



**ONTARIO RISK SHARING POOL**

**NOVEMBER 2019 OPERATIONAL REPORT**

**ACTUARIAL HIGHLIGHTS**

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**ACTUARIAL HIGHLIGHTS**  
**RSP ONTARIO**  
**OPERATIONAL REPORT**  
**NOVEMBER 2019**

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## 1 Summary

### Key Points

- (a) Although not directly discussed in these highlights, the growth in year-over-year transfer counts this month (66%) was well above projected (24%); and
- (b) otherwise, the month’s activities were generally aligned with projections from last month.

### 1.1 Valuation Schedule (Fiscal Year 2019)

The November 2019 Operational Report leverages actuarial assumptions consistent with last month (that is, it does not reflect the results of an updated valuation). The table below summarizes the implemented valuations for fiscal year 2019.

<b>ONTARIO RISK SHARING POOL FISCAL YEAR 2019 – SCHEDULE OF VALUATIONS</b>			
<b>Valuation Date</b>	<b>Discount Rate (per annum)</b>	<b>Operational Report</b>	<b>Description of Changes</b>
Sep. 30, 2018 (completed)	2.22% mfad 25 bp	Oct. 2018	updated valuation (roll forward): accident year 2018 loss ratio <u>increased</u> 0.5 points to 127.0%; discount rate <u>increased</u> 39 basis points; selected margins for adverse deviations were updated
Dec. 31, 2018 (completed)	1.88% mfad 25 bp	Mar. 2019	updated valuation: accident year 2019 loss ratio 127.1%; discount rate <u>decreased</u> 34 basis points; no change to selected margins for adverse deviations
Mar. 31, 2019 (completed)	1.43% mfad 25 bp	May 2019	updated valuation (roll forward): accident year 2019 loss ratio <u>increased</u> 0.5 points to 127.6%; discount rate <u>decreased</u> 45 basis points; no change to selected margins for adverse deviations
Jun. 30, 2019 (completed)	1.40% mfad 25 bp	Aug. 2019	updated valuation: accident year 2019 loss ratio <u>decreased</u> 4.6 points to 123.0%; discount rate <u>decreased</u> 3 basis points; selected margins for adverse deviations were updated
Sep. 30, 2019 (completed)	1.41% mfad 25 bp	Oct. 2019	update valuation (roll forward): accident year 2019 loss ratio <u>decreased</u> 0.7 points to 122.3%; discount rate <u>increased</u> 1 basis point; no change to selected margins for adverse deviations

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

Mr. Cosimo Pantaleo of Ernst & Young LLP (EY) has assumed the Appointed Actuary’s role effective as of October 24, 2019, from Liam McFarlane (the Appointed Actuary from June 1, 2013), due to Mr.

McFarlane's departure from EY.

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

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

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

Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent changes are provided below.

**Ontario Bill 15** (Fighting Fraud and Reducing Automobile Insurance Rates Act, 2014) was introduced into the Legislature by the Minister of Finance on July 15, 2014 and **received Royal Assent on November 20, 2014**. Bill 15 includes various amendments and provisions such as moving the Ontario Automobile Dispute Resolution System (DRS) for statutory accident benefits from the Financial Services Commission of Ontario to the Ministry of the Attorney General (Licence Appeal Tribunal), regulation of the Tow and Storage Industry (amendments to the Consumer Protection Act and Repair and Storage Liens Act), regulations related to licensing of insurance agents and adjusters, changes the applicable interest rate applied to overdue payments in the Statutory Accident Benefits Schedule (SABS), and changes to the prejudgment interest rate on general damages for non-pecuniary loss from the rate as set out in the Courts of Justice Act to rates linked to market conditions.

**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, 2019), reform adjustments (originally introduced with the September 30, 2015 valuation) specifically related to 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, 2018), impacting the selection of ultimates.

