

# **NEW BRUNSWICK RISK SHARING POOL**

## **MAY 2021 OPERATIONAL REPORT**

### **ACTUARIAL HIGHLIGHTS**

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**ACTUARIAL HIGHLIGHTS**

**RSP NEW BRUNSWICK**

**OPERATIONAL REPORT**

**MAY 2021**

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## 1 Summary

- 1) Recorded activities since last valuation implementation were significantly lower than projected, primarily driven by the activity in the month of May; this activity was reviewed and attributed to the reserving methodology change of one member company group.
- 2) Note to members: this is the quarterly Actuarial Highlights we will release going forward to replace the monthly Actuarial Highlights. The next report will be available for reporting month August 2021 in September 2021, in line with the valuation implementation schedule. Please contact us with any questions or concerns in regards to this matter.

### 1.1 Valuation Schedule (Fiscal Year 2021)

The May 2021 Operational Report incorporates the results of an updated valuation (as at March 31, 2021) – the impact of the implementation of the valuation is discussed in section 1.2. The following table summarizes the valuation implementations scheduled for fiscal year 2021.

NEW BRUNSWICK RISK SHARING POOL FISCAL YEAR 2021 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep 30, 2020 (completed)	0.22% mfad <sup>1</sup> 25 bp	Oct. 2020	update valuation (roll-forward): accident year 2020 loss ratio <u>decreased</u> 0.1 points to 65.2%; discount rate <u>decreased</u> 3 basis points; no change to selected margins for adverse deviations
Dec. 31, 2020 (completed)	0.26% mfad 25 bp	Mar. 2021	update valuation: accident year 2020 loss ratio <u>decreased</u> 6.0 points to 59.2% and accident year 2021 loss ratio <u>decreased</u> 6.5 points to 70.1%; discount rate <u>increased</u> 4 basis points; no change to selected margins for adverse deviations
Mar. 31, 2021 (completed)	0.78% mfad 25 bp	May 2021	update valuation (roll-forward): accident year 2021 loss ratio <u>decreased</u> 0.6 points to 69.5%; discount rate <u>increased</u> 52 basis points; no change to selected margins for adverse deviations
Jun. 30, 2021	% mfad -- bp	Aug. 2021	update valuation:
Sep. 30, 2021	% mfad -- bp	Oct. 2021	update valuation (roll-forward):

Under the proposed schedule for fiscal year 2021, the off-half valuation quarters ending

<sup>1</sup> The selected interest rate margin is limited to reducing the selected discount rate to 0%; the approach is that if the net impact is negative, the discount rate will be capped at 0%.

March 31, 2021 and September 30, 2021 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, 2021 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 (2021), and “Prem Def” refers to premium deficiency / deferred acquisition costs impacts.

### *Summary of Impact (\$000s) of Implementing Result of Valuation as at Mar. 31, 2021<sup>2</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	(25)	-	(25)	(351)	-	(376)
CAY	(51)	(6)	(57)	(88)	-	(145)
Prem Def	(50)	3	(47)	(109)	-	(156)
TOTAL	(126)	(3)	(129)	(548)	-	(677)

As indicated in the preceding table, the incorporation of the new valuation had an estimated **\$0.7 million favourable impact** on the month’s net result from operations, subtracting an estimated 0.8 points (see following table) from the **year-to-date Combined Operating Ratio** to end at **82.7%**.

### *Summary of Impact (% YTD EP) of Implementing Result of Valuation as at Mar. 31, 2021*

NB	ytd EP 79,998 (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	-	-	-	(0.4%)	-	(0.5%)
CAY	(0.1%)	-	(0.1%)	(0.1%)	-	(0.2%)
Prem Def	(0.1%)	-	(0.1%)	(0.1%)	-	(0.2%)
TOTAL	(0.2%)	-	(0.2%)	(0.7%)	-	(0.8%)

The impact of the **nominal changes** is shown in column [1] of the two preceding summary tables.

<sup>2</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.

The change in the selected nominal ultimates was **favourable 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 **PAYs** overall showed a **\$25 thousand favourable** nominal variance or 0.1 % of the PAYs nominal unpaid balance of \$22.3 million determined at the end of last month (April 2021), driven by favourable claims development.

The CAY and premium deficiency impacts are a result of the change in the selected loss ratio for accident year **2021** (decreased 0.6 points to 69.5%). This change is driven by lower than expected claims costs year to date, as claims frequency continues to be reduced as a result of the ongoing COVID-19 pandemic.

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 \$3 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 2021. Column [4] accounts for the change in the **discount rate** selected (increased 52 basis point to **0.78%**), indicating a favourable impact of \$0.5 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was \$0.4 million at May 2021 – 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 also left unchanged (as per our usual practice, development margins are reviewed with the June 30 valuation).

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**

The Annual General Meeting of the members of Facility Association (“FA”) appointed Mr. Cosimo

Pantaleo as the Appointed Actuary at its meeting on March 4, 2021.

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.

