



NEW BRUNSWICK RISK SHARING POOL

NOVEMBER 2018 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS**RSP NEW BRUNSWICK****OPERATIONAL REPORT****NOVEMBER 2018**

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2018)

The November 2018 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 2018.

NEW BRUNSWICK RISK SHARING POOL FISCAL YEAR 2018 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2017 (completed)	1.74% mfad: 25 bp	Oct. 2017	updated valuation (roll forward): accident year 2017 loss ratio <u>increased</u> 1.1 points to 73.5%; discount rate <u>increased</u> by 57 basis points; no change to selected margins for adverse deviations
Dec. 31, 2017 (completed)	1.75% mfad: 25 bp	Mar. 2018	update valuation: accident year 2018 loss ratio <u>increased</u> 1.1 point to 73.2%; discount rate <u>increased</u> by 1 basis point; no change to selected margins for adverse deviations
Mar. 31, 2018 (completed)	1.93% mfad: 25 bp	May 2018	update valuation (roll forward): accident year 2018 loss ratio <u>decreased</u> 0.1 point to 73.1%; discount rate <u>increased</u> by 18 basis points; no change to selected margins for adverse deviations
Jun. 30, 2018 (completed)	1.87% mfad 25 bp	Aug. 2018	updated valuation: accident year 2018 loss ratio <u>increased</u> 1.1 points to 74.2%; discount rate <u>decreased</u> by 6 basis points; selected margins for adverse deviations were updated
Sep. 30, 2018 (completed)	2.29% mfad 25 bp	Oct. 2018	updated valuation: accident year 2018 loss ratio <u>increased</u> 0.5 points to 74.7%; discount rate <u>increased</u> by 42 basis points; no change to selected margins for adverse deviations

Under the proposed schedule for fiscal year 2018, the “off-half” valuation quarters ending March 31, 2018 and September 30, 2018 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

There have been no changes in these descriptions since last month's Highlights.

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.

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

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

At the current time, no adjustments have been made to our valuation estimates or views based on the judgment as rendered, and at this point we do not believe this judgment will have a further impact on our valuation results.

1.4 Harmonized Sales Tax

There have been no changes in these descriptions since last month's Highlights.

In the fiscal 2016-17 provincial budget released February 2, 2016, the New Brunswick Finance Minister announced a 2 percentage point increase in the provincial component of the harmonized sales tax ("HST") **effective July 1st, 2016** increasing the combined HST rate in the province from 13% to 15%.

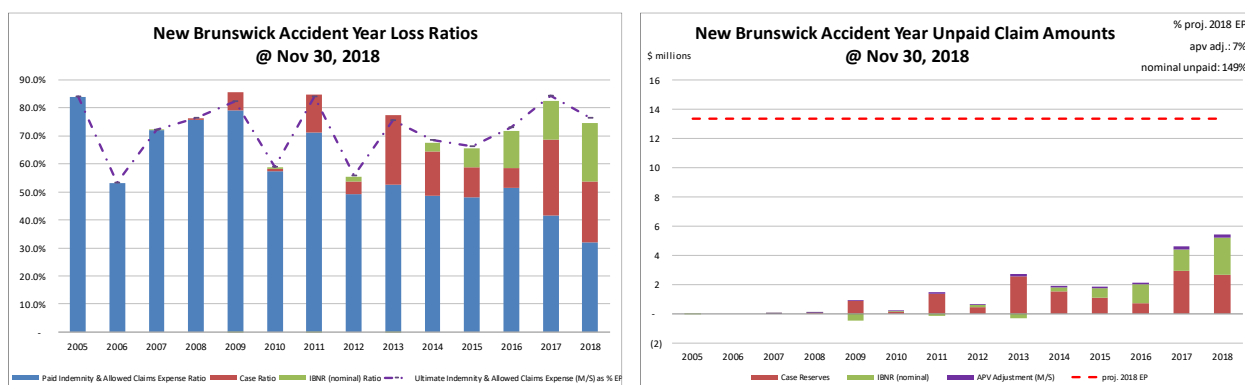
An adjustment for the HST rate increase was included in the updated loss cost trend structures selected using NB PPV Industry 2017-2 data, impacting the selected a priori loss ratios, however, no specific adjustments have been made to the valuation assumptions from the **most recent** valuation (September 30, 2018).

1.5 Current Provision Summary

The charts at the top of the next page show the current levels of claim liabilities¹ booked by 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.

year. 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 2018 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 (\$1.0 million – see table immediately below) represents 7% of the earned premium projected for the full year 2018 (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	14,319	68.4%
ibnr	5,637	26.9%
M/S apv adjust.	973	4.6%
M/S total	20,929	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 72% of the IBNR balance relates to accident years 2017 and 2018 (see Exhibit B). Approximately 76% of the M/S claim liabilities are related to accident years 2014-2018 inclusive (i.e. the most recent 5 accident years), and less than 1% is related to accident years 2008 and prior (i.e. prior to the most recent 10 accident years).

