



**ONTARIO RISK SHARING POOL**

**APRIL 2016 OPERATIONAL REPORT**

**ACTUARIAL HIGHLIGHTS**

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**ACTUARIAL HIGHLIGHTS**

**RSP ONTARIO**

**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.

<b>ONTARIO RISK SHARING POOL FISCAL YEAR 2016 – 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, 2015 (completed)	0.98% mfad: 25 bp	Oct. 2015	updated valuation (roll forward): accident year 2015 loss ratio decreased 5.7 points to 116.8%; discount rate decreased by 21 basis points; no change to selected margins for adverse deviations
Dec. 31, 2015 (completed)	0.90% mfad: 25 bp	Mar. 2016	updated valuation: accident year 2015 loss ratio decreased 1.3 points to 115.5%; accident year 2016 loss ratio decreased 3.6 points to 117.0%; discount rate decreased by 8 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<sup>1</sup>**

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.

**Ontario Bill 15** (Fighting Fraud and Reducing Automobile Insurance Rates Act, 2014) was introduced into the Legislature by the Minister of Finance on July 15, 2014 and received Royal Assent on November 20, 2014. Bill 15 includes various amendments and provisions such as, moving the Ontario Automobile Dispute Resolution System (DRS) for statutory accident benefits from the Financial Services Commission of Ontario to the Ministry of the Attorney General (Licence Appeal Tribunal), regulation of the Tow and Storage Industry (amendments to the Consumer Protection Act and Repair and Storage Liens Act), regulations related to licensing of insurance agents and adjusters, changes the applicable interest rate applied to overdue payments in the Statutory Accident Benefits Schedule (SABS), and changes to the prejudgment interest rate on general damages for non-pecuniary loss from the rate as set out in the Courts of Justice Act to rates linked to market conditions. At the September 30, 2015 valuation, reform adjustments specifically related to changes in the non-pecuniary prejudgment interest provision calculation impacting the bodily injury coverage and the applicable interest rate applied to overdue payments in the SABS impacting the accident benefits coverage, were included with the updated industry trend analysis (completed using industry data as at December 31, 2014), impacting the selection of ultimates.

**Ontario Bill 91** (Building Ontario Up Act (Budget Measures), 2015) was introduced into the Legislature by the Minister of Finance on April 23, 2015 and received Royal Assent on June 4, 2015. Bill 91 announced a number of amendments to regulations made under the Insurance Act, including: updating the Catastrophic Impairment Definition and changes to the standard benefit level under the Statutory Accident Benefits Schedule (SABS); restrictions on insurance premium increases and lowering of the maximum interest rate charged on monthly auto insurance premium payments; and adjustments to the monetary threshold beyond which the tort deductible does not apply to reflect inflation (adjustments to reflect inflation in the associated tort deductible were undertaken via an update to regulation 461/96). On August 26, 2015, the Ontario government filed Ontario regulations 250/15 and 251/15 implementing reforms set out in Bill 91. At the September 30, 2015 valuation, reform adjustments specifically related to changes in the tort threshold and deductibles impacting the bodily injury coverage and changes to the SABS impacting the bodily injury and accident benefits coverages, were included with the updated industry trend analysis (completed using industry data as at December 31, 2014) and nominal valuation estimates, impacting the selection of ultimates.

### **1.4 Ontario RSP Bodily Injury Case Reserve summary**

As indicated in the previous section, reform adjustments, specifically related to changes in the non-pecuniary prejudgment interest provisions in **Ontario Bill 15** and the changes in the tort threshold and deductibles in **Ontario Bill 91** impacting the third party liability - bodily injury coverage for accident year 2015 and subsequent, was included with the updated Ontario Private Passenger Vehicle industry trend analysis (completed using industry data as at June 30, 2015).

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<sup>1</sup>How bills become laws in Ontario is described in detail in the publication: <http://www.ontla.on.ca/lao/en/media/laointernet/pdf/bills-and-lawmaking-background-documents/how-bills-become-law-en.pdf>.

There have been two conflicting Ontario Superior Court decisions in relation to the application of prejudgment interest provisions: *Carillo v. Rizzo* (April 15, 2015) and *El-Khodr v. Lackie et al* (July 28, 2015). In the first, the judge ruled that the change to prejudgment interest for non-pecuniary losses<sup>2</sup> from a set level of 5% to the level that applies to pecuniary losses applies retroactively (i.e. applies to all open claims), whereas in the second, the judge ruled that the change applies only to claims where notification was provided to the insurer on or after January 1, 2015. FA's current view is that the second judgment supersedes the first, and no adjustments have been made to the provisions for accident years 2014 and prior as a result.

In addition to the above, there have also been multiple conflicting Ontario Superior Court decisions in relation to the application of the changes in the tort threshold and deductibles: *Cobb v. Long Estates* (November 13, 2015), *Vickers v. Palacios* (December 8, 2015) and *Corbett v. Odorico* (March 22, 2016). In the first, the judge ruled that the changes to the tort threshold and deductibles were substantive in nature such that the defendant was not entitled to apply the higher deductible, whereas in the second and third, the judges concluded the deductible change is procedural on the grounds that the cap on damages and the statutory deductible were implemented to achieve particular policy objectives and therefore applied retroactively (i.e. applies to all open claims). FA's current view, consistent with the latter two judgments, is that the changes to the applicable tort threshold and deductibles are applied on a settlement date basis. We've included a -2.25%<sup>3</sup> retroactive adjustment to Ontario third party liability - bodily injury unpaid amounts (outstanding case and selected IBNR) using negative IBNR, impacting AY2014/2 and prior. We have applied a 50% tempering factor to the AY2015/1 selected adjustment factor as these are settlements that are negotiated globally and hence there may be erosion of the deductible.

