NEW BRUNSWICK RISK SHARING POOL

MAY 2019 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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FACILITY Association

ACTUARIAL HIGHLIGHTS

RSP NEW BRUNSWICK

OPERATIONAL REPORT

MAY 2019

TABLE OF CONTENTS

1 Summary

1.1 Valuation Schedule (Fiscal Year 2019)

The May 2019 Operational Report incorporates the results of an updated valuation (as at March 31, 2019) – the impact of the implementation of the valuation is discussed in section 1.2. 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 (roll forward): accident year 2018 loss ratio increased 0.5 points to 74.7%; discount rate increased by 42 basis points; no change to selected margins for adverse deviations
Dec. 31, 2018 (completed)	1.93% mfad 25 bp	Mar. 2019	updated valuation: accident year 2019 loss ratio increased 0.9 points to 75.5%; discount rate decreased by 36 basis points; no change to selected margins for adverse deviations
Mar. 31, 2019 (completed)	1.44% mfad 25 bp	May 2019	updated valuation (roll forward): accident year 2019 loss ratio increased 1.0 points to 76.5%; discount rate decreased by 49 basis points; no change to selected margins for adverse deviations
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 New Valuation

A valuation of the New Brunswick Risk Sharing Pool ("RSP") as at March 31, 2019 has been completed since last month's Operational Report and the results of that valuation have been incorporated into this month's Report. The valuation was completed by the Facility Association's internal actuarial group in conjunction with, and approved by, the Appointed Actuary, under the hybrid model for actuarial services. Additional detail will be provided in an "Actuarial Highlights – Quarterly Valuation" report which we anticipate will be posted to the FA website later in July 2019.

The valuation implementation impact is summarized in the tables on the next page.

Summary of Impact ($000s) of Implementing Result of Valuation as at March 31, 2019[1]

NB	unfav / (fav) for the month and ytd					
	IMPACT in $000s from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal [1]	apv adj. [2]	sub-tot [3]	apv adj. [4]	apv adj. [5]	TOTAL [6]
PAYs	(9)	(5)	(14)	243	-	229
CAY	65	3	68	52	-	120
Prem Def	66	4	70	74	-	144
TOTAL	122	2	124	369	-	493

As indicated in the table above, the incorporation of the new valuation had an estimated ***$0.5 million unfavourable impact*** on the month's net result from operations, adding an estimated 13.8 points (see table immediately below) to the **year-to-date Combined Operating Ratio** to end at **138.0%**.

Summary of Impact (% YTD EP) of Implementing Result of Valuation as at March 31, 2019

NB	ytd EP 3,561 (actual)					
	IMPACT unfav / (fav) as % ytd EP from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal [1]	apv adj. [2]	sub-tot [3]	apv adj. [4]	apv adj. [5]	TOTAL [6]
PAYs	(0.3%)	(0.1%)	(0.4%)	6.8%	-	6.4%
CAY	1.8%	0.1%	1.9%	1.5%	-	3.4%
Prem Def	1.9%	0.1%	2.0%	2.1%	-	4.0%
TOTAL	3.4%	0.1%	3.5%	10.4%	-	13.8%

The impact of the nominal changes is shown in column [1] of the two preceding summary tables. The change in the selected nominal ultimates was unfavourable by $0.1 million overall. This reflects the impact attributable to the changes in the selected ultimate loss ratios (i.e. for each accident year, it is the product of life-to-date earned premium for the accident year and the change in the selected ultimate loss ratio).

The prior accident years overall showed a $9 thousand favourable nominal variance, which is attributed to process variance. The overall favourable prior accident years change is 0.0% of the prior accident years' nominal unpaid balance of $19.0 million determined at the end of last month (April 2019). As a smaller pool, it is subject to higher levels of process variance, driving volatility in the ultimate selection.

The current accident year and premium deficiency impacts are a result of the changes in the selected loss ratios for accident year **2019** (up 1.0 points to **76.5%**) and **2020** (no change at **77.5%**). Generally,

[1]In these tables, "PAYs" refers to prior accident years, "CAY" refers to the current accident year, and "Prem Def" refers to the provision for premium deficiency or the deferred policy acquisition asset (as applicable). "Nominal" refers to changes excluding any actuarial present value adjustments, whereas "apv adj." refers to actuarial present value adjustments.

The columns under the heading "ults & payout patterns" reflect the impact of changes in the valuation selected ultimates and claims payment patterns (i.e. based on unchanged selection of discount rates and margins for adverse deviation). The column "dsct rate" reflects the impact of the change in the selected discount rate and the column "margins" reflects the impact of any changes in selected margins for adverse deviations.

as a smaller pool, we would expect more volatility around projections of current and future expected loss ratios.

The impacts related to actuarial present value ("apv") adjustments are split into the impact prior to any change in the selected discount rate and selected margins for adverse deviations or "MfADs" (at the level they were selected i.e. coverage and accident half-year), the impact of then updating the discount rate, and finally the impact of any changes to the MfADs (at the level they were selected). The changes in actuarial present value adjustments are shown in the summary tables in columns [2], [4], and [5].

