Column [2] recognizes that changing the nominal selections also changed the unpaid estimates (including changes to the relative mix by government line, which had an impact on the weighted-average MfADs. It also reflects the fact that we updated the projected emergence of claims payments, resulting in a change in the projected cash flows. These changes generated an unfavourable change of \$0.7 million in the actuarial present value adjustments, prior to any changes in the selected discount rate and/or MfADs.

Claims payment emergence patterns were updated and cash flows were reviewed against the selected risk-free yield curve, derived from Government of Canada benchmark bond yields monthly series using values for June 2017. Column [4] accounts for the change in the **discount rate** selected (increased 21 basis points to **1.20%**), indicating a favourable impact of \$1.4 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was \$1.1 million at August 2017 (projected \$1.1 million impact at December 31, 2017) – this compares to the \$1.2 million change one would estimate as the impact by interpolation using the interest rate sensitivity table provided in last month’s Actuarial Highlights.

Column [5] accounts for any changes to selected MfADs. The selected **investment rate MfAD** was **left unchanged at 25 basis points**. However, the selected **claims development MfADs** were updated for some accident years and coverages, resulting in an estimated overall favourable impact of \$0.6 million.

Consideration was given to recent legal decisions and changes in legislation / regulation as outlined in section 1.4.

1.3 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.

1.4 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.”*

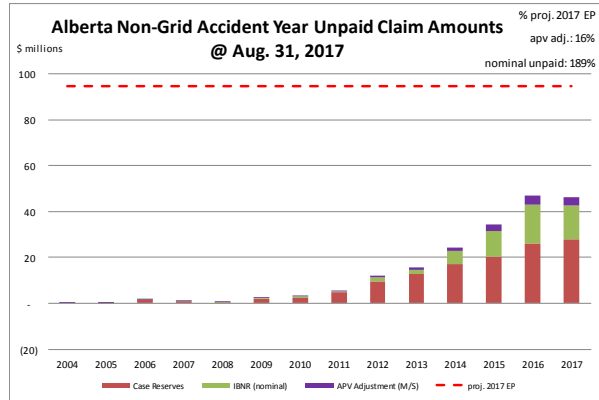
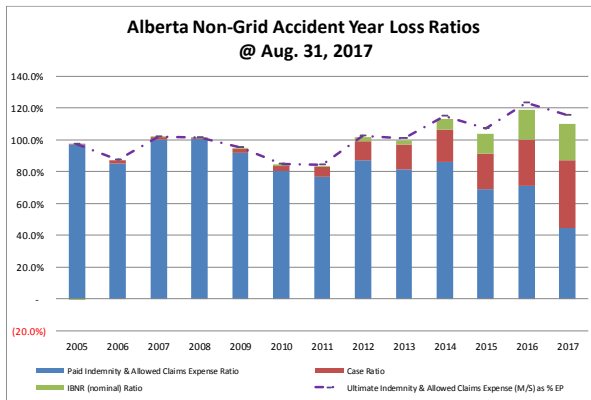
At the current time, no adjustments have been made to our valuation estimates or views based on the judgment as rendered, but we continue to review and consider the implications of the judgment.

1.5 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 amount of 2017 full year earned premium (the red hash-mark line) to provide some perspective.

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.



“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 16% of the earned premium projected for the full year 2017 (the upper 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	125,094	64.5%
ibnr	53,869	27.8%
M/S apv adjust.	14,957	7.7%
M/S total	193,920	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 59% 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	48,654	84.7%	claim	178,963	71.2%
prem def/(dpac)	5,157	9.0%	premium	53,811	21.4%
M/S apv adjust.	3,636	6.3%	M/S apv adjust.	18,593	7.4%
M/S total	57,447	100.0%	M/S total	251,367	100.0%

2 Activity During the Month of August 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 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)