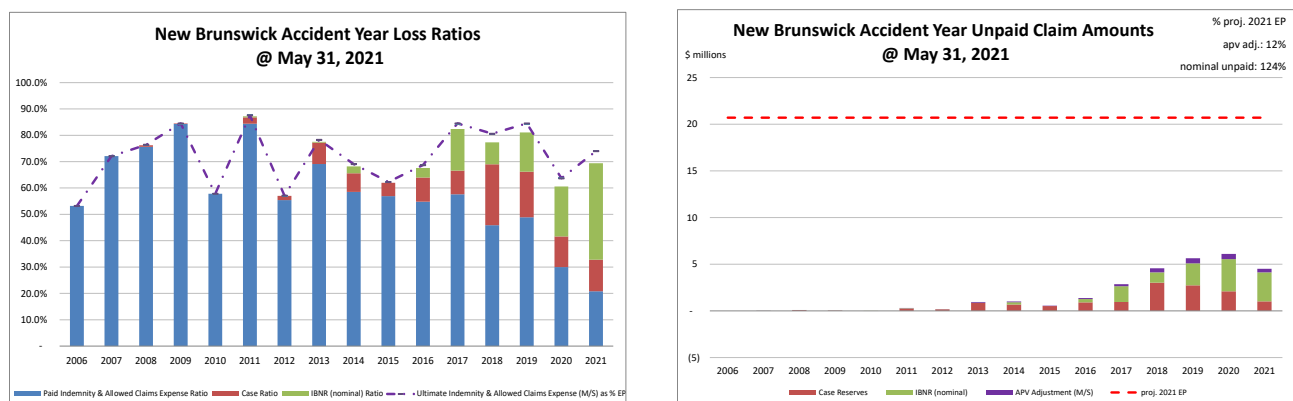
#### 1.4 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation

There have been no changes in these descriptions since last 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.

#### 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 2021 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 (\$2.5 million – see the following table) represents 12% of the earned premium projected for the full year 2021 (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.

The table to the left breaks down the Member Statement (M/S) claim liabilities total into component

<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.

claim liabilities (\$000s)

	amt	%
case	13,317	47.2%
ibnr	12,371	43.9%
M/S apv adjust.	2,514	8.9%
M/S total	28,202	100.0%

parts, showing that the majority of the claim liabilities for this RSP is in case reserves. Approximately 53% of the IBNR balance relates to accident years 2020 and 2021 (see Exhibit B). Approximately 84% of the M/S total claim liabilities are related to accident years 2017-2021 inclusive (i.e. the most recent 5 accident years), and

approximately 2% is related to accident years 2011 and prior (i.e. prior to the most recent 10 accident years).

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

premium liabilities (\$000s)

	amt	%
unearned prem	10,189	126.5%
prem def/(dpac)	(2,712)	(33.7%)
M/S apv adjust.	579	7.2%
M/S total	8,056	100.0%

policy liabilities (\$000s)

	amt	%
claim	25,688	70.8%
premium	7,477	20.6%
M/S apv adjust.	3,093	8.5%
M/S total	36,258	100.0%

## 2 Activity since previous valuation implementation

### 2.1 Recorded Premium and Claims Activity

The following table summarizes the extent to which premiums and claims amounts recorded during 2021 Q1 differ from projections at the end of 2020 Q4.

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

AY Group	Share Year	Share Month	Actual Earned Premium (000s)	Actual minus Projected Earned Premium (000s)	Actual Paid Claims (000s)	Actual minus Projected Paid Claims (000s)	Actual Recorded Claims (000s)	Actual minus Projected Recorded Claims (000s)
PAY	2021	April	(13)	(13)	130	(294)	500	342
		May	(26)	(26)	667	201	(2,059)	(2,228)
<b>PAY Total</b>			<b>(39)</b>	<b>(39)</b>	<b>797</b>	<b>(93)</b>	<b>(1,559)</b>	<b>(1,886)</b>
CAY	2021	April	1,715	108	493	29	718	(25)
		May	1,779	78	341	(119)	464	(164)
<b>CAY Total</b>			<b>3,494</b>	<b>186</b>	<b>834</b>	<b>(90)</b>	<b>1,182</b>	<b>(189)</b>
<b>Grand Total</b>			<b>3,455</b>	<b>147</b>	<b>1,631</b>	<b>(183)</b>	<b>(377)</b>	<b>(2,075)</b>

(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. The variances are also reviewed as part of the quarterly valuation process, as an indicator of changes in the claims development process or potential bias in ultimate claims estimates.