Column [2] recognizes that changing the nominal selections also changed the unpaid estimates (including changes to the relative mix by government line, which has an impact on the weighted-average MfADs). It also reflects the fact that we updated the projected emergence of claims payments, resulting in a change in the projected cash flows. These changes generated an unfavourable change of $2 thousand in the actuarial present value adjustments, prior to any changes in the selected discount rate and/or MfADs.

Updated projected cash flows were reviewed against the selected risk-free yield curve, derived from Government of Canada benchmark bond yields monthly series using values for March 2019. Column [4] accounts for the change in the **discount rate** selected (decreased 49 basis point to **1.44%**), indicating an unfavourable impact of $0.4 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was $0.3 million at May 2019 (projected $0.3 million impact at December 31, 2019) – this compares to the $0.3 million change one would estimate as the impact by interpolation using the interest rate sensitivity table provided in last month's Actuarial Highlights.

Column [5] accounts for any changes to selected MfADs. The selected **investment rate MfAD** was **left unchanged at 25 basis points** and the selected **claims development MfADs** at the coverage and accident year level were **left unchanged** as well.

Consideration was given to recent legal decisions and changes in legislation / regulation as outlined in section 1.4.

1.3 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.

1.4 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation[2]

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. At the current time, there are no specific

[2]This 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.

recent decisions or changes for inclusion here.

1.5 Harmonized Sales Tax

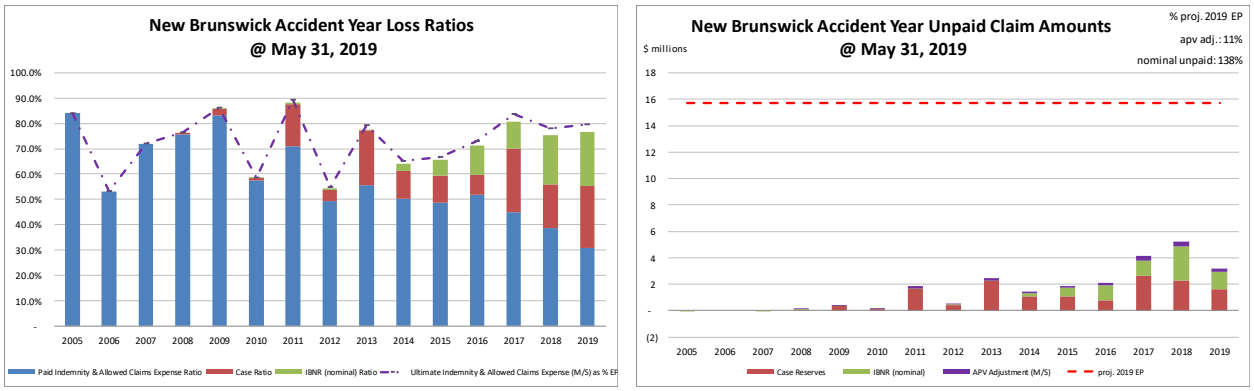
There have been no changes in these descriptions since last month's Highlights, other than updated current valuation date references.

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%.

No explicit adjustments have been made to the valuation assumptions from the **most recent** valuation (March 31, 2019), on the basis that current estimates have implicitly incorporated the impact.

1.6 Current Provision Summary

The charts immediately below show the current levels of claim liabilities[3] 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.



"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 ($1.7 million – see table at the top of the next page) represents 11% 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.

[3]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.

claim liabilities ($000s)

	amt	%
case	14,302	61.4%
ibnr	7,334	31.5%
M/S apv adjust.	1,664	7.1%
M/S total	23,300	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 54% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 71% of the M/S claim liabilities are related to accident years 2015-2019 inclusive (i.e. the most recent 5 accident years), and 2% 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	8,114	118.9%
prem def/(dpac)	(1,681)	(24.6%)
M/S apv adjust.	390	5.7%
M/S total	6,823	100.0%

policy liabilities ($000s)

	amt	%
claim	21,636	71.8%
premium	6,433	21.4%
M/S apv adjust.	2,054	6.8%
M/S total	30,123	100.0%

2 Activity During the Month of May 2019

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[4].

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

Table 01	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
Accident Year	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	(2)	(2)	102	(68)	(159)	(150)	(57)	(218)
2017	(20)	(20)	39	1	(67)	(118)	(28)	(117)
2018	(54)	(54)	89	(58)	18	86	108	29
2019	1,359	(45)	455	29	240	151	695	181
TOTAL	1,284	(120)	686	(95)	33	(30)	719	(125)

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

It is typically unusual to see actual earned premium transactions affecting accident years older than the first prior accident year, the changes in 2017 and prior accident years reflect activity undertaken by a member to remove risks from the RSP, reflecting recent audit findings.

