ONTARIO RISK SHARING POOL

OCTOBER 2018 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS

RSP ONTARIO

OPERATIONAL REPORT

OCTOBER 2018

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2018)

The October 2018 Operational Report incorporates the results of an updated valuation (as at September 30, 2018) – the impact of the implementation of the valuation is discussed in section 1.2. The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 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 (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 (completed)	2.22% mfad 25 bp	Oct. 2018	updated valuation (roll forward): accident year 2018 loss ratio increased 0.5 points to 127.0%; discount rate increased by 39 basis points; selected margins for adverse deviations were updated

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 New Valuation

A valuation of the Ontario Risk Sharing Pool (“RSP”) as at September 30, 2018 has been completed since last month’s Operational Report and the results of that valuation have been incorporated into this month’s Report. The valuation was completed by the Facility Association’s internal actuarial group in conjunction with, and approved by, the Appointed Actuary, under the hybrid model for actuarial services. Additional detail will be provided in an “Actuarial Highlights – Quarterly

Valuation" report which we anticipate will be posted to the FA website later in December.

The valuation implementation impact is summarized in the tables below.

Summary of Impact ($000s) of Implementing Result of Valuation as at September 30, 2018[1]

Ontario — unfav / (fav) for the month and ytd

	IMPACT in $000s from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
	[1]	[2]	[3]	[4]	[5]	[6]
PAYs	(2,796)	227	(2,569)	(8,341)	5,427	(5,483)
CAY	1,479	(304)	1,175	(3,144)	5,272	3,303
Prem Def	270	(297)	(27)	(2,309)	3,244	908
TOTAL	(1,047)	(374)	(1,421)	(13,794)	13,943	(1,272)

As indicated in the table above, the incorporation of the new valuation had an estimated ***$1.3 million favourable impact*** on the month's net result from operations, subtracting an estimated 0.4 points (see table immediately below) from the **year-to-date Combined Operating Ratio** to end at **146.5%**.

Summary of Impact (% YTD EP) of Implementing Result of Valuation as at September 30, 2018

Ontario — ytd EP 294,732 (actual)

	IMPACT unfav / (fav) as % ytd EP from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
	[1]	[2]	[3]	[4]	[5]	[6]
PAYs	(0.9%)	0.1%	(0.9%)	(2.8%)	1.8%	(1.9%)
CAY	0.5%	(0.1%)	0.4%	(1.1%)	1.8%	1.1%
Prem Def	0.1%	(0.1%)	-	(0.8%)	1.1%	0.3%
TOTAL	(0.4%)	(0.1%)	(0.5%)	(4.7%)	4.7%	(0.4%)

The impact of the nominal changes is shown in column [1] of the two preceding summary tables. The change in the selected nominal ultimates was favourable by $1.0 million overall. This reflects the impact attributable to the changes in the selected ultimate loss ratios (i.e. for each accident year, it is the product of life-to-date earned premium for the accident year and the change in the selected ultimate loss ratio).

The prior accident years overall showed a $2.8 million favourable nominal variance, which is attributed to favourable claims development, particularly for bodily injury recorded claims activity. This overall favourable prior accident years impact is 0.4% of the prior accident years' nominal

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

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

unpaid balance of $731.7 million determined at the end of last month (September 2018).

The current accident year and premium deficiency impacts are a result of the change in the selected loss ratios for accident year **2018** (up 0.5 points from 126.5% to **127.0%**) and **2019** (unchanged at **127.1%**).

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

Column [2] recognizes that changing the nominal selections also changed the unpaid estimates (including changes to the relative mix by government line, which had an impact on the weighted-average MfADs). It also reflects the fact that we updated the projected emergence of claims payments, resulting in a change in the projected cash flows. These changes generated a favourable change of $0.4 million in the actuarial present value adjustments, prior to any changes in the selected discount rate and/or MfADs.

Updated projected cash flows were reviewed against the selected risk-free yield curve, derived from Government of Canada benchmark bond yields monthly series using values for September 2018. Column [4] accounts for the change in the **discount rate** selected (<u>in</u>creased 39 basis points to **2.22%**), indicating a favourable impact of $13.8 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was $11.5 million at October 2018 – this compares to the $11.8 million change one would estimate as the impact by interpolation using the interest rate sensitivity table provided in last month's Actuarial Highlights.

Column [5] accounts for any changes to selected MfADs. The selected **investment rate MfAD** was **left unchanged at 25 basis points**. Our usual process is to review and update the claims development MfADs annually with the June 30 valuation. However, with the September 30, 2018 valuation, the selected **claims development MfADs** were further reviewed and updated for more recent accident years and some coverages, based on discussion and feedback with the FA's Actuarial Committee. This update resulted in an estimated overall <u>un</u>favourable impact of $13.9 million, partially offsetting the significant favourable MfADs update impact of $30.4 million initially implemented in the August 2018 Operational Report (based on the June 30, 2018 valuation).

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

1.3 Appointed Actuary and Hybrid Actuarial Services Model

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

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

1.4 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation[2]

There have been no changes in these descriptions since last month's Highlights, other than updated references to the most recent valuation and section references, and that we do not believe the Saadati judgment will have a further impact on our valuation results.

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 (September 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 prejudgement interest rate on general damages for non-pecuniary loss can be found in section 1.6.

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 (September 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

[2] 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.

threshold and deductibles can be found in section 1.6.

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, and at this point we do not believe this judgment will have a further impact on our valuation results.

1.5 Harmonized Sales Tax Class Action - Ontario

This is a new section (i.e. not included in last month's Highlights).

Since the end of October 2018, class action lawsuits have been brought against multiple insurers related to HST and limits / sub-limits of benefits per the Statutory Accident Benefits Schedule and FSCO's Professional Services Guideline as part of claims settlement practices in Ontario.

At the current time, no adjustments have been made to our valuation estimates, but in conjunction with FA's Appointed Actuary, FA management continues to review and consider the implications of the potential outcomes related to the class action lawsuits. Please contact Shawn Doherty at sdoherty@facilityassociation.com if you need further information.

1.6 Ontario RSP Bodily Injury Case Reserve summary

There have been no changes in these descriptions since last month's Highlights, other than updated references to the most recent valuation and updated discussion related to the full unwinding of the nominal valuation adjustment previously carried in relation to the application of changes to the prejudgement interest rate on general damages for non-pecuniary loss.

