



NEW BRUNSWICK RISK SHARING POOL

MARCH 2019 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS**RSP NEW BRUNSWICK****OPERATIONAL REPORT****MARCH 2019**

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2019)

The March 2019 Operational Report incorporates the results of an updated valuation (as at December 31, 2018) – 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: 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 (completed)	1.93% mfad 25 bp	Mar. 2019	updated valuation: accident year 2019 loss ratio <u>increased</u> 0.9 points to 75.5%; discount rate <u>decreased</u> by 36 basis points; no change to selected margins for adverse deviations
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 New Valuation

A valuation of the New Brunswick Risk Sharing Pool (“RSP”) as at December 31, 2018 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 June 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 December 31, 2018¹

NB	unfav / (fav) for the month and ytd					
	IMPACT in \$000s from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
	[1]	[2]	[3]	[4]	[5]	[6]
PAYs	705	27	732	173	-	905
CAY	34	2	36	25	-	61
Prem Def	75	3	78	52	-	130
TOTAL	814	32	846	250	-	1,096

As indicated in the table above, the incorporation of the new valuation had an estimated **\$1.1 million unfavourable impact** on the month's net result from operations, adding an estimated 29.8 points (see table immediately below) to the **year-to-date Combined Operating Ratio** to end at **140.9%**.

Summary of Impact (% YTD EP) of Implementing Result of Valuation as at December 31, 2018

NB	ytd EP		3,681	(actual)		
	IMPACT unfav / (fav) as % ytd EP from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
	[1]	[2]	[3]	[4]	[5]	[6]
PAYS	19.2%	0.7%	19.9%	4.7%	-	24.6%
CAY	0.9%	0.1%	1.0%	0.7%	-	1.7%
Prem Def	2.0%	0.1%	2.1%	1.4%	-	3.5%
TOTAL	22.1%	0.9%	23.0%	6.8%	-	29.8%

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 \$0.8 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 \$0.7 million unfavourable nominal variance, which is attributed to large claim activity. The overall unfavourable prior accident years change is 3.8% of the prior accident years' nominal unpaid balance of \$18.4 million determined at the end of last month (February 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 0.9 points to **75.5%**) and reflecting **2020** (up 2.4 points to

¹In 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.

77.5%). Generally, 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 \$32 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 December 2018. Column [4] accounts for the change in the **discount rate** selected (decreased 36 basis point to **1.93%**), indicating an unfavourable impact of \$0.3 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was \$0.2 million at March 2019 – this compares to the \$0.2 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 / Regulation²

Discussion related to the Supreme Court of Canada Saadati v Moorhead decision (2017 SCC 28, rendered on June 2, 2017) was removed as at this point we do not believe this judgment will have a

²This 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>.

further impact on our valuation results.

Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process.

1.5 Harmonized Sales Tax

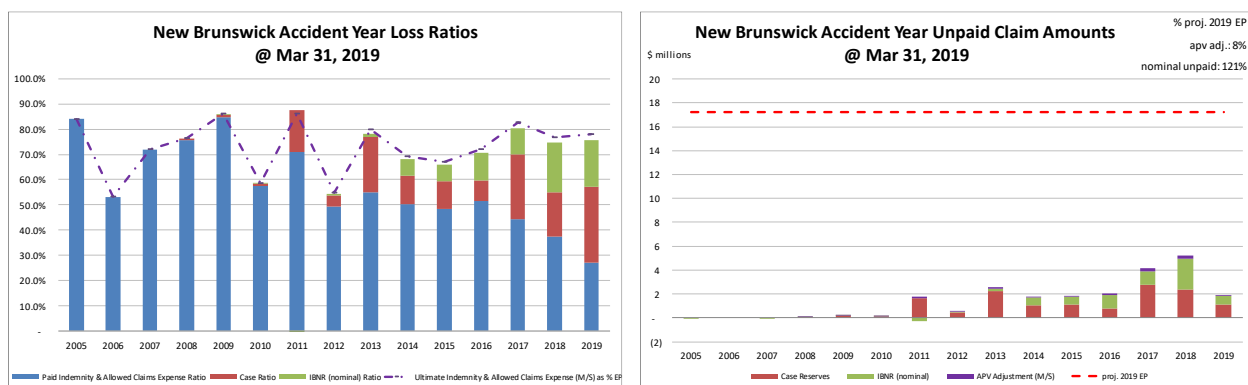
The descriptions in this section have been updated to reflect the most recent valuation (December 2018) and updates arising from the most recent industry trend analyses (June 2018).

