



NEW BRUNSWICK RISK SHARING POOL

FEBRUARY 2019 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

Related Bulletin: [F19-023 New Brunswick RSP February 2019 Operational Report](#)

For your convenience, bookmarks have been added to this document. To view them, please click on the BOOKMARK tab at the left.

Should you require any further information, please call Shawn Doherty, Senior Vice President Actuarial & CFO at (416) 644-4968.

ACTUARIAL HIGHLIGHTS
RSP NEW BRUNSWICK
OPERATIONAL REPORT
FEBRUARY 2019

TABLE OF CONTENTS

1	Summary.....	2
1.1	Valuation Schedule (Fiscal Year 2019).....	2
1.2	Appointed Actuary and Hybrid Actuarial Services Model.....	2
1.3	Consideration of Recent Legal Decisions and Changes in Legislation / Regulation.....	2
1.4	Harmonized Sales Tax.....	3
1.5	Current Provision Summary.....	3
2	Activity During the Month of February 2019.....	4
2.1	Recorded Premium and Claims Activity.....	4
2.1.a	Actual vs. Projected (AvsP): Earned Premium.....	5
2.1.b	AvsP: Recorded Indemnity & Allowed Claims Expense.....	6
2.1.c	AvsP: Paid Indemnity & Allowed Claims Expense.....	8
2.2	Actuarial Provisions.....	10
3	Ultimate Loss Ratio Matching Method.....	12
4	Calendar Year-to-Date Results.....	12
5	Current Operational Report – Additional Exhibits.....	13
6	EXHIBITS.....	13

1 Summary

1.1 Valuation Schedule (Fiscal Year 2019)

The February 2019 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 2019.

NEW BRUNSWICK RISK SHARING POOL FISCAL YEAR 2019 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
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
Dec. 31, 2018		Mar. 2019	update valuation
Mar. 31, 2019		May 2019	update valuation (roll forward)
Jun. 30, 2019		Aug. 2019	update valuation
Sep. 30, 2019		Oct. 2019	update valuation (roll forward)

Under the proposed schedule for fiscal year 2019, the “off-half” valuation quarters ending March 31, 2019 and September 30, 2019 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 / Regulation¹

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 /

¹This link is to a helpful guide on how bills become laws: <http://www.ontla.on.ca/lao/en/media/laointernet/pdf/bills-and-lawmaking-background-documents/how-bills-become-law-en.pdf>.

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 June 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.

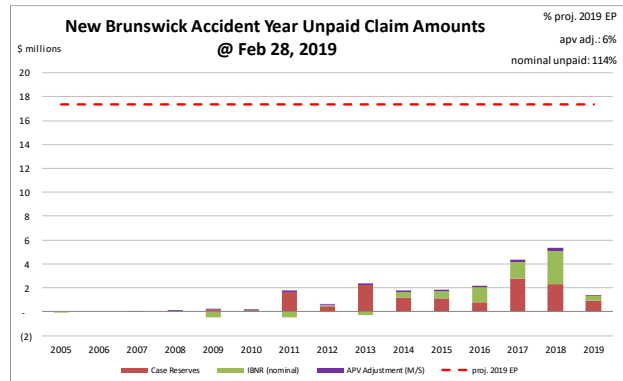
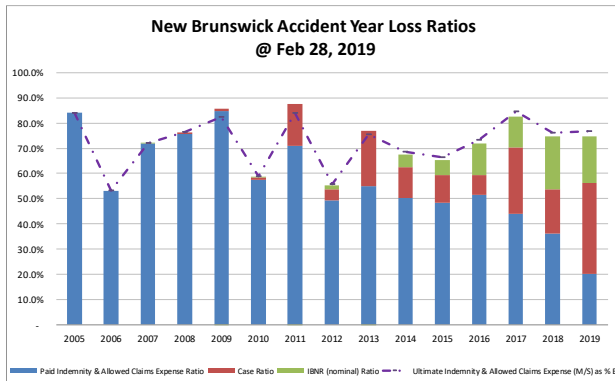
In the fiscal 2016-17 provincial budget released February 2, 2016, the New Brunswick Finance Minister announced a 2 percentage point increase in the provincial component of the harmonized sales tax (“HST”) **effective July 1, 2016** increasing the combined HST rate in the province from 13% to 15%.

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 liabilities² booked by accident 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 2019 full year earned premium (the red hash-mark line) to provide some perspective.