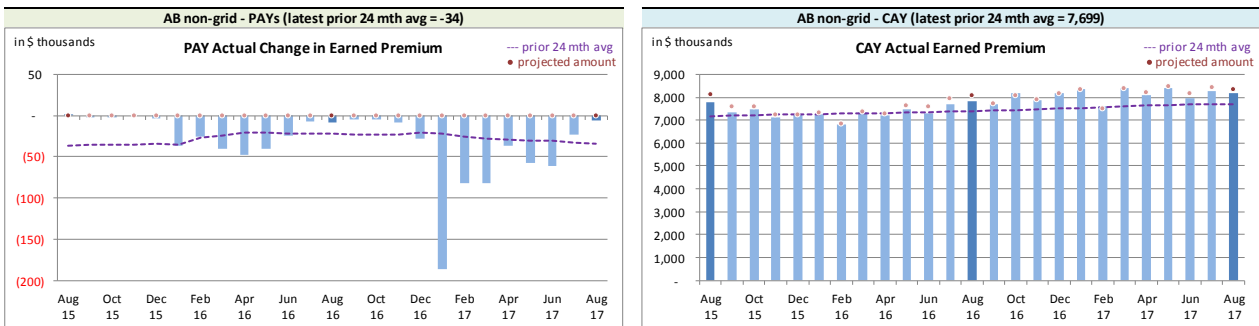
Accident Year	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	(0)	(0)	1,897	779	(1,180)	(400)	717	379
2015	(0)	(0)	569	(59)	(85)	109	484	50
2016	(6)	(6)	420	(402)	(340)	(250)	81	(651)
2017	8,192	(122)	4,922	520	4,560	894	9,482	1,413
TOTAL	8,185	(129)	7,809	839	2,955	353	10,764	1,191

(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**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 seem to occur at the beginning of each year.

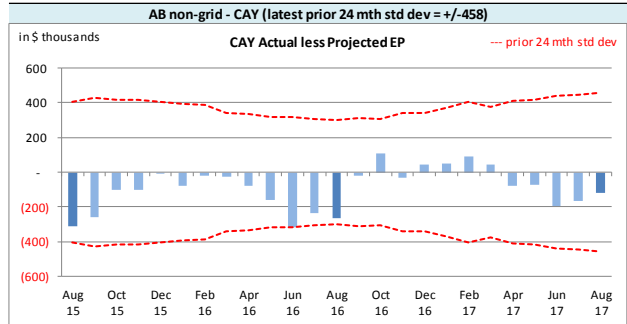
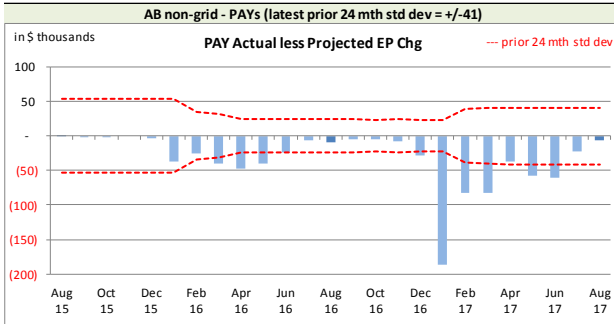
We have noted and have been investigating the unusually high level of PAYs earned premium activity so far in 2017, particularly with respect to one member and we are in discussions with that member to better understand the causes of the changes.

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**

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)	(34)	7,699
std dev	41	458
A-P <> std dev	9	1
% <> std dev	36.0%	4.0%
norm <> std dev	31.7%	31.7%

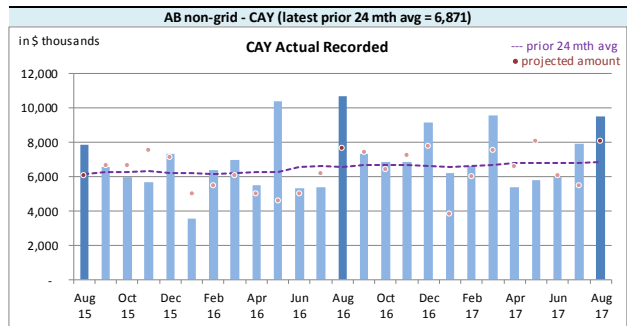
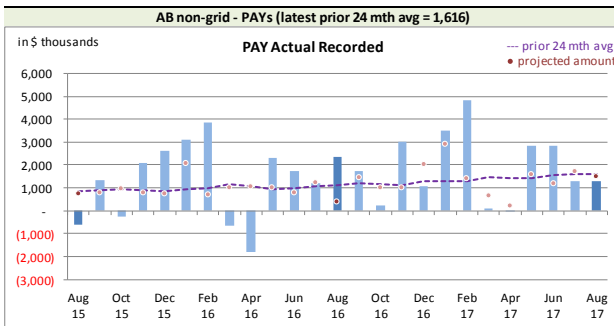
We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias⁶, with actuals generally lower than projected. However, the magnitude is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

