

# **NEW BRUNSWICK RISK SHARING POOL**

# **APRIL 2016 OPERATIONAL REPORT**

# **ACTUARIAL HIGHLIGHTS**

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# **ACTUARIAL HIGHLIGHTS**

# **RSP NEW BRUNSWICK**

# **OPERATIONAL REPORT**

# **APRIL 2016**

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#### 1 Summary

#### **1.1** Valuation Schedule (Fiscal Year 2016)

The April 2016 Operational Report leverages actuarial assumptions consistent with last month (that is, it does not reflect the results of an updated valuation). The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 2016.

		Brunswick Risk S Ar 2016 – Schedu	SHARING POOL JLE OF VALUATIONS
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2015 (completed)	0.73% mfad: 25 bp	Oct. 2015	updated valuation (roll forward): accident year 2015 loss ratio increased 0.6 points to 83.5%; discount rate decreased by 17 basis points; no change to selected margins for adverse deviations
Dec. 31, 2015 (completed)	0.67% mfad: 25 bp	Mar. 2016	updated valuation: accident year 2015 loss ratio decreased 5.0 points to 78.5%; accident year 2016 loss ratio decreased 3.0 points to 77.6%; discount rate decreased by 6 basis points; no change to selected margins for adverse deviations
Mar. 31, 2016		May 2016	update valuation (roll forward):
Jun. 30, 2016		Aug. 2016	update valuation:
Sep. 30, 2016		Oct. 2016	update valuation (roll forward):

Under the proposed schedule for fiscal year 2016, the "off-half" valuation quarters ending March 31, 2016 and September 30, 2016 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

Liam McFarlane of Ernst & Young LLP is Facility Association's Appointed Actuary (effective as of June 1, 2013).

Facility Association operates under a "hybrid" model in relation to the management and provision of actuarial services. Under this model, actuarial services are performed by both Facility Association's internal staff and its external actuarial consulting firm. The hybrid model approach maximizes the efficiency of resource allocation while providing access to additional expertise and capacity as needed.

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

Consideration and assessment of potential impacts of legal decisions and changes in legislation /

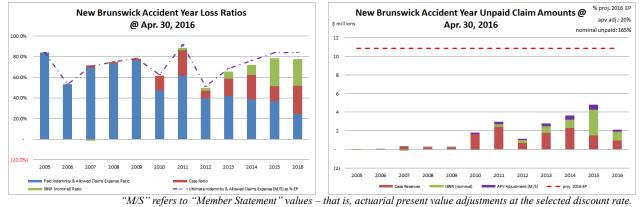


regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent changes are provided below.

**New Brunswick Regulation 2013-37** was filed by the Government of New Brunswick on May 7, 2013, amending Regulation 2003-20 (Injury Regulation), made under the Insurance Act. The Regulation introduced a new Part 2 which applies to all injuries arising from motor vehicle accidents occurring on or after August 1, 2013. The new Part 2 re-defines "minor personal injury", raises the maximum non-pecuniary damages recoverable by those suffering a "minor personal injury", and sets out a process for annually indexing the monetary cap for inflation. At the December 31, 2015 valuation, reform adjustments (originally introduced with the June 30, 2014 valuation) were explicitly taken into account with the updated industry trend analysis (completed using industry data as at June 30, 2015), impacting the selection of ultimates.

#### **1.4** Current Provision Summary

The charts immediately below show the current levels of claim liabilities<sup>1</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 2016 full year earned premium (the red hash-mark line) to provide some perspective.



The current actuarial present value adjustments balance (\$2.2 million – see table immediately below) represents 20% of the earned premium projected for the full year 2016 (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	12,049	60.2%
ibnr	5,787	28.9%
M/S apv adjust.	2,186	10.9%
M/S total	20,022	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 is in case reserves for this pool. Approximately 64% of the IBNR balance relates to accident years 2015 and 2016 (see

<sup>&</sup>lt;sup>1</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.



Exhibit B). Approximately 72% of the M/S claim liabilities are related to accident years 2012-2016 inclusive (i.e. the most recent 5 accident years).

