



ONTARIO RISK SHARING POOL

FEBRUARY 2018 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS

RSP ONTARIO

OPERATIONAL REPORT

FEBRUARY 2018

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2018)

The February 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.

ONTARIO RISK SHARING POOL FISCAL YEAR 2018 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
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		Mar. 2018	update valuation:
Mar. 31, 2018		May 2018	update valuation (roll forward):
Jun. 30, 2018		Aug. 2018	update valuation:
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 / Regulation¹

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

¹How 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>.

regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent changes are provided below. There have been no 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 (September 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) and nominal valuation selections, impacting the selection of ultimates. Additional discussion in relation to the application of changes to the prejudgement 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 current valuation (September 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 can be found in section 1.4.

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 this section since last month’s Highlights.

With the latest valuation, as at September 30, 2017, 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 was provided in the “Actuarial Highlights – Quarterly Valuation” report which was posted to the FA website on December 20, 2017.

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-pecuniary² 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 January 1, 2015). During the latest valuation (as at September 30, 2017), **a reform adjustment in relation to the application of changes to the prejudgment interest rate on general damages for non-pecuniary loss was included**. The reform adjustment, a 2% decrease 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

²**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.”

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 **latest valuation** (as at September 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, 2016³) 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.

³This 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
TOTAL	230,285	3.2	2.6	5.8

In the above table, the column referenced as [7] (“projected avg duration”) is an estimate of the number of years from claim occurrence⁴ 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]).

1.5 Current Provision Summary

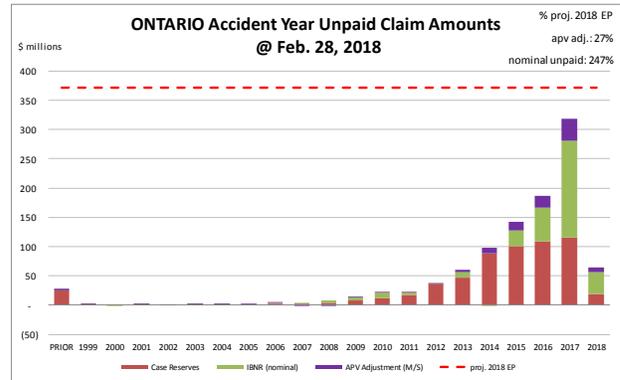
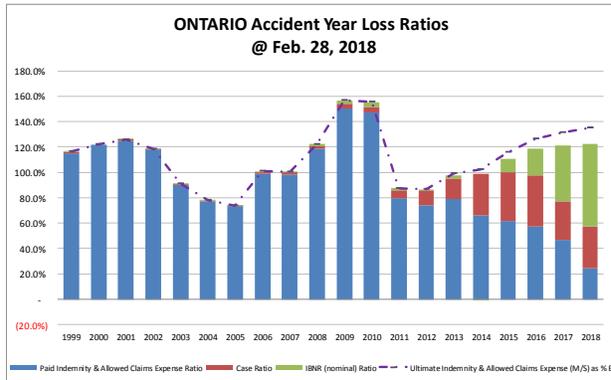
The charts at the top of the next page show the current levels of claim liabilities⁵ booked by accident year⁶. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the

⁴Prejudgment 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.

⁵Claim 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.

⁶The 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 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 (\$98.4 million – see table below) represents 27% 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	593,724	58.4%
ibnr	323,900	31.9%
M/S apv adjust.	98,397	9.7%
M/S total	1,016,021	100.0%

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 63% of the IBNR balance relates to accident years 2017 and 2018 (see Exhibit B). Approximately 80% 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 5% 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	159,509	74.0%
prem def/(dpac)	36,416	16.9%
M/S apv adjust.	19,601	9.1%
M/S total	215,526	100.0%

policy liabilities (\$000s)

	amt	%
claim	917,624	74.5%
premium	195,925	15.9%
M/S apv adjust.	117,998	9.6%
M/S total	1,231,547	100.0%

2 Activity During the Month of February 2018

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 Report⁷.

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	0	0	7,466	(2,971)	(3,614)	4,107	3,851	1,135
2016	(3)	(3)	2,210	(1,158)	1,577	1,895	3,788	738
2017	(216)	(216)	8,346	2,559	(282)	(6,663)	8,064	(4,104)
2018	27,319	(618)	10,290	3,089	8,662	(943)	18,952	2,146
TOTAL	27,100	(837)	28,313	1,520	6,343	(1,604)	34,655	(84)

