



**ALBERTA NON-GRID RISK SHARING POOL**

**SEPTEMBER 2016 OPERATIONAL REPORT**

**ACTUARIAL HIGHLIGHTS**

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**ACTUARIAL HIGHLIGHTS**  
**RSP ALBERTA NON-GRID**  
**OPERATIONAL REPORT**  
**SEPTEMBER 2016**

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## 1 Summary

### 1.1 Valuation Schedule (Fiscal Year 2016)

The September 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 2016.

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, 2015 (completed)	0.78% mfad: 25 bp	Oct. 2015	updated valuation (roll forward): accident year 2015 loss ratio increased 1.5 points to 101.4%; discount rate decreased by 19 basis points; no change to selected margins for adverse deviations
Dec. 31, 2015 (completed)	0.73% mfad: 25 bp	Mar. 2016	updated valuation: accident year 2015 loss ratio decreased 1.2 points to 100.2%; accident year 2016 loss ratio increased 0.2 points to 95.6%; discount rate decreased by 5 basis points; no change to selected margins for adverse deviations
Mar. 31, 2016 (completed)	0.68% mfad: 25 bp	May 2016	updated valuation (roll forward): accident year 2016 loss ratio increased 0.1 points to 95.7%; discount rate decreased by 5 basis points; no change to selected margins for adverse deviations
Jun. 30, 2016 (completed)	0.61% mfad: 25 bp	Aug. 2016	updated valuation: accident year 2016 loss ratio increased 9.9 points to 105.6%; discount rate decreased by 7 basis points; selected claims development margins for adverse deviations were updated
Sep. 30, 2016		Oct. 2016	update valuation (roll forward):

Under the proposed schedule for fiscal year 2016, the “off-half” valuation quarters ending March 31, 2016 and September 30, 2016 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.

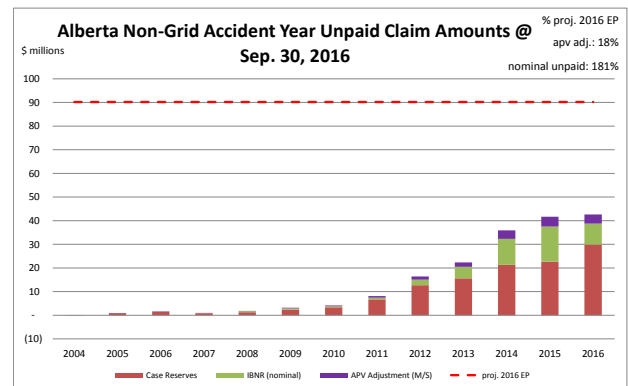
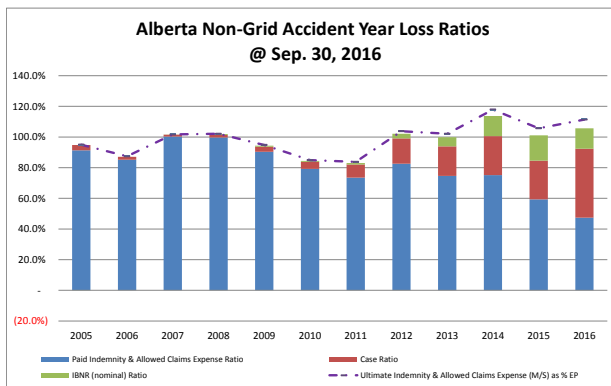
### 1.3 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation

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 liabilities<sup>1</sup> booked by accident year<sup>2</sup>. 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 (\$16.5 million – see table at top of next page) represents 18% 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 period.

<sup>1</sup>Claim 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.

