



**ONTARIO RISK SHARING POOL**

**SEPTEMBER 2018 OPERATIONAL REPORT**

**ACTUARIAL HIGHLIGHTS**

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**ACTUARIAL HIGHLIGHTS**

**RSP ONTARIO**

**OPERATIONAL REPORT**

**SEPTEMBER 2018**

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## 1 Summary

### 1.1 Valuation Schedule (Fiscal Year 2018)

The September 2018 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 2018.

<b>ONTARIO RISK SHARING POOL FISCAL YEAR 2018 – 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, 2017 (completed)	1.75% mfad: 25 bp	Oct. 2017	updated valuation (roll forward): accident year 2017 loss ratio increased 1.4 points to 121.3%; discount rate increased by 52 basis points; no change to selected margins for adverse deviations
Dec. 31, 2017 (completed)	1.73% mfad 25 bp	Mar. 2018	updated valuation: accident year 2018 loss ratio increased 3.4 points to 125.9%; discount rate decreased by 2 basis points; no change to selected margins for adverse deviations
Mar. 31, 2018 (completed)	1.89% mfad 25 bp	May 2018	update valuation (roll forward): accident year 2018 loss ratio decreased 0.2 points to 125.7%; discount rate increased by 16 basis points; no change to selected margins for adverse deviations
Jun. 30, 2018 (completed)	1.83% mfad 25 bp	Aug. 2018	updated valuation: accident year 2018 loss ratio increased 0.8 points to 126.5%; discount rate decreased by 6 basis points; selected margins for adverse deviations were updated
Sep. 30, 2018		Oct. 2018	update valuation (roll forward):

Under the proposed schedule for fiscal year 2018, the “off-half” valuation quarters ending March 31, 2018 and September 30, 2018 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>

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

Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent 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. With the most recent valuation (June 30, 2018), 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, 2017) and nominal valuation selections, 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 1.4.

**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 most recent valuation (June 30, 2018), 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, 2017) and nominal valuation estimates, impacting the selection of ultimates. Additional discussion in relation to the application of changes in the tort threshold and deductibles can be found in section 1.4.

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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>.

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.

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

There have been no changes in these descriptions since last month’s Highlights except for the anticipated timing of the release of the Quarterly Valuation Highlights.

With the most recent (June 30, 2018) valuation, the impact of recent Ontario Court of Appeal decisions in relation to the application of changes to the prejudgment interest rate on general damages for non-pecuniary loss was reviewed and a nominal valuation adjustment was included impacting accident years 2014 and prior, further discussion will be provided in the “Actuarial Highlights – Quarterly Valuation” report which is to be posted to the FA website later in the fall.

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, 2017).

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>2</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 (i.e. to be applied to all settlements on or after

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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.”

January 1, 2015). The Ontario Court of Appeal ruling in **El-Khodr v. Lackie** was appealed to the **Supreme Court of Canada**; on June 7, 2018, the Supreme Court of Canada dismissed the application for leave to appeal from the judgment of the Court of Appeal for Ontario.

During the **most recent valuation** (June 30, 2018), the reform adjustment in relation to the **application of changes to the prejudgement interest rate on general damages for non-pecuniary loss**, initially introduced with the September 30, 2017 valuation, was decreased from 1.0% to 0.5%. The reform adjustment applied retroactively (using negative IBNR) against bodily injury nominal unpaid claims amounts (outstanding case reserve and selected IBNR) impacting accidents years 2014 and prior, will be reduced at each successive valuation, assuming the impact of this product reform change will be fully reflected in outstanding case reserves by the September 30, 2018 valuation (that is, as this adjustment is unwound, it is anticipated that member settlement and case adjustment activity will occur simultaneously, neutralizing the adjustment unwind).

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 (i.e. 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 **most recent valuation** (June 30, 2018), 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, 2017<sup>3</sup>) by accident year as well as projected average duration, from accident date to projected settlement date, from the December 31, 2017 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>3</sup>As we anticipate the full impact of the reforms will be accounted for in case reserves by December 31, 2018 and therefore with the 2018 Q4 valuation, we anticipated being able to remove this section when that valuation is implemented with the March 2019 Operational Report.

**ON RSP** (Amounts in \$000s; as at Dec. 31, 2017)

AY	Curr BI Case	avg yrs to Dec 2017	projected avg # yrs to settlement	projected avg duration
[1]	[2]	[5]	[6]	[7]
1993	-	24.5	-	-
1994	-	23.5	-	-
1995	-	22.5	-	-
1996	168	21.5	1.5	23.0
1997	-	20.5	-	-
1998	-	19.5	-	-
1999	-	18.5	-	-
2000	-	17.5	-	-
2001	-	16.5	-	-
2002	-	15.5	-	-
2003	8	14.5	5.0	19.5
2004	-	13.5	-	-
2005	16	12.5	6.3	18.8
2006	25	11.5	6.6	18.1
2007	734	10.5	7.2	17.7
2008	1,770	9.5	3.7	13.2
2009	4,207	8.5	2.0	10.5
2010	8,454	7.5	1.9	9.4
2011	8,745	6.5	2.0	8.5
2012	16,577	5.5	2.1	7.6
2013	27,154	4.5	2.1	6.6
2014	43,100	3.5	2.2	5.7
2015	47,100	2.5	2.5	5.0
2016	46,452	1.5	3.0	4.5
2017	36,601	0.5	3.8	4.3
<b>TOTAL</b>	<b>241,111</b>	<b>3.1</b>	<b>2.6</b>	<b>5.8</b>

In the table above, the column referenced as [7] (“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, 2017 (column [5]) and from December 31, 2017 to settlement (column [6]).