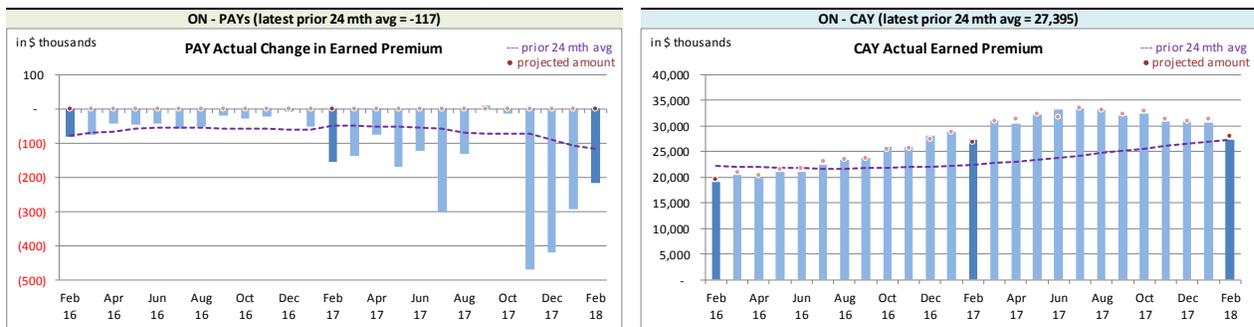
(Recorded transaction amounts exclude IBNR & other actuarial provisions)

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**⁸ 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 earlier 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 and management understands that this has been completed.

The relatively high level of PAYs negative earned premium for share months November and

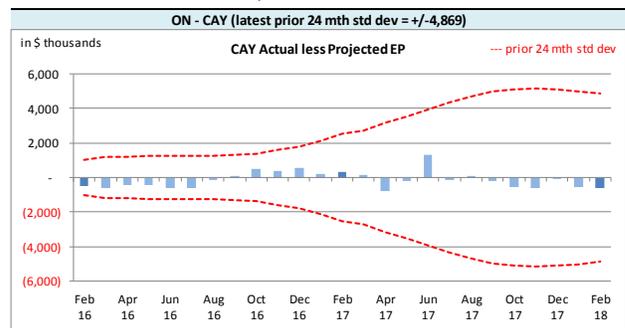
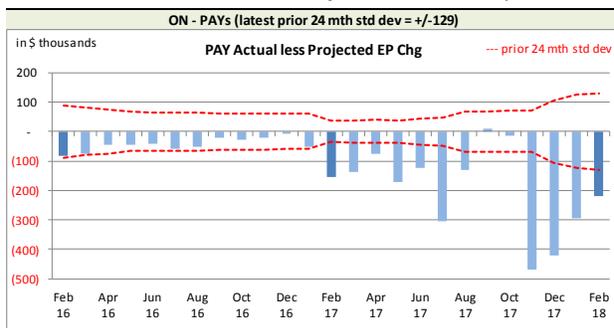
⁷There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

⁸Premium 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 was related to a member company’s removal of ineligible risks as a result of a recent regular audit by FA internal audit. The high level of PAY negative earned premium for January and February 2018 was attributed to activity across several member companies and management continues to investigate.

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)	(117)	27,395
std dev	129	4,869
A-P <> std dev	11	-
% <> std dev	44.0%	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) bias⁹, with actuals generally lower than projected. However, the magnitude is not high relative to monthly

premium, although the variances are outside 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 2016¹⁰, with actuals being generally lower than projected¹¹, and we modified our projections processes in response (24-month trailing is no longer indicating 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.

⁹The PAYS’ variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

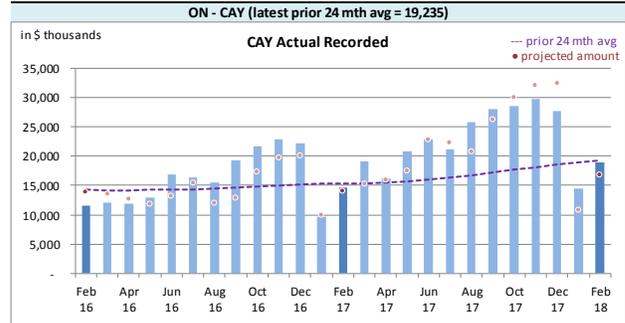
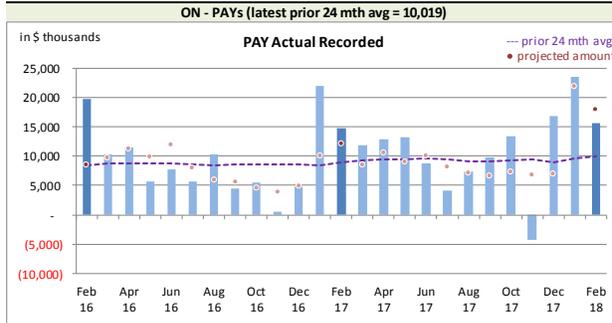
¹⁰In fact, January 2014 was the only month where the actual earned premium was higher than projected for the period January 2014 to August 2016 inclusive, clearly indicating bias, as a 95% confidence range for a binominal distribution with 32 trials and 50% probability of success is 10 to 22, and 1 is clearly outside of that range.

¹¹Due to the relatively rapid increase in earned premium during the latter part of 2016 and through 2017, the 24-month earned premium standard deviation has widened considerably, making it difficult to “see” projection variances in the CAY earned premium variance-from-projected chart.