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

claim liabilities (\$000s)

	amt	%
case	119,210	66.3%
ibnr	44,067	24.5%
M/S apv adjust.	16,468	9.2%
M/S total	179,745	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 54% of the IBNR balance relates to accident years 2015 and 2016 (see Exhibit B). Approximately 88% of the M/S total claim liabilities are related to accident years 2012-2016 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)

	amt	%
unearned prem	49,902	89.1%
prem def/(dpac)	1,956	3.5%
M/S apv adjust.	4,172	7.4%
M/S total	56,030	100.0%

policy liabilities (\$000s)

	amt	%
claim	163,277	69.3%
premium	51,858	22.0%
M/S apv adjust.	20,640	8.8%
M/S total	235,775	100.0%

## 2 Activity During the Month of September 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 Report<sup>3</sup>.

*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)	875	(339)	71	1,147	946	808
2014	1	1	1,412	738	(1,076)	(629)	336	109
2015	(5)	(5)	535	(607)	(63)	8	472	(599)
2016	7,709	(19)	5,381	511	1,955	(588)	7,337	(78)
TOTAL	7,704	(24)	8,204	303	888	(62)	9,091	241

(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

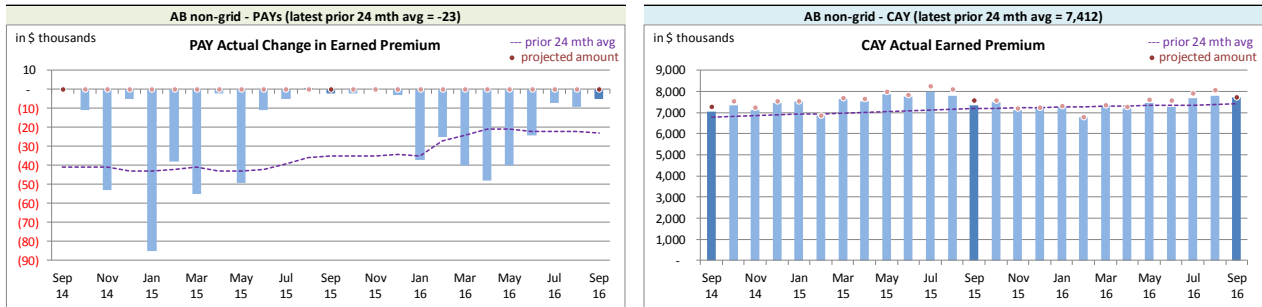
The charts at the top of the next page show actual **earned premium**<sup>4</sup> activity in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual

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

<sup>4</sup>Premium 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.

compares with the average amount of the preceding 24 calendar months.

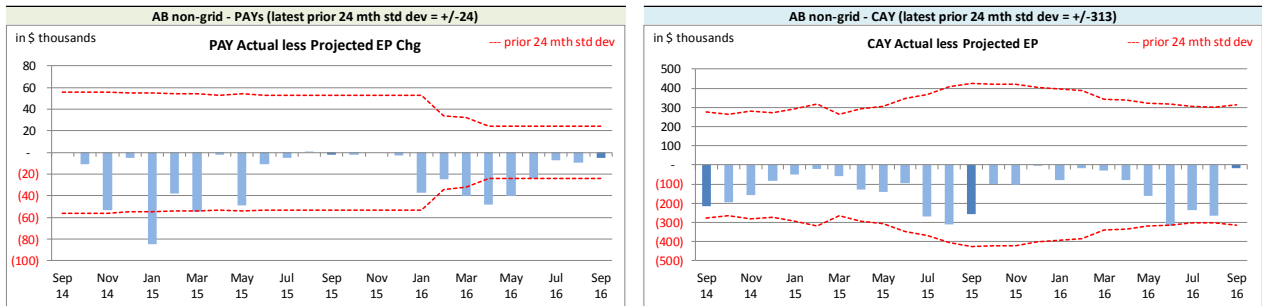
*Alberta non-Grid RSP Actual **Earned Premium** by Calendar Month*



**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.

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			
<b>Earned Premium</b>	PAYs	CAY	
Mthly Avg EP Chg (prior 24 mths)	(23)	7,412	
std dev	24	313	
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 bias<sup>5</sup>, 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). Starting with the August 2016 projections, we have modified our projections processes in an attempt to account for bias in the current process. Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently

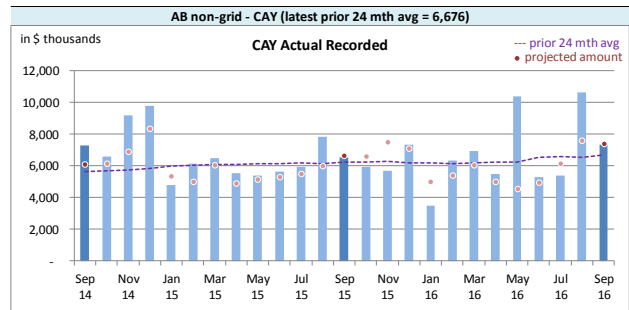
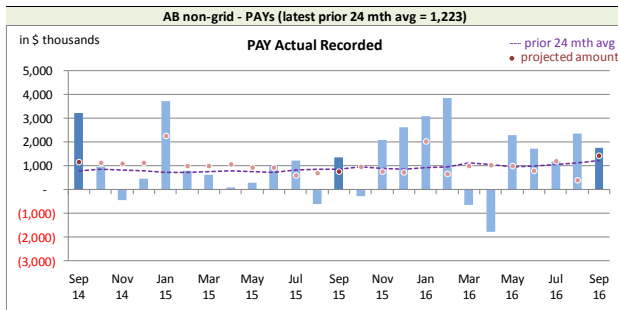
<sup>5</sup>The prior accident years (PAYs) variances will show bias as the projection upload forces all earned premium projections to be attributed to the current accident year.

deemed a priority.

**2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense**

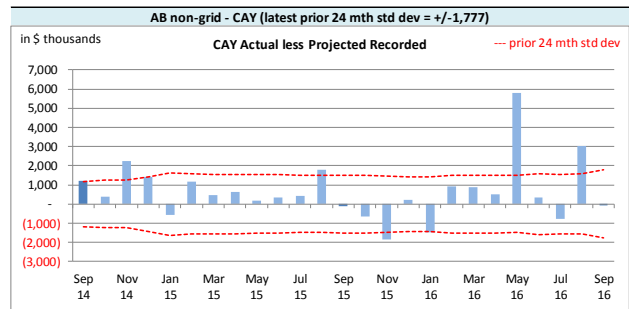
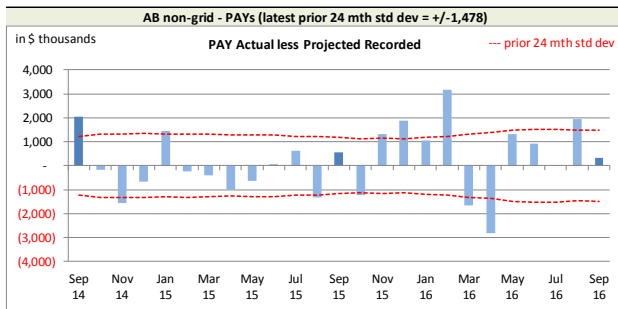
Actual **recorded** activity (**paid** and case reserve changes) over the last 25-month period is shown in the charts immediately below, including the “prior 24-month average” level.

*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			
	<b>Recorded</b>	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	1,223	6,676	
std dev	1,478	1,777	
A-P <> std dev	11	7	
% <> std dev	44.0%	28.0%	
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 are

looking at options in an attempt to address this.

