

NOVA SCOTIA RISK SHARING POOL

APRIL 2021 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

Related Bulletin: [F2021-037 NS RSP April 2021 Operational Report](#)

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ACTUARIAL HIGHLIGHTS

RSP NOVA SCOTIA

OPERATIONAL REPORT

APRIL 2021

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1 Summary

Note to members: we are currently reviewing our member reporting requirements and intend to provide the **Actuarial Highlights quarterly instead of the current monthly reporting**, starting with the May 2021 operational reporting and aligned with the valuation schedule; please contact us with any questions or concerns in regards to this matter.

1.1 Valuation Schedule (Fiscal Year 2021)

The April 2021 Operational Report leverages actuarial assumptions consistent with last month (that is, it does not reflect the results of an updated valuation). The following table summarizes the valuation implementations scheduled for fiscal year 2021.

NOVA SCOTIA RISK SHARING POOL FISCAL YEAR 2021 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep 30, 2020 (completed)	0.19% mfad ¹ 25 bp	Oct. 2020	update valuation (roll-forward): accident year 2020 loss ratio <u>increased</u> 0.2 points to 87.7%; discount rate <u>decreased</u> 4 basis points; no change to selected margins for adverse deviations
Dec. 31, 2020 (completed)	0.22% mfad 25 bp	Mar. 2021	update valuation: accident year 2020 loss ratio <u>decreased</u> 9.4 points to 78.3% and accident year 2021 loss ratio <u>decreased</u> 8.1 points to 91.3%; discount rate <u>increased</u> 3 basis points; no change to selected margins for adverse deviations
Mar. 31, 2021	% mfad -- bp	May 2021	update valuation (roll-forward):
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 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 Appointed Actuary and Hybrid Actuarial Services Model

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

¹ 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%.

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.

1.3 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation

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

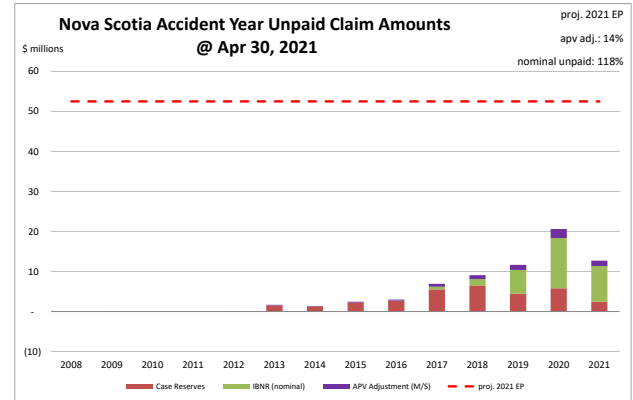
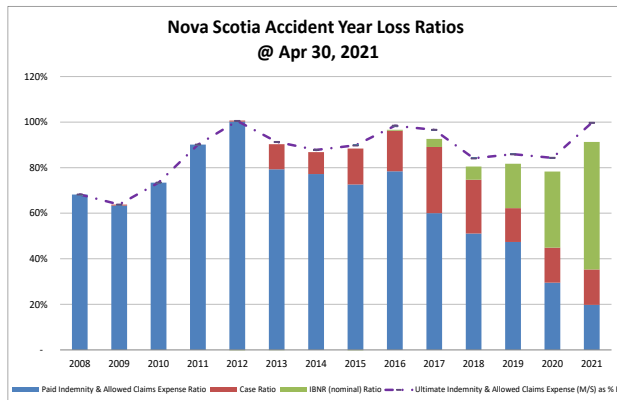
Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent (i.e. within the last five years) changes are provided below.

The **Nova Scotia Court of Appeal** confirmed, in a unanimous decision released on **January 18, 2019** in relation to **Sparks v Holland (2019 NSCA 3)**, that future Canada Pension Plan (CPP) disability benefits are deductible from future income loss awards in motor-vehicle accident claims in that province. Sparks sustained injuries as a result of a motor vehicle accident in Nova Scotia and sought damages for personal injuries and loss of income. The decision supported an earlier decision (*Tibbets v Murphy*, 2017 NSCA 35) that both past and future CPP disability benefits are deductible under section 133A of the Insurance Act. At the current time, no adjustments have been made to our valuation estimates as a result of this decision, and at this point we do not believe this judgment will have a further impact on our valuation results.

1.4 Current Provision Summary

The following charts show the current levels of claim liabilities² 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.

²Claim 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 (\$7.4 million – see the following table) represents 14% 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.

claim liabilities (\$000s)

	amt	%
case	32,520	46.8%
ibnr	29,643	42.6%
M/S apv adjust.	7,360	10.6%
M/S total	69,523	100.0%

The table to the left breaks down the Member Statement (M/S) claim liabilities total into component parts, showing that the majority of the claim liabilities for this RSP is in case reserves. Approximately 73% of the IBNR balance relates to accident years 2020 and 2021 (see Exhibit B).