2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

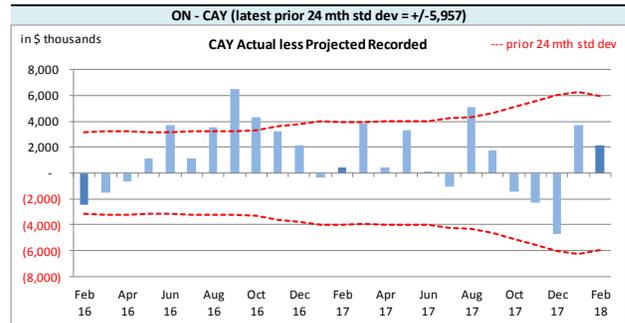
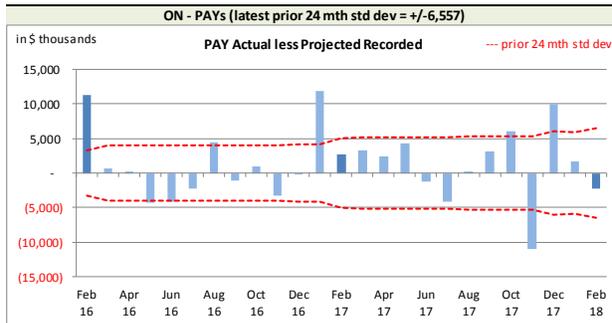
The charts immediately below show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

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		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	10,019	19,235
std dev	6,557	5,957
A-P <> std dev	8	5
% <> std dev	32.0%	20.0%
norm <> std dev	31.7%	31.7%

With respect to **recorded** indemnity & allowed claims expense, 32% 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. No bias has been

indicated at a 95% confidence level on a lagging 24-month basis.

The current accident year (CAY) **recorded** variances (right chart above) fell outside of one standard deviation 20% of the time over the entire period, suggesting that the projection process has performed better than simply projecting the prior 24-month average amount. There does appear to be evidence of some bias at the 95% confidence level as 16¹² times in the past 21 months, actuals

¹²For the binomial distribution with 21 trials and an assumed 50% success probability, the 95% confidence range is 6 to 15.

were higher than our projections for the CAY **recorded** amount (however, 24-month lagging bias was not indicated at a 95% confidence level). Among the 16 months in the past 21 where actuals were higher than our projections, 5 variances were outside the one standard deviation band.

In fact, 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 February) provides the average of the 2 monthly ratios (i.e. Jan-Feb) for that row's calendar year.

Per the table on the left 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 2 months to February of each year), the average ratios for 2018 are at their highest since 2009 for both **recorded** and **paid**, and also up from 2017. While we acknowledge that these ratios are more volatile earlier in the year due to smaller year-to-date earned premium levels, this poor start to the year does not seem to bode well.

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
Feb 2009	38.6%		9.8%	
Feb 2010	32.9%	(5.7%)	9.7%	(0.1%)
Feb 2011	24.1%	(8.8%)	7.7%	(2.0%)
Feb 2012	25.6%	1.5%	7.7%	0.0%
Feb 2013	26.1%	0.5%	7.9%	0.2%
Feb 2014	33.9%	7.8%	10.3%	2.4%
Feb 2015	34.5%	0.6%	10.7%	0.4%
Feb 2016	35.0%	0.5%	12.2%	1.5%
Feb 2017	29.6%	(5.4%)	11.0%	(1.2%)
Feb 2018	39.9%	10.3%	15.2%	4.2%

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.

FA management was notified on January 31, 2018 by a member of a potential recorded case reserve overstatement. Management investigated and estimated the overstatement for the Ontario RSP as at October 31, 2017 as indicated in the table at the top of the next page.

Estimated case reserve overstatement as at Oct 31, 2017
Case Reserve Overstatement

100 RSP ON

	Amounts in \$000s
2006	222
2007	194
2008	193
2009	593
2010	253
2011	27
2012	688
2013	695
2014	1,221
2015	2,440
2016	2,260
2017	2,480
TOTAL	11,266