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

premium liabilities (\$000s)

	amt	%
unearned prem	8,692	124.4%
prem def/(dpac)	(1,981)	(28.4%)
M/S apv adjust.	274	3.9%
M/S total	6,985	100.0%

policy liabilities (\$000s)

	amt	%
claim	19,956	71.5%
premium	6,711	24.0%
M/S apv adjust.	1,247	4.5%
M/S total	27,914	100.0%

2 Activity During the Month of November 2018

2.1 Recorded Premium and Claims Activity

The table at the top of the next page summarizes the extent to which premiums and claims amounts

recorded during the month differ from projections reflected in the prior month's Operational Report².

New Brunswick RSP Actual vs Projected Summary: Recorded Transaction Amounts (\$ thousands)

Table 01 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)	19	(118)	1,158	1,267	1,177	1,149
2016	(1)	(1)	12	(8)	25	31	37	23
2017	(2)	(2)	74	29	(220)	(215)	(145)	(185)
2018	1,229	(1)	643	227	174	(195)	817	32
TOTAL	1,226	(4)	748	130	1,137	888	1,885	1,018

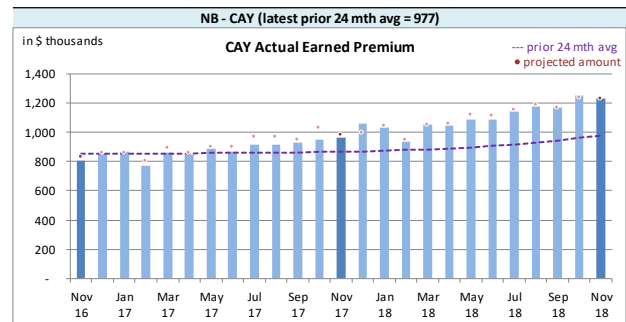
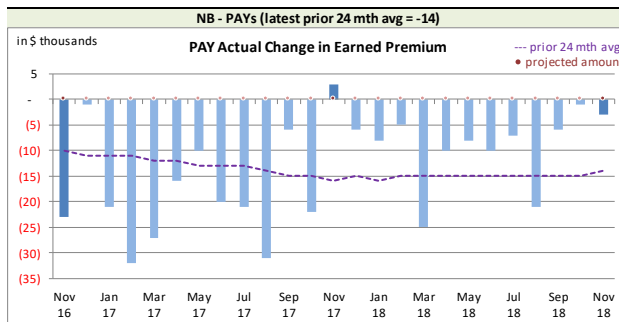
(Recorded transaction amounts exclude IBNR & other actuarial provisions)

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

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

The charts immediately below show actual **earned premium**³ 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.

*New Brunswick 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 in January each year. The heightened prior accident years' activity over 2017 and in March 2018 was related to ineligible risks being removed from the RSP based on findings of the FA internal audit team with respect to FA audits.

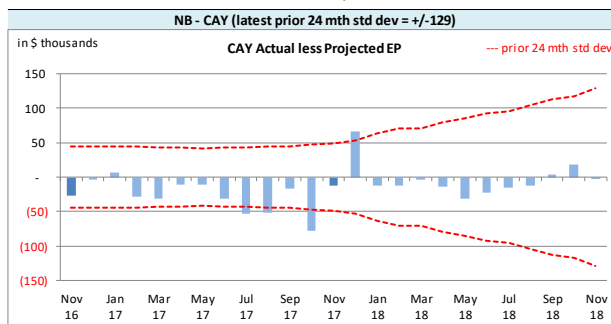
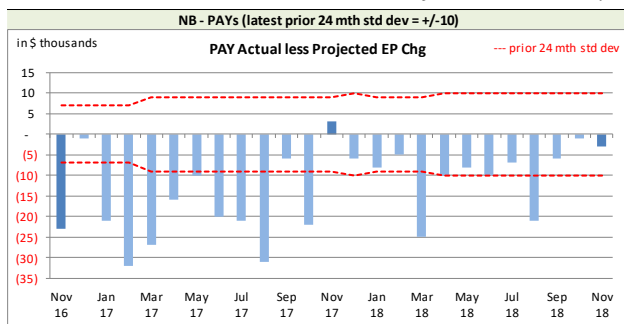
The associated variance between the actual changes and the projections from the previous month are shown in the charts at the top of the next page. **Earned premium** change projections are all

²There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

³Premium 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.

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.