Approximately 88% of the M/S total claim liabilities are related to accident years 2017-2021 inclusive (i.e. the most recent 5 accident years), and just over 0% 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	24,053	97.6%
prem def/(dpac)	(1,601)	(6.5%)
M/S apv adjust.	2,198	8.9%
M/S total	24,650	100.0%

policy liabilities (\$000s)

	amt	%
claim	62,163	66.0%
premium	22,452	23.8%
M/S apv adjust.	9,558	10.1%
M/S total	94,173	100.0%

2 Activity During the Month of April 2021

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 Report³.

Nova Scotia 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	(1)	(1)	299	60	(191)	11	108	71
2019	(1)	(1)	320	202	(52)	(119)	268	83
2020	(16)	(16)	77	(292)	(74)	(83)	3	(375)
2021	4,047	(192)	1,051	(109)	628	(239)	1,679	(348)
TOTAL	4,030	(209)	1,747	(139)	310	(431)	2,057	(570)

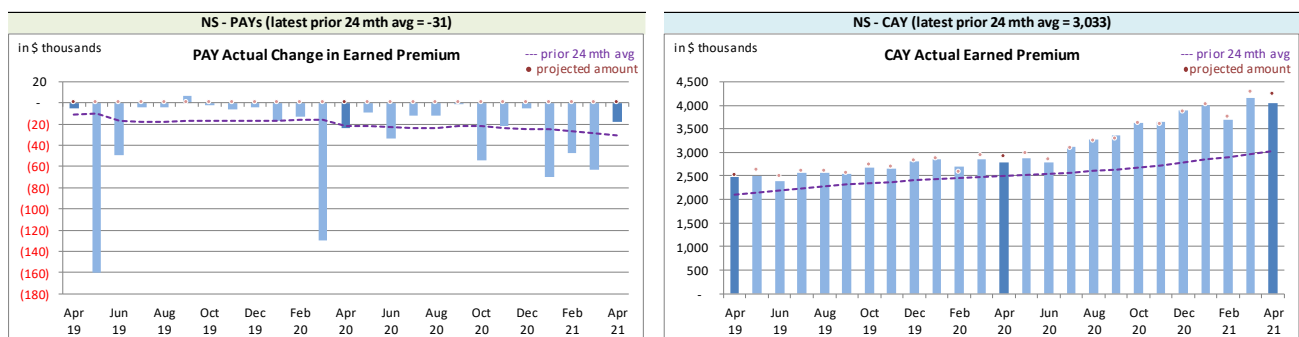
(Recorded transaction amounts exclude IBNR & other actuarial provisions)

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**⁴ 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.

*Nova Scotia RSP Actual **Earned Premium** by Calendar Month*



Earned premium changes during a given calendar month in relation to prior accident years tend to

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

⁴Premium 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.

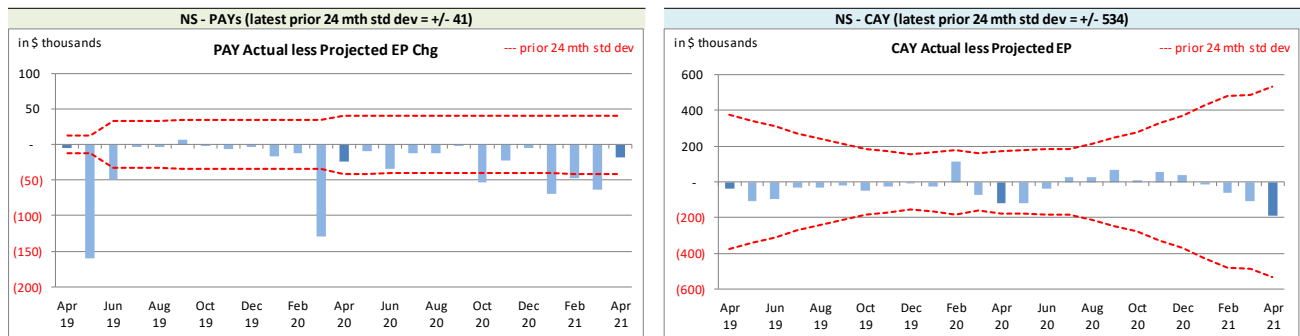
be at modest levels, although relatively high levels generally occur at the beginning of each year.

On Latest \$ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(31)	3,033
std dev	41	534
A-P > std dev	7	-
% > std dev	28.0%	0.0%
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 the 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.

