



**NEW BRUNSWICK RISK SHARING POOL**

**DECEMBER 2019 OPERATIONAL REPORT**

**ACTUARIAL HIGHLIGHTS**

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

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## 1 Summary

### Key Points

(a) The month’s activities were generally aligned with projections from last month.

#### 1.1 Valuation Schedule (Fiscal Year 2019)

The December 2019 Operational Report leverages actuarial assumptions consistent with last month (that is, it does not reflect the results of an updated valuation). The table below summarizes the implemented valuations for fiscal year 2019.

<b>NEW BRUNSWICK RISK SHARING POOL FISCAL YEAR 2019 – 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, 2018 (completed)	2.29% mfad 25 bp	Oct. 2018	updated valuation (roll forward): accident year 2018 loss ratio <u>increased</u> 0.5 points to 74.7%; discount rate <u>increased</u> 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> 36 basis points; no change to selected margins for adverse deviations
Mar. 31, 2019 (completed)	1.44% mfad 25 bp	May 2019	updated valuation (roll forward): accident year 2019 loss ratio <u>increased</u> 1.0 points to 76.5%; discount rate <u>decreased</u> 49 basis points; no change to selected margins for adverse deviations
Jun. 30, 2019 (completed)	1.41% mfad 25 bp	Aug. 2019	updated valuation: accident year 2019 loss ratio <u>decreased</u> 2.9 points to 73.6%; discount rate <u>decreased</u> 3 basis points; selected margins for adverse deviations were updated
Sep. 30, 2019 (completed)	1.43% mfad 25 bp	Oct. 2019	update 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

Under the proposed schedule for fiscal year 2019, the “off-half” valuation quarters ending March 31, 2019 and September 30, 2019 would not reflect a full valuation update of assumptions, but would rather “roll-forward” key assumptions from the previous valuation.

#### 1.2 Appointed Actuary and Hybrid Actuarial Services Model

Mr. Cosimo Pantaleo of Ernst & Young LLP (EY) has assumed the Appointed Actuary’s role effective as of October 24, 2019, from Liam McFarlane (the Appointed Actuary from June 1, 2013), due to Mr. McFarlane’s departure from EY. It is anticipated that Mr. Pantaleo will be formally appointed by the

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.

### **1.3 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation<sup>1</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 decisions or changes for inclusion here.

### **1.4 Harmonized Sales Tax**

There have been no changes in these descriptions since last month’s Highlights other than updated valuation reference.

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

No explicit adjustments have been made to the valuation assumptions from the **most recent** valuation (September 30, 2019), on the basis that current estimates have implicitly incorporated the impact.

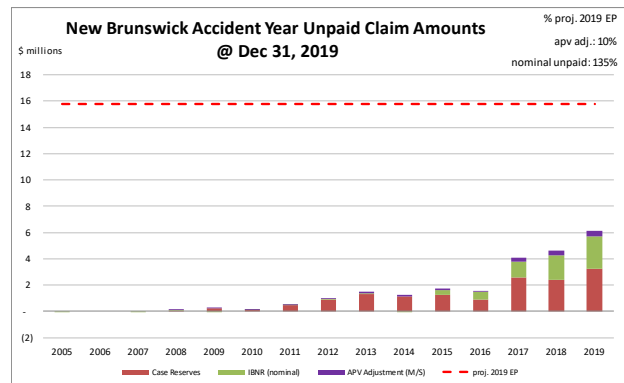
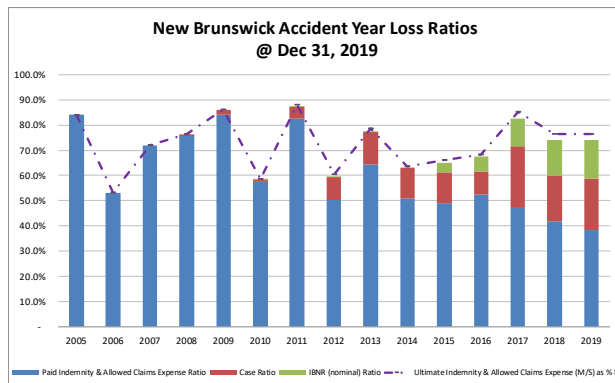
### **1.5 Current Provision Summary**

The charts at the top of the next page show the current levels of claim liabilities<sup>2</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 2019 full year earned premium (the red hash-mark line) to provide some perspective.

