



**ONTARIO RISK SHARING POOL**

**AUGUST 2017 OPERATIONAL REPORT**

**ACTUARIAL HIGHLIGHTS**

Related Bulletin: [F17-074 Ontario RSP August 2017 Operational Report](#)

Related Quarterly Valuation Highlights:

[Actuarial Quarterly Valuation Highlights Risk Sharing Pools as at June 30, 2017](#)

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**ACTUARIAL HIGHLIGHTS**  
**RSP ONTARIO**  
**OPERATIONAL REPORT**  
**AUGUST 2017**

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## 1 Summary

### 1.1 Valuation Schedule (Fiscal Year 2017)

The August 2017 Operational Report incorporates the results of an updated valuation (as at June 30, 2017) – the impact of the implementation of the valuation is discussed in section 1.2. The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 2017.

<b>ONTARIO RISK SHARING POOL FISCAL YEAR 2017 – 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, 2016 (completed)	0.62% mfad: 25 bp	Oct. 2016	updated valuation (roll forward): accident year 2016 loss ratio increased 0.8 points to 119.2%; discount rate decreased by 6 basis points; no change to selected margins for adverse deviations
Dec. 31, 2016 (completed)	1.12% mfad: 25 bp	Mar. 2017	updated valuation: accident year 2016 loss ratio increased 0.5 points to 119.7%; accident year 2017 loss ratio increased 0.4 points to 117.9%; discount rate increased by 50 basis points; no change to selected margins for adverse deviations
Mar. 31, 2017 (completed)	1.04% mfad: 25 bp	May 2017	updated valuation (roll forward): accident year 2017 loss ratio increased 0.7 points to 118.6%; discount rate decreased by 8 basis points; no change to selected margins for adverse deviations
Jun. 30, 2017	1.23% mfad: 25 bp	Aug. 2017	updated valuation: accident year 2017 loss ratio increased 1.3 points to 119.9%; discount rate increased by 19 basis points; selected margins for adverse deviations were updated
Sep. 30, 2017		Oct. 2017	update valuation (roll forward):

Under the proposed schedule for fiscal year 2017, the “off-half” valuation quarters ending March 31, 2017 and September 30, 2017 would not reflect a full valuation update of assumptions, but would rather “roll-forward” key assumptions from the previous valuation.

### 1.2 New Valuation

A valuation of the Ontario Risk Sharing Pool (“RSP”) as at June 30, 2017 has been completed since last month’s Operational Report and the results of that valuation have been incorporated into this month’s Report. The valuation was completed by the Facility Association’s internal actuarial group in conjunction with, and approved by, the appointed actuary, under the hybrid model for actuarial services. Additional detail will be provided in an “Actuarial Highlights – Quarterly Valuation” report to be posted to the FA website at the same time as this report.

The valuation implementation impact is summarized in the tables below.

*Summary of Impact (\$000s) of Implementing Result of Valuation as at June 31, 2017<sup>1</sup>*

Ontario	unfav / (fav) for the month and ytd					
	IMPACT in \$000s from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
[1]	[2]	[3]	[4]	[5]	[6]	
PAYS	(16,295)	(2,878)	(19,173)	(4,222)	(13,084)	(36,479)
CAY	3,245	515	3,760	(1,533)	-	2,227
Prem Def	794	98	892	(1,407)	-	(515)
<b>TOTAL</b>	<b>(12,256)</b>	<b>(2,265)</b>	<b>(14,521)</b>	<b>(7,162)</b>	<b>(13,084)</b>	<b>(34,767)</b>

As indicated in the table above, the incorporation of the new valuation had an estimated **\$34.8 million favourable impact** on the month's net result from operations, subtracting an estimated 14.0 points (see table immediately below) from the **year-to-date Combined Operating Ratio** to end at **129.1%**.

*Summary of Impact (% YTD EP) of Implementing Result of Valuation as at June 30, 2017*

Ontario	ytd EP 248,462 (actual)					
	IMPACT unfav / (fav) as % ytd EP from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
[1]	[2]	[3]	[4]	[5]	[6]	
PAYS	(6.6%)	(1.2%)	(7.7%)	(1.7%)	(5.3%)	(14.7%)
CAY	1.3%	0.2%	1.5%	(0.6%)	-	0.9%
Prem Def	0.3%	-	0.4%	(0.6%)	-	(0.2%)
<b>TOTAL</b>	<b>(4.9%)</b>	<b>(0.9%)</b>	<b>(5.8%)</b>	<b>(2.9%)</b>	<b>(5.3%)</b>	<b>(14.0%)</b>

The impact of the nominal changes is shown in column [1] of the two preceding summary tables. The change in the selected nominal ultimates was favourable by \$12.3 million overall. This reflects the impact attributable to the changes in the selected ultimate loss ratios (i.e. for each accident year, it is the product of life-to-date earned premium for the accident year and the change in the selected ultimate loss ratio).

The prior accident years overall showed a \$16.3 million favourable variance with the implementation as recorded claims activity continues to show favourable actual experience relative to recorded activity projected from the previous valuation, particularly with respect to bodily injury

<sup>1</sup>In these tables, "PAYS" refers to prior accident years, "CAY" refers to the current accident year, and "Prem Def" refers to the provision for premium deficiency or the deferred policy acquisition asset (as applicable). "Nominal" refers to changes excluding any actuarial present value adjustments, whereas "apv adj." refers to actuarial present value adjustments.

The columns under the heading "ults & payout patterns" reflect the impact of changes in the valuation selected ultimates and claims payment patterns (i.e. based on unchanged selection of discount rates and margins for adverse deviation). The column "dsct rate" reflects the impact of the change in the selected discount rate and the column "margins" reflects the impact of any changes in selected margins for adverse deviations.

(within third party liability) recorded activity. The total favourable impact is 2.4% of the prior accident years' nominal unpaid balance of \$683.5 million determined at the end of last month (July 2017).

The current accident year and premium deficiency impacts are a result of the changes in the selected loss ratios for accident year **2017** (up 1.3 points from 118.6% to **119.9%**) and **2018** (down 0.7 points from 123.2% to **122.5%**). These changes reflect various updated assumptions, but are not beyond what we would “expect” in terms of point movements of estimated “mean” loss ratios.

The impacts related to actuarial present value (“apv”) adjustments are split into the impact prior to any change in the selected discount rate and selected margins for adverse deviations or “MfADs” (at the level they were selected i.e. coverage and accident half-year), the impact of then updating the discount rate, and finally the impact of any changes to the MfADs (at the level they were selected). The changes in actuarial present value adjustments are shown in the summary tables in columns [2], [4], and [5].

Column [2] recognizes that changing the nominal selections also changed the unpaid estimates (including changes to the relative mix by government line, which had an impact on the weighted-average MfADs). It also reflects the fact that we updated the projected emergence of claims payments, resulting in a change in the projected cash flows. These changes generated a favourable change of \$2.3 million in the actuarial present value adjustments, prior to any changes in the selected discount rate and/or MfADs.