Nova Scotia 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) bias⁵, with actuals generally lower than projected, although the magnitude is not high relative to monthly premium. In addition to the PAYs' bias, the CAY has also shown bias⁶, with actuals being generally lower than projected, and while we modified our projections processes in response, bias still exists. Over time, we may consider other projection approaches to address the bias issue, but it is not currently deemed as priority.

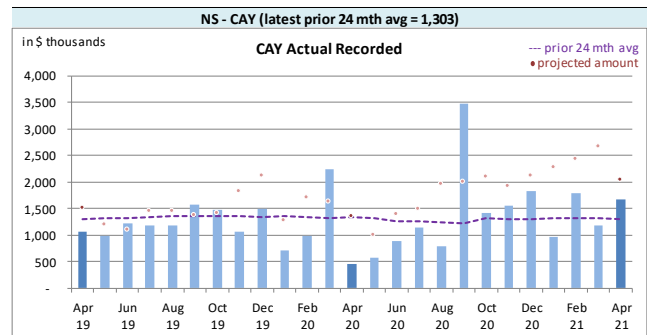
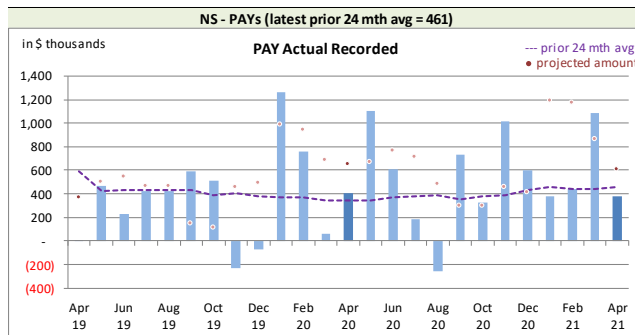
2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

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.

⁵The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

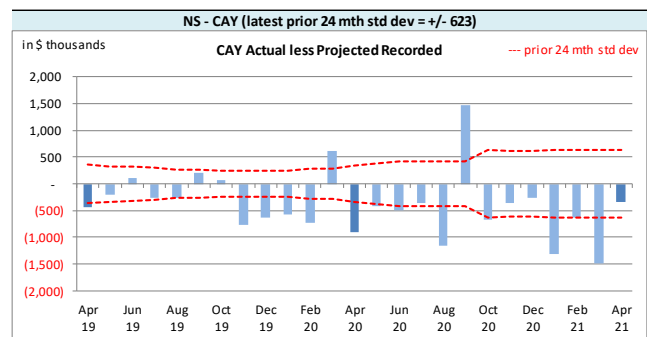
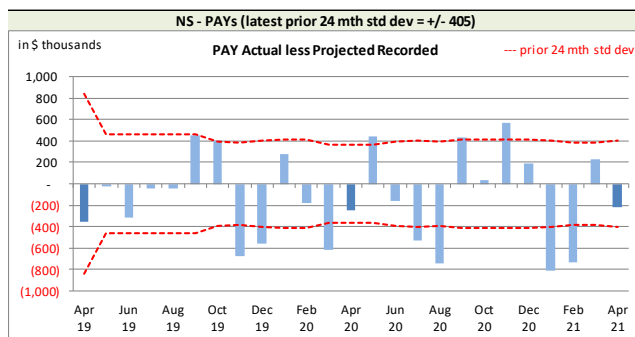
⁶We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (25 in this case) and 50% probability of success. The rolling 25-month CAY variances at April 2021 has only 7 months where the actuals were higher than projected, and as the 95% confidence range is 8 to 17, bias continues to be indicated.

Nova Scotia 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.

Nova Scotia RSP Actual vs Projected Summary: **Recorded** Variances by Calendar Month



On Latest \$ thousands		
	Recorded	
	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	461	1,303
std dev	405	623
A-P <> std dev	11	16
% <> std dev	44.0%	64.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	worse	worse

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, 44% of 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 the preceding table), suggesting the projection process has performed worse 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).