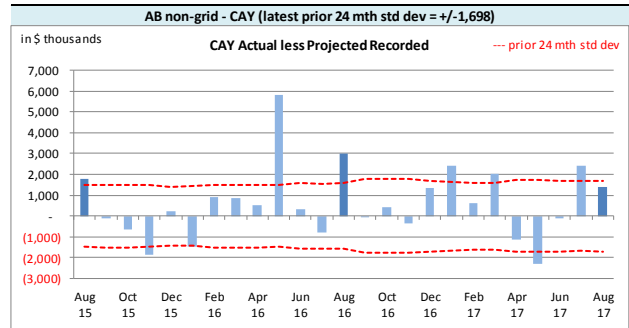
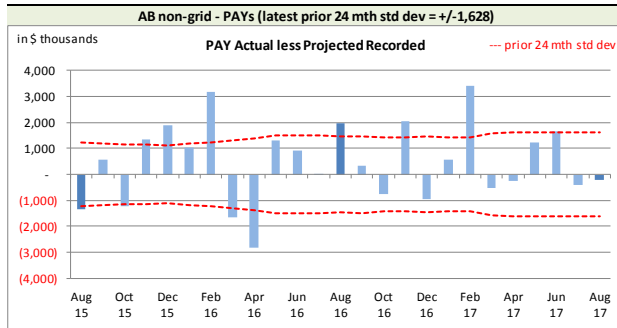
Alberta non-Grid RSP Actual Recorded by Calendar Month



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.

⁶The 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)	1,616	6,871
std dev	1,628	1,698
A-P <> std dev	11	9
% <> std dev	44.0%	36.0%
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

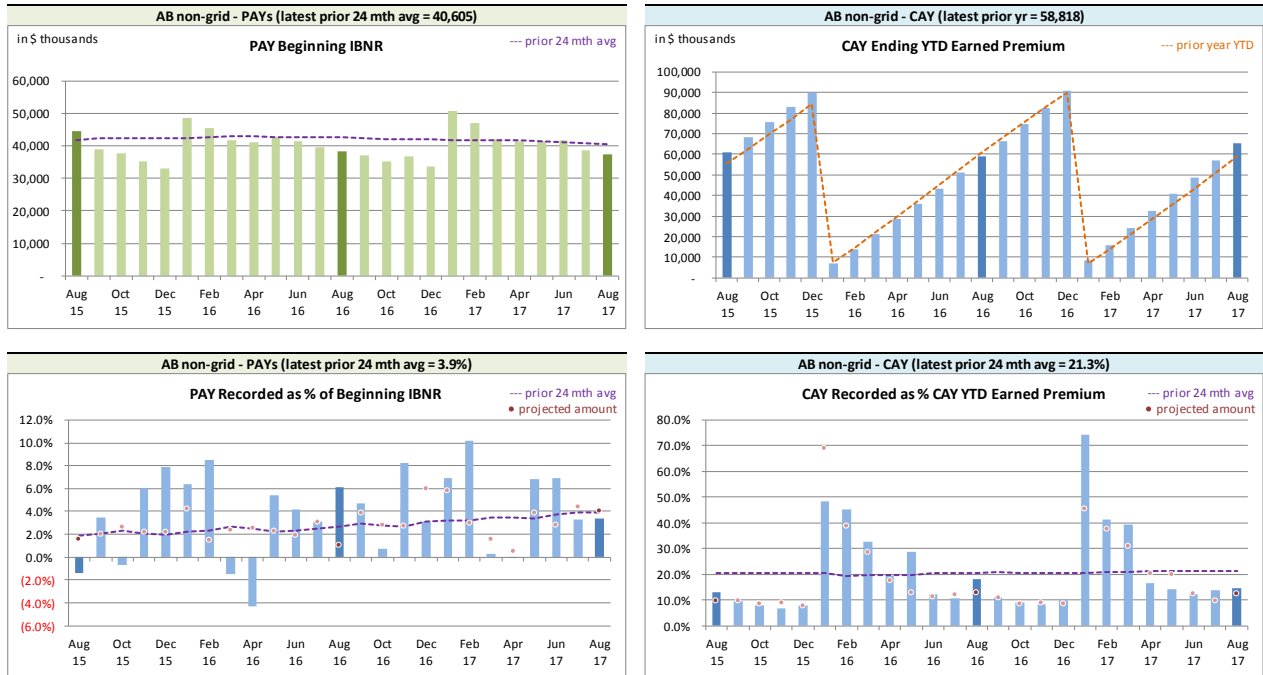
implemented changes in an attempt to address this that appear to be working.

