



ALBERTA NON-GRID RISK SHARING POOL

NOVEMBER 2016 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS
RSP ALBERTA NON-GRID
OPERATIONAL REPORT
NOVEMBER 2016

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2016)

The November 2016 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 2016 – 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		Mar. 2017	update valuation:
Mar. 31, 2017		May 2017	update valuation (roll forward):
Jun. 30, 2017		Aug. 2017	update valuation:
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

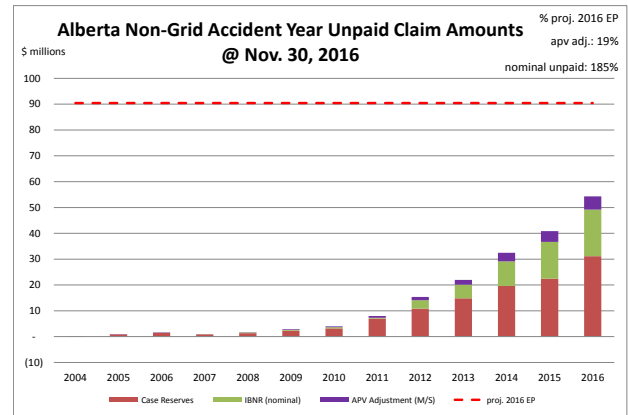
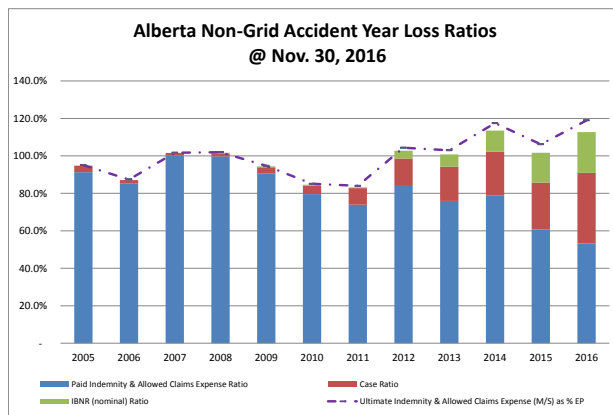
Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent changes are provided below.

Alberta Bill 39 (Enhancing Consumer Protection in Auto Insurance Act) was introduced into the

Legislature by the Minister of Finance on November 6, 2013, and received Royal Assent on December 11, 2013. Bill 39 includes various amendments and provisions such as allowing for both mandatory and optional auto insurance premiums to be regulated by the independent Automobile Insurance Rate Board (AIRB), the introduction of an Insurer file and approve system for premium adjustments instead of an annual industry-wide rate adjustment, improved access to health care after a collision and strengthened Insurance Company solvency requirements. No specific adjustments have been made to the current valuation assumptions based on Bill 39.

1.4 Current Provision Summary

The charts immediately below 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 2016 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 (\$17.4 million – see table immediately below) represents 19% of the earned premium projected for the full year 2016 (see the upper right corner of the right chart above). If our current estimates of the nominal unpaid amounts prove to match actual claims payments, the actuarial present value adjustments will be released into the net operating result over future periods.

claim liabilities (\$000s)	amt	%
case	115,938	62.6%
ibnr	51,787	28.0%
M/S apv adjust.	17,377	9.4%
M/S total	185,102	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 62% of the IBNR balance relates to accident years 2015 and 2016 (see Exhibit B). Approximately 89% of the M/S total claim liabilities are related to accident years 2012-2016 inclusive (i.e. the most recent 5 accident

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.

years).

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

premium liabilities (\$000s)			policy liabilities (\$000s)		
	amt	%		amt	%
unearned prem	50,003	91.3%	claim	167,725	69.9%
prem def/(dpac)	555	1.0%	premium	50,558	21.1%
M/S apv adjust.	4,222	7.7%	M/S apv adjust.	21,599	9.0%
M/S total	54,780	100.0%	M/S total	239,882	100.0%

2 Activity During the Month of November 2016

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 Report³.