*New Brunswick 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)	(14)	977
std dev	10	129
A-P <> std dev	12	4
% <> std dev	48.0%	16.0%
norm <> std dev	31.7%	31.7%

We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias⁴, with actuals generally lower than our projections, although the magnitude is not high

relative to monthly premium. In addition to the PAYs' bias, the CAY has also shown bias⁵, with actuals being generally lower than projected, and we have modified our projections processes in response. Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority. Projection variances have also been exacerbated by written premium variances, where our projections, based on information provided by larger RSP users, have been proven to be too high. Notwithstanding the projection misses, readers will also note the widening of the CAY standard deviation band, reflecting the recent and sustained volume increases and the impact as those increases are earned.

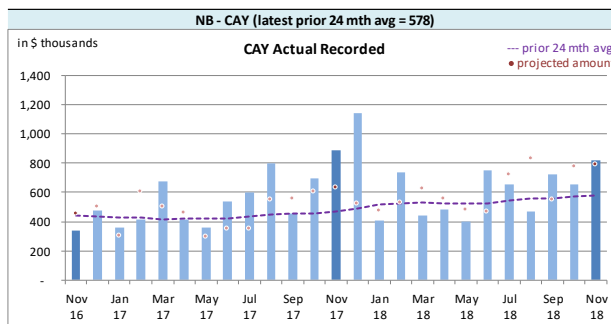
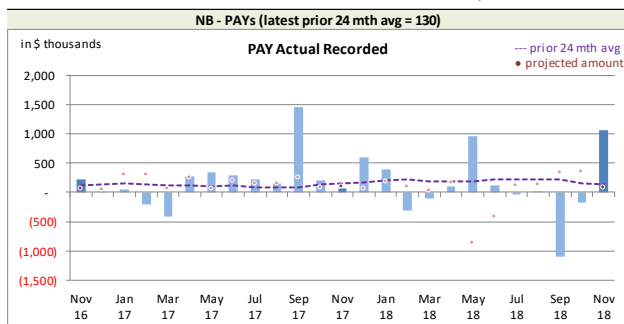
2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

The charts at the top of the next page show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

⁴The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

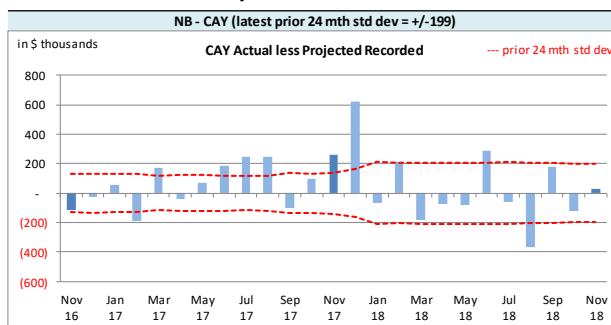
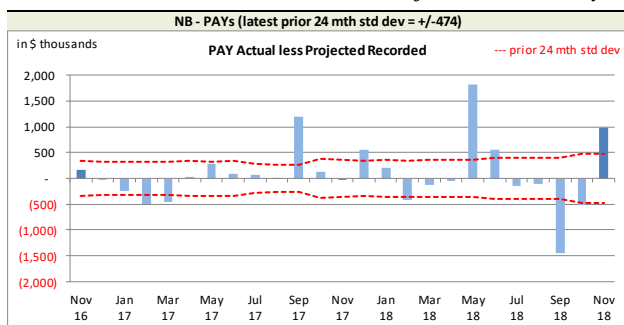
⁵We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (24 in this case) and 50% probability of success. The 24-month variances at November 2018 has only 4 months where the actual was higher than projected, and as the 95% confidence range is 7 to 17, bias continues to be indicated.

*New Brunswick 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 to show how the variances from projection compare with historical standard deviations.

*New Brunswick RSP Actual vs Projected Summary: **Recorded** Variances by Calendar Month*



On Latest \$ thousands			
	Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)		130	578
std dev		474	199
A-P <> std dev		10	10
% <> std dev		40.0%	40.0%
norm <> std dev		31.7%	31.7%

With respect to **recorded** indemnity & allowed claims expense activity, caution must be exercised in reviewing the variances as this is a small pool and single claim transactions that are normal course for the business may look "unusual" and generate relatively "significant" variances that in nominal value terms are not that

significant. That said, 40% of the prior accident years' (PAYs) **recorded** variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **recorded** amounts (see table above), suggesting the projection process has performed worse than simply projecting the prior 24-month average amount (assuming it follows a normal distribution). Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

The PAY **recorded** activity was higher than the projected by more than one standard deviation. The activity was reviewed and confirmed, with the variance attributed to process variance.