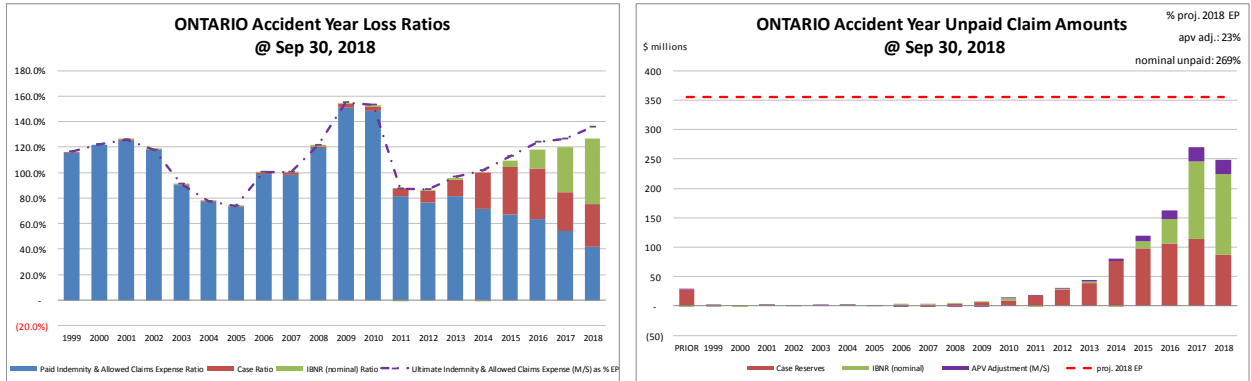
### 1.5 Current Provision Summary

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

<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.

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 2018 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 (\$80.4 million – see table immediately below) represents 23% of the earned premium projected for the full year 2018 (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	622,976	60.1%
ibnr	333,008	32.1%
M/S apv adjust.	80,420	7.8%
<b>M/S total</b>	<b>1,036,404</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 81% of the IBNR balance relates to accident years 2017 and 2018 (see Exhibit B). Approximately 85% of the M/S total claim

liabilities are related to accident years 2014-2018 inclusive (i.e. the most recent 5 accident years), and approximately 4% is related to accident years 2008 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	183,854	72.7%
prem def/(dpac)	49,772	19.7%
M/S apv adjust.	19,107	7.6%
<b>M/S total</b>	<b>252,733</b>	<b>100.0%</b>

policy liabilities (\$000s)

	amt	%
claim	955,984	74.2%
premium	233,626	18.1%
M/S apv adjust.	99,527	7.7%
<b>M/S total</b>	<b>1,289,137</b>	<b>100.0%</b>

<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”.



## 2 Activity During the Month of September 2018

### 2.1 Recorded Premium and Claims Activity

The table immediately below summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month’s Operational Report<sup>7</sup>.

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

Accident Year	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	(0)	(0)	6,728	(2,476)	(4,848)	2,728	1,880	252
2016	(1)	(1)	2,205	(787)	(2,915)	(3,151)	(710)	(3,938)
2017	(11)	(11)	2,486	(3)	(3,943)	(5,372)	(1,457)	(5,375)
2018	29,064	(403)	14,693	1,347	14,228	(90)	28,920	1,257
<b>TOTAL</b>	<b>29,052</b>	<b>(415)</b>	<b>26,112</b>	<b>(1,918)</b>	<b>2,521</b>	<b>(5,886)</b>	<b>28,633</b>	<b>(7,804)</b>

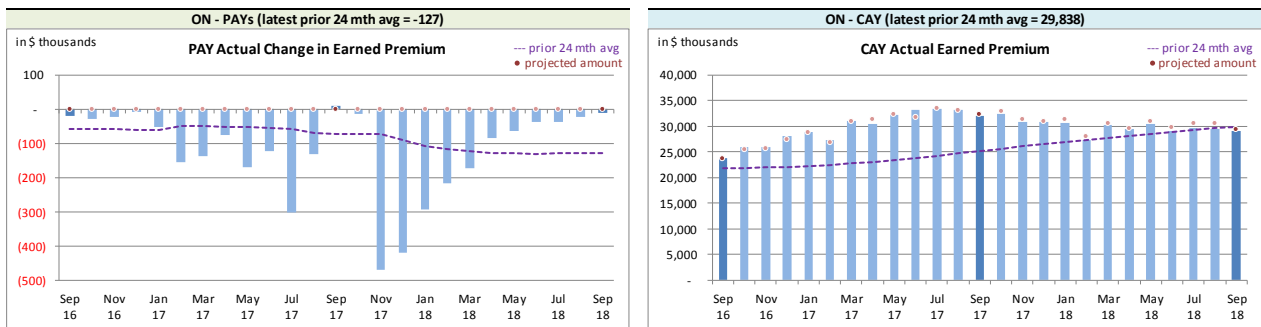
(Recorded transaction amounts exclude IBNR & other actuarial provisions)

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>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 relatively high levels of PAYs negative earned premium for share months November and

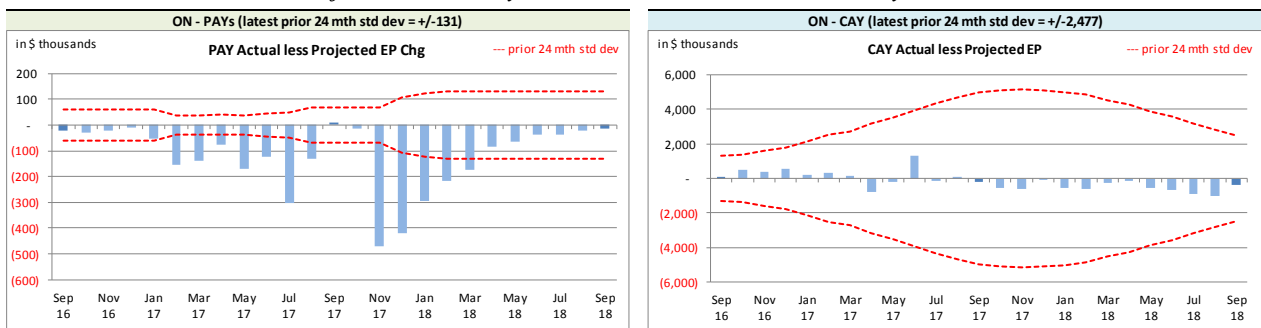
<sup>7</sup>There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

<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.

December 2017 were related to a member company’s removal of ineligible risks as a result of a regular audit by FA internal audit. The high levels of PAY negative earned premium through the first half of 2018 were a result of activity across several member companies. The activity investigated by FA management and confirmed as valid and correct.

