



ALBERTA NON-GRID RISK SHARING POOL

JANUARY 2017 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS
RSP ALBERTA NON-GRID
OPERATIONAL REPORT
JANUARY 2017

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2017)

The January 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		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

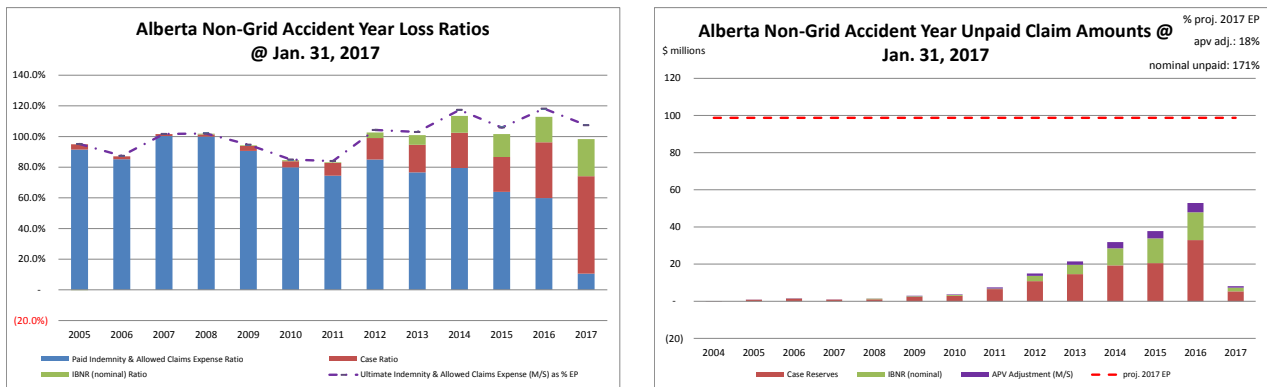
Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent changes are provided below.

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 most recent valuation (September 30, 2016) 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 2017 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 (\$17.5 million – see table immediately below) represents 18% of the earned premium projected for the full year 2017 (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	119,515	64.2%
ibnr	49,109	26.4%
M/S apv adjust.	17,496	9.4%
M/S total	186,120	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 35% of the IBNR balance relates to accident years 2016 and 2017 (see Exhibit B). Approximately 82% of the M/S total

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

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.

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

premium liabilities (\$000s)			policy liabilities (\$000s)		
	amt	%		amt	%
unearned prem	47,089	93.4%	claim	168,624	71.3%
prem def/(dpac)	(577)	(1.1%)	premium	46,512	19.7%
M/S apv adjust.	3,885	7.7%	M/S apv adjust.	21,381	9.0%
M/S total	50,397	100.0%	M/S total	236,517	100.0%

2 Activity During the Month of January 2017

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	(1)	(1)	1,075	(824)	(820)	700	254	(125)
2015	(6)	(6)	2,421	1,332	(2,096)	(2,103)	325	(771)
2016	(179)	(179)	4,438	1,809	(1,509)	(330)	2,929	1,479
2017	8,362	49	883	393	5,310	2,000	6,193	2,393
TOTAL	8,176	(137)	8,817	2,710	885	267	9,702	2,977

(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.

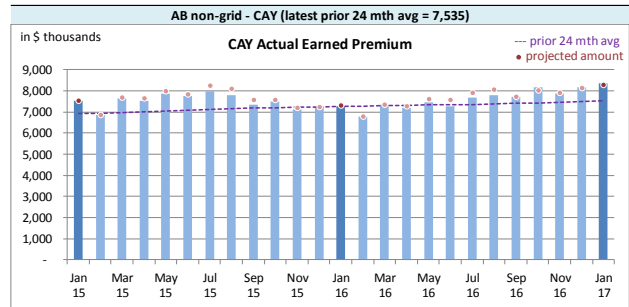
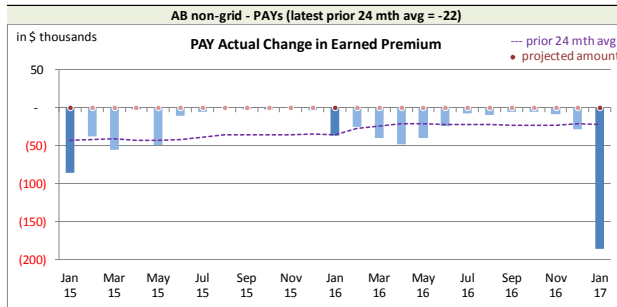
2.1.a Actual vs. Projected (AvsP): Earned Premium

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.

