

# ONTARIO RISK SHARING POOL DECEMBER 2018 OPERATIONAL REPORT ACTUARIAL HIGHLIGHTS

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# **ACTUARIAL HIGHLIGHTS**

### **RSP ONTARIO**

# OPERATIONAL REPORT DECEMBER 2018

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#### 1 Summary

#### 1.1 Valuation Schedule (Fiscal Year 2019)

The December 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 2019.

	Ontario Risk Sharing Pool Fiscal Year 2019 – Schedule of Valuations					
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes			
Sep. 30, 2018 (completed)	2.22% mfad 25 bp	Oct. 2018	updated valuation (roll forward): accident year 2018 loss ratio <u>increased 0.5 points to 127.0%;</u> discount rate <u>increased by 39 basis points;</u> selected margins for adverse deviations were updated			
Dec. 31, 2018		Mar. 2019	update valuation:			
Mar. 31, 2019		May 2019	update valuation (roll forward)			
Jun. 30, 2019		Aug. 2019	update valuation			
Sep. 30, 2019		Oct. 2019	update valuation (roll forward)			

Under the proposed schedule for fiscal year 2019, the "off-half" valuation quarters ending March 31, 2019 and September 30, 2019 would not reflect a full valuation update of assumptions, but would rather "roll-forward" key assumptions from the previous valuation.

#### 1.2 Appointed Actuary and Hybrid Actuarial Services Model

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

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

### 1.3 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation<sup>1</sup>

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

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



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 1.5.

Ontario Bill 91 (Building Ontario Up Act (Budget Measures), 2015) was introduced into the Legislature by the Minister of Finance on April 23, 2015 and received Royal Assent on June 4, 2015. Bill 91 announced a number of amendments to regulations made under the Insurance Act, including: updating the Catastrophic Impairment Definition and changes to the standard benefit level under the Statutory Accident Benefits Schedule (SABS); restrictions on insurance premium increases and lowering of the maximum interest rate charged on monthly auto insurance premium payments; and adjustments to the monetary threshold beyond which the tort deductible does not apply to reflect inflation (adjustments to reflect inflation in the associated tort deductible were undertaken via an update to regulation 461/96). On August 26, 2015, the Ontario government filed Ontario regulations 250/15 and 251/15 implementing reforms set out in Bill 91. With the 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 threshold and deductibles can be found in section 1.5.

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



was dismissed. The Supreme Court upheld the \$100,000 non-pecuniary award, determining:

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

At the current time, no adjustments have been made to our valuation estimates or views based on the judgment as rendered, and at this point we do not believe this judgment will have a further impact on our valuation results.

#### 1.4 Harmonized Sales Tax Class Action - Ontario

There have been no changes in these descriptions since 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 <a href="mailto:sdoherty@facilityassociation.com">sdoherty@facilityassociation.com</a> if you need further information.

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

There have been no changes in these descriptions since last month's Highlights, other than updated references related to the posting date for the Actuarial Highlights – Quarterly Valuation report.

With the <u>most recent</u> (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 was provided in the "Actuarial Highlights – Quarterly Valuation" report which was posted to the FA website in January 2019.

As indicated in the previous section, reform adjustments, specifically related to changes in the non-pecuniary prejudgment interest provisions in **Ontario Bill 15** and the changes in the tort threshold and deductibles in **Ontario Bill 91** impacting the third party liability - bodily injury coverage for accident year 2015 and subsequent, was included with the updated Ontario Private Passenger Vehicle industry trend analysis (completed using industry data as at December 31, 2017).

In the Ontario Court of Appeal decisions in El-Khodr v. Lackie (September 19, 2017; 2017 ONCA 716) and Cobb v. Long Estate (September 19, 2017; 2017 ONCA 717), the court of appeal



ruled that the change to prejudgment interest for non-pecuniary<sup>2</sup> losses from a set level of 5% to the level that applies to pecuniary losses were implemented to achieve particular policy objectives and therefore should have retrospective application (i.e. to be applied to all settlements on or after 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 <u>most recent</u> 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<sup>3</sup>) by accident year as well as projected average duration, from accident date to projected settlement date, from the December 31, 2017 valuation paid emergence projection model. No attempt has been made to distinguish case reserves held for pecuniary versus non-pecuniary losses, nor in estimating the amount of prejudgment interest, if any, is included in the case reserve estimates.

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

<sup>&</sup>lt;sup>3</sup>As we anticipate the full impact of the reforms will be accounted for in case reserves by December 31, 2018 and therefore with the 2018 Q4 valuation, we anticipated being able to remove this section when that valuation is implemented with the March 2019 Operational Report.



ON RSP (	Amounts in	\$000s: as at [	Dec. 31.	2017)
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AY	Curr BI Case	avg yrs to Dec projected avg # yrs to 2017 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<sup>4</sup> to claim settlement, via summing the average number of years from claim occurrence to December 31, 2017 (column [5]) and from December 31, 2017 to settlement (column [6]).

#### 1.6 Current Provision Summary

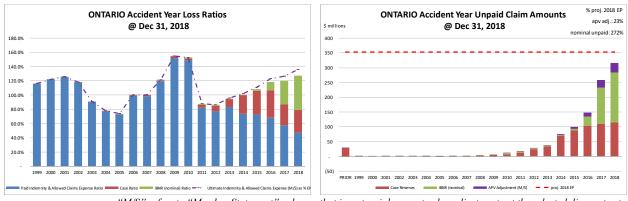
The charts at the top of the next page show the current levels of claim liabilities<sup>5</sup> booked by accident

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

<sup>&</sup>lt;sup>5</sup>Claim liabilities refer to provision for unpaid indemnity and allowed claims expenses. Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this discussion.



year<sup>6</sup>. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the associated dollar amounts for the components of the claim liabilities and the current 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 (\$82.1 million – see table immediately below) represents 23% of the earned premium 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.

amt	%
610,030	58.6%
348,577	33.5%
	610,030

claim liabilities (\$000s)

M/S apv adjust. 82,123 M/S total 1,040,730 100.0% 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 84% of the IBNR balance relates to accident and 2018 (see Exhibit B). 2017 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).