Recognizing that individual members may interpret these results differently, we have included a table at the top of the next page displaying the current levels of Ontario RSP Third Party Liability – Bodily Injury Case Reserves (as at December 31, 2015) by accident year as well as projected average duration, from accident date to projected settlement date, from the December 31, 2015 valuation paid emergence projection model. No attempt has been made to distinguish case reserves held for pecuniary versus non-pecuniary losses, nor in estimating the amount of prejudgment interest, if any, is included in the case reserve estimates.

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<sup>2</sup>**Pecuniary** awards are defined on the Ontario Attorney General's website as "Damages that can be measured in money (i.e., special damages)" with special damages further defined as "Damages intended to compensate a plaintiff for a quantifiable monetary loss. Examples of such losses include: lost earnings, medical bills, and repair costs." In contrast, **non-pecuniary** awards defined as "Damages that cannot be measured in money, but nevertheless are compensated for with money (i.e., general damages)" with general damages further defined as "Damages for non-monetary losses suffered by a plaintiff. These damages are not capable of exact quantification. Examples of such losses suffered include pain, suffering, and disfigurement."

<sup>3</sup>The original adjustment with the 2015 Q3 valuation was -3.00%, with the intent to reduce this by 0.75 points with each subsequent valuation, reaching 0.00% with the 2016 Q3 valuation.

**ON RSP** (Amounts in \$000s; as at Dec. 31, 2015)

AY	Curr BI Case	avg yrs to Dec 2015	projected avg # yrs to settlement	projected avg duration
1993	-	22.5	-	-
1994	-	21.5	-	-
1995	-	20.5	-	-
1996	168	19.5	2.6	22.1
1997	-	18.5	-	-
1998	-	17.5	-	-
1999	-	16.5	-	-
2000	-	15.5	-	-
2001	-	14.5	-	-
2002	-	13.5	-	-
2003	38	12.5	6.4	18.9
2004	-	11.5	6.9	18.4
2005	70	10.5	7.4	17.9
2006	640	9.5	4.8	14.3
2007	2,012	8.5	3.1	11.6
2008	5,983	7.5	2.6	10.1
2009	11,116	6.5	2.4	8.9
2010	24,857	5.5	2.5	8.0
2011	26,424	4.5	2.3	6.8
2012	40,771	3.5	2.4	5.9
2013	54,426	2.5	2.7	5.2
2014	45,063	1.5	3.3	4.8
2015	29,944	0.5	4.1	4.6
<b>TOTAL</b>	<b>241,512</b>	<b>3.2</b>	<b>2.9</b>	<b>6.0</b>

In the above table, the column “projected avg duration” is an estimate of the number of years from claim occurrence<sup>4</sup> to claim settlement, via summing the average number of years from claim occurrence to December 31, 2015 (3<sup>rd</sup> column) and from December 31, 2015 to settlement (4<sup>th</sup> column).

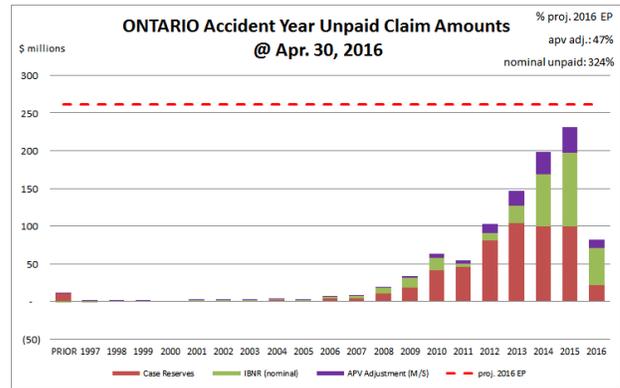
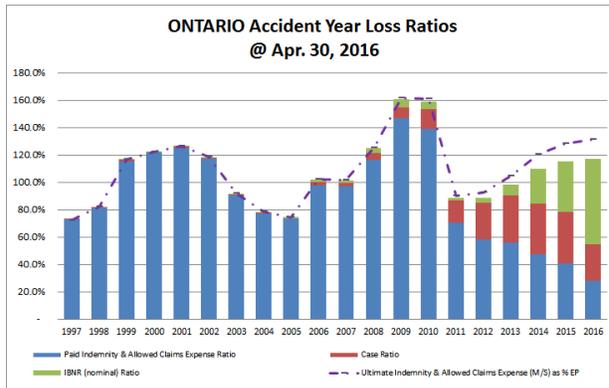
### 1.5 Current Provision Summary

The charts at the top of the next page show the current levels of claim liabilities<sup>5</sup> booked by accident year<sup>6</sup>. 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.

<sup>4</sup>Prejudgment interest in Ontario applies to the period from the date the claim is reported, not from the time of occurrence. We have provided the latter to allow actuarial judgment to be applied in estimating the lag between occurrence and reporting.

<sup>5</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.

<sup>6</sup>The loss ratio chart has been limited to show the most recent 20 accident years; the unpaid provision chart has been limited to show the most recent 20 accident years, and show all accident years older than 20 years collectively as “PRIOR”.



*“M/S” refers to “Member Statement” values – that is, actuarial present value adjustments at the selected discount rate.*

The current actuarial present value adjustments provision for claims liabilities (\$121.3 million – see table below) represents 47% 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	544,753	56.3%
ibnr	302,212	31.2%
M/S apv adjust.	121,279	12.5%
<b>M/S total</b>	<b>968,244</b>	<b>100.0%</b>

The table to the left breaks down the Member Statement (M/S) claim liabilities total into component parts, indicating case reserves represent the largest portion. Approximately 49% of the IBNR balance relates to accident years 2015 and 2016 (see Exhibit B). Approximately 79% of the M/S total claim

liabilities are related to accident years 2012-2016 inclusive (i.e. the most recent 5 accident years), and approximately 3% is related to accident years 2006 and prior (i.e. prior to the most recent 10 accident years).