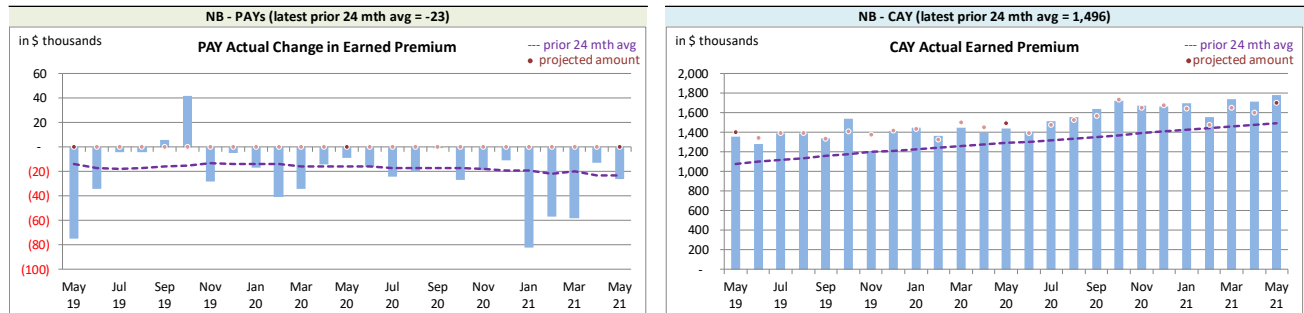
More detailed analysis and commentary on actual vs. projected for the most recent reporting months

is provided below.

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

The following charts show actual **earned premium**<sup>4</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.

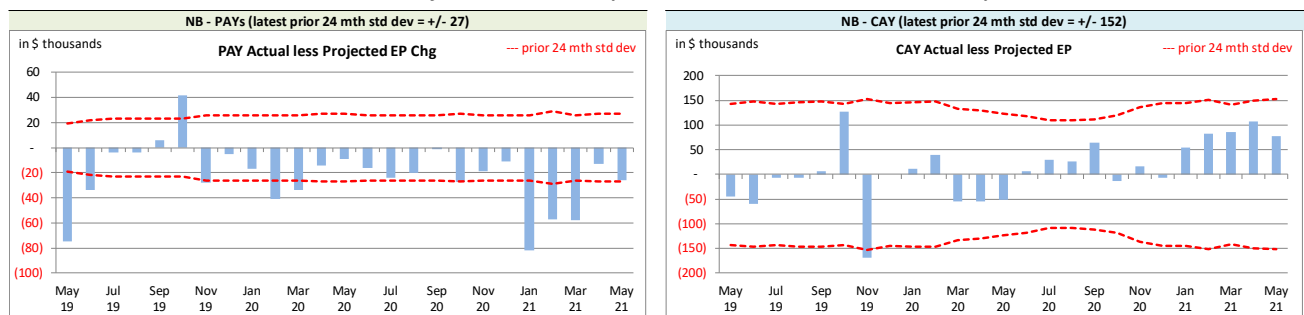
New Brunswick RSP Actual **Earned Premium** by Calendar Month



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

The associated variance between the actual changes and the projections from the previous month are shown in 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



<sup>4</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.



On Latest \$ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(23)	1,496
std dev	27	152
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

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>5</sup>, with actuals generally lower than our projections, although the magnitude is not high

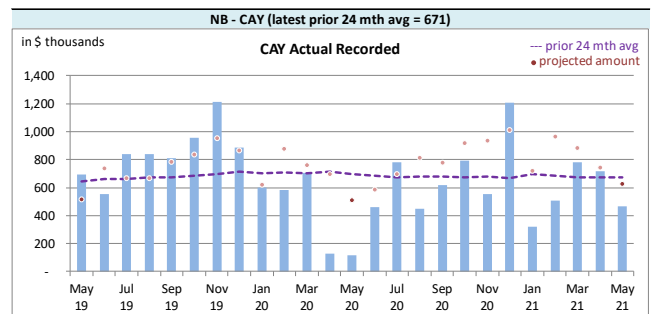
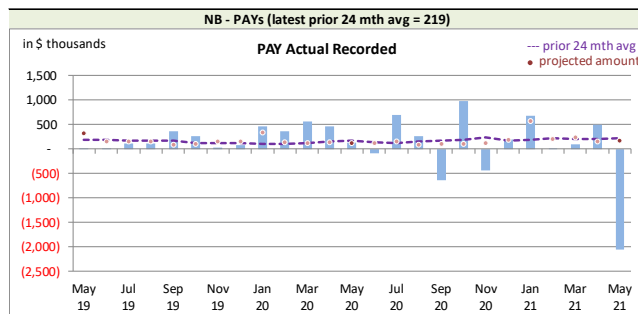
relative to monthly premium. However, for the CAY, bias<sup>6</sup> has not been indicated. Over time, we may consider other projection approaches to address the bias issue, but it is not currently deemed as priority.