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

premium liabilities (\$00	)Os)		policy liabilities (\$000s)					
	amt	%		amt	%			
unearned prem	4,535	113.6%	claim	17,836	74.3%			
prem def/(dpac)	(884)	(22.2%)	premium	3,651	15.2%			
M/S apv adjust.	341	8.5%	M/S apv adjust.	2,527	10.5%			
M/S total	3,992	100.0%	M/S total	24,014	100.0%			

#### 2 Activity During the Month of April 2016

#### 2.1 Recorded Premium and Claims Activity

The table immediately below summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month's Operational Report<sup>2</sup>.

			v	•				<i>,</i>
Table 01	e 01 Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
Accident	Actual less		Actual	Actual less	Actual	Actual less	Actual	, Actual less
Year	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected
Prior	-	-	62	(23)	111	128	173	105
2014	(1)	(1)	16	(32)	63	61	79	29
2015	(11)	(11)	42	(23)	(31)	(148)	11	(171)
2016	846	(31)	288	33	261	171	549	204
TOTAL	835	(43)	409	(44)	404	212	813	168

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

(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" (this is particularly true where volumes are low). 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.

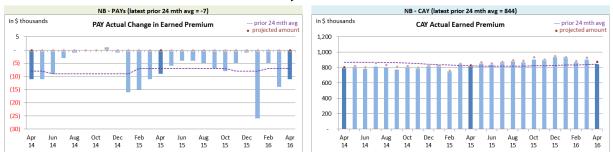
#### 2.1.a Actual vs. Projected (AvsP): Earned Premium

The charts at the top of the next page show actual **earned premium**<sup>3</sup> activity in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

<sup>&</sup>lt;sup>2</sup>There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

<sup>&</sup>lt;sup>3</sup>Premium is earned on a daily basis based on the transaction term measured in days. As a result, months with 31 days earned relatively more than those with 30 days, and February earns the least.



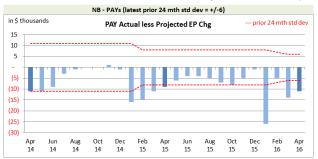


New Brunswick RSP Actual Earned Premium by Calendar Month

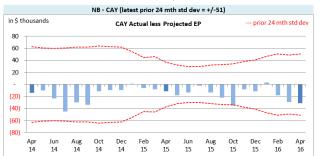
**Earned premium** changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels seem to occur in January each year.

The associated variance between the actual changes and the projections from the previous month are shown in the charts immediately below. **Earned premium** change projections are all attributed to the current accident year as the projection upload does not accept **earned premium** changes for other accident years. We do not see this limitation as being significant for our purposes, but it does mean that the actual less projection variance will equal the actual **earned premium** change in relation to prior accident years.

New Brunswick RSP Actual vs. Projected Summary: Earned Premium Variances by Calendar Month



On Latest \$ thousands						
Earned Premium	PAYs	CAY				
Mthly Avg EP Chg (prior 24 mths)	(7)	844				
std dev	6	51				
A-P <> std dev	7	1				
% <> std dev	28.0%	4.0%				
norm <> std dev	31.7%	31.7%				



We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated bias<sup>4</sup>, with actuals generally lower than our projections. However, the magnitude is not high relative to monthly premium, and the

variances are within the prior 24-month standard deviation more often than indicated by a normal distribution (see charts above). Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority.

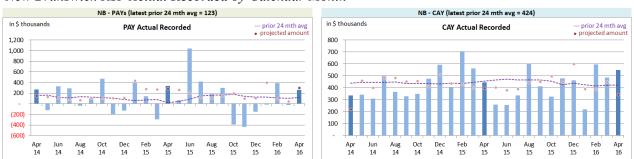
#### 2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

Actual recorded activity (paid and case reserve changes) over the last 25-month period are shown in

<sup>&</sup>lt;sup>4</sup>The prior accident years (PAYs) variances will show bias as the projection upload forces all earned premium projections to be attributed to the current accident year.