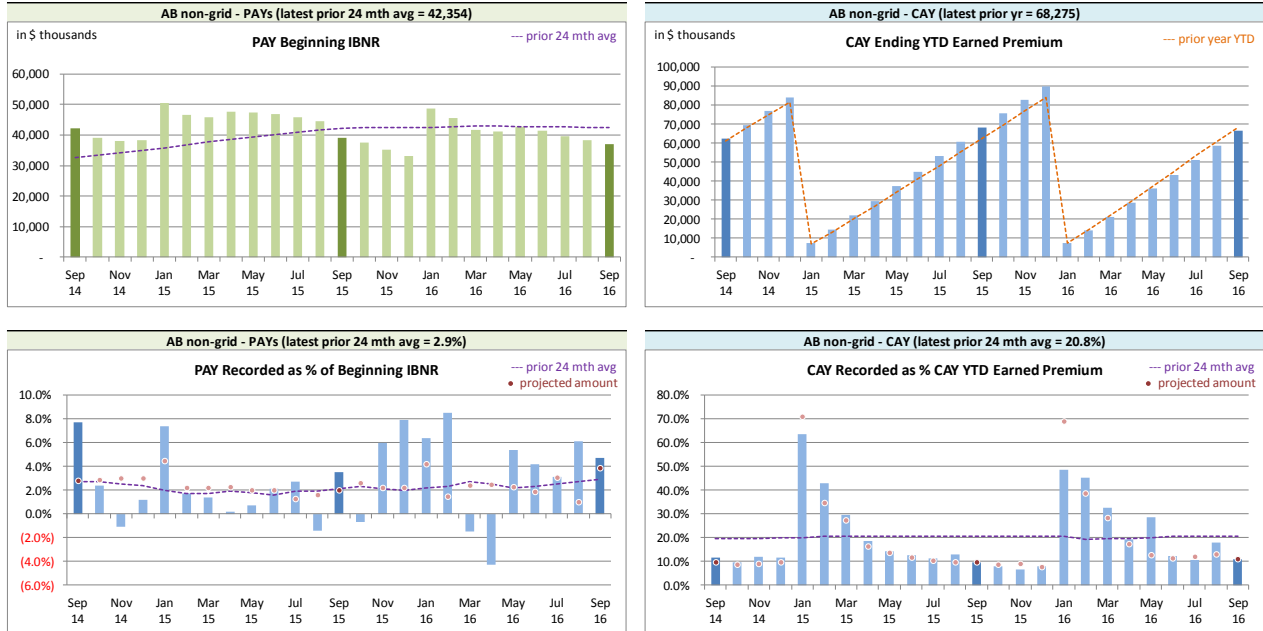
The current accident year (CAY) **recorded** variances (right chart above) have been greater than one standard deviation 28% of the time, suggesting that the projection process is not much better than simply projecting the most recent prior 24-month average.

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. 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 influence<sup>6</sup> 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).

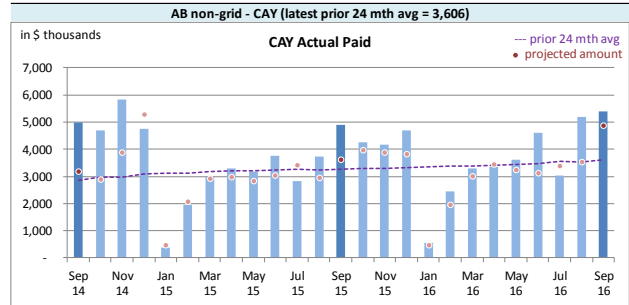
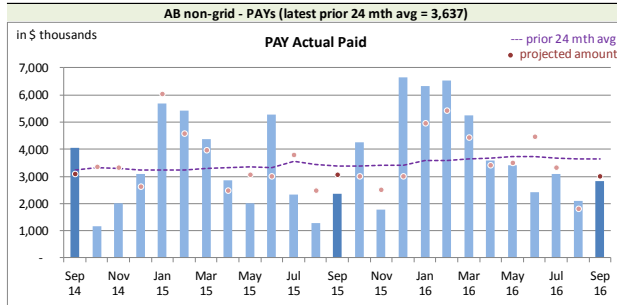
**2.1.c AvsP: Paid Indemnity & Allowed Claims Expense**

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.

<sup>6</sup>Our 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.