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<sup>1</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>.

<sup>2</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.



"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 (\$1.6 million – see table below) represents 10% of the earned premium projected for the full year 2019 (see the upper right corner of the right chart above). If our current estimates of the nominal unpaid amounts prove to match actual claims payments, the actuarial present value adjustments will be released into the net operating result over future periods.

claim liabilities (\$000s)

	amt	%
case	14,685	64.4%
ibnr	6,554	28.7%
M/S apv adjust.	1,561	6.8%
<b>M/S total</b>	<b>22,800</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 66% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 79% of the M/S claim liabilities

are related to accident years 2015-2019 inclusive (i.e. the most recent 5 accident years), and 2% is related to accident years 2009 and prior (i.e. prior to the most recent 10 accident years).

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

premium liabilities (\$000s)

	amt	%
unearned prem	8,774	124.8%
prem def/(dpac)	(2,143)	(30.5%)
M/S apv adjust.	397	5.6%
<b>M/S total</b>	<b>7,028</b>	<b>100.0%</b>

policy liabilities (\$000s)

	amt	%
claim	21,239	71.2%
premium	6,631	22.2%
M/S apv adjust.	1,958	6.6%
<b>M/S total</b>	<b>29,828</b>	<b>100.0%</b>

## 2 Activity During the Month of December 2019

### 2.1 Recorded Premium and Claims Activity

The table at the top of the next page summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month's Operational Report<sup>3</sup>.

<sup>3</sup>There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

*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	61	(45)	77	140	138	95
2017	(1)	(1)	16	(173)	(151)	(4)	(135)	(177)
2018	(5)	(5)	85	(134)	(3)	137	82	3
2019	1,417	0	870	332	14	(314)	884	18
<b>TOTAL</b>	<b>1,412</b>	<b>(5)</b>	<b>1,032</b>	<b>(20)</b>	<b>(63)</b>	<b>(42)</b>	<b>969</b>	<b>(62)</b>

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

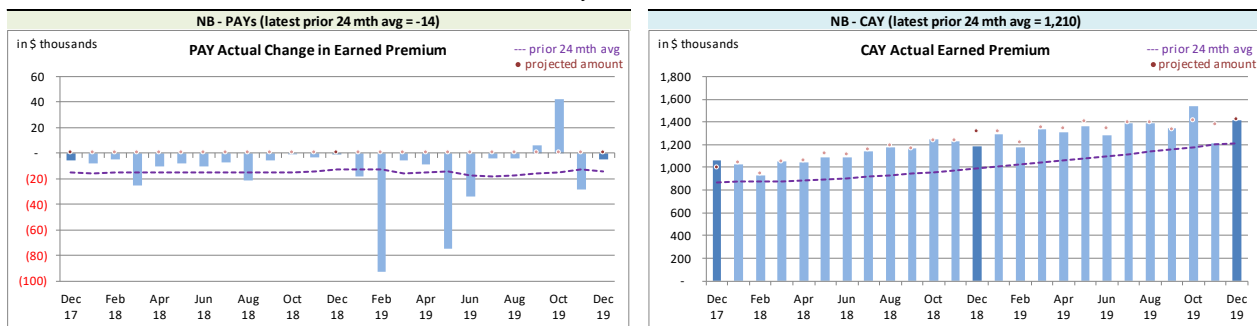
It is unusual to see actual earned premium transactions affecting prior accident years by this time in the calendar year – the prior accident years changes in the month reflect activity undertaken by a member reflecting recent audit findings.

Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural “process variance” (i.e. random variation), and this is particularly true where volumes are low as found in this RSP. Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of the variance. Commentary from our review is provided in the sub-sections that follow.