Claims payment emergence patterns were updated and cash flows were reviewed against the selected risk-free yield curve, derived from Government of Canada benchmark bond yields monthly series using values for June 2017. Column [4] accounts for the change in the **discount rate** selected (increased 19 basis points to **1.23%**), indicating a favourable impact of \$7.2 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was \$5.8 million at August 2017 (projected \$6.0 million impact at December 31, 2017) – this compares to the \$6.2 million change one would estimate as the impact by interpolation using the interest rate sensitivity table provided in last month's Actuarial Highlights.

Column [5] accounts for any changes to selected MfADs. The selected **investment rate MfAD** was **left unchanged at 25 basis points**. However, the selected **claims development MfADs** were updated for some accident years and coverages, resulting in an estimated overall favourable impact of \$13.1 million.

Consideration was given to recent legal decisions and changes in legislation / regulation as noted above and outlined in section 1.4.

### **1.3 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.

#### 1.4 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation<sup>2</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 (other than minor changes noting the review and update of applicable reform adjustments using industry data as at December 31, 2016 and the addition of references to additional discussion in section 1.5, there have been no significant changes in these descriptions since last month's Highlights).

**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. With the current valuation (June 30, 2017), reform adjustments (originally introduced with the June 30, 2015 valuation) 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, 2016), impacting the selection of ultimates. Additional discussion in relation to the application of changes to the prejudgment interest rate on general damages for non-pecuniary loss can be found in section 1.5.

**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. With the current valuation (June 30, 2017), reform adjustments (originally introduced with the September 30, 2015 valuation) 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, 2016) and nominal valuation estimates, impacting the selection of ultimates. Additional discussion in relation to the application of changes in the tort threshold and deductibles

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<sup>2</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>.

can be found in section 1.5.

The **Supreme Court of Canada** rendered its judgment on **Saadati v Moorhead (2017 SCC 28, rendered on Jun 2, 2017)**. Saadati was involved in a collision in July of 2005 in British Columbia and sued the at-fault driver for damages. According to the Supreme Court decision, “*The trial judge found that the ... accident caused S[aadati] psychological injuries, including personality change and cognitive difficulties. ...and awarded S[aadati] \$100,000 for non-pecuniary damages.*” The trial decision was appealed to the BC Court of Appeal where the trial’s \$100,000 non-pecuniary award was dismissed. The Supreme Court upheld the \$100,000 non-pecuniary award, determining:

- “*A finding of legally compensable mental injury need not rest, in whole or in part, on the claimant proving a recognized psychiatric injury.*”
- “*...a trier of fact adjudicating a claim of mental injury is not concerned with diagnosis, but with symptoms and their effects.*”
- “*Expert evidence can assist in determining whether or not a mental injury has been shown, but where psychiatric diagnosis is unavailable, it remains open to a trier of fact to find on other evidence adduced by the claimant that he or she has proven on a balance of probabilities the occurrence of mental injury.*”

At the current time, no adjustments have been made to our valuation estimates or views based on the judgment as rendered, but we continue to review and consider the implications of the judgment.

### 1.5 Ontario RSP Bodily Injury Case Reserve summary

The following discussion was **updated from last month’s Highlights** to reflect the review and update of the reform adjustments using Ontario Industry PPV data as at December 31, 2016 as well as the **Ontario Court of Appeal decisions in El-Khodr v. Lackie (2017ONCA716) and Cobb v. Long Estate (2017ONCA717)**.

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 December 31, 2016).

In the **Ontario Court of Appeal decisions** in El-Khodr v. Lackie (**September 19, 2017**; 2017 ONCA 716) and Cobb v. Long Estate (**September 19, 2017**; 2017 ONCA 717), the court of appeal ruled that the change to prejudgment interest for non-pecuniary<sup>3</sup> losses from a set level of 5% to the level that applies to pecuniary losses were implemented to achieve particular policy objectives and therefore should have retrospective application (ie. to be applied to all settlements on or after January 1, 2015). During the current valuation (as at June 30, 2017), FA’s view was consistent with the Ontario Divisional Court decision in Carr v. Modi (November 18, 2016; 2016 ONSC 7255)

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<sup>3</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.”

presuming the change in prejudgment interest for non-pecuniary losses would not have a retroactive effect, and no adjustments had been made to the provisions for accident years 2014 and prior as a result. We are reviewing the impact of the recent Ontario Court of Appeal decisions with FA's Appointed Actuary.

**In addition to the above**, in the **Ontario Court of Appeal decisions** in El-Khodr v. Lackie (**September 19, 2017**; 2017 ONCA 716) and Cobb v. Long Estate (September 19, 2017; 2017 ONCA 717), the court of appeal ruled that the changes to the tort deductible and monetary threshold were implemented to achieve particular policy objectives and therefore should have retrospective application (ie. to be applied to all settlements on or after January 1, 2015). The Facility Association view, consistent with these decisions, is that the changes to the bodily injury tort threshold and deductibles are on a settlement date basis. With the current valuation (as at June 30, 2017), no additional reform adjustment was included as we have assumed the retroactive impact of this product reform change has been fully reflected in outstanding case reserves.

Recognizing that individual members may interpret these results differently, we have included a table at the top of the next page displaying the levels of Ontario RSP Third Party Liability – Bodily Injury Case Reserves (as at December 31, 2016<sup>4</sup>) by accident year as well as projected average duration, from accident date to projected settlement date, from the December 31, 2016 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>4</sup>This table will be updated to December 31, 2017 with the 2017 Q4 valuation which is anticipated to be implemented with the March 2018 Operational Report.



**ON RSP** (Amounts in \$000s; as at Dec. 31, 2016)

AY	Curr BI Case	avg yrs to Dec 2016	projected avg # yrs to settlement	projected avg duration
[1]	[2]	[5]	[6]	[7]
1993	-	23.5	-	-
1994	-	22.5	-	-
1995	-	21.5	-	-
1996	168	20.5	2.0	22.5
1997	-	19.5	-	-
1998	-	18.5	-	-
1999	-	17.5	-	-
2000	-	16.5	-	-
2001	-	15.5	-	-
2002	-	14.5	-	-
2003	8	13.5	6.0	19.5
2004	-	12.5	-	-
2005	50	11.5	7.4	18.9
2006	123	10.5	8.0	18.5
2007	907	9.5	5.2	14.7
2008	2,289	8.5	1.7	10.2
2009	6,856	7.5	1.7	9.2
2010	14,342	6.5	2.1	8.6
2011	15,171	5.5	2.0	7.5
2012	27,936	4.5	2.0	6.5
2013	44,461	3.5	2.2	5.7
2014	44,176	2.5	2.6	5.1
2015	44,279	1.5	3.1	4.6
2016	29,519	0.5	3.9	4.4
<b>TOTAL</b>	<b>230,285</b>	<b>3.2</b>	<b>2.6</b>	<b>5.8</b>

In the above table, the column referenced as [7] (“projected avg duration”) is an estimate of the number of years from claim occurrence<sup>5</sup> to claim settlement, via summing the average number of years from claim occurrence to December 31, 2016 (column [5]) and from December 31, 2016 to settlement (column [6]).