²Claim liabilities refer to provision for unpaid indemnity and allowed claims expenses. Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this discussion.



"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 (\$1.1 million – see table immediately below) represents 6% of the earned premium projected for the full year 2019 (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	13,788	66.1%
ibnr	5,965	28.6%
M/S apv adjust.	1,094	5.2%
M/S total	20,847	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 for this RSP is in case reserves. Approximately 55% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 72% of the M/S

claim liabilities are related to accident years 2015–2019 inclusive (i.e. the most recent 5 accident years), and -1%³ is related to accident years 2009 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	7,571	124.4%
prem def/(dpac)	(1,725)	(28.4%)
M/S apv adjust.	238	3.9%
M/S total	6,084	100.0%

policy liabilities (\$000s)

	amt	%
claim	19,753	73.3%
premium	5,846	21.7%
M/S apv adjust.	1,332	4.9%
M/S total	26,931	100.0%

2 Activity During the Month of February 2019

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

³M/S claims liabilities for accident years 2009 and prior account for less than 0% of total claims liabilities at the present time as a result of the IBNR calculation and recorded claims activity since the prior valuation. While unusual, this suggests the potential for unfavourable experience occurring since the prior valuation.

recorded during the month differ from projections reflected in the prior month’s Operational Report⁴.

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	(5)	(5)	30	(338)	358	692	388	354
2017	(47)	(47)	11	(114)	174	268	184	153
2018	(42)	(42)	116	(42)	(168)	(66)	(52)	(108)
2019	1,179	(40)	351	(3)	436	52	787	49
TOTAL	1,086	(133)	507	(498)	800	946	1,307	448

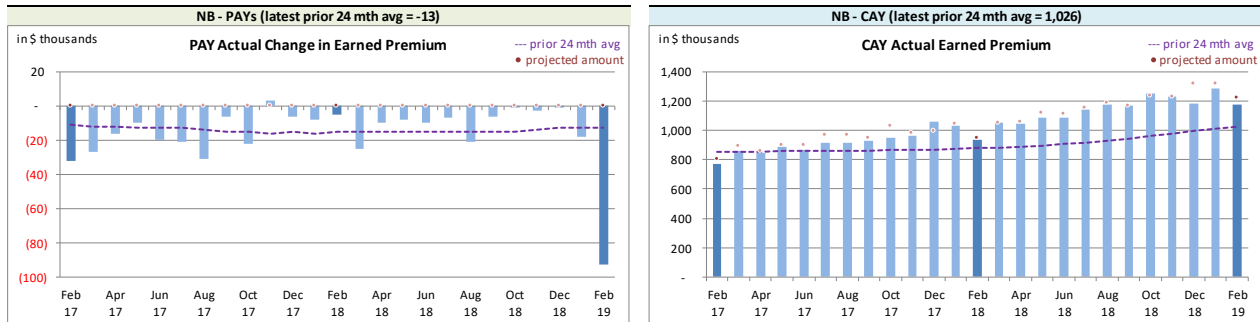
(Recorded transaction amounts exclude IBNR & other actuarial provisions)

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**⁵ activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

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 generally occur at the beginning of each year.

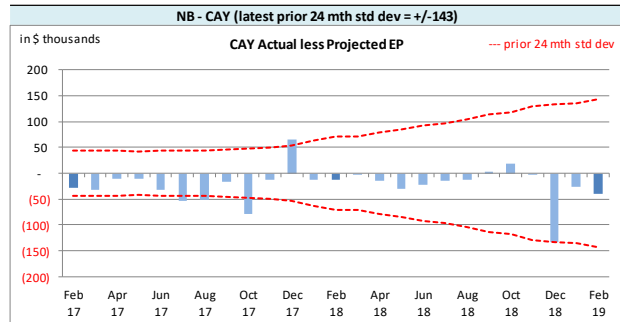
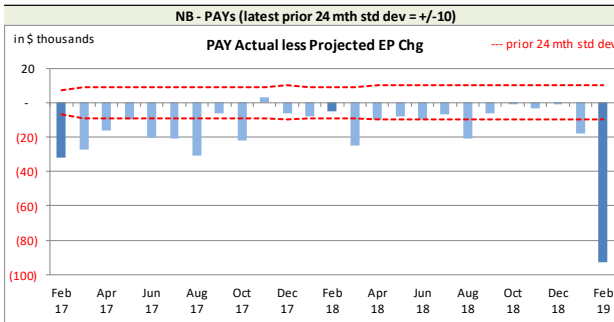
The associated variance between the actual changes and the projections from the previous month are shown in the charts at the top of the next page. **Earned premium** change projections are all attributed to the current accident year as the projection upload does not accept **earned premium** changes for other accident years. We do not see this limitation as being significant for our purposes, but it does mean that the actual less projection variance will equal the actual **earned premium**

⁴There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

⁵Premium is earned on a daily basis based on the transaction term measured in days. As a result, months with 31 days earned relatively more than those with 30 days, and February earns the least.

change in relation to prior accident years.

