



**NEW BRUNSWICK RISK SHARING POOL**

**AUGUST 2020 OPERATIONAL REPORT**

**ACTUARIAL HIGHLIGHTS**

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**ACTUARIAL HIGHLIGHTS**  
**RSP NEW BRUNSWICK**  
**OPERATIONAL REPORT**  
**AUGUST 2020**

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## 1 Summary

### Key Points

- (a) The 2020 Q2 valuation was completed and implemented into the results this month, with a \$2.1 million favourable impact, or 6.2% of beginning policy liabilities (policy liabilities ended at \$34 million) and 18.1 points of year-to-date earned premium; the updated valuation loss ratios include a further assessment of the incurred impacts associated with the COVID-19 pandemic; and
- (b) August’s premium projections have been updated to reflect the most recent information provided by certain members. Updated claims assumptions are derived from the 2020 Q2 valuation.

### 1.1 Valuation Schedule (Fiscal Year 2020)

The August 2020 Operational Report incorporates the results of an updated valuation (as at June 30, 2020) – the impact of the implementation of the valuation is discussed in section **Error! Reference source not found.** The following table summarizes the valuation implementations scheduled for fiscal year 2020.

<b>NEW BRUNSWICK RISK SHARING POOL FISCAL YEAR 2020 – SCHEDULE OF VALUATIONS</b>			
<b>Valuation Date</b>	<b>Discount Rate (per annum)</b>	<b>Operational Report</b>	<b>Description of Changes</b>
Sep 30, 2019 (completed)	1.43% mfad 25 bp	Oct. 2019	updated valuation (roll forward) : accident year 2019 loss ratio <u>increased</u> 0.6 points to 74.2%; discount rate <u>increased</u> 2 basis points; no change to selected margins for adverse deviations
Dec. 31, 2019 (completed)	1.62% mfad 25 bp	Mar. 2020	update valuation: 2019 loss ratio <u>increased</u> 3.5 points to 77.7%; accident year 2020 loss ratio <u>increased</u> 2.4 points to 75.4 %; discount rate <u>increased</u> 19 basis points; no change to selected margins for adverse deviations
Mar. 31, 2020 (completed)	0.64% mfad 25 bp	May. 2020	update valuation (partial roll-forward): accident year 2020 loss ratio <u>decreased</u> 0.9 points to 74.5%; discount rate <u>decreased</u> 98 basis points; no change to selected margins for adverse deviations
Jun. 30, 2020 (completed)	0.25% mfad 25 bp	Aug. 2020	update valuation: accident year 2020 loss ratio <u>decreased</u> 9.2 points to 65.3%; discount rate <u>decreased</u> by 39 basis points; selected margins for adverse deviations were updated
Sep 30, 2020	% mfad -- bp	Oct. 2020	update valuation (roll-forward)

Under the proposed schedule for fiscal year 2020, the off-half valuation quarters ending

March 31, 2020 and September 30, 2020 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 June 30, 2020 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.

The valuation implementation impact is summarized in the following two tables, where the abbreviations PAYs refers to prior accident years, CAY refers to the current accident year (2020), and “Prem Def” refers to premium deficiency / deferred acquisition costs impacts.

### *Summary of Impact (\$000s) of Implementing Result of Valuation as at Jun. 30, 2020<sup>1</sup>*

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	(458)	(48)	(506)	228	(90)	(368)
CAY	(1,064)	(104)	(1,168)	78	-	(1,090)
Prem Def	(632)	(46)	(678)	71	-	(607)
<b>TOTAL</b>	<b>(2,154)</b>	<b>(198)</b>	<b>(2,352)</b>	<b>377</b>	<b>(90)</b>	<b>(2,065)</b>

As indicated in the preceding table, the incorporation of the new valuation had an estimated **\$2.1 million favourable impact** on the month’s net result from operations, subtracting an estimated 18.1 points (see following table) from the **year-to-date Combined Operating Ratio** to end at **122.0%**.

<sup>1</sup>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.

*Summary of Impact (% YTD EP) of Implementing Result of Valuation as at Jun. 30, 2020*

NB	ytd EP 11,394 (actual)					
	IMPACT unfav / (fav) as % ytd EP from changes in:					
	ults & payout patterns			dsct rate	margins	TOTAL
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	
[1]	[2]	[3]	[4]	[5]	[6]	
PAYs	(4.0%)	(0.4%)	(4.4%)	2.0%	(0.8%)	(3.2%)
CAY	(9.3%)	(0.9%)	(10.3%)	0.7%	-	(9.6%)
Prem Def	(5.5%)	(0.4%)	(6.0%)	0.6%	-	(5.3%)
<b>TOTAL</b>	<b>(18.9%)</b>	<b>(1.7%)</b>	<b>(20.6%)</b>	<b>3.3%</b>	<b>(0.8%)</b>	<b>(18.1%)</b>

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 **favourable by \$2.2 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 **PAYs** overall showed a **\$0.5 million favourable** nominal variance or 2.6% of the PAYs nominal unpaid balance of \$19.0 million determined at the end of last month (July 2020), driven by favourable claims development and updates to a priori loss ratios to include more recent data and updated trends. While the valuation implementation impact does differ from the valuation changes themselves (as they apply to different periods), the valuation result by government line provides insight into the relative PAYs nominal changes. As per the following table, the valuation changes were mainly in relation to Third Party Liability (Bodily Injury) and Accident Benefits across multiple PAYs.