## 1.6 Current Provision Summary

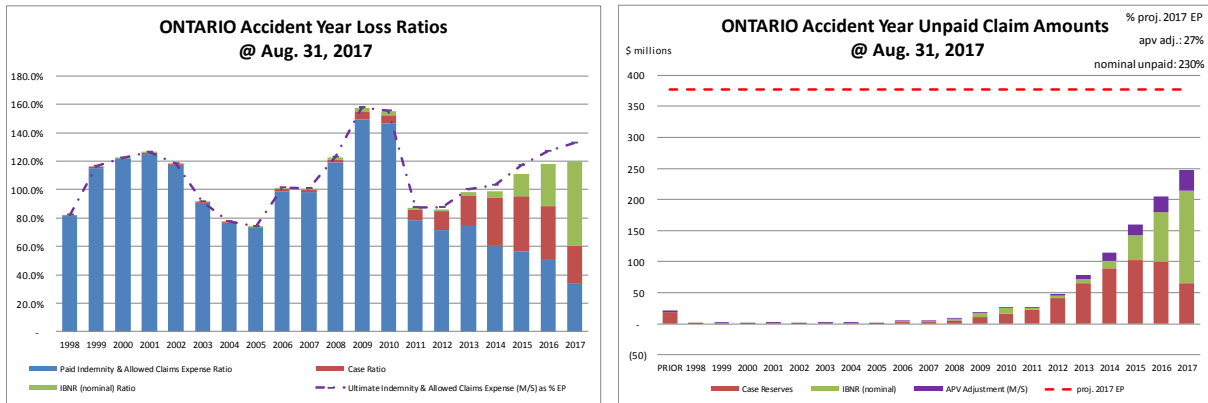
The charts at the top of the next page show the current levels of claim liabilities<sup>6</sup> booked by accident year<sup>7</sup>. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the

<sup>5</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>6</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>7</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”.

associated dollar amounts for the components of the claim liabilities and the current projected amount of 2017 full year earned premium (the red hash-mark line) to provide some perspective.



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

The current actuarial present value adjustments provision for claims liabilities (\$102.4 million – see table below) represents 27% of the earned premium projected for the full year 2017 (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	548,083	56.6%
ibnr	317,574	32.8%
M/S apv adjust.	102,402	10.6%
<b>M/S total</b>	<b>968,059</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 72% of the IBNR balance relates to accident years 2016 and 2017 (see Exhibit B). Approximately 83% of the M/S total claim liabilities are related to accident

years 2013-2017 inclusive (i.e. the most recent 5 accident years), and approximately 4% is related to accident years 2007 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)			policy liabilities (\$000s)		
	amt	%		amt	%
unearned prem	202,352	73.9%	claim	865,657	69.7%
prem def/(dpac)	43,142	15.7%	premium	245,494	19.8%
M/S apv adjust.	28,449	10.4%	M/S apv adjust.	130,851	10.5%
<b>M/S total</b>	<b>273,943</b>	<b>100.0%</b>	<b>M/S total</b>	<b>1,242,002</b>	<b>100.0%</b>

## 2 Activity During the Month of August 2017

### 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>8</sup>.

<sup>8</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)*

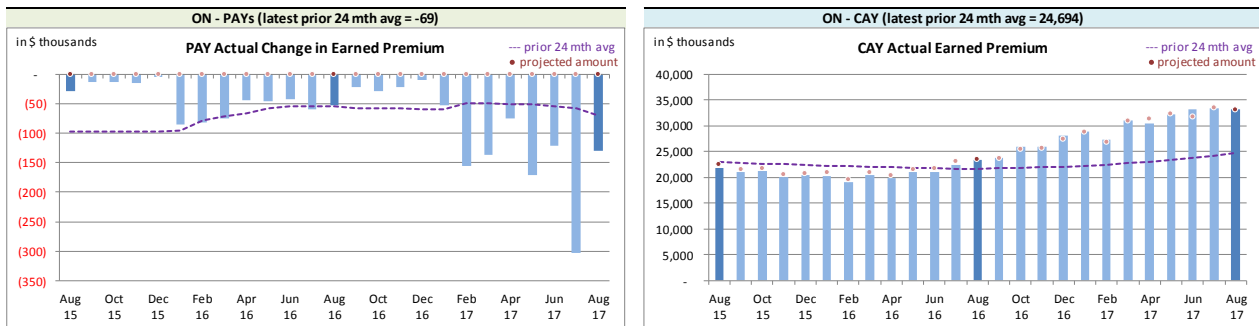
Table 01 Accident Year	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	(1)	(1)	10,682	3,064	(7,362)	(1,055)	3,319	2,008
2015	(2)	(2)	2,619	(352)	(443)	1,163	2,176	811
2016	(127)	(127)	2,510	(1,300)	(686)	(1,357)	1,824	(2,657)
2017	33,204	69	14,810	1,102	11,013	4,014	25,824	5,116
TOTAL	33,074	(61)	30,621	2,514	2,522	2,764	33,143	5,278

(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). 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>9</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.

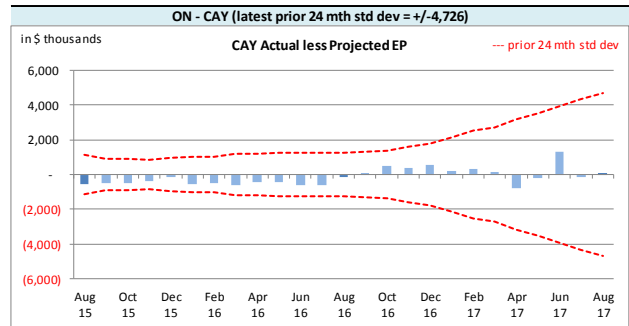
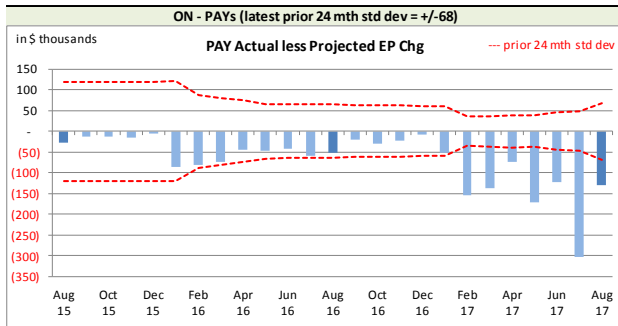
We have noted and investigated the unusually high level of PAYs earned premium activity so far in 2017. Our investigation identified eligible risks incorrectly removed from the pool by a member company and management has asked the member to correct this. The member has advised that these risks and associated premium and claims transactions will be reinstated to the pool by the end of the 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

<sup>9</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.