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

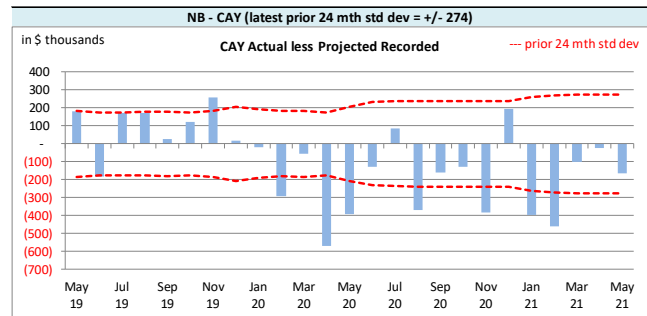
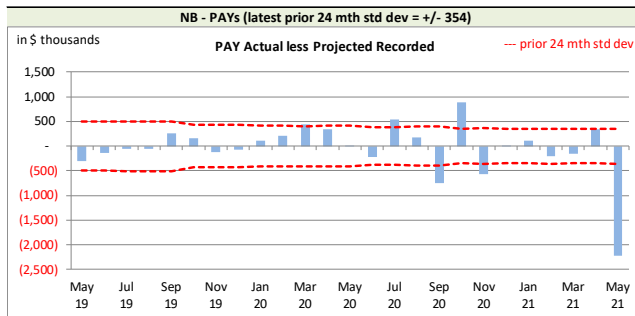


**Recorded** activity variances from the previous month’s projections are shown in the following charts, including the “prior 24-month standard deviation” levels to show how the variances from projection compare with historical standard deviations.

<sup>5</sup>The PAYs’ variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

<sup>6</sup>For the binomial distribution with 25 trials and an assumed 50% success probability, the 95% confidence range is 8 to 17 successes. That is, favourable or unfavourable counts of 0 to 7 or 18 to 25 out of 25 outcomes would suggest bias.

## 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)		219	671
std dev		354	274
A-P <> std dev		6	9
% <> std dev		24.0%	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, 24% 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 (13 of 25 variances are positive).

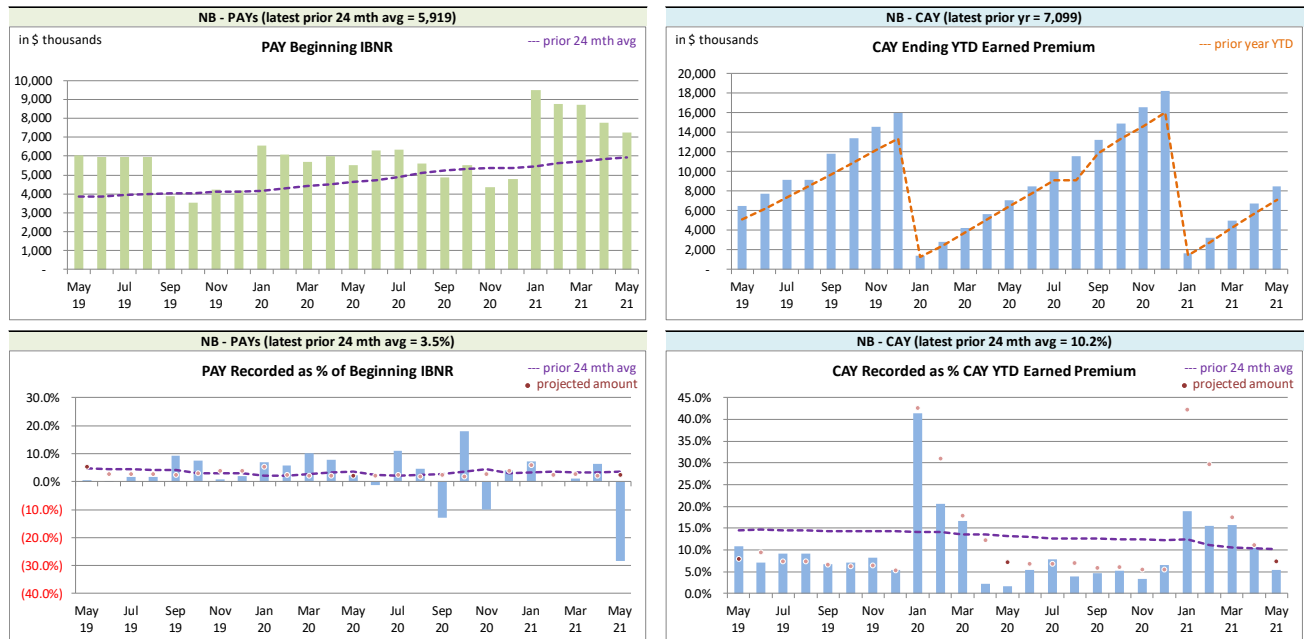
The PAY **recorded** variance was outside of the one standard deviation band this month (see preceding chart on the right). The lower than projected recorded activity was reviewed, and attributed to the reserving methodology change of one member company group.

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 (9 of 25 variances are positive).