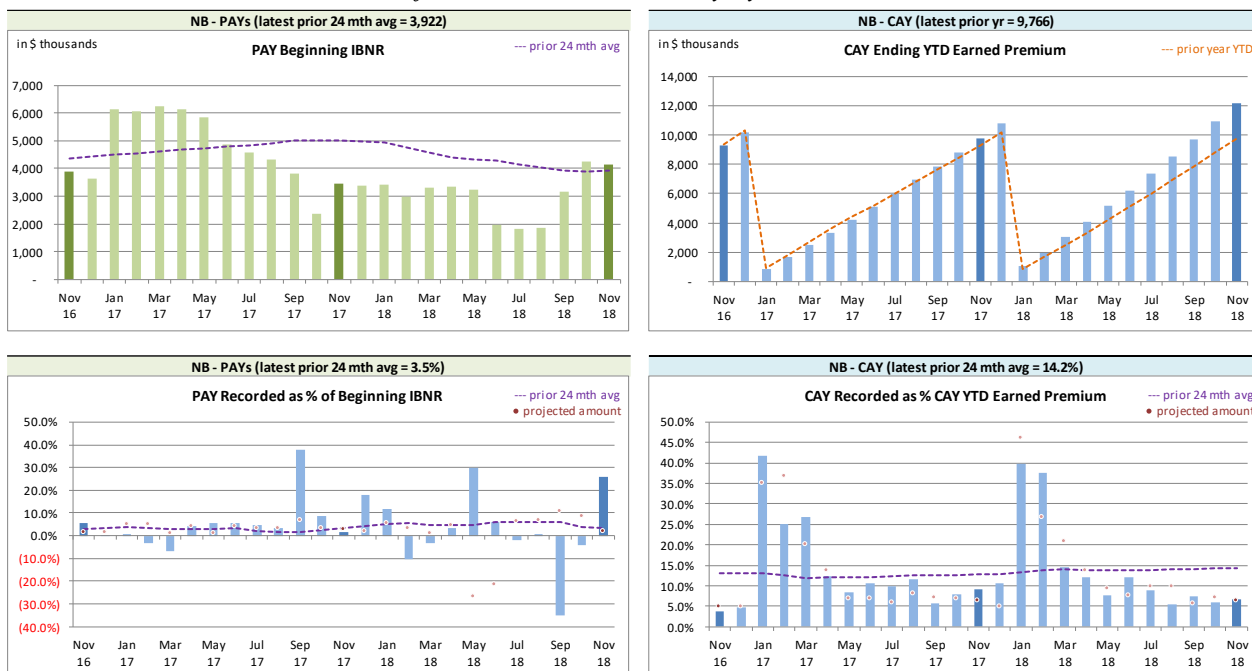
The current accident year (CAY) **recorded** variances fell outside of one standard deviation 40% of the time over the last 25 calendar months (see table above), suggesting the projection process has performed worse than simply projecting the prior 24-month average amount. Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

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. Note in particular the increase in the level of PAYs beginning IBNR over the months. Part of this will be as a response to valuations and showing up as a beginning IBNR change one month after the valuation is implemented (i.e. April, June, September, and November).

New Brunswick 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).

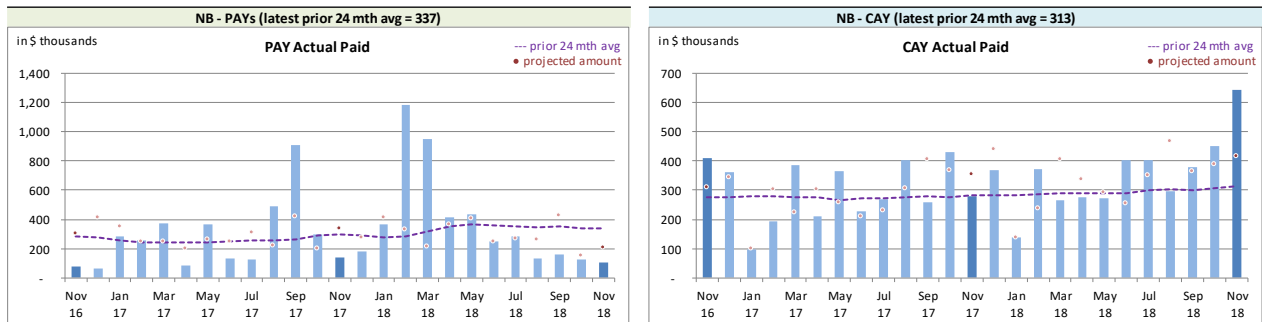
2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

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

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.