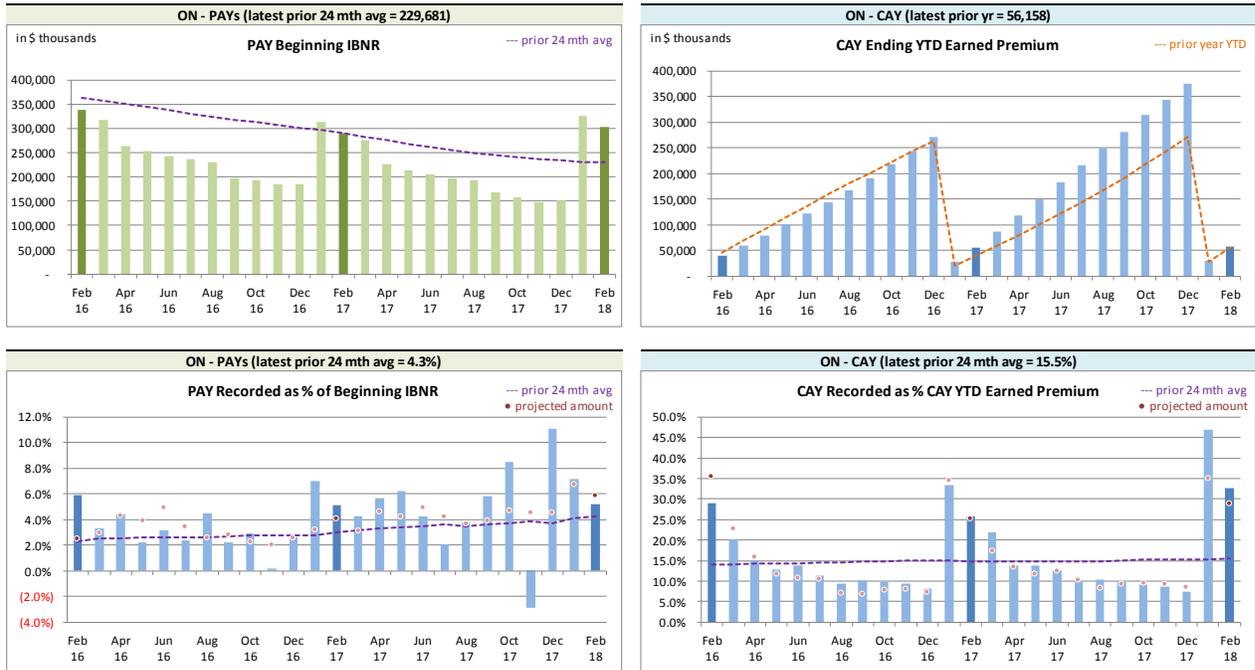
The overstatement of \$11.3 million represented 2.0% of total case reserves recorded at October 31, 2017 for the Ontario RSP, and 1.3% of nominal claims liabilities.

FA's year-end audited financial statements (as at October 31, 2017) were adjusted to reflect this overstatement by reducing the claims liabilities amount by the overstatement (as well as release of associated margins for adverse claims development). However, no adjustment has currently been made to reflect this in the Member Statements (i.e. monthly RSP Operational Reports). It is currently expected to be reflected via reductions in ultimate with the December 31, 2017 valuation, expected to be implemented into the March 2018 Operational Reports.

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), although January and February 2018 are at elevated levels (due to increased writings during 2017).

Ontario RSP Levels that influence¹³ 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:

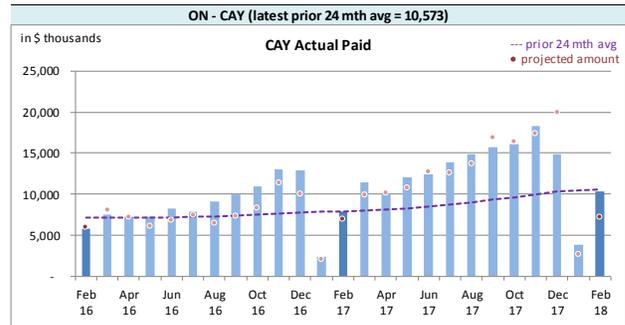
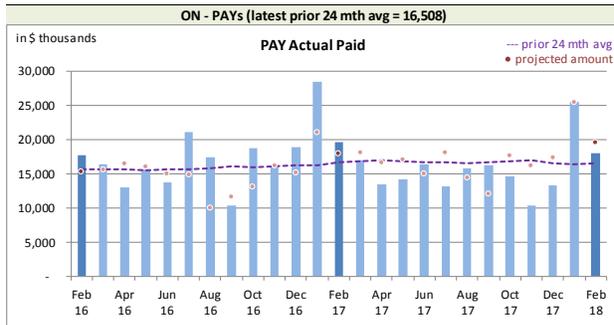
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years’ ultimate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

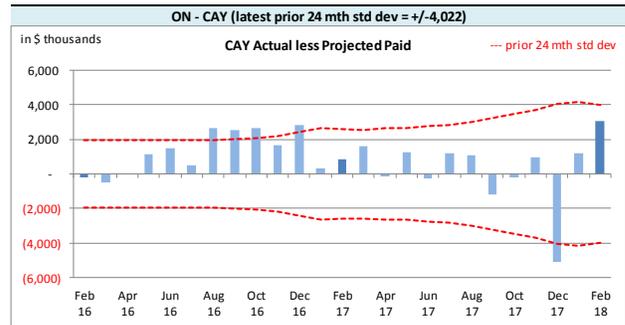
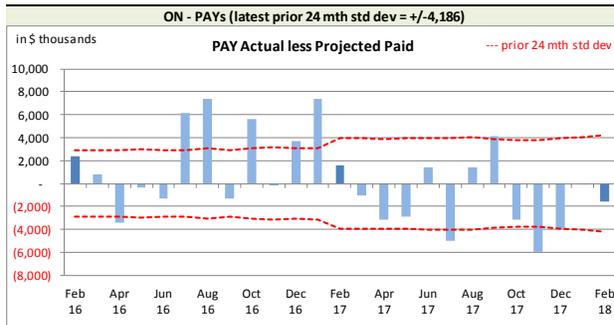
¹³Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned 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			
	Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)		16,508	10,573
std dev		4,186	4,022
A-P <> std dev		9	5
% <> std dev		36.0%	20.0%
norm <> std dev		31.7%	31.7%

With respect to **paid** indemnity & allowed claims expense, 36% 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 no than projecting simply based on the preceding 24-month average. No bias has been indicated at a 95% confidence level on a lagging 24-month basis.