### **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

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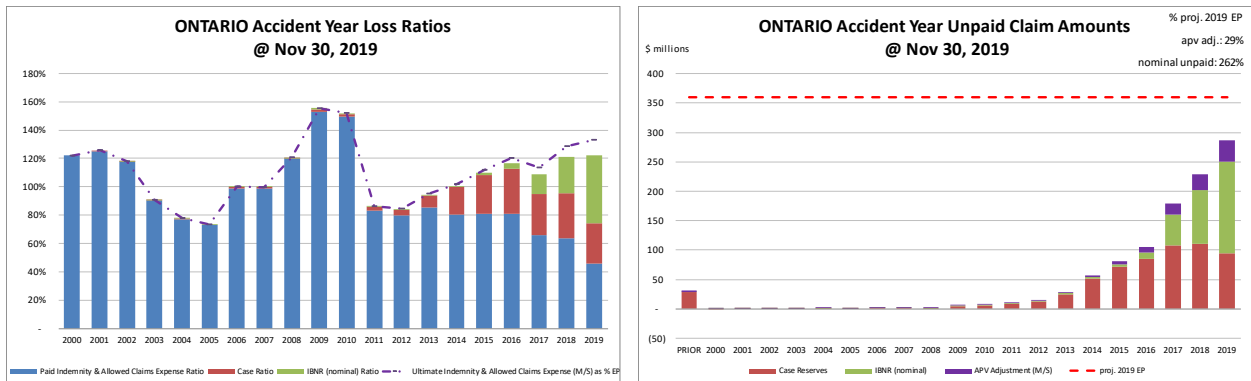
<sup>1</sup>This url to a pdf is to a helpful guide on how bills become laws: <https://www.ola.org/sites/default/files/common/how-bills-become-law-en.pdf>

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](mailto:sdoherty@facilityassociation.com) if you need further information.

### 1.5 Current Provision Summary

The charts below show the current levels of claim liabilities<sup>2</sup> booked by accident year<sup>3</sup>. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the associated dollar amounts for the components of the claim liabilities and the current projected amount of 2019 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 (\$103.1 million – see table below) represents 29% of the earned premium projected for the full year 2019 (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	611,701	58.6%
ibnr	328,719	31.5%
M/S apv adjust.	103,108	9.9%
<b>M/S total</b>	<b>1,043,528</b>	<b>100.0%</b>

The table to the left breaks down the Member Statement (M/S) claim liabilities total into component parts, showing that the majority of the claim liabilities for this RSP is in case reserves. Approximately 76% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 84% of the M/S total claim

liabilities are related to accident years 2015-2019 inclusive (i.e. the most recent 5 accident years), and approximately 5% is related to accident years 2009 and prior (i.e. prior to the most recent 10 accident years).

<sup>2</sup>Claim liabilities refer to provision for unpaid indemnity and allowed claims expenses. Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this discussion.

<sup>3</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”.

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

premium liabilities (\$000s)			policy liabilities (\$000s)		
	amt	%		amt	%
unearned prem	230,224	72.5%	claim	940,420	69.1%
prem def/(dpac)	57,507	18.1%	premium	287,731	21.1%
M/S apv adjust.	29,745	9.4%	M/S apv adjust.	132,853	9.8%
M/S total	317,476	100.0%	M/S total	1,361,004	100.0%

## 2 Activity During the Month of November 2019

### 2.1 Recorded Premium and Claims Activity

The table 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>4</sup>.

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

Accident Year	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	(7)	(7)	9,891	(227)	(10,096)	(901)	(205)	(1,128)
2017	(6)	(6)	2,522	(739)	63	576	2,585	(163)
2018	(36)	(36)	3,544	(559)	(877)	(1,481)	2,666	(2,041)
2019	33,370	446	18,048	552	11,993	271	30,041	823
TOTAL	33,321	397	34,004	(974)	1,082	(1,536)	35,087	(2,509)

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

It is unusual to see actual earned premium transactions affecting prior accident years by this time in the calendar year – the prior accident years changes in the month reflect activity undertaken by a member reflecting recent audit findings.

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.

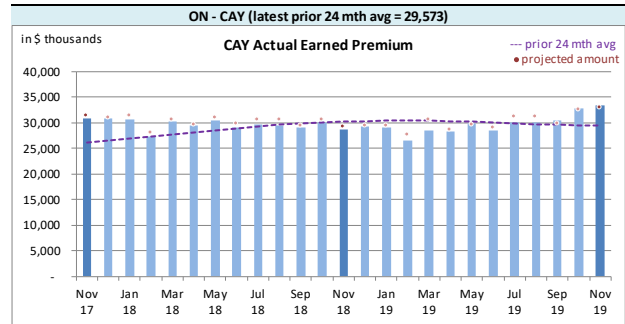
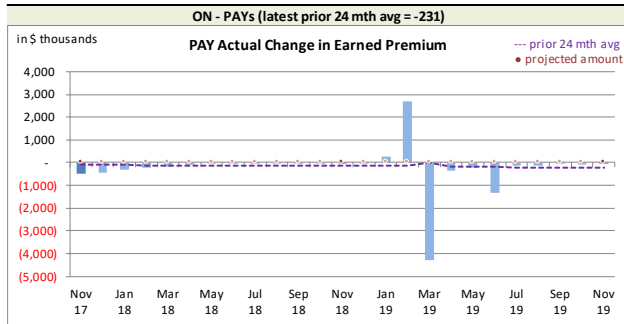
#### 2.1.a Actual vs. Projected (AvsP): Earned Premium