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

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[3] 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). 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** (September 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, has been fully unwound (that is, no adjustment is carried for accident years 2014 and prior). As such, we are assuming the impact of this product reform change is fully reflected in outstanding case reserves with the September 30, 2018 valuation (that is, as this adjustment was unwinding, it was anticipated that member settlement and case adjustment activity would 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** (September 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[4]) 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

[3]**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."

[4]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.

pecuniary versus non-pecuniary losses, nor in estimating the amount of prejudgment interest, if any, is included in the case reserve estimates.

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

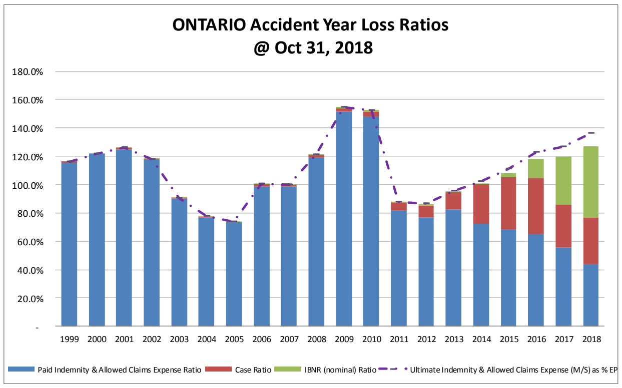
AY	Curr BI Case	avg yrs to Dec 2017	projected avg # yrs to settlement	projected avg duration
[1]	[2]	[5]	[6]	[7]
1993	-	24.5	-	-
1994	-	23.5	-	-
1995	-	22.5	-	-
1996	168	21.5	1.5	23.0
1997	-	20.5	-	-
1998	-	19.5	-	-
1999	-	18.5	-	-
2000	-	17.5	-	-
2001	-	16.5	-	-
2002	-	15.5	-	-
2003	8	14.5	5.0	19.5
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
TOTAL	**241,111**	**3.1**	**2.6**	**5.8**

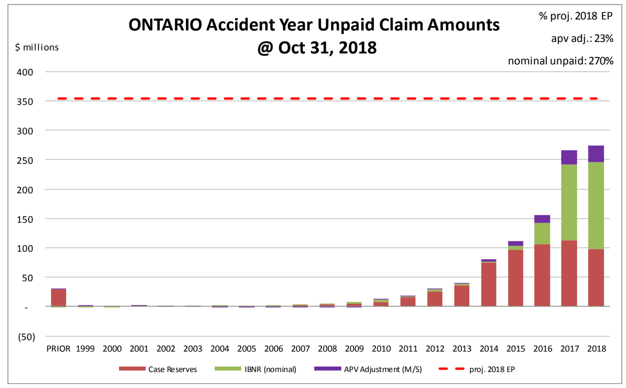
In the table above, the column referenced as [7] ("projected avg duration") is an estimate of the number of years from claim occurrence[5] to claim settlement, via summing the average number of years from claim occurrence to December 31, 2017 (column [5]) and from December 31, 2017 to settlement (column [6]).

[5]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.

1.7 Current Provision Summary

The charts immediately below show the current levels of claim liabilities[6] booked by accident year[7]. 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 ($80.3 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	620,322	59.8%
ibnr	336,490	32.4%
M/S apv adjust.	80,313	7.7%
M/S total	1,037,125	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 82% of the IBNR balance relates to accident years 2017 and 2018 (see Exhibit B). Approximately 86% 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).

[6]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.

[7]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".

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

premium liabilities ($000s)

	amt	%
unearned prem	179,759	72.4%
prem def/(dpac)	49,066	19.8%
M/S apv adjust.	19,332	7.8%
M/S total	248,157	100.0%

policy liabilities ($000s)

	amt	%
claim	956,812	74.4%
premium	228,825	17.8%
M/S apv adjust.	99,645	7.8%
M/S total	1,285,282	100.0%

2 Activity During the Month of October 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[8].

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

Table 01	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
Accident Year	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	(1)	(1)	9,175	2,418	(11,992)	(6,779)	(2,817)	(4,361)
2016	(3)	(3)	4,145	1,197	30	(307)	4,175	890
2017	(13)	(13)	4,366	(562)	(1,031)	(65)	3,335	(627)
2018	30,026	(495)	18,132	2,861	10,340	(4,191)	28,472	(1,330)
TOTAL	30,010	(512)	35,818	5,914	(2,653)	(11,342)	33,165	(5,428)

(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.

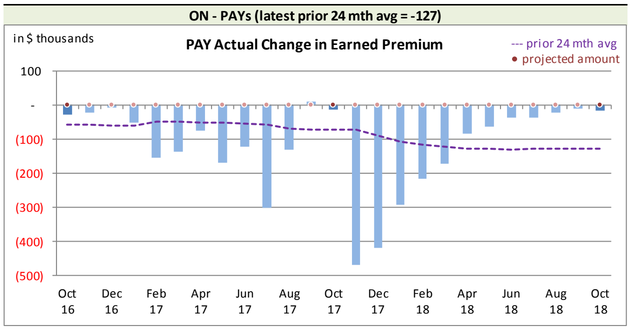
2.1.a Actual vs. Projected (AvsP): Earned Premium

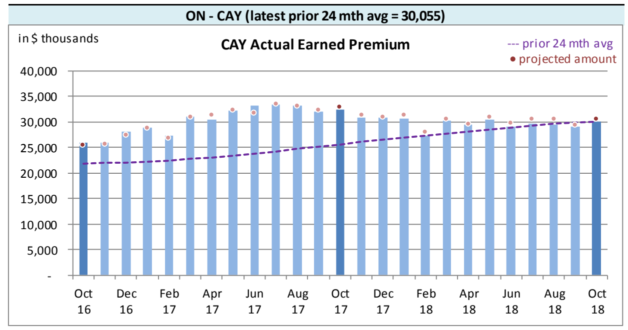
The charts at the top of the next page show actual **earned premium**[9] activity in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

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

[9]Premium is earned on a daily basis based on the transaction term measured in days. As a result, months with 31 days earned relatively more than those with 30 days, and February earns the least.