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)	(13)	1,026
std dev	10	143
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) bias⁶, 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 bias⁷, 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.

The PAYs **earned premium** level for the month was unusual, reflecting member actions related to audit activity / findings.

Readers will note the widening of the CAY standard deviation band, reflecting the recent and sustained volume increases and the impact as those increases are earned.

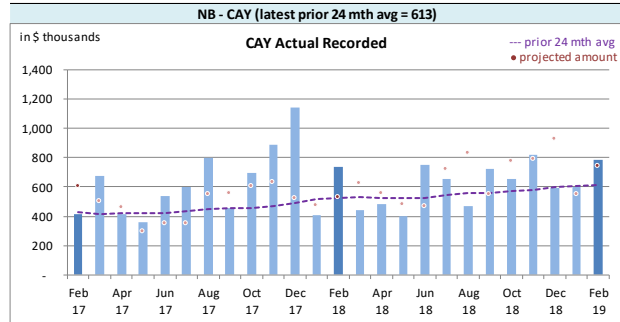
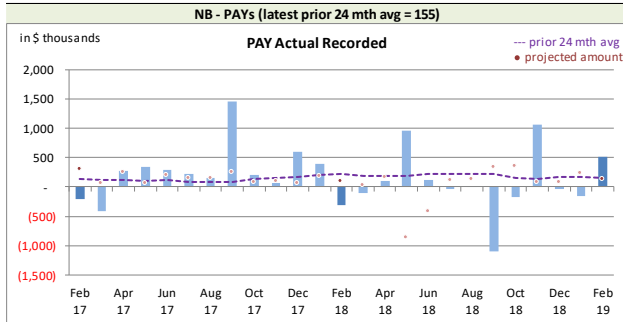
2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

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.

⁶The PAYs’ variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

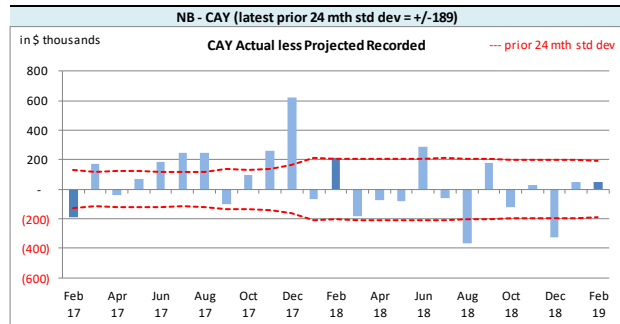
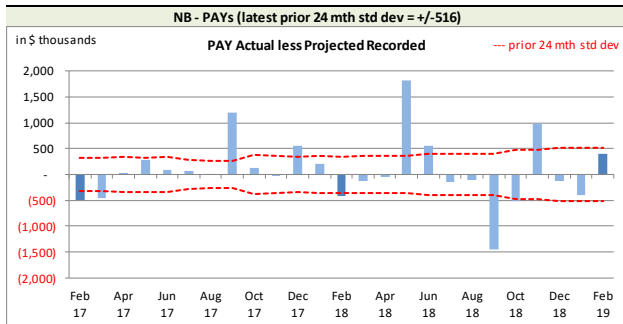
⁷We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (24 in this case) and 50% probability of success. The 24-month variances at February 2019 has only 3 months where the actual was higher than projected, and as the 95% confidence 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)	155	155	613
std dev	516	516	189
A-P <> std dev	10	10	11
% <> std dev	40.0%	40.0%	44.0%
norm <> std dev	31.7%	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