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

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



On Latest \$ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(127)	29,838
std dev	131	2,477
A-P <> std dev	12	-
% <> std dev	48.0%	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>9</sup>, with actuals generally lower than projected, although the magnitude is not high relative to monthly

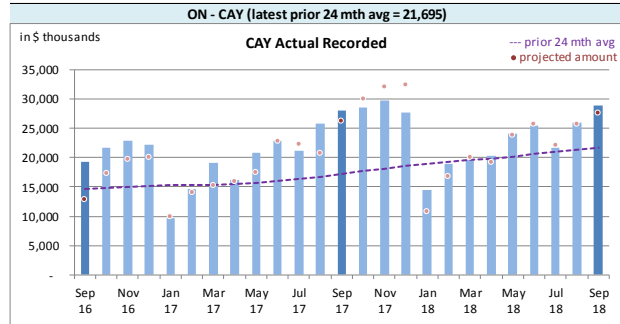
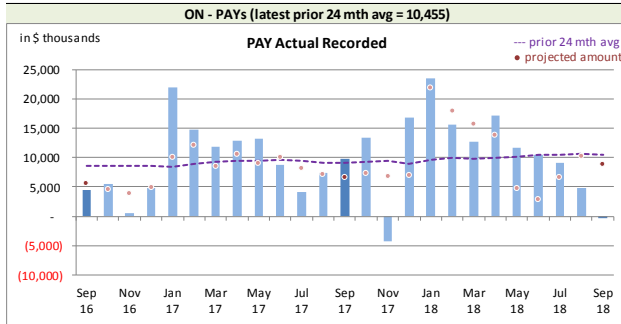
premium. Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority. Readers will also note the significant widening then tapering of the CAY standard deviation band, reflecting recent volume changes and the impact as those changes 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.

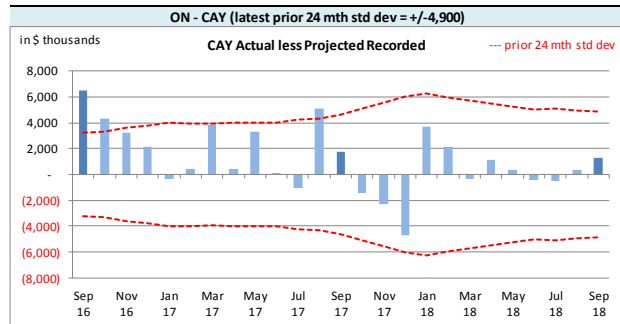
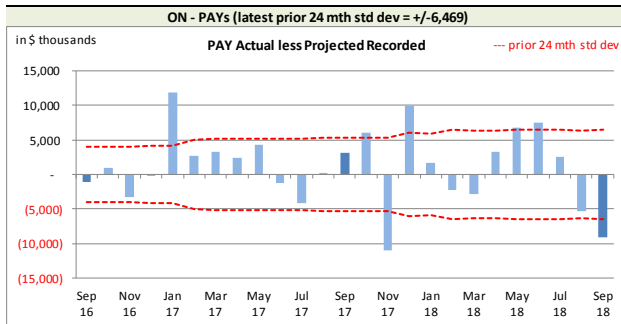
<sup>9</sup>The PAYs’ variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

*Ontario RSP Actual Recorded by Calendar Month*



**Recorded** activity variances from the previous month’s projections are shown in the charts immediately 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)	10,455	10,455	21,695
std dev	6,469	6,469	4,900
A-P <> std dev	7	7	3
% <> std dev	28.0%	28.0%	12.0%
norm <> std dev	31.7%	31.7%	31.7%

With respect to **recorded** indemnity & allowed claims expense, 28% of the prior accident years’ (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **recorded** amounts (see table on left), suggesting the projection process has performed no better than simply projecting

the prior 24-month average amount (assuming it follows a normal distribution). Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

The PAY **recorded** activity was lower than the projected by more than one standard deviation. In large part, this was due to a member submitting correcting case reserve transactions for which provisions have been held since last year (and discussed further on in this section). The corrections were focused on PAYs 2010 to 2017 inclusive, and were reasonably aligned with FA management’s previously held provisions (which have now been released as a result). There remain case reserve corrections for the member related to PAYs 2006-2009, but this constitutes a relatively small level of overall case reserve (although FA management has opted to continue holding the current provision for those accident years until the correction transactions have been submitted).

The current accident year (CAY) **recorded** variances (right chart above) fell outside of one standard deviation 12% of the time over the last 25 calendar months suggesting that the projection process has

performed better than simply projecting the prior 24-month average amount. Up until May 2018, there did appear to be evidence of some bias at the 95% confidence level. We modified our projections processes in response to these findings and the modifications appear to have had the desired effect.

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 Sep) provides the average of the 9 monthly ratios (i.e. Jan-Sep) for that row's calendar year.

Per the *left* table below (showing average monthly ratios for each calendar year), the 2017 average **recorded** ratio at 14.7% was the second highest ratio since 2010 (2016 was the highest), and the 2017 **paid** ratio at 7.6% tied with 2016 as the highest level since 2010. That is, both ratios remained at “elevated” levels compared with the ratios for the 3 calendar years immediately following the 2010 reforms.

As can be seen in the *right* table below (average of 9 months to Sep of each year), the 2018 average ratio for **recorded** is at its highest level since 2010 while the **paid** ratio is at its highest level in the last 10 years.