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



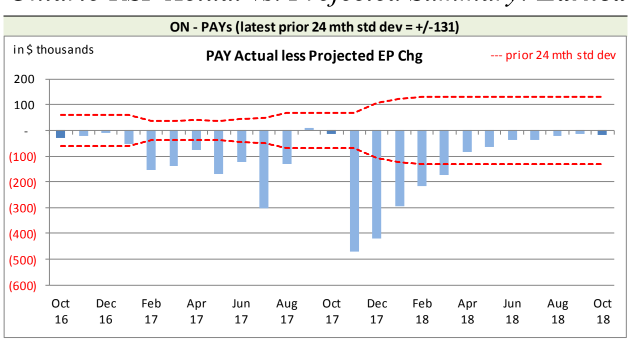


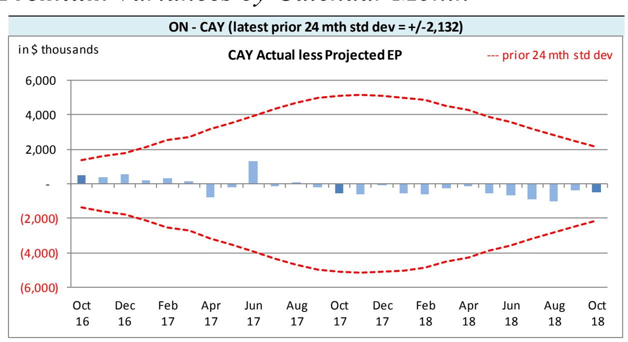
Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels (note the different scales in the charts above), although relatively high levels generally occur at the beginning of each year.

The relatively high levels of PAYs negative earned premium for share months November and 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 was 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)	30,055
std dev	131	2,132
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[10], with actuals generally lower than projected, although the magnitude is not high relative to

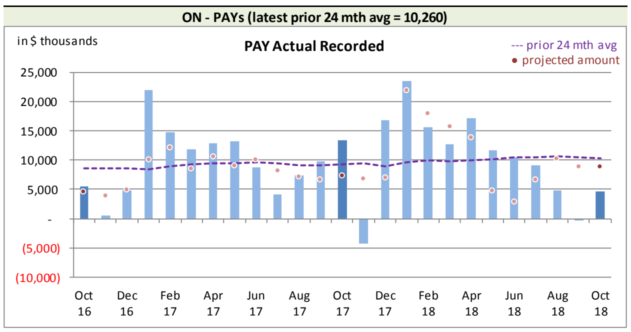
[10] The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

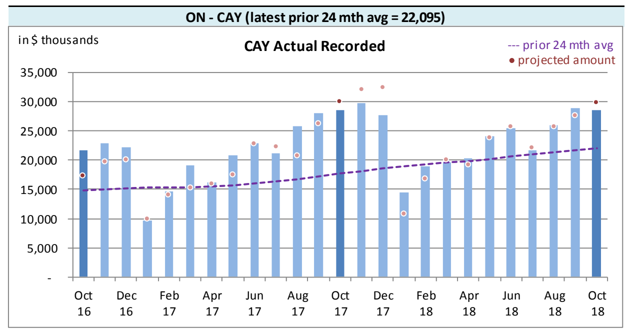
monthly premium. Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority. Readers will also note the significant widening then tapering of the CAY standard deviation band, reflecting significant volume changes and the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

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.

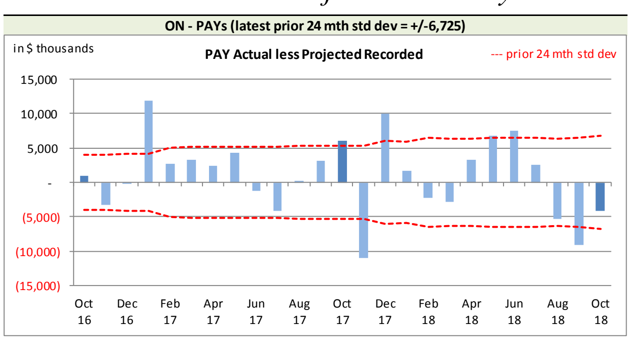
*Ontario RSP Actual **Recorded** by Calendar Month*

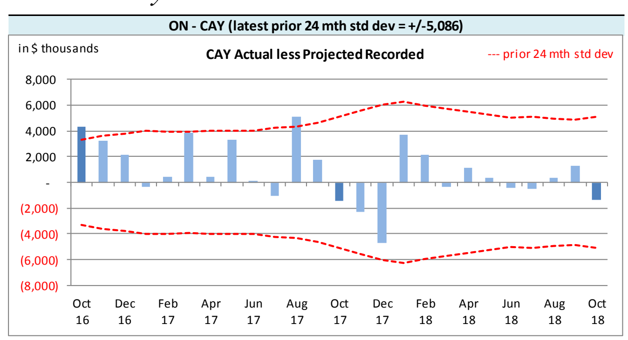




Recorded activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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





On Latest $ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	10,260	22,095
std dev	6,725	5,086
A-P <> std dev	7	2
% <> std dev	28.0%	8.0%
norm <> std dev	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 but within one standard deviation. This was partly 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 2006 to 2009 inclusive, and were reasonably aligned with FA management's previously held provisions (which have now been released as a result).

The current accident year (CAY) **recorded** variances (right chart at the bottom of the previous page) fell outside of one standard deviation 8% 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 Oct) provides the average of the 10 monthly ratios (i.e. Jan-Oct) 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 10 months to Oct 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%