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

**premium liabilities (\$000s)**

	amt	%
unearned prem	119,368	75.2%
prem def/(dpac)	21,099	13.3%
M/S apv adjust.	18,339	11.5%
<b>M/S total</b>	<b>158,806</b>	<b>100.0%</b>

**policy liabilities (\$000s)**

	amt	%
claim	846,965	75.1%
premium	140,467	12.5%
M/S apv adjust.	139,618	12.4%
<b>M/S total</b>	<b>1,127,050</b>	<b>100.0%</b>

## 2 Activity During the Month of April 2016

### 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>7</sup>.

<sup>7</sup>There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

*Ontario 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	(3)	(3)	7,263	(453)	(929)	4,929	6,335	4,477
2014	(10)	(10)	2,857	1,144	(308)	(18)	2,550	1,127
2015	(31)	(31)	2,936	(4,066)	(304)	(1,335)	2,631	(5,402)
2016	19,921	(435)	7,279	53	4,671	(703)	11,950	(650)
TOTAL	19,877	(479)	20,335	(3,322)	3,131	2,873	23,466	(448)

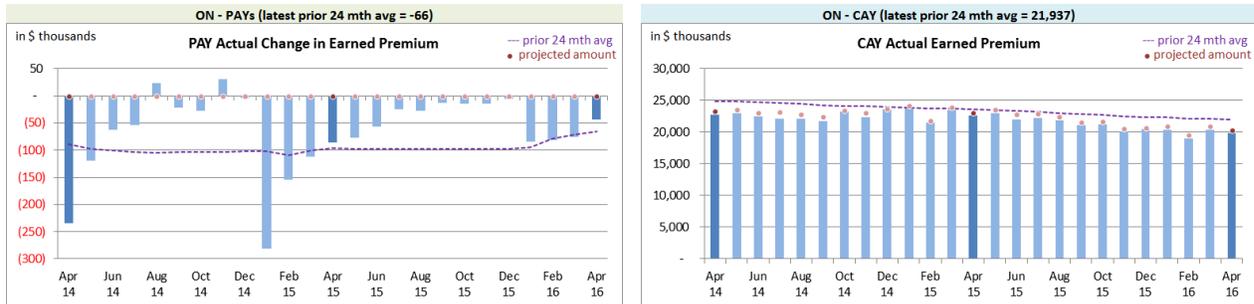
(Recorded transaction amounts exclude IBNR & other actuarial provisions)

Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural “process variance”. 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 immediately below show actual **earned premium**<sup>8</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.

#### Ontario RSP Actual Earned Premium by Calendar Month

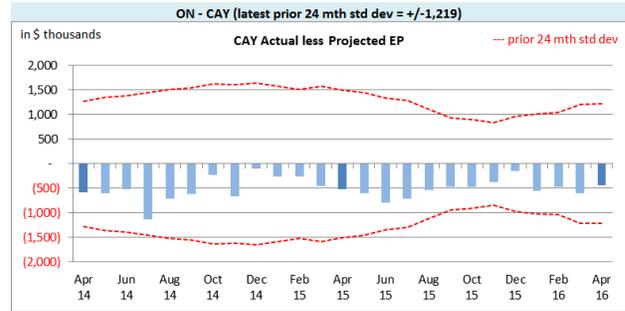
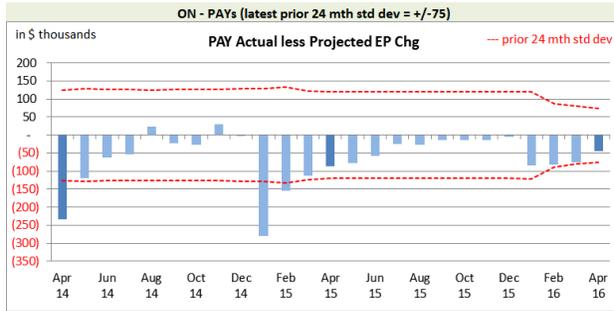


**Earned premium** changes during a given calendar month in relation to prior accident years tend to be at modest levels (note the different scales in the charts above), although relatively high levels generally occur at the beginning of each year.

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 mean that the actual less projection variance will equal the actual **earned premium** change in relation to prior accident years.

<sup>8</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.

*Ontario RSP Actual vs. Projected Summary: **Earned Premium** Variances by Calendar Month*



On Latest \$ thousands			
<b>Earned Premium</b>	PAYs	CAY	
Mthly Avg EP Chg (prior 24 mths)	(66)	21,937	
std dev	75	1,219	
A-P <> std dev	3	-	
% <> std dev	12.0%	0.0%	
norm <> std dev	31.7%	31.7%	

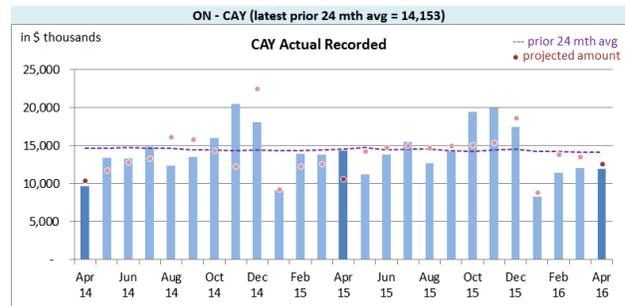
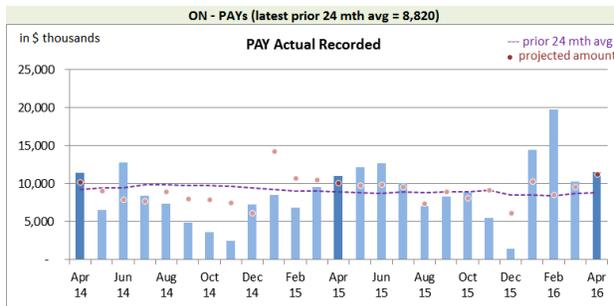
We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated bias<sup>9</sup>, with actuals generally lower than projected. However, the magnitude is not high relative to monthly premium, and the

variances are within the prior 24-month standard deviation for monthly earned premium more often than indicated by a normal distribution (see table 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 is shown in the charts immediately below, including the “prior 24-month average” level.