The current accident year (CAY) **recorded** variances (right chart above) have been greater than one standard deviation 36% 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 influence⁷ 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:

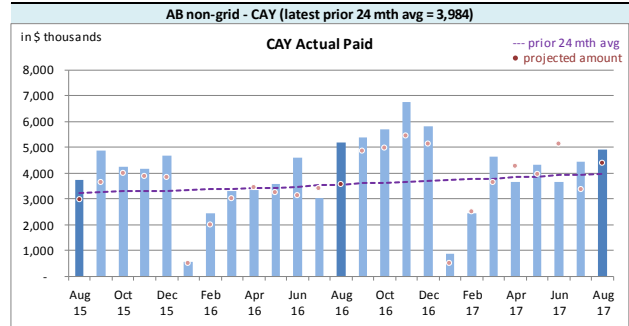
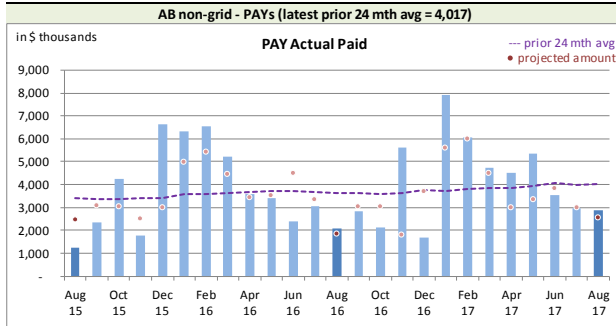
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years’ ultimate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

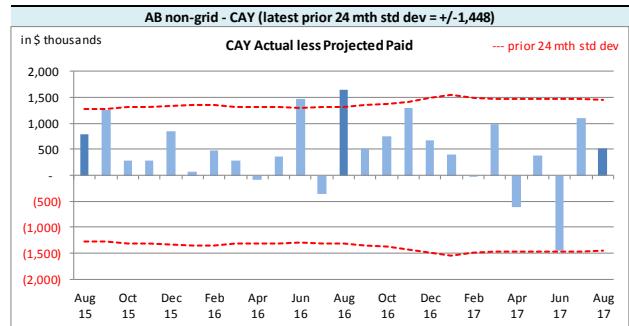
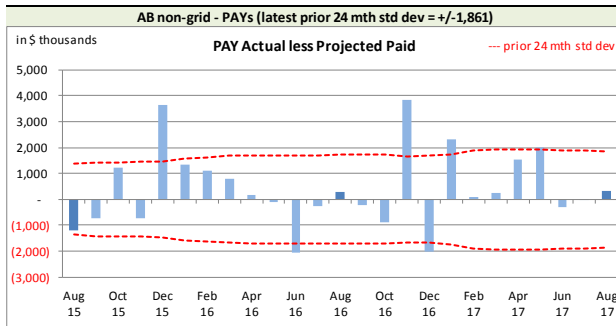
⁷Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned 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)		4,017	3,984
std dev		1,861	1,448
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.

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 at the top of the next page related to levels influencing **paid** activity.

Alberta non-Grid RSP Levels that influence⁸ 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 IBNR⁹, 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 the August 2017 Operational Report and the

⁸Our 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.

⁹For ease of discussion, “IBNR” is used in place of “provisions for incurred but not recorded (IBNR) and development”.