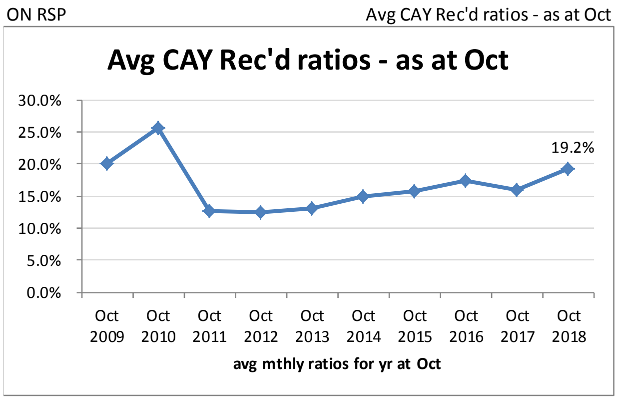
CAY avg of mthly ratios for yr

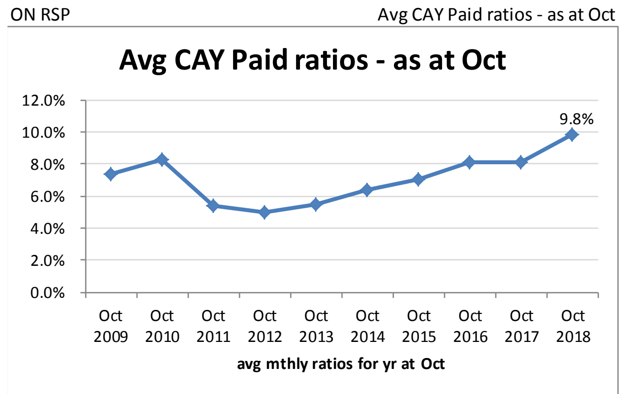
as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg
Oct 2009	20.1%		7.4%	
Oct 2010	25.6%	5.5%	8.3%	0.9%
Oct 2011	12.6%	(13.0%)	5.4%	(2.9%)
Oct 2012	12.4%	(0.2%)	5.0%	(0.4%)
Oct 2013	13.0%	0.6%	5.5%	0.5%
Oct 2014	14.9%	1.9%	6.4%	0.9%
Oct 2015	15.7%	0.8%	7.0%	0.6%
Oct 2016	17.3%	1.6%	8.1%	1.1%
Oct 2017	16.0%	(1.3%)	8.1%	0.0%
Oct 2018	19.2%	3.2%	9.8%	1.7%

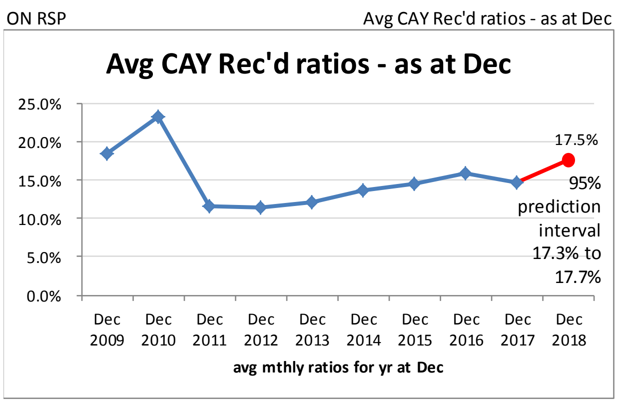
There has been strong (over 95%) correlation between the ytd monthly average ratios at October each year and the corresponding monthly average ratios at December, suggesting the monthly average ratios for 2018 at October (that is, the average of the 10 monthly ratios Jan 2018 to Oct 2018) are predictive 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 17.5% (95% prediction interval of 17.3% to 17.7%) for **recorded** and 9.3% (95%

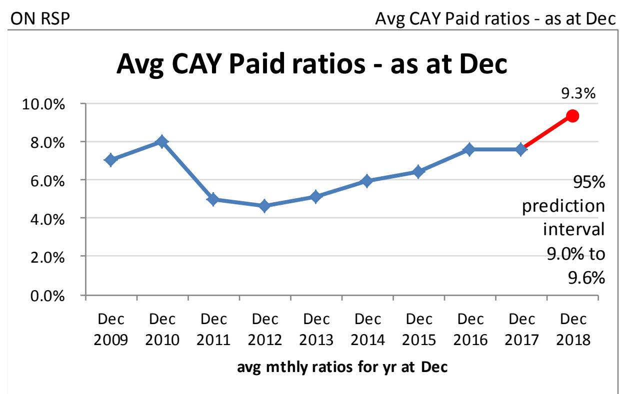
prediction interval of 9.0% to 9.6%) for **paid**. The results are presented in the charts immediately below.

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 nine 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. During the month of September 2018, the member submitted correcting case reserve transactions related to PAYs 2010-2017 inclusive. The partial 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, as of September 30, 2018, FA management's provisions for PAYs 2006-2009 were still being held, pending final resolution by the member.

Management investigated and estimated the overall overstatement for the Ontario RSP as at the latest valuation (September 30, 2018) as indicated in the table at the top of the next page.

Estimated case reserve overstatement as at Sep 30, 2018

overstatement / (understatement)

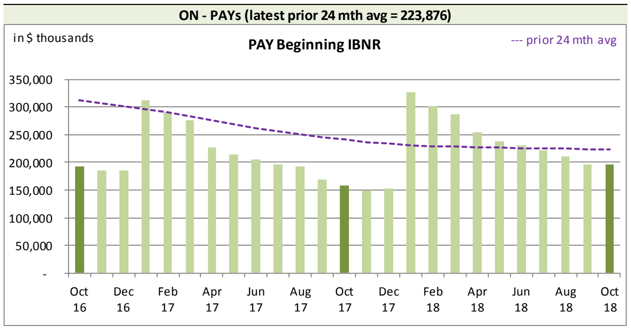
Accident Year	Total Case Reserve Overstatement ($'000s)
2006	227
2007	201
2008	264
2009	1,067
2010	-
2011	-
2012	-
2013	-
2014	-
2015	-
2016	-
2017	-
Total	**1,759**

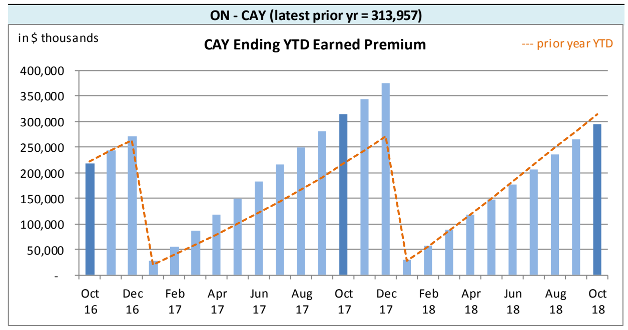
With the latest valuation (September 30, 2018), prior accident years' (in particular, AYs 2006 to 2009 inclusive) ultimates selections have taken into account the member's overstatement of case reserves not corrected as of September 30, 2018 (summarized in the table above). During the month of October 2018, the member submitted correcting case reserve transactions related to PAYs 2006-2009 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.

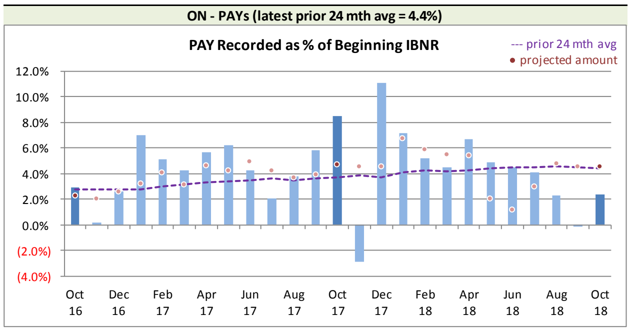
The method for establishing IBNR adjusts automatically for changes in **earned premium** and **recorded** claims activity level (see sections 2.2 and 3).