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

premium liabilities (\$000s) p			policy liabilities (\$000s)				
	amt	%		amt	%		
unearned prem	170,112	72.4%	claim	958,607	75.1%		
prem def/(dpac)	46,474	19.8%	premium	216,586	17.0%		

	Ge	,,,		G.1.1.6	,,,
unearned prem	170,112	72.4%	claim	958,607	75.1%
prem def/(dpac)	46,474	19.8%	premium	216,586	17.0%
M/S apv adjust.	18,298	7.8%	M/S apv adjust.	100,421	7.9%
M/S total	234,884	100.0%	M/S total	1,275,614	100.0%

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



#### 2 Activity During the Month of December 2018

#### 2.1 Recorded Premium and Claims Activity

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

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

Table 01	1 Earned Premium		um 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	(0)	(0)	10,253	(707)	(13,642)	(4,162)	(3,389)	(4,869)
2016	(1)	(1)	4,332	1,540	(1,951)	(1,810)	2,381	(270)
2017	(15)	(15)	3,975	(775)	(2,505)	(1,487)	1,470	(2,262)
2018	29,217	(107)	16,183	(3,228)	8,398	637	24,581	(2,592)
TOTAL	29,200	(124)	34,743	(3,170)	(9,701)	(6,823)	25,043	(9,993)

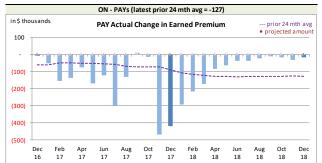
(Recorded transaction amounts exclude IBNR & other actuarial provisions)

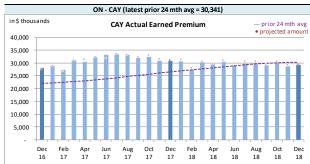
Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural "process variance" (i.e. random variation). Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of the variance. Commentary from our review is provided in the sub-sections that follow.

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

The charts immediately below show actual **earned premium**<sup>8</sup> activity in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

Ontario RSP Actual Earned Premium by Calendar Month





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

The associated variance between the actual changes and the projections from the previous month are

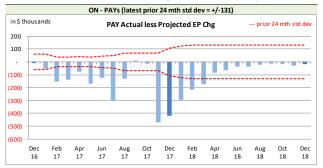
<sup>&</sup>lt;sup>7</sup>There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

<sup>&</sup>lt;sup>8</sup>Premium is earned on a daily basis based on the transaction term measured in days. As a result, months with 31 days earned relatively more than those with 30 days, and February earns the least.



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)	30,341			
std dev	131	1,752			
A-P <> std dev	12	-			
% <> std dev	48.0%	0.0%			
norm <> std dev	31.7%	31.7%			

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

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

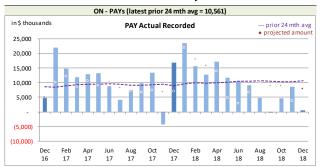
#### 2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

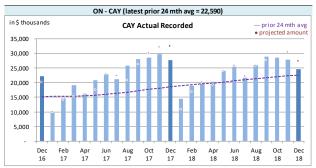
The charts at the top of the next page show actual **recorded** activity (**paid** and **case reserve** changes), in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

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



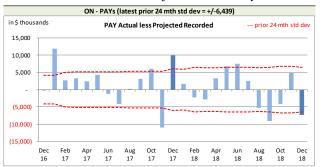






**Recorded** activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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





On Latest \$thousands					
Recorded	PAYs	CAY			
Mthly Avg Recorded (prior 24 mths)	10,561	22,590			
std dev	6,439	5,366			
A-P <> std dev	8	1			
% <> std dev	32.0%	4.0%			
norm <> std dev	31.7%	31.7%			

With respect to **recorded** indemnity & allowed claims expense, 32% 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** variance (left chart above) was outside of one standard deviation this month. The activity was reviewed and confirmed, with the variance attributed to process variance.

The current accident year (CAY) **recorded** variances (right chart above) fell outside of one standard deviation 4% 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 table on the next page. The table shows, in each



row, the average monthly ratio for each calendar year. That is, each row in the table below (as at Dec) provides the average of the 12 monthly-ratios (i.e. Jan-Dec) for that row's calendar year.

Per the table below (showing average monthly ratios for each calendar year), the 2018 average **recorded** and **paid** ratios at 17.3% and 9.0% respectively were the highest ratios since 2010 (**paid** ratio is at its highest level in the last 10 years).

CAY avg of mthly ratios for yr

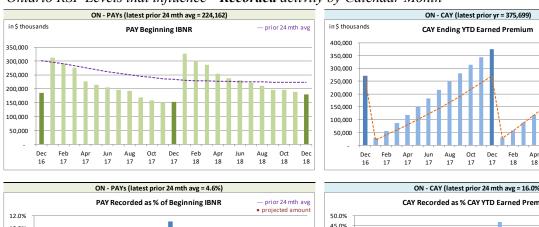
as at	Rec'd	yr-on-yr chg	 Paid	yr-on-yr chg
Dec 2009	18.5%		7.0%	
Dec 2010	23.2%	4.7%	8.0%	1.0%
Dec 2011	11.5%	(11.7%)	5.0%	(3.0%)
Dec 2012	11.4%	(0.1%)	4.6%	(0.4%)
Dec 2013	12.0%	0.6%	5.1%	0.5%
Dec 2014	13.7%	1.7%	5.9%	0.8%
Dec 2015	14.4%	0.7%	6.4%	0.5%
Dec 2016	15.8%	1.4%	7.6%	1.2%
Dec 2017	14.7%	(1.1%)	7.6%	0.0%
Dec 2018	17.3%	2.6%	9.0%	1.4%

These 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.

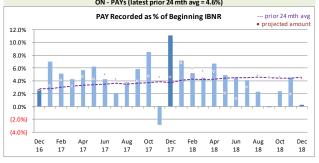
The method for establishing IBNR adjusts automatically for changes in **earned premium** and **recorded** claims activity level (see sections 2.2 and 3).