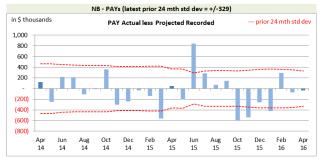
the charts immediately below, including the "prior 24-month average" level.



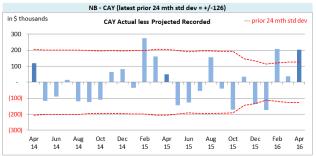
New Brunswick RSP Actual Recorded by Calendar Month

**Recorded** activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels.

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



On Latest \$ thousands						
Recorded	PAYs	CAY				
Mthly Avg Recorded (prior 24 mths)	123	424				
std dev	329	126				
A-P <> std dev	5	5				
% <> std dev	20.0%	20.0%				
norm <> std dev	31.7%	31.7%				



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

significant. That said, the prior accident years' (PAYs) **recorded** variances (left chart above) do not appear to have bias, although 6 of the last 7 projections have proven higher than actual. At 20%, the percentage of months with variances beyond one standard deviation of the experience period activity suggests the projection process is somewhat better than projections based simply on a 24-month average. However, 3 of the 5 variances beyond one standard deviation have occurred in relation to the last 7 projections. In addition, 4 of the 5 variances beyond one standard deviation have occurred in relation to actuals that were negative.

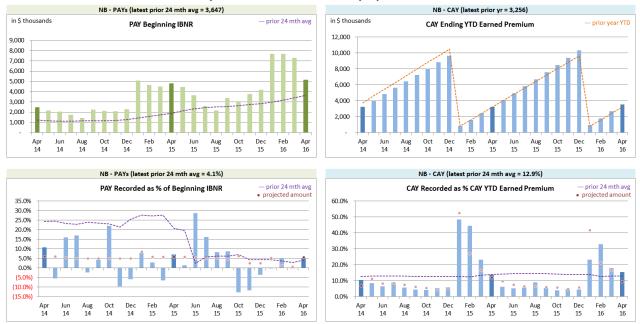
The current accident year (CAY) **recorded** variances (right chart above), with 20% of months with variances outside of one standard deviation, suggest the projection process is better than projecting simply on a 24-month average. We do not see evidence of bias in the variances, although 4 of the 5 variances beyond one standard deviation were in relation to our 5 most recent projections. However, it is notable that the standard deviation of the prior 24 months' activity has narrowed considerably in the most recent 5 periods (reduced by half).



The CAY **recorded** variance for the current month was outside the one standard deviation band. The activity was reviewed and confirmed, with the variance attributed to process variance.

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

We have included, for reference, additional charts immediately below related to levels influencing **recorded** activity.



*New Brunswick RSP Levels that influence<sup>5</sup> Recorded activity by Calendar Month* 

We track beginning prior accident years' IBNR as **recorded** activity "comes out of" IBNR. Changes in the prior accident years' beginning IBNR (see upper left chart above) occur for several possible reasons:

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

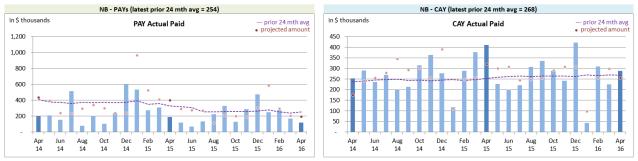
#### 2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

The charts at the top of the next page show actual paid activity in each of the most recent

 $<sup>^{5}</sup>$ 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.



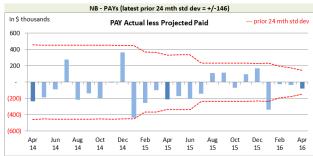
25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.



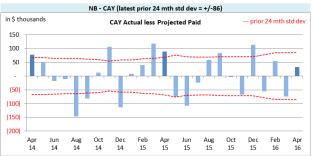
New Brunswick RSP Actual Paid activity by Calendar Month

The charts immediately below show the actual less projected **paid** variances for the last 25 calendar months, along with bands for the "prior 24-month standard deviations" to show how the variances from projection compare with historical standard deviations.