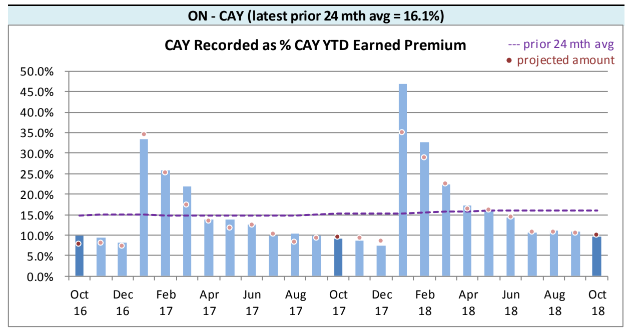
We have included, for reference, additional charts at the top of the next page related to levels influencing **recorded** activity. Note in particular the reduction in the level of PAY beginning IBNR over the months, as a response to valuations and showing up as a beginning IBNR change one month after the valuation is implemented (i.e. April, June, September, and November).

Ontario RSP Levels that influence[11] ***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:

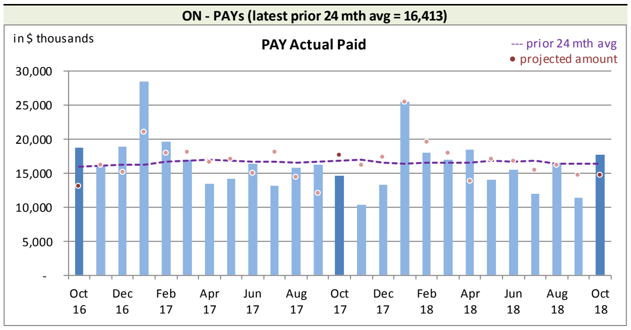
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate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

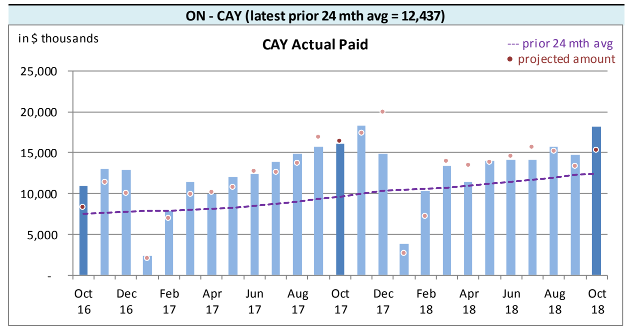
2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

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.

[11] 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.

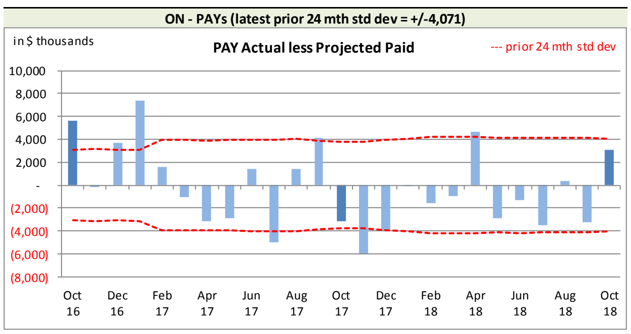
*Ontario RSP Actual **Paid** activity by Calendar Month*

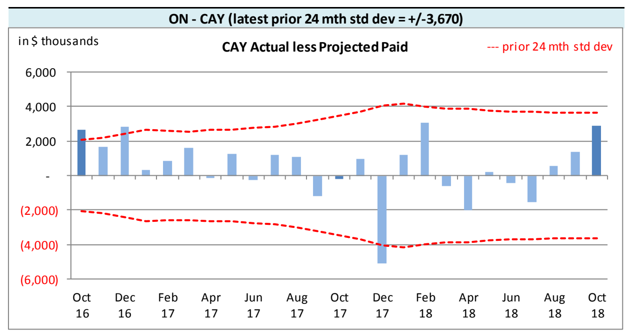




Paid activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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





On Latest $ thousands		
Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	16,413	12,437
std dev	4,071	3,670
A-P <> std dev	7	3
% <> std dev	28.0%	12.0%
norm <> std dev	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 12% 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[12] 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.

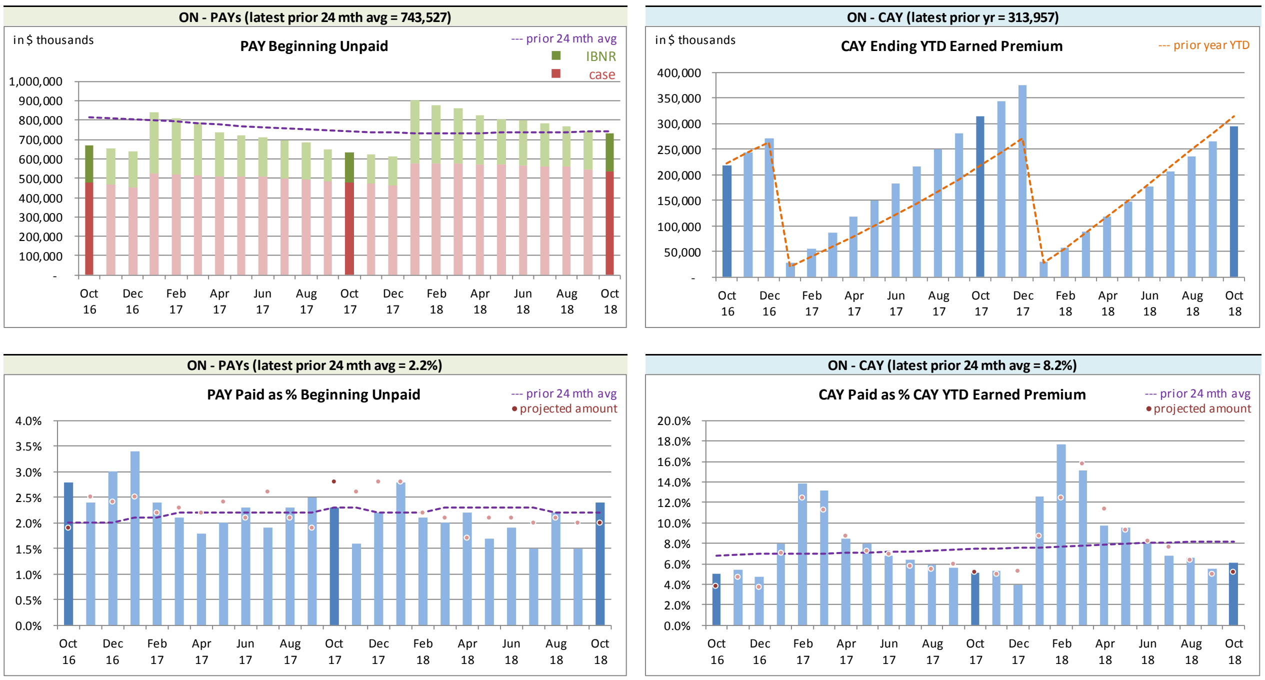
The *bottom right* chart on the next page shows that the rolling 24-month ratio of CAY **paid** to ytd **earned premium** has been increasing, which adds to the difficulty in projecting **paid** activity. We