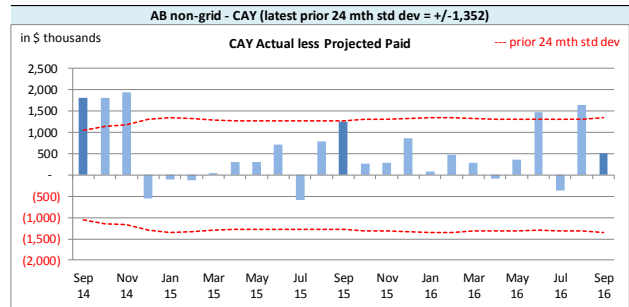
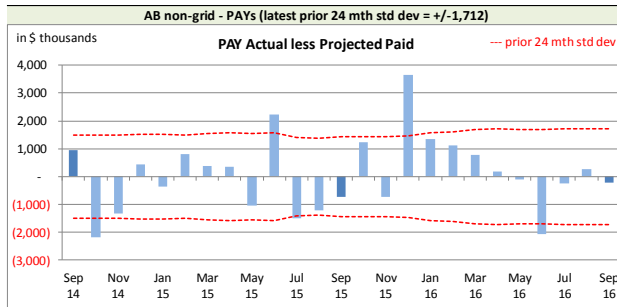


*Alberta non-Grid RSP Actual **Paid** activity by Calendar Month*



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		
<b>Paid</b>	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	3,637	3,606
std dev	1,712	1,352
A-P <> std dev	5	5
% <> std dev	20.0%	20.0%
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.

With only 20% 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 at the top of the next page related to levels influencing **paid** activity.

*Alberta non-Grid RSP Levels that influence<sup>7</sup> 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 IBNR<sup>8</sup>, 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 September 2016 Operational Report and the associated one-month projections from last month’s Report.

<sup>7</sup>Our 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.

<sup>8</sup>For 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	9,414	(811)	(859)	(7)	5,729	37	14,284	(781)
2014	10,990	(109)	(581)	14	4,160	(94)	14,569	(189)
2015	14,821	593	(751)	(12)	4,897	78	18,967	659
2016	8,842	58	(698)	9	4,571	(63)	12,715	4
TOTAL	44,067	(269)	(2,889)	4	19,357	(42)	60,535	(307)

The IBNR provision is \$0.3 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 immediately below summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in the September 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 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:	1,956	(20)	4,172	(20)	6,128	(40)
balance as % unearned premium:	3.9%	-	8.4%	-	12.3%	-
actual unearned premium:	49,902					
less projected:	(254)					

### 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 loss<sup>9</sup> 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 expenses<sup>10</sup>, 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 106.0% rather than 105.6% (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.)

*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	517	0.8%	(2,650)	(4.0%)	(2,133)	(3.2%)	(304)	(0.1%)
CAY	70,252	106.0%	3,873	5.8%	74,125	111.8%	8,416	(0.4%)
TOTAL	70,770	106.8%	1,223	1.8%	71,993	108.6%	8,111	(0.4%)

(“% 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

<sup>9</sup>“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).

<sup>10</sup>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 analysis.

on a discounted basis, and therefore reflect the time value of money and include an explicit provision for adverse deviations in accordance with accepted actuarial practice in Canada.

IBNR presented in section 6, Exhibit B, does NOT include any actuarial present value adjustments. The “Total IBNR” from this exhibit is shown in the Operational Report as “Undiscounted IBNR”.

The ultimate loss ratios detailed in section 6, Exhibit B, refer to the estimates derived on the basis of various actuarial methodologies applied to the experience of the Alberta Non-Grid Risk Sharing Pool for the purposes of the most recent quarterly valuation. As discussed in section 3, IBNR reflected in the current month’s Operational Report was derived as the difference between the estimated ultimate for the claims amount (i.e. earned premium x ultimate loss ratio) and the associated current recorded amounts (life-to-date payments plus current case reserves).