The charts at the top of the next page show actual **earned premium**<sup>5</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.

<sup>4</sup>There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

<sup>5</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.

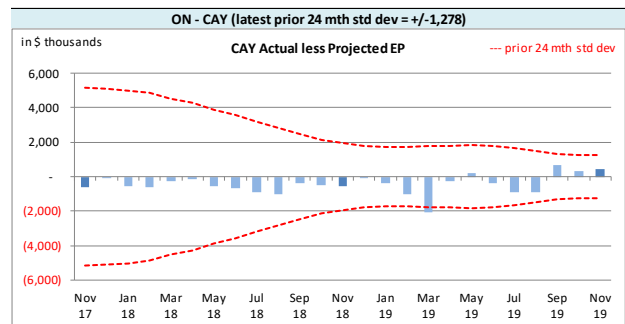
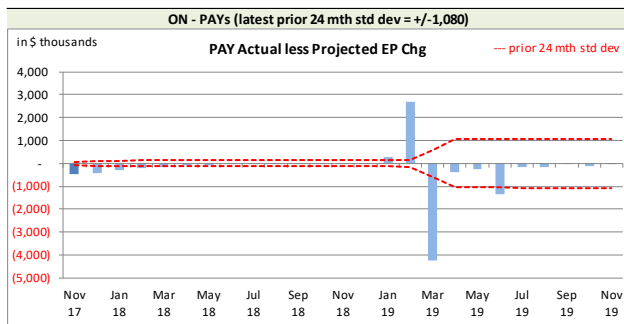
Ontario RSP Actual Earned Premium by Calendar Month



**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 shown in the charts 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)	(231)	29,573
std dev	1,080	1,278
A-P <> std dev	9	1
% <> std dev	36.0%	4.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	no better	better

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>6</sup>, with actuals generally lower than projected, although the magnitude is not high relative to monthly premium. In addition to the PAYs' bias, the CAY

has also shown bias<sup>7</sup>, with actuals being generally lower than projected, and while we modified our projections processes in response, bias still exists. Over time, we may consider other projection

<sup>6</sup>The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

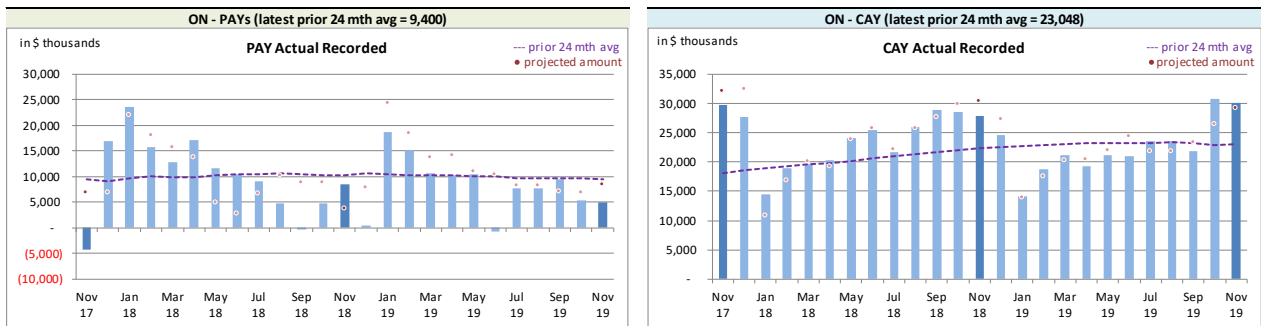
<sup>7</sup>We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (25 in this case) and 50% probability of success. The rolling 25-month CAY variances at November 2019 has only 4 months where the actuals were higher than projected, and as the 95% confidence range is 8 to 17, bias continues to be indicated.