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



On Latest \$ thousands						
Paid	PAYs	CAY				
Mthly Avg Paid (prior 24 mths)	254	268				
std dev	146	86				
A-P <> std dev	1	10				
% <> std dev	4.0%	40.0%				
norm <> std dev	31.7%	31.7%				



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

That said, the prior accident years'(PAYs) **paid** variances (left chart above) indicates some bias (actuals have tended to be lower than projections), but at 4%, the percentage of months with variances outside of the experience period's standard deviation suggests the projection process performs better than projecting simply on average values.

The current accident year (CAY) **paid** variances (right chart above) do not appear to show bias, but at 40%, the percentage of months with variances falling outside of the experience period's standard deviation suggests the projection process is performing worse than simply projecting a 24-month average.

We have included, for reference, additional charts at the top of the next page related to levels influencing **paid** activity.





New Brunswick RSP Levels that influence<sup>6</sup> **Paid** activity by Calendar Month

We track beginning prior accident years' unpaid balance (case and IBNR) as **paid** activity "comes out of" the unpaid balance. Changes in the prior accident years' beginning unpaid balance (see upper left chart above) occur for several possible reasons:

- to offset actual **paid** activity (may reduce case or IBNR or both);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate (will show up as a beginning unpaid balance change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

#### 2.2 Actuarial Provisions

An "ultimate loss ratio matching method" (described in section 3) was used to determine the month's IBNR<sup>7</sup>, and factors were applied to the nominal unpaid claims liability (case plus IBNR) to determine the discount amount (shown as a negative value to indicate its impact of reducing the liability) and the Provisions for Adverse Deviations. The loss ratios and the factors used to determine the current month's provisions and projections were based on the applicable valuation. The table immediately below summarizes variances in provisions included in the April 2016 Operational Report and the associated one-month projections from last month's Report.

<sup>&</sup>lt;sup>6</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>&</sup>lt;sup>7</sup>For ease of discussion, "IBNR" is used in place of "provisions for incurred but not recorded (IBNR) and development".



Table 02			actuarial present value adjustments						
	IBNR		IDND Discount Amount		Provisions for Adverse		for Adverse	IBNR + actuarial present	
			Discount Amount		Deviations		value adjustments		
Accident	Actual	Actual less	Actual	Actual less	Actual	Actual less	0 - tu - l	Actual less	
Year	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected	
Prior	1,168	(104)	(124)	(2)	1,117	4	2,161	(102)	
2014	928	(30)	(61)	(1)	482	5	1,349	(26)	
2015	2,783	162	(94)	-	640	2	3,329	164	
2016	908	(228)	(44)	1	270	(9)	1,134	(236)	
TOTAL	5,787	(200)	(323)	(2)	2,509	2	7,973	(200)	

New Brunswick RSP Actual vs Projected Summary: IBNR and APV Amounts (\$ thousands)

The IBNR provision is \$0.2 million lower than projected 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 immediately below summarizes the variances in the provisions for deferred policy acquisition cost asset amounts (shown as negative values) included in the April 2016 Operational Report and the one-month projections from last month's Report. Note that this RSP is in a deferred policy acquisition cost asset position; actuarial present value adjustments have an impact on the asset value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium and therefore increase the write down of the asset value. The variances are mainly driven by 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:	(884)	36	341	(15)	(543)	21
balance as % unearned premium:	(19.5%)	-	7.5%	-	(12.0%)	-
actual unearned premium:	4,535					
less projected:	(179)					

#### **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>8</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 below summarizes the calendar year-to-date results for indemnity & allowed claims expenses<sup>9</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 78.8% rather than 77.6% (the valuation ultimate ratio for accident year 2016), 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 Nominal Values YTD actuarial present value adjustment		YTD Total		Change from Prior Month YTD	
	Amount % EP		Amount	% EP	Amount	% EP	Amount	LR pts
PAYs	(2,199)	(62.8%)	(259)	(7.4%)	(2,458)	(70.2%)	(24)	21.1%
CAY	2,761	78.8%	226	6.5%	2,987	85.3%	700	(0.5%)
TOTAL	561	16.0%	(33)	(0.9%)	528	15.1%	676	20.6%

("% EP" based on 2016 calendar year-to-date earned premium; ratios may not total due to rounding)

The prior accident years (PAYs) changes from last month are due to the release of the actuarial present value adjustments with claims payments. The loss ratio change year-to-date 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, 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.