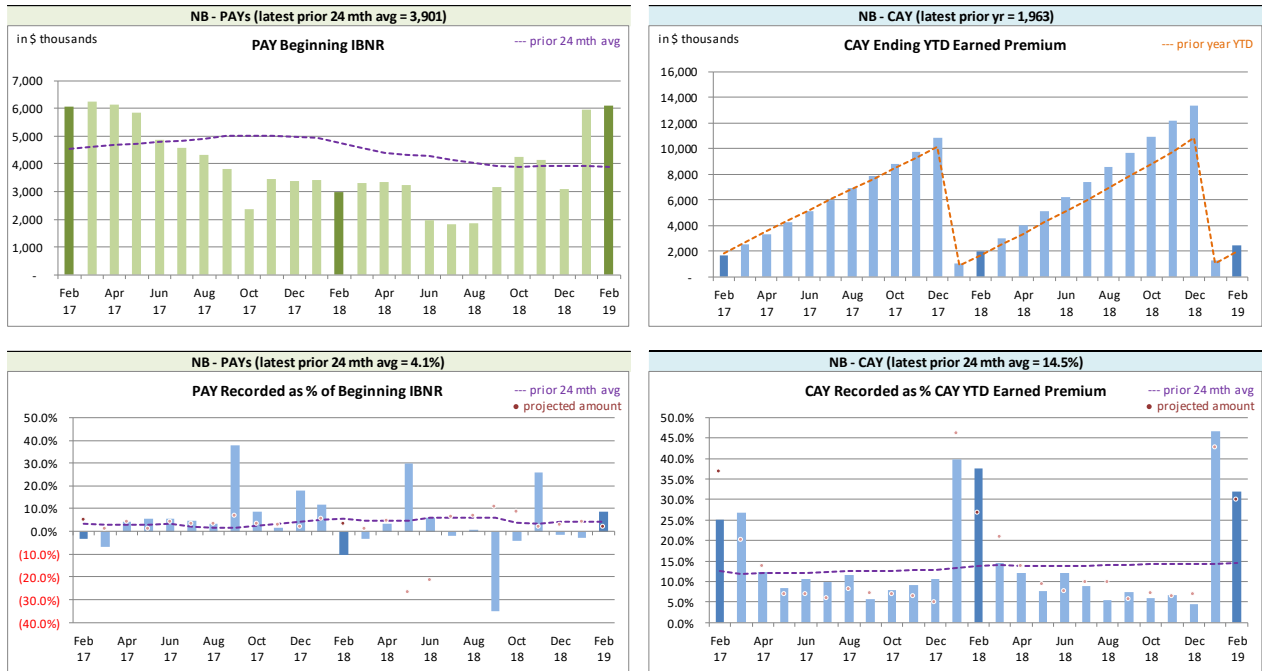
significant. That said, 40% of the prior accident years’ (PAYs) **recorded** variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **recorded** amounts (see table above), suggesting the projection process has performed worse than simply projecting the 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 current accident year (CAY) **recorded** variances fell outside of one standard deviation 44% 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 influence⁸ 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:

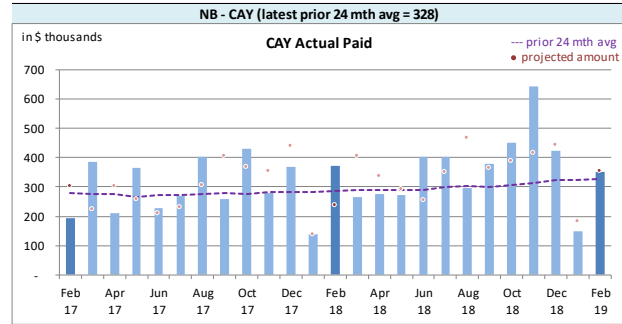
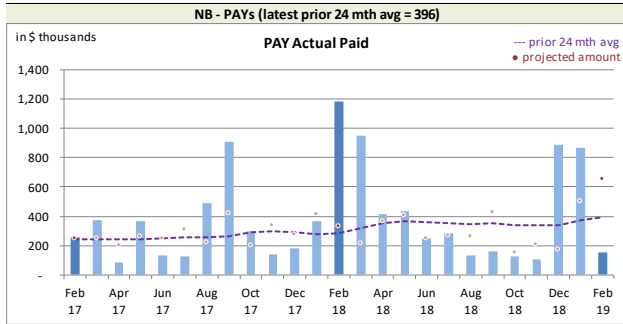
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years’ ultimate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