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

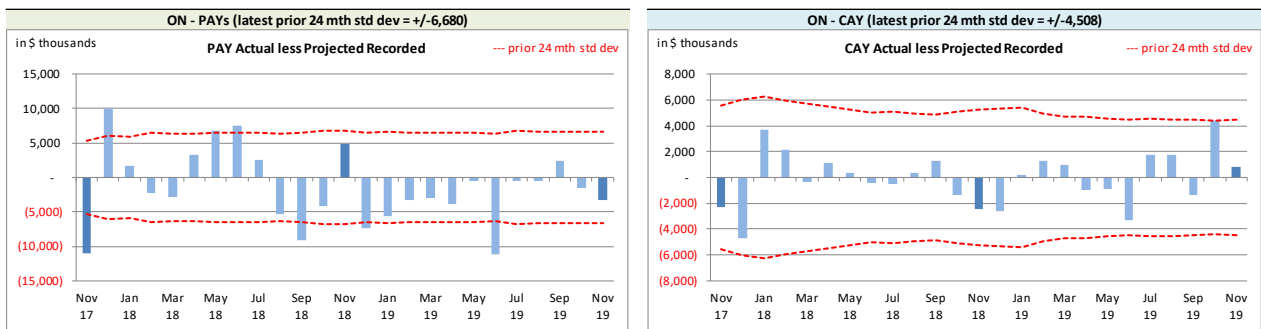
The charts below show actual **recorded** activity (**paid** and **case reserve** changes), in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

*Ontario RSP Actual Recorded by Calendar Month*



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

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



On Latest \$ thousands			
Recorded	PAYs	CAY	
Mthly Avg Recorded (prior 24 mths)	9,400	23,048	
std dev	6,680	4,508	
A-P <> std dev	7	-	
% <> std dev	28.0%	0.0%	
norm <> std dev	31.7%	31.7%	
performance vs 24-mth avg:	no better	better	

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 rolling 25-month basis (8 of 25 variances were positive), but on a lagging 12-month basis, bias is indicated (1 of latest 12 variances have been positive; we have made some adjustments to address this, but more appears to be needed).