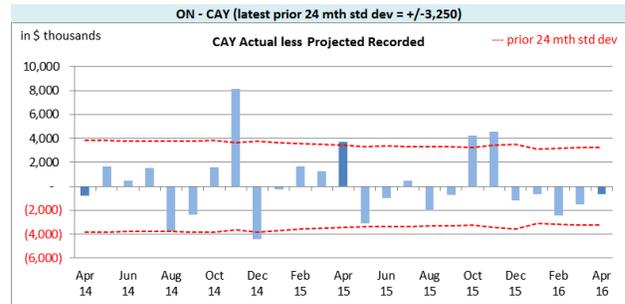
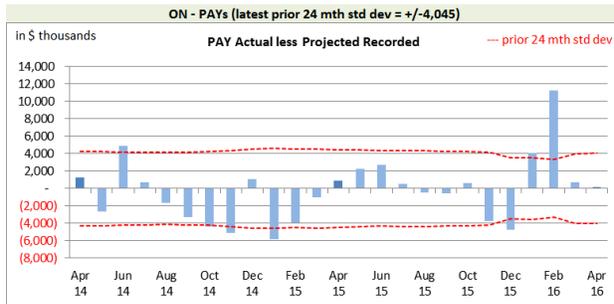
*Ontario RSP Actual **Recorded** by Calendar Month*



**Recorded** activity variances from the previous month’s projections are shown in the charts at the top of the next page, including the “prior 24-month standard deviation” levels.

<sup>9</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.

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



On Latest \$ thousands			
	<b>Recorded</b>	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	8,820	14,153	
std dev	4,045	3,250	
A-P <> std dev	7	5	
% <> std dev	28.0%	20.0%	
norm <> std dev	31.7%	31.7%	

With respect to **recorded** indemnity & allowed claims expense, 28% of the prior accident years’ (PAYs) variances (left chart above) were outside of one standard deviation over the period, suggesting the projection process has performed little better than simply projecting the prior 24-month average amount. In addition, there was

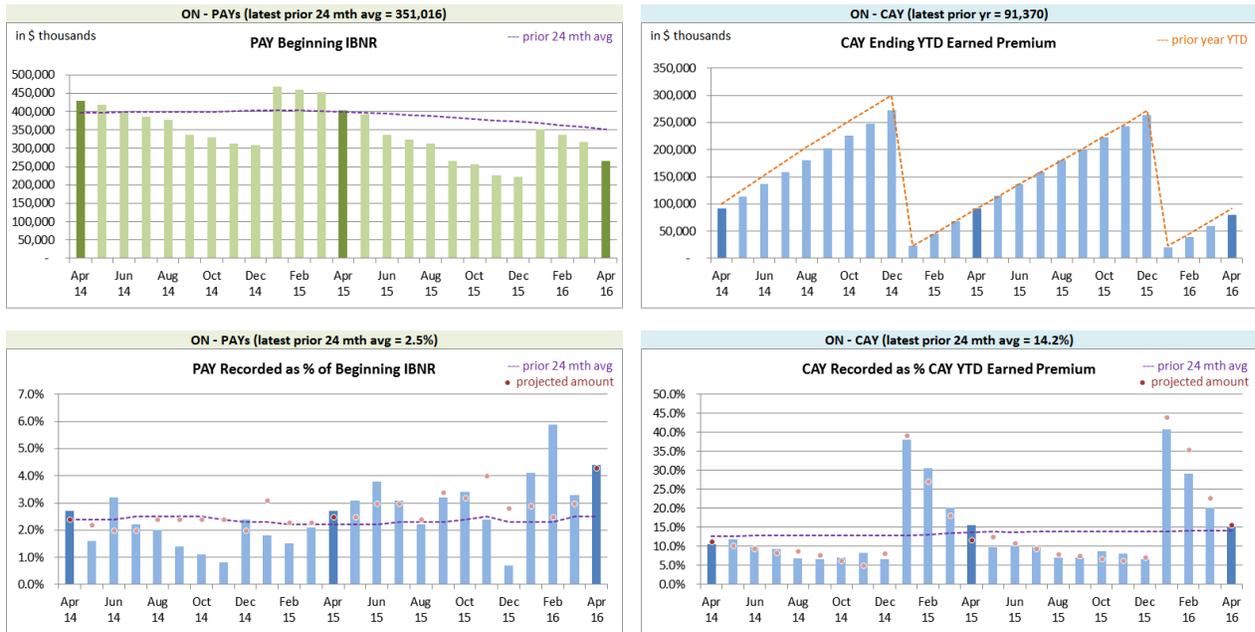
evidence that bias may have been creeping in at the end of 2014 and into the start of 2015 (where actuals tended to be lower than our projections), although adjustments made to our projections seem to have been successful in reducing this bias. We also note that the ratio of PAYs’ **recorded** activity relative to beginning IBNR has been below the average of the preceding 24-months for those months where our projections have been too high (see bottom left chart at top of the next page). We continue to investigate to understand the implications to our projections and make adjustments accordingly.