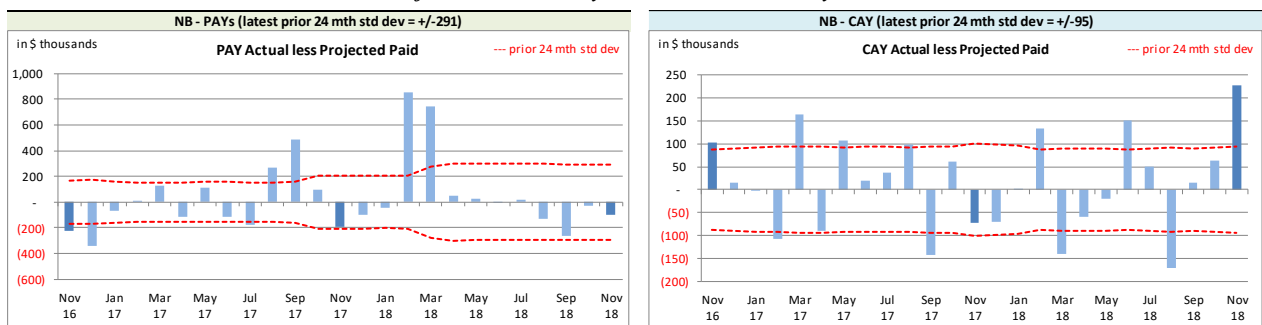
compares with the average amount of the preceding 24 calendar months.

*New Brunswick RSP Actual **Paid** activity by Calendar Month*



Paid activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

*New Brunswick RSP Actual vs Projected Summary: **Paid** Variances by Calendar Month*



On Latest \$ thousands		
	Paid	
	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	337	313
std dev	291	95
A-P <> std dev	7	11
% <> std dev	28.0%	44.0%
norm <> std dev	31.7%	31.7%

With respect to **paid** indemnity & allowed claims expense, caution must be exercised in reviewing the variances as this is a small pool, and single claim transactions that are normal course for the business may look "unusual" and generate relatively "significant" variances that in nominal value terms are not that significant.

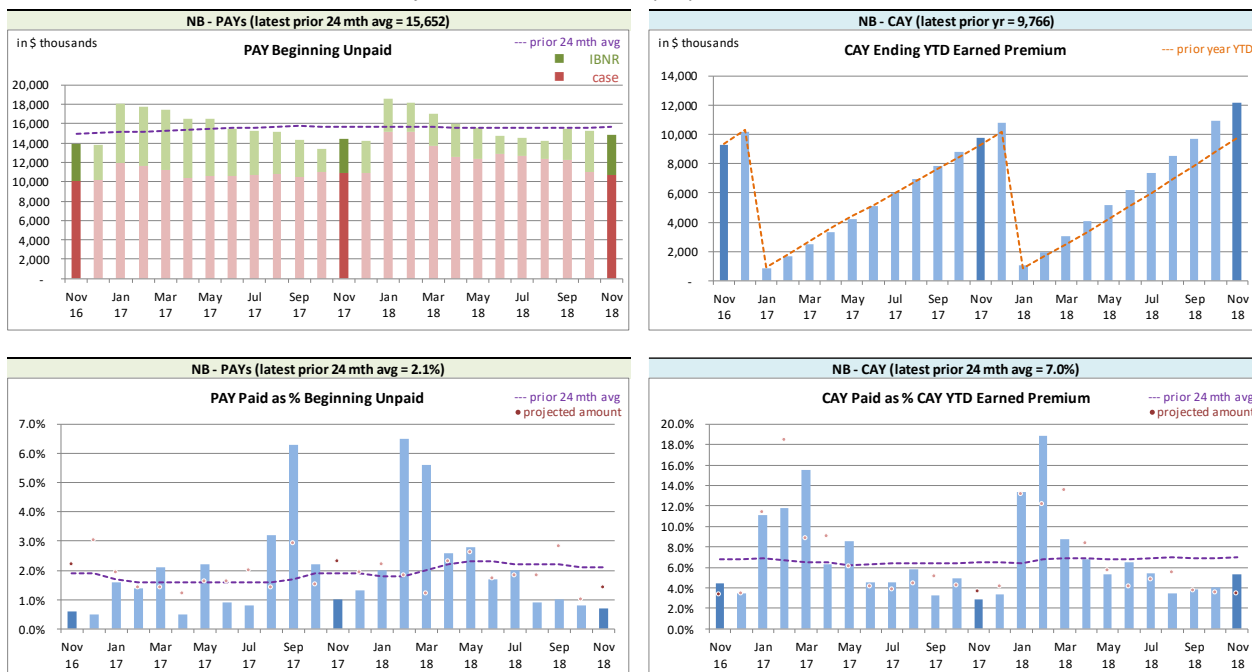
That said, 28% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on the left above, suggesting the projection process has performed no better than simply projecting the prior 24-month average amount (assuming it follows a normal distribution). Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

The current accident year (CAY) **paid** variances (see table on the left above) fell outside of one standard deviation 44% of the time over the last 25 calendar months, suggesting that the projection process has performed worse than simply projecting the prior 24-month average amount. No bias has been indicated at a 95% confidence level on a lagging 24-month basis.

The CAY **paid** activity was higher than the projected by more than one standard deviation. The activity was reviewed and confirmed, with the variance attributed to process variance.