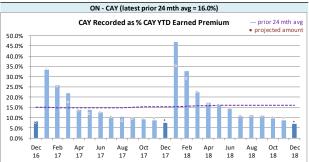
We have included, for reference, additional charts at the top of the next page related to levels influencing **recorded** activity. Note in particular the reduction in the level of PAY beginning IBNR over the months, as a response to valuations and showing up as a beginning IBNR change one month after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





#### Ontario RSP Levels that influence<sup>10</sup> **Recorded** activity by Calendar Month





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

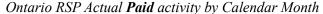
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate (will show up as a beginning IBNR change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

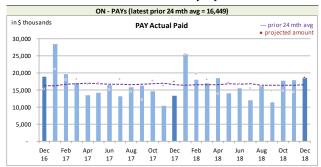
#### 2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

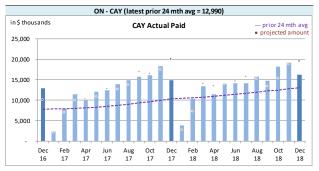
The charts at the top of the next page show actual **paid** activity in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

<sup>&</sup>lt;sup>10</sup>Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned premium), deriving year-to-date recorded as selected ultimate less IBNR. In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.



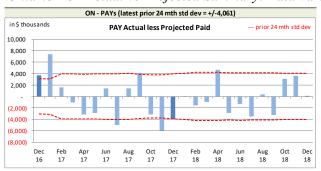


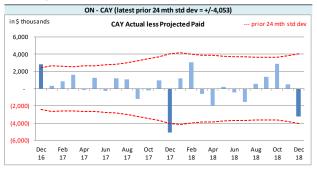




**Paid** activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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





On Latest \$thousands					
Paid	PAYs	CAY			
Mthly Avg Paid (prior 24 mths)	16,449	12,990			
std dev	4,061	4,053			
A-P <> std dev	6	2			
% <> std dev	24.0%	8.0%			
norm <> std dev	31.7%	31.7%			

With respect to **paid** indemnity & allowed claims expense, 24% 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 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 8% of the time over the last 25 calendar months (see table above), suggesting the projection process has performed better than simply projecting the prior 24-month average amount. Bias had been indicated at a 95% confidence level on a lagging 24-month basis<sup>11</sup> up until March 2018, as 18 times in the 24 months to that point (i.e. April 2016 to March 2018), actuals were higher than our projections for the CAY **paid** amount. We modified our projections processes in response to these findings and continue to monitor.

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

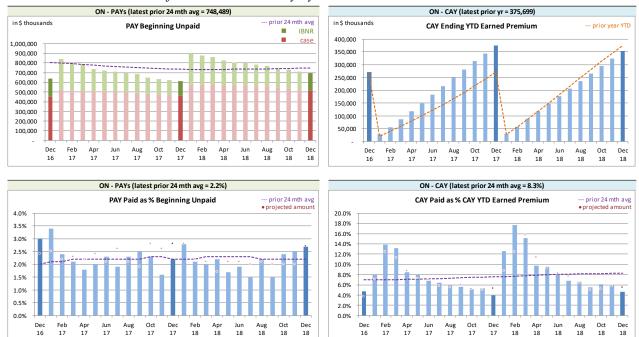
<sup>&</sup>lt;sup>11</sup>For the binomial distribution with 24 trials and an assumed 50% success probability, the 95% confidence range is 7 to 17.



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 influence<sup>12</sup> Paid activity by Calendar Month



We track beginning prior accident years' unpaid balance (case and IBNR) as **paid** activity "comes out of" the unpaid balance. Changes in the prior accident years' beginning unpaid balance (see upper left chart above) occur for several possible reasons:

- to offset actual **paid** activity (may reduce case or IBNR or both);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate (will show up as a beginning unpaid balance change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

<sup>&</sup>lt;sup>12</sup>Our paid projections for the prior accident years are based on selected ratios of paid to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date paid to year-to-date selected ultimate indemnity (i.e. selected LR x earned premium). In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.



#### 2.2 Actuarial Provisions

An "ultimate loss ratio matching method" (described in section 3) is used to determine the month's IBNR<sup>13</sup>, and factors are applied to the nominal unpaid claims liability (case plus IBNR) to determine the discount amount (shown as a negative value to indicate its impact of reducing the liability) and 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			actua	arial present v					
	IBNR		Discount Amount		Provisions	Provisions for Adverse		IBNR + actuarial present	
	IDI	NK	Discount	Discount Amount		Deviations		ustments	
Accident	Actual	Actual less	Actual	Actual less	Actual	Actual less	Actual	Actual less	
Year	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected	
Prior	26,249	4,868	(19,851)	(46)	32,812	19	39,210	4,841	
2016	30,750	269	(7,576)	86	19,968	(227)	43,142	128	
2017	122,903	2,244	(14,710)	(48)	39,251	128	147,444	2,324	
2018	168,675	2,455	(19,019)	(207)	51,248	558	200,904	2,806	
TOTAL	348,577	9,836	(61,156)	(215)	143,279	478	430,700	10,099	

The IBNR provision is \$9.8 million higher than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1.

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

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

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

The table at the top of the next page summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in this month's Operational Report and the one-month projections from last month's Report. This RSP is in a premium deficiency position (shown as a positive amount) prior to and after actuarial present value adjustments. Actuarial present value adjustments increase the liability value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance.

<sup>&</sup>lt;sup>13</sup>For ease of discussion, "IBNR" is used in place of "provisions for incurred but not recorded (IBNR) and development".



Ontario RSP Actual vs Projected Summary: Premium Deficiency / (DPAC) Amounts (\$ thousands)

Table 03	(Deferre	Premium Deficiency / (Deferred Policy Acquisition Costs)		actuarial present value adjustments		Premium Deficiency / (DPAC) including actuarial present value adjustments	
	Actual Actual less Actual	Actual	Actual less	Actual	Actual less		
	Actual	Projected	Actual	Projected	Actual	Projected	
balance:	46,474	140	18,298	68	64,772	208	
balance as % unearned premium:	27.3%	-	10.8%	-	38.1%	-	

actual unearned premium: 170,112 less projected: 639

#### 3 Ultimate Loss Ratio Matching Method

An "ultimate loss ratio matching method" continues to be applied to the current month and two projected months shown in the Operational Reports, with IBNR determined by accident year as follows:

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

#### 4 Calendar Year-to-Date Results

The table at the top of the next page summarizes the calendar year-to-date results for indemnity & allowed claims expenses<sup>15</sup>, including IBNR.