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

*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)	(69)	24,694	
std dev	68	4,726	
A-P <> std dev	7	-	
% <> std dev	28.0%	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 prior accident years’ (PAYs) bias<sup>10</sup>, with actuals generally lower than projected. However, the magnitude is not high relative to

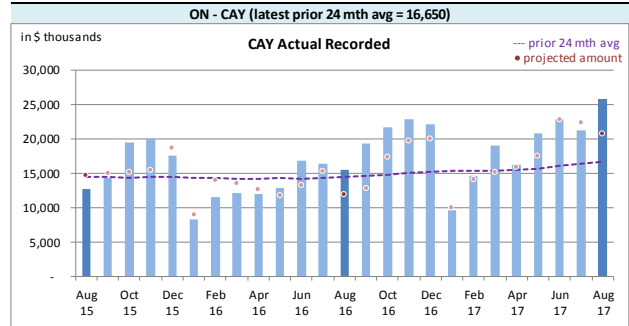
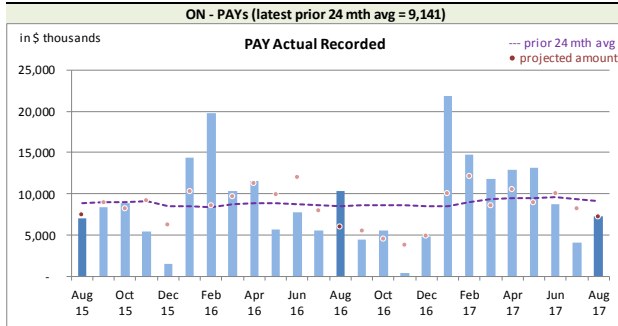
monthly premium, and the variances are within the prior 24-month standard deviation for monthly earned premium more often than indicated by a normal distribution (left table above). In addition to the PAYs’ bias, the CAY had also shown bias up until August 2016, with actuals being generally lower than projected. Starting with the August 2016 projections, we have modified our projections processes in an attempt to account for CAY bias. Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority. Readers will also note the significant widening of the CAY standard deviation band, reflecting the recent and sustained volume increases and the impact as those increases are earned.

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

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

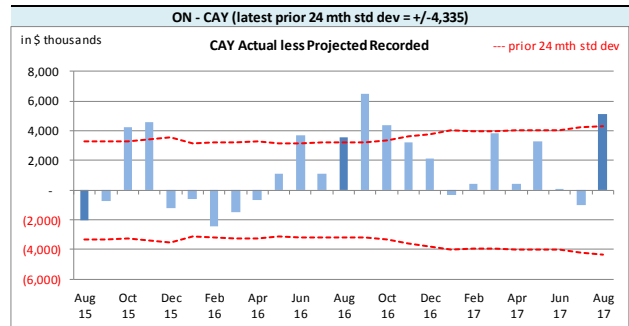
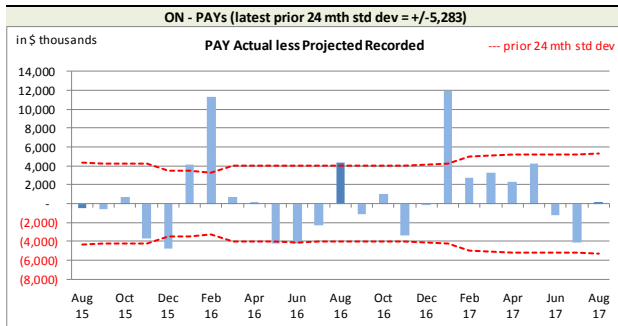
<sup>10</sup>The PAYs’ variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

*Ontario RSP Actual Recorded by Calendar Month*



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

*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)	9,141	16,650	
std dev	5,283	4,335	
A-P <> std dev	7	7	
% <> std dev	28.0%	28.0%	
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 no better than simply projecting the prior 24-month average amount.

The current accident year (CAY) **recorded** variances (right chart above) fell outside of one standard deviation 24% of the time over the entire period, suggesting that the projection process performs no better than simply projecting the prior 24-month average amount. There does appear to be evidence of some bias as fourteen times in the past sixteen months our projections were below the actual CAY **recorded** amount. Among these fourteen months, five variances were outside the one standard deviation band. The CAY **recorded** during the month as a percentage of the year-to-date **earned premium** table (bottom right chart at the top of the page following the next page) does show consistently higher ratios during 2016 than 2015. This is also occurring in relation to the **paid-to-ytd-earned premium** ratio (next section).

The CAYs **recorded** variance for the current month was outside the one standard deviation band. The activity was reviewed and confirmed, with the variance attributed to the challenges of projecting recorded activity levels as volumes are increasing significantly, and as ratios used as guides for

projections appear to be changing.

Specifically, the averages of monthly ratios for **recorded** and **paid** to year-to-date earned premium have been on the rise generally since 2012, as is evident in the tables below. These tables show, in each row, the average monthly ratio for each calendar year. That is, each row in the left table (as at Dec) provides the average of the 12 monthly-ratios (i.e. Jan, Feb, ... Dec) for that row's calendar year, whereas each row in the right table (as at August) provides the average of the 8 monthly ratios (i.e. Jan-August) for that row's calendar year.

With respect to the left table below (average of 12 months to Dec for each year), the 2016 average **recorded** ratio at 15.8% and the **paid** ratio at 7.6% were both at their highest levels since 2010. For the right table (average of 8 months to August for each year), the average ratios for 2016 were up from 2015 for both **recorded** and **paid**, and although the 2017 ratios are both down in relation to 2016, they remain at “elevated” levels compared with the ratios for the 3 calendar years immediately following the 2010 reforms.