The current accident year (CAY) **paid** variances over the last 25 calendar months have fallen outside of one standard deviation 20% of the time, suggesting the projection process has performed better than projecting simply based on the preceding 24-month average (see table above to the left). There does appear to be evidence of some bias at the 95% confidence level on a lagging 24-month basis, as 18¹⁴ times in the past 24 months, actuals were higher than our projections for the CAY **recorded** amount. Among the 18 months in the past 24 where actuals were higher than our projections, 4 variances were outside the one standard deviation band.

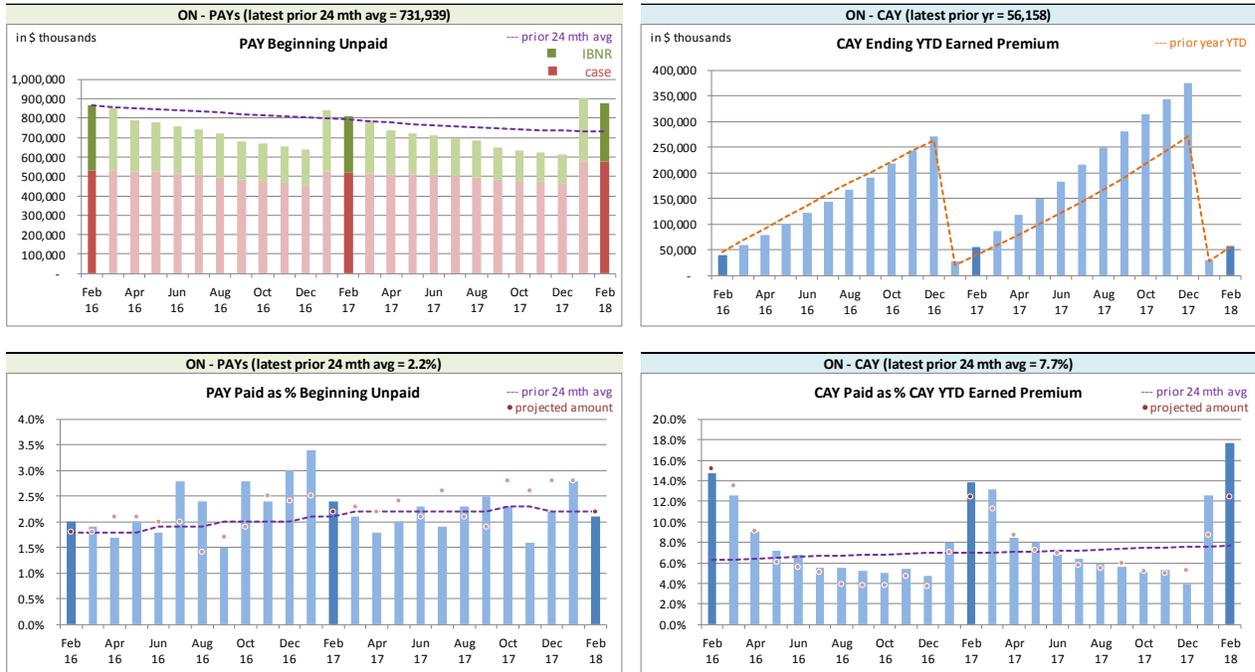
The bottom right chart on the next page shows that the rolling 24-month ratio of CAY **paid** to ytd

¹⁴For the binomial distribution with 24 trials and an assumed 50% success probability, the 95% confidence range is 7 to 17.

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 influence¹⁵ 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).

¹⁵Our paid projections for the prior accident years are based on selected ratios of paid to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date paid to year-to-date selected ultimate indemnity (i.e. selected LR x earned premium). In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.

2.2 Actuarial Provisions

An “ultimate loss ratio matching method” (described in section 3) is used to determine the month’s IBNR¹⁶, 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 the February 2018 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	63,511	(1,135)	(21,536)	(177)	54,052	349	96,027	(963)
2016	57,201	(741)	(7,644)	(53)	28,423	198	77,980	(596)
2017	165,498	3,842	(14,598)	147	52,263	(526)	203,163	3,463
2018	37,690	(2,904)	(3,131)	212	10,568	(713)	45,127	(3,405)
TOTAL	323,900	(938)	(46,909)	129	145,306	(692)	422,297	(1,501)

The IBNR provision is \$0.9 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.