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%.

Consideration of the HST rate increase was included in the NB PPV Industry 2018-1 data industry trend analyses, however, no specific adjustments have been made to the valuation assumptions from the **most recent** valuation (December 31, 2018).

1.6 Current Provision Summary

The charts immediately below show the current levels of claim liabilities³ 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 (\$1.3 million – see table at the top of the next page) represents 8% of the earned premium projected for the full year 2019 (see the upper right corner of the right chart above), with the increase in the actuarial present value adjustments from last month a result of the 2018 Q4 valuation implementation, specifically the decrease in the discount rate. 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.

³Claim 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	13,928	63.1%
ibnr	6,828	30.9%
M/S apv adjust.	1,329	6.0%
M/S total	22,085	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 48% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 69% of the M/S

claim liabilities are related to accident years 2015-2019 inclusive (i.e. the most recent 5 accident years), and 1% 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	7,651	121.9%
prem def/(dpac)	(1,667)	(26.6%)
M/S apv adjust.	295	4.7%
M/S total	6,279	100.0%

policy liabilities (\$000s)

	amt	%
claim	20,756	73.2%
premium	5,984	21.1%
M/S apv adjust.	1,624	5.7%
M/S total	28,364	100.0%

2 Activity During the Month of March 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 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	0	0	15	(152)	(96)	51	(81)	(101)
2017	(0)	(0)	23	(101)	(49)	62	(26)	(39)
2018	(5)	(5)	158	4	35	161	193	165
2019	1,333	(19)	532	169	250	30	782	198
TOTAL	1,327	(25)	728	(80)	140	303	868	223

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

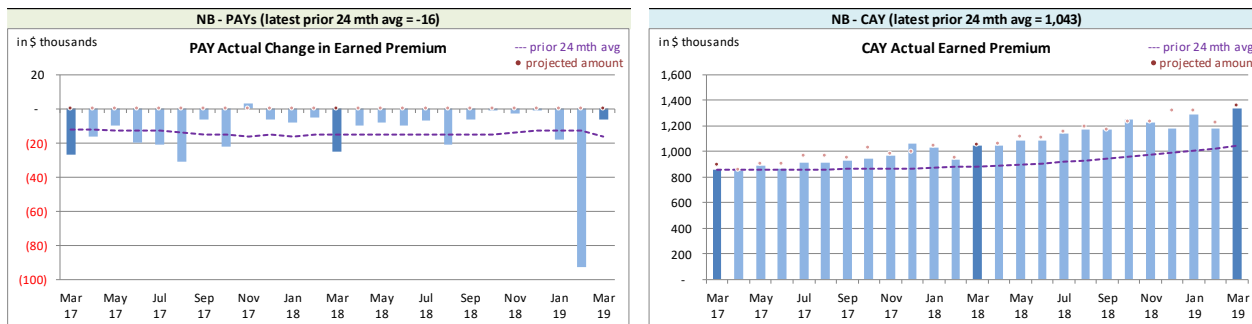
Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural "process variance" (i.e. random variation), and this is particularly true where volumes are low as found in this RSP. Each month, the projection variances are reviewed for signs 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.

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

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.