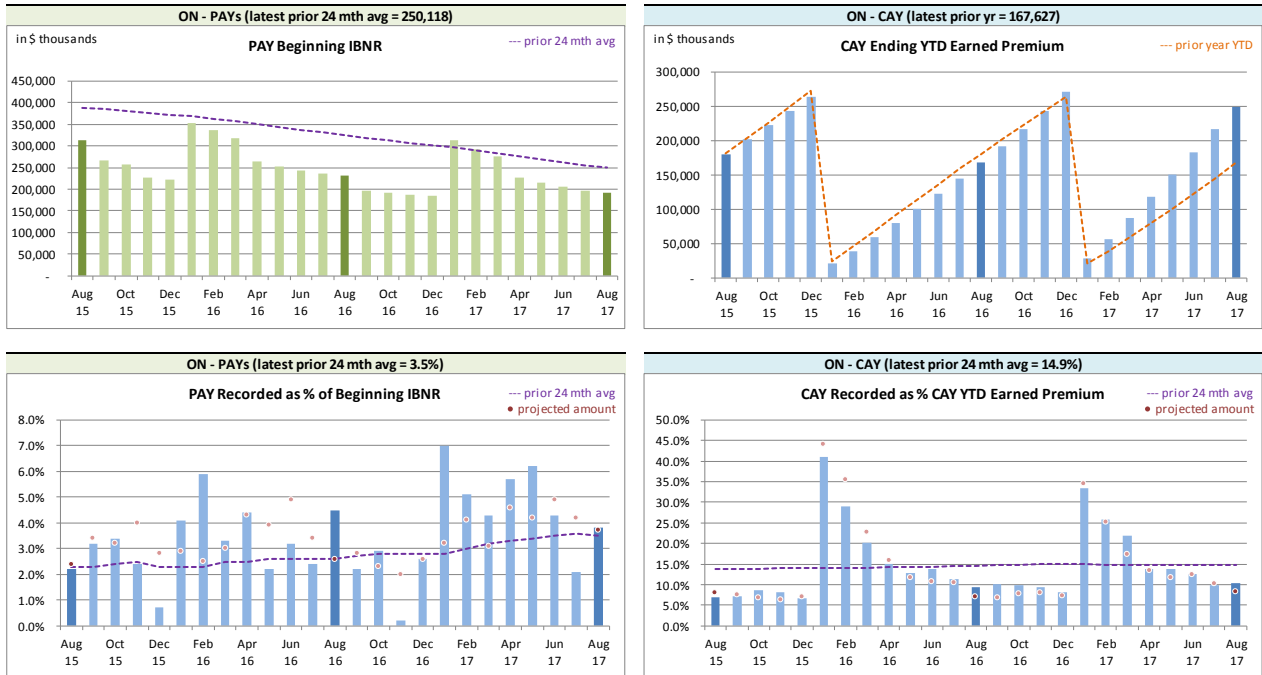
CAY avg of mthly ratios for yr					CAY avg of mthly ratios for yr				
as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg	as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg
Dec 2009	18.5%		7.0%		Aug 2009	22.3%		7.9%	
Dec 2010	23.2%	4.7%	8.0%	1.0%	Aug 2010	28.3%	6.0%	8.8%	0.9%
Dec 2011	11.5%	(11.7%)	5.0%	(3.0%)	Aug 2011	14.3%	(14.0%)	5.9%	(2.9%)
Dec 2012	11.4%	(0.1%)	4.6%	(0.4%)	Aug 2012	13.7%	(0.6%)	5.5%	(0.4%)
Dec 2013	12.0%	0.6%	5.1%	0.5%	Aug 2013	14.6%	0.9%	6.0%	0.5%
Dec 2014	13.7%	1.7%	5.9%	0.8%	Aug 2014	16.9%	2.3%	7.1%	1.1%
Dec 2015	14.4%	0.7%	6.4%	0.5%	Aug 2015	17.7%	0.8%	7.7%	0.6%
Dec 2016	15.8%	1.4%	7.6%	1.2%	Aug 2016	19.1%	1.4%	8.9%	1.2%
					Aug 2017	17.7%	(1.4%)	8.8%	(0.1%)

These ratios may be signalling an actual increase in claim amounts generally, signalling a change in the pattern of **recorded** / **paid** activity, or signalling belated impacts of rate decreases (reducing **earned premium** level per loss cost level). The CAY **recorded** activity will be monitored to determine if this is an ongoing trend.

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. Note in particular the reduction in the level of PAY beginning IBNR over the months, 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).

*Ontario RSP Levels that influence<sup>11</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:

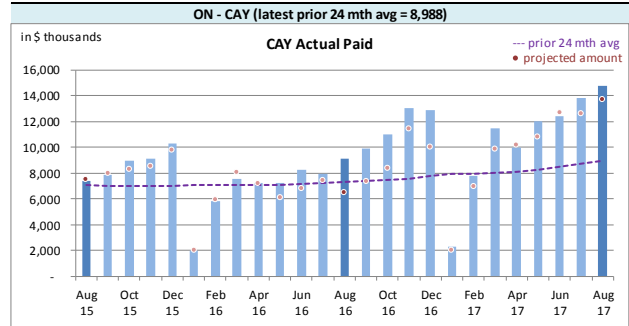
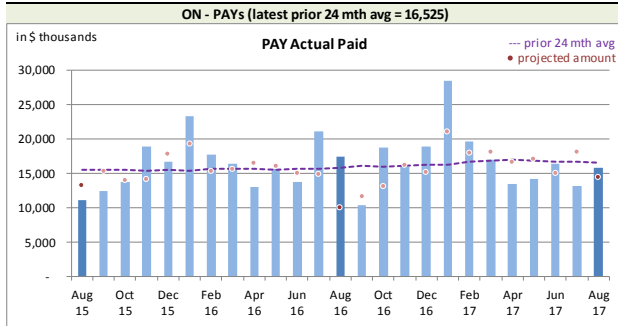
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years’ ultimate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

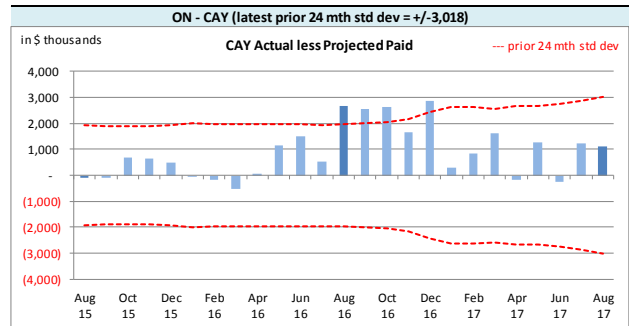
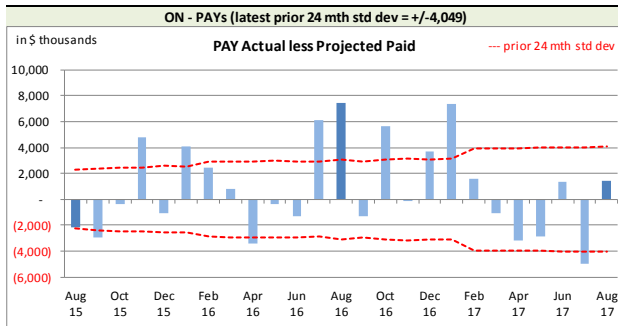
<sup>11</sup>Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected 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*



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

*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)		16,525	8,988
std dev		4,049	3,018
A-P <> std dev		10	4
% <> std dev		40.0%	16.0%
norm <> std dev		31.7%	31.7%

With respect to **paid** indemnity & allowed claims expense, 40% 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 worse than projecting simply based on the preceding 24-month