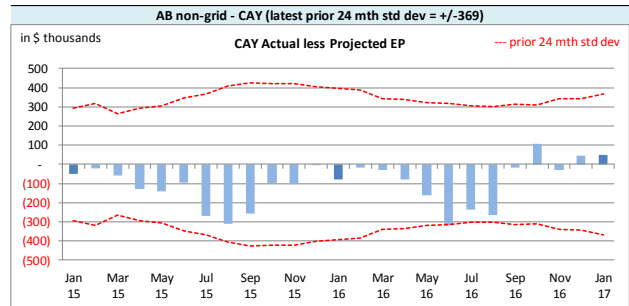
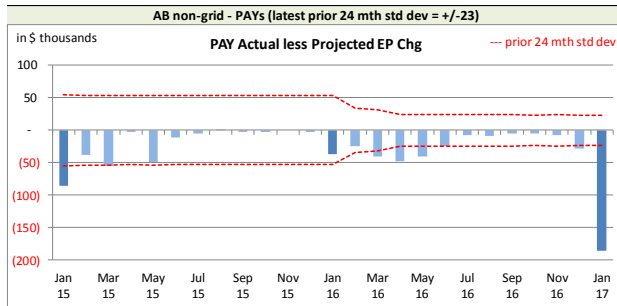
Alberta non-Grid RSP Actual Earned Premium by Calendar Month



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)	(22)	7,535	
std dev	23	369	
A-P <> std dev	7	1	
% <> std dev	28.0%	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

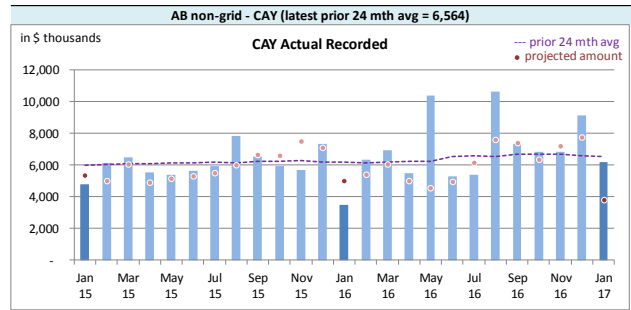
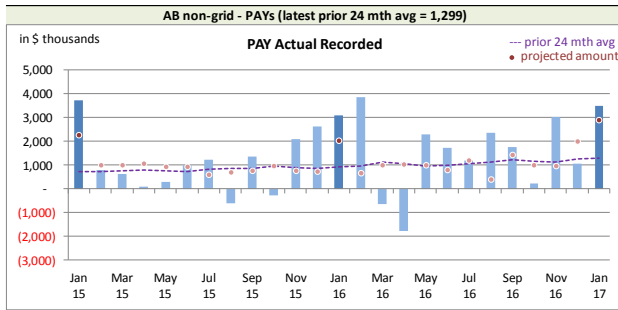
monthly premium, and the variances are within the prior 24-month standard deviation more often than indicated by a normal distribution (see table above). In addition to the prior accident years' bias, the CAY has also shown bias, with actuals being generally lower than projected. Starting with the August 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 levels further, but it is not currently deemed a priority.

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.