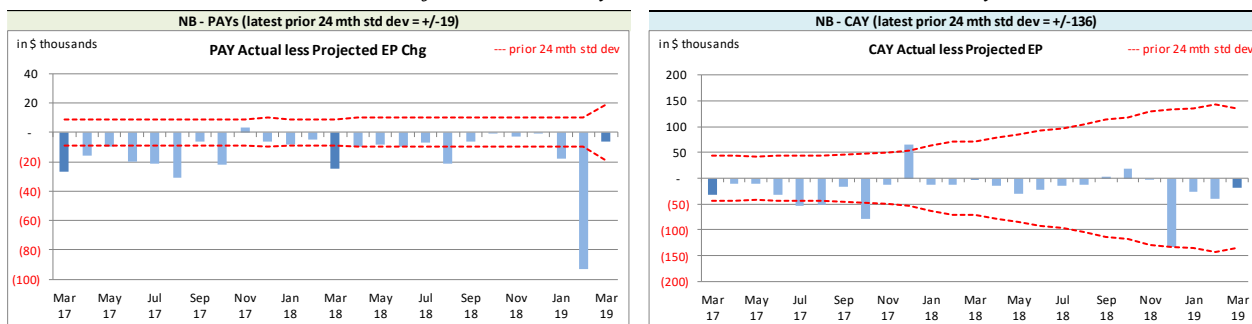
New Brunswick RSP Actual **Earned Premium** by Calendar Month



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 unusually and relatively high prior accident years earned premium in February 2019 were investigated and related to a member removal of ineligible risks.

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



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.

On Latest \$ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(16)	1,043
std dev	19	136
A-P <> std dev	11	4
% <> std dev	44.0%	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

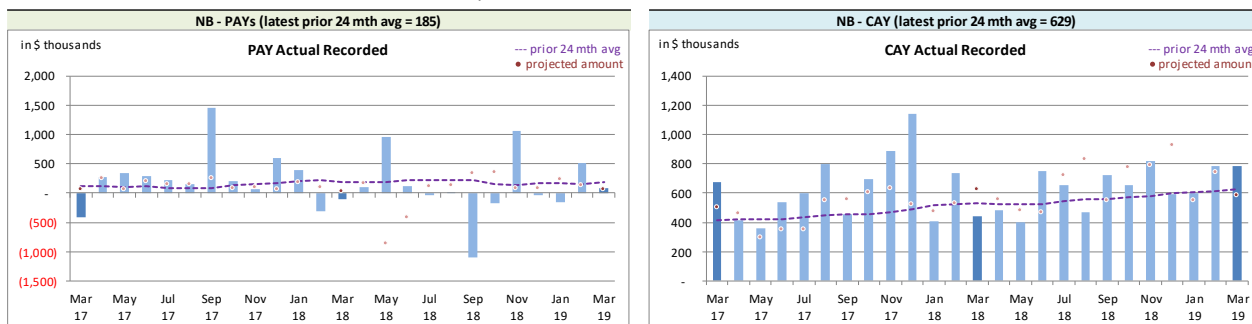
monthly premium. In addition to the PAYs' bias, the CAY has also shown bias⁷, with actuals being generally lower than projected, and we have modified our projections processes in response. Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority.

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.

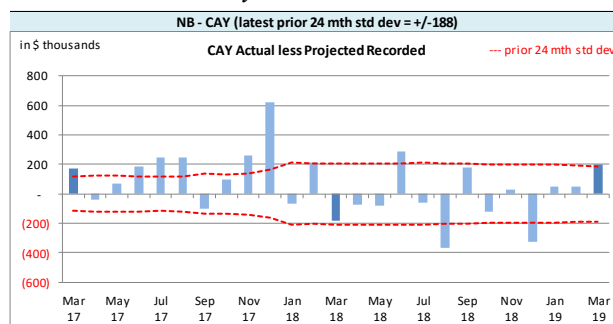
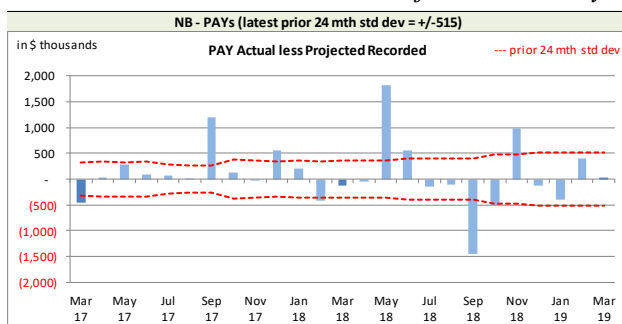
New Brunswick RSP Actual Recorded by Calendar Month



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.