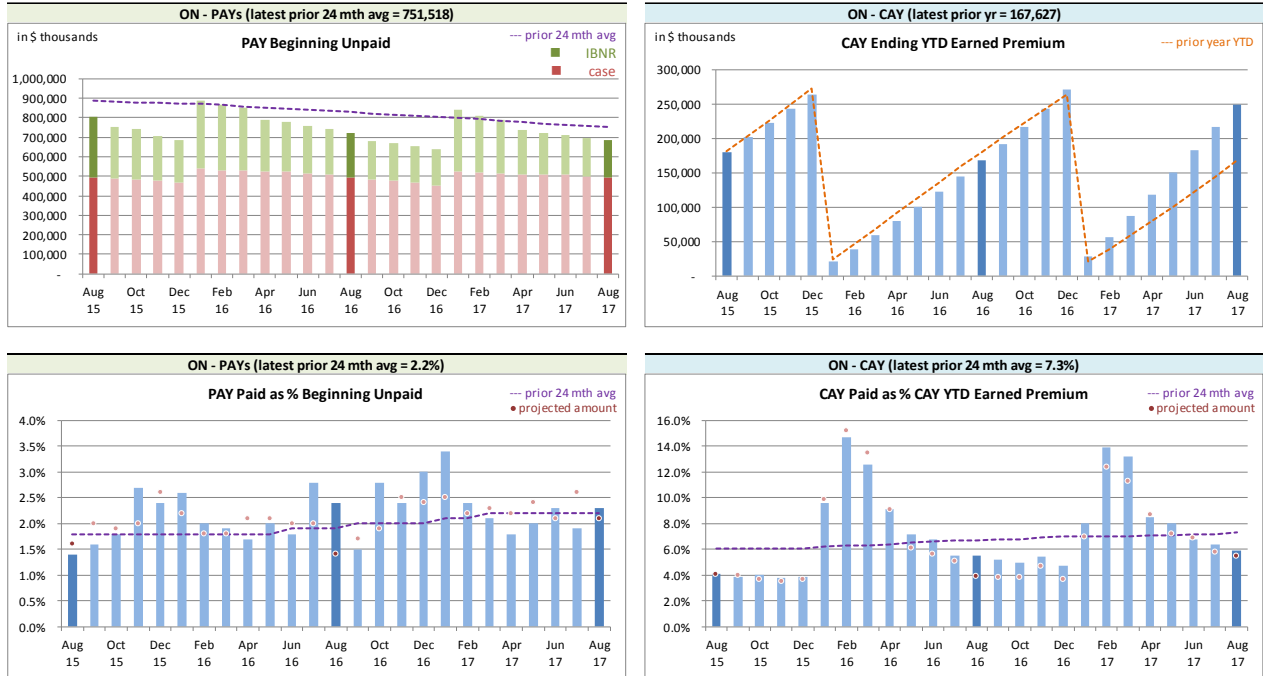
average. There does appear to be some evidence of bias, with actuals coming in higher than our projections (of the 10 occurrences where the variance was outside of a standard deviation, 7 had actuals higher than our projection). Efforts to address this bias seem to be working.

The current accident year (CAY) **paid** variances (right chart above) show that actuals have been higher than projected for fifteen of the past seventeen months, four of which were also outside the one standard deviation band. The bottom right chart at the top of the next page shows that the rolling 24-month ratio of CAY **paid** to ytd **earned premium** has been increasing, which adds to the difficulty in projecting **paid** activity. We have made adjustments to our assumption selections in an attempt to account for these issues, but recognize, as discussed in the previous section, that the results may be signalling a change in paid patterns, a change in claims levels in general, or the impact of rate changes.



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

*Ontario RSP Levels that influence<sup>12</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>13</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

<sup>12</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>13</sup>For ease of discussion, “IBNR” is used in place of “provisions for incurred but not recorded (IBNR) and development”.

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 immediately below summarizes variances in provisions included in the August 2017 Operational Report and the associated one-month projections from last month’s Report.

*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	47,913	(7,840)	(12,361)	(2,090)	40,622	(6,628)	76,174	(16,558)
2015	40,439	(3,704)	(4,721)	(644)	21,609	(4,177)	57,327	(8,525)
2016	80,075	(5,070)	(6,670)	(882)	31,468	(5,840)	104,873	(11,792)
2017	149,147	(1,789)	(8,577)	(1,362)	41,032	182	181,602	(2,969)
<b>TOTAL</b>	<b>317,574</b>	<b>(18,403)</b>	<b>(32,329)</b>	<b>(4,978)</b>	<b>134,731</b>	<b>(16,463)</b>	<b>419,976</b>	<b>(39,844)</b>

The IBNR provision is \$18.4 million lower than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1, and due to the valuation implementation.

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

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

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

The table at the top of the next page summarizes the variances in the provisions for the premium deficiency amounts included in the August 2017 Operational Report and the one-month projections from last month’s Report. This RSP is in a premium deficiency position (shown as a positive amount) prior to and after 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 noted are mainly driven by the unearned premium variance and due to the valuation implementation.

*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:	43,142	1,525	28,449	(809)	71,591	716
balance as % unearned premium:	21.3%	0.4%	14.1%	(0.6%)	35.4%	(0.2%)
actual unearned premium:	202,352					
less projected:	3,389					

### 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>14</sup> ratio per latest valuation
- (c) Estimated ultimate incurred = (a) x (b)
- (d) Recorded indemnity & allowed claims expense to-date
- (e) IBNR = (c) – (d)

### 4 Calendar Year-to-Date Results

The table at the top of the next page summarizes the calendar year-to-date results for indemnity & allowed claims expenses<sup>15</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 120.5% rather than 119.9% (the valuation ultimate ratio for accident year 2017), 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.)

<sup>14</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>15</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.

*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	(49,684)	(20.0%)	(51,204)	(20.6%)	(100,888)	(40.6%)	(38,642)	(11.7%)
CAY	299,279	120.5%	32,455	13.1%	331,734	133.5%	45,502	0.6%
TOTAL	249,594	100.5%	(18,749)	(7.5%)	230,845	92.9%	6,860	(11.1%)

(“% EP” based on 2017 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 and due to valuation implementation. 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 and the valuation implementation.

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

**5 Current Operational Report – Additional Exhibits**

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

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

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

The ultimate loss ratios 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				
		Actual	Actual	Projected	Projected	Projected
		Jul. 2017	Aug. 2017	Sep. 2017	Oct. 2017	Dec. 2017
IBNR + M/S actuarial present value adjustments	Accident Year					
	prior	220	1,922	1,882	1,846	1,773
	1998	77	73	72	71	69
	1999	54	48	48	46	43
	2000	72	72	71	70	67
	2001	209	200	196	192	183
	2002	284	282	276	271	260
	2003	554	392	383	375	361
	2004	719	526	515	505	484
	2005	814	533	522	512	492
	2006	1,694	1,133	1,111	1,088	1,044
	2007	2,217	1,697	1,663	1,631	1,567
	2008	4,673	3,354	3,286	3,221	3,093
	2009	8,456	7,112	6,969	6,829	6,560
	2010	15,030	10,344	10,136	9,933	9,541
	2011	5,470	3,889	3,810	3,735	3,586
discount rate	2012	9,270	7,010	6,841	6,675	6,410
1.23%	2013	12,095	12,544	12,293	11,981	11,507
	2014	32,977	25,043	24,541	23,926	22,979
interest rate margin	2015	67,660	57,327	55,540	53,098	50,277
25 basis pts	2016	121,790	104,873	100,374	95,081	84,453
	2017	161,924	181,602	197,286	209,691	222,568
	<b>TOTAL</b>	<b>446,259</b>	<b>419,976</b>	<b>427,815</b>	<b>430,777</b>	<b>427,317</b>
	Change		(26,283)	7,839	2,962	