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>7</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:

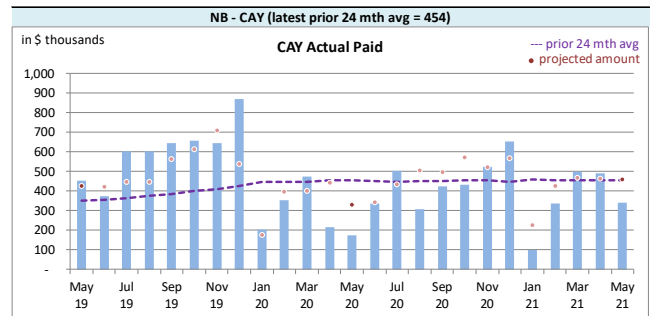
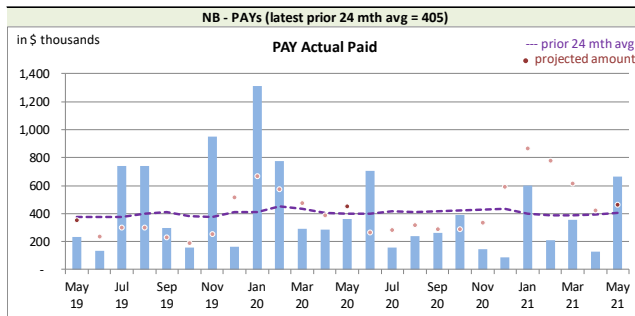
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a CAY becomes a PAY (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs' ultimates (will show up as a beginning IBNR change one 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.

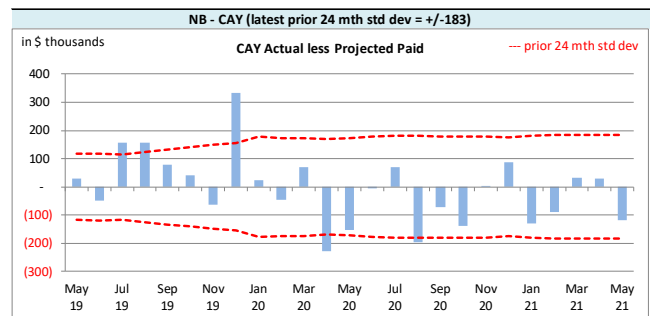
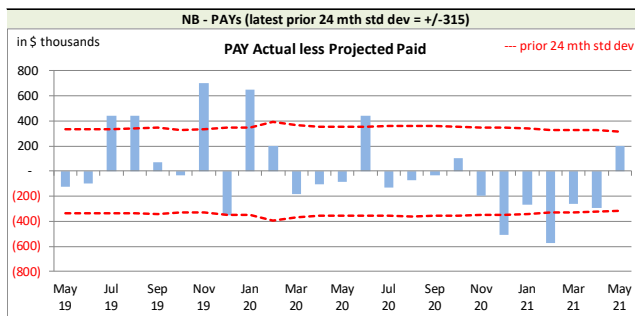
<sup>7</sup>Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR 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.

## 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		
	<b>Paid</b>	
	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	405	454
std dev	315	183
A-P <> std dev	8	5
% <> std dev	32.0%	20.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	no better	better

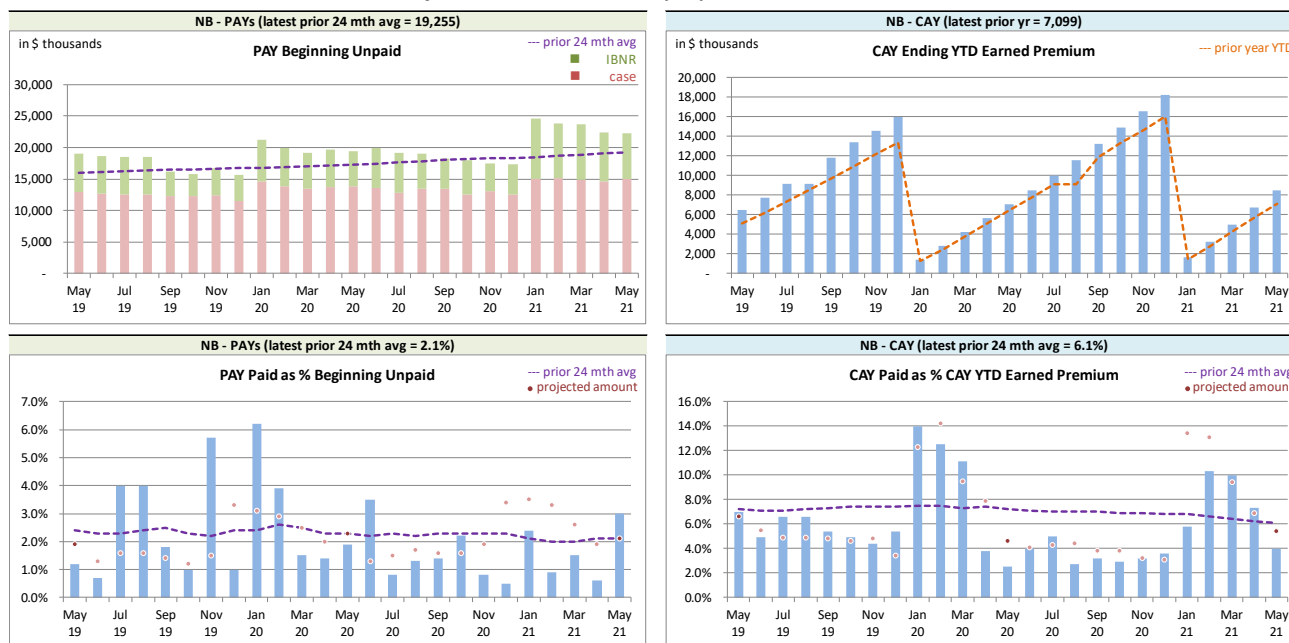
With respect to **paid** indemnity & allowed claims expense, caution must be exercised in reviewing the variances as this is a small pool, and single claim transactions that are normal course for the business may look unusual and generate relatively significant variances that in nominal value terms are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