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

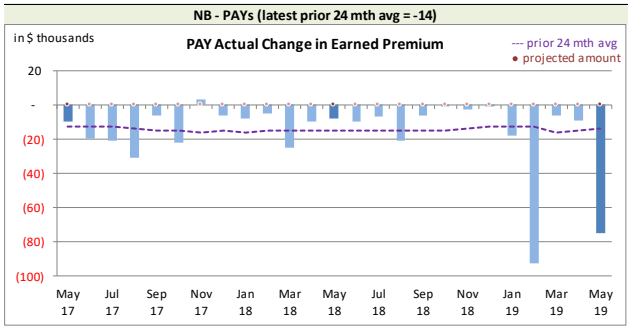
[4]There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

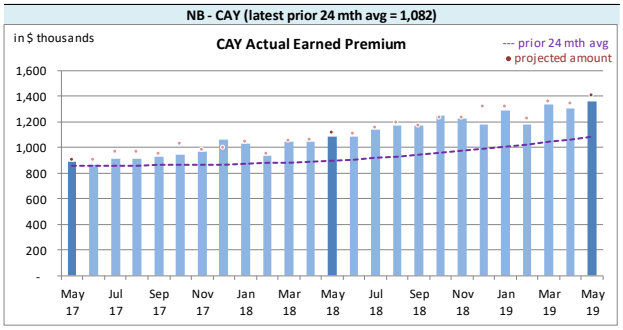
our review is provided in the sub-sections that follow.

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*

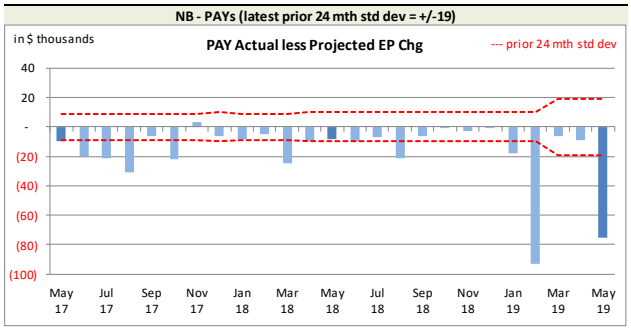


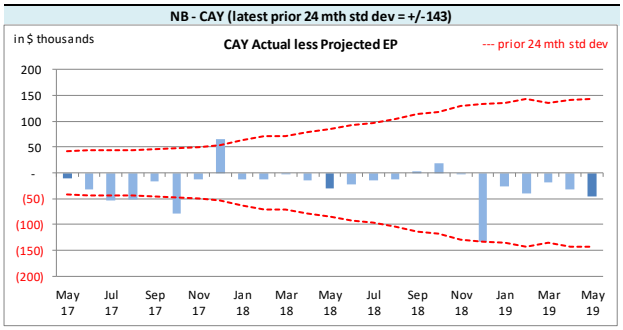


Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels generally occur at the beginning of each year. As commented on earlier, this month's variances are related to a member's activity in relation to recent audit findings.

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.

*New Brunswick RSP Actual vs. Projected Summary: **Earned Premium** Variances by Calendar Month*





[5]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.

On Latest $ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(14)	1,082
std dev	19	143
A-P <> std dev	10	4
% <> std dev	40.0%	16.0%
norm <> std dev	31.7%	31.7%

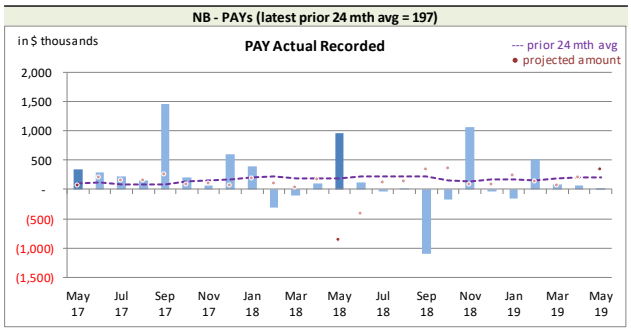
We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias[6], with actuals generally lower than our projections, although the magnitude is not high relative to monthly premium. In addition to the PAYs' bias, the CAY has also shown bias[7], 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.

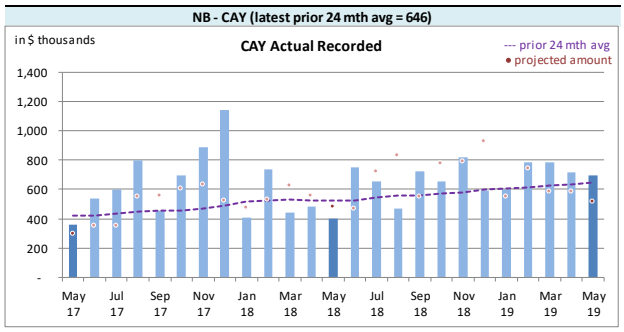
Readers will note the widening of the CAY standard deviation band, reflecting the recent and sustained volume increases and the impact as those increases are earned.