*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 Jul. 2017	Actual Aug. 2017	Projected Sep. 2017	Projected Oct. 2017	Projected Dec. 2017
	-	prior	(1,341)	270	264	260	252
	82.1%	1998	23	23	23	23	23
	116.4%	1999	(8)	(8)	(8)	(8)	(8)
	122.1%	2000	66	66	65	64	62
	126.2%	2001	145	145	142	139	133
	118.3%	2002	244	248	243	238	228
	91.4%	2003	477	334	327	320	308
	77.9%	2004	622	456	447	438	420
	73.9%	2005	768	509	499	489	469
	101.1%	2006	1,516	1,020	1,000	980	941
	100.7%	2007	2,028	1,585	1,553	1,522	1,462
	122.6%	2008	4,100	3,025	2,964	2,905	2,790
	157.4%	2009	7,157	6,210	6,086	5,964	5,728
	155.3%	2010	12,992	8,979	8,799	8,623	8,282
	87.2%	2011	3,684	2,443	2,394	2,346	2,253
	86.3%	2012	4,642	4,062	3,981	3,901	3,747
	98.1%	2013	2,968	5,751	5,636	5,523	5,305
	98.9%	2014	16,981	12,795	12,539	12,163	11,682
	110.9%	2015	45,508	40,439	38,821	36,880	34,701
	117.9%	2016	89,626	80,075	76,071	71,507	63,177
	119.9%	2017	132,346	149,147	161,533	170,613	175,824
		<b>TOTAL</b>	<b>324,544</b>	<b>317,574</b>	<b>323,379</b>	<b>324,890</b>	<b>317,779</b>
		Change		(6,970)	5,805	1,511	

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

## EXHIBIT C

## Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual	Actual	Projected	Projected	Projected
	Jul. 2017	Aug. 2017	Sep. 2017	Oct. 2017	Dec. 2017
Premium Liabilities					
(1) unearned premium (UP)	205,972	202,352	204,591	199,294	187,919
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	135.1%	135.4%	135.7%	136.1%	136.9%
(3) expected future costs {(1) x (2)}	278,280	273,943	277,665	271,209	257,291
(4) premium deficiency / (deferred policy acquisition cost)	72,308	71,591	73,074	71,915	69,372
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	120.5%	121.3%	121.6%	122.0%	122.7%
(6) expected future costs {(1) x (5)}	248,108	245,494	248,829	243,043	230,570
(7) premium deficiency / (deferred policy acquisition cost)	42,136	43,142	44,238	43,749	42,651



## EXHIBIT D

## Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2017, broken down by component.

Ontario		Projected Balances as at Dec. 31, 2017 (\$000s)						
ending 2017		nominal values			actuarial present value adjustments (apvs)			
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	development PfAD	Total apvs	TOTAL
prior	17,423	252	17,675	(274)	54	1,741	1,521	19,196
1998	610	23	633	(19)	4	61	46	679
1999	778	(8)	770	(28)	5	74	51	821
2000	11	62	73	(3)	1	7	5	78
2001	801	133	934	(46)	8	88	50	984
2002	392	228	620	(34)	7	59	32	652
2003	833	308	1,141	(67)	13	107	53	1,194
2004	1,131	420	1,551	(101)	20	145	64	1,615
2005	162	469	631	(45)	9	59	23	654
2006	2,617	941	3,558	(278)	53	328	103	3,661
2007	2,249	1,462	3,711	(293)	56	342	105	3,816
2008	4,535	2,790	7,325	(476)	95	684	303	7,628
2009	10,359	5,728	16,087	(853)	161	1,524	832	16,919
2010	14,558	8,282	22,840	(1,119)	206	2,172	1,259	24,099
2011	21,052	2,253	23,305	(1,119)	233	2,219	1,333	24,638
2012	37,174	3,747	40,921	(1,596)	327	3,932	2,663	43,584
2013	59,978	5,305	65,283	(2,089)	392	7,899	6,202	71,485
2014	82,187	11,682	93,869	(2,910)	563	13,644	11,297	105,166
2015	97,237	34,701	131,938	(4,354)	792	19,138	15,576	147,514
2016	91,483	63,177	154,660	(5,722)	1,083	25,915	21,276	175,936
PAYs (sub-total):	445,570	141,955	587,525	(21,426)	4,082	80,138	62,794	650,319
CAY (2017)	132,996	175,824	308,820	(12,353)	2,471	56,626	46,744	355,564
<b>claims liabilities:</b>	<b>578,566</b>	<b>317,779</b>	<b>896,345</b>	<b>(33,779)</b>	<b>6,553</b>	<b>136,764</b>	<b>109,538</b>	<b>1,005,883</b>
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	development PfAD	Total apvs	TOTAL*
<b>premium liabilities:</b>	187,919	42,651	230,570	(7,594)	1,381	32,934	26,721	257,291
*Total may not be sum of parts, as apvs apply to future costs within UPR								
<b>policy liabilities:</b>			<b>1,126,915</b>	<b>(41,373)</b>	<b>7,934</b>	<b>169,698</b>	<b>136,259</b>	<b>1,263,174</b>

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, 2017 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Jun. 30, 2017)

Accident Year	Third Party Liability	Accident Benefits	Other Coverages	Total
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	10.0%	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%	10.0%	10.0%
2009	10.0%	10.0%	10.0%	10.0%
2010	10.0%	10.0%	10.0%	10.0%
2011	10.0%	10.0%	9.8%	10.0%
2012	10.0%	10.0%	9.2%	10.0%
2013	12.5%	12.5%	12.1%	12.5%
2014	15.0%	15.0%	14.3%	15.0%
2015	15.0%	15.0%	14.3%	15.0%
2016	17.4%	17.5%	12.6%	17.4%
2017	19.1%	20.0%	6.7%	19.1%
2018	14.5%	20.0%	5.2%	14.8%
prem liab	14.5%	20.0%	5.2%	14.8%

discount rate: 1.23%  
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, 2017 from the latest valuation date (projections in exhibits A to D are also to Dec. 31, 2017, but are based on more up-to-date information). We have included the current valuation selection (1.123%), the prior valuation assumption (1.04%) and the prior fiscal year end valuation assumption (0.62%) 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, 2017 projected Unpaid							
	0.73%	1.23%	1.73%	2.23%	2.73%	3.23%	1.04%	0.62%
2002 & prior	20,635	20,466	20,297	20,134	19,975	19,816	20,530	20,673
2003	1,329	1,297	1,266	1,236	1,207	1,179	1,309	1,337
2004	1,808	1,759	1,713	1,668	1,625	1,584	1,777	1,819
2005	902	875	850	825	802	780	885	908
2006	4,155	4,022	3,894	3,773	3,657	3,546	4,072	4,186
2007	4,104	3,970	3,841	3,719	3,603	3,493	4,020	4,136
2008	7,681	7,477	7,283	7,100	6,926	6,760	7,553	7,728
2009	17,337	16,961	16,604	16,269	15,947	15,641	17,102	17,422
2010	24,058	23,575	23,112	22,677	22,259	21,863	23,755	24,170
2011	23,653	23,193	22,757	22,342	21,946	21,565	23,365	23,759
2012	39,999	39,365	38,757	38,179	37,627	37,095	39,604	40,148
2013	70,467	69,549	68,670	67,826	67,016	66,232	69,893	70,671
2014	101,084	99,826	98,618	97,440	96,308	95,219	100,304	101,378
2015	148,753	146,745	144,792	142,925	141,106	139,335	147,501	149,216
2016	195,107	192,164	189,270	186,528	183,825	181,217	193,261	195,808
2017	363,746	357,787	352,045	346,488	341,072	335,906	360,023	365,078
<b>Total</b>	<b>1,024,818</b>	<b>1,009,031</b>	<b>993,769</b>	<b>979,129</b>	<b>964,901</b>	<b>951,231</b>	<b>1,014,954</b>	<b>1,028,437</b>
curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption	