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

The charts below 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*



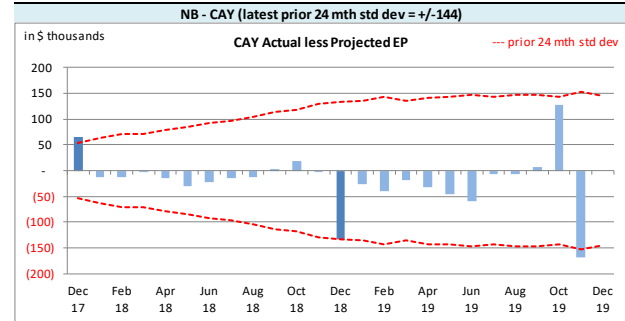
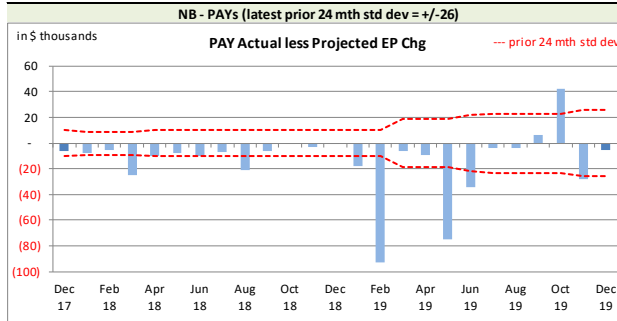
**Earned premium** changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels generally occur at the beginning of each year.

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

<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.

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*



On Latest \$ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(14)	1,210
std dev	26	144
A-P <> std dev	8	2
% <> std dev	32.0%	8.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	no better	better

We project **earned premium** changes from known unearned premium 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. In addition to the PAYs' bias,

the CAY has also shown bias<sup>6</sup>, 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.

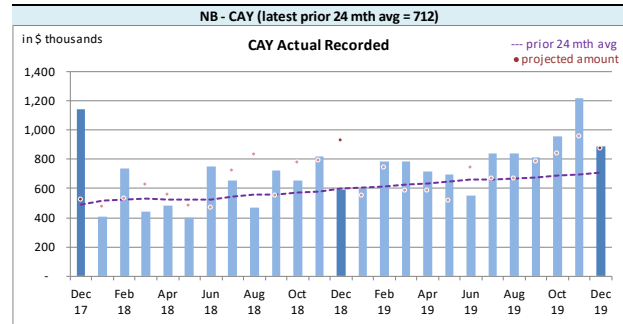
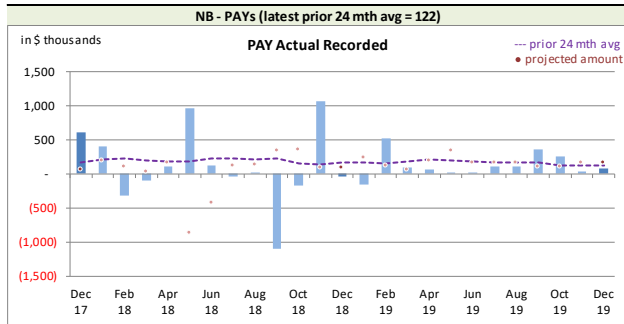
**2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense**

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

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

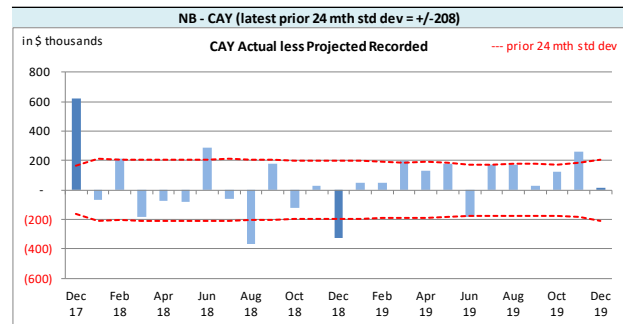
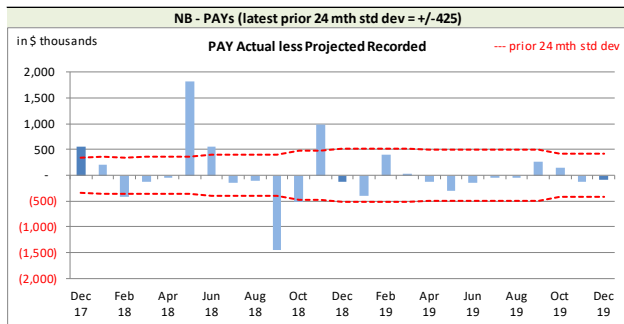
<sup>6</sup>We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (25 in this case) and 50% probability of success. The rolling 25-month CAY variances at December 2019 has only 5 months where the actual was higher than projected, and as the 95% confidence range is 8 to 17, bias continues to be indicated.