2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

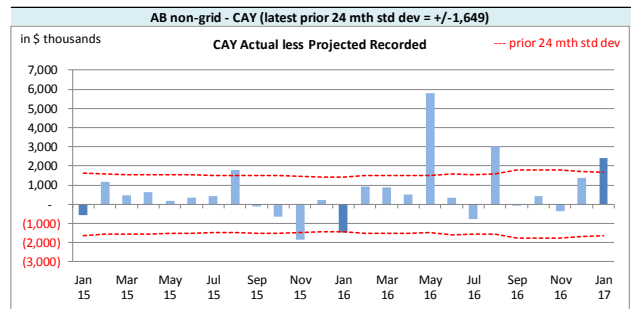
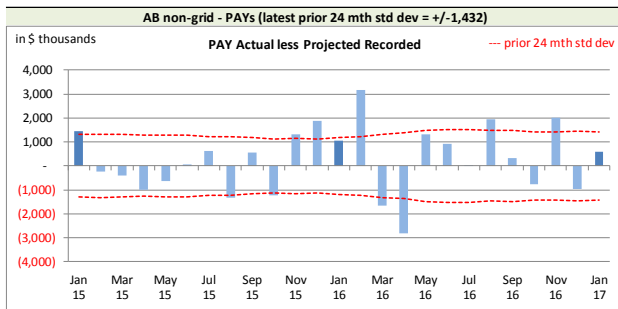
Actual **recorded** activity (**paid** and case reserve changes) over the last 25-month period is shown in the charts immediately below, including the “prior 24-month average” level.

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)	1,299	1,299	6,564
std dev	1,432	1,432	1,649
A-P <> std dev	10	10	6
% <> std dev	40.0%	40.0%	24.0%
norm <> std dev	31.7%	31.7%	31.7%

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

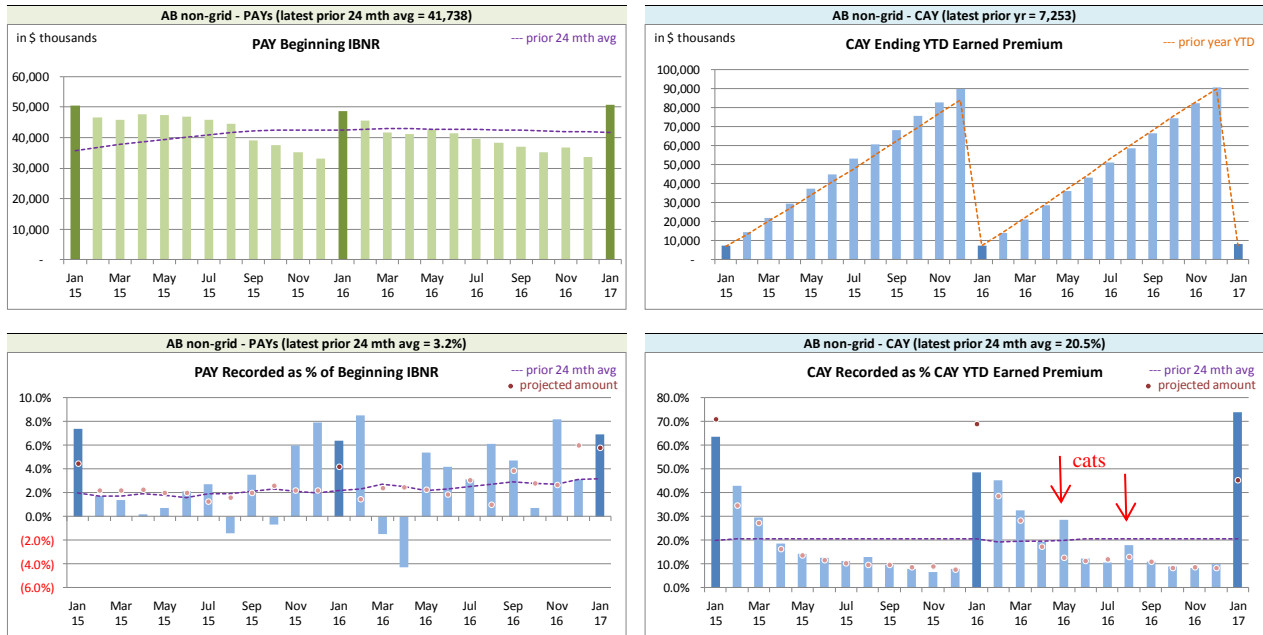
The current accident year (CAY) **recorded** variances (right chart above) have been greater than one standard deviation 24% of the time, suggesting that the projection process is somewhat better than simply projecting the most recent prior 24-month average.