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

New Brunswick 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) was used to determine the month's IBNR⁸, and factors were 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

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".

determine the current month's provisions and projections were based on the applicable valuation. The table immediately below summarizes variances in provisions included in this month's Operational Report and the associated one-month projections from last month's Report.

New Brunswick RSP Actual vs Projected Summary: IBNR and APV Amounts (\$ thousands)

Table 02

Accident Year	IBNR		actuarial present value adjustments				IBNR + actuarial present value adjustments	
			Discount Amount		Provisions for Adverse Deviations			
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	276	(1,149)	(367)	(5)	834	11	743	(1,143)
2016	1,322	(23)	(134)	(1)	243	1	1,431	(23)
2017	1,477	184	(331)	2	529	(5)	1,675	181
2018	2,562	(33)	(396)	17	595	(25)	2,761	(41)
TOTAL	5,637	(1,021)	(1,228)	13	2,201	(18)	6,610	(1,026)

The IBNR provision is \$1.0 million lower than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1.

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

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

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

The table at the top of the next page summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in this month's 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 amount) prior to and after actuarial present value adjustments. Actuarial present value adjustments decrease the asset value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance.

New Brunswick 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:	(1,981)	(7)	274	2	(1,707)	(5)
balance as % unearned premium:	(22.8%)	-	3.2%	0.1%	(19.6%)	0.1%
actual unearned premium:	8,692					
less projected:	48					

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 not only the 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 75.3% rather than 74.7% (the valuation ultimate ratio for accident year 2018), 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 New Brunswick 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.

New Brunswick 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	618	5.1%	(416)	(3.4%)	202	1.7%	(5)	(0.2%)
CAY	9,104	75.3%	199	1.6%	9,303	77.0%	929	(0.1%)
TOTAL	9,722	80.5%	(217)	(1.8%)	9,505	78.7%	924	(0.3%)

(“% EP” based on 2018 calendar year-to-date earned premium; ratios may not total due to rounding)

In general, prior accident years (PAYs) changes from last month are due to the release of the actuarial present value adjustments with claims payments, except when valuations are implemented. The loss ratio change year-to-date in Table 04 reflects not only changes in the prior accident year levels, but also the increase in the calendar year-to-date earned premium with an additional month’s earned premium.

For the current accident year (CAY), changes in the year-to-date total reflects the additional month’s exposure and regular changes to actuarial present value adjustments as the year ages.

5 Current Operational Report – Additional Exhibits

Section 6 provides exhibits pertaining to the actuarial provisions reflected in the current month’s Operational Report.

IBNR (including actuarial present value adjustments) presented in section 6, Exhibit A, were derived on a discounted basis, and therefore reflect the time value of money and include an explicit provision for adverse deviations in accordance with accepted actuarial practice in Canada.

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

The ultimate loss ratios detailed in section 6, Exhibit B, refer to the estimates derived on the basis of various actuarial methodologies applied to the experience of the New Brunswick 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
**IBNR + M/S actuarial present
 value adjustments**

 discount rate
 2.29%

 interest rate margin
 25 basis pts

Amounts in \$000s					
Accident Year	Actual Oct. 2018	Actual Nov. 2018	Projected Dec. 2018	Projected Jan. 2019	Projected Dec. 2019
2005	(2)	(2)	(2)	(2)	(2)
2006	-	-	-	-	-
2007	9	9	9	7	4
2008	9	9	10	9	7
2009	91	(448)	(443)	(307)	(130)
2010	65	65	64	49	26
2011	128	(77)	(76)	(35)	9
2012	216	216	213	163	85
2013	243	(181)	(179)	(77)	8
2014	401	397	384	303	169
2015	759	755	746	715	468
2016	1,469	1,431	1,416	1,428	1,038
2017	1,534	1,675	1,614	1,637	1,259
2018	2,649	2,761	2,843	2,521	1,806
2019	-	-	-	517	3,310
TOTAL	7,571	6,610	6,599	6,928	8,057
Change		(961)	(11)	329	

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

EXHIBIT B
IBNR
TABLE EXHIBIT B

TABLE EXHIBIT B

Amounts in \$000s							
IBNR	Ultimate Loss Ratio	Accident Year	Actual Oct. 2018	Actual Nov. 2018	Projected Dec. 2018	Projected Jan. 2019	Projected Dec. 2019
	84.0%	2005	(2)	(2)	(2)	(2)	(2)
	53.2%	2006	-	-	-	-	-
	72.1%	2007	8	8	8	6	3
	76.3%	2008	4	4	4	3	3
	82.2%	2009	64	(475)	(470)	(334)	(151)
	58.7%	2010	56	56	55	39	18
	83.2%	2011	49	(156)	(154)	(109)	(49)
	55.4%	2012	177	177	175	124	55
	74.4%	2013	118	(306)	(303)	(215)	(99)
	67.6%	2014	304	300	288	204	92
	65.5%	2015	675	670	663	623	391
	71.8%	2016	1,359	1,322	1,309	1,296	926
	82.6%	2017	1,333	1,477	1,418	1,404	1,067
	74.7%	2018	2,461	2,562	2,623	2,308	1,633
	74.6%	2019	-	-	-	484	2,979
		TOTAL	6,606	5,637	5,614	5,831	6,866
		Change		(969)	(23)	217	