In calculating the amounts as percentages of earned premium, the calendar year-to-date earned premium has been used, which includes earned premium associated with the current accident year but also earned premium adjustments related to prior accident years. Specifically, the current accident year (CAY) ratio in the table is 127.4% 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.)

<sup>&</sup>lt;sup>14</sup>"Loss" here refers to indemnity and allowed claims expenses, but does not include the claims expense allowance included in member company overall expense allowances ("Expense Allowance" in the Operational Report).

<sup>&</sup>lt;sup>15</sup>Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this analysis.



Table 04	YTD Nominal Values		YTD actuarial present value adjustment		YTD To	tal	Change from Prior Month YTD	
	Amount	% EP	Amount	% EP	Amount	% EP	Amount	LR pts
PAYs	(27,680)	(7.8%)	(44,774)	(12.7%)	(72,454)	(20.5%)	(1,336)	1.5%
CAY	449,105	127.4%	32,229	9.1%	481,334	136.5%	39,480	(0.1%)
TOTAL	421,425	119.5%	(12,545)	(3.6%)	408,880	116.0%	38,144	1.4%

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

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

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

#### 5 Current Operational Report – Additional Exhibits

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

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

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

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

#### 6 EXHIBITS

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

EXHIBIT A IBNR for Member Sharing – includes Actuarial Present Value Adjustments

EXHIBIT B IBNR

EXHIBIT C Premium Liabilities

EXHIBIT D Projected Year-end Policy Liabilities

EXHIBIT E Discount Rate & Margins for Adverse Deviations

EXHIBIT F Interest Rate Sensitivity

EXHIBIT G Components of IBNR Change During Month



# **EXHIBIT A**

# IBNR for Member Sharing – includes Actuarial Present Value Adjustments

TABLE EXHIBIT A			Amount	s in \$000s		
IBNR + M/S actuarial present	Accident	Actual	Actual	Projected	Projected	Projected
value adjustments	Year	Nov. 2018	Dec. 2018	Jan. 2019	Feb. 2019	Dec. 2019
·	prior	(884)	(959)	(664)	(681)	(510)
	1999	19	20	24	23	17
	2000	(4)	(4)	(4)	(4)	(4)
	2001	180	180	189	185	139
	2002	65	65	65	64	49
	2003	127	127	128	127	96
	2004	221	219	227	225	167
	2005	433	432	428	425	320
	2006	609	606	624	619	466
	2007	732	809	813	807	606
	2008	1,255	1,349	1,334	1,324	994
	2009	578	1,135	1,046	1,039	781
	2010	4,202	4,243	3,806	3,774	2,837
	2011	2,704	3,851	3,596	3,557	2,676
	2012	4,833	5,264	5,124	5,064	3,809
discount rate	2013	3,314	3,722	2,888	2,846	2,140
2.22%	2014	5,229	5,391	4,623	4,521	3,400
	2015	12,709	12,760	11,998	11,428	6,646
interest rate margin	2016	45,921	43,142	41,523	40,121	22,857
25 basis pts	2017	149,351	147,444	142,687	135,162	82,848
	2018	186,005	200,904	185,455	175,606	124,275
	2019	-	-	27,427	47,294	216,192
	TOTAL	417,599	430,700	433,337	433,526	470,801
	Change		13,101	2,637	189	

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



# **EXHIBIT B**

# **IBNR**

TABLE EXHIBIT B	_			Amount	s in \$000s		
IBNR	Ultimate	Accident	Actual	Actual	Projected	Projected	Projected
	Loss Ratio	Year	Nov. 2018	Dec. 2018	Jan. 2019	Feb. 2019	Dec. 2019
	-	prior	(1,735)	(1,806)	(1,769)	(1,751)	(1,318)
	116.3%	1999	(13)	(13)	(13)	(13)	(11)
	122.0%	2000	(4)	(4)	(4)	(4)	(4)
	126.0%	2001	160	160	157	155	117
	117.9%	2002	63	63	62	61	47
	90.7%	2003	125	125	122	121	91
	77.7%	2004	226	225	220	218	162
	73.7%	2005	441	440	431	427	322
	100.4%	2006	680	677	663	656	494
	100.2%	2007	836	914	896	887	667
	121.4%	2008	1,424	1,518	1,488	1,473	1,107
	155.0%	2009	791	1,327	1,300	1,287	968
	152.6%	2010	4,137	4,180	4,096	4,055	3,049
	87.9%	2011	2,426	3,579	3,507	3,472	2,611
	86.3%	2012	4,328	4,770	4,675	4,628	3,481
	95.1%	2013	1,856	2,306	2,260	2,237	1,681
	100.7%	2014	1,703	1,925	1,886	1,867	1,403
	108.0%	2015	5,417	5,863	5,511	5,070	2,054
	118.2%	2016	33,132	30,750	28,597	27,453	12,820
	119.8%	2017	124,391	122,903	116,758	109,753	62,298
	127.0%	2018	156,150	168,675	153,494	144,284	97,891
	127.1%	2019	-	-	23,581	40,772	180,473
		TOTAL	336,534	348,577	347,918	347,108	370,403
		Change		12,043	(659)	(810)	

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 Nov. 2018	Actual Dec. 2018	Projected Jan. 2019	Projected Feb. 2019	Projected Dec. 2019			
(1) unearned premium (UP)	174,728	170,112	165,645	162,647	231,441			
FOR MEMBER SHARING								
(2) expected future costs ratio {% of (1)}	138.1%	138.1%	138.1%	138.2%	141.4%			
<ul><li>(3) expected future costs {(1) x (2)}</li><li>(4) premium deficiency / (deferred policy</li></ul>	241,233	234,884	228,775	224,717	327,144			
acquisition cost)	66,505	64,772	63,130	62,070	95,703			
Excluding Actuarial Present Value Adjustments								
(5) expected future costs ratio {% of (1)}	127.3%	127.3%	127.4%	127.4%	130.3%			
<ul><li>(6) expected future costs {(1) x (5)}</li><li>(7) premium deficiency / (deferred policy</li></ul>	222,441	216,586	210,956	207,213	301,660			
acquisition cost)	47,713	46,474	45,311	44,566	70,219			



# EXHIBIT D

# Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2019, broken down by component.