2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

The charts immediately below 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.

*New Brunswick RSP Actual **Recorded** by Calendar Month*



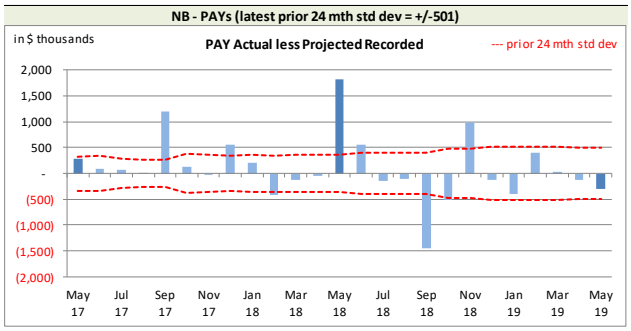


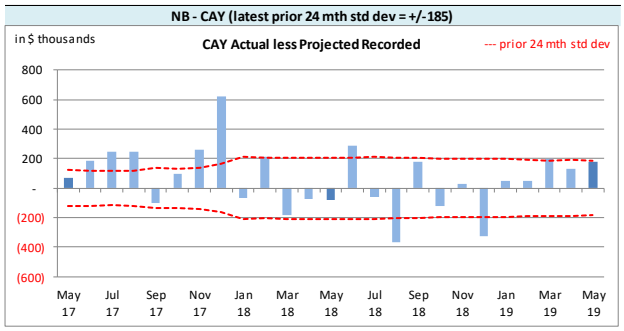
Recorded activity variances from the previous month's projections are shown in the charts at the top of the next page, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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

[7]We 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 May 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 vs Projected Summary: ***Recorded*** *Variances by Calendar Month*





On Latest $ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	197	646
std dev	501	185
A-P <> std dev	8	10
% <> std dev	32.0%	40.0%
norm <> std dev	31.7%	31.7%

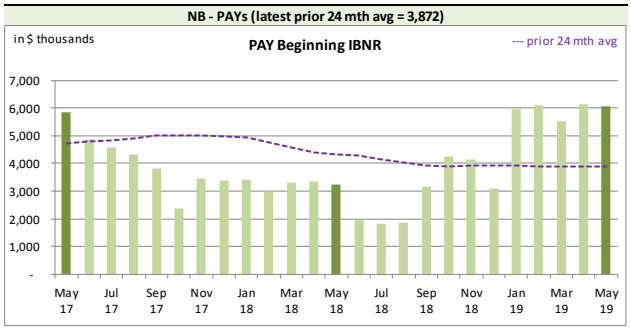
With respect to **recorded** indemnity & allowed claims expense activity, caution must be exercised in reviewing the variances as this is a small pool and single claim transactions that are normal course for the business may look unusual and generate relatively significant variances that in nominal value terms are not that significant in relative or overall terms. That said, 32% 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 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.

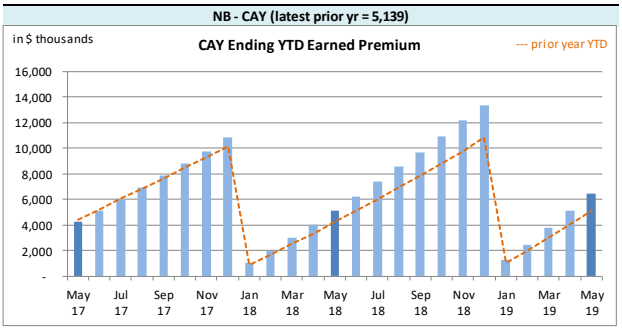
The current accident year (CAY) **recorded** variances fell outside of one standard deviation 40% of the time over the last 25 calendar months (see table above), suggesting the projection process has performed worse than simply projecting the prior 24-month average amount. We believe projection improvements introduced during 2018 are not yet fully reflected in the CAY variance measure (7 of the 11 variances beyond a standard deviation were related to the earlier 13 months, with only 4 related to the more recent 12 months). Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

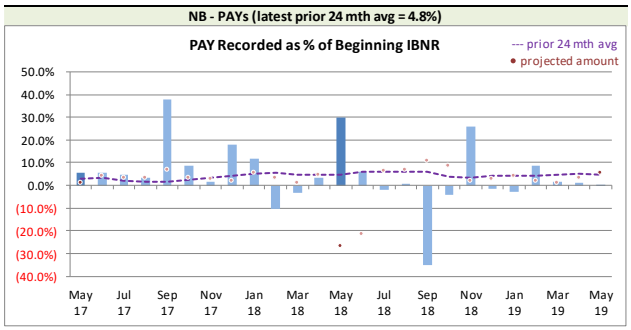
The method for establishing IBNR adjusts automatically for changes in **earned premium** and **recorded** claims activity level (see sections 2.2 and 3).