CAY avg of mthly ratios for yr

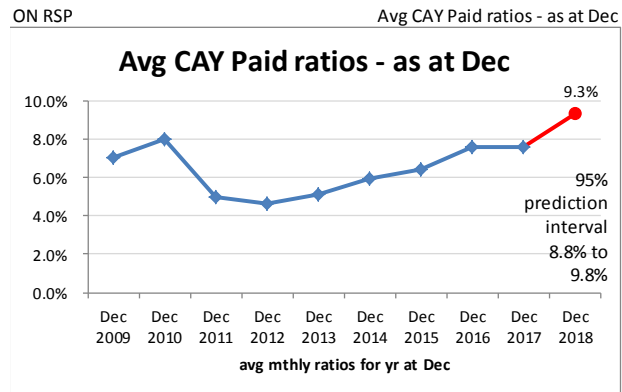
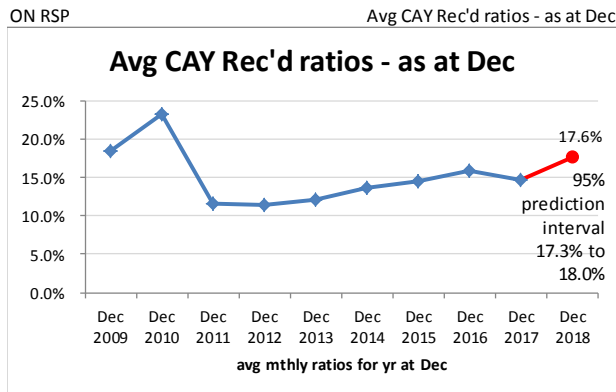
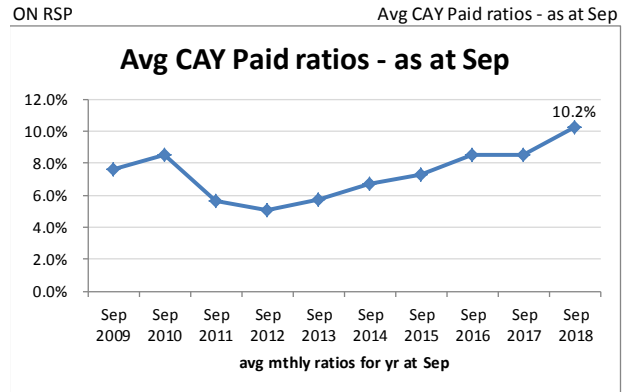
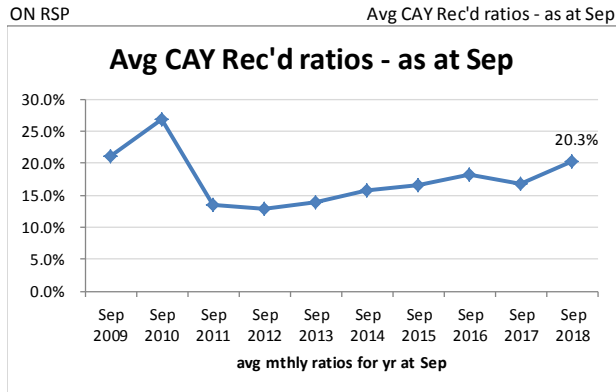
as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg
Dec 2009	18.5%		7.0%	
Dec 2010	23.2%	4.7%	8.0%	1.0%
Dec 2011	11.5%	(11.7%)	5.0%	(3.0%)
Dec 2012	11.4%	(0.1%)	4.6%	(0.4%)
Dec 2013	12.0%	0.6%	5.1%	0.5%
Dec 2014	13.7%	1.7%	5.9%	0.8%
Dec 2015	14.4%	0.7%	6.4%	0.5%
Dec 2016	15.8%	1.4%	7.6%	1.2%
Dec 2017	14.7%	(1.1%)	7.6%	0.0%

CAY avg of mthly ratios for yr

as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg
Sep 2009	21.1%		7.6%	
Sep 2010	26.9%	5.8%	8.5%	0.9%
Sep 2011	13.4%	(13.5%)	5.6%	(2.9%)
Sep 2012	12.9%	(0.5%)	5.1%	(0.5%)
Sep 2013	13.8%	0.9%	5.7%	0.6%
Sep 2014	15.8%	2.0%	6.7%	1.0%
Sep 2015	16.5%	0.7%	7.3%	0.6%
Sep 2016	18.1%	1.6%	8.5%	1.2%
Sep 2017	16.8%	(1.3%)	8.5%	0.0%
Sep 2018	20.3%	3.5%	10.2%	1.7%

There has been strong (over 95%) correlation between the ytd monthly average ratios at September each year and the corresponding monthly average ratios at December, suggesting the monthly average ratios for 2018 at September (that is, the average of the 9 monthly ratios Jan 2018 to Sept 2018) are predictive of where the 2018 monthly average ratios will be at year-end (that is, the 12 monthly ratios Jan 2018 – Dec 2018). Using simple regression, we forecast the average of the 12 monthly ratios for calendar year 2018 (i.e. the average of the monthly ratios for Jan 2018 – Dec 2018) will be 17.6% (95% prediction interval of 17.3% to 18.0%) for **recorded** and 9.3% (95% prediction interval of 8.8% to 9.8%) for **paid**. The results are presented in the charts at the top of the next page.

*Ontario RSP average of monthly CAY claims activity ratios to EP*



We are taking this information into consideration as part of our projection process.

These monthly-average ratios may be signalling an actual increase in relative claim amounts generally, signaling a change in the pattern of **recorded / paid** activity, or signaling 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.

As noted in the last eight monthly Actuarial Highlights, FA management was notified on January 31, 2018 by a member of a potential recorded case reserve overstatement. Furthermore, during the March 31, 2018 valuation, FA management was advised of an additional and separate recorded case reserve understatement primarily due to incorrect reporting after FA's October 31, 2017 fiscal year end. Management investigated and estimated the overall overstatement for the Ontario RSP as at the latest valuation (June 30, 2018) as indicated in the table at the top of the next page.