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)	2,148	1,227	(825)	(88)	1,323	1,139
2014	(3)	(3)	2,708	2,389	(1,854)	(1,742)	855	648
2015	(5)	(5)	775	213	72	30	847	243
2016	7,879	(31)	6,755	1,293	110	(1,662)	6,864	(369)
TOTAL	7,871	(39)	12,386	5,122	(2,497)	(3,462)	9,889	1,661

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

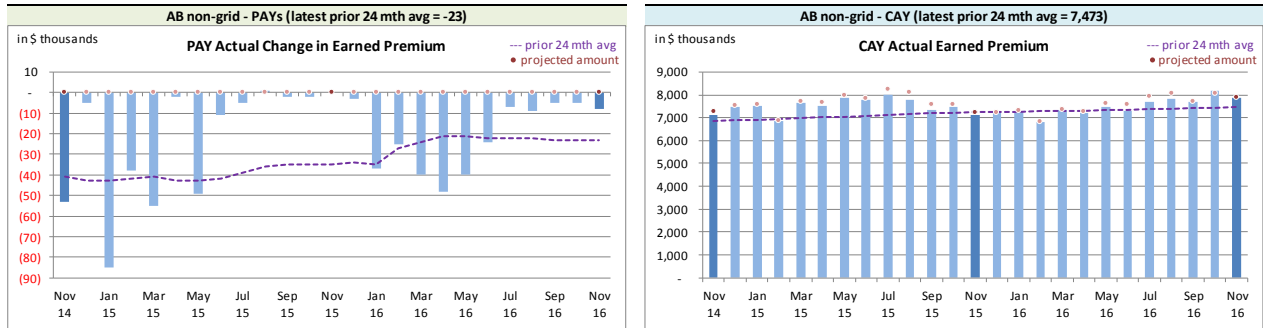
Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural “process variance”. Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of the variance. Commentary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

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

The charts at the top of the next page 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.

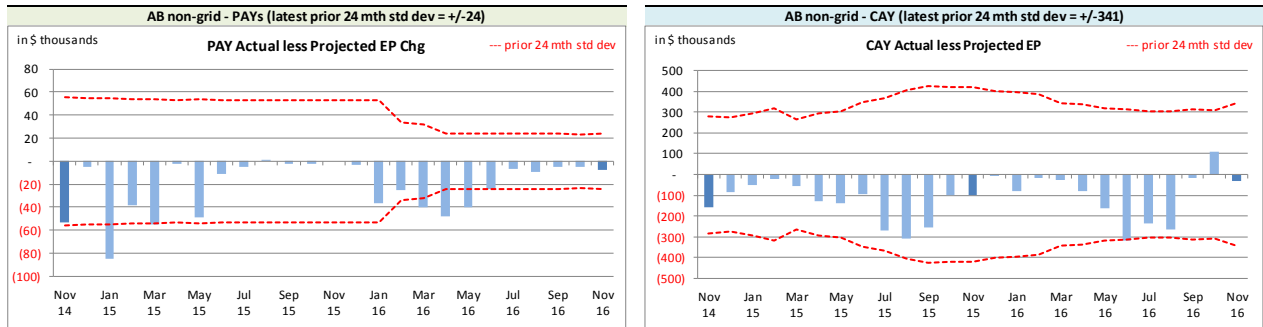
³There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

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.

*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.

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*


On Latest \$ thousands			
Earned Premium	PAYS	CAY	
Mthly Avg EP Chg (prior 24 mths)	(23)	7,473	
std dev	24	341	
A-P <> std dev	5	1	
% <> std dev	20.0%	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' bias⁵, with actuals generally lower than projected. However, the magnitude is not high relative to monthly

premium, and the variances are within the prior 24-month standard deviation more often than indicated by a normal distribution (see table above). In addition to the prior accident years' bias, the CAY has also shown bias, with actuals being generally lower than projected. Starting with the August 2016 projections, we have modified our projections processes in an attempt to account for CAY bias. Over time, we may consider other projection approaches to narrow monthly variance

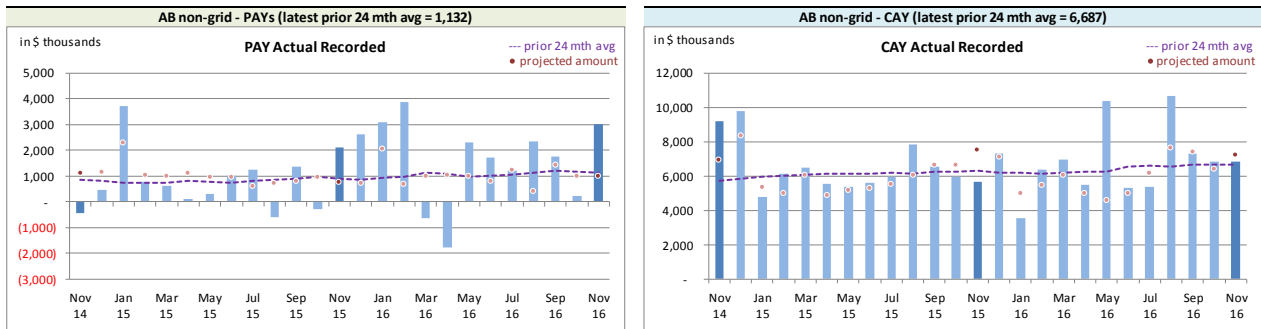
⁵The prior accident years (PAYS) variances will show bias as the projection upload forces all earned premium projections to be attributed to the current accident year.