The CAY **recorded** variance for the current month was outside the one standard deviation band. The activity was reviewed and confirmed, with the variance attributed to process variance.

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:

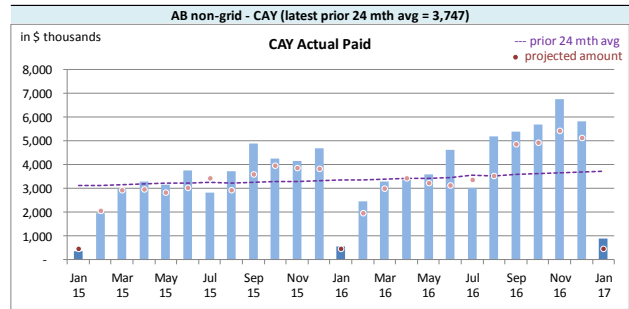
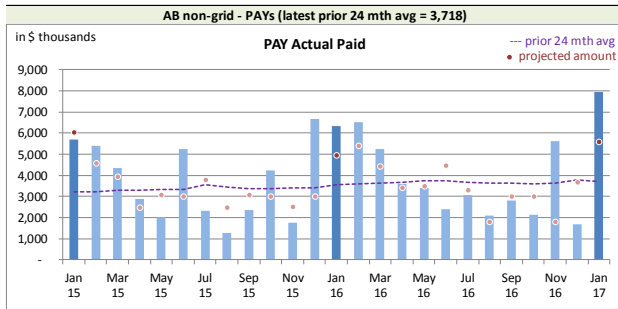
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years’ ultimate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

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.

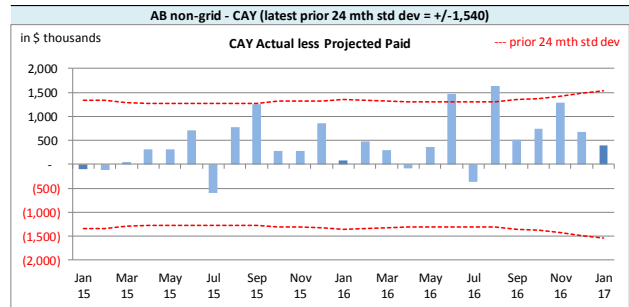
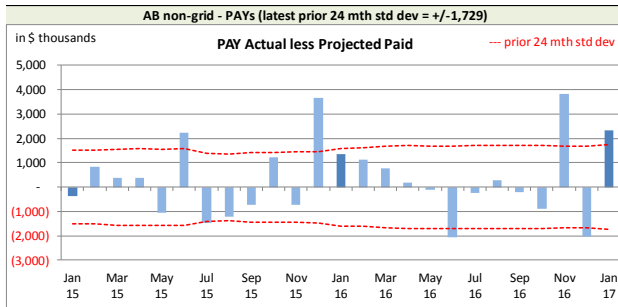
⁶Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned 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*



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)		3,718	3,747
std dev		1,729	1,540
A-P <> std dev		7	2
% <> std dev		28.0%	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 28% 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 somewhat better than simply projecting based on a 24-month average.

The PAY **paid** variance for the current month was outside the one standard deviation band. The activity was reviewed and confirmed, with the variance attributed to process variance.

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 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 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 January 2017 Operational Report and the associated one-month projections from last month’s Report.

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”.

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	18,710	123	(1,092)	(11)	9,028	102	26,646	214
2015	13,374	765	(542)	22	4,405	(175)	17,237	612
2016	14,998	(1,681)	(863)	36	5,796	(245)	19,931	(1,890)
2017	2,027	(2,345)	(117)	6	881	(42)	2,791	(2,381)
TOTAL	49,109	(3,138)	(2,614)	53	20,110	(360)	66,605	(3,445)

The IBNR provision is \$3.1 million lower than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1.