*New Brunswick RSP Actual Recorded by Calendar Month*



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

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



On Latest \$ thousands			
	Recorded	PAYS	CAY
Mthly Avg Recorded (prior 24 mths)	122	122	712
std dev	425	425	208
A-P <> std dev	7	7	8
% <> std dev	28.0%	28.0%	32.0%
norm <> std dev	31.7%	31.7%	31.7%
performance vs 24-mth avg:	no better	no 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, 28% 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 rolling 25-month basis (9 of 25 variances are positive).

The current accident year (CAY) **recorded** variances fell outside of one standard deviation 32% of the time over the last 25 calendar months (see table above), 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 (16 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, additional charts below 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 chart above) occur for several possible reasons:

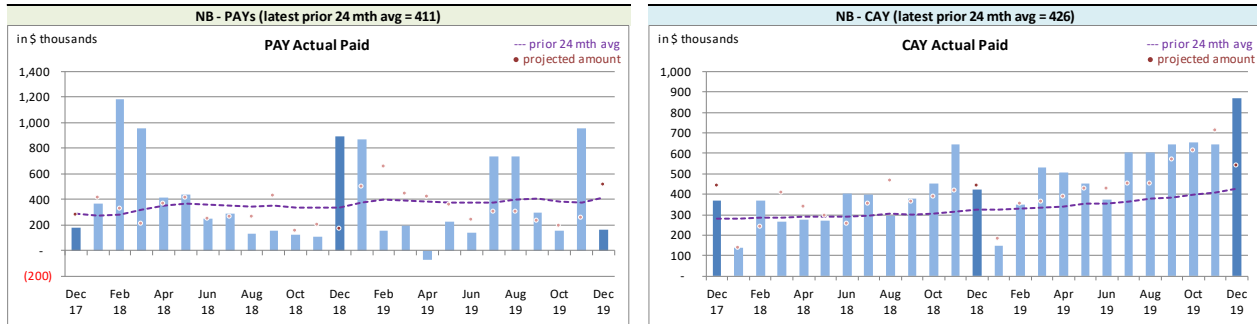
- to offset actual recorded activity (through loss ratio matching);
- the annual switchover as a CAY becomes a PAY (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs’ ultimates (will show up as a beginning IBNR change one month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

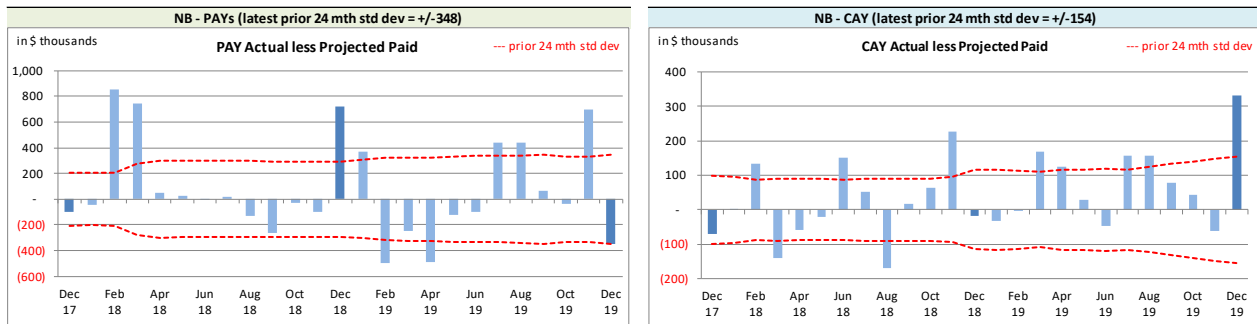
<sup>7</sup>Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR 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 charts 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			
<b>Paid</b>	PAYs	CAY	
Mthly Avg Paid (prior 24 mths)	411	426	
std dev	348	154	
A-P <> std dev	10	10	
% <> std dev	40.0%	40.0%	
norm <> std dev	31.7%	31.7%	
performance vs 24-mth avg:	worse	worse	

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 table on the left above), 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 (11 of 25 variances are positive).