The current accident year (CAY) **recorded** variances (right chart above) fell outside of one standard deviation 20% of the time over the entire period, suggesting that the projection process performs somewhat better than simply projecting the prior 24-month average amount. We see no evidence of systemic bias in the variances.

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 at the top of the next page related to levels influencing **recorded** activity.

*Ontario RSP Levels that influence<sup>10</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:

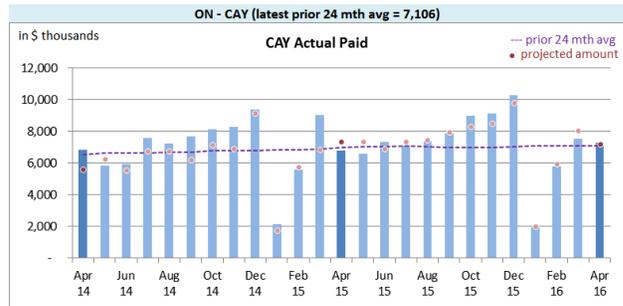
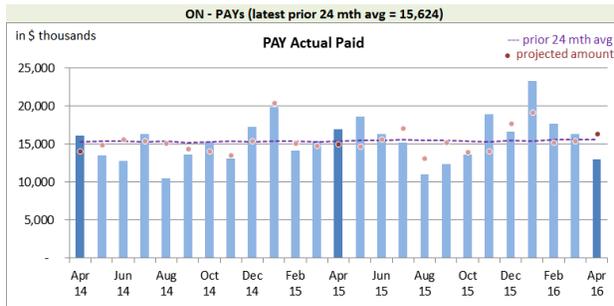
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years’ ultimate (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 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.

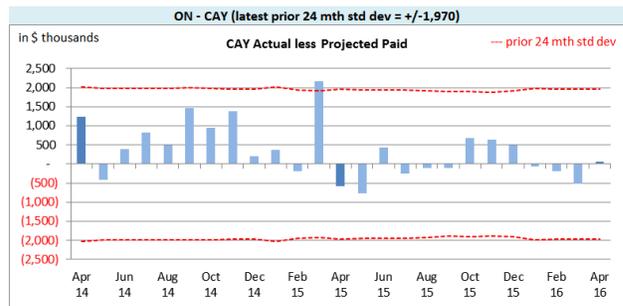
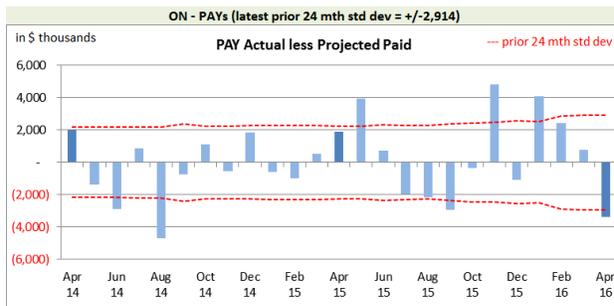
<sup>10</sup>Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected 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.

*Ontario 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.

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



On Latest \$ thousands			
	<b>Paid</b>	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	15,624	15,624	7,106
std dev	2,914	2,914	1,970
A-P <> std dev	7	7	1
% <> std dev	28.0%	28.0%	4.0%
norm <> std dev	31.7%	31.7%	31.7%

With respect to **paid** indemnity & allowed claims expense, 28% of the prior accident years’ (PAYs) variances (left chart above) over the last 25 calendar months have fallen outside of one standard deviation, suggesting the projection process has performed little better than projecting simply based on the preceding 24-month average. There does not appear to be evidence of bias.

The PAY **paid** 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 current accident year (CAY) **paid** variances (right chart above) do not raise concerns over our projection process with respect to magnitudes projected, although there is evidence of bias (actuals tended to be higher than our projections). We have implemented adjustments to address this and they seem to be working.

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

*Ontario RSP Levels that influence<sup>11</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) is used to determine the month’s IBNR<sup>12</sup>, and factors are 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 projections and actuals were based on the applicable valuation. The table at the top of the next page summarizes variances in provisions included in the April 2016 Operational Report and the associated one-month projections from last month’s Report.

<sup>11</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>12</sup>For ease of discussion, “IBNR” is used in place of “provisions for incurred but not recorded (IBNR) and development”.

*Ontario RSP Actual vs Projected Summary: IBNR and APV Amounts (\$ thousands)*

Table 02

Accident Year	IBNR		actuarial present value adjustments				IBNR + actuarial present value adjustments	
	Actual	Actual less Projected	Discount Amount		Provisions for Adverse Deviations		Actual	Actual less Projected
			Actual	Actual less Projected	Actual	Actual less Projected		
Prior	86,449	(4,480)	(13,170)	(17)	59,470	17	132,749	(4,480)
2014	68,570	(1,138)	(4,379)	30	33,821	(232)	98,012	(1,340)
2015	97,747	5,366	(5,715)	(116)	39,660	812	131,692	6,062
2016	49,446	141	(2,191)	17	13,783	(110)	61,038	48
<b>TOTAL</b>	<b>302,212</b>	<b>(111)</b>	<b>(25,455)</b>	<b>(86)</b>	<b>146,734</b>	<b>487</b>	<b>423,491</b>	<b>290</b>

The IBNR provision is \$0.1 million lower than projected, 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 the premium deficiency amounts (this RSP remains in a premium deficiency liability position) included in the April 2016 Operational Report and the one-month projections from last month's Report. Variances are mainly driven by the unearned premium variance.