AY	Dollar Impact Relative to Valuation Assumption							
	0.73%	1.23%	1.73%	2.23%	2.73%	3.23%	1.04%	0.62%
<b>Total</b>	15,787	-	(15,262)	(29,902)	(44,130)	(57,800)	5,923	19,406
curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption	

AY	Percentage Impact Relative to Valuation Assumption							
	0.73%	1.23%	1.73%	2.23%	2.73%	3.23%	1.04%	0.62%
2002 & prior	0.8%	-	(0.8%)	(1.6%)	(2.4%)	(3.2%)	0.3%	1.0%
2003	2.5%	-	(2.4%)	(4.7%)	(6.9%)	(9.1%)	0.9%	3.1%
2004	2.8%	-	(2.6%)	(5.2%)	(7.6%)	(9.9%)	1.0%	3.4%
2005	3.1%	-	(2.9%)	(5.7%)	(8.3%)	(10.9%)	1.1%	3.8%
2006	3.3%	-	(3.2%)	(6.2%)	(9.1%)	(11.8%)	1.2%	4.1%
2007	3.4%	-	(3.2%)	(6.3%)	(9.2%)	(12.0%)	1.3%	4.2%
2008	2.7%	-	(2.6%)	(5.0%)	(7.4%)	(9.6%)	1.0%	3.4%
2009	2.2%	-	(2.1%)	(4.1%)	(6.0%)	(7.8%)	0.8%	2.7%
2010	2.0%	-	(2.0%)	(3.8%)	(5.6%)	(7.3%)	0.8%	2.5%
2011	2.0%	-	(1.9%)	(3.7%)	(5.4%)	(7.0%)	0.7%	2.4%
2012	1.6%	-	(1.5%)	(3.0%)	(4.4%)	(5.8%)	0.6%	2.0%
2013	1.3%	-	(1.3%)	(2.5%)	(3.6%)	(4.8%)	0.5%	1.6%
2014	1.3%	-	(1.2%)	(2.4%)	(3.5%)	(4.6%)	0.5%	1.6%
2015	1.4%	-	(1.3%)	(2.6%)	(3.8%)	(5.0%)	0.5%	1.7%
2016	1.5%	-	(1.5%)	(2.9%)	(4.3%)	(5.7%)	0.6%	1.9%
2017	1.7%	-	(1.6%)	(3.2%)	(4.7%)	(6.1%)	0.6%	2.0%
<b>Total</b>	<b>1.6%</b>	<b>-</b>	<b>(1.5%)</b>	<b>(3.0%)</b>	<b>(4.4%)</b>	<b>(5.7%)</b>	<b>0.6%</b>	<b>1.9%</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

ShareDate **201708**

AccountCode (All)

AccidentYear (All)

RSP **Ontario**

AccountCode Desc **IBNR - Discou**

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	220	(2)	(50)	1,754	1,702	773.6%	1,922
1998	77	(2)	2	(4)	(4)	(5.2%)	73
1999	54	(1)	1	(6)	(6)	(11.1%)	48
2000	72	(1)	1	-	-	-	72
2001	209	(4)	5	(10)	(9)	(4.3%)	200
2002	284	(5)	9	(6)	(2)	(0.7%)	282
2003	554	(12)	12	(162)	(162)	(29.2%)	392
2004	719	(14)	14	(193)	(193)	(26.8%)	526
2005	814	(17)	(89)	(175)	(281)	(34.5%)	533
2006	1,694	(34)	(134)	(393)	(561)	(33.1%)	1,133
2007	2,217	(44)	149	(625)	(520)	(23.5%)	1,697
2008	4,673	(93)	41	(1,267)	(1,319)	(28.2%)	3,354
2009	8,456	(169)	551	(1,726)	(1,344)	(15.9%)	7,112
2010	15,030	(300)	(1,233)	(3,153)	(4,686)	(31.2%)	10,344
2011	5,470	(109)	(865)	(607)	(1,581)	(28.9%)	3,889
2012	9,270	(185)	312	(2,387)	(2,260)	(24.4%)	7,010
2013	12,095	(332)	(444)	1,225	449	3.7%	12,544
2014	32,977	(829)	(614)	(6,491)	(7,934)	(24.1%)	25,043
2015	67,660	(1,808)	(761)	(7,764)	(10,333)	(15.3%)	57,327
2016	121,790	(5,125)	2,697	(14,489)	(16,917)	(13.9%)	104,873
2017	161,924	22,647	(5,196)	2,227	19,678	12.2%	181,602
<b>Grand Total</b>	<b>446,259</b>	<b>13,561</b>	<b>(5,592)</b>	<b>(34,252)</b>	<b>(26,283)</b>	<b>(5.9%)</b>	<b>419,976</b>

EXHIBIT G

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

ShareDate **201708** ▼  
 AccountCode (All) ▼  
 AccidentYear (All) ▼  
 RSP **Ontario** ▼  
 AccountCode Desc **IBNR - Undiscounted**

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	(1,341)	26	(71)	1,656	1,611	(120.1%)	270
1998	23	-	-	-	-	-	23
1999	(8)	-	-	-	-	-	(8)
2000	66	(1)	1	-	-	-	66
2001	145	(3)	3	-	-	-	145
2002	244	(5)	9	-	4	1.6%	248
2003	477	(10)	10	(143)	(143)	(30.0%)	334
2004	622	(12)	12	(166)	(166)	(26.7%)	456
2005	768	(15)	(85)	(159)	(259)	(33.7%)	509
2006	1,516	(30)	(138)	(328)	(496)	(32.7%)	1,020
2007	2,028	(41)	141	(543)	(443)	(21.8%)	1,585
2008	4,100	(82)	79	(1,072)	(1,075)	(26.2%)	3,025
2009	7,157	(143)	540	(1,344)	(947)	(13.2%)	6,210
2010	12,992	(260)	(1,194)	(2,559)	(4,013)	(30.9%)	8,979
2011	3,684	(74)	(887)	(280)	(1,241)	(33.7%)	2,443
2012	4,642	(93)	419	(906)	(580)	(12.5%)	4,062
2013	2,968	(59)	(151)	2,993	2,783	93.8%	5,751
2014	16,981	(509)	(697)	(2,980)	(4,186)	(24.7%)	12,795
2015	45,508	(1,365)	(813)	(2,891)	(5,069)	(11.1%)	40,439
2016	89,626	(4,481)	2,503	(7,573)	(9,551)	(10.7%)	80,075
2017	132,346	18,590	(5,034)	3,245	16,801	12.7%	149,147
<b>Grand Total</b>	<b>324,544</b>	<b>11,433</b>	<b>(5,353)</b>	<b>(13,050)</b>	<b>(6,970)</b>	<b>(2.1%)</b>	<b>317,574</b>