Ontario	Projected Balances as at Dec. 31, 2019 (\$000s)												
ending 2019	ı	nominal values	;		actu	arial present val	ue adjustments	(apvs)					
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL			
prior	20,983	(1,329)	19,654	(1,152)	135	1,967	(114)	1,853	836	20,490			
2000	15	(4)	11	(1)	-	1	-	1	-	11			
2001	479	117	596	(38)	4	60	(4)	56	22	618			
2002	41	47	88	(7)	1	9	(1)	8	2	90			
2003	228	91	319	(27)	3	32	(3)	29	5	324			
2004	779	162	941	(89)	9	94	(9)	85	5	946			
2005	37	322	359	(38)	4	36	(4)	32	(2)	357			
2006	1,305	494	1,799	(209)	22	180	(21)	159	(28)	1,771			
2007	1,494	667	2,161	(277)	28	216	(28)	188	(61)	2,100			
2008	2,141	1,107	3,248	(439)	45	325	(44)	281	(113)	3,135			
2009	4,118	968	5,086	(697)	71	509	(70)	439	(187)	4,899			
2010	4,876	3,049	7,925	(1,006)	103	792	(101)	691	(212)	7,713			
2011	8,910	2,611	11,521	(1,083)	104	1,152	(108)	1,044	65	11,586			
2012	16,137	3,481	19,618	(1,628)	157	1,962	(163)	1,799	328	19,946			
2013	24,097	1,681	25,778	(2,114)	206	2,578	(211)	2,367	459	26,237			
2014	49,951	1,403	51,354	(3,133)	308	5,135	(313)	4,822	1,997	53,351			
2015	62,158	2,054	64,212	(3,339)	321	8,027	(417)	7,610	4,592	68,804			
2016	90,119	12,820	102,939	(5,147)	515	15,441	(772)	14,669	10,037	112,976			
2017	119,059	62,298	181,357	(10,156)	1,088	31,375	(1,757)	29,618	20,550	201,907			
2018	127,068	97,891	224,959	(14,172)	1,350	41,842	(2,636)	39,206	26,384	251,343			
PAYs (sub-total):	533,995	189,930	723,925	(44,752)	4,474	111,733	(6,776)	104,957	64,679	788,604			
CAY (2019)	134,136	180,473	314,609	(21,079)	2,202	58,517	(3,921)	54,596	35,719	350,328			
claims liabilities:	668,131	370,403	1,038,534	(65,831)	6,676	170,250	(10,697)	159,553	100,398	1,138,932			
	Unearned Premium	Premium Defiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*			
premium liabilities:	231,441	70,219	301,660	(15,959)	1,807	41,854	(2,218)	39,636	25,484	327,144			
						*	Total may not be s	um of parts, as ap	vs apply to future of	costs within UPR			
policy liabilities:			1,340,194	(81,790)	8,483	212,104	(12,915)	199,189	125,882	1,466,076			



#### **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	Third Party	Accident	Other	Total
Year	Liability	Benefits	Coverages	
	Margins	Margins	Margins	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%
		<b></b> -		
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