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 the February 2018 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.

¹⁶For 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:	36,416	(742)	19,601	(395)	56,017	(1,137)
balance as % unearned premium:	22.8%	-	12.3%	-	35.1%	-
actual unearned premium:	159,509					
less projected:		(3,192)				

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 loss¹⁷ 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 expenses¹⁸, 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 123.6% rather than 122.5% (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.)

¹⁷“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).

¹⁸Allowed 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	(620)	(1.1%)	(3,708)	(6.4%)	(4,328)	(7.5%)	(2,283)	(0.8%)
CAY	71,089	123.6%	7,437	12.9%	78,526	136.5%	36,493	(1.7%)
TOTAL	70,469	122.5%	3,729	6.5%	74,198	129.0%	34,210	(2.5%)

(“% 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
		Jan. 2018	Feb. 2018	Mar. 2018	Apr. 2018	Dec. 2018
IBNR + M/S actuarial present value adjustments	Accident Year					
	prior	2,271	2,242	2,178	2,134	1,740
	1999	143	143	140	138	113
	2000	(4)	(4)	(4)	(4)	(4)
	2001	107	107	106	104	86
	2002	267	268	262	259	218
	2003	356	356	350	346	289
	2004	655	653	638	631	529
	2005	676	663	651	645	541
	2006	1,165	1,200	1,176	1,163	980
	2007	1,026	991	971	961	807
	2008	3,534	3,407	3,339	3,307	2,782
	2009	6,663	5,911	5,792	5,730	4,815
	2010	11,213	10,592	10,373	10,264	8,619
	2011	4,270	4,389	4,294	4,244	3,550
	2012	2,529	2,504	2,442	2,403	1,988
discount rate	2013	12,960	12,800	12,502	12,340	10,285
1.75%	2014	10,439	8,528	8,384	8,323	6,708
	2015	42,195	41,277	39,484	37,138	22,195
interest rate margin	2016	82,047	77,980	75,848	71,557	46,582
25 basis pts	2017	212,644	203,163	190,825	182,390	140,848
	2018	27,586	45,127	65,621	86,900	199,852
	TOTAL	422,742	422,297	425,372	430,973	453,523
	Change		(445)	3,075	5,601	

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 Jan. 2018	Actual Feb. 2018	Projected Mar. 2018	Projected Apr. 2018	Projected Dec. 2018
	-	prior	36	15	16	15	10
	116.4%	1999	95	95	93	92	76
	122.0%	2000	(4)	(4)	(4)	(4)	(4)
	126.1%	2001	68	68	67	66	54
	118.3%	2002	248	248	243	241	203
	91.2%	2003	323	323	317	314	264
	77.9%	2004	549	548	537	532	447
	73.9%	2005	665	652	639	633	532
	101.0%	2006	1,147	1,181	1,157	1,145	965
	100.4%	2007	1,036	1,001	981	971	815
	122.3%	2008	3,571	3,444	3,375	3,341	2,811
	156.7%	2009	6,468	5,716	5,602	5,546	4,664
	155.2%	2010	10,600	9,983	9,783	9,685	8,146
	87.4%	2011	3,469	3,603	3,531	3,496	2,940
	86.0%	2012	1,090	1,121	1,099	1,088	915
	98.0%	2013	8,821	8,778	8,602	8,516	7,163
	98.7%	2014	816	(863)	(820)	(697)	(432)
	110.5%	2015	28,364	27,602	25,946	23,870	11,022
	118.8%	2016	60,992	57,201	55,485	51,601	29,778
	121.3%	2017	173,824	165,498	153,913	146,217	108,798
	122.5%	2018	23,177	37,690	55,120	73,399	159,641
		TOTAL	325,355	323,900	325,682	330,067	338,808
		Change		(1,455)	1,782	4,385	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Jan. 2018	Actual Feb. 2018	Projected Mar. 2018	Projected Apr. 2018	Projected Dec. 2018
Premium Liabilities					
(1) unearned premium (UP)	165,585	159,509	161,167	164,008	233,582
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	135.0%	135.1%	135.3%	135.6%	140.0%
(3) expected future costs {(1) x (2)}	223,609	215,526	218,048	222,336	326,945
(4) premium deficiency / (deferred policy acquisition cost)	58,024	56,017	56,881	58,328	93,363
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	122.8%	122.8%	123.0%	123.2%	127.2%
(6) expected future costs {(1) x (5)}	203,274	195,925	198,218	202,115	297,210
(7) premium deficiency / (deferred policy acquisition cost)	37,689	36,416	37,051	38,107	63,628