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

EXHIBIT C
Premium Liabilities
TABLE EXHIBIT C

	Amounts in \$000s				
Premium Liabilities	Actual Oct. 2018	Actual Nov. 2018	Projected Dec. 2018	Projected Jan. 2019	Projected Dec. 2019
(1) unearned premium (UP)	8,637	8,692	8,799	8,842	10,634
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	80.4%	80.4%	80.3%	80.3%	80.9%
(3) expected future costs {(1) x (2)}	6,941	6,985	7,065	7,104	8,599
(4) premium deficiency / (deferred policy acquisition cost)	(1,696)	(1,707)	(1,734)	(1,738)	(2,035)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	77.2%	77.2%	77.1%	77.2%	77.7%
(6) expected future costs {(1) x (5)}	6,670	6,711	6,788	6,826	8,262
(7) premium deficiency / (deferred policy acquisition cost)	(1,967)	(1,981)	(2,011)	(2,016)	(2,372)

EXHIBIT D
Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2018, broken down by component.

New Brunswick ending 2018		Projected Balances as at Dec. 31, 2018 (\$000s)									
Acc Yr	nominal values			actuarial present value adjustments (apvs)						Total apvs	TOTAL
	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD			
2005	-	(2)	(2)	-	-	-	-	-	-	-	(2)
2006	-	-	-	-	-	-	-	-	-	-	-
2007	-	8	8	-	-	1	-	1	1	1	9
2008	77	4	81	(2)	-	8	-	8	6	6	87
2009	869	(470)	399	(13)	1	40	(1)	39	27	27	426
2010	91	55	146	(6)	1	15	(1)	14	9	9	155
2011	1,358	(154)	1,204	(43)	5	120	(4)	116	78	78	1,282
2012	437	175	612	(23)	2	61	(2)	59	38	38	650
2013	2,539	(303)	2,236	(101)	11	224	(10)	214	124	124	2,360
2014	1,510	288	1,798	(85)	9	180	(8)	172	96	96	1,894
2015	1,078	663	1,741	(91)	9	174	(9)	165	83	83	1,824
2016	677	1,309	1,986	(131)	14	240	(16)	224	107	107	2,093
2017	2,953	1,418	4,371	(328)	35	529	(40)	489	196	196	4,567
PAYs (sub-total):	11,589	2,991	14,580	(823)	87	1,592	(91)	1,501	765	765	15,345
CAY (2018)	3,127	2,623	5,750	(437)	46	661	(50)	611	220	220	5,970
claims liabilities:	14,716	5,614	20,330	(1,260)	133	2,253	(141)	2,112	985	985	21,315
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD		Total apvs	TOTAL*
premium liabilities:	8,799	(2,011)	6,788	(341)	33	617	(32)	585	277	277	7,065
*Total may not be sum of parts, as apvs apply to future costs within UPR											
policy liabilities:			27,118	(1,601)	166	2,870	(173)	2,697	1,262	1,262	28,380

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, 2018 from the valuation), followed by the selected discount rate and the associated margin for investment income.

**Selected Claims Development MfADs (Sep. 30,
 2018)**

Accident Year	Third Party Liability Margins	Accident Benefits Margins	Other Coverages Margins	Total Margins
2005	10.0%	10.0%	10.0%	10.0%
2006	10.0%	10.0%	10.0%	10.0%
2007	10.0%	10.0%	10.0%	10.0%
2008	10.0%	10.0%	10.0%	10.0%
2009	10.0%	10.0%	10.0%	10.0%
2010	10.0%	10.0%	10.0%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	10.0%	10.0%	10.0%	10.0%
2014	10.0%	10.0%	9.5%	10.0%
2015	10.0%	10.0%	10.0%	10.0%
2016	12.5%	10.0%	11.7%	12.1%
2017	12.5%	10.0%	9.2%	12.1%
2018	12.3%	10.0%	7.2%	11.5%
2019	11.7%	10.0%	5.6%	9.4%
prem liab	11.7%	10.0%	5.6%	9.4%