levels further, but it is not currently deemed a priority.

2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

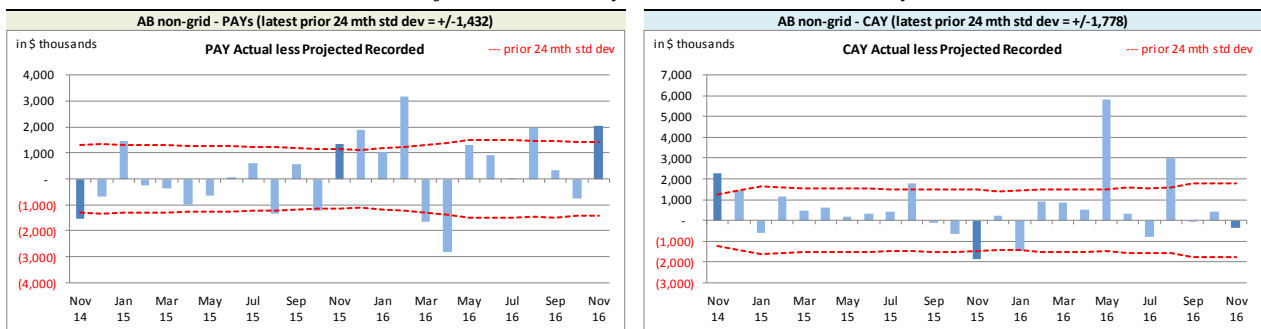
Actual **recorded** activity (**paid** and case reserve changes) over the last 25-month period is shown in the charts immediately below, including the “prior 24-month average” level.

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.

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)	1,132	1,132	6,687
std dev	1,432	1,432	1,778
A-P <> std dev	11	11	6
% <> std dev	44.0%	44.0%	24.0%
norm <> std dev	31.7%	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 are looking at

options in an attempt to address this.

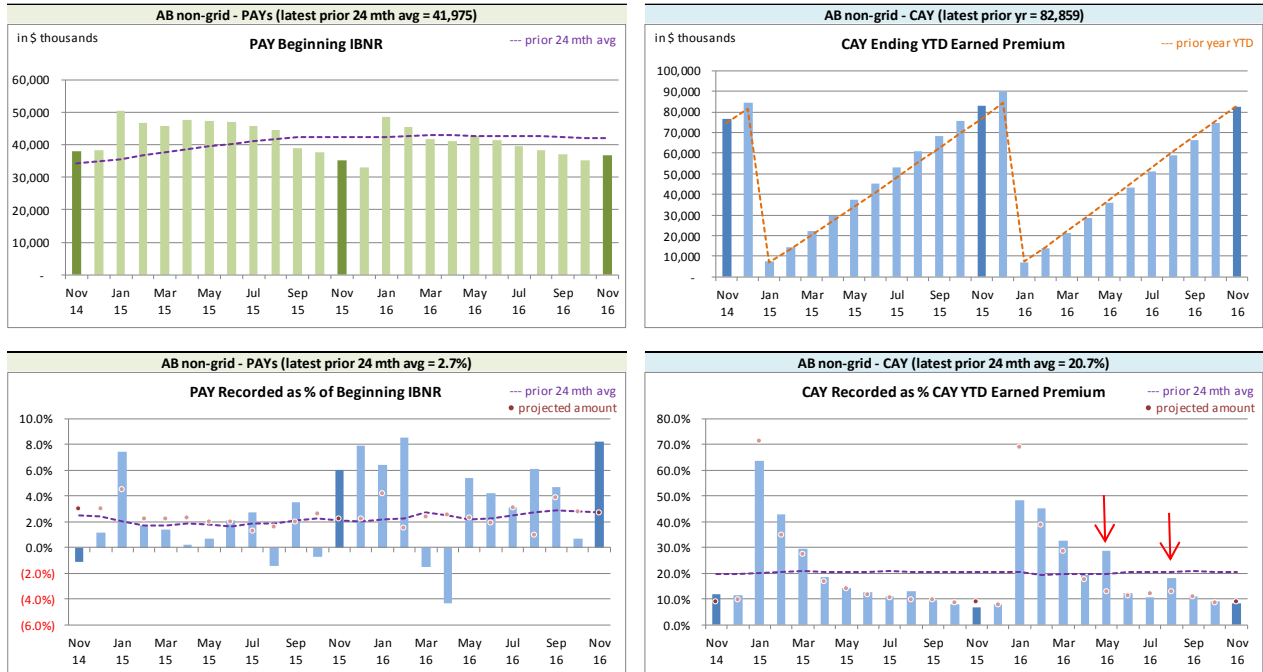
This month’s PAY **recorded** variance fell outside of the standard deviation band. Our investigation led to the conclusion that this was due to large recorded emergence (a large payment partially offset by small case reserve takedown) for one Accident Year 2014 claim.