	Actuar	rial Present Va	lue of Provision	ons at Various	Discount Rate	s - Dec. 31, 20	18 projected U	Jnpaid
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	curr + 50bp	curr + 100bp	curr + 150bp	prior val	prior fyr end
			assumption		·	·	assumption	assumption
				,				,
			Dollar Imp	oact Relative t	o Valuation As	ssumption		
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	curr + 50bp	curr + 100bp	curr + 150bp	prior val	prior fyr end
	curr - 100 bp	curr - 50 bp	curr val assumption	į	curr + 100bp	curr + 150bp		prior fyr end assumption
	curr - 100 bp	curr - 50 bp		į	curr + 100bp	curr + 150bp		{· ·
	curr - 100 bp	curr - 50 bp	assumption	į	·	·		{· ·
AY	curr - 100 bp	21.72%	assumption		·	·		{· ·
AY 2003 &		·	assumption Percentage I	mpact Relativ	e to Valuation	Assumption	assumption	assumption
		·	assumption Percentage I	mpact Relativ	e to Valuation	Assumption	assumption	assumption
2003 &	1.22%	1.72%	assumption Percentage I	mpact Relativ 2.72%	e to Valuation 3.22%	Assumption 3.72%	assumption  1.83%	assumption
2003 & prior	1.22%	1.72%	assumption Percentage I	mpact Relativ 2.72% (1.6%)	e to Valuation 3.22% (3.1%)	Assumption 3.72% (4.6%)	1.83% 1.3%	1.75% 1.5%
2003 & prior 2004	1.22% 3.3% 5.1%	1.72% 1.6% 2.6%	assumption Percentage I	mpact Relativ 2.72% (1.6%) (2.3%)	e to Valuation 3.22% (3.1%) (4.7%)	Assumption 3.72% (4.6%) (6.9%)	1.83% 1.3% 2.0%	1.75% 1.5% 2.3%
2003 & prior 2004 2005	1.22% 3.3% 5.1% 5.7%	1.72% 1.6% 2.6% 2.8%	assumption Percentage I	mpact Relativ 2.72% (1.6%) (2.3%) (2.6%)	e to Valuation 3.22% (3.1%) (4.7%) (5.1%)	(4.6%) (6.9%) (7.7%)	1.83% 1.3% 2.0% 2.2%	1.75% 1.5% 2.3% 2.6%
2003 & prior 2004 2005 2006	1.22% 3.3% 5.1% 5.7% 6.3%	1.72% 1.6% 2.6% 2.8% 3.1%	assumption Percentage I	mpact Relativ 2.72% (1.6%) (2.3%) (2.6%) (2.9%)	e to Valuation 3.22% (3.1%) (4.7%) (5.1%) (5.7%)	(4.6%) (6.9%) (7.7%) (8.4%)	1.83% 1.3% 2.0% 2.2% 2.4%	1.75% 1.5% 2.3% 2.6% 2.9%
2003 & prior 2004 2005 2006 2007	1.22% 3.3% 5.1% 5.7% 6.3% 6.7%	1.72% 1.6% 2.6% 2.8% 3.1% 3.3%	assumption Percentage I	mpact Relativ 2.72% (1.6%) (2.3%) (2.6%) (2.9%) (3.1%)	(3.1%) (4.7%) (5.1%) (5.7%) (6.0%)	(4.6%) (6.9%) (7.7%) (8.4%) (8.8%)	1.83% 1.3% 2.0% 2.2% 2.4% 2.5%	1.75% 1.5% 2.3% 2.6% 2.9% 3.0%
2003 & prior 2004 2005 2006 2007 2008	1.22% 3.3% 5.1% 5.7% 6.3% 6.7% 6.8%	1.72% 1.6% 2.6% 2.8% 3.1% 3.3% 3.3%	assumption Percentage I	mpact Relativ 2.72% (1.6%) (2.3%) (2.6%) (2.9%) (3.1%) (3.1%)	e to Valuation 3.22% (3.1%) (4.7%) (5.1%) (5.7%) (6.0%) (6.1%)	(4.6%) (6.9%) (7.7%) (8.4%) (8.8%) (9.0%)	1.83% 1.3% 2.0% 2.2% 2.4% 2.5% 2.5%	1.75% 1.5% 2.3% 2.6% 2.9% 3.0% 3.1%
2003 & prior 2004 2005 2006 2007 2008 2009	1.22% 3.3% 5.1% 5.7% 6.3% 6.7% 6.8% 6.2%	1.72%  1.6% 2.6% 2.8% 3.1% 3.3% 3.3% 3.0%	assumption Percentage I	mpact Relativ 2.72% (1.6%) (2.3%) (2.5%) (2.9%) (3.1%) (2.9%)	(3.1%) (4.7%) (5.1%) (5.7%) (6.0%) (6.1%)	Assumption 3.72% (4.6%) (6.9%) (7.7%) (8.4%) (8.8%) (9.0%) (8.1%)	1.83% 1.3% 2.0% 2.2% 2.4% 2.5% 2.5% 2.3%	1.75%  1.5%  2.3%  2.6%  2.9%  3.0%  3.1%  2.8%
2003 & prior 2004 2005 2006 2007 2008 2009 2010	1.22% 3.3% 5.1% 5.7% 6.3% 6.7% 6.8% 6.2% 4.4%	1.72% 1.6% 2.6% 2.8% 3.1% 3.3% 3.3% 3.0% 2.2%	assumption Percentage I	2.72% (1.6%) (2.3%) (2.6%) (2.9%) (3.1%) (2.9%) (2.9%) (2.0%)	e to Valuation 3.22% (3.1%) (4.7%) (5.1%) (6.0%) (6.1%) (5.5%) (4.0%)	Assumption 3.72% (4.6%) (6.9%) (7.7%) (8.8%) (9.0%) (8.1%) (5.8%)	1.83% 1.3% 2.0% 2.2% 2.25% 2.5% 2.5% 1.7%	1.75% 1.5% 2.3% 2.6% 2.99% 3.0% 3.1% 2.88% 2.0%
2003 & prior 2004 2005 2006 2007 2008 2009 2010 2011	1.22% 3.3% 5.1% 5.7% 6.3% 6.7% 6.8% 6.2% 4.4% 3.9%	1.72%  1.6%  2.6%  3.1%  3.3%  3.0%  2.2%  1.9%	assumption Percentage I	mpact Relativ 2.72% (1.6%) (2.3%) (2.6%) (3.1%) (3.1%) (2.9%) (3.1%) (2.0%) (1.8%)	e to Valuation 3.22% (3.1%) (4.7%) (5.1%) (6.0%) (6.1%) (5.5%) (4.0%) (3.5%)	Assumption 3.72% (4.6%) (6.9%) (7.7%) (8.4%) (9.0%) (8.1%) (5.8%) (5.1%)	1.83% 1.3% 2.0% 2.2% 2.4% 2.5% 2.5% 1.7% 1.5%	1.75% 1.5% 2.3% 2.6% 2.99% 3.0% 3.1½ 2.88% 2.0% 1.8%
2003 & prior 2004 2005 2006 2007 2008 2009 2010 2011 2012	1.22% 3.3% 5.1% 5.7% 6.3% 6.7% 6.8% 6.2% 4.4% 3.9% 3.8%	1.72%  1.6% 2.6% 2.8% 3.1% 3.3% 3.0% 2.2% 1.9%	assumption Percentage I	mpact Relativ 2.72% (1.6%) (2.3%) (2.6%) (3.1%) (3.1%) (2.9%) (1.8%) (1.8%)	e to Valuation 3.22% (3.1%) (4.7%) (5.1%) (6.0%) (6.0%) (5.5%) (4.0%) (3.5%)	Assumption 3.72% (4.6%) (6.9%) (7.7%) (8.4%) (9.0%) (8.1%) (5.8%) (5.1%) (5.1%)	1.83% 1.3% 2.0% 2.2% 2.4% 2.5% 2.5% 2.5% 1.7% 1.5% 1.4%	1.75% 1.59% 2.39% 2.69% 3.09% 3.11% 2.88% 2.09% 1.88% 1.79%