The PAYs **paid** variances were outside of the one standard deviation band this month (see left chart above). The activity was reviewed and attributed to process variance.

The current accident year (CAY) **paid** variances fell outside of one standard deviation 36% 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. 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** variances were outside of the one standard deviation band this month (see left chart at the bottom of the previous page). The activity was reviewed and attributed to process variance.

We have included, for reference, additional charts below 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 chart above) 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

<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”.

Provisions for Adverse Deviations. The loss ratios and the factors used to determine the current month’s provisions and projections were based on the applicable valuation.

The table 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		actuarial present value adjustments						IBNR + actuarial present value adjustments	
		IBNR		Discount Amount		Provisions for Adverse Deviations			
Accident Year	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	
Prior	1,020	(94)	(210)	-	758	1	1,568	(93)	
2017	1,173	177	(170)	(8)	469	22	1,472	191	
2018	1,882	(6)	(206)	(6)	528	16	2,204	4	
2019	2,479	(17)	(281)	16	673	(38)	2,871	(39)	
TOTAL	6,554	60	(867)	2	2,428	1	8,115	63	

The IBNR provision is \$60 thousand higher than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1.

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

- (i) the change projected last month;
- (ii) the additional change due to variances in earned premium (because we apply a loss ratio to earned premium in determining ultimate level) and/or recorded claims (as IBNR is calculated as ultimate less recorded) differences; and
- (iii) the additional change due to valuation implementation impacts (as applicable)

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

The table at the top of the next page summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in this month’s Operational Report and the one-month projections from last month’s Report. This RSP is in a deferred policy acquisition cost asset position (shown as a negative amount) prior to and after actuarial present value adjustments. Actuarial present value adjustments decrease the asset value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance.

*New Brunswick RSP Actual vs Projected Summary: Premium Deficiency / (DPAC) Amounts (\$ thousands)*

Table 03

	Premium Deficiency / (Deferred Policy Acquisition Costs)		actuarial present value adjustments		Premium Deficiency / (DPAC) including actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
balance:	(2,143)	(27)	397	4	(1,746)	(23)
balance as % unearned premium:	(24.4%)	-	4.5%	-	(19.9%)	-
actual unearned premium:	8,774					
less projected:	99					

### 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 table at the top of the next page 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 75.3% rather than 74.2% (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.)

<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.

*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	436	2.8%	173	1.1%	609	3.9%	(21)	(0.5%)
CAY	11,886	75.3%	392	2.5%	12,278	77.8%	1,065	(0.2%)
TOTAL	12,321	78.1%	565	3.6%	12,886	81.6%	1,044	(0.8%)

(“% EP” based on 2019 calendar year-to-date earned premium; ratios may not total due to rounding)

In general, prior accident years (PAYs) changes from last month are due to the release of the actuarial present value adjustments with claims payments, except when valuations are implemented. The loss ratio change year-to-date in Table 04 reflects not only changes in the prior accident year levels, but also the increase in the calendar year-to-date earned premium with an additional month’s earned premium.

For the current accident year (CAY), changes in the year-to-date total reflects the additional month’s exposure and regular changes to actuarial present value adjustments as the year ages.

## 5 Current Operational Report – Additional Exhibits

Section 6 provides exhibits pertaining to the actuarial provisions reflected in the current month’s Operational Report.

IBNR (including actuarial present value adjustments) presented in section 6, Exhibit A, were derived on a discounted basis, and therefore reflect the time value of money and include an explicit provision for adverse deviations in accordance with accepted actuarial practice in Canada.

IBNR presented in section 6, Exhibit B, does NOT include any actuarial present value adjustments. The “Total IBNR” from this exhibit is shown in the Operational Report as “Undiscounted IBNR”.