*Ontario 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:	21,099	180	18,339	147	39,438	327
balance as % unearned premium:	17.7%	-	15.4%	-	33.0%	-
actual unearned premium:	119,368					
less projected:	945					

### 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>13</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>14</sup>, including IBNR.

In calculating the amounts as percentages of earned premium, the calendar year-to-date earned premium has been used, which includes 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 117.4% rather than 117.0% (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 Ontario RSP Summary of Operations due to rounding.)

*Ontario 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	(43,010)	(54.2%)	(9,313)	(11.7%)	(52,323)	(65.9%)	(1,906)	18.8%
CAY	93,226	117.4%	11,592	14.6%	104,818	132.0%	25,936	(0.5%)
TOTAL	50,216	63.2%	2,279	2.9%	52,495	66.1%	24,031	18.3%

(“% 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.

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.

<sup>13</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>14</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 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 presented in section 6, Exhibit B, refer to the estimates derived on the basis of various actuarial methodologies applied to the experience of the Ontario Risk Sharing Pool for the purposes of the most recent quarterly valuation. As discussed in section 3, IBNR 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
prior			872	857	837	821	729
1997			(28)	(28)	(27)	(26)	(20)
1998			79	78	78	76	71
1999			158	158	154	151	133
2000			146	146	143	140	125
2001			469	468	459	448	398
2002			706	706	692	678	601
2003			933	933	914	896	794
2004			1,348	1,345	1,318	1,291	1,144
2005			1,681	1,706	1,672	1,639	1,453
2006			3,171	2,854	2,797	2,740	2,426
2007			3,642	3,772	3,696	3,622	3,209
2008			8,657	8,420	8,251	8,086	7,162
2009			15,478	15,533	15,222	14,917	13,214
2010			20,918	21,773	21,338	20,911	18,523
discount rate 0.90%		2011	10,392	9,215	9,030	8,850	7,860
		2012	22,312	21,849	21,407	20,978	18,631
		2013	48,997	42,964	42,201	41,357	36,717
interest rate margin 25 basis pts		2014	101,075	98,012	96,199	94,130	83,640
		2015	134,868	131,692	123,830	113,790	101,541
		2016	47,052	61,038	77,606	92,685	167,357
		<b>TOTAL</b>	<b>422,926</b>	<b>423,491</b>	<b>427,817</b>	<b>428,180</b>	<b>465,708</b>
Change				565	4,326	363	

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 Mar. 2016	Actual Apr. 2016	Projected May. 2016	Projected Jun. 2016	Projected Dec. 2016
	-	prior	(41)	(53)	(52)	(51)	(45)
	72.7%	1997	(38)	(38)	(37)	(36)	(30)
	82.1%	1998	20	20	20	20	20
	116.5%	1999	83	83	81	79	70
	122.2%	2000	136	136	133	130	116
	126.5%	2001	384	384	376	368	326
	118.5%	2002	609	609	597	585	518
	91.6%	2003	828	828	811	795	704
	78.4%	2004	1,194	1,194	1,170	1,147	1,016
	74.4%	2005	1,583	1,608	1,576	1,544	1,368
	101.7%	2006	2,825	2,531	2,480	2,430	2,151
	101.6%	2007	3,193	3,326	3,259	3,194	2,829
	124.8%	2008	7,455	7,221	7,077	6,935	6,143
	160.4%	2009	13,246	13,317	13,051	12,790	11,329
	159.1%	2010	15,466	16,393	16,065	15,744	13,947
	88.3%	2011	5,576	4,504	4,414	4,326	3,832
	88.6%	2012	10,876	10,687	10,473	10,264	9,093
	98.5%	2013	29,392	23,699	23,225	22,760	20,163
	109.6%	2014	71,131	68,570	67,199	65,855	58,336
	115.5%	2015	100,414	97,747	90,905	81,360	72,071
	117.0%	2016	38,089	49,446	62,883	74,821	131,495
		<b>TOTAL</b>	<b>302,421</b>	<b>302,212</b>	<b>305,706</b>	<b>305,060</b>	<b>335,452</b>
		Change		(209)	3,494	(646)	

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

## EXHIBIT C

## Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Mar. 2016	Actual Apr. 2016	Projected May. 2016	Projected Jun. 2016	Projected Dec. 2016
Premium Liabilities					
(1) unearned premium (UP)	114,725	119,368	125,792	131,433	168,069
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	132.8%	133.0%	133.4%	133.8%	137.2%
(3) expected future costs {(1) x (2)}	152,329	158,806	167,784	175,824	230,543
(4) premium deficiency / (deferred policy acquisition cost)	37,604	39,438	41,992	44,391	62,474
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	117.4%	117.7%	118.0%	118.3%	121.3%
(6) expected future costs {(1) x (5)}	134,739	140,467	148,407	155,519	203,918
(7) premium deficiency / (deferred policy acquisition cost)	20,014	21,099	22,615	24,086	35,849