2003 & prior 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013	1.22% 3.3% 5.1% 5.7% 6.3% 6.7% 6.8% 6.2% 4.4% 3.9% 3.8% 2.8%	1.72%  1.6% 2.6% 2.8% 3.1% 3.3% 3.0% 2.2% 1.9% 1.9% 1.4%	assumption Percentage I	mpact Relativ 2.72% (1.6%) (2.3%) (2.6%) (3.1%) (2.9%) (2.9%) (1.8%) (1.8%) (1.3%)	e to Valuation 3.22% (3.1%) (4.7%) (5.1%) (5.7%) (6.0%) (6.1%) (5.5%) (4.0%) (3.5%) (3.5%) (2.6%)	Assumption 3.72% (4.6%) (6.9%) (7.7%) (8.4%) (8.8%) (9.0%) (8.1%) (5.8%) (5.1%) (5.1%) (3.8%)	1.83% 1.3% 2.0% 2.2% 2.4% 2.5% 2.5% 2.5% 1.7% 1.5% 1.4% 1.1%	1.75% 1.59% 2.39% 2.69% 3.09% 3.11% 2.88% 2.09% 1.88% 1.79% 1.33%
2003 & prior 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014	1.22% 3.3% 5.1% 5.7% 6.3% 6.7% 6.8% 4.4% 3.9% 3.8% 2.8% 2.4%	1.72%  1.6% 2.6% 2.8% 3.1% 3.3% 3.3% 1.9% 1.9% 1.4% 1.2%	assumption Percentage I	mpact Relativ 2.72% (1.6%) (2.3%) (2.6%) (3.1%) (2.9%) (3.1%) (2.9%) (1.8%) (1.3%) (1.3%) (1.1%)	e to Valuation 3.22% (3.1%) (4.7%) (5.1%) (5.7%) (6.0%) (4.0%) (3.5%) (3.5%) (2.6%) (2.2%)	Assumption 3.72% (4.6%) (6.9%) (7.7%) (8.4%) (9.0%) (5.1%) (5.1%) (5.1%) (3.8%) (3.2%)	1.83% 1.3% 2.0% 2.2% 2.4% 2.5% 2.5% 1.7% 1.5% 1.1% 0.9%	1.75% 1.59% 2.39% 2.69% 3.09% 3.11% 2.88% 2.09% 1.88% 1.79% 1.33% 1.11%
2003 & prior 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015	1.22%  3.3% 5.1% 5.7% 6.3% 6.7% 6.8% 6.2% 4.4% 3.9% 3.8% 2.8% 2.4% 2.3%	1.72%  1.6% 2.6% 2.8% 3.1% 3.3% 3.3% 3.0% 2.2% 1.9% 1.4% 1.2% 1.1%	assumption Percentage I	(1.6%) (2.72% (1.6%) (2.3%) (2.6%) (3.1%) (3.1%) (2.9%) (1.8%) (1.8%) (1.3%) (1.1%) (1.1%)	e to Valuation 3.22%  (3.1%) (4.7%) (5.1%) (5.7%) (6.0%) (6.1%) (5.6%) (4.0%) (3.5%) (2.6%) (2.2%)	(4.6%) (6.9%) (7.7%) (8.4%) (8.8%) (9.0%) (5.1%) (5.1%) (5.1%) (3.8%) (3.2%) (3.2%)	1.83%  1.3% 2.0% 2.2% 2.4% 2.5% 2.5% 1.7% 1.5% 1.4% 1.1% 0.9%	1.75%  1.5%  2.3%  2.6%  2.9%  3.0%  3.14%  2.8%  2.0%  1.8%  1.7%  1.3%  1.1%  1.1%
2003 & prior 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016	1.22%  3.3% 5.1% 6.3% 6.7% 6.8% 6.2% 4.4% 3.9% 3.8% 2.8% 2.4% 2.3% 2.6%	1.72%  1.6% 2.6% 2.8% 3.1% 3.3% 3.3% 1.9% 1.9% 1.9% 1.1% 1.2% 1.1%	assumption Percentage I	mpact Relativ 2.72% (1.6%) (2.3%) (2.6%) (3.1%) (3.19) (2.0%) (1.8%) (1.8%) (1.1%) (1.1%) (1.1%) (1.2%)	e to Valuation 3.22% (3.1%) (4.7%) (5.1%) (5.7%) (6.0%) (6.1%) (5.6%) (4.0%) (3.5%) (2.6%) (2.2%) (2.1%) (2.4%)	(4.6%) (6.9%) (7.7%) (8.4%) (8.8%) (9.0%) (5.1%) (5.1%) (5.1%) (3.8%) (3.2%) (3.2%) (3.6%)	1.83%  1.3% 2.0% 2.2% 2.4% 2.5% 2.5% 1.7% 1.5% 1.4% 1.14% 0.9% 1.0%	1.75%  1.5%  2.3%  2.6%  2.9%  3.0%  3.1%  2.8%  2.0%  1.8%  1.7%  1.3%  1.1%  1.1%  1.2%
2003 & prior 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017	1.22% 3.3% 5.1% 6.3% 6.7% 6.8% 6.2% 4.4% 3.9% 2.8% 2.4% 2.3% 2.6% 2.9%	1.72%  1.6% 2.6% 2.8% 3.1% 3.3% 3.3% 1.9% 1.9% 1.1% 1.2% 1.1% 1.3%	assumption Percentage I	mpact Relativ 2.72% (1.6%) (2.3%) (2.6%) (2.9%) (3.1%) (2.9%) (1.8%) (1.8%) (1.1%) (1.1%) (1.1%) (1.2%) (1.4%)	e to Valuation 3.22% (3.1%) (4.7%) (5.1%) (5.1%) (6.0%) (6.1%) (3.5%) (3.5%) (2.6%) (2.2%) (2.1%) (2.4%) (2.8%)	(4.6%) (6.9%) (7.7%) (8.4%) (8.8%) (9.0%) (5.1%) (5.1%) (5.1%) (3.8%) (3.2%) (3.2%) (4.1%)	1.83%  1.3% 2.0% 2.2% 2.4% 2.5% 2.5% 1.7% 1.5% 1.4% 0.9% 0.9% 1.0% 1.0%	1.75%  1.5%  2.3%  2.6%  2.9%  3.0%  3.1%  2.8%  2.0%  1.8%  1.7%  1.3%  1.19  1.19  1.2%  1.4%
2003 & prior 2004 2005 2006 2007 2008 2010 2011 2012 2013 2014 2015 2016 2017 2018	1.22% 3.3% 5.1% 5.7% 6.3% 6.7% 6.8% 6.2% 4.4% 3.9% 2.8% 2.4% 2.3% 2.6% 2.9% 3.1%	1.72%  1.6% 2.6% 3.1% 3.3% 3.3% 1.9% 1.9% 1.4% 1.2% 1.1% 1.3% 1.5%	assumption Percentage I	mpact Relativ 2.72% (1.6%) (2.3%) (2.5%) (3.1%) (2.9%) (1.8%) (1.8%) (1.1%) (1.1%) (1.1%) (1.1%) (1.2%) (1.5%)	e to Valuation 3.22%  (3.1%) (4.7%) (5.1%) (5.5%) (6.0%) (6.1%) (5.6%) (4.0%) (2.5%) (2.2%) (2.1%) (2.4%) (2.8%) (2.8%) (2.8%)	Assumption 3.72%  (4.6%) (6.9%) (7.7%) (8.4%) (8.8%) (9.0%) (8.1%) (5.1%) (5.1%) (3.8%) (3.2%) (3.2%) (4.1%) (4.3%)	1.83%  1.3% 2.0% 2.2% 2.4% 2.5% 2.5% 1.7% 1.5% 1.14% 0.9% 0.9% 1.0% 1.14% 1.2%	1.75%  1.5%  2.3% 2.6% 2.9% 3.0% 3.1% 2.8% 2.0% 1.8% 1.7% 1.3% 1.19% 1.19% 1.2% 1.4%
2003 & prior 2004 2005 2006 2007 2008 2010 2011 2012 2013 2014 2015 2016 2017 2018	1.22% 3.3% 5.1% 5.7% 6.3% 6.7% 6.88 6.2% 4.4% 3.9% 2.8% 2.4% 2.3% 2.6% 2.9% 3.1%	1.72%  1.6% 2.6% 2.8% 3.1% 3.3% 3.3% 1.9% 1.9% 1.1% 1.2% 1.1% 1.5% 1.5%	assumption Percentage I 2.22%	(1.6%) (2.3%) (2.6%) (2.9%) (3.1%) (2.9%) (1.8%) (1.1%) (1.1%) (1.1%) (1.1%) (1.5%) (1.4%) (1.4%) (1.4%) (1.4%)	e to Valuation 3.22%  (3.1%) (4.7%) (5.1%) (5.5%) (6.0%) (6.1%) (5.6%) (4.0%) (2.5%) (2.2%) (2.1%) (2.4%) (2.8%) (2.8%) (2.8%)	Assumption 3.72%  (4.6%) (6.9%) (7.7%) (8.8%) (9.0%) (5.1%) (5.1%) (5.1%) (3.2%) (3.2%) (3.6%) (4.1%) (4.3%)	1.83%  1.3%  2.0%  2.2%  2.5%  2.5%  1.7%  1.5%  1.1%  0.9%  1.0%  1.1%  1.1%  1.1%  1.1%  1.1%  1.1%	1.75%  1.5%  2.3% 2.6% 2.9% 3.0% 3.1% 2.8% 2.0% 1.8% 1.7% 1.3% 1.19% 1.19% 1.44% 1.44%