*Estimated case reserve overstatement as at Jun 30, 2018*

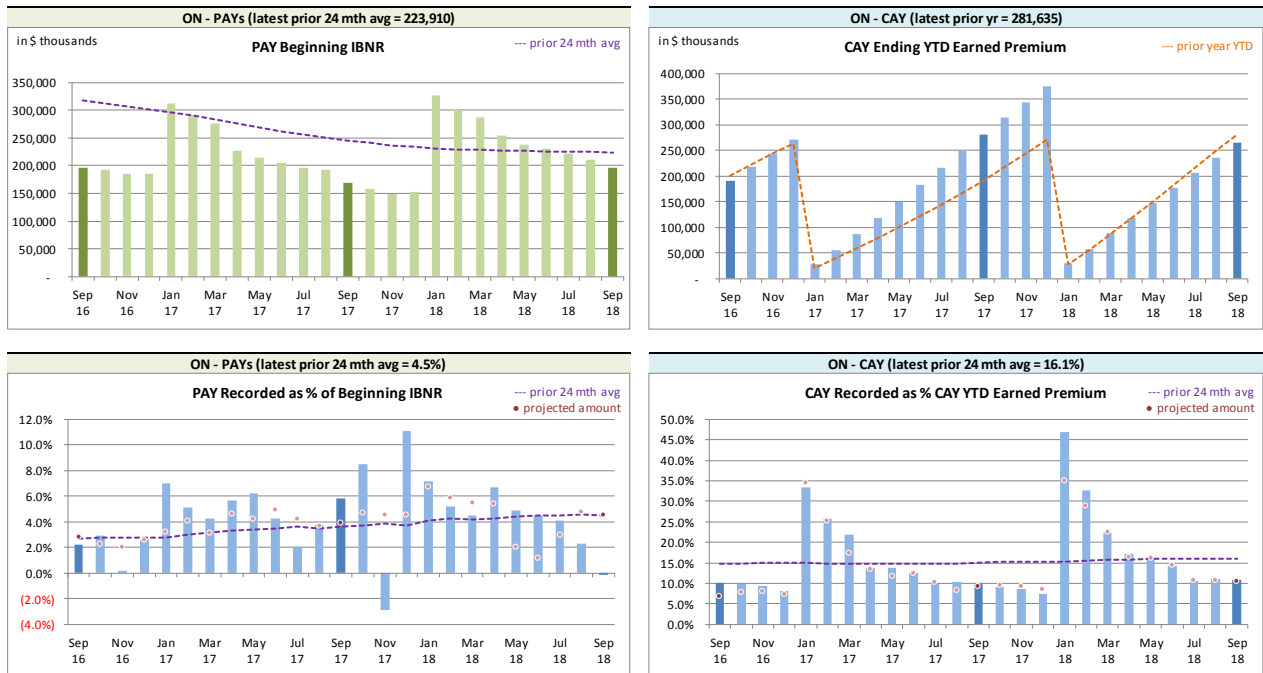
<u>overstatement / (understatement)</u>	
Accident Year	Total Case Reserve Overstatement (\$'000s)
2006	227
2007	201
2008	264
2009	1,030
2010	115
2011	(115)
2012	651
2013	(265)
2014	602
2015	1,162
2016	1,648
2017	2,989
<b>Total</b>	<b>8,509</b>

With the latest valuation (June 30, 2018), prior accident years' ultimates selections have taken into account the member's misstatement of case reserves (both the original amount as notified, and the subsequent amount, with the combination of the two being summarized in the table above). During the month of Sep 2018, the member submitted correcting case reserve transactions related to PAYs 2010-2017 inclusive. The corrections were largely in line with FA management's expectations, and the associated provisions previously held by FA management have been removed as a result. However, FA management's provisions for PAYs 2006-2009 are still being held, pending final resolution by the member.

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>10</sup> Recorded activity by Calendar Month*



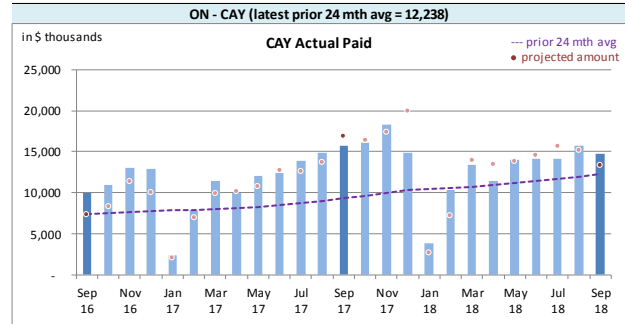
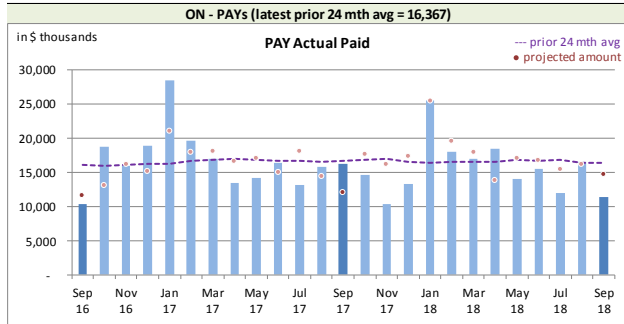
We track beginning prior accident years’ IBNR as **recorded** activity “comes out of” IBNR. Changes in the prior accident years’ beginning IBNR (see upper left chart above) occur for several possible reasons:

- 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).

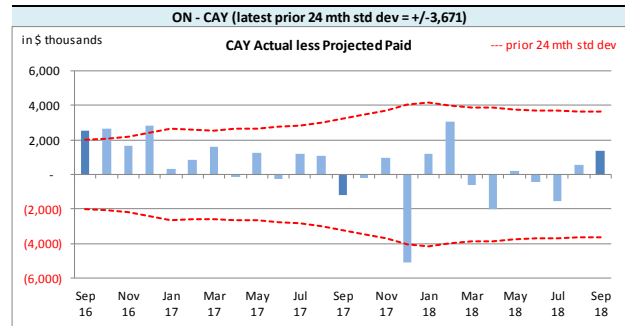
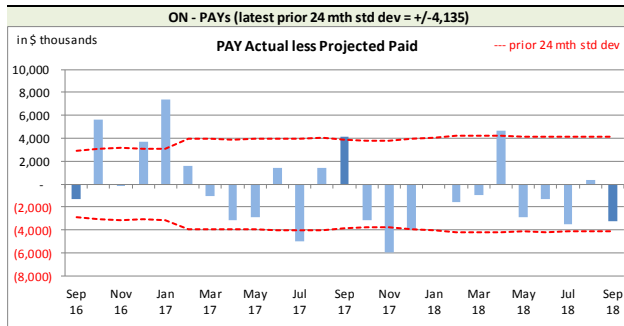
**2.1.c AvsP: Paid Indemnity & Allowed Claims Expense**

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**


**Paid** activity variances from the previous month’s projections are shown in the charts immediately 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)	16,367	16,367	12,238
std dev	4,135	4,135	3,671
A-P <> std dev	7	7	4
% <> std dev	28.0%	28.0%	16.0%
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 over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on left), suggesting the projection process has performed no better than simply projecting the prior 24-month average amount (assuming it follows a normal distribution). Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

The current accident year (CAY) **paid** variances fell outside of one standard deviation 16% of the time over the last 25 calendar months (see table above), suggesting the projection process has performed better than simply projecting the prior 24-month average amount. Bias had been indicated at a 95% confidence level on a lagging 24-month basis<sup>11</sup> up until March 2018, as 18 times in the 24 months to that point (i.e. April 2016 to March 2018), actuals were higher than our projections for the CAY **paid** amount.