## **6 EXHIBITS**

The exhibits listed below are provided on the pages that follow:

- EXHIBIT A IBNR for Member Sharing – includes Actuarial Present Value Adjustments
- EXHIBIT B IBNR
- EXHIBIT C Premium Liabilities
- EXHIBIT D Projected Year-end Policy Liabilities
- EXHIBIT E Discount Rate & Margins for Adverse Deviations
- EXHIBIT F Interest Rate Sensitivity
- EXHIBIT G Components of IBNR Change During Month

**EXHIBIT A**
**IBNR for Member Sharing – includes Actuarial Present Value Adjustments**

TABLE EXHIBIT A

		Amounts in \$000s				
IBNR + M/S actuarial present value adjustments	Accident Year	Actual Aug. 2016	Actual Sep. 2016	Projected Oct. 2016	Projected Nov. 2016	Projected Dec. 2016
	2004	42	42	41	40	39
	2005	76	48	48	47	46
	2006	164	162	159	155	153
	2007	145	143	139	136	135
	2008	585	585	573	562	551
	2009	768	754	739	724	711
	2010	739	801	784	770	753
discount rate	2011	1,453	1,398	1,369	1,343	1,316
0.61%	2012	4,277	3,674	3,601	3,528	3,435
	2013	7,063	6,677	6,544	6,398	6,177
interest rate margin	2014	15,061	14,569	14,259	14,009	13,518
25 basis pts	2015	19,506	18,967	18,250	17,601	16,350
	2016	11,636	12,715	15,174	15,738	27,502
	<b>TOTAL</b>	<b>61,515</b>	<b>60,535</b>	<b>61,680</b>	<b>61,051</b>	<b>70,686</b>
	Change		(980)	1,145	(629)	

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

**EXHIBIT B**
**IBNR**

TABLE EXHIBIT B

Amounts in \$000s

IBNR	Ultimate Loss Ratio	Accident Year	Actual Aug. 2016	Actual Sep. 2016	Projected Oct. 2016	Projected Nov. 2016	Projected Dec. 2016
	349.1%	2004	36	36	35	34	33
	94.7%	2005	(3)	(30)	(29)	(28)	(27)
	87.2%	2006	28	26	25	24	24
	101.6%	2007	60	58	57	56	55
	101.9%	2008	430	431	422	414	406
	94.4%	2009	503	492	482	472	463
	84.4%	2010	378	461	452	443	434
	83.0%	2011	785	732	717	703	689
	102.1%	2012	2,927	2,342	2,295	2,249	2,182
	99.9%	2013	5,219	4,866	4,769	4,650	4,464
	113.6%	2014	11,326	10,990	10,770	10,555	10,133
	101.1%	2015	15,299	14,821	14,228	13,659	12,566
	105.6%	2016	8,038	8,842	10,946	11,224	21,965
		<b>TOTAL</b>	<b>45,026</b>	<b>44,067</b>	<b>45,169</b>	<b>44,455</b>	<b>53,387</b>
		Change		(959)	1,102	(714)	

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

## EXHIBIT C

## Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Aug. 2016	Actual Sep. 2016	Projected Oct. 2016	Projected Nov. 2016	Projected Dec. 2016
Premium Liabilities					
(1) unearned premium (UP)	49,187	49,902	49,258	47,614	44,758
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	112.7%	112.3%	111.8%	111.2%	110.6%
(3) expected future costs {(1) x (2)}	55,456	56,030	55,064	52,961	49,483
(4) premium deficiency / (deferred policy acquisition cost)	6,269	6,128	5,806	5,347	4,725
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	104.3%	103.9%	103.5%	102.9%	102.3%
(6) expected future costs {(1) x (5)}	51,326	51,858	50,964	49,018	45,798
(7) premium deficiency / (deferred policy acquisition cost)	2,139	1,956	1,706	1,404	1,040