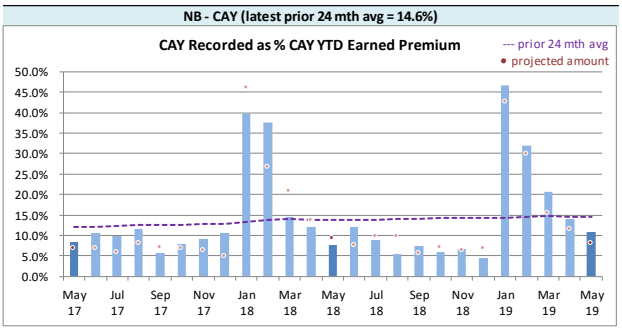
We have included, for reference, additional charts at the top of the next page related to levels influencing **recorded** activity. Note in particular the increase in the level of PAYs beginning IBNR over the months. Part of this will be as a response to valuations and showing up as a beginning IBNR change one month after the valuation is implemented (i.e. April, June, September, and November).

New Brunswick RSP Levels that influence[8] ***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:

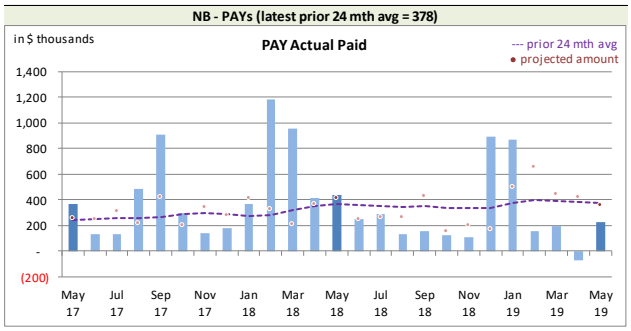
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate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

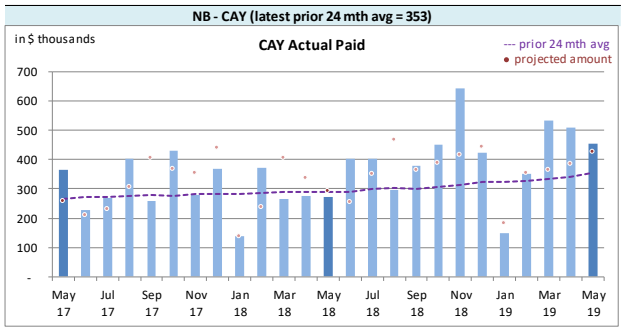
2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

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.

[8]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.

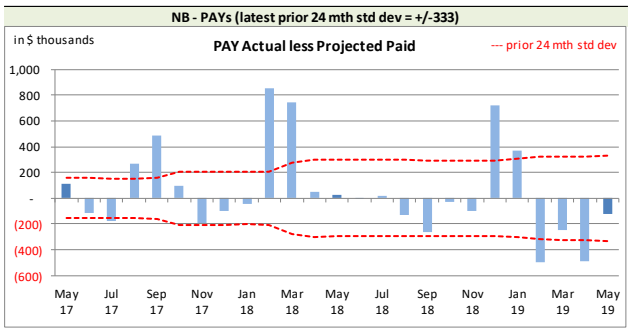
*New Brunswick RSP Actual **Paid** activity by Calendar Month*

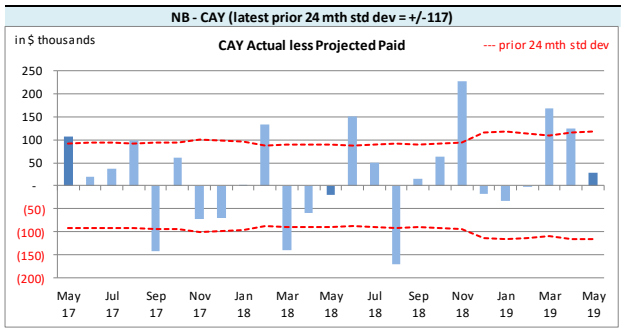




Paid activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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





On Latest $ thousands		
Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	378	353
std dev	333	117
A-P <> std dev	9	10
% <> std dev	36.0%	40.0%
norm <> std dev	31.7%	31.7%