*Valuation as at June 30, 2020 – PAYs Nominal Changes by Government Line*

Accident Year	New Brunswick RSP - valuation changes in selected ultimate (favourable) / unfavourable during Quarter			
	Third Party Liability	Accident Benefits	Other Coverages	Total
<b>2015 &amp; Prior</b>	(175)	128	-	(47)
<b>2016</b>	(62)	(45)	(5)	(112)
<b>2017</b>	255	(125)	(8)	122
<b>2018</b>	(149)	(146)	(15)	(310)
<b>2019</b>	(45)	(78)	(46)	(169)
<b>TOTAL</b>	<b>(176)</b>	<b>(266)</b>	<b>(74)</b>	<b>(516)</b>

The CAY and premium deficiency impacts are a result of the change in the selected loss ratios for accident year **2020** (decreased 9.2 points to 65.3%) and accident year **2021** (decreased 2.9 points to 76.6 %).

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 preceding 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 a favourable change of \$198 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 June 2020. Column [4] accounts for the change in the **discount rate** selected (decreased 39 basis point to **0.25%**), indicating an unfavourable impact of \$377 thousand. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was \$306 thousand at August 2020 – this compares to the \$268 thousand 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**, but the selected **claims development MfADs** at the coverage and accident year level were **updated** as per usual practice with the June 30 valuation, resulting in a favourable impact of \$0.1 million, as margins on older PAYs were aged.

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**

Mr. Cosimo Pantaleo of Ernst & Young LLP (EY) was appointed as Actuary by the FA Board at its February 18, 2020 meeting.

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<sup>2</sup>**

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

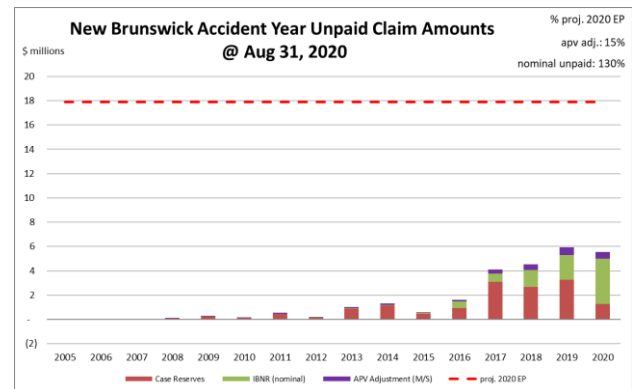
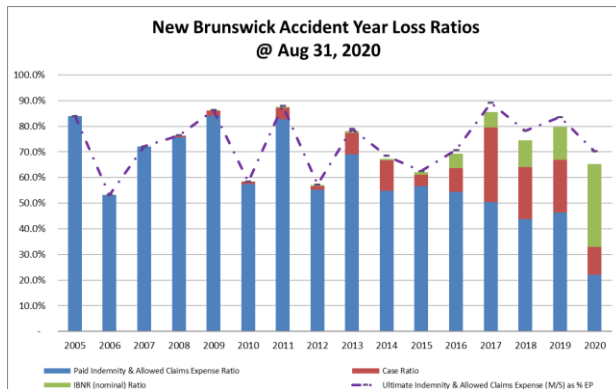
Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process. At the current time, there are no specific recent (i.e. within the last five years) decisions or changes for inclusion here.

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<sup>2</sup>This url to a pdf is to a helpful guide on how bills become laws: <https://www.ola.org/sites/default/files/common/how-bills-become-law-en.pdf>.

### 1.5 Current Provision Summary

The following charts show the current levels of claim liabilities<sup>3</sup> 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 2020 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 (\$2.6 million – see the following table) represents 15% of the earned premium projected for the full year 2020 (see the upper right corner of the right chart above). If our current estimates of the nominal unpaid amounts prove to match actual claims payments, the actuarial present value adjustments will be released into the net operating result over future periods.

claim liabilities (\$000s)

	amt	%
case	14,669	56.7%
ibnr	8,623	33.3%
M/S apv adjust.	2,591	10.0%
<b>M/S total</b>	<b>25,883</b>	<b>100.0%</b>

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 67% of the IBNR balance relates to accident years 2019 and 2020 (see Exhibit B). Approximately 84% of the M/S total claim

liabilities are related to accident years 2016-2020 inclusive (i.e. the most recent 5 accident years), and approximately 2% is related to accident years 2010 and prior (i.e. prior to the most recent 10 accident years).

<sup>3</sup>Claim liabilities refer to provision for unpaid indemnity and allowed claims expenses. Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this discussion.

The following tables summarize the premium liabilities and the total policy liabilities.

premium liabilities (\$000s)			policy liabilities (\$000s)		
	amt	%		amt	%
unearned prem	10,202	125.2%	claim	23,292	68.4%
prem def/(dpac)	(2,726)	(33.4%)	premium	7,476	22.0%
M/S apv adjust.	674	8.3%	M/S apv adjust.	3,265	9.6%
M/S total	8,150	100.0%	M/S total	34,033	100.0%

## 2 Activity During the Month of August 2020

### 2.1 Recorded Premium and Claims Activity

The following table summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month’s Operational Report<sup>4</sup>.