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)							
	nominal values			actuarial present value adjustments (apvs)				TOTAL
	Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	development PfAD	
2004	26	33	59	-	-	6	6	65
2005	822	(27)	795	(8)	3	78	73	868
2006	1,352	24	1,376	(14)	6	137	129	1,505
2007	802	55	857	(9)	4	85	80	937
2008	1,194	406	1,600	(21)	8	158	145	1,745
2009	2,262	463	2,725	(35)	14	269	248	2,973
2010	3,138	434	3,572	(54)	21	352	319	3,891
2011	6,322	689	7,011	(112)	49	690	627	7,638
2012	12,003	2,182	14,185	(227)	85	1,395	1,253	15,438
2013	14,936	4,464	19,400	(330)	136	1,907	1,713	21,113
2014	20,425	10,133	30,558	(550)	214	3,721	3,385	33,943
2015	21,679	12,566	34,245	(685)	274	4,195	3,784	38,029
PAYs (sub-total):	84,961	31,422	116,383	(2,045)	814	12,993	11,762	128,145
CAY (2016)	33,426	21,965	55,391	(997)	388	6,146	5,537	60,928
<b>claims liabilities:</b>	<b>118,387</b>	<b>53,387</b>	<b>171,774</b>	<b>(3,042)</b>	<b>1,202</b>	<b>19,139</b>	<b>17,299</b>	<b>189,073</b>
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	development PfAD	Total apvs	TOTAL*
<b>premium liabilities:</b>	44,758	1,040	45,798	(592)	228	4,049	3,685	49,483
*Total may not be sum of parts, as apvs apply to future costs within UPR								
<b>policy liabilities:</b>			<b>217,572</b>	<b>(3,634)</b>	<b>1,430</b>	<b>23,188</b>	<b>20,984</b>	<b>238,556</b>

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 (Jun. 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%	5.0%	10.0%
2009	10.0%	10.0%	5.7%	10.0%
2010	10.0%	10.0%	5.0%	10.0%
2011	10.0%	10.0%	9.9%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	10.0%	10.0%	10.0%	10.0%
2014	12.5%	10.0%	11.3%	12.4%
2015	12.5%	10.0%	12.5%	12.5%
2016	12.1%	10.0%	6.0%	11.3%
2017	12.5%	10.0%	12.5%	12.5%
prem liab	11.8%	10.0%	5.2%	9.0%