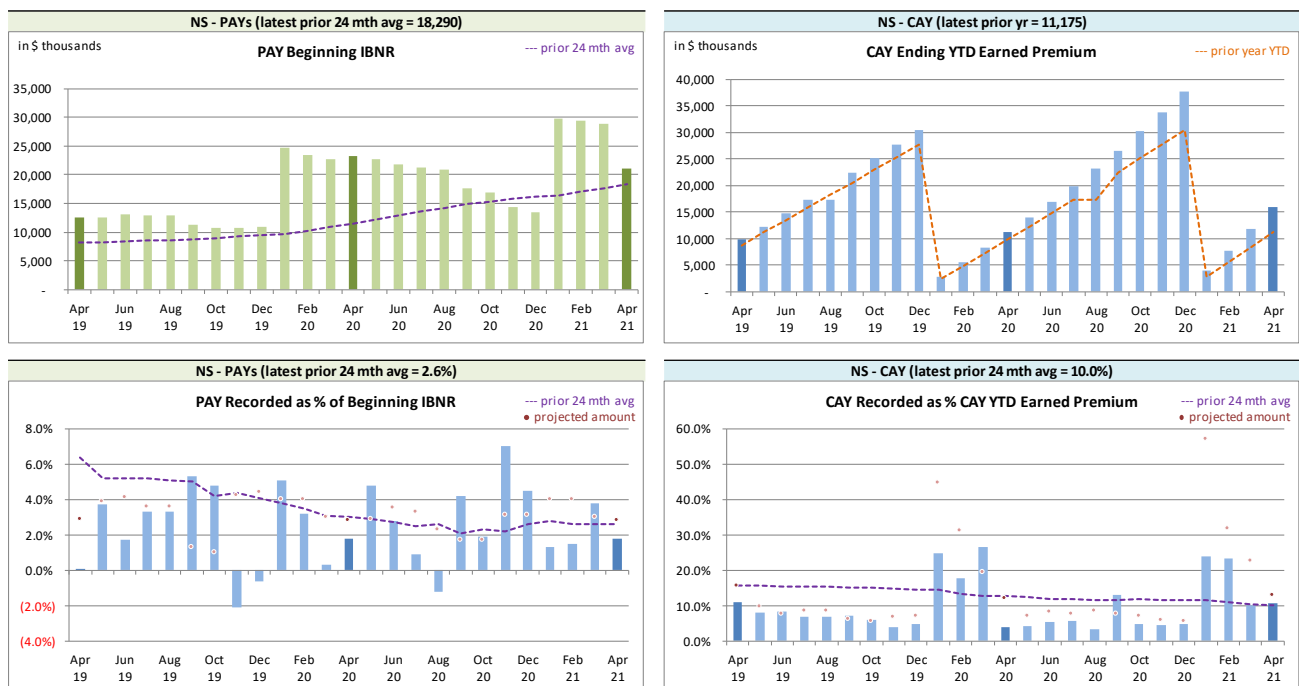
The current accident year (CAY) **recorded** variances fell outside of one standard deviation 64% of the time over the last 25 calendar months (see preceding table on the left), suggesting that the projection process has performed worse than simply projecting the prior 24-month average amount. We are considering ways to improve our projection process as a result, but efforts so far have fallen short. Bias has been indicated at a 95% confidence level on a rolling 25-month basis (5 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. 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), and part will also reflect the maturity level of the RSP.

Nova Scotia RSP Levels that influence⁷ 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:

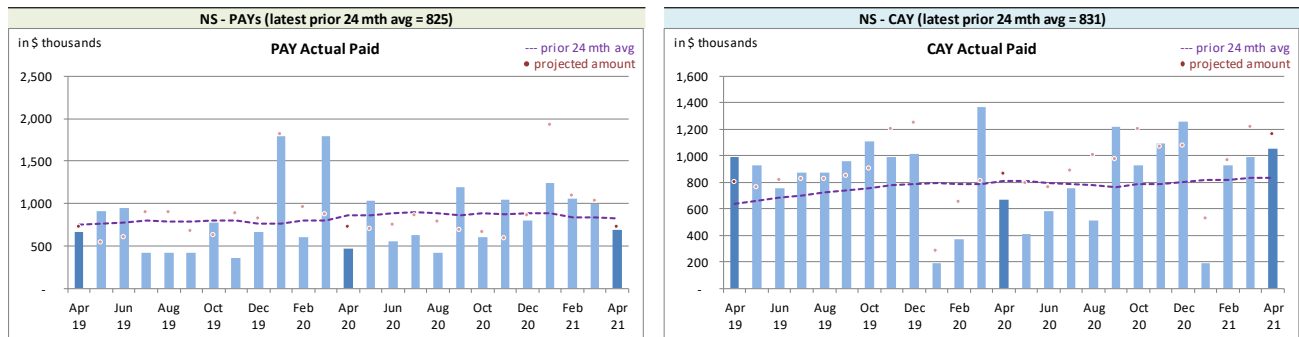
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a CAY becomes a PAY (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs' ultimates (will show up as a beginning IBNR change one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

⁷Our 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.