EXHIBIT D

Projected Year-end Policy Liabilities

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

Ontario		Projected Balances as at Dec. 31, 2016 (\$000s)						
ending 2016		nominal values			actuarial present value adjustments (apvs)			
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	development PfAD	Total apvs	TOTAL
prior	8,854	(45)	8,809	(135)	40	869	774	9,583
1997	136	(30)	106	(2)	1	11	10	116
1998	628	20	648	(17)	5	63	51	699
1999	790	70	860	(27)	7	83	63	923
2000	11	116	127	(5)	1	13	9	136
2001	759	326	1,085	(44)	12	104	72	1,157
2002	797	518	1,315	(59)	16	126	83	1,398
2003	808	704	1,512	(74)	20	144	90	1,602
2004	1,284	1,016	2,300	(122)	32	218	128	2,428
2005	241	1,368	1,609	(93)	26	152	85	1,694
2006	3,116	2,151	5,267	(305)	84	496	275	5,542
2007	3,721	2,829	6,550	(334)	92	622	380	6,930
2008	9,303	6,143	15,446	(618)	154	1,483	1,019	16,465
2009	15,446	11,329	26,775	(964)	268	2,581	1,885	28,660
2010	35,070	13,947	49,017	(1,814)	490	5,900	4,576	53,593
2011	38,738	3,832	42,570	(1,490)	383	5,135	4,028	46,598
2012	68,854	9,093	77,947	(2,416)	624	11,330	9,538	87,485
2013	89,014	20,163	109,177	(2,729)	655	18,628	16,554	125,731
2014	86,400	58,336	144,736	(3,763)	1,013	28,054	25,304	170,040
2015	99,035	72,071	171,106	(4,962)	1,369	33,063	29,470	200,576
PAYs (sub-total):	463,005	203,957	666,962	(19,973)	5,292	109,075	94,394	761,356
CAY (2016)	87,153	131,495	218,648	(6,778)	1,749	40,891	35,862	254,510
<b>claims liabilities:</b>	550,158	335,452	885,610	(26,751)	7,041	149,966	130,256	1,015,866
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	development PfAD	Total apvs	TOTAL*
<b>premium liabilities:</b>	168,069	35,849	203,918	(5,495)	1,425	30,695	26,625	230,543
<b>policy liabilities:</b>			<b>1,089,528</b>	<b>(32,246)</b>	<b>8,466</b>	<b>180,661</b>	<b>156,881</b>	<b>1,246,409</b>

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

Accident Year	Selected Claims Development MfADs (Dec. 31, 2015)			Total
	Third Party Liability	Accident Benefits	Other Coverages	
1994	10.0%	10.0%	10.0%	10.0%
1995	10.0%	10.0%	10.0%	10.0%
1996	10.0%	10.0%	10.0%	10.0%
1997	10.0%	10.0%	10.0%	10.0%
1998	10.0%	10.0%	10.0%	10.0%
1999	10.0%	10.0%	10.0%	10.0%
2000	10.0%	10.0%	10.0%	10.0%
2001	10.0%	10.0%	10.0%	10.0%
2002	9.3%	10.0%	10.0%	10.0%
2003	10.0%	10.0%	10.0%	10.0%
2004	10.0%	10.0%	10.0%	10.0%
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%	9.5%	10.0%
2009	10.0%	10.0%	7.1%	10.0%
2010	12.5%	12.5%	11.3%	12.5%
2011	12.5%	12.5%	12.2%	12.5%
2012	15.0%	15.0%	12.6%	15.0%
2013	17.5%	17.5%	15.7%	17.5%
2014	19.9%	20.0%	17.3%	19.9%
2015	19.9%	20.0%	17.2%	19.9%
2016	19.3%	20.0%	7.9%	19.3%
prem liab	15.5%	20.0%	5.3%	15.5%

discount rate: 0.90%  
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, 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 (0.90%), the prior valuation assumption (0.98%) and the prior fiscal year end valuation assumption (0.98%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

\$ Format: \$000s

Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2016 projected Unpaid								
AY	0.40%	0.90%	1.40%	1.90%	2.40%	2.90%	0.98%	0.98%
2001 & prior	12,107	11,970	11,836	11,706	11,578	11,453	11,948	11,948
2002	1,593	1,552	1,513	1,475	1,439	1,404	1,546	1,546
2003	1,801	1,751	1,704	1,658	1,614	1,572	1,743	1,743
2004	2,749	2,667	2,588	2,513	2,441	2,372	2,654	2,654
2005	1,840	1,780	1,723	1,668	1,616	1,567	1,771	1,771
2006	5,592	5,410	5,238	5,074	4,918	4,770	5,381	5,381
2007	6,523	6,336	6,160	5,993	5,835	5,685	6,307	6,307
2008	15,769	15,411	15,072	14,749	14,444	14,156	15,354	15,354
2009	29,049	28,459	27,902	27,374	26,873	26,395	28,368	28,368
2010	56,702	55,533	54,428	53,374	52,375	51,423	55,352	55,352
2011	45,055	44,170	43,331	42,530	41,766	41,035	44,031	44,031
2012	71,433	70,193	69,017	67,893	66,817	65,788	70,006	70,006
2013	116,196	114,557	112,964	111,438	109,986	108,578	114,283	114,283
2014	170,329	167,867	165,522	163,216	161,045	158,934	167,486	167,486
2015	211,508	208,109	204,864	201,744	198,729	195,793	207,595	207,595
2016	262,419	257,821	253,384	249,112	245,028	241,052	257,085	257,085
<b>Total</b>	<b>1,010,665</b>	<b>993,586</b>	<b>977,246</b>	<b>961,517</b>	<b>946,504</b>	<b>931,977</b>	<b>990,910</b>	<b>990,910</b>
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

Dollar Impact Relative to Valuation Assumption								
AY	0.40%	0.90%	1.40%	1.90%	2.40%	2.90%	0.98%	0.98%
<b>Total</b>	<b>17,079</b>	<b>-</b>	<b>(16,340)</b>	<b>(32,069)</b>	<b>(47,082)</b>	<b>(61,609)</b>	<b>(2,676)</b>	<b>(2,676)</b>
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