The current accident year (CAY) **recorded** variances (right chart at the bottom of previous page) have been greater than one standard deviation 24% of the time, suggesting that the projection process is somewhat 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 immediately below related to levels influencing **recorded** activity. The lower right chart (CAY month recorded activity to year-to-date earned premium ratio) shows the influence of catastrophic events during 2016 (Fort McMurray in May and hail storms in August).

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:

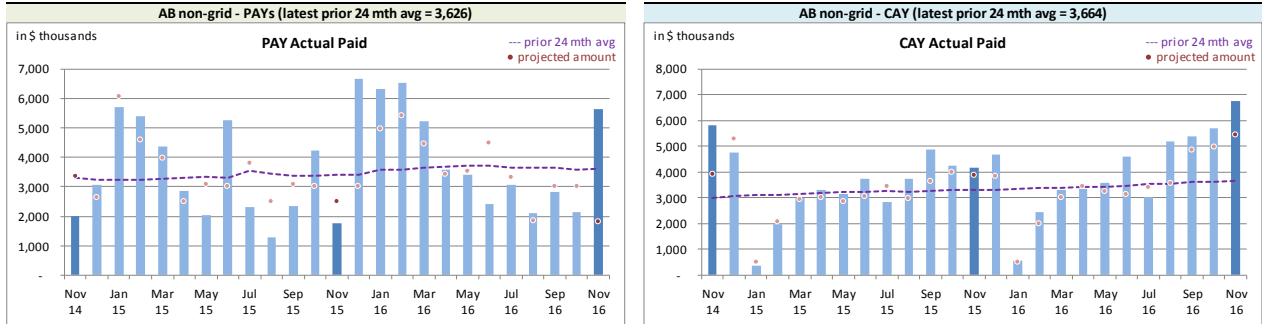
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years’ ultimate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

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.

2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

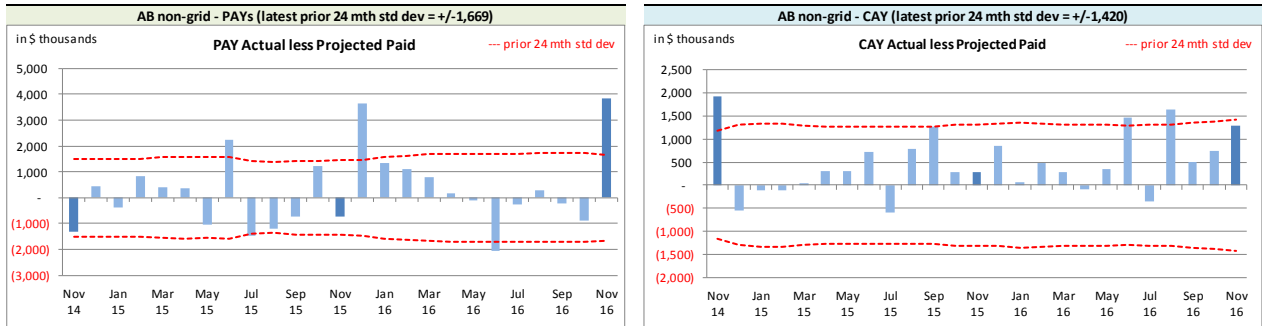
The charts immediately below show actual **paid** activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

*Alberta non-Grid RSP Actual **Paid** activity by Calendar Month*



The charts immediately below show the actual less projected **paid** variances for the last 25 calendar months, along with bands for the “prior 24-month standard deviations” 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)	3,626	3,664	
std dev	1,669	1,420	
A-P <> std dev	5	3	
% <> std dev	20.0%	12.0%	
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 20% 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.