The current accident year (CAY) **paid** variances fell outside of one standard deviation 16% of the time over the last 25 calendar months (see table above), suggesting the projection process has performed better than simply projecting the prior 24-month average amount. Bias had been indicated at a 95% confidence level on a lagging 24-month basis<sup>11</sup> up until March 2018, as 18 times in the 24 months to that point (i.e. April 2016 to March 2018), actuals were higher than our projections for the CAY **paid** amount.

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.

<sup>11</sup>For the binomial distribution with 24 trials and an assumed 50% success probability, the 95% confidence range is 7 to 17.



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

<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.

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 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 this month's 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	23,333	(253)	(18,196)	(160)	36,721	224	41,858	(189)
2016	41,058	3,937	(6,928)	(37)	21,676	116	55,806	4,016
2017	132,051	5,361	(13,059)	-	36,258	(1)	155,250	5,360
2018	136,566	(1,766)	(12,562)	104	36,510	(302)	160,514	(1,964)
TOTAL	333,008	7,279	(50,745)	(93)	131,165	37	413,428	7,223

The IBNR provision is \$7.3 million higher than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1.

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

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

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

The table at the top of the next page summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in this month's Operational Report and the one-month projections from last month's Report. This RSP is in a 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.

<sup>13</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: 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:	49,772	(300)	19,107	(106)	68,879	(406)
balance as % unearned premium:	27.1%	-	10.4%	-	37.5%	-
actual unearned premium:	183,854					
less projected:	(1,017)					

### 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 127.0% rather than 126.5% (the valuation ultimate ratio for accident year 2018), 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	(24,810)	(9.4%)	(38,196)	(14.4%)	(63,006)	(23.8%)	(878)	2.6%
CAY	336,064	127.0%	23,948	9.0%	360,012	136.0%	39,123	(0.2%)
TOTAL	311,254	117.6%	(14,248)	(5.4%)	297,006	112.2%	38,246	2.4%

(“% EP” based on 2018 calendar year-to-date earned premium; ratios may not total due to rounding)

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

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

## 5 Current Operational Report – Additional Exhibits

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

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

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

The ultimate loss ratios 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
		Aug. 2018	Sep. 2018	Oct. 2018	Nov. 2018	Dec. 2018
IBNR + M/S actuarial present value adjustments	Accident Year					
	prior	1,230	1,215	1,191	1,165	1,129
	1999	58	27	26	25	25
	2000	(4)	(4)	(4)	(4)	(4)
	2001	102	102	101	99	94
	2002	67	67	65	65	61
	2003	720	720	713	706	665
	2004	239	234	231	229	217
	2005	340	340	337	334	314
	2006	420	421	417	414	389
	2007	665	569	564	559	525
	2008	1,594	1,640	1,625	1,609	1,510
	2009	1,237	1,205	1,194	1,182	1,110
	2010	3,774	3,971	3,928	3,887	3,662
	2011	1,345	(62)	(66)	(71)	(52)
	2012	2,749	1,787	1,760	1,734	1,657
discount rate	2013	5,310	4,723	4,654	4,586	4,372
1.83%	2014	3,639	3,982	3,900	3,816	3,610
	2015	20,659	20,921	19,312	18,820	17,833
interest rate margin	2016	55,317	55,806	52,225	50,047	46,893
25 basis pts	2017	154,043	155,250	150,824	147,807	143,595
	2018	150,311	160,514	171,815	181,759	191,260
	<b>TOTAL</b>	<b>403,815</b>	<b>413,428</b>	<b>414,812</b>	<b>418,768</b>	<b>418,865</b>
	Change		9,613	1,384	3,956	

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 Aug. 2018	Actual Sep. 2018	Projected Oct. 2018	Projected Nov. 2018	Projected Dec. 2018
	-	prior	5	(8)	(8)	(8)	(8)
	116.3%	1999	18	(13)	(13)	(13)	(12)
	122.0%	2000	(4)	(4)	(4)	(4)	(4)
	126.1%	2001	67	67	66	65	61
	117.9%	2002	63	63	62	61	57
	91.1%	2003	696	696	689	682	641
	77.7%	2004	216	212	210	208	196
	73.7%	2005	337	337	334	331	311
	100.4%	2006	430	430	426	422	397
	100.2%	2007	697	601	595	589	554
	121.5%	2008	1,658	1,704	1,687	1,670	1,570
	154.8%	2009	1,268	1,234	1,222	1,210	1,137
	152.7%	2010	3,478	3,676	3,639	3,603	3,387
	87.3%	2011	819	(581)	(575)	(569)	(535)
	86.2%	2012	1,773	837	829	821	772
	95.7%	2013	3,118	2,587	2,561	2,535	2,383
	100.0%	2014	(810)	(418)	(414)	(410)	(406)
	109.1%	2015	11,385	11,913	10,483	10,169	9,355
	118.4%	2016	40,349	41,058	37,773	35,884	33,013
	120.0%	2017	130,608	132,051	128,089	125,527	121,761
	126.5%	2018	128,719	136,566	145,374	152,897	159,986
		<b>TOTAL</b>	<b>324,890</b>	<b>333,008</b>	<b>333,025</b>	<b>335,670</b>	<b>334,616</b>
		Change		8,118	17	2,645	

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

## EXHIBIT C

## Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Aug. 2018	Actual Sep. 2018	Projected Oct. 2018	Projected Nov. 2018	Projected Dec. 2018
Premium Liabilities					
(1) unearned premium (UP)	180,764	183,854	183,838	187,116	184,057
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	137.4%	137.5%	137.6%	137.7%	137.8%
(3) expected future costs {(1) x (2)}	248,356	252,733	252,891	257,570	253,548
(4) premium deficiency / (deferred policy acquisition cost)	67,592	68,879	69,053	70,454	69,491
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	127.0%	127.1%	127.2%	127.2%	127.3%
(6) expected future costs {(1) x (5)}	229,580	233,626	233,772	238,099	234,379
(7) premium deficiency / (deferred policy acquisition cost)	48,816	49,772	49,934	50,983	50,322

**EXHIBIT D**
**Projected Year-end Policy Liabilities**

The table below presents the projected policy liabilities as at December 31, 2018, broken down by component.