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 March 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)		185	629
std dev		515	188
A-P <> std dev		9	11
% <> std dev		36.0%	44.0%
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, 36% 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.

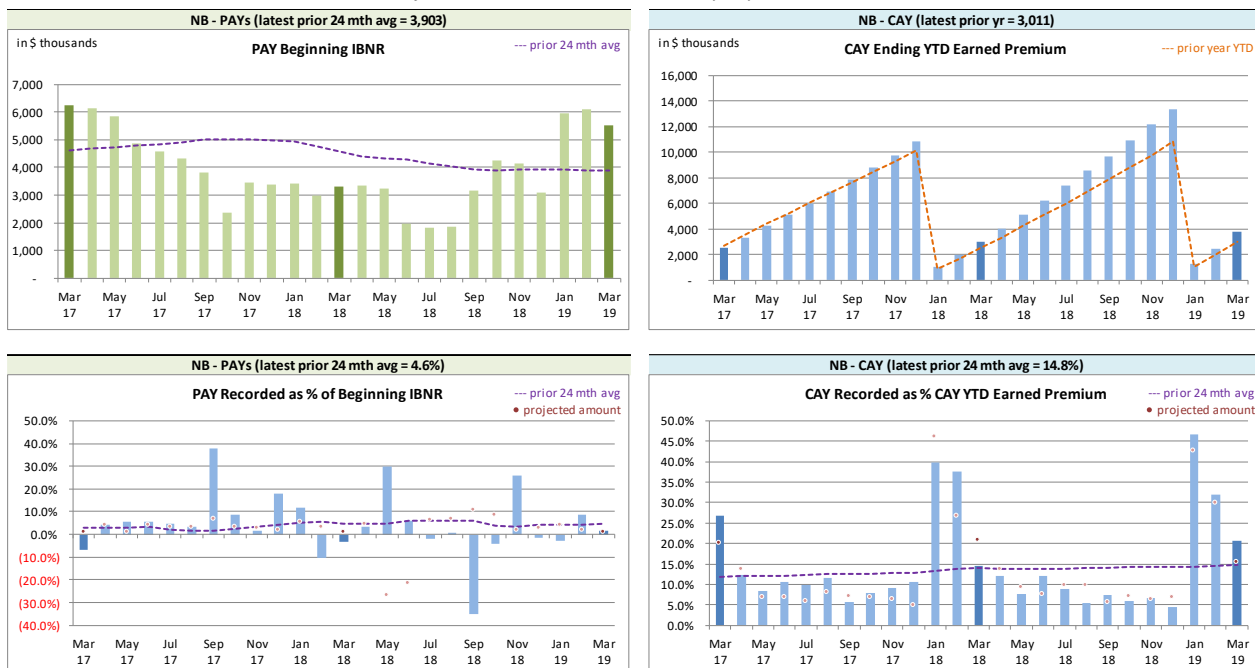
The current accident year (CAY) **recorded** variances fell outside of one standard deviation 44% of the time over the last 25 calendar months (see table above), suggesting the projection process has performed worse than simply projecting the prior 24-month average amount. We believe projection improvements 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 CAY **recorded** variance (see right chart above) was outside of one standard deviation this month. The activity was reviewed and confirmed, with the variance attributed to process variance.

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

We have included, for reference, additional charts 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 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:

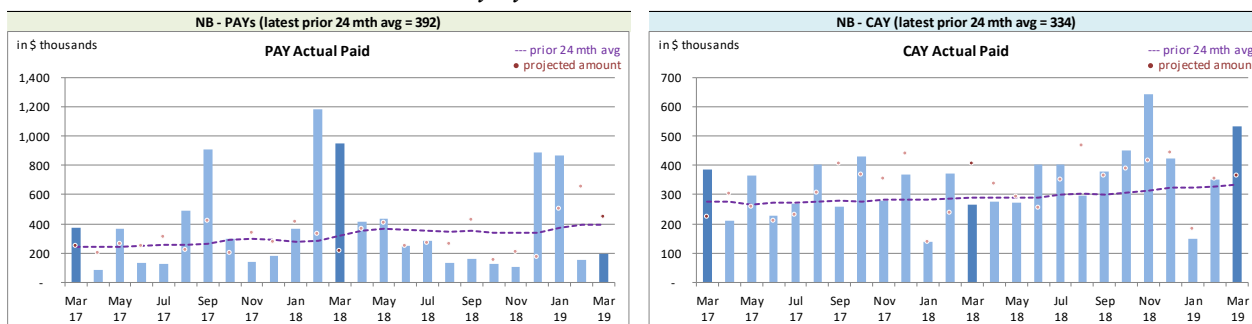
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate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