<sup>&</sup>lt;sup>8</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>&</sup>lt;sup>9</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.



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 Mar. 2016	Actual Apr. 2016	Projected May. 2016	Projected Jun. 2016	Projected Dec. 2016			
-	2005	(2)	(2)	(2)	(2)	(2)			
	2006	12	12	11	10	10			
	2007	45	(147)	(140)	(132)	(94)			
	2008	84	84	82	79	64			
	2009	96	85	84	81	65			
	2010	141	141	140	140	135			
discount rate	2011	547	544	539	524	439			
0.67%	2012	404	417	412	396	311			
	2013	1,012	1,027	1,016	980	775			
interest rate margin	2014	1,432	1,349	1,331	1,283	1,018			
25 basis pts	2015	3,356	3,329	3,324	3,126	2,384			
	2016	983	1,134	1,567	2,011	3,276			
	TOTAL	8,110	7,973	8,364	8,496	8,381			
	Change		(137)	391	132				

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



# EXHIBIT B

# IBNR

TABLE EXHIBIT B		Amounts in \$000s						
IBNR	Ultimate	Accident	Actual	Actual	Projected	Projected	Projected	
	Loss Ratio	Year	Mar. 2016	Apr. 2016	May. 2016	Jun. 2016	Dec. 2016	
	84.0%	2005	(2)	(2)	(2)	(2)	(2)	
	53.3%	2006	11	11	10	9	9	
	70.3%	2007	27	(165)	(158)	(150)	(110)	
	74.9%	2008	53	53	52	49	37	
	78.0%	2009	65	55	54	51	38	
	61.0%	2010	(41)	(41)	(41)	(39)	(28)	
	88.4%	2011	244	243	241	229	169	
	50.0%	2012	290	305	302	287	211	
	65.5%	2013	693	709	702	667	490	
	72.0%	2014	1,008	928	914	868	639	
	78.5%	2015	2,803	2,783	2,783	2,588	1,903	
	77.6%	2016	800	908	1,286	1,672	2,700	
		TOTAL	5,951	5,787	6,143	6,229	6,056	
		Change		(164)	356	86		

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. 2016	Actual Apr. 2016	Projected May. 2016	Projected Jun. 2016	Projected Dec. 2016			
(1) unearned premium (UP)	4,573	4,535	4,702	4,979	5,431			
FOR MEMBER SHARING								
(2) expected future costs ratio {% of (1)}	88.0%	88.0%	88.1%	88.2%	89.0%			
(3) expected future costs {(1) x (2)}	4,024	3,992	4,144	4,390	4,831			
(4) premium deficiency / (deferred policy								
acquisition cost)	(549)	(543)	(558)	(589)	(600)			
Excluding Actuarial Present Value Adjustments								
(5) expected future costs ratio {% of (1)}	80.5%	80.5%	80.6%	80.6%	81.3%			
(6) expected future costs {(1) x (5)}	3,679	3,651	3,788	4,014	4,415			
(7) premium deficiency / (deferred policy								
acquisition cost)	(894)	(884)	(914)	(965)	(1,016)			



# EXHIBIT D

# Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2016, broken down by component.