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

Accident Year	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	(2)	(2)	220	113	(338)	(249)	(117)	(135)
2018	(5)	(5)	(1)	(45)	40	67	39	22
2019	(14)	(14)	20	(144)	324	429	344	285
2020	1,554	26	308	(195)	139	(172)	447	(367)
TOTAL	1,534	6	548	(271)	165	75	713	(196)

(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

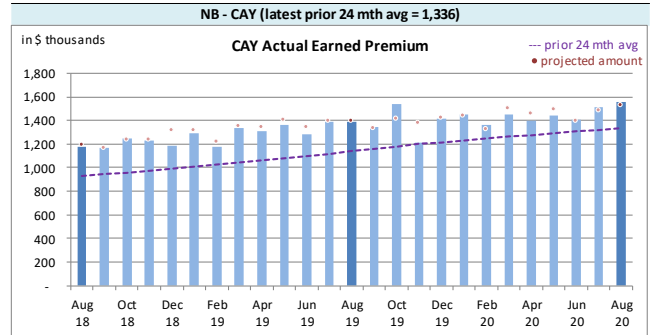
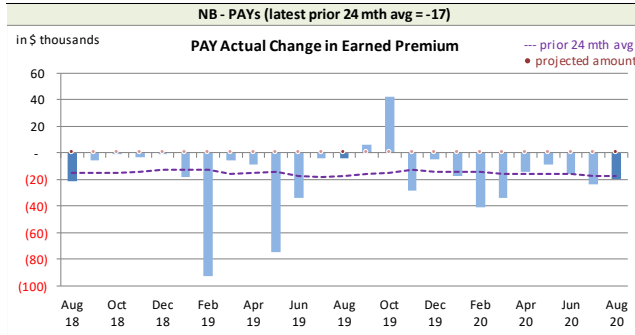
The following charts show actual **earned premium**<sup>5</sup> activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

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

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



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



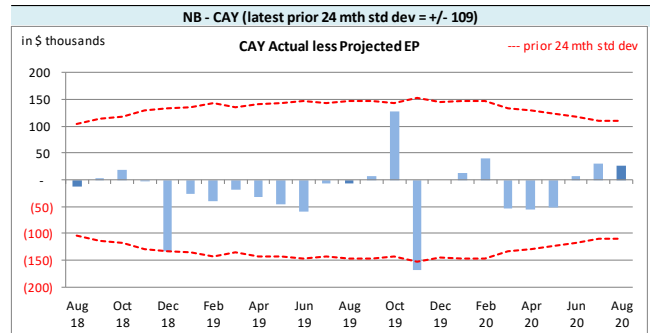
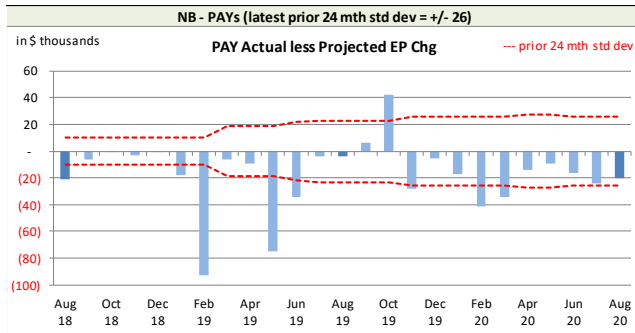
Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels generally occur at the beginning of each year.

On Latest \$ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(17)	1,336
std dev	26	109
A-P <> std dev	9	1
% <> std dev	36.0%	4.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	no better	better

The associated variance between the actual changes and the projections from the previous month are shown in following charts. **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**



We project **earned premium** changes from known unearned premium balances and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias<sup>6</sup>, with actuals generally lower than our projections, although the magnitude is not high relative to monthly premium. However, for the CAY, bias<sup>7</sup> has not been indicated. Over time, we may consider other projection approaches to address the bias issue, but it is not currently deemed as priority.

<sup>6</sup>The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

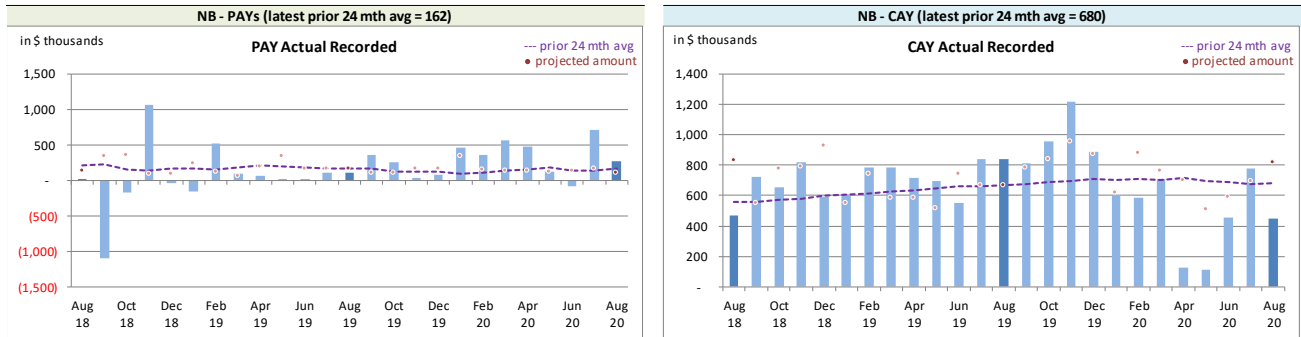
<sup>7</sup>We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (25 in this case) and 50% probability of success. The rolling 25-month CAY variances at August 2020 has 9 months where the actual was higher than projected, and as the 95% confidence range is 8 to 17, bias continues to be indicated.