discount rate: 2.29%
 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, 2018 from the latest valuation date (projections in exhibits A to D are also to Dec. 31, 2018, but are based on more up-to-date information). We have included the most recent valuation selection (2.29%), the prior valuation assumption (1.87%) and the prior fiscal year end valuation assumption (1.74%) 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, 2018 projected Unpaid								
AY	1.29%	1.79%	2.29%	2.79%	3.29%	3.79%	1.87%	1.74%
2005	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-
2007	2	2	2	2	2	2	2	2
2008	76	75	75	74	74	73	75	76
2009	375	372	370	367	364	362	372	373
2010	136	135	134	133	132	130	135	135
2011	1,119	1,110	1,102	1,093	1,085	1,077	1,109	1,111
2012	627	622	617	611	606	602	621	622
2013	2,260	2,237	2,215	2,194	2,173	2,152	2,234	2,240
2014	1,774	1,756	1,738	1,721	1,703	1,687	1,753	1,758
2015	1,811	1,790	1,770	1,750	1,730	1,711	1,787	1,793
2016	2,122	2,091	2,061	2,031	2,003	1,975	2,086	2,094
2017	4,725	4,645	4,568	4,493	4,421	4,350	4,633	4,653
2018	6,031	5,928	5,829	5,733	5,641	5,551	5,912	5,939
Total	21,058	20,763	20,481	20,202	19,934	19,672	20,719	20,796
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

Dollar Impact Relative to Valuation Assumption								
AY	1.29%	1.79%	2.29%	2.79%	3.29%	3.79%	1.87%	1.74%
Total	577	282	-	(279)	(547)	(809)	238	315
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

Percentage Impact Relative to Valuation Assumption								
AY	1.29%	1.79%	2.29%	2.79%	3.29%	3.79%	1.87%	1.74%
2005	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-
2008	1.3%	-	-	(1.3%)	(1.3%)	(2.7%)	-	1.3%
2009	1.4%	0.5%	-	(0.8%)	(1.6%)	(2.2%)	0.5%	0.8%
2010	1.5%	0.7%	-	(0.7%)	(1.5%)	(3.0%)	0.7%	0.7%
2011	1.5%	0.7%	-	(0.8%)	(1.5%)	(2.3%)	0.6%	0.8%
2012	1.6%	0.8%	-	(1.0%)	(1.8%)	(2.4%)	0.6%	0.8%
2013	2.0%	1.0%	-	(0.9%)	(1.9%)	(2.8%)	0.9%	1.1%
2014	2.1%	1.0%	-	(1.0%)	(2.0%)	(2.9%)	0.9%	1.2%
2015	2.3%	1.1%	-	(1.1%)	(2.3%)	(3.3%)	1.0%	1.3%
2016	3.0%	1.5%	-	(1.5%)	(2.8%)	(4.2%)	1.2%	1.6%
2017	3.4%	1.7%	-	(1.6%)	(3.2%)	(4.8%)	1.4%	1.9%
2018	3.5%	1.7%	-	(1.6%)	(3.2%)	(4.8%)	1.4%	1.9%
Total	2.8%	1.4%	-	(1.4%)	(2.7%)	(4.0%)	1.2%	1.5%
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	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 New Brunswick
AccountCode Desc IBNR - Discou

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			
2005	(2)	-	-	-	-	-	(2)
2006	-	-	-	-	-	-	-
2007	9	-	-	-	-	-	9
2008	9	1	(1)	-	-	-	9
2009	91	(1)	(538)	-	(539)	(592.3%)	(448)
2010	65	(1)	1	-	-	-	65
2011	128	(2)	(203)	-	(205)	(160.2%)	(77)
2012	216	(5)	5	-	-	-	216
2013	243	(3)	(421)	-	(424)	(174.5%)	(181)
2014	401	(13)	9	-	(4)	(1.0%)	397
2015	759	(9)	5	-	(4)	(0.5%)	755
2016	1,469	(15)	(23)	-	(38)	(2.6%)	1,431
2017	1,534	(40)	181	-	141	9.2%	1,675
2018	2,649	153	(41)	-	112	4.2%	2,761
Grand Total	7,571	65	(1,026)	-	(961)	(12.7%)	6,610

EXHIBIT G

Page 2 of 2

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

 RSP **New Brunswick**
 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			
2005	(2)	-	-	-	-	-	(2)
2006	-	-	-	-	-	-	-
2007	8	-	-	-	-	-	8
2008	4	-	-	-	-	-	4
2009	64	(1)	(538)	-	(539)	(842.2%)	(475)
2010	56	(1)	1	-	-	-	56
2011	49	(1)	(204)	-	(205)	(418.4%)	(156)
2012	177	(4)	4	-	-	-	177
2013	118	(2)	(422)	-	(424)	(359.3%)	(306)
2014	304	(12)	8	-	(4)	(1.3%)	300
2015	675	(7)	2	-	(5)	(0.7%)	670
2016	1,359	(14)	(23)	-	(37)	(2.7%)	1,322
2017	1,333	(40)	184	-	144	10.8%	1,477
2018	2,461	134	(33)	-	101	4.1%	2,562
Grand Total	6,606	52	(1,021)	-	(969)	(14.7%)	5,637