Percentage Impact Relative to Valuation Assumption								
AY	0.40%	0.90%	1.40%	1.90%	2.40%	2.90%	0.98%	0.98%
2001 & prior	1.1%	-	(1.1%)	(2.2%)	(3.3%)	(4.3%)	(0.2%)	(0.2%)
2002	2.6%	-	(2.5%)	(5.0%)	(7.3%)	(9.5%)	(0.4%)	(0.4%)
2003	2.9%	-	(2.7%)	(5.3%)	(7.8%)	(10.2%)	(0.5%)	(0.5%)
2004	3.1%	-	(3.0%)	(5.8%)	(8.5%)	(11.1%)	(0.5%)	(0.5%)
2005	3.4%	-	(3.2%)	(6.3%)	(9.2%)	(12.0%)	(0.5%)	(0.5%)
2006	3.4%	-	(3.2%)	(6.2%)	(9.1%)	(11.8%)	(0.5%)	(0.5%)
2007	3.0%	-	(2.8%)	(5.4%)	(7.9%)	(10.3%)	(0.5%)	(0.5%)
2008	2.3%	-	(2.2%)	(4.3%)	(6.3%)	(8.1%)	(0.4%)	(0.4%)
2009	2.1%	-	(2.0%)	(3.8%)	(5.6%)	(7.3%)	(0.3%)	(0.3%)
2010	2.1%	-	(2.0%)	(3.9%)	(5.7%)	(7.4%)	(0.3%)	(0.3%)
2011	2.0%	-	(1.9%)	(3.7%)	(5.4%)	(7.1%)	(0.3%)	(0.3%)
2012	1.8%	-	(1.7%)	(3.3%)	(4.8%)	(6.3%)	(0.3%)	(0.3%)
2013	1.4%	-	(1.4%)	(2.7%)	(4.0%)	(5.2%)	(0.2%)	(0.2%)
2014	1.5%	-	(1.4%)	(2.8%)	(4.1%)	(5.3%)	(0.2%)	(0.2%)
2015	1.6%	-	(1.6%)	(3.1%)	(4.5%)	(5.9%)	(0.2%)	(0.2%)
2016	1.8%	-	(1.7%)	(3.4%)	(5.0%)	(6.5%)	(0.3%)	(0.3%)
<b>Total</b>	<b>1.7%</b>	<b>-</b>	<b>(1.6%)</b>	<b>(3.2%)</b>	<b>(4.7%)</b>	<b>(6.2%)</b>	<b>(0.3%)</b>	<b>(0.3%)</b>
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	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 **Ontario**  
 AccountCode Desc **IBNR - Discour**

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			
prior	872	(19)	4	-	(15)	(1.7%)	857
1997	(28)	1	(1)	-	-	-	(28)
1998	79	(1)	-	-	(1)	(1.3%)	78
1999	158	(4)	4	-	-	-	158
2000	146	(3)	3	-	-	-	146
2001	469	(10)	9	-	(1)	(0.2%)	468
2002	706	(14)	14	-	-	-	706
2003	933	(19)	19	-	-	-	933
2004	1,348	(27)	24	-	(3)	(0.2%)	1,345
2005	1,681	(33)	58	-	25	1.5%	1,706
2006	3,171	(63)	(254)	-	(317)	(10.0%)	2,854
2007	3,642	(72)	202	-	130	3.6%	3,772
2008	8,657	(173)	(64)	-	(237)	(2.7%)	8,420
2009	15,478	(310)	365	-	55	0.4%	15,533
2010	20,918	(419)	1,274	-	855	4.1%	21,773
2011	10,392	(208)	(969)	-	(1,177)	(11.3%)	9,215
2012	22,312	(447)	(16)	-	(463)	(2.1%)	21,849
2013	48,997	(881)	(5,152)	-	(6,033)	(12.3%)	42,964
2014	101,075	(1,723)	(1,340)	-	(3,063)	(3.0%)	98,012
2015	134,868	(9,238)	6,062	-	(3,176)	(2.4%)	131,692
2016	47,052	13,938	48	-	13,986	29.7%	61,038
<b>Grand Total</b>	<b>422,926</b>	<b>275</b>	<b>290</b>	<b>-</b>	<b>565</b>	<b>0.1%</b>	<b>423,491</b>

EXHIBIT G

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

RSP		Ontario						IBNR - in \$000s
AccountCode Desc		IBNR - Undiscounted						
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	
prior	(41)	1	(13)	-	(12)	29.3%	(53)	
1997	(38)	1	(1)	-	-	-	(38)	
1998	20	-	-	-	-	-	20	
1999	83	(2)	2	-	-	-	83	
2000	136	(3)	3	-	-	-	136	
2001	384	(8)	8	-	-	-	384	
2002	609	(12)	12	-	-	-	609	
2003	828	(17)	17	-	-	-	828	
2004	1,194	(24)	24	-	-	-	1,194	
2005	1,583	(32)	57	-	25	1.6%	1,608	
2006	2,825	(57)	(237)	-	(294)	(10.4%)	2,531	
2007	3,193	(64)	197	-	133	4.2%	3,326	
2008	7,455	(149)	(85)	-	(234)	(3.1%)	7,221	
2009	13,246	(265)	336	-	71	0.5%	13,317	
2010	15,466	(309)	1,236	-	927	6.0%	16,393	
2011	5,576	(112)	(960)	-	(1,072)	(19.2%)	4,504	
2012	10,876	(218)	29	-	(189)	(1.7%)	10,687	
2013	29,392	(588)	(5,105)	-	(5,693)	(19.4%)	23,699	
2014	71,131	(1,423)	(1,138)	-	(2,561)	(3.6%)	68,570	
2015	100,414	(8,033)	5,366	-	(2,667)	(2.7%)	97,747	
2016	38,089	11,216	141	-	11,357	29.8%	49,446	
<b>Grand Total</b>	<b>302,421</b>	<b>(98)</b>	<b>(111)</b>	<b>-</b>	<b>(209)</b>	<b>(0.1%)</b>	<b>302,212</b>	