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

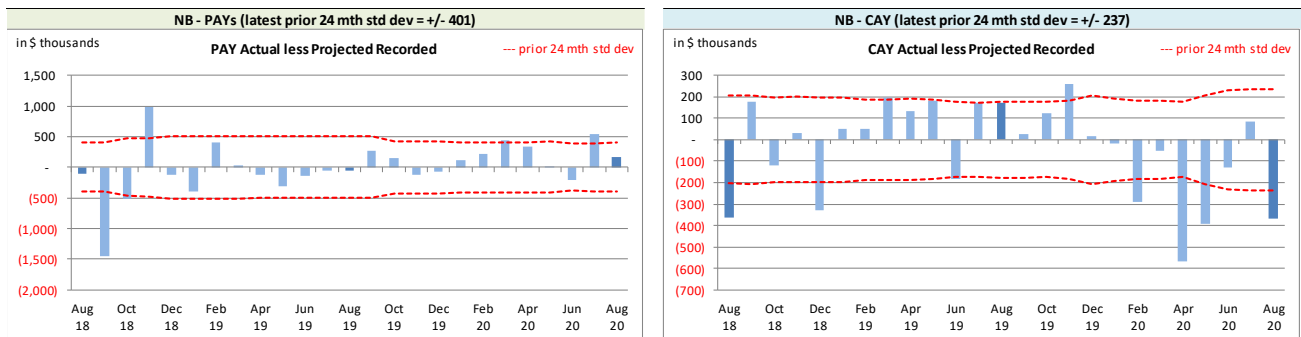
The following charts show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

*New Brunswick RSP Actual Recorded by Calendar Month*



**Recorded** activity variances from the previous month’s projections are shown in the following charts, 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		
<b>Recorded</b>	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	162	680
std dev	401	237
A-P <> std dev	5	9
% <> std dev	20.0%	36.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	better	no better

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, 20% 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 preceding table to the left), suggesting the projection process has performed 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 rolling 25-month basis (12 of 25 variances are positive).

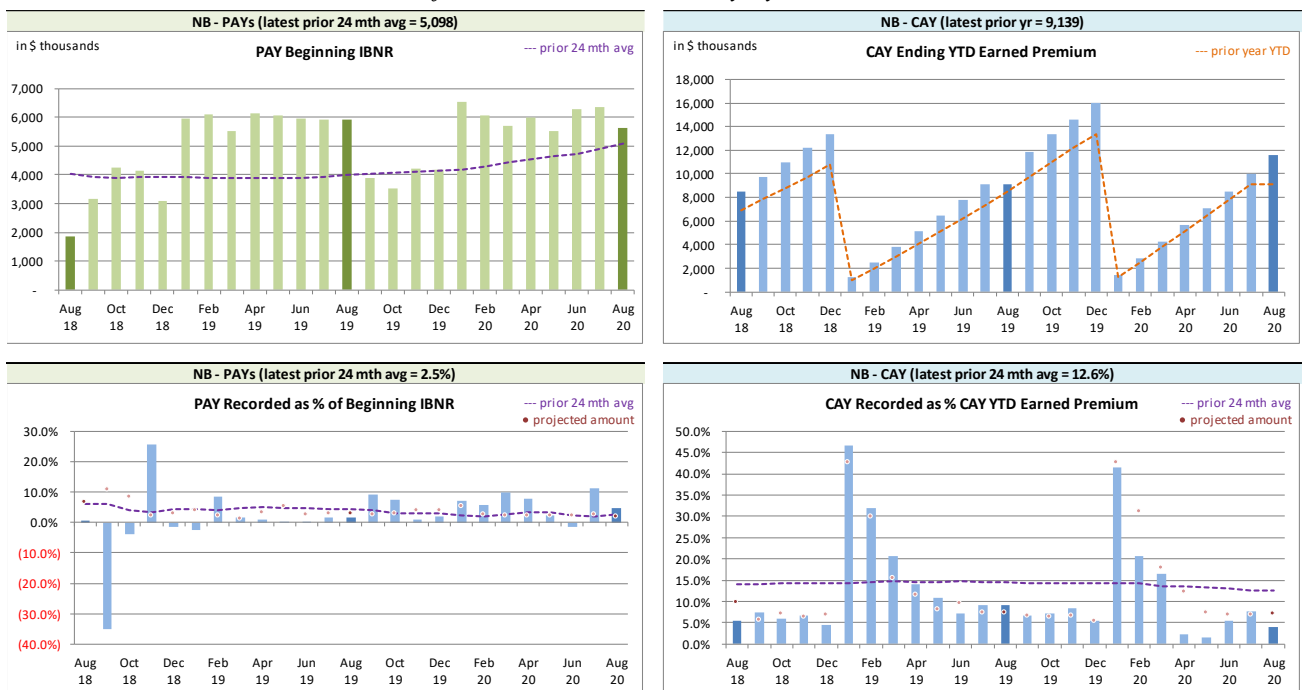
The current accident year (CAY) **recorded** variances fell outside of one standard deviation 36% of the time over the last 25 calendar months (see preceding table on the left), suggesting the projection process has performed no better than simply projecting the prior 24-month average amount. Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (14 of 25 variances are positive).

The CAY **recorded** variance was outside the one standard deviation band this month (see preceding chart on the right) the lower projected recorded activity was reviewed, and 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, the following charts related to levels influencing **recorded** activity. Note in particular the increase in the level of PAY 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<sup>8</sup> Recorded activity by Calendar Month*



We track PAY beginning IBNR as **recorded** activity comes out of IBNR. Changes in the PAY beginning IBNR (see upper left of the preceding group of charts) occur for several possible reasons:

- to offset actual **recorded** activity (through loss ratio matching);