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

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[13] 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

[13] 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[14], 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

			actuarial present value adjustments					
	IBNR		Discount Amount		Provisions for Adverse Deviations		IBNR + actuarial present value adjustments	
Accident Year	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	24,643	2,854	(21,177)	(3,346)	35,168	(822)	38,634	(1,314)
2016	36,340	(1,433)	(7,992)	(1,202)	21,065	(177)	49,413	(2,812)
2017	127,951	(138)	(15,199)	(2,402)	40,557	5,025	153,309	2,485
2018	147,556	2,182	(16,459)	(2,590)	44,350	4,040	175,447	3,632
TOTAL	336,490	3,465	(60,827)	(9,540)	141,140	8,066	416,803	1,991

The IBNR provision is $3.5 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, and due to the valuation implementation.

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

(i) the change projected last month;

(ii) the additional change due to variances in earned premium (because we apply a loss ratio to earned premium in determining ultimate level) and/or recorded claims (as IBNR is calculated as ultimate less recorded) differences; and

(iii) the additional change due to valuation implementation impacts (as applicable)

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

The table at the top of the next page summarizes the variances in the provisions for 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 and due to the valuation implementation.

[14]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:	49,066	(868)	19,332	213	68,398	(655)
balance as % unearned premium:	27.3%	0.1%	10.8%	0.3%	38.0%	0.4%
actual unearned premium:	179,759					
less projected:	(4,079)					

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[15] 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[16], 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 127.4% rather than 127.0% (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.)

[15] "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).

[16] 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	(27,625)	(9.4%)	(42,246)	(14.3%)	(69,871)	(23.7%)	(6,865)	0.1%
CAY	375,526	127.4%	27,891	9.5%	403,417	136.9%	43,405	0.9%
TOTAL	347,901	118.0%	(14,355)	(4.9%)	333,546	113.2%	36,540	1.0%

("% 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 and the valuation implementation.

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

5 Current Operational Report – Additional Exhibits

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

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

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

The ultimate loss ratios presented in section 6, Exhibit B, refer to the estimates derived on the basis of various actuarial methodologies applied to the experience of the Ontario Risk Sharing Pool for the purposes of the most recent quarterly valuation. As discussed in section 3, IBNR in the current month's Operational Report was derived as the difference between the estimated ultimate for the claims amount (i.e. earned premium x ultimate loss ratio) and the associated current recorded amounts (life-to-date payments plus current case reserves).

6 EXHIBITS

The exhibits listed below are provided on the pages that follow:

EXHIBIT A	IBNR for Member Sharing – includes Actuarial Present Value Adjustments
EXHIBIT B	IBNR
EXHIBIT C	Premium Liabilities
EXHIBIT D	Projected Year-end Policy Liabilities
EXHIBIT E	Discount Rate & Margins for Adverse Deviations
EXHIBIT F	Interest Rate Sensitivity
EXHIBIT G	Components of IBNR Change During Month

EXHIBIT A

IBNR for Member Sharing – includes Actuarial Present Value Adjustments

TABLE EXHIBIT A

IBNR + M/S actuarial present value adjustments

discount rate 2.22%

interest rate margin 25 basis pts

	Amounts in $000s				
Accident Year	Actual Sep. 2018	Actual Oct. 2018	Projected Nov. 2018	Projected Dec. 2018	Projected Dec. 2019
prior	1,215	(835)	(833)	(758)	(171)
1999	27	20	19	20	16
2000	(4)	(4)	(4)	(4)	(4)
2001	102	180	178	167	138
2002	67	65	63	60	47
2003	720	127	126	119	97
2004	234	206	203	191	158
2005	340	416	412	389	308
2006	421	590	585	548	453
2007	569	709	704	658	539
2008	1,640	1,217	1,206	1,128	905
2009	1,205	2,064	2,046	1,915	1,462
2010	3,971	4,003	3,963	3,727	2,662
2011	(62)	2,029	2,006	1,895	1,331
2012	1,787	4,524	4,474	4,220	3,245
2013	4,723	3,353	3,304	3,149	1,809
2014	3,982	4,990	4,904	4,644	2,915
2015	20,921	14,980	14,608	13,888	6,593
2016	55,806	49,413	48,424	45,319	20,718
2017	155,250	153,309	150,242	145,983	81,090
2018	160,514	175,447	184,324	192,136	119,400
2019	-	-	-	-	198,528
TOTAL	413,428	416,803	420,954	419,394	442,239
Change		3,375	4,151	(1,560)	