2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

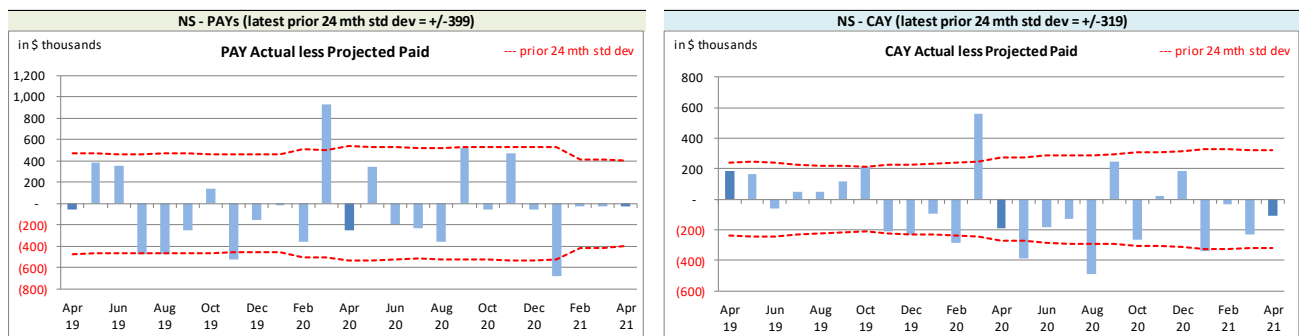
The following charts show actual **paid** activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

*Nova Scotia RSP Actual **Paid** by activity 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.

*Nova Scotia RSP Actual vs Projected Summary: **Paid** Variances by Calendar Month*



On Latest \$ thousands		
	Paid	
Mthly Avg Paid (prior 24 mths)	825	831
std dev	399	319
A-P <> std dev	5	7
% <> std dev	20.0%	28.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	better	no better

With respect to **paid** 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

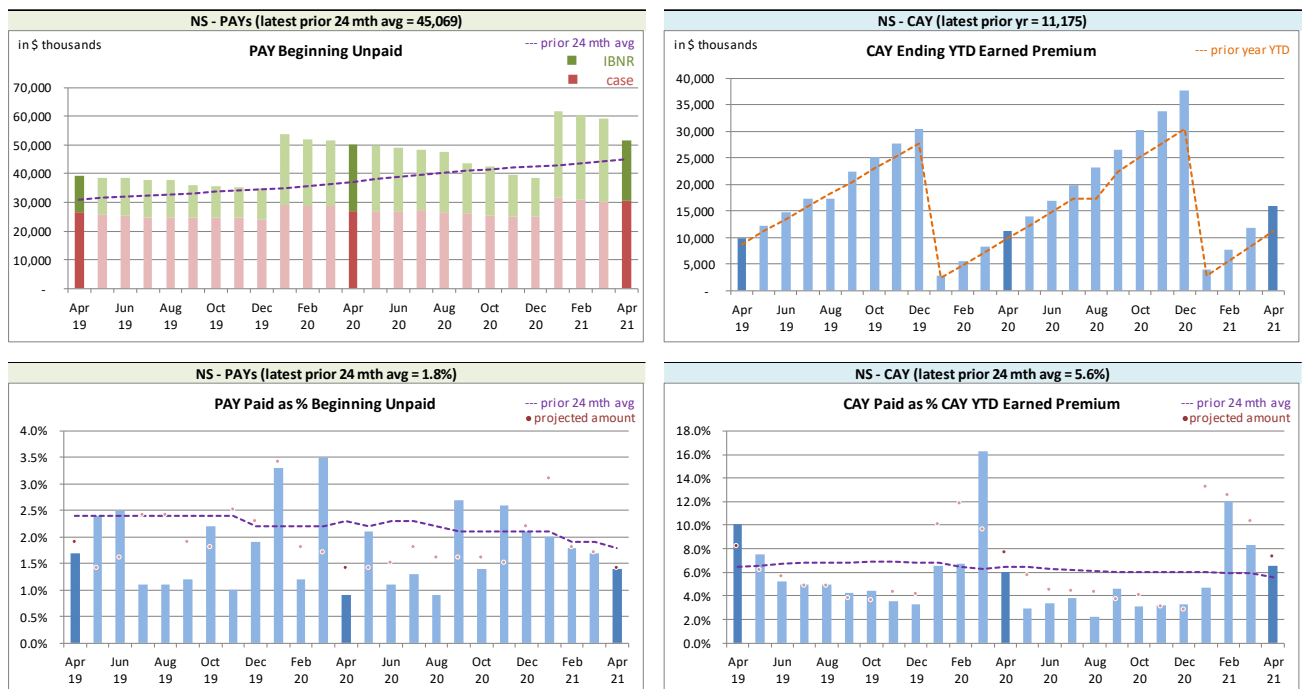
overall terms. That said, 20% of the prior accident years’ (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see preceding table on the left), suggesting the projection process has performed better than simply projecting the prior 24-month average amount (assuming it follows a normal distribution). Bias has been indicated at a 95% confidence level on a rolling 25-month basis (7 of 25 variances are positive).

The current accident year (CAY) **paid** variances fell outside of one standard deviation 28% of the time

over the last 25 calendar months (see the preceding table), 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 (10 of 25 variances are positive).