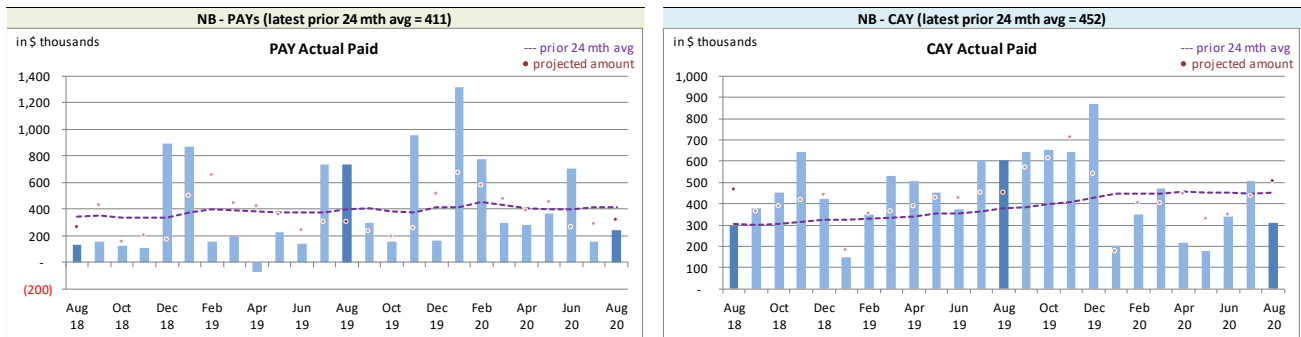
<sup>8</sup>Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned premium), deriving year-to-date recorded as selected ultimate less IBNR. In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.

- the annual switchover as a CAY becomes a PAY (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs’ ultimates (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

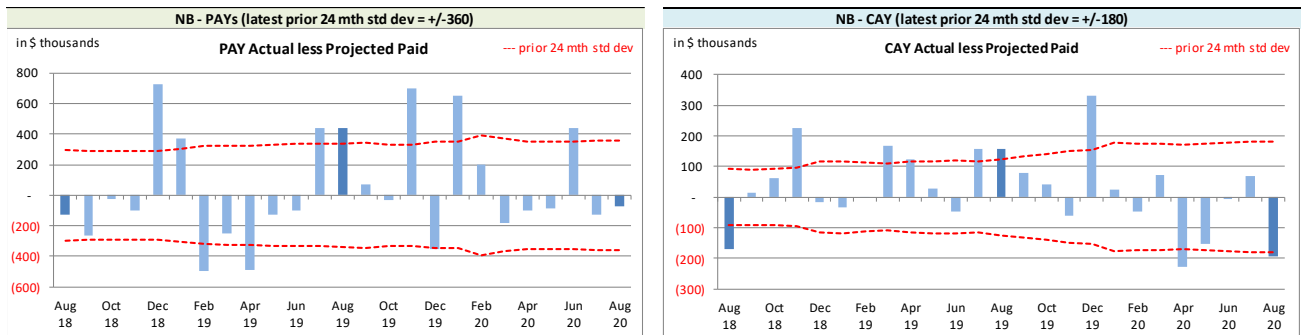
The following charts show actual **paid** activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

*New Brunswick RSP Actual Paid activity by Calendar Month*



**Paid** activity variances from the previous month’s projections are shown in the following charts, 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		
	PAYs	CAY
<b>Paid</b>		
Mthly Avg Paid (prior 24 mths)	411	452
std dev	360	180
A-P <> std dev	10	9
% <> std dev	40.0%	36.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	worse	no better

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, 40% 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 preceding table on the left), suggesting the projection process has performed worse

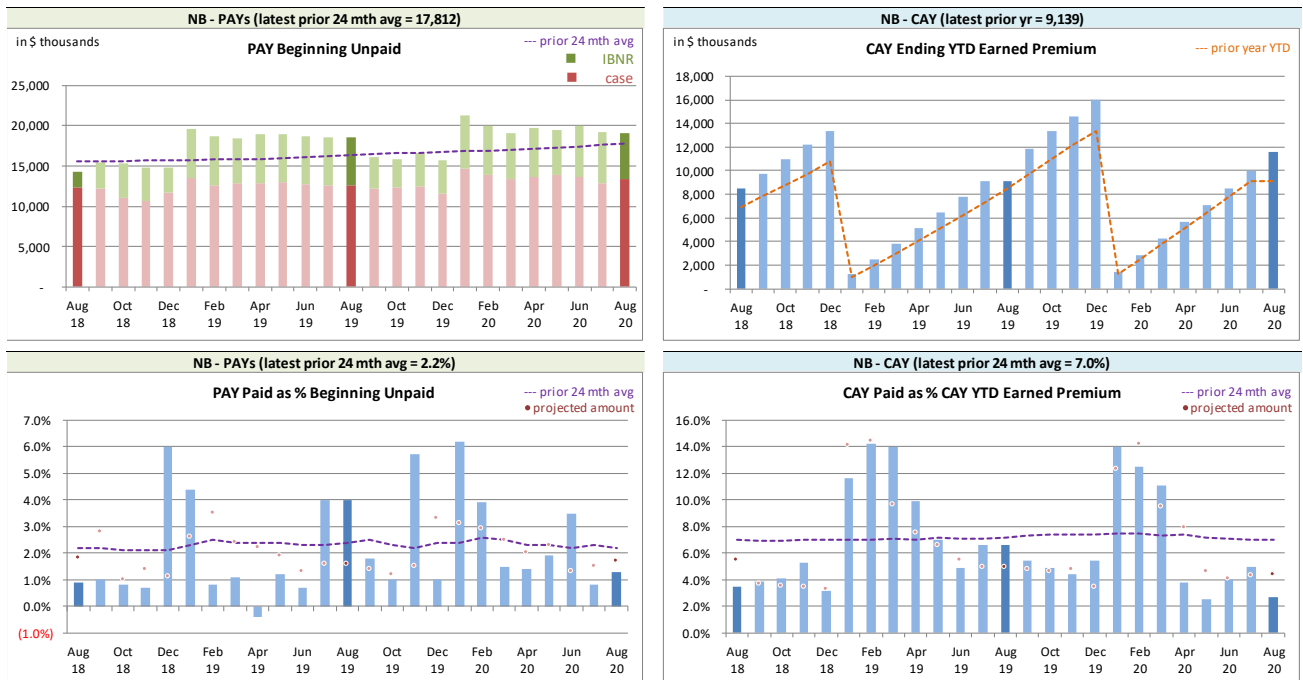
than simply projecting the prior 24-month average amount (assuming a normal distribution). Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (9 of 25 variances are positive).