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

EXHIBIT B

IBNR

TABLE EXHIBIT B

IBNR

Ultimate Loss Ratio	Accident Year	Actual Sep. 2018	Actual Oct. 2018	Projected Nov. 2018	Projected Dec. 2018	Projected Dec. 2019
		Amounts in $000s				
-	prior	(8)	(1,692)	(1,675)	(1,574)	(1,228)
116.3%	1999	(13)	(13)	(13)	(12)	(11)
122.0%	2000	(4)	(4)	(4)	(4)	(4)
126.0%	2001	67	160	158	149	117
117.9%	2002	63	63	62	58	45
90.7%	2003	696	125	124	117	93
77.7%	2004	212	212	210	197	153
73.7%	2005	337	424	420	395	309
100.4%	2006	430	661	654	615	481
100.2%	2007	601	814	806	758	596
121.4%	2008	1,704	1,394	1,380	1,297	1,015
155.0%	2009	1,234	2,285	2,262	2,126	1,665
152.6%	2010	3,676	3,937	3,898	3,664	2,872
87.9%	2011	(581)	1,733	1,716	1,613	1,264
86.3%	2012	837	4,004	3,964	3,726	2,920
95.1%	2013	2,587	1,861	1,842	1,731	1,355
100.7%	2014	(418)	1,340	1,327	1,247	977
108.0%	2015	11,913	7,339	7,119	6,549	1,811
118.2%	2016	41,058	36,340	35,613	32,764	10,548
119.8%	2017	132,051	127,951	125,392	121,630	60,279
127.0%	2018	136,566	147,556	154,337	160,128	92,931
127.1%	2019	-	-	-	-	162,701
	TOTAL	333,008	336,490	339,592	337,174	340,889
	Change		3,482	3,102	(2,418)	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in $000s				
Premium Liabilities	Actual Sep. 2018	Actual Oct. 2018	Projected Nov. 2018	Projected Dec. 2018	Projected Dec. 2019
(1) unearned premium (UP)	183,854	179,759	183,396	180,596	213,810
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	137.5%	138.0%	138.1%	138.1%	141.3%
(3) expected future costs {(1) x (2)}	252,733	248,157	253,231	249,397	302,179
(4) premium deficiency / (deferred policy acquisition cost)	68,879	68,398	69,835	68,801	88,369
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	127.1%	127.3%	127.3%	127.3%	130.3%
(6) expected future costs {(1) x (5)}	233,626	228,825	233,507	229,971	278,637
(7) premium deficiency / (deferred policy acquisition cost)	49,772	49,066	50,111	49,375	64,827

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	27,637	(1,574)	26,063	(1,808)	198	2,607	(181)	2,426	816	26,879
1999	676	(12)	664	(35)	4	66	(3)	63	32	696
2000	15	(4)	11	(1)	-	1	-	1	-	11
2001	653	149	802	(62)	6	80	(6)	74	18	820
2002	60	58	118	(10)	1	12	(1)	11	2	120
2003	310	117	427	(41)	4	43	(4)	39	2	429
2004	1,077	197	1,274	(134)	14	127	(13)	114	(6)	1,268
2005	74	395	469	(54)	6	47	(5)	42	(6)	463
2006	1,817	615	2,432	(311)	32	243	(31)	212	(67)	2,365
2007	2,125	758	2,883	(389)	40	288	(39)	249	(100)	2,783
2008	3,296	1,297	4,593	(629)	64	459	(63)	396	(169)	4,424
2009	5,747	2,126	7,873	(1,000)	102	787	(100)	687	(211)	7,662
2010	7,534	3,664	11,198	(1,053)	101	1,120	(105)	1,015	63	11,261
2011	15,287	1,613	16,900	(1,403)	135	1,690	(140)	1,550	282	17,182
2012	24,053	3,726	27,779	(2,278)	222	2,778	(228)	2,550	494	28,273
2013	34,723	1,731	36,454	(2,224)	219	3,645	(222)	3,423	1,418	37,872
2014	69,838	1,247	71,085	(3,696)	355	7,108	(370)	6,738	3,397	74,482
2015	92,963	6,549	99,512	(4,976)	498	12,439	(622)	11,817	7,339	106,851
2016	104,306	32,764	137,070	(7,676)	822	20,560	(1,151)	19,409	12,555	149,625
2017	110,073	121,630	231,703	(14,597)	1,390	40,085	(2,525)	37,560	24,353	256,056
PAYs (sub-total):	502,264	177,046	679,310	(42,377)	4,213	94,185	(5,809)	88,376	50,212	729,522
CAY (2018)	121,788	160,128	281,916	(18,888)	1,973	52,436	(3,513)	48,923	32,008	313,924
claims liabilities:	624,052	337,174	961,226	(61,265)	6,186	146,621	(9,322)	137,299	82,220	1,043,446

	Unearned Premium	Premium Defiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	180,596	49,375	229,971	(12,166)	1,377	31,906	(1,691)	30,215	19,426	249,397

*Total may not be sum of parts, as apvs apply to future costs within UPR

policy liabilities:			**1,191,197**	**(73,431)**	**7,563**	**178,527**	**(11,013)**	**167,514**	**101,646**	**1,292,843**

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 (Sep. 30, 2018)

Accident Year	Third Party Liability Margins	Accident Benefits Margins	Other Coverages Margins	Total Margins
1993	10.0%	10.0%	10.0%	10.0%
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%	8.7%	10.0%
2013	10.0%	10.0%	9.5%	10.0%
2014	10.0%	10.0%	9.1%	10.0%
2015	12.5%	12.5%	11.9%	12.5%
2016	15.0%	15.0%	12.9%	15.0%
2017	17.4%	17.5%	9.5%	17.3%
2018	18.4%	20.0%	6.2%	18.6%
2019	13.6%	20.0%	5.2%	13.9%
prem liab	13.6%	20.0%	5.2%	13.9%

discount rate:	2.22%
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 (2.22%), the prior valuation assumption (1.83%) 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.

$ Format: $000s

	Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2018 projected Unpaid							
AY	1.22%	1.72%	2.22%	2.72%	3.22%	3.72%	1.83%	1.75%
2003 & prior	30,422	29,934	29,456	28,991	28,544	28,103	29,828	29,903
2004	1,436	1,401	1,366	1,334	1,302	1,272	1,393	1,398
2005	537	522	508	495	482	469	519	521
2006	2,770	2,687	2,606	2,530	2,457	2,387	2,668	2,681
2007	3,298	3,193	3,092	2,997	2,906	2,819	3,170	3,186
2008	4,993	4,831	4,677	4,530	4,391	4,258	4,796	4,821
2009	9,206	8,933	8,671	8,423	8,189	7,966	8,872	8,915
2010	11,332	11,086	10,851	10,629	10,418	10,218	11,033	11,071
2011	17,585	17,250	16,929	16,626	16,337	16,064	17,176	17,229
2012	28,515	27,979	27,462	26,970	26,506	26,062	27,860	27,942
2013	36,699	36,190	35,696	35,227	34,778	34,347	36,077	36,157
2014	74,016	73,146	72,299	71,485	70,709	69,964	72,949	73,089
2015	106,760	105,545	104,367	103,231	102,133	101,063	105,279	105,476
2016	153,390	151,445	149,536	147,708	145,916	144,206	151,004	151,316
2017	265,456	261,608	257,868	254,204	250,730	247,336	260,752	261,357
2018	328,477	323,433	318,533	313,787	309,238	304,796	322,324	323,108
Total	1,074,892	1,059,183	1,043,917	1,029,167	1,015,036	1,001,330	1,055,700	1,058,170
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