lew Brunswick		Projected Balances as at Dec. 31, 2016 (\$000s)								
nding 2016	1	nominal values		actuar						
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	development PfAD	Total apvs	TOTAL		
2005	_	(2)	(2)	-	-	-	-	(2		
2006	2	9	11	-	-	1	1	1.		
2007	240	(110)	130	(1)	1	16	16	14		
2008	197	37	234	(3)	1	29	27	26		
2009	196	38	234	(3)	1	29	27	26		
2010	1,468	(28)	1,440	(20)	7	176	163	1,603		
2011	2,235	169	2,404	(36)	12	294	270	2,67		
2012	695	211	906	(13)	5	108	100	1,00		
2013	1,726	490	2,216	(35)	13	307	285	2,50		
2014	2,249	639	2,888	(55)	20	414	379	3,26		
2015	1,864	1,903	3,767	(83)	30	534	481	4,248		
PAYs (sub-total):	10,872	3,356	14,228	(249)	90	1,908	1,749	15,97		
CAY (2016)	2,109	2,700	4,809	(111)	38	649	576	5,38		
claims liabilities:	12,981	6,056	19,037	(360)	128	2,557	2,325	21,36		
	Unearned Premium	Premium Defiency / (DPAC)	Total Provision	discount	investment PfAD	development PfAD	Total apvs	TOTAL*		
premium liabilities:	5,431	(1,016)	4,415	(68)	26	458	416	4,83		
					*Total may n	ot be sum of parts, a	as apvs apply to futur	e costs within UP		
policy liabilities:			23,452	(428)	154	3,015	2,741	26,19		



#### 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, 2016 from the valuation), followed by the selected discount rate and the associated margin for investment income.

	Sciected cid	inis Developi	nent MilAD3 (E	2013
Accident	Third Party	Accident	Other	Total
Year	Liability	Benefits	Coverages	Total
2005	12.5%	10.0%	12.5%	12.5%
2006	12.5%	10.0%	12.5%	12.2%
2007	12.5%	10.0%	12.5%	12.5%
2008	12.5%	10.0%	12.5%	12.5%
2009	12.5%	10.0%	12.5%	12.4%
2010	12.5%	10.0%	5.0%	12.4%
2011	12.5%	10.0%	12.5%	12.4%
2012	12.5%	10.0%	9.3%	12.1%
2013	15.0%	10.0%	12.5%	14.1%
2014	15.0%	10.0%	15.0%	14.6%
2015	15.0%	10.0%	15.0%	14.5%
2016	14.8%	10.0%	6.3%	13.8%
prem liab	13.3%	10.0%	5.1%	10.9%

#### Selected Claims Development MfADs (Dec. 31, 2015)

discount rate: 0.67%

25

margin (basis points):



#### EXHIBIT F

#### Interest Rate Sensitivity

The tables below present sensitivity to the member statement claims liability as projected to Dec. 31, 2016 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2016 and based on more up-to-date information). We have included both the current valuation selection (0.67%), the prior valuation assumption (0.73%) and the prior fiscal year end valuation assumption (0.73%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

Ś	Format:	\$000s
-		

	Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2016 projected Unp								
ΑΥ	0.17%	0.67%	1.17%	1.67%	2.17%	2.67%	0.73%	0.73%	
2005	-	-	-	-	-	-	-	-	
2006	7	7	7	7	7	7	7	7	
2007	138	137	136	135	134	133	137	137	
2008	190	189	187	186	185	183	189	189	
2009	221	219	217	215	213	212	219	219	
2010	1,341	1,329	1,315	1,302	1,289	1,276	1,327	1,327	
2011	1,847	1,829	1,809	1,789	1,770	1,751	1,827	1,827	
2012	892	884	875	866	857	848	883	883	
2013	2,253	2,230	2,203	2,176	2,150	2,125	2,226	2,226	
2014	3,187	3,149	3,105	3,063	3,021	2,981	3,144	3,144	
2015	4,123	4,065	3,998	3,934	3,871	3,810	4,056	4,056	
2016	5,889	5,800	5,699	5,601	5,506	5,414	5,787	5,787	
Total	20,088	19,838	19,551	19,274	19,003	18,740	19,802	19,802	
	curr - 50 bp	curr val	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val	prior fyr end	
		assumption					assumption	assumption	
			Dollar Im	pact Relative to	o Valuation Ass	umption			
AY	0.17%	0.67%	1.17%	1.67%	2.17%	2.67%	0.73%	0.73%	
Total	250	-	(287)	(564)	(835)	(1,098)	(36)	(36)	
	curr - 50 bp	curr val	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val	prior fyr end	
		assumption					assumption	assumption	