The ultimate loss ratios detailed in section 6, Exhibit B, refer to the estimates derived on the basis of various actuarial methodologies applied to the experience of the New Brunswick Risk Sharing Pool for the purposes of the most recent quarterly valuation. As discussed in section 3, IBNR reflected in the current month’s Operational Report was derived as the difference between the estimated ultimate for the claims amount (i.e. earned premium x ultimate loss ratio) and the associated current recorded amounts (life-to-date payments plus current case reserves).

## 6 EXHIBITS

The exhibits listed below are provided on the pages that follow:

- EXHIBIT A IBNR for Member Sharing – includes Actuarial Present Value Adjustments
- EXHIBIT B IBNR
- EXHIBIT C Premium Liabilities
- EXHIBIT D Projected Year-end Policy Liabilities
- EXHIBIT E Discount Rate & Margins for Adverse Deviations
- EXHIBIT F Interest Rate Sensitivity
- EXHIBIT G Components of IBNR Change During Month

EXHIBIT A

IBNR for Member Sharing – includes Actuarial Present Value Adjustments

TABLE EXHIBIT A

		Amounts in \$000s				
IBNR + M/S actuarial present value adjustments	Accident Year	Actual Nov. 2019	Actual Dec. 2019	Projected Jan. 2020	Projected Feb. 2020	Projected Dec. 2020
	2005	(2)	(2)	(2)	(2)	(2)
	2006	-	-	-	-	-
	2007	(4)	(4)	(4)	(4)	(4)
	2008	11	11	12	12	11
	2009	16	16	18	17	14
	2010	29	29	29	29	25
	2011	49	49	50	49	42
	2012	103	117	115	112	96
	2013	181	153	155	151	131
discount rate	2014	65	59	62	61	51
1.43%	2015	483	472	467	458	382
	2016	782	668	663	648	498
interest rate margin	2017	1,340	1,472	1,479	1,424	1,125
25 basis pts	2018	2,297	2,204	2,070	2,006	1,553
	2019	2,690	2,871	2,678	2,649	2,103
	2020	-	-	489	685	2,922
<b>TOTAL</b>		<b>8,040</b>	<b>8,115</b>	<b>8,281</b>	<b>8,295</b>	<b>8,947</b>
Change			75	166	14	

*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 Nov. 2019	Actual Dec. 2019	Projected Jan. 2020	Projected Feb. 2020	Projected Dec. 2020
	84.0%	2005	(2)	(2)	(2)	(2)	(2)
	53.2%	2006	-	-	-	-	-
	72.0%	2007	(4)	(4)	(4)	(4)	(4)
	76.3%	2008	4	4	4	4	4
	86.1%	2009	(4)	(4)	(4)	(4)	(4)
	58.4%	2010	20	20	20	20	18
	87.5%	2011	11	11	11	11	10
	59.7%	2012	28	42	41	40	34
	77.5%	2013	71	48	47	46	40
	62.8%	2014	(20)	(25)	(24)	(24)	(22)
	64.9%	2015	366	356	349	342	283
	67.4%	2016	687	574	557	546	411
	82.5%	2017	1,038	1,173	1,161	1,115	865
	74.1%	2018	1,967	1,882	1,750	1,697	1,289
	74.2%	2019	2,311	2,479	2,305	2,282	1,825
	73.0%	2020	-	-	430	583	2,467
		<b>TOTAL</b>	<b>6,473</b>	<b>6,554</b>	<b>6,641</b>	<b>6,652</b>	<b>7,214</b>
		Change		81	87	11	