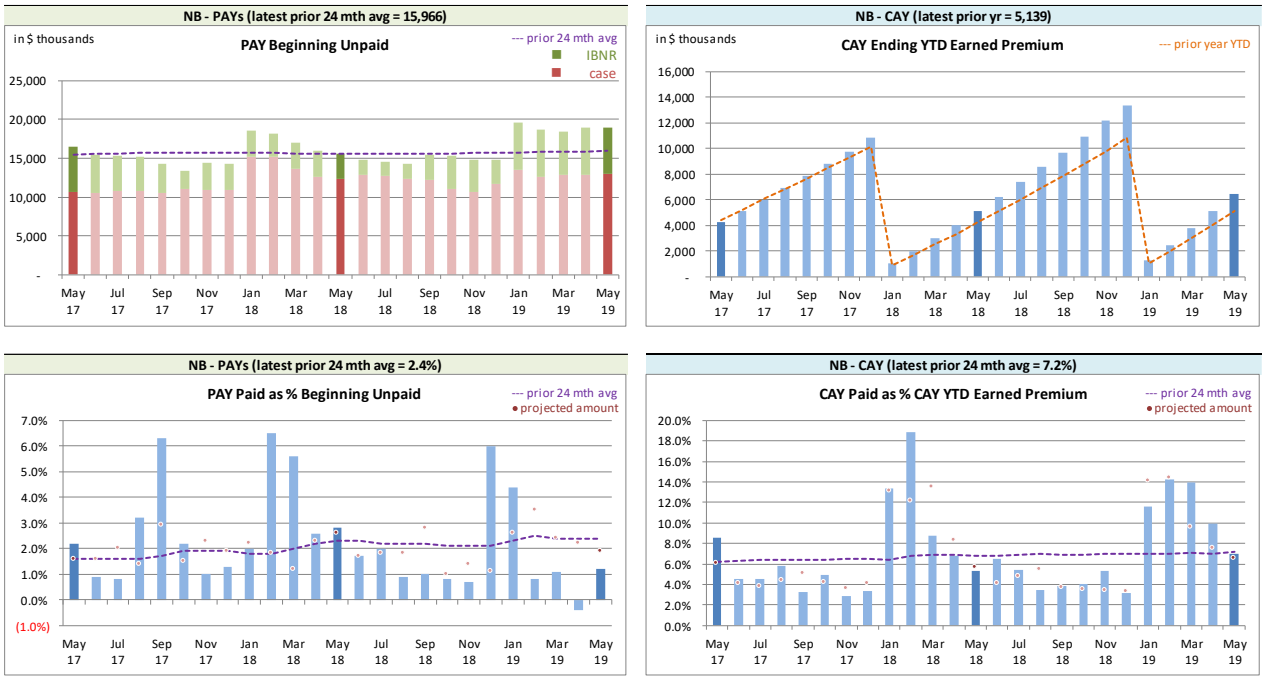
With respect to **paid** indemnity & allowed claims expense, caution must be exercised in reviewing the variances as this is a small pool, and single claim transactions that are normal course for the business may look unusual and generate relatively significant variances that in nominal value terms are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

That said, 36% 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 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 at the top of the next page related to levels influencing **paid** activity.

New Brunswick RSP Levels that influence[9] ***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 IBNR[10], 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 determine the current month's provisions and projections were based on the applicable valuation. The table at the top of the next page summarizes variances in provisions included in this month's Operational Report and the

[9]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.

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

associated one-month projections from last month's Report.

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

Table 02

	IBNR		actuarial present value adjustments: Discount Amount		Provisions for Adverse Deviations		IBNR + actuarial present value adjustments	
Accident Year	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	2,235	82	(276)	92	1,062	5	3,021	179
2017	1,152	133	(164)	48	471	7	1,459	188
2018	2,583	24	(229)	71	596	19	2,950	114
2019	1,364	(150)	(145)	44	349	8	1,568	(98)
TOTAL	7,334	89	(814)	255	2,478	39	8,998	383

The IBNR provision is $89 thousand higher than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1, and due to the valuation implementation.

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

(i) the change projected last month;

(ii) the additional change due to variances in earned premium (because we apply a loss ratio to earned premium in determining ultimate level) and/or recorded claims (as IBNR is calculated as ultimate less recorded) differences; and

(iii) the additional change due to valuation implementation impacts (as applicable)

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

The table below summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in 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, and due to the valuation implementation.

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:	(1,681)	121	390	68	(1,291)	189
balance as % unearned premium:	(20.7%)	0.8%	4.8%	1.0%	(15.9%)	1.8%
actual unearned premium:	8,114					
less projected:	(258)					

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[11] 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[12], 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 79.0% rather than 76.5% (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.)

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	542	8.7%	464	7.4%	1,006	16.1%	152	(1.0%)
CAY	4,946	79.0%	204	3.3%	5,150	82.2%	1,174	2.4%
TOTAL	5,488	87.6%	668	10.7%	6,156	98.3%	1,327	1.3%

("% 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, and due to the valuation implementation.

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, and due to the valuation implementation.

[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).

[12] 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.