This month’s PAY **paid** variance fell outside of the standard deviation band. Our investigation led to the conclusion that this was due to large paid emergence for one Accident Year 2014 claim (same claim is discussed in section 2.1.b).

With only 12% 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).

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

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.

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 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 November 2016 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	10,026	(1,140)	(729)	18	5,524	(129)	14,821	(1,251)
2014	9,481	(650)	(466)	39	3,789	(311)	12,804	(922)
2015	14,245	(248)	(661)	4	4,799	(28)	18,383	(272)
2016	18,035	333	(787)	21	5,908	(159)	23,156	195
TOTAL	51,787	(1,705)	(2,643)	82	20,020	(627)	69,164	(2,250)

The IBNR provision is \$1.7 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 November 2016 Operational Report and the one-month projections from last month's Report. This RSP is in a premium deficiency position (shown as a positive value) both 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 indicated are mainly due to the unearned premium variance.

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

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:	555	(35)	4,222	93	4,777	58
balance as % unearned premium:	1.1%	(0.1%)	8.4%	-	9.6%	(0.1%)
actual unearned premium:	50,003					
less projected:	1,131					

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 113.1% rather than 112.8% (the valuation ultimate ratio for accident year 2016), 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	2,315	2.8%	(2,989)	(3.6%)	(674)	(0.8%)	(597)	(0.7%)
CAY	93,130	113.1%	5,121	6.2%	98,251	119.4%	9,110	(0.3%)
TOTAL	95,445	116.0%	2,132	2.6%	97,577	118.5%	8,514	(1.1%)

(“% EP” based on 2016 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, 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 Oct. 2016	Actual Nov. 2016	Projected Dec. 2016	Projected Jan. 2017	Projected Dec. 2017
		2004	42	42	41	40	29
		2005	73	69	67	72	55
		2006	163	162	159	156	129
		2007	143	139	136	133	107
		2008	414	413	405	400	321
		2009	655	621	608	596	477
		2010	960	773	756	743	588
discount rate		2011	1,615	991	971	960	763
0.55%		2012	4,770	4,496	4,408	4,319	3,408
		2013	7,503	7,115	6,919	6,782	5,347
interest rate margin		2014	13,968	12,804	12,054	11,845	8,932
25 basis pts		2015	19,323	18,383	17,078	15,872	10,910
		2016	20,910	23,156	24,980	23,085	14,231
		2017	-	-	-	4,651	25,409
		TOTAL	70,539	69,164	68,582	69,654	70,706
		Change		(1,375)	(582)	1,072	

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 Oct. 2016	Actual Nov. 2016	Projected Dec. 2016	Projected Jan. 2017	Projected Dec. 2017
	349.1%	2004	36	36	35	34	24
	94.8%	2005	(8)	(11)	(11)	(11)	(11)
	87.2%	2006	25	24	24	24	24
	101.6%	2007	57	54	53	52	41
	101.8%	2008	268	267	262	257	206
	94.4%	2009	390	376	368	361	289
	84.6%	2010	602	438	429	420	330
	83.2%	2011	932	328	321	315	247
	102.7%	2012	3,422	3,221	3,157	3,094	2,427
	100.8%	2013	5,626	5,293	5,134	5,031	3,945
	113.5%	2014	10,338	9,481	8,865	8,688	6,404
	101.6%	2015	15,097	14,245	13,105	12,057	8,053
	112.8%	2016	16,012	18,035	19,439	17,884	10,703
	98.3%	2017	-	-	-	3,853	19,924
		TOTAL	52,797	51,787	51,181	52,059	52,606
		Change		(1,010)	(606)	878	

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
	Oct. 2016	Nov. 2016	Dec. 2016	Jan. 2017	Dec. 2017
Premium Liabilities					
(1) unearned premium (UP)	50,621	50,003	47,043	44,332	44,900
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	111.7%	109.6%	107.1%	107.1%	108.1%
(3) expected future costs {(1) x (2)}	56,565	54,780	50,381	47,466	48,556
(4) premium deficiency / (deferred policy acquisition cost)	5,944	4,777	3,338	3,134	3,656
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	103.1%	101.1%	98.8%	98.8%	99.8%
(6) expected future costs {(1) x (5)}	52,206	50,558	46,498	43,807	44,814
(7) premium deficiency / (deferred policy acquisition cost)	1,585	555	(545)	(525)	(86)

EXHIBIT D

Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2016, broken down by component.