We have included, for reference, the following charts related to levels influencing **paid** activity. Both case and IBNR increases contribute to the increase of PAY beginning unpaid. This is somewhat expected, given the maturity level of the RSP.

Nova Scotia RSP Levels that influence⁸ 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).

⁸Our 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.

2.2 Actuarial Provisions

An ultimate loss ratio matching method (described in section 3) was used to determine the month's IBNR⁹, 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.

Nova Scotia RSP Actual vs Projected Summary: IBNR and APV Amounts (\$ thousands)

Table 02

Accident Year	actuarial present value adjustments							
	IBNR		Discount Amount		Provisions for Adverse Deviations		IBNR + actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	2,255	(72)	(91)	1	2,601	(8)	4,765	(79)
2019	5,910	(83)	(52)	1	1,324	(25)	7,182	(107)
2020	12,580	362	(110)	(1)	2,356	35	14,826	396
2021	8,898	173	(80)	-	1,412	(8)	10,230	165
TOTAL	29,643	380	(333)	1	7,693	(6)	37,003	375

The IBNR provision is \$0.4 million higher than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1.

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 this month's Operational Report and the one-month projections from last month's Report. This RSP is in a deferred policy acquisition costs position (shown as a negative amount) prior to the actuarial present value adjustments, while in a premium deficiency position (shown as a positive amount) after the actuarial present value adjustments. Actuarial present value adjustments increase the liability value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances

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

noted are mainly driven by the unearned premium variance.

Nova Scotia RSP Actual vs Projected Summary: Premium Deficiency / (DPAC) Amounts (\$ thousands)

Table 03

	Premium Deficiency / (Deferred Policy Acquisition Costs)		actuarial present value adjustments		Premium Deficiency / (DPAC) including actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
balance:	(1,601)	106	2,198	(140)	597	(34)
balance as % unearned premium:	(6.7%)	-	9.1%	-	2.5%	-
actual unearned premium:	24,053					
less projected:	(1,541)					

3 Ultimate Loss Ratio Matching Method

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

- Earned premium to-date
- Ultimate loss¹⁰ ratio per latest valuation
- Estimated ultimate incurred = (a) x (b)
- Recorded indemnity & allowed claims expense to-date
- IBNR = (c) – (d)

4 Calendar Year-to-Date Results

The following table summarizes the calendar year-to-date results for indemnity & allowed claims expenses¹¹, 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 92.5% rather than 91.3% (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 Nova Scotia RSP Summary of Operations due to rounding.)

¹⁰“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).

¹¹Allowed 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.

Nova Scotia 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	(6,796)	(43.3%)	(1,184)	(7.5%)	(7,980)	(50.8%)	(99)	16.7%
CAY	14,514	92.5%	1,332	8.5%	15,846	100.9%	4,005	(0.6%)
TOTAL	7,718	49.2%	148	0.9%	7,866	50.1%	3,906	16.2%

("% 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.

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 Nova Scotia 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 Mar. 2021	Actual Apr. 2021	Projected May. 2021	Projected Jun. 2021	Projected Jul. 2021	Projected Aug. 2021	Projected Sep. 2021	Projected Dec. 2021
	2008	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
	2009	12	12	12	12	12	12	12	11
	2010	4	4	4	4	4	4	4	4
	2011	4	4	4	4	4	4	4	4
	2012	(19)	(19)	(19)	(19)	(19)	(19)	(18)	(16)
	2013	141	137	135	134	131	129	128	121
	2014	124	120	119	117	115	114	113	107
	2015	194	186	183	181	177	175	174	168
discount rate	2016	326	331	327	323	317	313	309	292
0.22%	2017	1,377	1,415	1,387	1,334	1,305	1,286	1,230	1,142
	2018	2,749	2,579	2,516	2,429	2,374	2,337	2,285	2,145
interest rate margin	2019	7,489	7,182	7,109	6,944	6,702	6,514	6,331	5,873
25 basis pts	2020	14,853	14,826	14,467	13,980	13,582	13,310	13,158	12,200
	2021	7,904	10,230	13,024	15,186	17,259	19,183	20,847	25,089
	TOTAL	35,154	37,003	39,264	40,625	41,959	43,358	44,573	47,136
	Change		1,849	2,261	1,361	1,334	1,399	1,215	