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
1.44%

interest rate margin
25 basis pts

Amounts in $000s					
Accident Year	Actual Apr. 2019	Actual May. 2019	Projected Jun. 2019	Projected Jul. 2019	Projected Dec. 2019
2005	(2)	(2)	(2)	(2)	(2)
2006	-	-	-	-	-
2007	(4)	(4)	(4)	(4)	(4)
2008	10	11	11	11	10
2009	70	42	40	39	36
2010	54	55	52	50	47
2011	(165)	170	165	163	153
2012	109	104	98	95	86
2013	276	228	222	218	206
2014	730	363	343	330	302
2015	754	733	718	681	574
2016	1,183	1,321	1,295	1,269	1,128
2017	1,362	1,459	1,421	1,396	1,264
2018	2,924	2,950	2,890	2,829	2,471
2019	1,089	1,568	1,902	2,319	3,910
TOTAL	8,390	8,998	9,151	9,394	10,181
Change		608	153	243	

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 Apr. 2019	Actual May. 2019	Projected Jun. 2019	Projected Jul. 2019	Projected Dec. 2019
84.0%	2005	(2)	(2)	(2)	(2)	(2)
53.2%	2006	-	-	-	-	-
72.0%	2007	(4)	(4)	(4)	(4)	(4)
76.3%	2008	4	4	4	4	4
85.9%	2009	42	14	13	12	11
58.6%	2010	44	44	41	39	36
88.1%	2011	(264)	36	33	31	28
54.3%	2012	76	66	61	58	51
77.7%	2013	113	52	48	46	42
64.2%	2014	619	265	246	234	209
65.5%	2015	645	609	597	561	467
71.3%	2016	1,041	1,151	1,128	1,105	978
80.7%	2017	1,108	1,152	1,117	1,095	989
75.3%	2018	2,638	2,583	2,531	2,480	2,152
76.5%	2019	969	1,364	1,655	2,028	3,419
	TOTAL	7,029	7,334	7,468	7,687	8,380
	Change		305	134	219	

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 Apr. 2019	Actual May. 2019	Projected Jun. 2019	Projected Jul. 2019	Projected Dec. 2019
(1) unearned premium (UP)	7,873	8,114	8,283	8,273	7,841
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	82.2%	84.1%	84.2%	84.3%	85.0%
(3) expected future costs {(1) x (2)}	6,472	6,823	6,974	6,974	6,662
(4) premium deficiency / (deferred policy acquisition cost)	(1,401)	(1,291)	(1,309)	(1,299)	(1,179)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	78.3%	79.3%	79.4%	79.4%	80.1%
(6) expected future costs {(1) x (5)}	6,168	6,433	6,574	6,573	6,281
(7) premium deficiency / (deferred policy acquisition cost)	(1,705)	(1,681)	(1,709)	(1,700)	(1,560)

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
2005	-	(2)	(2)	-	-	-	-	-	-	(2)
2006	-	-	-	-	-	-	-	-	-	-
2007	-	(4)	(4)	-	-	-	-	-	-	(4)
2008	71	4	75	(1)	-	7	-	7	6	81
2009	313	11	324	(7)	1	32	(1)	31	25	349
2010	92	36	128	(3)	1	13	-	13	11	139
2011	1,558	28	1,586	(36)	6	159	(4)	155	125	1,711
2012	411	51	462	(12)	2	46	(1)	45	35	497
2013	2,099	42	2,141	(54)	9	214	(5)	209	164	2,305
2014	1,027	209	1,236	(33)	5	124	(3)	121	93	1,329
2015	1,013	467	1,480	(44)	7	148	(4)	144	107	1,587
2016	728	978	1,706	(61)	10	208	(7)	201	150	1,856
2017	2,416	989	3,405	(146)	24	415	(18)	397	275	3,680
2018	2,070	2,152	4,222	(198)	34	507	(24)	483	319	4,541
PAYs (sub-total):	11,798	4,961	16,759	(595)	99	1,873	(67)	1,806	1,310	18,069
CAY (2019)	3,663	3,419	7,082	(347)	64	814	(40)	774	491	7,573
claims liabilities:	15,461	8,380	23,841	(942)	163	2,687	(107)	2,580	1,801	25,642
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	7,841	(1,560)	6,281	(207)	36	571	(19)	552	381	6,662
										*Total may not be sum of parts, as apvs apply to future costs within UPR
policy liabilities:			**30,122**	**(1,149)**	**199**	**3,258**	**(126)**	**3,132**	**2,182**	**32,304**

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, 2019 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Mar. 31, 2019)

Accident Year	Third Party Liability	Accident Benefits	Other Coverages	Total
	Margins	Margins	Margins	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%	9.9%	10.0%
2015	10.0%	10.0%	10.0%	10.0%
2016	12.5%	10.0%	10.9%	12.2%
2017	12.5%	10.0%	9.1%	12.2%
2018	12.5%	10.0%	8.9%	12.0%
2019	12.3%	10.0%	5.7%	11.5%
2020	11.8%	10.0%	5.1%	9.4%
prem liab	11.8%	10.0%	5.1%	9.4%