	Percentage Impact Relative to Valuation Assumption								
AY	0.17%	0.67%	1.17%	1.67%	2.17%	2.67%	0.73%	0.73%	
2005	-	-	-	-	-	-	-	-	
2006	-	-	-	-	-	-	-	-	
2007	0.7%	-	(0.7%)	(1.5%)	(2.2%)	(2.9%)	-	-	
2008	0.5%	-	(1.1%)	(1.6%)	(2.1%)	(3.2%)	-	-	
2009	0.9%	-	(0.9%)	(1.8%)	(2.7%)	(3.2%)	-	-	
2010	0.9%	-	(1.1%)	(2.0%)	(3.0%)	(4.0%)	(0.2%)	(0.2%)	
2011	1.0%	-	(1.1%)	(2.2%)	(3.2%)	(4.3%)	(0.1%)	(0.1%)	
2012	0.9%		(1.0%)	(2.0%)	(3.1%)	(4.1%)	(0.1%)	(0.1%)	
2013	1.0%	-	(1.2%)	(2.4%)	(3.6%)	(4.7%)	(0.2%)	(0.2%)	
2014	1.2%		(1.4%)	(2.7%)	(4.1%)	(5.3%)	(0.2%)	(0.2%)	
2015	1.4%	-	(1.6%)	(3.2%)	(4.8%)	(6.3%)	(0.2%)	(0.2%)	
2016	1.5%	-	(1.7%)	(3.4%)	(5.1%)	(6.7%)	(0.2%)	(0.2%)	
Total	1.3%	-	(1.4%)	(2.8%)	(4.2%)	(5.5%)	(0.2%)	(0.2%)	
	curr - 50 bp	curr val	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val	prior fyr end	
		assumption					assumption	assumption	



# EXHIBIT G

Page 1 of 2

M/S IBNR - in \$000s

# Components of Member Statement IBNR (i.e. "Discounted") Change During Month

RSP	New Brunswic
AccountCode Desc	IBNR - Discour उ

	Values										
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				
2005	(2)	-	-	-	-	-	(2)				
2006	12	(1)	1	-	-	-	12				
2007	45	(1)	(191)	-	(192)	(426.7%)	(147)				
2008	84	(4)	4	-	-	-	84				
2009	96	(4)	(7)	-	(11)	(11.5%)	85				
2010	141	1	(1)	-	-	-	141				
2011	547	(15)	12	-	(3)	(0.5%)	544				
2012	404	(15)	28	-	13	3.2%	417				
2013	1,012	(37)	52	-	15	1.5%	1,027				
2014	1,432	(57)	(26)	-	(83)	(5.8%)	1,349				
2015	3,356	(191)	164	-	(27)	(0.8%)	3,329				
2016	983	387	(236)	-	151	15.4%	1,134				
Grand Total	8,110	63	(200)	-	(137)	(1.7%)	7,973				



2016

Grand Total

800

5,951

336

36

108

(164)

13.5%

(2.8%)

908

5,787

# EXHIBIT G

Page 2 of 2

# Components of IBNR (i.e. "Undiscounted") Change During Month

RSP New Brunswic T AccountCode Desc IBNR - Undiscc T ted												
AccYear •	Values 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					
2005	(2)	-	-	-	-	-	(2)					
2006	11	(1)	1	-	-	-	11					
2007	27	(1)	(191)	-	(192)	(711.1%)	(165)					
2008	53	(3)	3	-	-	-	53					
2009	65	(3)	(7)	-	(10)	(15.4%)	55					
2010	(41)	2	(2)	-	-	-	(41)					
2011	244	(12)	11	-	(1)	(0.4%)	243					
2012	290	(15)	30	-	15	5.2%	305					
2013	693	(35)	51	-	16	2.3%	709					
2014	1,008	(50)	(30)	-	(80)	(7.9%)	928					
2015	2,803	(182)	162	-	(20)	(0.7%)	2,783					

(228)

(200)

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