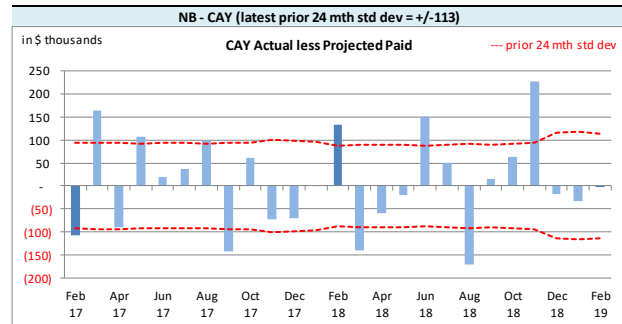
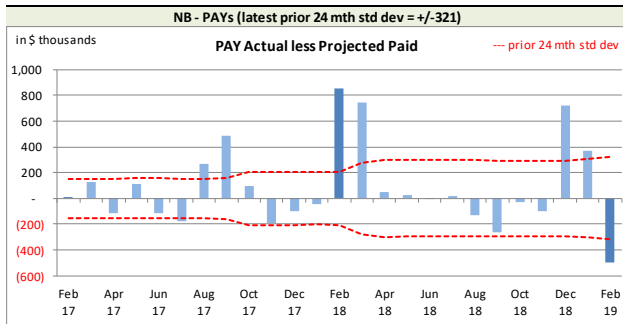
⁸Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned 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.

*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)	396	328
std dev	321	113
A-P <> std dev	8	10
% <> std dev	32.0%	40.0%
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.

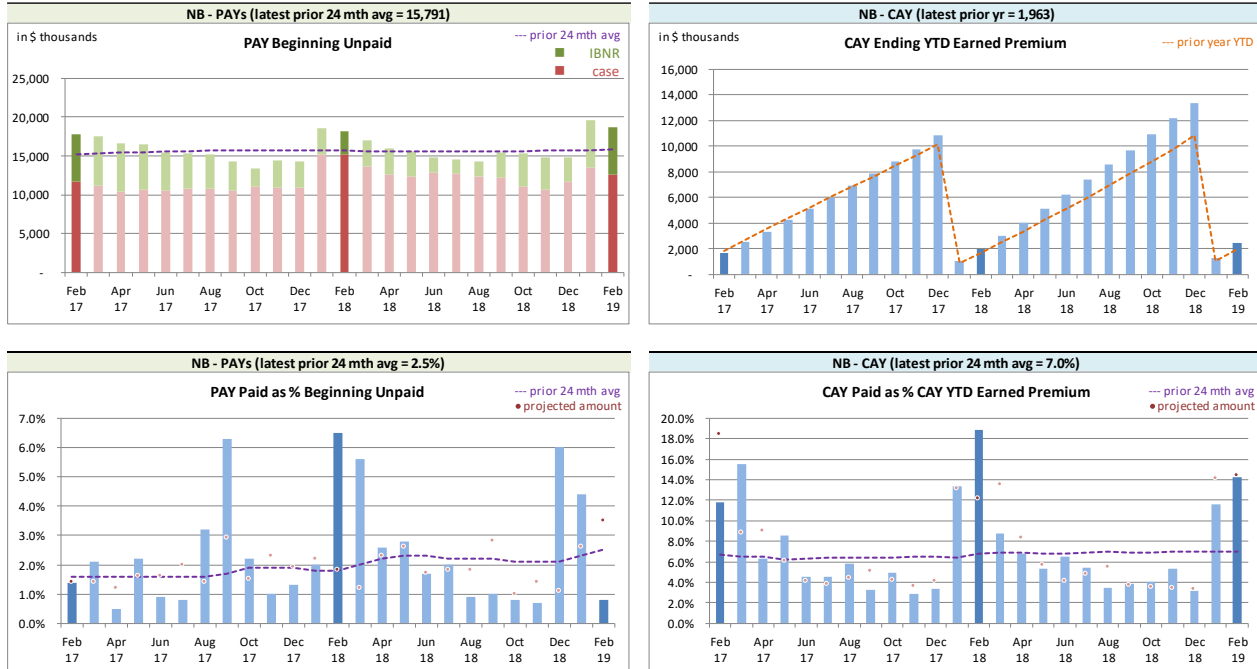
That said, 32% of the prior accident years’ (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on the left above), suggesting the projection process has performed no better than simply projecting the prior 24-month average amount (assuming a normal distribution). Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

The PAY **paid** variance (see left chart above) was outside of one standard deviation this month. The activity was reviewed and confirmed, with the variance attributed to process variance.