discount rate:	1.44%
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, 2019 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 (1.44%), the prior valuation assumption (1.93%) and the prior fiscal year end valuation assumption (2.29%) 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, 2019 projected Unpaid							
AY	0.44%	0.94%	1.44%	1.94%	2.44%	2.94%	1.93%	2.29%
2005	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-
2007	1	1	1	1	1	1	1	1
2008	58	57	57	57	56	56	57	56
2009	115	115	114	113	112	111	113	112
2010	99	98	98	97	96	95	97	96
2011	1,260	1,250	1,240	1,230	1,220	1,210	1,230	1,223
2012	361	358	354	351	348	345	351	349
2013	1,860	1,844	1,828	1,812	1,797	1,782	1,813	1,801
2014	1,145	1,134	1,123	1,112	1,102	1,092	1,113	1,105
2015	1,444	1,428	1,414	1,399	1,385	1,372	1,400	1,389
2016	1,846	1,822	1,799	1,776	1,754	1,733	1,777	1,761
2017	3,803	3,745	3,689	3,634	3,581	3,530	3,636	3,597
2018	4,800	4,720	4,643	4,567	4,495	4,423	4,569	4,516
2019	7,930	7,792	7,660	7,532	7,407	7,287	7,535	7,445
Total	24,722	24,364	24,020	23,681	23,354	23,037	23,692	23,451
	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	0.44%	0.94%	1.44%	1.94%	2.44%	2.94%	1.93%	2.29%
Total	702	344	-	(339)	(666)	(983)	(328)	(569)
	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	0.44%	0.94%	1.44%	1.94%	2.44%	2.94%	1.93%	2.29%
2005	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-
2008	1.8%	-	-	-	(1.8%)	(1.8%)	-	(1.8%)
2009	0.9%	0.9%	-	(0.9%)	(1.8%)	(2.6%)	(0.9%)	(1.8%)
2010	1.0%	-	-	(1.0%)	(2.0%)	(3.1%)	(1.0%)	(2.0%)
2011	1.6%	0.8%	-	(0.8%)	(1.6%)	(2.4%)	(0.8%)	(1.4%)
2012	2.0%	1.1%	-	(0.8%)	(1.7%)	(2.5%)	(0.8%)	(1.4%)
2013	1.8%	0.9%	-	(0.9%)	(1.7%)	(2.5%)	(0.8%)	(1.5%)
2014	2.0%	1.0%	-	(1.0%)	(1.9%)	(2.8%)	(0.9%)	(1.6%)
2015	2.1%	1.0%	-	(1.1%)	(2.1%)	(3.0%)	(1.0%)	(1.8%)
2016	2.6%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(1.2%)	(2.1%)
2017	3.1%	1.5%	-	(1.5%)	(2.9%)	(4.3%)	(1.4%)	(2.5%)
2018	3.4%	1.7%	-	(1.6%)	(3.2%)	(4.7%)	(1.6%)	(2.7%)
2019	3.5%	1.7%	-	(1.7%)	(3.3%)	(4.9%)	(1.6%)	(2.8%)
Total	2.9%	1.4%	-	(1.4%)	(2.8%)	(4.1%)	(1.4%)	(2.4%)
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

Components of Member Statement IBNR (i.e. "Discounted") Change During Month

RSP	New Brunswi
AccountCode Desc	IBNR - Discou d

M/S IBNR - in $000s

	Values						
AccYear	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	(4)	-	-	-	-	-	(4)
2008	10	-	-	1	1	10.0%	11
2009	70	(3)	1	(26)	(28)	(40.0%)	42
2010	54	(3)	2	2	1	1.9%	55
2011	(165)	9	(9)	335	335	(203.0%)	170
2012	109	(3)	3	(5)	(5)	(4.6%)	104
2013	276	(9)	7	(46)	(48)	(17.4%)	228
2014	730	(27)	26	(366)	(367)	(50.3%)	363
2015	754	(53)	47	(15)	(21)	(2.8%)	733
2016	1,183	(84)	143	79	138	11.7%	1,321
2017	1,362	(91)	99	89	97	7.1%	1,459
2018	2,924	(88)	(67)	181	26	0.9%	2,950
2019	1,089	577	(218)	120	479	44.0%	1,568
Grand Total	**8,390**	**225**	**34**	**349**	**608**	**7.2%**	**8,998**

EXHIBIT G

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

RSP	New Brunswi
AccountCode Desc	IBNR - Undisc nted

IBNR - in $000s

	Values						
AccYear	**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	(4)	-	-	-	-	-	(4)
2008	4	-	-	-	-	-	4
2009	42	(2)	1	(27)	(28)	(66.7%)	14
2010	44	(2)	2	-	-	-	44
2011	(264)	11	(11)	300	300	(113.6%)	36
2012	76	(3)	3	(10)	(10)	(13.2%)	66
2013	113	(5)	7	(63)	(61)	(54.0%)	52
2014	619	(25)	24	(353)	(354)	(57.2%)	265
2015	645	(52)	47	(31)	(36)	(5.6%)	609
2016	1,041	(83)	143	50	110	10.6%	1,151
2017	1,108	(89)	101	32	44	4.0%	1,152
2018	2,638	(79)	(69)	93	(55)	(2.1%)	2,583
2019	969	545	(215)	65	395	40.8%	1,364
Grand Total	**7,029**	**216**	**33**	**56**	**305**	**4.3%**	**7,334**