That said, 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 preceding table on the left), 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 rolling 25-month basis (9 of 25 variances are positive).

The current accident year (CAY) **paid** variances fell outside of one standard deviation 20% of the time over the last 25 calendar months (see preceding table on the left), suggesting that the projection process has performed 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 (13 of 25 variances are positive).

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

## New Brunswick RSP Levels that influence<sup>8</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 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>9</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.

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

<sup>8</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.

<sup>9</sup>For ease of discussion, "IBNR" is used in place of "provisions for incurred but not recorded (IBNR) and development".

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)

### 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>10</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>11</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 71.5% rather than 69.5% (the valuation ultimate ratio for accident year 2021), 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	(1,017)	(12.3%)	(607)	(7.4%)	(1,624)	(19.7%)	(466)	(1.9%)
CAY	5,899	71.5%	383	4.6%	6,282	76.1%	1,204	(2.0%)
TOTAL	4,882	59.2%	(224)	(2.7%)	4,658	56.4%	738	(3.9%)

(“% EP” based on 2021 calendar year-to-date earned premium; ratios may not total due to rounding)

<sup>10</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>11</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.

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 impact of 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 impact of 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  
0.78%

interest rate margin  
25 basis pts

Amounts in \$000s								
Accident Year	Actual Apr. 2021	Actual May. 2021	Projected Jun. 2021	Projected Jul. 2021	Projected Aug. 2021	Projected Sep. 2021	Projected Oct. 2021	Projected Dec. 2021
2006	-	-	-	-	-	-	-	-
2007	6	6	6	6	6	6	6	6
2008	12	12	12	12	12	12	12	11
2009	6	6	6	6	6	6	6	6
2010	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
2011	56	71	69	68	64	64	64	62
2012	50	19	18	18	19	18	18	18
2013	167	113	111	109	104	103	103	100
2014	116	330	321	315	296	292	289	279
2015	66	36	35	35	34	34	33	32
2016	310	466	454	444	416	411	407	393
2017	1,081	1,905	1,885	1,789	1,769	1,739	1,678	1,567
2018	1,611	1,529	1,513	1,486	1,471	1,456	1,411	1,321
2019	2,570	2,899	2,775	2,725	2,698	2,670	2,602	2,431
2020	3,753	4,005	3,938	3,859	3,700	3,634	3,588	3,336
2021	2,752	3,492	4,060	4,613	4,677	4,636	4,552	4,266
<b>TOTAL</b>	<b>12,552</b>	<b>14,885</b>	<b>15,199</b>	<b>15,481</b>	<b>15,268</b>	<b>15,077</b>	<b>14,765</b>	<b>13,824</b>
Change		2,333	314	282	(213)	(191)	(312)	

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. 2021	Actual May. 2021	Projected Jun. 2021	Projected Jul. 2021	Projected Aug. 2021	Projected Sep. 2021	Projected Oct. 2021	Projected Dec. 2021
	53.2%	2006	-	-	-	-	-	-	-	-
	72.1%	2007	5	5	5	5	5	5	5	5
	76.3%	2008	4	4	4	4	4	4	4	4
	84.5%	2009	3	3	3	3	3	3	3	3
	57.8%	2010	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
	87.3%	2011	11	44	43	42	39	39	39	38
	57.0%	2012	32	4	4	4	4	4	4	4
	77.5%	2013	75	33	32	31	29	29	29	28
	68.2%	2014	24	247	239	234	216	214	212	204
	61.9%	2015	13	(9)	(9)	(9)	(8)	(8)	(8)	(8)
	67.6%	2016	190	355	343	336	310	307	304	292
	82.4%	2017	774	1,680	1,663	1,568	1,552	1,524	1,465	1,364
	77.3%	2018	1,087	1,091	1,080	1,058	1,047	1,037	997	928
	81.1%	2019	1,924	2,363	2,245	2,200	2,178	2,156	2,091	1,947
	60.6%	2020	3,106	3,446	3,391	3,323	3,180	3,129	3,098	2,885
	69.5%	2021	2,378	3,109	3,604	4,078	4,060	3,941	3,780	3,347
		TOTAL	9,622	12,371	12,643	12,873	12,615	12,380	12,019	11,037
		Change		2,749	272	230	(258)	(235)	(361)	