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	11,207	(324)	(1,828)	(279)	6,372	(664)	15,751	(1,267)
2015	10,827	399	(1,064)	(171)	3,999	45	13,762	273
2016	16,900	2,990	(1,592)	(343)	5,522	361	20,830	3,008
2017	14,935	741	(1,496)	(303)	5,044	85	18,483	523
TOTAL	53,869	3,806	(5,980)	(1,096)	20,937	(173)	68,826	2,537

The IBNR provision is \$3.8 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, and due to the valuation implementation.

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 August 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 and due to the valuation implementation.

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:	5,157	1,872	3,636	(152)	8,793	1,720
balance as % unearned premium:	10.6%	4.0%	7.5%	-	18.1%	4.0%
actual unearned premium:	48,654					
less projected:	(1,461)					

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 loss¹⁰ 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 expenses¹¹, 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 110.8% 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.)

¹⁰“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).

¹¹Allowed 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	4,790	7.4%	(6,149)	(9.5%)	(1,359)	(2.1%)	1,544	3.0%
CAY	71,734	110.8%	3,548	5.5%	75,282	116.3%	11,188	3.0%
TOTAL	76,525	118.2%	(2,601)	(4.0%)	73,924	114.2%	12,732	6.0%

(“% 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 and due to valuation implementation. 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 and the valuation implementation.

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 and due to the valuation implementation.

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				
		Actual	Actual	Projected	Projected	Projected
		Jul. 2017	Aug. 2017	Sep. 2017	Oct. 2017	Dec. 2017
IBNR + M/S actuarial present value adjustments	Accident Year					
	2004	42	42	42	42	42
	2005	(31)	(42)	(41)	(40)	(38)
	2006	145	137	134	132	127
	2007	149	293	287	282	270
	2008	325	92	90	90	86
	2009	305	561	548	537	518
	2010	691	710	696	681	645
	2011	1,590	884	867	850	806
discount rate	2012	2,810	2,650	2,597	2,545	2,409
1.20%	2013	4,052	3,033	2,934	2,892	2,742
	2014	7,383	7,391	7,127	7,024	6,400
interest rate margin	2015	13,985	13,762	13,271	12,976	11,571
25 basis pts	2016	18,635	20,830	19,868	19,592	17,117
	2017	16,777	18,483	18,949	21,261	22,803
	TOTAL	66,858	68,826	67,369	68,864	65,498
	Change		1,968	(1,457)	1,495	

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 Jul. 2017	Actual Aug. 2017	Projected Sep. 2017	Projected Oct. 2017	Projected Dec. 2017
	349.1%	2004	36	36	36	36	36
	97.2%	2005	(34)	(45)	(44)	(43)	(41)
	87.2%	2006	20	17	17	17	17
	101.7%	2007	66	214	210	206	198
	101.2%	2008	240	63	62	61	59
	95.0%	2009	128	385	377	369	355
	84.3%	2010	452	498	488	478	450
	83.5%	2011	1,114	496	486	476	448
	101.5%	2012	1,873	1,827	1,790	1,754	1,650
	99.4%	2013	2,850	1,981	1,902	1,883	1,772
	112.9%	2014	5,124	5,735	5,506	5,451	4,919
	103.6%	2015	10,862	10,827	10,394	10,186	9,000
	118.9%	2016	14,642	16,900	16,055	15,894	13,745
	109.9%	2017	13,417	14,935	15,129	17,178	18,082
		TOTAL	50,790	53,869	52,408	53,946	50,690
		Change		3,079	(1,461)	1,538	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual	Actual	Projected	Projected	Projected
	Jul. 2017	Aug. 2017	Sep. 2017	Oct. 2017	Dec. 2017
Premium Liabilities					
(1) unearned premium (UP)	49,136	48,654	48,764	48,733	46,499
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	114.2%	118.1%	118.1%	118.2%	118.4%
(3) expected future costs {(1) x (2)}	56,109	57,447	57,604	57,601	55,034
(4) premium deficiency / (deferred policy acquisition cost)	6,973	8,793	8,840	8,868	8,535
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	106.6%	110.6%	110.7%	110.7%	110.9%
(6) expected future costs {(1) x (5)}	52,393	53,811	53,958	53,955	51,550
(7) premium deficiency / (deferred policy acquisition cost)	3,257	5,157	5,194	5,222	5,051