The current accident year (CAY) **paid** variances fell outside of one standard deviation 40% of the time over the last 25 calendar months (see table above), 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.

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

New Brunswick RSP Levels that influence⁹ 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 IBNR¹⁰, 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

⁹Our 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.

¹⁰For 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	
	Actual	Actual less Projected	Discount Amount		Provisions for Adverse Deviations		Actual	Actual less Projected
			Actual	Actual less Projected	Actual	Actual less Projected		
Prior	1,377	(358)	(403)	(14)	1,021	37	1,995	(335)
2017	1,332	(192)	(273)	(5)	496	9	1,555	(188)
2018	2,804	77	(384)	(1)	586	2	3,006	78
2019	452	(79)	(102)	2	153	(3)	503	(80)
TOTAL	5,965	(552)	(1,162)	(18)	2,256	45	7,059	(525)

The IBNR provision is \$0.6 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:	(1,725)	126	238	(18)	(1,487)	108
balance as % unearned premium:	(22.8%)	-	3.1%	-	(19.6%)	-
actual unearned premium:	7,571					
less projected:	(551)					

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 loss¹¹ 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 expenses¹², 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 78.1% rather than 74.6% (the valuation ultimate ratio for accident year 2019), 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.)

¹¹“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).

¹²Allowed 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	(88)	(3.7%)	47	2.0%	(41)	(1.7%)	(83)	(5.0%)
CAY	1,839	78.1%	51	2.2%	1,890	80.3%	900	2.2%
TOTAL	1,751	74.4%	98	4.2%	1,849	78.6%	817	(2.8%)

(“% EP” based on 2019 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

		Amounts in \$000s				
IBNR + M/S actuarial present value adjustments	Accident Year	Actual Jan. 2019	Actual Feb. 2019	Projected Mar. 2019	Projected Apr. 2019	Projected Dec. 2019
	2005	(2)	(2)	(2)	(2)	(2)
	2006	-	-	-	-	-
	2007	9	9	9	8	4
	2008	10	10	10	10	8
	2009	(443)	(443)	(438)	(406)	(195)
	2010	66	66	65	60	36
	2011	(61)	(379)	(375)	(345)	(149)
	2012	216	216	213	200	115
	2013	(124)	(124)	(124)	(109)	(12)
discount rate	2014	564	562	556	520	298
2.29%	2015	743	705	689	683	487
	2016	1,409	1,375	1,360	1,284	1,018
interest rate margin	2017	1,781	1,555	1,536	1,467	1,179
25 basis pts	2018	2,991	3,006	2,972	2,940	2,433
	2019	390	503	953	1,396	3,824
TOTAL		7,549	7,059	7,424	7,706	9,044
	Change		(490)	365	282	

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 Jan. 2019	Actual Feb. 2019	Projected Mar. 2019	Projected Apr. 2019	Projected Dec. 2019
	84.0%	2005	(2)	(2)	(2)	(2)	(2)
	53.2%	2006	-	-	-	-	-
	72.1%	2007	8	8	8	7	3
	76.3%	2008	4	4	4	4	3
	82.2%	2009	(483)	(483)	(478)	(445)	(228)
	58.7%	2010	56	56	55	51	27
	83.2%	2011	(137)	(455)	(450)	(418)	(213)
	55.4%	2012	177	177	175	163	83
	74.4%	2013	(249)	(249)	(247)	(230)	(118)
	67.6%	2014	472	470	465	432	221
	65.5%	2015	650	612	600	594	410
	71.8%	2016	1,273	1,239	1,227	1,153	901
	82.6%	2017	1,555	1,332	1,319	1,253	987
	74.7%	2018	2,783	2,804	2,776	2,748	2,266
	74.6%	2019	360	452	877	1,294	3,528
		TOTAL	6,467	5,965	6,329	6,604	7,868
		Change		(502)	364	275	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Jan. 2019	Actual Feb. 2019	Projected Mar. 2019	Projected Apr. 2019	Projected Dec. 2019
Premium Liabilities					
(1) unearned premium (UP)	7,791	7,571	7,796	8,238	10,198
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	80.3%	80.4%	80.4%	80.4%	80.9%
(3) expected future costs {(1) x (2)}	6,260	6,084	6,264	6,624	8,247
(4) premium deficiency / (deferred policy acquisition cost)	(1,531)	(1,487)	(1,532)	(1,614)	(1,951)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	77.2%	77.2%	77.2%	77.3%	77.7%
(6) expected future costs {(1) x (5)}	6,015	5,846	6,020	6,365	7,924
(7) premium deficiency / (deferred policy acquisition cost)	(1,776)	(1,725)	(1,776)	(1,873)	(2,274)

EXHIBIT D
Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2019, broken down by component.