The current accident year (CAY) **paid** variances fell outside of one standard deviation 36% of the time over the last 25 calendar months (see preceding table on the left), suggesting that the projection process has performed no better than simply projecting the prior 24-month average amount. Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (14 of 25 variances are positive).

The CAY **paid** variance was outside the one standard deviation band this month (see preceding chart on the right) the lower projected paid activity was reviewed, and attributed to low settlement activities.

We have included, for reference, the following charts related to levels influencing **paid** activity.

*New Brunswick RSP Levels that influence<sup>9</sup> Paid activity by Calendar Month*



We track the PAY beginning unpaid balance (case and IBNR) as **paid** activity comes out of the unpaid balance. Changes in the PAY beginning unpaid balance (see upper left of the preceding group of charts) occur for several possible reasons:

- to offset actual **paid** activity (may reduce case or IBNR or both);
- the annual switchover as a CAY becomes a PAY (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs' ultimates (will show up as a beginning unpaid balance change one month after the

<sup>9</sup>Our paid projections for the prior accident years are based on selected ratios of paid to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date paid to year-to-date selected ultimate indemnity (i.e. selected LR x earned premium). In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.

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<sup>10</sup>, 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 following table 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	1,471	123	(51)	77	945	(88)	2,365	112
2018	1,372	(328)	(32)	50	522	(20)	1,862	(298)
2019	2,046	(440)	(48)	69	687	7	2,685	(364)
2020	3,734	(678)	(45)	89	613	(95)	4,302	(684)
<b>TOTAL</b>	<b>8,623</b>	<b>(1,323)</b>	<b>(176)</b>	<b>285</b>	<b>2,767</b>	<b>(196)</b>	<b>11,214</b>	<b>(1,234)</b>

The IBNR provision is \$1.3 million lower than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1, 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 following table 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

<sup>10</sup>For ease of discussion, “IBNR” is used in place of “provisions for incurred but not recorded (IBNR) and development”.

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:	(2,726)	(797)	674	78	(2,052)	(719)
balance as % unearned premium:	(26.7%)	(6.1%)	6.6%	0.2%	(20.1%)	(5.9%)
actual unearned premium:	10,202					
less projected:	819					

### 3 Ultimate Loss Ratio Matching Method

An “ultimate loss ratio matching method” continues to be applied to the current month and two projected months shown in the Operational Reports, with IBNR determined by accident year as follows:

- (a) Earned premium to-date
- (b) Ultimate loss<sup>11</sup> ratio per latest valuation
- (c) Estimated ultimate incurred = (a) x (b)
- (d) Recorded indemnity & allowed claims expense to-date
- (e) IBNR = (c) – (d)

### 4 Calendar Year-to-Date Results

The following table summarizes the calendar year-to-date results for indemnity & allowed claims expenses<sup>12</sup>, 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 66.3% rather than 65.3% (the valuation ultimate ratio for accident year 2020), 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.)

<sup>11</sup>“Loss” here refers to indemnity and allowed claims expenses, but does not include the claims expense allowance included in member company overall expense allowances (“Expense Allowance” in the Operational Report).

<sup>12</sup>Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this analysis.

*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	1,205	10.6%	462	4.1%	1,667	14.6%	(409)	(6.5%)
CAY	7,555	66.3%	568	5.0%	8,123	71.3%	150	(9.6%)
<b>TOTAL</b>	<b>8,760</b>	<b>76.9%</b>	<b>1,030</b>	<b>9.0%</b>	<b>9,790</b>	<b>85.9%</b>	<b>(259)</b>	<b>(16.0%)</b>

(“% EP” based on 2020 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	Amounts in \$000s					
IBNR + M/S actuarial present value adjustments	Accident Year	Actual Jul. 2020	Actual Aug. 2020	Projected Sep. 2020	Projected Oct. 2020	Projected Dec. 2020
	2005	(2)	(2)	(2)	(2)	(2)
	2006	-	-	-	-	-
	2007	(6)	6	6	6	6
	2008	12	12	12	12	12
	2009	20	21	21	21	20
	2010	16	(18)	(18)	(18)	(18)
	2011	113	84	83	83	82
	2012	390	52	51	51	51
	2013	(42)	167	165	163	159
	2014	(95)	163	162	161	158
discount rate	2015	177	147	145	144	141
0.25%	2016	801	702	683	658	616
	2017	896	1,031	1,020	1,006	944
interest rate margin	2018	2,182	1,862	1,843	1,806	1,690
25 basis pts	2019	3,125	2,685	2,591	2,554	2,371
	2020	4,599	4,302	4,610	4,854	3,110
	<b>TOTAL</b>	<b>12,186</b>	<b>11,214</b>	<b>11,372</b>	<b>11,499</b>	<b>9,340</b>
	Change		(972)	158	127	

*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 Jul. 2020	Actual Aug. 2020	Projected Sep. 2020	Projected Oct. 2020	Projected Dec. 2020
84.0%	2005	(2)	(2)	(2)	(2)	(2)
53.2%	2006	-	-	-	-	-
72.1%	2007	(7)	5	5	5	5
76.3%	2008	4	4	4	4	4
86.1%	2009	(4)	(4)	(4)	(4)	(4)
58.3%	2010	8	(27)	(27)	(27)	(27)
87.5%	2011	66	36	36	36	36
57.1%	2012	345	34	34	34	34
78.0%	2013	(139)	73	72	71	69
67.2%	2014	(181)	45	45	45	45
62.0%	2015	125	92	91	90	88
69.2%	2016	660	556	538	515	480
85.6%	2017	491	659	652	641	597
74.5%	2018	1,717	1,372	1,358	1,325	1,234
79.6%	2019	2,545	2,046	1,972	1,952	1,817
65.3%	2020	4,088	3,734	3,982	4,168	2,358
	<b>TOTAL</b>	<b>9,716</b>	<b>8,623</b>	<b>8,756</b>	<b>8,853</b>	<b>6,734</b>
	Change		(1,093)	133	97	