Ontario		Projected Balances as at Dec. 31, 2018 (\$000s)								
ending 2018		nominal values			actuarial present value adjustments (apvs)					
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL
prior	25,663	(8)	25,655	(1,468)	188	2,565	(148)	2,417	1,137	26,792
1999	663	(12)	651	(29)	4	65	(3)	62	37	688
2000	15	(4)	11	(1)	-	1	-	1	-	11
2001	800	61	861	(55)	8	86	(6)	80	33	894
2002	59	57	116	(8)	1	12	(1)	11	4	120
2003	310	641	951	(73)	9	95	(7)	88	24	975
2004	1,053	196	1,249	(107)	14	125	(11)	114	21	1,270
2005	178	311	489	(47)	6	49	(5)	44	3	492
2006	1,968	397	2,365	(251)	31	237	(25)	212	(8)	2,357
2007	2,280	554	2,834	(323)	43	283	(32)	251	(29)	2,805
2008	3,166	1,570	4,736	(545)	66	474	(55)	419	(60)	4,676
2009	6,390	1,137	7,527	(798)	98	753	(80)	673	(27)	7,500
2010	8,503	3,387	11,890	(939)	119	1,189	(94)	1,095	275	12,165
2011	15,627	(535)	15,092	(1,056)	136	1,509	(106)	1,403	483	15,575
2012	26,892	772	27,664	(1,936)	249	2,766	(194)	2,572	885	28,549
2013	36,618	2,383	39,001	(1,950)	234	3,900	(195)	3,705	1,989	40,990
2014	69,995	(406)	69,589	(2,992)	348	6,959	(299)	6,660	4,016	73,605
2015	94,304	9,355	103,659	(4,354)	518	12,854	(540)	12,314	8,478	112,137
2016	105,728	33,013	138,741	(6,521)	832	20,534	(965)	19,569	13,880	152,621
2017	110,138	121,761	231,899	(12,291)	1,623	34,321	(1,819)	32,502	21,834	253,733
PAYs (sub-total):	510,350	174,630	684,980	(35,744)	4,527	88,777	(4,585)	84,192	52,975	737,955
CAY (2018)	132,946	159,986	292,932	(16,404)	2,051	48,334	(2,707)	45,627	31,274	324,206
claims liabilities:	643,296	334,616	977,912	(52,148)	6,578	137,111	(7,292)	129,819	84,249	1,062,161
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	184,057	50,322	234,379	(10,995)	1,404	30,178	(1,418)	28,760	19,169	253,548
*Total may not be sum of parts, as apvs apply to future costs within UPR										
policy liabilities:			1,212,291	(63,143)	7,982	167,289	(8,710)	158,579	103,418	1,315,709



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, 2018 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Jun. 30, 2018)

Accident Year	Third Party Liability Margins	Accident Benefits Margins	Other Coverages Margins	Total Margins
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	8.6%	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%	9.0%	10.0%
2013	10.0%	10.0%	9.7%	10.0%
2014	10.0%	10.0%	8.4%	10.0%
2015	12.4%	12.5%	9.8%	12.4%
2016	14.9%	15.0%	9.9%	14.8%
2017	14.8%	15.0%	7.9%	14.8%
2018	16.4%	17.5%	6.0%	16.5%
2019	12.5%	17.5%	5.1%	12.9%
prem liab	12.5%	17.5%	5.1%	12.9%

discount rate: 1.83%  
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, 2018 from the latest valuation date (projections in exhibits A to D are also to Dec. 31, 2018, but are based on more up-to-date information). We have included the most recent valuation selection (1.83%), the prior valuation assumption (1.89%) and the prior fiscal year end valuation assumption (1.75%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

AY	Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2018 projected Unpaid							
	0.83%	1.33%	1.83%	2.33%	2.83%	3.33%	1.89%	1.75%
2003 & prior	30,618	30,121	29,637	29,168	28,707	28,264	29,582	29,717
2004	1,475	1,439	1,404	1,371	1,338	1,307	1,400	1,410
2005	568	552	537	523	509	496	535	539
2006	2,832	2,746	2,664	2,585	2,510	2,438	2,654	2,677
2007	3,306	3,199	3,097	3,000	2,907	2,818	3,085	3,113
2008	5,116	4,947	4,787	4,634	4,489	4,352	4,767	4,812
2009	9,422	9,138	8,868	8,614	8,372	8,142	8,837	8,911
2010	10,866	10,625	10,396	10,179	9,973	9,778	10,369	10,432
2011	17,324	16,984	16,659	16,352	16,059	15,783	16,621	16,710
2012	30,015	29,426	28,866	28,339	27,831	27,353	28,800	28,955
2013	36,684	36,176	35,687	35,223	34,774	34,348	35,631	35,764
2014	70,458	69,609	68,794	68,012	67,261	66,538	68,693	68,919
2015	110,666	109,381	108,134	106,943	105,772	104,664	107,989	108,335
2016	156,715	154,697	152,712	150,830	148,975	147,196	152,487	153,027
2017	264,135	260,259	256,483	252,861	249,328	245,903	256,056	257,076
2018	339,610	334,266	329,110	324,071	319,204	314,538	328,480	329,920
<b>Total</b>	<b>1,089,810</b>	<b>1,073,565</b>	<b>1,057,835</b>	<b>1,042,705</b>	<b>1,028,009</b>	<b>1,013,918</b>	<b>1,055,986</b>	<b>1,060,317</b>
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