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. 2021	Actual May. 2021	Projected Jun. 2021	Projected Jul. 2021	Projected Aug. 2021	Projected Sep. 2021	Projected Oct. 2021	Projected Dec. 2021
(1) unearned premium (UP)	9,944	10,189	10,871	11,480	11,721	11,826	11,737	10,167
FOR MEMBER SHARING								
(2) expected future costs ratio {% of (1)}	80.1%	79.1%	79.8%	80.5%	81.3%	82.2%	83.1%	85.2%
(3) expected future costs {(1) x (2)}	7,962	8,056	8,671	9,245	9,534	9,716	9,752	8,663
(4) premium deficiency / (deferred policy acquisition cost)	(1,982)	(2,133)	(2,200)	(2,235)	(2,187)	(2,110)	(1,985)	(1,504)
Excluding Actuarial Present Value Adjustments								
(5) expected future costs ratio {% of (1)}	73.4%	73.4%	74.0%	74.7%	75.5%	76.3%	77.1%	79.1%
(6) expected future costs {(1) x (5)}	7,298	7,477	8,048	8,581	8,850	9,018	9,050	8,040
(7) premium deficiency / (deferred policy acquisition cost)	(2,646)	(2,712)	(2,823)	(2,899)	(2,871)	(2,808)	(2,687)	(2,127)

EXHIBIT D

Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2021, broken down by component.

New Brunswick		Projected Balances as at Dec. 31, 2021 (\$000s)									
ending 2021		nominal values			actuarial present value adjustments (apvs)						
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL	
2006	-	-	-	-	-	-	-	-	-	-	
2007	-	5	5	-	-	1	-	1	1	6	
2008	70	4	74	-	-	7	-	7	7	81	
2009	27	3	30	-	-	3	-	3	3	33	
2010	-	(2)	(2)	-	-	-	-	-	-	(2)	
2011	221	38	259	(3)	1	26	-	26	24	283	
2012	144	4	148	(2)	1	15	-	15	14	162	
2013	771	28	799	(10)	3	80	(1)	79	72	871	
2014	637	204	841	(11)	3	84	(1)	83	75	916	
2015	470	(8)	462	(7)	2	46	(1)	45	40	502	
2016	866	292	1,158	(20)	7	116	(2)	114	101	1,259	
2017	1,021	1,364	2,385	(45)	14	239	(5)	234	203	2,588	
2018	2,773	928	3,701	(78)	22	459	(10)	449	393	4,094	
2019	2,663	1,947	4,610	(111)	37	572	(14)	558	484	5,094	
2020	1,596	2,885	4,481	(121)	40	547	(15)	532	451	4,932	
PAYs (sub-total):	11,259	7,690	18,949	(408)	130	2,195	(49)	2,146	1,868	20,817	
CAY (2021)	6,549	3,347	9,896	(267)	79	1,138	(31)	1,107	919	10,815	
claims liabilities:	17,808	11,037	28,845	(675)	209	3,333	(80)	3,253	2,787	31,632	
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*	
premium liabilities:	10,167	(2,127)	8,040	(156)	47	747	(15)	732	623	8,663	
*Total may not be sum of parts, as apvs apply to future costs within UPR											
policy liabilities:			36,885	(831)	256	4,080	(95)	3,985	3,410	40,295	

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, 2021 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Accident Year	Selected Claims Development MfADs (Mar. 31, 2021)			
	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%	10.0%	10.0%
2015	10.0%	10.0%	10.0%	10.0%
2016	10.0%	10.0%	10.0%	10.0%
2017	10.0%	10.0%	10.0%	10.0%
2018	12.5%	10.0%	10.3%	12.4%
2019	12.5%	10.0%	12.5%	12.4%
2020	12.5%	10.0%	11.2%	12.2%
2021	12.3%	10.0%	5.5%	11.5%
2022	11.8%	10.0%	5.1%	9.6%
prem liab	11.8%	10.0%	5.1%	9.6%