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 Jul. 2020	Actual Aug. 2020	Projected Sep. 2020	Projected Oct. 2020	Projected Dec. 2020
(1) unearned premium (UP)	9,280	10,202	10,737	11,146	10,154
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	85.2%	79.9%	81.3%	82.9%	86.3%
(3) expected future costs {(1) x (2)}	7,909	8,150	8,730	9,239	8,767
(4) premium deficiency / (deferred policy acquisition cost)	(1,371)	(2,052)	(2,007)	(1,907)	(1,387)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	78.9%	73.3%	74.6%	76.0%	79.2%
(6) expected future costs {(1) x (5)}	7,324	7,476	8,009	8,473	8,040
(7) premium deficiency / (deferred policy acquisition cost)	(1,956)	(2,726)	(2,728)	(2,673)	(2,114)

EXHIBIT D

Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2020, broken down by component.

New Brunswick ending 2020		Projected Balances as at Dec. 31, 2020 (\$000s)									
Acc Yr	nominal values			actuarial present value adjustments (apvs)						TOTAL	
	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs		
2005	-	(2)	(2)	-	-	-	-	-	-	(2)	
2006	-	-	-	-	-	-	-	-	-	-	
2007	-	5	5	-	-	1	-	1	1	6	
2008	74	4	78	-	-	8	-	8	8	86	
2009	245	(4)	241	-	-	24	-	24	24	265	
2010	115	(27)	88	-	-	9	-	9	9	97	
2011	423	36	459	(2)	2	46	-	46	46	505	
2012	135	34	169	(1)	1	17	-	17	17	186	
2013	834	69	903	(4)	4	90	-	90	90	993	
2014	1,089	45	1,134	(5)	5	113	-	113	113	1,247	
2015	440	88	528	(3)	3	53	-	53	53	581	
2016	891	480	1,371	(8)	8	137	(1)	136	136	1,507	
2017	2,896	597	3,493	(24)	24	349	(2)	347	347	3,840	
2018	2,541	1,234	3,775	(30)	30	460	(4)	456	456	4,231	
2019	2,766	1,817	4,583	(41)	41	559	(5)	554	554	5,137	
<b>PAYs (sub-total):</b>	<b>12,449</b>	<b>4,376</b>	<b>16,825</b>	<b>(118)</b>	<b>118</b>	<b>1,866</b>	<b>(12)</b>	<b>1,854</b>	<b>1,854</b>	<b>18,679</b>	
<b>CAY (2020)</b>	<b>4,246</b>	<b>2,358</b>	<b>6,604</b>	<b>(59)</b>	<b>59</b>	<b>759</b>	<b>(7)</b>	<b>752</b>	<b>752</b>	<b>7,356</b>	
<b>claims liabilities:</b>	<b>16,695</b>	<b>6,734</b>	<b>23,429</b>	<b>(177)</b>	<b>177</b>	<b>2,625</b>	<b>(19)</b>	<b>2,606</b>	<b>2,606</b>	<b>26,035</b>	
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*	
<b>premium liabilities:</b>	<b>10,154</b>	<b>(2,114)</b>	<b>8,040</b>	<b>(47)</b>	<b>47</b>	<b>731</b>	<b>(4)</b>	<b>727</b>	<b>727</b>	<b>8,767</b>	
*Total may not be sum of parts, as apvs apply to future costs within UPR											
<b>policy liabilities:</b>			<b>31,469</b>	<b>(224)</b>	<b>224</b>	<b>3,356</b>	<b>(23)</b>	<b>3,333</b>	<b>3,333</b>	<b>34,802</b>	

EXHIBIT E

Discount Rate & Margins for Adverse Deviations

The tables below present selected margins for adverse development by coverage (the total is a weighted average, based on the unpaid claims projection for December 31, 2020 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Jun. 30,  
2020)

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%	10.0%	10.0%
2015	10.0%	10.0%	10.0%	10.0%
2016	10.0%	10.0%	6.1%	10.0%
2017	10.0%	10.0%	7.7%	10.0%
2018	12.5%	10.0%	12.5%	12.2%
2019	12.5%	10.0%	12.5%	12.2%
2020	12.3%	10.0%	5.5%	11.5%
2021	11.7%	10.0%	5.0%	9.4%
<u>prem liab</u>	<u>11.7%</u>	<u>10.0%</u>	<u>5.0%</u>	<u>9.4%</u>

discount rate: 0.25%  
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, 2020 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2020, and are based on more up-to-date information). We have included the most recent valuation selection (0.25%), the prior valuation assumption (0.64%) and the prior fiscal year end valuation assumption (1.43%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