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	19,939	10	19,949	(547)	336	1,996	(55)	1,941	1,730	21,679	
1999	545	76	621	(26)	4	62	(3)	59	37	658	
2000	15	(4)	11	(1)	-	1	-	1	-	11	
2001	669	54	723	(43)	7	72	(4)	68	32	755	
2002	248	203	451	(31)	4	45	(3)	42	15	466	
2003	638	264	902	(67)	9	90	(7)	83	25	927	
2004	888	447	1,335	(53)	7	133	(5)	128	82	1,417	
2005	129	532	661	(59)	8	66	(6)	60	9	670	
2006	1,846	965	2,811	(275)	37	281	(28)	253	15	2,826	
2007	2,168	815	2,983	(316)	42	298	(32)	266	(8)	2,975	
2008	3,042	2,811	5,853	(638)	88	585	(64)	521	(29)	5,824	
2009	6,051	4,664	10,715	(954)	129	1,071	(95)	976	151	10,866	
2010	9,040	8,146	17,186	(1,289)	172	1,719	(129)	1,590	473	17,659	
2011	13,824	2,940	16,764	(1,106)	151	1,676	(111)	1,565	610	17,374	
2012	27,644	915	28,559	(1,828)	228	2,856	(183)	2,673	1,073	29,632	
2013	36,653	7,163	43,816	(2,366)	307	5,477	(296)	5,181	3,122	46,938	
2014	67,445	(432)	67,013	(2,882)	402	10,052	(432)	9,620	7,140	74,153	
2015	93,646	11,022	104,668	(4,396)	628	15,596	(655)	14,941	11,173	115,841	
2016	104,612	29,778	134,390	(6,182)	806	23,250	(1,070)	22,180	16,804	151,194	
2017	130,082	108,798	238,880	(12,422)	1,672	45,148	(2,348)	42,800	32,050	270,930	
PAYs (sub-total):	519,124	179,167	698,291	(35,481)	5,037	110,474	(5,526)	104,948	74,504	772,795	
CAY (2018)	148,239	159,641	307,880	(16,933)	2,155	58,189	(3,200)	54,989	40,211	348,091	
claims liabilities:	667,363	338,808	1,006,171	(52,414)	7,192	168,663	(8,726)	159,937	114,715	1,120,886	
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*	
premium liabilities:	233,582	63,628	297,210	(13,646)	1,780	43,607	(2,006)	41,601	29,735	326,945	
*Total may not be sum of parts, as apvs apply to future costs within UPR											
policy liabilities:			1,303,381	(66,060)	8,972	212,270	(10,732)	201,538	144,450	1,447,831	

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 (Sep. 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%	9.9%	10.0%
2012	10.0%	10.0%	9.3%	10.0%
2013	12.5%	12.5%	12.0%	12.5%
2014	15.0%	15.0%	13.6%	15.0%
2015	14.9%	15.0%	12.1%	14.9%
2016	17.4%	17.5%	10.8%	17.3%
2017	18.9%	20.0%	6.4%	18.9%
2018	14.4%	20.0%	5.2%	14.7%
prem liab	14.4%	20.0%	5.2%	14.7%

discount rate: 1.75%
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 to Dec. 31, 2018, and are based on more up-to-date information). We have included the most recent valuation selection (1.75%), the prior valuation assumption (1.23%) 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							
	0.75%	1.25%	1.75%	2.25%	2.75%	3.25%	1.23%	0.62%
2002 & prior	28,356	28,118	27,882	27,654	27,433	27,209	28,126	28,418
2003	369	364	360	356	352	348	365	370
2004	1,781	1,734	1,689	1,646	1,604	1,564	1,736	1,793
2005	862	837	813	790	769	747	838	869
2006	3,770	3,651	3,538	3,430	3,326	3,227	3,656	3,803
2007	3,882	3,756	3,637	3,523	3,415	3,312	3,762	3,916
2008	7,348	7,155	6,971	6,798	6,632	6,474	7,162	7,401
2009	15,125	14,792	14,475	14,175	13,890	13,617	14,805	15,217
2010	23,123	22,677	22,250	21,846	21,460	21,092	22,695	23,245
2011	23,996	23,543	23,112	22,701	22,312	21,937	23,562	24,120
2012	39,275	38,658	38,066	37,504	36,967	36,452	38,681	39,443
2013	67,622	66,780	65,965	65,189	64,438	63,716	66,810	67,849
2014	102,940	101,698	100,479	99,316	98,184	97,094	101,742	103,291
2015	147,916	145,946	144,029	142,194	140,406	138,681	146,014	148,441
2016	195,630	192,674	189,824	187,093	184,401	181,831	192,804	196,430
2017	361,988	356,152	350,525	345,078	339,824	334,756	356,405	363,552
Total	1,023,983	1,008,535	993,615	979,293	965,413	952,057	1,009,163	1,028,158
	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							
	0.75%	1.25%	1.75%	2.25%	2.75%	3.25%	1.23%	0.62%
Total	30,368	14,920	-	(14,322)	(28,202)	(41,558)	15,548	34,543
	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							
	0.75%	1.25%	1.75%	2.25%	2.75%	3.25%	1.23%	0.62%
2002 & prior	1.7%	0.8%	-	(0.8%)	(1.6%)	(2.4%)	0.9%	1.9%
2003	2.5%	1.1%	-	(1.1%)	(2.2%)	(3.3%)	1.4%	2.8%
2004	5.4%	2.7%	-	(2.5%)	(5.0%)	(7.4%)	2.8%	6.2%
2005	6.0%	3.0%	-	(2.8%)	(5.4%)	(8.1%)	3.1%	6.9%
2006	6.6%	3.2%	-	(3.1%)	(6.0%)	(8.8%)	3.3%	7.5%
2007	6.7%	3.3%	-	(3.1%)	(6.1%)	(8.9%)	3.4%	7.7%
2008	5.4%	2.6%	-	(2.5%)	(4.9%)	(7.1%)	2.7%	6.2%
2009	4.5%	2.2%	-	(2.1%)	(4.0%)	(5.9%)	2.3%	5.1%
2010	3.9%	1.9%	-	(1.8%)	(3.6%)	(5.2%)	2.0%	4.5%
2011	3.8%	1.9%	-	(1.8%)	(3.5%)	(5.1%)	1.9%	4.4%
2012	3.2%	1.6%	-	(1.5%)	(2.9%)	(4.2%)	1.6%	3.6%
2013	2.5%	1.2%	-	(1.2%)	(2.3%)	(3.4%)	1.3%	2.9%
2014	2.4%	1.2%	-	(1.2%)	(2.3%)	(3.4%)	1.3%	2.8%
2015	2.7%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	1.4%	3.1%
2016	3.1%	1.5%	-	(1.4%)	(2.9%)	(4.2%)	1.6%	3.5%
2017	3.3%	1.6%	-	(1.6%)	(3.1%)	(4.5%)	1.7%	3.7%
Total	3.1%	1.5%	-	(1.4%)	(2.8%)	(4.2%)	1.6%	3.5%
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