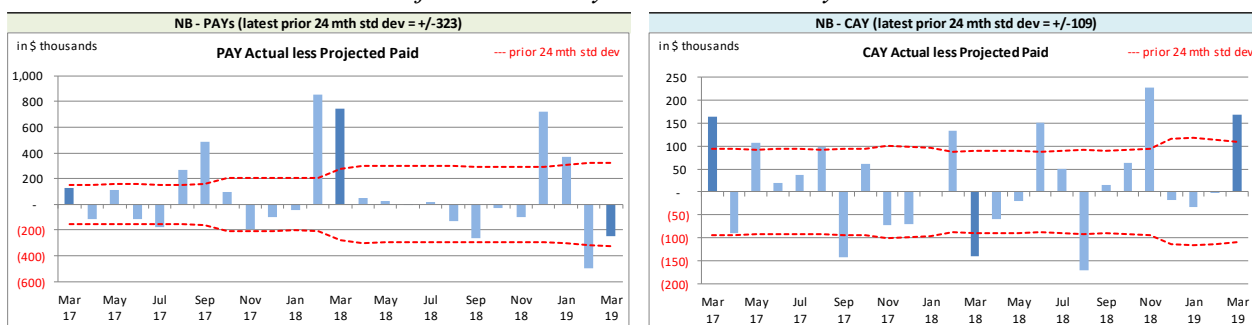
⁸Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned 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)		392	334
std dev		323	109
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 in

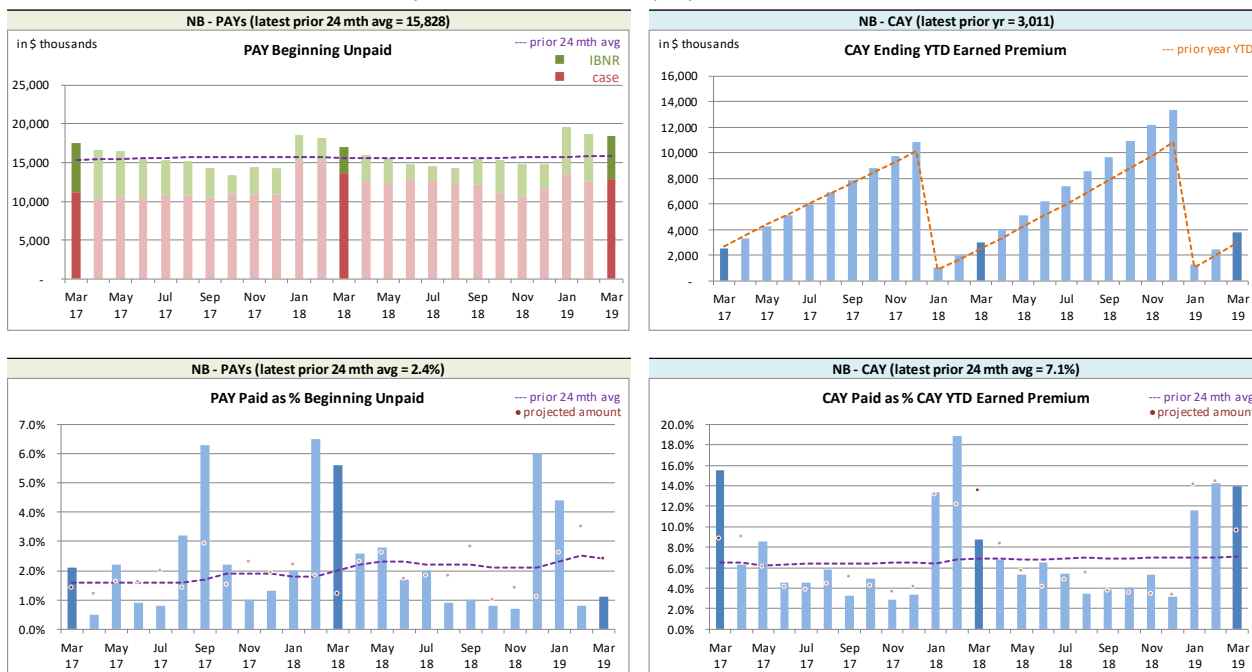
relative or overall terms. That said, 32% of the prior accident years' (PAYS) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on the left above), suggesting the projection process has performed no better than simply projecting 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 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.