\$ Format: \$000s

AY	Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2020 projected Unpaid							
	0.00%	0.00%	0.25%	0.75%	1.25%	1.75%	0.64%	1.43%
2005	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-
2008	64	64	64	64	64	63	64	64
2009	224	224	224	222	221	220	223	221
2010	75	75	75	74	74	73	74	73
2011	406	406	406	403	400	397	404	399
2012	213	213	213	210	208	205	211	207
2013	888	888	887	880	873	867	882	871
2014	1,108	1,108	1,108	1,098	1,089	1,080	1,100	1,085
2015	584	584	583	577	571	564	578	568
2016	1,431	1,431	1,430	1,412	1,394	1,377	1,416	1,388
2017	3,836	3,836	3,834	3,779	3,726	3,673	3,791	3,706
2018	4,026	4,026	4,023	3,959	3,897	3,837	3,973	3,875
2019	5,664	5,664	5,658	5,560	5,466	5,374	5,582	5,432
2020	6,932	6,932	6,926	6,800	6,679	6,562	6,828	6,636
<b>Total</b>	<b>25,451</b>	<b>25,451</b>	<b>25,431</b>	<b>25,038</b>	<b>24,662</b>	<b>24,292</b>	<b>25,126</b>	<b>24,525</b>
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

AY	Dollar Impact Relative to Valuation Assumption							
	0.00%	0.00%	0.25%	0.75%	1.25%	1.75%	0.64%	1.43%
Total	20	20	-	(393)	(769)	(1,139)	(305)	(906)
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

AY	Percentage Impact Relative to Valuation Assumption							
	0.00%	0.00%	0.25%	0.75%	1.25%	1.75%	0.64%	1.43%
2005	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	(1.6%)	-	-
2009	-	-	-	(0.9%)	(1.3%)	(1.8%)	(0.4%)	(1.3%)
2010	-	-	-	(1.3%)	(1.3%)	(2.7%)	(1.3%)	(2.7%)
2011	-	-	-	(0.7%)	(1.5%)	(2.2%)	(0.5%)	(1.7%)
2012	-	-	-	(1.4%)	(2.3%)	(3.8%)	(0.9%)	(2.8%)
2013	0.1%	0.1%	-	(0.8%)	(1.6%)	(2.3%)	(0.6%)	(1.8%)
2014	-	-	-	(0.9%)	(1.7%)	(2.5%)	(0.7%)	(2.1%)
2015	0.2%	0.2%	-	(1.0%)	(2.1%)	(3.3%)	(0.9%)	(2.6%)
2016	0.1%	0.1%	-	(1.3%)	(2.5%)	(3.7%)	(1.0%)	(2.9%)
2017	0.1%	0.1%	-	(1.4%)	(2.8%)	(4.2%)	(1.1%)	(3.3%)
2018	0.1%	0.1%	-	(1.6%)	(3.1%)	(4.6%)	(1.2%)	(3.7%)
2019	0.1%	0.1%	-	(1.7%)	(3.4%)	(5.0%)	(1.3%)	(4.0%)
2020	0.1%	0.1%	-	(1.8%)	(3.6%)	(5.3%)	(1.4%)	(4.2%)
<b>Total</b>	<b>0.1%</b>	<b>0.1%</b>	<b>-</b>	<b>(1.5%)</b>	<b>(3.0%)</b>	<b>(4.5%)</b>	<b>(1.2%)</b>	<b>(3.6%)</b>
	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 Brunswick**  
AccountCode Desc **IBNR - Discounted**

M/S IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2005	(2)	-	-	-	-	-	(2)
2006	-	-	-	-	-	-	-
2007	(6)	-	-	12	12	(200.0%)	6
2008	12	-	-	-	-	-	12
2009	20	-	-	1	1	5.0%	21
2010	16	-	(35)	1	(34)	(212.5%)	(18)
2011	113	(3)	3	(29)	(29)	(25.7%)	84
2012	390	(9)	9	(338)	(338)	(86.7%)	52
2013	(42)	1	133	75	209	(497.6%)	167
2014	(95)	3	(45)	300	258	(271.6%)	163
2015	177	(2)	-	(28)	(30)	(16.9%)	147
2016	801	(7)	10	(102)	(99)	(12.4%)	702
2017	896	(10)	46	99	135	15.1%	1,031
2018	2,182	(22)	(21)	(277)	(320)	(14.7%)	1,862
2019	3,125	(76)	(282)	(82)	(440)	(14.1%)	2,685
2020	4,599	387	406	(1,090)	(297)	(6.5%)	4,302
<b>Grand Total</b>	<b>12,186</b>	<b>262</b>	<b>224</b>	<b>(1,458)</b>	<b>(972)</b>	<b>(8.0%)</b>	<b>11,214</b>



EXHIBIT G

Page 2 of 2

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

RSP		New Brunswick						IBNR - in \$000s
AccountCode Desc		IBNR - Undiscounted						
AccYear	Values							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	Sum of Total Change	Sum of % Total Change		
2005	(2)	-	-	-	-	-	(2)	
2006	-	-	-	-	-	-	-	
2007	(7)	-	-	12	12	(171.4%)	5	
2008	4	-	-	-	-	-	4	
2009	(4)	-	-	-	-	-	(4)	
2010	8	-	(35)	-	(35)	(437.5%)	(27)	
2011	66	(2)	2	(30)	(30)	(45.5%)	36	
2012	345	(8)	8	(311)	(311)	(90.1%)	34	
2013	(139)	3	146	63	212	(152.5%)	73	
2014	(181)	4	(45)	267	226	(124.9%)	45	
2015	125	(3)	1	(31)	(33)	(26.4%)	92	
2016	660	(7)	12	(109)	(104)	(15.8%)	556	
2017	491	(5)	45	128	168	34.2%	659	
2018	1,717	(17)	(25)	(303)	(345)	(20.1%)	1,372	
2019	2,545	(59)	(296)	(144)	(499)	(19.6%)	2,046	
2020	4,088	324	386	(1,064)	(354)	(8.7%)	3,734	
<b>Grand Total</b>	<b>9,716</b>	<b>230</b>	<b>199</b>	<b>(1,522)</b>	<b>(1,093)</b>	<b>(11.2%)</b>	<b>8,623</b>	