discount rate:	0.61%
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 (0.61%), the prior valuation assumption (0.68%) 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	0.11%	0.61%	1.11%	1.61%	2.11%	2.61%	0.68%	0.78%
2004	-	-	-	-	-	-	-	-
2005	664	660	655	650	645	639	659	658
2006	1,263	1,255	1,245	1,234	1,224	1,214	1,254	1,251
2007	758	753	746	740	733	727	752	750
2008	1,633	1,620	1,603	1,586	1,569	1,553	1,617	1,614
2009	2,760	2,737	2,708	2,679	2,651	2,624	2,733	2,727
2010	3,921	3,886	3,840	3,796	3,752	3,709	3,880	3,871
2011	6,835	6,769	6,681	6,596	6,513	6,432	6,756	6,739
2012	14,563	14,420	14,233	14,051	13,873	13,700	14,394	14,356
2013	22,117	21,885	21,586	21,294	21,009	20,735	21,843	21,784
2014	34,101	33,714	33,213	32,727	32,256	31,795	33,645	33,543
2015	41,322	40,819	40,174	39,544	38,930	38,339	40,730	40,599
2016	63,027	62,320	61,409	60,523	59,659	58,830	62,193	62,007
<b>Total</b>	<b>192,964</b>	<b>190,838</b>	<b>188,093</b>	<b>185,420</b>	<b>182,814</b>	<b>180,297</b>	<b>190,456</b>	<b>189,899</b>
	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	0.11%	0.61%	1.11%	1.61%	2.11%	2.61%	0.68%	0.78%
<b>Total</b>	2,126	-	(2,745)	(5,418)	(8,024)	(10,541)	(382)	(939)
	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	0.11%	0.61%	1.11%	1.61%	2.11%	2.61%	0.68%	0.78%
2004	-	-	-	-	-	-	-	-
2005	0.6%	-	(0.8%)	(1.5%)	(2.3%)	(3.2%)	(0.2%)	(0.3%)
2006	0.6%	-	(0.8%)	(1.7%)	(2.5%)	(3.3%)	(0.1%)	(0.3%)
2007	0.7%	-	(0.9%)	(1.7%)	(2.7%)	(3.5%)	(0.1%)	(0.4%)
2008	0.8%	-	(1.0%)	(2.1%)	(3.1%)	(4.1%)	(0.2%)	(0.4%)
2009	0.8%	-	(1.1%)	(2.1%)	(3.1%)	(4.1%)	(0.1%)	(0.4%)
2010	0.9%	-	(1.2%)	(2.3%)	(3.4%)	(4.6%)	(0.2%)	(0.4%)
2011	1.0%	-	(1.3%)	(2.6%)	(3.8%)	(5.0%)	(0.2%)	(0.4%)
2012	1.0%	-	(1.3%)	(2.6%)	(3.8%)	(5.0%)	(0.2%)	(0.4%)
2013	1.1%	-	(1.4%)	(2.7%)	(4.0%)	(5.3%)	(0.2%)	(0.5%)
2014	1.1%	-	(1.5%)	(2.9%)	(4.3%)	(5.7%)	(0.2%)	(0.5%)
2015	1.2%	-	(1.6%)	(3.1%)	(4.6%)	(6.1%)	(0.2%)	(0.5%)
2016	1.1%	-	(1.5%)	(2.9%)	(4.3%)	(5.6%)	(0.2%)	(0.5%)
<b>Total</b>	<b>1.1%</b>	<b>-</b>	<b>(1.4%)</b>	<b>(2.8%)</b>	<b>(4.2%)</b>	<b>(5.5%)</b>	<b>(0.2%)</b>	<b>(0.5%)</b>
	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 Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2004	42	(1)	1	-	-	-	42
2005	76	(1)	(27)	-	(28)	(36.8%)	48
2006	164	(3)	1	-	(2)	(1.2%)	162
2007	145	(4)	2	-	(2)	(1.4%)	143
2008	585	(13)	13	-	-	-	585
2009	768	(16)	2	-	(14)	(1.8%)	754
2010	739	(14)	76	-	62	8.4%	801
2011	1,453	(26)	(29)	-	(55)	(3.8%)	1,398
2012	4,277	(71)	(532)	-	(603)	(14.1%)	3,674
2013	7,063	(98)	(288)	-	(386)	(5.5%)	6,677
2014	15,061	(303)	(189)	-	(492)	(3.3%)	14,569
2015	19,506	(1,198)	659	-	(539)	(2.8%)	18,967
2016	11,636	1,075	4	-	1,079	9.3%	12,715
<b>Grand Total</b>	<b>61,515</b>	<b>(673)</b>	<b>(307)</b>	<b>-</b>	<b>(980)</b>	<b>(1.6%)</b>	<b>60,535</b>

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	(3)	-	(27)	-	(27)	900.0%	(30)
2006	28	(1)	(1)	-	(2)	(7.1%)	26
2007	60	(1)	(1)	-	(2)	(3.3%)	58
2008	430	(9)	10	-	1	0.2%	431
2009	503	(10)	(1)	-	(11)	(2.2%)	492
2010	378	(8)	91	-	83	22.0%	461
2011	785	(12)	(41)	-	(53)	(6.8%)	732
2012	2,927	(44)	(541)	-	(585)	(20.0%)	2,342
2013	5,219	(52)	(301)	-	(353)	(6.8%)	4,866
2014	11,326	(227)	(109)	-	(336)	(3.0%)	10,990
2015	15,299	(1,071)	593	-	(478)	(3.1%)	14,821
2016	8,038	746	58	-	804	10.0%	8,842
<b>Grand Total</b>	<b>45,026</b>	<b>(690)</b>	<b>(269)</b>	<b>-</b>	<b>(959)</b>	<b>(2.1%)</b>	<b>44,067</b>