AY	Dollar Impact Relative to Valuation Assumption							
	0.83%	1.33%	1.83%	2.33%	2.83%	3.33%	1.89%	1.75%
Total	31,975	15,730	-	(15,130)	(29,826)	(43,917)	(1,849)	2,482
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

AY	Percentage Impact Relative to Valuation Assumption							
	0.83%	1.33%	1.83%	2.33%	2.83%	3.33%	1.89%	1.75%
2003 & prior	3.3%	1.6%	-	(1.6%)	(3.1%)	(4.6%)	(0.2%)	0.3%
2004	5.1%	2.5%	-	(2.4%)	(4.7%)	(6.9%)	(0.3%)	0.4%
2005	5.8%	2.8%	-	(2.6%)	(5.2%)	(7.6%)	(0.4%)	0.4%
2006	6.3%	3.1%	-	(3.0%)	(5.8%)	(8.5%)	(0.4%)	0.5%
2007	6.7%	3.3%	-	(3.1%)	(6.1%)	(9.0%)	(0.4%)	0.5%
2008	6.9%	3.3%	-	(3.2%)	(6.2%)	(9.1%)	(0.4%)	0.5%
2009	6.2%	3.0%	-	(2.9%)	(5.6%)	(8.2%)	(0.3%)	0.5%
2010	4.5%	2.2%	-	(2.1%)	(4.1%)	(5.9%)	(0.3%)	0.3%
2011	4.0%	2.0%	-	(1.8%)	(3.6%)	(5.3%)	(0.2%)	0.3%
2012	4.0%	1.9%	-	(1.8%)	(3.6%)	(5.2%)	(0.2%)	0.3%
2013	2.8%	1.4%	-	(1.3%)	(2.6%)	(3.8%)	(0.2%)	0.2%
2014	2.4%	1.2%	-	(1.1%)	(2.2%)	(3.3%)	(0.1%)	0.2%
2015	2.3%	1.2%	-	(1.1%)	(2.2%)	(3.2%)	(0.1%)	0.2%
2016	2.6%	1.3%	-	(1.2%)	(2.4%)	(3.6%)	(0.1%)	0.2%
2017	3.0%	1.5%	-	(1.4%)	(2.8%)	(4.1%)	(0.2%)	0.2%
2018	3.2%	1.6%	-	(1.5%)	(3.0%)	(4.4%)	(0.2%)	0.2%
<b>Total</b>	<b>3.0%</b>	<b>1.5%</b>	<b>-</b>	<b>(1.4%)</b>	<b>(2.8%)</b>	<b>(4.2%)</b>	<b>(0.2%)</b>	<b>0.2%</b>
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

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

RSP		Ontario						M/S IBNR - in \$000s
AccountCode	Desc	IBNR - Discou						
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	1,230	(36)	21	-	(15)	(1.2%)	1,215	
1999	58	(1)	(30)	-	(31)	(53.4%)	27	
2000	(4)	-	-	-	-	-	(4)	
2001	102	(1)	1	-	-	-	102	
2002	67	(1)	1	-	-	-	67	
2003	720	(7)	7	-	-	-	720	
2004	239	(2)	(3)	-	(5)	(2.1%)	234	
2005	340	(3)	3	-	-	-	340	
2006	420	(3)	4	-	1	0.2%	421	
2007	665	(5)	(91)	-	(96)	(14.4%)	569	
2008	1,594	(15)	61	-	46	2.9%	1,640	
2009	1,237	(11)	(21)	-	(32)	(2.6%)	1,205	
2010	3,774	(44)	241	-	197	5.2%	3,971	
2011	1,345	(23)	(1,384)	-	(1,407)	(104.6%)	(62)	
2012	2,749	(47)	(915)	-	(962)	(35.0%)	1,787	
2013	5,310	(97)	(490)	-	(587)	(11.1%)	4,723	
2014	3,639	(20)	363	-	343	9.4%	3,982	
2015	20,659	(1,781)	2,043	-	262	1.3%	20,921	
2016	55,317	(3,527)	4,016	-	489	0.9%	55,806	
2017	154,043	(4,153)	5,360	-	1,207	0.8%	155,250	
2018	150,311	12,167	(1,964)	-	10,203	6.8%	160,514	
<b>Grand Total</b>	<b>403,815</b>	<b>2,390</b>	<b>7,223</b>	<b>-</b>	<b>9,613</b>	<b>2.4%</b>	<b>413,428</b>	

EXHIBIT G

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

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	5	-	(13)	-	(13)	(260.0%)	(8)
1999	18	-	(31)	-	(31)	(172.2%)	(13)
2000	(4)	-	-	-	-	-	(4)
2001	67	(1)	1	-	-	-	67
2002	63	(1)	1	-	-	-	63
2003	696	(7)	7	-	-	-	696
2004	216	(2)	(2)	-	(4)	(1.9%)	212
2005	337	(3)	3	-	-	-	337
2006	430	(4)	4	-	-	-	430
2007	697	(7)	(89)	-	(96)	(13.8%)	601
2008	1,658	(17)	63	-	46	2.8%	1,704
2009	1,268	(13)	(21)	-	(34)	(2.7%)	1,234
2010	3,478	(35)	233	-	198	5.7%	3,676
2011	819	(8)	(1,392)	-	(1,400)	(170.9%)	(581)
2012	1,773	(18)	(918)	-	(936)	(52.8%)	837
2013	3,118	(31)	(500)	-	(531)	(17.0%)	2,587
2014	(810)	113	279	-	392	(48.4%)	(418)
2015	11,385	(1,594)	2,122	-	528	4.6%	11,913
2016	40,349	(3,228)	3,937	-	709	1.8%	41,058
2017	130,608	(3,918)	5,361	-	1,443	1.1%	132,051
2018	128,719	9,613	(1,766)	-	7,847	6.1%	136,566
<b>Grand Total</b>	<b>324,890</b>	<b>839</b>	<b>7,279</b>	<b>-</b>	<b>8,118</b>	<b>2.5%</b>	<b>333,008</b>