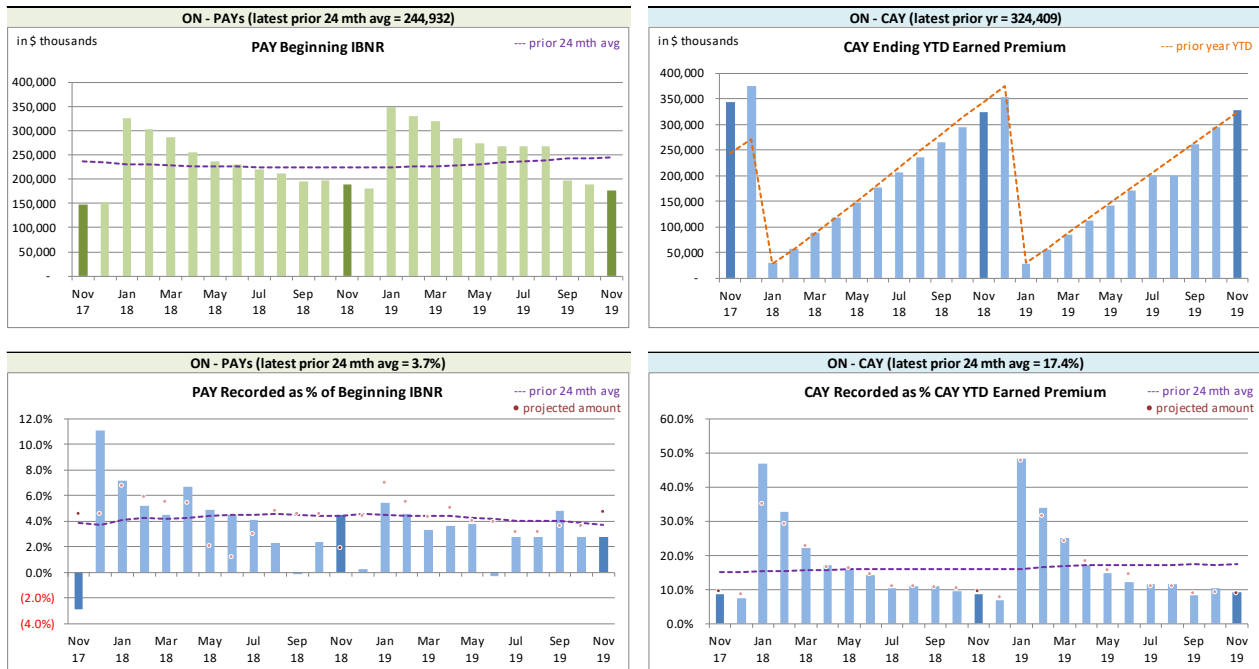


The current accident year (CAY) **recorded** variances (right lower chart at the bottom of the previous page) fell outside of one standard deviation 0% of the time over the last 25 calendar months suggesting that the projection process has performed better than simply projecting the prior 24-month average amount. Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (13 of 25 variances were positive).

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 below 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 a valuation is implemented (i.e. April, June, September, and November).

*Ontario RSP Levels that influence<sup>8</sup> Recorded activity by Calendar Month*



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

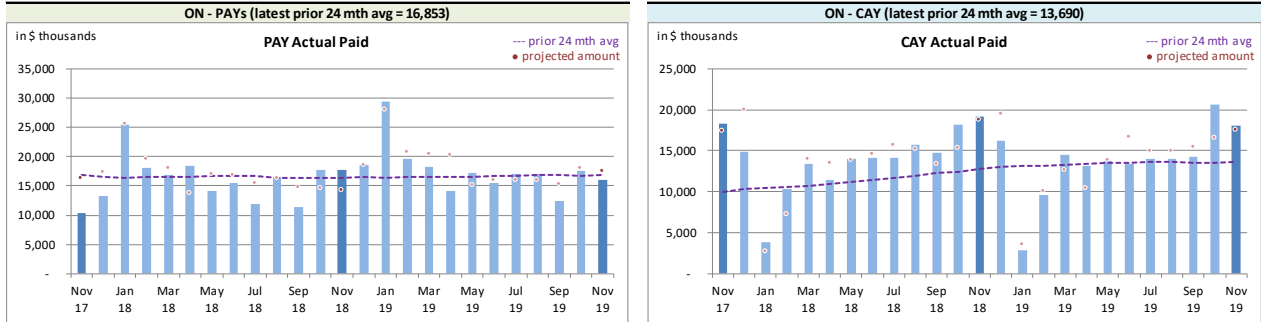
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a CAY becomes a PAY (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs' ultimates (will show up as a beginning IBNR change one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

<sup>8</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.

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

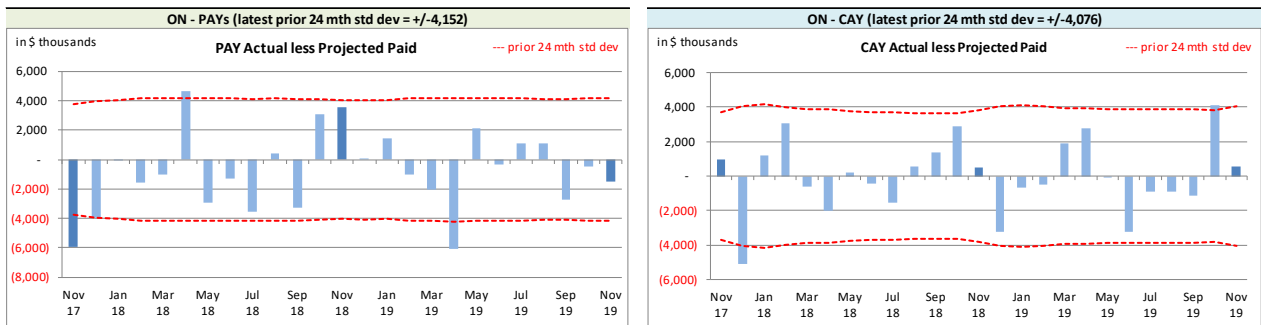
The charts below show actual **paid** activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

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



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

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



On Latest \$ thousands			
<b>Paid</b>	PAYs	CAY	
Mthly Avg Paid (prior 24 mths)	16,853	13,690	
std dev	4,152	4,076	
A-P <> std dev	3	2	
% <> std dev	12.0%	8.0%	
norm <> std dev	31.7%	31.7%	
performance vs 24-mth avg:	better	better	

With respect to **paid** indemnity & allowed claims expense, 12% 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 rolling 25-month basis (9 of 25 variances are positive).