#### **EXHIBIT G**

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



M/S IBNR - in \$000s

	Values						ī
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	(884)	80	(155)	-	(75)	8.5%	(959)
1999	19	1	-	-	1	5.3%	20
2000	(4)	-	-	-	-	-	(4)
2001	180	(10)	10	-	-	-	180
2002	65	(4)	4	-	-	-	65
2003	127	(7)	7	-	-	-	127
2004	221	(15)	13	-	(2)	(0.9%)	219
2005	433	(26)	25	-	(1)	(0.2%)	432
2006	609	(40)	37	-	(3)	(0.5%)	606
2007	732	(46)	123	-	77	10.5%	809
2008	1,255	(80)	174	-	94	7.5%	1,349
2009	578	(41)	598	-	557	96.4%	1,135
2010	4,202	(250)	291	-	41	1.0%	4,243
2011	2,704	(154)	1,301	-	1,147	42.4%	3,851
2012	4,833	(276)	707	-	431	8.9%	5,264
2013	3,314	(156)	564	-	408	12.3%	3,722
2014	5,229	(278)	440	-	162	3.1%	5,391
2015	12,709	(651)	702	-	51	0.4%	12,760
2016	45,921	(2,907)	128	-	(2,779)	(6.1%)	43,142
2017	149,351	(4,231)	2,324	-	(1,907)	(1.3%)	147,444
2018	186,005	12,093	2,806	-	14,899	8.0%	200,904
<b>Grand Total</b>	417,599	3,002	10,099	-	13,101	3.1%	430,700



#### **EXHIBIT G**

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



IBNR - in \$000s

	Values				ı		ı
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	(1,735)	104	(175)	-	(71)	4.1%	(1,806)
1999	(13)	1	(1)	-	-	-	(13)
2000	(4)	-	-	-	-	-	(4)
2001	160	(10)	10	-	-	-	160
2002	63	(4)	4	-	-	-	63
2003	125	(8)	8	-	-	-	125
2004	226	(14)	13	-	(1)	(0.4%)	225
2005	441	(26)	25	-	(1)	(0.2%)	440
2006	680	(41)	38	-	(3)	(0.4%)	677
2007	836	(50)	128	-	78	9.3%	914
2008	1,424	(85)	179	-	94	6.6%	1,518
2009	791	(47)	583	-	536	67.8%	1,327
2010	4,137	(248)	291	-	43	1.0%	4,180
2011	2,426	(146)	1,299	-	1,153	47.5%	3,579
2012	4,328	(260)	702	-	442	10.2%	4,770
2013	1,856	(111)	561	-	450	24.2%	2,306
2014	1,703	(102)	324	-	222	13.0%	1,925
2015	5,417	(433)	879	-	446	8.2%	5,863
2016	33,132	(2,651)	269	-	(2,382)	(7.2%)	30,750
2017	124,391	(3,732)	2,244	-	(1,488)	(1.2%)	122,903
2018	156,150	10,070	2,455	-	12,525	8.0%	168,675
<b>Grand Total</b>	336,534	2,207	9,836	-	12,043	3.6%	348,577