Alberta non-Grid ending 2016		Projected Balances as at Dec. 31, 2016 (\$000s)							TOTAL
		nominal values			actuarial present value adjustments (apvs)				
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	development PfAD	Total apvs	TOTAL	
2004	26	35	61	-	-	6	6	67	
2005	854	(11)	843	(8)	3	83	78	921	
2006	1,405	24	1,429	(13)	6	142	135	1,564	
2007	833	53	886	(9)	4	88	83	969	
2008	1,294	262	1,556	(19)	8	154	143	1,699	
2009	2,246	368	2,614	(31)	13	258	240	2,854	
2010	3,148	429	3,577	(47)	21	353	327	3,904	
2011	6,848	321	7,169	(100)	43	707	650	7,819	
2012	10,644	3,157	13,801	(193)	83	1,361	1,251	15,052	
2013	14,592	5,134	19,726	(296)	138	1,943	1,785	21,511	
2014	19,110	8,865	27,975	(448)	196	3,441	3,189	31,164	
2015	22,129	13,105	35,234	(634)	282	4,325	3,973	39,207	
PAYs (sub-total):	83,129	31,742	114,871	(1,798)	797	12,861	11,860	126,731	
CAY (2016)	33,763	19,439	53,202	(851)	372	6,020	5,541	58,743	
claims liabilities:	116,892	51,181	168,073	(2,649)	1,169	18,881	17,401	185,474	
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	development PfAD	Total apvs	TOTAL*	
premium liabilities:	47,043	(545)	46,498	(555)	278	4,160	3,883	50,381	
*Total may not be sum of parts, as apvs apply to future costs within UPR									
policy liabilities:			214,571	(3,204)	1,447	23,041	21,284	235,855	

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, 2016 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Sep. 30, 2016)				
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%	7.1%	10.0%
2009	10.0%	10.0%	5.2%	10.0%
2010	10.0%	10.0%	8.2%	10.0%
2011	10.0%	10.0%	9.9%	10.0%
2012	10.0%	10.0%	9.6%	10.0%
2013	10.0%	10.0%	10.0%	10.0%
2014	12.5%	10.0%	12.5%	12.5%
2015	12.5%	10.0%	12.5%	12.5%
2016	12.1%	10.0%	7.7%	11.5%
2017	12.5%	10.0%	12.5%	12.5%
prem liab	11.8%	10.0%	5.2%	9.1%

discount rate:	0.55%
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, 2016 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2016 and based on more up-to-date information). We have included both the current valuation selection (0.55%), the prior valuation assumption (0.61%) and the prior fiscal year end valuation assumption (0.78%) 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, 2016 projected Unpaid								
AY	0.05%	0.55%	1.05%	1.55%	2.05%	2.55%	0.61%	0.78%
2004	-	-	-	-	-	-	-	-
2005	754	750	744	738	732	727	749	747
2006	1,403	1,396	1,384	1,373	1,362	1,351	1,395	1,391
2007	829	824	817	810	803	796	823	821
2008	1,569	1,558	1,541	1,525	1,509	1,493	1,556	1,550
2009	2,893	2,873	2,842	2,812	2,783	2,754	2,869	2,859
2010	3,999	3,969	3,923	3,877	3,833	3,790	3,963	3,948
2011	7,545	7,483	7,386	7,293	7,201	7,112	7,471	7,438
2012	15,713	15,583	15,382	15,187	14,997	14,811	15,557	15,490
2013	21,644	21,452	21,157	20,871	20,593	20,322	21,415	21,316
2014	33,503	33,178	32,686	32,209	31,743	31,295	33,117	32,950
2015	41,470	41,038	40,391	39,759	39,143	38,550	40,963	40,738
2016	60,914	60,328	59,440	58,581	57,751	56,948	60,218	59,916
Total	192,236	190,432	187,693	185,035	182,450	179,949	190,096	189,164
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