	Dollar Impact Relative to Valuation Assumption							
AY	1.22%	1.72%	2.22%	2.72%	3.22%	3.72%	1.83%	1.75%
Total	30,975	15,266	-	(14,750)	(28,881)	(42,587)	11,783	14,253
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

	Percentage Impact Relative to Valuation Assumption							
AY	1.22%	1.72%	2.22%	2.72%	3.22%	3.72%	1.83%	1.75%
2003 & prior	3.3%	1.6%	-	(1.6%)	(3.1%)	(4.6%)	1.3%	1.5%
2004	5.1%	2.6%	-	(2.3%)	(4.7%)	(6.9%)	2.0%	2.3%
2005	5.7%	2.8%	-	(2.6%)	(5.1%)	(7.7%)	2.2%	2.6%
2006	6.3%	3.1%	-	(2.9%)	(5.7%)	(8.4%)	2.4%	2.9%
2007	6.7%	3.3%	-	(3.1%)	(6.0%)	(8.8%)	2.5%	3.0%
2008	6.8%	3.3%	-	(3.1%)	(6.1%)	(9.0%)	2.5%	3.1%
2009	6.2%	3.0%	-	(2.9%)	(5.6%)	(8.1%)	2.3%	2.8%
2010	4.4%	2.2%	-	(2.0%)	(4.0%)	(5.8%)	1.7%	2.0%
2011	3.9%	1.9%	-	(1.8%)	(3.5%)	(5.1%)	1.5%	1.8%
2012	3.8%	1.9%	-	(1.8%)	(3.5%)	(5.1%)	1.4%	1.7%
2013	2.8%	1.4%	-	(1.3%)	(2.6%)	(3.8%)	1.1%	1.3%
2014	2.4%	1.2%	-	(1.1%)	(2.2%)	(3.2%)	0.9%	1.1%
2015	2.3%	1.1%	-	(1.1%)	(2.1%)	(3.2%)	0.9%	1.1%
2016	2.6%	1.3%	-	(1.2%)	(2.4%)	(3.6%)	1.0%	1.2%
2017	2.9%	1.5%	-	(1.4%)	(2.8%)	(4.1%)	1.1%	1.4%
2018	3.1%	1.5%	-	(1.5%)	(2.9%)	(4.3%)	1.2%	1.4%
Total	3.0%	1.5%	-	(1.4%)	(2.8%)	(4.1%)	1.1%	1.4%
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

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

RSP	Ontario
AccountCode Desc	IBNR - Discou d

M/S IBNR - in $000s

AccYear	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
prior	1,215	(24)	(1,665)	(361)	(2,050)	(168.7%)	(835)
1999	27	(1)	1	(7)	(7)	(25.9%)	20
2000	(4)	-	-	-	-	-	(4)
2001	102	(1)	174	(95)	78	76.5%	180
2002	67	(2)	2	(2)	(2)	(3.0%)	65
2003	720	(7)	7	(593)	(593)	(82.4%)	127
2004	234	(3)	3	(28)	(28)	(12.0%)	206
2005	340	(3)	90	(11)	76	22.4%	416
2006	421	(4)	235	(62)	169	40.1%	590
2007	569	(5)	217	(72)	140	24.6%	709
2008	1,640	(15)	(78)	(330)	(423)	(25.8%)	1,217
2009	1,205	(11)	615	255	859	71.3%	2,064
2010	3,971	(43)	572	(497)	32	0.8%	4,003
2011	(62)	(4)	633	1,462	2,091	(3,372.6%)	2,029
2012	1,787	(27)	2,868	(104)	2,737	153.2%	4,524
2013	4,723	(69)	1,049	(2,350)	(1,370)	(29.0%)	3,353
2014	3,982	(82)	(160)	1,250	1,008	25.3%	4,990
2015	20,921	(1,609)	(371)	(3,961)	(5,941)	(28.4%)	14,980
2016	55,806	(3,581)	(1,013)	(1,799)	(6,393)	(11.5%)	49,413
2017	155,250	(4,426)	663	1,822	(1,941)	(1.3%)	153,309
2018	160,514	11,301	329	3,303	14,933	9.3%	175,447
Grand Total	**413,428**	**1,384**	**4,171**	**(2,180)**	**3,375**	**0.8%**	**416,803**

EXHIBIT G

Page 2 of 2

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

RSP: Ontario
AccountCode Desc: IBNR - Undiscounted

IBNR - in $000s

AccYear	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
prior	(8)	-	(1,684)	-	(1,684)	21,050.0%	(1,692)
1999	(13)	-	-	-	-	-	(13)
2000	(4)	-	-	-	-	-	(4)
2001	67	(1)	174	(80)	93	138.8%	160
2002	63	(1)	1	-	-	-	63
2003	696	(7)	7	(571)	(571)	(82.0%)	125
2004	212	(2)	2	-	-	-	212
2005	337	(3)	90	-	87	25.8%	424
2006	430	(4)	235	-	231	53.7%	661
2007	601	(6)	219	-	213	35.4%	814
2008	1,704	(17)	(78)	(215)	(310)	(18.2%)	1,394
2009	1,234	(12)	615	448	1,051	85.2%	2,285
2010	3,676	(37)	582	(284)	261	7.1%	3,937
2011	(581)	6	627	1,681	2,314	(398.3%)	1,733
2012	837	(8)	2,873	302	3,167	378.4%	4,004
2013	2,587	(26)	1,095	(1,795)	(726)	(28.1%)	1,861
2014	(418)	4	(142)	1,896	1,758	(420.6%)	1,340
2015	11,913	(1,430)	(254)	(2,890)	(4,574)	(38.4%)	7,339
2016	41,058	(3,285)	(894)	(539)	(4,718)	(11.5%)	36,340
2017	132,051	(3,962)	611	(749)	(4,100)	(3.1%)	127,951
2018	136,566	8,808	703	1,479	10,990	8.0%	147,556
Grand Total	**333,008**	**17**	**4,782**	**(1,317)**	**3,482**	**1.0%**	**336,490**