New Brunswick		Projected Balances as at Dec. 31, 2019 (\$000s)										
ending 2019		nominal values			actuarial present value adjustments (apvs)							
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL		
2006	-	-	-	-	-	-	-	-	-	-		
2007	5	3	8	-	-	1	-	1	1	9		
2008	64	3	67	(2)	-	7	-	7	5	72		
2009	(42)	(228)	(270)	8	(1)	27	(1)	26	33	(237)		
2010	99	27	126	(4)	-	13	-	13	9	135		
2011	1,240	(213)	1,027	(39)	4	103	(4)	99	64	1,091		
2012	431	83	514	(19)	2	51	(2)	49	32	546		
2013	1,811	(118)	1,693	(64)	7	169	(6)	163	106	1,799		
2014	1,173	221	1,394	(63)	7	139	(6)	133	77	1,471		
2015	1,038	410	1,448	(68)	7	145	(7)	138	77	1,525		
2016	815	901	1,716	(89)	9	208	(11)	197	117	1,833		
2017	2,563	987	3,550	(234)	25	429	(28)	401	192	3,742		
2018	1,959	2,266	4,225	(317)	34	486	(36)	450	167	4,392		
PAYs (sub-total):	11,156	4,340	15,496	(891)	94	1,778	(101)	1,677	880	16,376		
CAY (2019)	4,182	3,528	7,710	(586)	62	887	(67)	820	296	8,006		
claims liabilities:	15,338	7,868	23,206	(1,477)	156	2,665	(168)	2,497	1,176	24,382		
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*		
premium liabilities:	10,198	(2,274)	7,924	(398)	38	720	(37)	683	323	8,247		
*Total may not be sum of parts, as apvs apply to future costs within UPR												
policy liabilities:			31,130	(1,875)	194	3,385	(205)	3,180	1,499	32,629		

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 to Dec. 31, 2019, and 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 Brunswi						M/S IBNR - in \$000s
AccountCode Desc		IBNR - Discou						
AccYear	Values							
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount	
2005	(2)	-	-	-	-	-	(2)	
2006	-	-	-	-	-	-	-	
2007	9	-	-	-	-	-	9	
2008	10	-	-	-	-	-	10	
2009	(443)	9	(9)	-	-	-	(443)	
2010	66	(2)	2	-	-	-	66	
2011	(61)	1	(319)	-	(318)	521.3%	(379)	
2012	216	(6)	6	-	-	-	216	
2013	(124)	1	(1)	-	-	-	(124)	
2014	564	(12)	10	-	(2)	(0.4%)	562	
2015	743	(18)	(20)	-	(38)	(5.1%)	705	
2016	1,409	(30)	(4)	-	(34)	(2.4%)	1,375	
2017	1,781	(38)	(188)	-	(226)	(12.7%)	1,555	
2018	2,991	(63)	78	-	15	0.5%	3,006	
2019	390	193	(80)	-	113	29.0%	503	
Grand Total	7,549	35	(525)	-	(490)	(6.5%)	7,059	

EXHIBIT G

Page 2 of 2

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

 RSP **New Brunswi**
 AccountCode Desc **IBNR - Undisc**

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	(483)	10	(10)	-	-	-	(483)
2010	56	(1)	1	-	-	-	56
2011	(137)	3	(321)	-	(318)	232.1%	(455)
2012	177	(4)	4	-	-	-	177
2013	(249)	5	(5)	-	-	-	(249)
2014	472	(9)	7	-	(2)	(0.4%)	470
2015	650	(13)	(25)	-	(38)	(5.8%)	612
2016	1,273	(25)	(9)	-	(34)	(2.7%)	1,239
2017	1,555	(31)	(192)	-	(223)	(14.3%)	1,332
2018	2,783	(56)	77	-	21	0.8%	2,804
2019	360	171	(79)	-	92	25.6%	452
Grand Total	6,467	50	(552)	-	(502)	(7.8%)	5,965