Please see Exhibit G, page 1 for Components of Change during Current Month

EXHIBIT B

IBNR

TABLE EXHIBIT B

	Amounts in \$000s								
Ultimate Loss Ratio	Accident Year	Actual Mar. 2021	Actual Apr. 2021	Projected May. 2021	Projected Jun. 2021	Projected Jul. 2021	Projected Aug. 2021	Projected Sep. 2021	Projected Dec. 2021
68.2%	2008	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
63.8%	2009	5	5	5	5	5	5	5	5
73.4%	2010	4	4	4	4	4	4	4	4
90.1%	2011	4	4	4	4	4	4	4	4
100.5%	2012	(23)	(23)	(23)	(23)	(23)	(23)	(22)	(20)
90.2%	2013	(13)	(14)	(14)	(14)	(14)	(14)	(14)	(14)
86.8%	2014	(3)	(6)	(6)	(6)	(6)	(6)	(6)	(6)
88.2%	2015	(25)	(32)	(32)	(32)	(32)	(32)	(31)	(28)
96.6%	2016	56	61	60	59	58	57	55	50
92.7%	2017	628	670	650	617	598	586	568	535
80.5%	2018	1,735	1,590	1,542	1,465	1,421	1,393	1,351	1,260
81.7%	2019	6,178	5,910	5,851	5,699	5,482	5,318	5,158	4,765
78.3%	2020	12,596	12,580	12,265	11,823	11,468	11,239	11,127	10,260
91.3%	2021	6,882	8,898	11,333	13,176	14,864	16,391	17,664	20,691
	TOTAL	28,020	29,643	31,635	32,773	33,825	34,918	35,859	37,502
	Change		1,623	1,992	1,138	1,052	1,093	941	

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 Mar. 2021	Actual Apr. 2021	Projected May. 2021	Projected Jun. 2021	Projected Jul. 2021	Projected Aug. 2021	Projected Sep. 2021	Projected Dec. 2021
(1) unearned premium (UP)	25,496	24,053	24,915	26,602	28,622	30,413	32,463	33,533
FOR MEMBER SHARING								
(2) expected future costs ratio {% of (1)}	102.1%	102.5%	103.0%	103.6%	104.4%	105.1%	105.9%	108.5%
(3) expected future costs {(1) x (2)}	26,040	24,650	25,664	27,571	29,869	31,973	34,380	36,371
(4) premium deficiency / (deferred policy acquisition cost)	544	597	749	969	1,247	1,560	1,917	2,838
Excluding Actuarial Present Value Adjustments								
(5) expected future costs ratio {% of (1)}	93.0%	93.3%	93.8%	94.4%	95.0%	95.7%	96.5%	98.8%
(6) expected future costs {(1) x (5)}	23,717	22,452	23,375	25,110	27,204	29,120	31,312	33,125
(7) premium deficiency / (deferred policy acquisition cost)	(1,779)	(1,601)	(1,540)	(1,492)	(1,418)	(1,293)	(1,151)	(408)

EXHIBIT D

Projected Year-end Policy Liabilities

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

Nova Scotia		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	
2008	-	(3)	(3)	-	-	-	-	-	-	(3)	
2009	59	5	64	-	-	6	-	6	6	70	
2010	-	4	4	-	-	-	-	-	-	4	
2011	-	4	4	-	-	-	-	-	-	4	
2012	61	(20)	41	-	-	4	-	4	4	45	
2013	1,368	(14)	1,354	(4)	4	135	-	135	135	1,489	
2014	1,138	(6)	1,132	(3)	3	113	-	113	113	1,245	
2015	1,993	(28)	1,965	(8)	8	197	(1)	196	196	2,161	
2016	2,383	50	2,433	(7)	7	243	(1)	242	242	2,675	
2017	4,496	535	5,031	(20)	20	609	(2)	607	607	5,638	
2018	5,971	1,260	7,231	(36)	36	889	(4)	885	885	8,116	
2019	4,293	4,765	9,058	(45)	45	1,114	(6)	1,108	1,108	10,166	
2020	5,611	10,260	15,871	(95)	95	1,952	(12)	1,940	1,940	17,811	
PAYs (sub-total):	27,373	16,811	44,184	(218)	218	5,262	(26)	5,236	5,236	49,420	
CAY (2021)	16,842	20,691	37,533	(263)	263	4,429	(31)	4,398	4,398	41,931	
claims liabilities:	44,215	37,502	81,717	(481)	481	9,691	(57)	9,634	9,634	91,351	
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*	
premium liabilities:	33,533	(408)	33,125	(196)	196	3,266	(20)	3,246	3,246	36,371	
*Total may not be sum of parts, as apvs apply to future costs within UPR											
policy liabilities:			114,842	(677)	677	12,957	(77)	12,880	12,880	127,722	

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.