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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		2,271	(69)	40	-	(29)	(1.3%)	2,242
1999		143	(2)	2	-	-	-	143
2000		(4)	-	-	-	-	-	(4)
2001		107	(1)	1	-	-	-	107
2002		267	(2)	3	-	1	0.4%	268
2003		356	(3)	3	-	-	-	356
2004		655	(10)	8	-	(2)	(0.3%)	653
2005		676	(5)	(8)	-	(13)	(1.9%)	663
2006		1,165	(11)	46	-	35	3.0%	1,200
2007		1,026	(10)	(25)	-	(35)	(3.4%)	991
2008		3,534	(35)	(92)	-	(127)	(3.6%)	3,407
2009		6,663	(71)	(681)	-	(752)	(11.3%)	5,911
2010		11,213	(125)	(496)	-	(621)	(5.5%)	10,592
2011		4,270	(60)	179	-	119	2.8%	4,389
2012		2,529	(54)	29	-	(25)	(1.0%)	2,504
2013		12,960	(213)	53	-	(160)	(1.2%)	12,800
2014		10,439	(259)	(1,652)	-	(1,911)	(18.3%)	8,528
2015		42,195	(2,545)	1,627	-	(918)	(2.2%)	41,277
2016		82,047	(3,471)	(596)	-	(4,067)	(5.0%)	77,980
2017		212,644	(12,944)	3,463	-	(9,481)	(4.5%)	203,163
2018		27,586	20,946	(3,405)	-	17,541	63.6%	45,127
Grand Total		422,742	1,056	(1,501)	-	(445)	(0.1%)	422,297

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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 Change Due to Valuation Implementation	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				
prior	36	(1)	(20)	-	(21)	(58.3%)	15
1999	95	(1)	1	-	-	-	95
2000	(4)	-	-	-	-	-	(4)
2001	68	(1)	1	-	-	-	68
2002	248	(2)	2	-	-	-	248
2003	323	(3)	3	-	-	-	323
2004	549	(5)	4	-	(1)	(0.2%)	548
2005	665	(7)	(6)	-	(13)	(2.0%)	652
2006	1,147	(11)	45	-	34	3.0%	1,181
2007	1,036	(10)	(25)	-	(35)	(3.4%)	1,001
2008	3,571	(36)	(91)	-	(127)	(3.6%)	3,444
2009	6,468	(65)	(687)	-	(752)	(11.6%)	5,716
2010	10,600	(106)	(511)	-	(617)	(5.8%)	9,983
2011	3,469	(35)	169	-	134	3.9%	3,603
2012	1,090	(11)	42	-	31	2.8%	1,121
2013	8,821	(88)	45	-	(43)	(0.5%)	8,778
2014	816	(65)	(1,614)	-	(1,679)	(205.8%)	(863)
2015	28,364	(2,269)	1,507	-	(762)	(2.7%)	27,602
2016	60,992	(3,050)	(741)	-	(3,791)	(6.2%)	57,201
2017	173,824	(12,168)	3,842	-	(8,326)	(4.8%)	165,498
2018	23,177	17,417	(2,904)	-	14,513	62.6%	37,690
Grand Total	325,355	(517)	(938)	-	(1,455)	(0.4%)	323,900