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 ending 2017	Projected Balances as at Dec. 31, 2017 (\$000s)							
	nominal values			actuarial present value adjustments (apvs)				
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	development PfAD	Total apvs	TOTAL
2004	26	36	62	-	-	6	6	68
2005	67	(41)	26	-	-	3	3	29
2006	1,311	17	1,328	(25)	5	130	110	1,438
2007	684	198	882	(18)	4	86	72	954
2008	282	59	341	(7)	1	33	27	368
2009	1,734	355	2,089	(54)	13	204	163	2,252
2010	2,190	450	2,640	(77)	16	256	195	2,835
2011	4,462	448	4,910	(147)	29	476	358	5,268
2012	8,749	1,650	10,399	(312)	62	1,009	759	11,158
2013	11,722	1,772	13,494	(418)	81	1,307	970	14,464
2014	15,362	4,919	20,281	(608)	122	1,967	1,481	21,762
2015	18,423	9,000	27,423	(932)	192	3,311	2,571	29,994
2016	23,168	13,745	36,913	(1,366)	295	4,443	3,372	40,285
PAYs (sub-total):	88,180	32,608	120,788	(3,964)	820	13,231	10,087	130,875
CAY (2017)	38,823	18,082	56,905	(1,992)	398	6,315	4,721	61,626
claims liabilities:	127,003	50,690	177,693	(5,956)	1,218	19,546	14,808	192,501
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	development PfAD	Total apvs	TOTAL*
premium liabilities:	46,499	5,051	51,550	(1,232)	256	4,460	3,484	55,034
				*Total may not be sum of parts, as apvs apply to future costs within UPR				
policy liabilities:	229,243			(7,188)	1,474	24,006	18,292	247,535

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 current 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

Page 1 of 2

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	(31)	1	(40)	28	(11)	35.5%	(42)	
2006	145	(3)	-	(5)	(8)	(5.5%)	137	
2007	149	(3)	151	(4)	144	96.6%	293	
2008	325	(7)	(140)	(86)	(233)	(71.7%)	92	
2009	305	(8)	(35)	299	256	83.9%	561	
2010	691	(15)	52	(18)	19	2.7%	710	
2011	1,590	(32)	33	(707)	(706)	(44.4%)	884	
2012	2,810	(57)	139	(242)	(160)	(5.7%)	2,650	
2013	4,052	(68)	(505)	(446)	(1,019)	(25.1%)	3,033	
2014	7,383	(251)	(88)	347	8	0.1%	7,391	
2015	13,985	(496)	(44)	317	(223)	(1.6%)	13,762	
2016	18,635	(813)	683	2,325	2,195	11.8%	20,830	
2017	16,777	1,183	(1,603)	2,126	1,706	10.2%	18,483	
Grand Total	66,858	(569)	(1,397)	3,934	1,968	2.9%	68,826	

EXHIBIT G

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

RSP		Alberta Non-Grid						IBNR - in \$000s
AccountCode Desc		IBNR - Undiscounted						
AccYear	Values			Sum of Change Due to Valuation Implementation	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					
2004	36	-	-	-	-	-	36	
2005	(34)	1	(37)	25	(11)	32.4%	(45)	
2006	20	-	(3)	-	(3)	(15.0%)	17	
2007	66	(1)	149	-	148	224.2%	214	
2008	240	(5)	(95)	(77)	(177)	(73.8%)	63	
2009	128	(3)	(27)	287	257	200.8%	385	
2010	452	(9)	55	-	46	10.2%	498	
2011	1,114	(22)	32	(628)	(618)	(55.5%)	496	
2012	1,873	(37)	145	(154)	(46)	(2.5%)	1,827	
2013	2,850	(57)	(487)	(325)	(869)	(30.5%)	1,981	
2014	5,124	(205)	(109)	925	611	11.9%	5,735	
2015	10,862	(434)	(50)	449	(35)	(0.3%)	10,827	
2016	14,642	(732)	644	2,346	2,258	15.4%	16,900	
2017	13,417	777	(1,544)	2,285	1,518	11.3%	14,935	
Grand Total	50,790	(727)	(1,327)	5,133	3,079	6.1%	53,869	