The CAY **paid** variance (see right chart above) was outside of one standard deviation this month. 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 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	actuarial present value adjustments							
	IBNR		Discount Amount		Provisions for Adverse Deviations		IBNR + actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	2,414	1,057	(372)	24	1,061	59	3,103	1,140
2017	1,122	(197)	(217)	47	473	(8)	1,378	(158)
2018	2,594	(182)	(311)	61	600	32	2,883	(89)
2019	698	(179)	(117)	34	212	(15)	793	(160)
TOTAL	6,828	499	(1,017)	166	2,346	68	8,157	733

The IBNR provision is \$0.5 million 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 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, 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:	(1,667)	109	295	51	(1,372)	160
balance as % unearned premium:	(21.8%)	1.0%	3.9%	0.8%	(17.9%)	1.8%
actual unearned premium:	7,651					
less projected:	(144)					

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:

- Earned premium to-date
- Ultimate loss¹¹ ratio per latest valuation
- Estimated ultimate incurred = (a) x (b)
- Recorded indemnity & allowed claims expense to-date
- 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 77.9% rather than 75.5% (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.)

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	615	16.7%	238	6.5%	853	23.2%	894	24.9%
CAY	2,867	77.9%	95	2.6%	2,962	80.5%	1,072	0.2%
TOTAL	3,482	94.6%	333	9.0%	3,815	103.6%	1,966	25.0%

(“% 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.

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
 1.93%

 interest rate margin
 25 basis pts

Amounts in \$000s					
Accident Year	Actual Feb. 2019	Actual Mar. 2019	Projected Apr. 2019	Projected May. 2019	Projected Dec. 2019
2005	(2)	(2)	(2)	(2)	(2)
2006	-	-	-	-	-
2007	9	(4)	(4)	(4)	(4)
2008	10	10	10	10	9
2009	(443)	56	52	50	41
2010	66	54	49	47	39
2011	(379)	(167)	(146)	(139)	(92)
2012	216	109	101	97	78
2013	(124)	320	300	290	248
2014	562	729	670	645	517
2015	705	751	745	693	541
2016	1,375	1,247	1,191	1,105	953
2017	1,555	1,378	1,331	1,243	1,084
2018	3,006	2,883	2,847	2,814	2,394
2019	503	793	1,252	1,865	4,464
TOTAL	7,059	8,157	8,396	8,714	10,270
Change		1,098	239	318	

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	Accident	Actual	Actual	Projected	Projected	Projected
	Loss Ratio	Year	Feb. 2019	Mar. 2019	Apr. 2019	May. 2019	Dec. 2019
	84.0%	2005	(2)	(2)	(2)	(2)	(2)
	53.2%	2006	-	-	-	-	-
	72.0%	2007	8	(4)	(4)	(4)	(4)
	76.3%	2008	4	4	4	4	4
	86.1%	2009	(483)	42	38	36	28
	58.6%	2010	56	44	40	38	30
	85.1%	2011	(455)	(266)	(242)	(232)	(179)
	54.4%	2012	177	76	69	66	50
	78.3%	2013	(249)	156	142	136	105
	67.9%	2014	470	618	562	540	419
	65.8%	2015	612	642	636	585	448
	70.8%	2016	1,239	1,104	1,049	965	828
	80.4%	2017	1,332	1,122	1,077	991	859
	74.6%	2018	2,804	2,594	2,568	2,542	2,161
	75.5%	2019	452	698	1,125	1,703	4,064
		TOTAL	5,965	6,828	7,062	7,368	8,811
		Change		863	234	306	