Exhibit G shows the accident year IBNR amount change from last month to this month broken down into:

- (i) the change projected last month;
- (ii) the additional change due to variances in earned premium (because we apply a loss ratio to earned premium in determining ultimate level) and/or recorded claims (as IBNR is calculated as ultimate less recorded) differences; and
- (iii) the additional change due to valuation implementation impacts (as applicable)

The variances associated with (ii) above are discussed in sections 2.1.a and 2.1.b.

The table below summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in the January 2017 Operational Report and the one-month projections from last month's Report. This RSP is in a deferred policy acquisition cost asset position (shown as a negative value) before actuarial present value adjustments and in a premium deficiency position (shown as a positive value) after actuarial present value adjustments. Actuarial present value adjustments increase the expected future policy obligations (costs) associated with the unearned premium and cause the write down of the asset value and the creation of the liability. The variances indicated are mainly due to 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:	(577)	(7)	3,885	52	3,308	45
balance as % unearned premium:	(1.2%)	-	8.3%	-	7.0%	-
actual unearned premium:	47,089					
less projected:	611					

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 below 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 100.5% rather than 98.3% (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.)

*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	(209)	(2.6%)	(826)	(10.1%)	(1,035)	(12.7%)	(1,035)	(12.7%)
CAY	8,220	100.5%	764	9.3%	8,984	109.9%	8,984	109.9%
TOTAL	8,011	98.0%	(62)	(0.8%)	7,949	97.2%	7,949	97.2%

(“% 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, 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

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.

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 Dec. 2016	Actual Jan. 2017	Projected Feb. 2017	Projected Mar. 2017	Projected Dec. 2017
	2004	42	42	42	42	42
	2005	32	34	33	33	29
	2006	162	162	159	156	134
	2007	137	82	80	77	65
	2008	421	475	466	457	381
	2009	643	622	609	597	498
	2010	866	800	785	768	634
	2011	901	939	921	902	747
discount rate	2012	4,334	4,133	4,065	3,984	3,273
0.55%	2013	6,872	6,853	6,717	6,557	5,386
	2014	12,545	12,504	12,209	12,055	9,462
interest rate margin	2015	17,798	17,237	16,662	16,403	12,110
25 basis pts	2016	23,605	19,931	19,036	18,777	12,615
	2017	-	2,791	4,707	6,935	28,148
	TOTAL	68,358	66,605	66,491	67,743	73,524
	Change		(1,753)	(114)	1,252	

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 Dec. 2016	Actual Jan. 2017	Projected Feb. 2017	Projected Mar. 2017	Projected Dec. 2017
	349.1%	2004	36	36	36	36	36
	94.8%	2005	(45)	(48)	(47)	(46)	(37)
	87.2%	2006	24	24	24	24	24
	101.6%	2007	52	(3)	(3)	(3)	(3)
	101.8%	2008	275	345	338	331	276
	94.4%	2009	392	373	366	359	300
	84.6%	2010	551	489	479	469	384
	83.2%	2011	279	313	307	301	245
	102.7%	2012	3,068	2,891	2,848	2,791	2,279
	100.8%	2013	5,063	5,071	4,970	4,846	3,959
	113.5%	2014	9,271	9,219	8,989	8,899	6,832
	101.6%	2015	13,705	13,374	12,973	12,843	9,218
	112.8%	2016	18,129	14,998	14,398	14,326	9,215
	98.3%	2017	-	2,027	3,433	5,150	22,373
		TOTAL	50,800	49,109	49,111	50,326	55,101
		Change		(1,691)	2	1,215	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Dec. 2016	Actual Jan. 2017	Projected Feb. 2017	Projected Mar. 2017	Projected Dec. 2017
Premium Liabilities					
(1) unearned premium (UP)	48,103	47,089	46,149	45,765	48,325
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	107.0%	107.0%	107.0%	107.1%	108.1%
(3) expected future costs {(1) x (2)}	51,479	50,397	49,399	49,003	52,240
(4) premium deficiency / (deferred policy acquisition cost)	3,376	3,308	3,250	3,238	3,915
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	98.8%	98.8%	98.8%	98.8%	99.8%
(6) expected future costs {(1) x (5)}	47,511	46,512	45,591	45,227	48,212
(7) premium deficiency / (deferred policy acquisition cost)	(592)	(577)	(558)	(538)	(113)