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



**EXHIBIT C**
**Premium Liabilities**

TABLE EXHIBIT C

Premium Liabilities	Amounts in \$000s				
	Actual	Actual	Projected	Projected	Projected
	Nov. 2019	Dec. 2019	Jan. 2020	Feb. 2020	Dec. 2020
(1) unearned premium (UP)	9,114	8,774	8,305	7,922	8,339
<b>FOR MEMBER SHARING</b>					
(2) expected future costs ratio {% of (1)}	80.3%	80.1%	80.1%	80.1%	82.2%
(3) expected future costs {(1) x (2)}	7,317	7,028	6,652	6,348	6,857
(4) premium deficiency / (deferred policy acquisition cost)	(1,797)	(1,746)	(1,653)	(1,574)	(1,482)
<b>Excluding Actuarial Present Value Adjustments</b>					
(5) expected future costs ratio {% of (1)}	75.8%	75.6%	75.6%	75.6%	77.6%
(6) expected future costs {(1) x (5)}	6,905	6,631	6,277	5,990	6,469
(7) premium deficiency / (deferred policy acquisition cost)	(2,209)	(2,143)	(2,028)	(1,932)	(1,870)

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)						TOTAL	
	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs		
2005	-	(2)	(2)	-	-	-	-	-	-	(2)	
2006	-	-	-	-	-	-	-	-	-	-	
2007	-	(4)	(4)	-	-	-	-	-	-	(4)	
2008	78	4	82	(1)	-	8	-	8	7	89	
2009	254	(4)	250	(5)	1	25	(1)	24	20	270	
2010	91	20	111	(2)	-	11	-	11	9	120	
2011	470	11	481	(11)	2	48	(1)	47	38	519	
2012	900	42	942	(20)	3	94	(2)	92	75	1,017	
2013	1,316	48	1,364	(33)	5	136	(3)	133	105	1,469	
2014	1,158	(25)	1,133	(32)	6	113	(3)	110	84	1,217	
2015	1,254	356	1,610	(48)	8	161	(5)	156	116	1,726	
2016	910	574	1,484	(58)	10	148	(6)	142	94	1,578	
2017	2,597	1,173	3,770	(170)	26	464	(21)	443	299	4,069	
2018	2,408	1,882	4,290	(206)	34	519	(25)	494	322	4,612	
PAYs (sub-total):	11,436	4,075	15,511	(586)	95	1,727	(67)	1,660	1,169	16,680	
CAY (2019)	3,251	2,479	5,730	(281)	46	659	(32)	627	392	6,122	
claims liabilities:	14,687	6,554	21,241	(867)	141	2,386	(99)	2,287	1,561	22,802	
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*	
premium liabilities:	8,774	(2,143)	6,631	(205)	32	589	(19)	570	397	7,028	
policy liabilities:			27,872	(1,072)	173	2,975	(118)	2,857	1,958	29,830	

\*Total may not be sum of parts, as apvs apply to future costs within UPR

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 (Sep. 30,  
2019)

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%	8.7%	10.0%
2017	12.5%	10.0%	10.7%	12.3%
2018	12.5%	10.0%	12.5%	12.1%
2019	12.3%	10.0%	5.6%	11.5%
2020	11.7%	10.0%	5.1%	9.2%
<u>prem liab</u>	<u>11.7%</u>	<u>10.0%</u>	<u>5.1%</u>	<u>9.2%</u>

discount rate: 1.43%  
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 (1.43%), the prior valuation assumption (1.41%) 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