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 Feb. 2019	Actual Mar. 2019	Projected Apr. 2019	Projected May. 2019	Projected Dec. 2019
(1) unearned premium (UP)	7,571	7,651	8,130	8,574	10,187
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	80.4%	82.1%	82.2%	82.4%	84.0%
(3) expected future costs {(1) x (2)}	6,084	6,279	6,682	7,062	8,561
(4) premium deficiency / (deferred policy acquisition cost)	(1,487)	(1,372)	(1,448)	(1,512)	(1,626)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	77.2%	78.2%	78.3%	78.5%	80.1%
(6) expected future costs {(1) x (5)}	5,846	5,984	6,369	6,729	8,160
(7) premium deficiency / (deferred policy acquisition cost)	(1,725)	(1,667)	(1,761)	(1,845)	(2,027)

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 ending 2019		Projected Balances as at Dec. 31, 2019 (\$000s)							
Acc Yr	nominal values			actuarial present value adjustments (apvs)					
	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs
2006	-	-	-	-	-	-	-	-	-
2007	-	(4)	(4)	-	-	-	-	-	(4)
2008	67	4	71	(2)	-	7	-	7	5
2009	148	28	176	(5)	1	18	(1)	17	13
2010	90	30	120	(3)	-	12	-	12	9
2011	1,415	(179)	1,236	(38)	5	124	(4)	120	87
2012	393	50	443	(16)	2	44	(2)	42	28
2013	2,014	105	2,119	(70)	8	212	(7)	205	143
2014	1,057	419	1,476	(52)	7	148	(5)	143	98
2015	1,051	448	1,499	(58)	7	150	(6)	144	93
2016	829	828	1,657	(78)	10	202	(9)	193	125
2017	2,534	859	3,393	(190)	24	414	(23)	391	225
2018	1,834	2,161	3,995	(252)	32	483	(30)	453	233
PAYs (sub-total):	11,432	4,747	16,179	(764)	96	1,814	(87)	1,727	1,059
CAY (2019)	3,671	4,064	7,735	(495)	62	890	(57)	833	400
claims liabilities:	15,103	8,811	23,914	(1,259)	158	2,704	(144)	2,560	1,459
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs
									TOTAL*
premium liabilities:	10,187	(2,027)	8,160	(355)	47	742	(33)	709	401
*Total may not be sum of parts, as apvs apply to future costs within UPR									
policy liabilities:			32,074	(1,614)	205	3,446	(177)	3,269	1,860

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 (Dec. 31, 2018)				
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%	9.4%	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%	9.9%	12.2%
2018	12.5%	10.0%	11.6%	12.1%
2019	12.3%	10.0%	5.7%	11.5%
prem liab	11.7%	10.0%	5.6%	9.4%