Dollar Impact Relative to Valuation Assumption								
AY	0.05%	0.55%	1.05%	1.55%	2.05%	2.55%	0.61%	0.78%
Total	1,804	-	(2,739)	(5,397)	(7,982)	(10,483)	(336)	(1,268)
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

Percentage Impact Relative to Valuation Assumption								
AY	0.05%	0.55%	1.05%	1.55%	2.05%	2.55%	0.61%	0.78%
2004	-	-	-	-	-	-	-	-
2005	0.5%	-	(0.8%)	(1.6%)	(2.4%)	(3.1%)	(0.1%)	(0.4%)
2006	0.5%	-	(0.9%)	(1.6%)	(2.4%)	(3.2%)	(0.1%)	(0.4%)
2007	0.6%	-	(0.8%)	(1.7%)	(2.5%)	(3.4%)	(0.1%)	(0.4%)
2008	0.7%	-	(1.1%)	(2.1%)	(3.1%)	(4.2%)	(0.1%)	(0.5%)
2009	0.7%	-	(1.1%)	(2.1%)	(3.1%)	(4.1%)	(0.1%)	(0.5%)
2010	0.8%	-	(1.2%)	(2.3%)	(3.4%)	(4.5%)	(0.2%)	(0.5%)
2011	0.8%	-	(1.3%)	(2.5%)	(3.8%)	(5.0%)	(0.2%)	(0.6%)
2012	0.8%	-	(1.3%)	(2.5%)	(3.8%)	(5.0%)	(0.2%)	(0.6%)
2013	0.9%	-	(1.4%)	(2.7%)	(4.0%)	(5.3%)	(0.2%)	(0.6%)
2014	1.0%	-	(1.5%)	(2.9%)	(4.3%)	(5.7%)	(0.2%)	(0.7%)
2015	1.1%	-	(1.6%)	(3.1%)	(4.6%)	(6.1%)	(0.2%)	(0.7%)
2016	1.0%	-	(1.5%)	(2.9%)	(4.3%)	(5.6%)	(0.2%)	(0.7%)
Total	0.9%	-	(1.4%)	(2.8%)	(4.2%)	(5.5%)	(0.2%)	(0.7%)
	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**
AccountCode Desc **IBNR - Discour**

M/S IBNR - in \$000s

AccYear	Values		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
	Sum of Prior Month Actual Amount	Sum of Projected Change					
2004	42	(1)	1	-	-	-	42
2005	73	(2)	(2)	-	(4)	(5.5%)	69
2006	163	(4)	3	-	(1)	(0.6%)	162
2007	143	(4)	-	-	(4)	(2.8%)	139
2008	414	(8)	7	-	(1)	(0.2%)	413
2009	655	(11)	(23)	-	(34)	(5.2%)	621
2010	960	(17)	(170)	-	(187)	(19.5%)	773
2011	1,615	(17)	(607)	-	(624)	(38.6%)	991
2012	4,770	(61)	(213)	-	(274)	(5.7%)	4,496
2013	7,503	(141)	(247)	-	(388)	(5.2%)	7,115
2014	13,968	(242)	(922)	-	(1,164)	(8.3%)	12,804
2015	19,323	(668)	(272)	-	(940)	(4.9%)	18,383
2016	20,910	2,051	195	-	2,246	10.7%	23,156
Grand Total	70,539	875	(2,250)	-	(1,375)	(1.9%)	69,164

EXHIBIT G

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

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

IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2004	36	(1)	1	-	-	-	36
2005	(8)	-	(3)	-	(3)	37.5%	(11)
2006	25	(1)	-	-	(1)	(4.0%)	24
2007	57	(1)	(2)	-	(3)	(5.3%)	54
2008	268	(5)	4	-	(1)	(0.4%)	267
2009	390	(8)	(6)	-	(14)	(3.6%)	376
2010	602	(12)	(152)	-	(164)	(27.2%)	438
2011	932	(9)	(595)	-	(604)	(64.8%)	328
2012	3,422	(34)	(167)	-	(201)	(5.9%)	3,221
2013	5,626	(113)	(220)	-	(333)	(5.9%)	5,293
2014	10,338	(207)	(650)	-	(857)	(8.3%)	9,481
2015	15,097	(604)	(248)	-	(852)	(5.6%)	14,245
2016	16,012	1,690	333	-	2,023	12.6%	18,035
Grand Total	52,797	695	(1,705)	-	(1,010)	(1.9%)	51,787