AY	Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2019 projected Unpaid							
	0.43%	0.93%	1.43%	1.93%	2.43%	2.93%	1.41%	2.29%
2005	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-
2008	79	78	78	77	77	76	78	77
2009	225	223	222	220	219	217	222	219
2010	109	108	107	106	106	105	107	106
2011	469	465	462	458	454	451	462	455
2012	876	870	863	857	851	845	864	853
2013	2,244	2,225	2,206	2,188	2,170	2,153	2,207	2,175
2014	1,153	1,141	1,130	1,120	1,109	1,099	1,131	1,112
2015	1,636	1,619	1,602	1,585	1,569	1,553	1,602	1,573
2016	1,565	1,543	1,522	1,502	1,481	1,462	1,523	1,487
2017	4,157	4,089	4,024	3,960	3,898	3,838	4,026	3,915
2018	4,691	4,610	4,532	4,456	4,383	4,312	4,535	4,403
2019	6,850	6,728	6,612	6,498	6,388	6,283	6,616	6,419
<b>Total</b>	<b>24,054</b>	<b>23,699</b>	<b>23,360</b>	<b>23,027</b>	<b>22,705</b>	<b>22,394</b>	<b>23,373</b>	<b>22,794</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							
	0.43%	0.93%	1.43%	1.93%	2.43%	2.93%	1.41%	2.29%
Total	694	339	-	(333)	(655)	(966)	13	(566)
	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							
	0.43%	0.93%	1.43%	1.93%	2.43%	2.93%	1.41%	2.29%
2005	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-
2008	1.3%	-	-	(1.3%)	(1.3%)	(2.6%)	-	(1.3%)
2009	1.4%	0.5%	-	(0.9%)	(1.4%)	(2.3%)	-	(1.4%)
2010	1.9%	0.9%	-	(0.9%)	(0.9%)	(1.9%)	-	(0.9%)
2011	1.5%	0.6%	-	(0.9%)	(1.7%)	(2.4%)	-	(1.5%)
2012	1.5%	0.8%	-	(0.7%)	(1.4%)	(2.1%)	0.1%	(1.2%)
2013	1.7%	0.9%	-	(0.8%)	(1.6%)	(2.4%)	0.0%	(1.4%)
2014	2.0%	1.0%	-	(0.9%)	(1.9%)	(2.7%)	0.1%	(1.6%)
2015	2.1%	1.1%	-	(1.1%)	(2.1%)	(3.1%)	-	(1.8%)
2016	2.8%	1.4%	-	(1.3%)	(2.7%)	(3.9%)	0.1%	(2.3%)
2017	3.3%	1.6%	-	(1.6%)	(3.1%)	(4.6%)	0.0%	(2.7%)
2018	3.5%	1.7%	-	(1.7%)	(3.3%)	(4.9%)	0.1%	(2.8%)
2019	3.6%	1.8%	-	(1.7%)	(3.4%)	(5.0%)	0.1%	(2.9%)
<b>Total</b>	<b>3.0%</b>	<b>1.5%</b>	<b>-</b>	<b>(1.4%)</b>	<b>(2.8%)</b>	<b>(4.1%)</b>	<b>0.1%</b>	<b>(2.4%)</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 Prior Month Actual	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
2005	(2)	-	-	-	-	-	(2)
2006	-	-	-	-	-	-	-
2007	(4)	-	-	-	-	-	(4)
2008	11	-	-	-	-	-	11
2009	16	-	-	-	-	-	16
2010	29	-	-	-	-	-	29
2011	49	-	-	-	-	-	49
2012	103	(1)	15	-	14	13.6%	117
2013	181	(2)	(26)	-	(28)	(15.5%)	153
2014	65	(1)	(5)	-	(6)	(9.2%)	59
2015	483	(19)	8	-	(11)	(2.3%)	472
2016	782	(29)	(85)	-	(114)	(14.6%)	668
2017	1,340	(59)	191	-	132	9.9%	1,472
2018	2,297	(97)	4	-	(93)	(4.0%)	2,204
2019	2,690	220	(39)	-	181	6.7%	2,871
<b>Grand Total</b>	<b>8,040</b>	<b>12</b>	<b>63</b>	<b>-</b>	<b>75</b>	<b>0.9%</b>	<b>8,115</b>

EXHIBIT G

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	(4)	-	-	-	-	-	(4)	
2008	4	-	-	-	-	-	4	
2009	(4)	-	-	-	-	-	(4)	
2010	20	-	-	-	-	-	20	
2011	11	-	-	-	-	-	11	
2012	28	-	14	-	14	50.0%	42	
2013	71	(1)	(22)	-	(23)	(32.4%)	48	
2014	(20)	-	(5)	-	(5)	25.0%	(25)	
2015	366	(15)	5	-	(10)	(2.7%)	356	
2016	687	(27)	(86)	-	(113)	(16.4%)	574	
2017	1,038	(42)	177	-	135	13.0%	1,173	
2018	1,967	(79)	(6)	-	(85)	(4.3%)	1,882	
2019	2,311	185	(17)	-	168	7.3%	2,479	
<b>Grand Total</b>	<b>6,473</b>	<b>21</b>	<b>60</b>	<b>-</b>	<b>81</b>	<b>1.3%</b>	<b>6,554</b>	