Selected Claims Development MfADs (Dec. 31,
2020)

Accident Year	Third Party Liability Margins	Accident Benefits Margins	Other Coverages Margins	Total Margins
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%	9.9%	10.0%	9.9%
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	12.5%	10.0%	12.5%	12.1%
2018	12.5%	10.0%	11.3%	12.3%
2019	12.5%	10.0%	10.3%	12.3%
2020	12.5%	10.0%	9.3%	12.3%
2021	12.4%	10.0%	5.4%	11.8%
prem liab	12.0%	10.0%	5.1%	10.0%

discount rate: 0.22%
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 (0.22%), the prior valuation assumption (0.19%) and the prior fiscal year end valuation assumption (0.19%) 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%	0.00%	0.22%	0.72%	1.22%	1.72%	0.19%	0.19%
2007	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-
2009	46	46	46	46	46	45	46	46
2010	-	-	-	-	-	-	-	-
2011	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
2012	45	45	45	44	44	43	45	45
2013	799	799	799	794	788	783	799	799
2014	705	705	705	700	695	691	705	705
2015	1,296	1,296	1,296	1,285	1,275	1,265	1,296	1,296
2016	2,221	2,221	2,220	2,204	2,187	2,170	2,220	2,220
2017	4,989	4,989	4,987	4,947	4,904	4,863	4,987	4,987
2018	7,228	7,228	7,224	7,155	7,082	7,013	7,225	7,225
2019	10,148	10,148	10,143	10,024	9,903	9,785	10,143	10,143
2020	18,689	18,689	18,677	18,423	18,164	17,911	18,679	18,679
Total	46,165	46,165	46,141	45,621	45,087	44,568	46,144	46,144
	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%	0.22%	0.72%	1.22%	1.72%	0.19%	0.19%
Total	24	24	-	(520)	(1,054)	(1,573)	3	3
	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%	0.22%	0.72%	1.22%	1.72%	0.19%	0.19%
2007	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	(2.2%)	-	-
2010	-	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-	-
2012	-	-	-	(2.2%)	(2.2%)	(4.4%)	-	-
2013	-	-	-	(0.6%)	(1.4%)	(2.0%)	-	-
2014	-	-	-	(0.7%)	(1.4%)	(2.0%)	-	-
2015	-	-	-	(0.8%)	(1.6%)	(2.4%)	-	-
2016	0.0%	0.0%	-	(0.7%)	(1.5%)	(2.3%)	-	-
2017	0.0%	0.0%	-	(0.8%)	(1.7%)	(2.5%)	-	-
2018	0.1%	0.1%	-	(1.0%)	(2.0%)	(2.9%)	0.0%	0.0%
2019	0.0%	0.0%	-	(1.2%)	(2.4%)	(3.5%)	-	-
2020	0.1%	0.1%	-	(1.4%)	(2.7%)	(4.1%)	0.0%	0.0%
Total	0.1%	0.1%	-	(1.1%)	(2.3%)	(3.4%)	0.0%	0.0%
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

Page 1 of 2

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

RSP Nova Scotia
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			
2008	(3)	-	-	-	-	-	(3)
2009	12	-	-	-	-	-	12
2010	4	-	-	-	-	-	4
2011	4	-	-	-	-	-	4
2012	(19)	-	-	-	-	-	(19)
2013	141	(1)	(3)	-	(4)	(2.8%)	137
2014	124	(1)	(3)	-	(4)	(3.2%)	120
2015	194	(2)	(6)	-	(8)	(4.1%)	186
2016	326	(4)	9	-	5	1.5%	331
2017	1,377	(27)	65	-	38	2.8%	1,415
2018	2,749	(29)	(141)	-	(170)	(6.2%)	2,579
2019	7,489	(200)	(107)	-	(307)	(4.1%)	7,182
2020	14,853	(423)	396	-	(27)	(0.2%)	14,826
2021	7,904	2,161	165	-	2,326	29.4%	10,230
Grand Total	35,154	1,474	375	-	1,849	5.3%	37,003

EXHIBIT G

Page 2 of 2

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

RSP Nova Scotia
AccountCode Desc IBNR - Undiscounted

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			
2008	(3)	-	-	-	-	-	(3)
2009	5	-	-	-	-	-	5
2010	4	-	-	-	-	-	4
2011	4	-	-	-	-	-	4
2012	(23)	-	-	-	-	-	(23)
2013	(13)	-	(1)	-	(1)	7.7%	(14)
2014	(3)	-	(3)	-	(3)	100.0%	(6)
2015	(25)	-	(7)	-	(7)	28.0%	(32)
2016	56	(1)	6	-	5	8.9%	61
2017	628	(19)	61	-	42	6.7%	670
2018	1,735	(17)	(128)	-	(145)	(8.4%)	1,590
2019	6,178	(185)	(83)	-	(268)	(4.3%)	5,910
2020	12,596	(378)	362	-	(16)	(0.1%)	12,580
2021	6,882	1,843	173	-	2,016	29.3%	8,898
Grand Total	28,020	1,243	380	-	1,623	5.8%	29,643