discount rate: 0.78%  
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, 2021 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2021, and are based on more up-to-date information). We have included the most recent valuation selection (0.78%), the prior valuation assumption (0.26%) and the prior fiscal year end valuation assumption (0.22%) 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, 2021 projected Unpaid							
	0.00%	0.28%	0.78%	1.28%	1.78%	2.28%	0.26%	0.22%
2005	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-
2008	34	34	34	34	34	34	34	34
2009	18	18	18	18	18	17	18	18
2010	1	1	1	1	1	1	1	1
2011	299	299	297	295	293	291	299	299
2012	150	150	149	147	146	144	150	150
2013	628	628	623	618	614	609	628	628
2014	736	736	730	724	718	712	736	736
2015	443	443	438	434	430	426	443	443
2016	1,075	1,073	1,062	1,050	1,039	1,028	1,074	1,074
2017	2,672	2,669	2,637	2,605	2,574	2,544	2,670	2,671
2018	4,038	4,032	3,977	3,923	3,870	3,818	4,034	4,036
2019	5,080	5,071	4,993	4,916	4,842	4,770	5,075	5,076
2020	5,705	5,694	5,596	5,501	5,409	5,319	5,698	5,700
2021	8,424	8,408	8,259	8,114	7,976	7,840	8,414	8,417
Total	29,303	29,256	28,814	28,380	27,964	27,553	29,274	29,283
	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%	0.28%	0.78%	1.28%	1.78%	2.28%	0.26%	0.22%
Total	489	442	-	(434)	(850)	(1,261)	460	469
	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%	0.28%	0.78%	1.28%	1.78%	2.28%	0.26%	0.22%
2005	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	(5.6%)	-	-
2010	-	-	-	-	-	-	-	-
2011	0.7%	0.7%	-	(0.7%)	(1.3%)	(2.0%)	0.7%	0.7%
2012	0.7%	0.7%	-	(1.3%)	(2.0%)	(3.4%)	0.7%	0.7%
2013	0.8%	0.8%	-	(0.8%)	(1.4%)	(2.2%)	0.8%	0.8%
2014	0.8%	0.8%	-	(0.8%)	(1.6%)	(2.5%)	0.8%	0.8%
2015	1.1%	1.1%	-	(0.9%)	(1.8%)	(2.7%)	1.1%	1.1%
2016	1.2%	1.0%	-	(1.1%)	(2.2%)	(3.2%)	1.1%	1.1%
2017	1.3%	1.2%	-	(1.2%)	(2.4%)	(3.5%)	1.3%	1.3%
2018	1.5%	1.4%	-	(1.4%)	(2.7%)	(4.0%)	1.4%	1.5%
2019	1.7%	1.6%	-	(1.5%)	(3.0%)	(4.5%)	1.6%	1.7%
2020	1.9%	1.8%	-	(1.7%)	(3.3%)	(4.9%)	1.8%	1.9%
2021	2.0%	1.8%	-	(1.8%)	(3.4%)	(5.1%)	1.9%	1.9%
Total	1.7%	1.5%	-	(1.5%)	(2.9%)	(4.4%)	1.6%	1.6%
	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  
(April 2021 to May 2021)

RSP New Brunswick  
AccountCode Desc IBNR - Discounted

M/S IBNR - in \$000s

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
prior	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-
2005	(2)	-	-	-	-	-	(2)
2006	-	-	-	-	-	-	-
2007	6	-	-	-	-	-	6
2008	12	-	-	-	-	-	12
2009	6	-	-	-	-	-	6
2010	(2)	-	-	-	-	-	(2)
2011	57	(5)	32	(13)	14	24.6%	71
2012	50	(5)	(13)	(13)	(31)	(62.0%)	19
2013	167	(15)	15	(54)	(54)	(32.3%)	113
2014	118	(10)	221	1	212	179.7%	330
2015	171	(10)	(97)	(28)	(135)	(78.9%)	36
2016	305	(29)	129	61	161	52.8%	466
2017	1,112	(39)	1,033	(201)	793	71.3%	1,905
2018	1,813	(94)	(33)	(157)	(284)	(15.7%)	1,529
2019	2,647	(121)	518	(145)	252	9.5%	2,899
2020	3,866	(103)	69	173	139	3.6%	4,005
2021	2,185	1,107	345	(145)	1,307	59.8%	3,492
<b>Grand Total</b>	<b>12,511</b>	<b>676</b>	<b>2,219</b>	<b>(521)</b>	<b>2,374</b>	<b>19.0%</b>	<b>14,885</b>

EXHIBIT G

Page 2 of 2

Components of IBNR (i.e. “Undiscounted”) Change  
(April 2021 to May 2021)

RSP New Brunswick  
AccountCode Desc IBNR - Undiscounted

IBNR - in \$000s

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
prior	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-
2005	(2)	-	-	-	-	-	(2)
2006	-	-	-	-	-	-	-
2007	5	-	-	-	-	-	5
2008	4	-	-	-	-	-	4
2009	3	-	-	-	-	-	3
2010	(2)	-	-	-	-	-	(2)
2011	11	(1)	44	(10)	33	300.0%	44
2012	32	(3)	(15)	(10)	(28)	(87.5%)	4
2013	75	(8)	8	(42)	(42)	(56.0%)	33
2014	26	(3)	215	9	221	850.0%	247
2015	117	(6)	(100)	(20)	(126)	(107.7%)	(9)
2016	185	(20)	121	69	170	91.9%	355
2017	803	(31)	1,057	(149)	877	109.2%	1,680
2018	1,287	(84)	(34)	(78)	(196)	(15.2%)	1,091
2019	1,996	(108)	523	(48)	367	18.4%	2,363
2020	3,213	(63)	42	254	233	7.3%	3,446
2021	1,893	948	319	(51)	1,216	64.2%	3,109
<b>Grand Total</b>	<b>9,646</b>	<b>621</b>	<b>2,180</b>	<b>(76)</b>	<b>2,725</b>	<b>28.3%</b>	<b>12,371</b>