discount rate: 1.93%
 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 (1.93%), the prior valuation assumption (2.29%) 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	0.93%	1.43%	1.93%	2.43%	2.93%	3.43%	2.29%	2.29%
2005	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-
2007	1	1	1	1	1	1	1	1
2008	48	48	47	47	47	46	47	47
2009	111	110	109	109	108	107	109	109
2010	89	88	87	87	86	85	87	87
2011	920	912	905	898	891	884	900	900
2012	312	309	306	303	300	298	304	304
2013	1,773	1,757	1,742	1,727	1,712	1,698	1,731	1,731
2014	1,330	1,318	1,306	1,295	1,284	1,272	1,298	1,298
2015	1,361	1,347	1,334	1,320	1,307	1,295	1,324	1,324
2016	1,729	1,708	1,687	1,666	1,646	1,627	1,672	1,672
2017	3,757	3,701	3,647	3,593	3,542	3,491	3,608	3,608
2018	4,720	4,642	4,565	4,491	4,419	4,348	4,511	4,511
2019	8,500	8,356	8,216	8,078	7,947	7,819	8,117	8,117
Total	24,651	24,297	23,952	23,615	23,290	22,971	23,709	23,709
	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	0.93%	1.43%	1.93%	2.43%	2.93%	3.43%	2.29%	2.29%
Total	699	345	-	(337)	(662)	(981)	(243)	(243)
	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	0.93%	1.43%	1.93%	2.43%	2.93%	3.43%	2.29%	2.29%
2005	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-
2008	2.1%	2.1%	-	-	-	(2.1%)	-	-
2009	1.8%	0.9%	-	-	(0.9%)	(1.8%)	-	-
2010	2.3%	1.1%	-	-	(1.1%)	(2.3%)	-	-
2011	1.7%	0.8%	-	(0.8%)	(1.5%)	(2.3%)	(0.6%)	(0.6%)
2012	2.0%	1.0%	-	(1.0%)	(2.0%)	(2.6%)	(0.7%)	(0.7%)
2013	1.8%	0.9%	-	(0.9%)	(1.7%)	(2.5%)	(0.6%)	(0.6%)
2014	1.8%	0.9%	-	(0.8%)	(1.7%)	(2.6%)	(0.6%)	(0.6%)
2015	2.0%	1.0%	-	(1.0%)	(2.0%)	(2.9%)	(0.7%)	(0.7%)
2016	2.5%	1.2%	-	(1.2%)	(2.4%)	(3.6%)	(0.9%)	(0.9%)
2017	3.0%	1.5%	-	(1.5%)	(2.9%)	(4.3%)	(1.1%)	(1.1%)
2018	3.4%	1.7%	-	(1.6%)	(3.2%)	(4.8%)	(1.2%)	(1.2%)
2019	3.5%	1.7%	-	(1.7%)	(3.3%)	(4.8%)	(1.2%)	(1.2%)
Total	2.9%	1.4%	-	(1.4%)	(2.8%)	(4.1%)	(1.0%)	(1.0%)
	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
 AccountCode Desc

New Brunswick
IBNR - Discounted

M/S IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2005	(2)	-	-	-	-	-	(2)
2006	-	-	-	-	-	-	-
2007	9	-	-	(13)	(13)	(144.4%)	(4)
2008	10	-	-	-	-	-	10
2009	(443)	5	(5)	499	499	(112.6%)	56
2010	66	(1)	1	(12)	(12)	(18.2%)	54
2011	(379)	4	(5)	213	212	(55.9%)	(167)
2012	216	(3)	3	(107)	(107)	(49.5%)	109
2013	(124)	-	-	444	444	(358.1%)	320
2014	562	(6)	125	48	167	29.7%	729
2015	705	(16)	15	47	46	6.5%	751
2016	1,375	(15)	(21)	(92)	(128)	(9.3%)	1,247
2017	1,555	(19)	44	(202)	(177)	(11.4%)	1,378
2018	3,006	(34)	(169)	80	(123)	(4.1%)	2,883
2019	503	450	(221)	61	290	57.7%	793
Grand Total	7,059	365	(233)	966	1,098	15.6%	8,157

EXHIBIT G

Page 2 of 2

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

 RSP
 AccountCode Desc **New Brunswick**
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	-	-	(12)	(12)	(150.0%)	(4)
2008	4	-	-	-	-	-	4
2009	(483)	5	(5)	525	525	(108.7%)	42
2010	56	(1)	1	(12)	(12)	(21.4%)	44
2011	(455)	5	(6)	190	189	(41.5%)	(266)
2012	177	(2)	2	(101)	(101)	(57.1%)	76
2013	(249)	2	(2)	405	405	(162.7%)	156
2014	470	(5)	124	29	148	31.5%	618
2015	612	(12)	11	31	30	4.9%	642
2016	1,239	(12)	(23)	(100)	(135)	(10.9%)	1,104
2017	1,332	(13)	39	(236)	(210)	(15.8%)	1,122
2018	2,804	(28)	(168)	(14)	(210)	(7.5%)	2,594
2019	452	425	(213)	34	246	54.4%	698
Grand Total	5,965	364	(240)	739	863	14.5%	6,828