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	694	(37)	657	-	-	66	66	723
2006	1,144	24	1,168	(11)	5	116	110	1,278
2007	722	(3)	719	(6)	3	71	68	787
2008	830	276	1,106	(11)	6	110	105	1,211
2009	1,862	300	2,162	(26)	11	213	198	2,360
2010	2,332	384	2,716	(33)	14	269	250	2,966
2011	5,226	245	5,471	(71)	33	540	502	5,973
2012	8,696	2,279	10,975	(154)	66	1,082	994	11,969
2013	11,793	3,959	15,752	(221)	95	1,553	1,427	17,179
2014	16,017	6,832	22,849	(343)	160	2,813	2,630	25,479
2015	16,153	9,218	25,371	(406)	178	3,120	2,892	28,263
2016	23,821	9,215	33,036	(595)	264	3,731	3,400	36,436
PAYs (sub-total):	89,316	32,728	122,044	(1,877)	835	13,690	12,648	134,692
CAY (2017)	33,074	22,373	55,447	(887)	388	6,274	5,775	61,222
claims liabilities:	122,390	55,101	177,491	(2,764)	1,223	19,964	18,423	195,914
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	development PfAD	Total apvs	TOTAL*
premium liabilities:	48,325	(113)	48,212	(575)	288	4,315	4,028	52,240
*Total may not be sum of parts, as apvs apply to future costs within UPR								
policy liabilities:			225,703	(3,339)	1,511	24,279	22,451	248,154

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, 2017 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 - Discounted**

M/S IBNR - in \$000s

AccYear	Values		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
	Sum of Prior Month Actual Amount							
2004	42		(1)	1	-	-	-	42
2005	32		5	(3)	-	2	6.3%	34
2006	162		(3)	3	-	-	-	162
2007	137		(3)	(52)	-	(55)	(40.1%)	82
2008	421		(6)	60	-	54	12.8%	475
2009	643		(14)	(7)	-	(21)	(3.3%)	622
2010	866		(17)	(49)	-	(66)	(7.6%)	800
2011	901		(12)	50	-	38	4.2%	939
2012	4,334		(86)	(115)	-	(201)	(4.6%)	4,133
2013	6,872		(134)	115	-	(19)	(0.3%)	6,853
2014	12,545		(252)	211	-	(41)	(0.3%)	12,504
2015	17,798		(1,173)	612	-	(561)	(3.2%)	17,237
2016	23,605		(1,784)	(1,890)	-	(3,674)	(15.6%)	19,931
2017	-		5,172	(2,381)	-	2,791	100.0%	2,791
Grand Total	68,358		1,692	(3,445)	-	(1,753)	(2.6%)	66,605

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	(45)	1	(4)	-	(3)	6.7%	(48)
2006	24	-	-	-	-	-	24
2007	52	(1)	(54)	-	(55)	(105.8%)	(3)
2008	275	(6)	76	-	70	25.5%	345
2009	392	(8)	(11)	-	(19)	(4.8%)	373
2010	551	(11)	(51)	-	(62)	(11.3%)	489
2011	279	(6)	40	-	34	12.2%	313
2012	3,068	(61)	(116)	-	(177)	(5.8%)	2,891
2013	5,063	(101)	109	-	8	0.2%	5,071
2014	9,271	(185)	133	-	(52)	(0.6%)	9,219
2015	13,705	(1,096)	765	-	(331)	(2.4%)	13,374
2016	18,129	(1,450)	(1,681)	-	(3,131)	(17.3%)	14,998
2017	-	4,372	(2,345)	-	2,027	100.0%	2,027
Grand Total	50,800	1,447	(3,138)	-	(1,691)	(3.3%)	49,109