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 has not been indicated at a 95% confidence level on a rolling 25-month basis (12 of 25 variances are positive).

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

*Ontario RSP Levels that influence<sup>9</sup> Paid activity by Calendar Month*



We track the PAY beginning unpaid balance (case and IBNR) as **paid** activity comes out of the unpaid balance. Changes in the PAY 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 CAY becomes a PAY (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs’ ultimates (will show up as a beginning unpaid balance change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

## 2.2 Actuarial Provisions

An ultimate loss ratio matching method (described in section 3) is used to determine the month’s IBNR<sup>10</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.

<sup>9</sup>Our paid projections for the prior accident years are based on selected ratios of paid to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date paid to year-to-date selected ultimate indemnity (i.e. selected LR x earned premium). In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.

<sup>10</sup>For ease of discussion, “IBNR” is used in place of “provisions for incurred but not recorded (IBNR) and development”.

The table below summarizes variances in provisions included in this month’s Operational Report and the associated one-month projections from last month’s Report.

*Ontario RSP Actual vs Projected Summary: IBNR and APV Amounts (\$ thousands)*

Table 02

Accident Year	IBNR		actuarial present value adjustments				IBNR + actuarial present value adjustments	
	Actual	Actual less Projected	Discount Amount		Provisions for Adverse Deviations		Actual	Actual less Projected
			Actual	Actual less Projected	Actual	Actual less Projected		
Prior	28,303	1,119	(13,466)	(20)	35,996	3	50,833	1,102
2017	52,365	157	(5,778)	(26)	24,171	110	70,758	241
2018	91,436	1,997	(8,264)	(22)	35,043	90	118,215	2,065
2019	156,615	(277)	(10,790)	1	46,196	(1)	192,021	(277)
<b>TOTAL</b>	<b>328,719</b>	<b>2,996</b>	<b>(38,298)</b>	<b>(67)</b>	<b>141,406</b>	<b>202</b>	<b>431,827</b>	<b>3,131</b>

The IBNR provision is \$3.0 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.

*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:	57,507	3,541	29,745	1,840	87,252	5,381
balance as % unearned premium:	25.0%	-	12.9%	-	37.9%	-
actual unearned premium:	230,224					
less projected:	14,212					

### 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>11</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>12</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 123.7% rather than 122.3% (the valuation ultimate ratio for accident year 2019), 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>11</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>12</sup>Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this analysis.

*Ontario RSP Calendar Year-to-Date Indemnity & Allowed Claims Expense Summary (\$ thousands)*

Table 04	YTD Nominal Values		YTD actuarial present value adjustment		YTD Total		Change from Prior Month YTD	
	Amount	% EP	Amount	% EP	Amount	% EP	Amount	LR pts
PAYs	(78,914)	(24.3%)	(14,421)	(4.4%)	(93,335)	(28.8%)	(1,545)	2.8%
CAY	400,781	123.7%	35,406	10.9%	436,187	134.6%	44,025	(0.3%)
TOTAL	321,867	99.3%	20,985	6.5%	342,852	105.8%	42,480	2.5%

(“% EP” based on 2019 calendar year-to-date earned premium; ratios may not total due to rounding)

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

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

**5 Current Operational Report – Additional Exhibits**

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

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

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

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

**6 EXHIBITS**

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

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

EXHIBIT A

IBNR for Member Sharing – includes Actuarial Present Value Adjustments

TABLE EXHIBIT A

		Amounts in \$000s				
		Actual	Actual	Projected	Projected	Projected
		Oct. 2019	Nov. 2019	Dec. 2019	Jan. 2020	Dec. 2020
IBNR + M/S actuarial present value adjustments	Accident Year					
	prior	1,829	1,940	1,879	2,239	1,701
	2000	14	14	13	13	12
	2001	48	49	48	50	40
	2002	70	70	66	66	52
	2003	122	122	116	116	88
	2004	283	282	270	274	209
	2005	304	304	288	287	222
	2006	594	605	576	583	449
	2007	521	476	453	460	353
	2008	1,138	1,266	1,204	1,199	920
	2009	1,896	1,897	1,804	1,792	1,374
	2010	2,626	2,533	2,410	2,335	1,793
	2011	1,084	1,465	1,398	1,267	971
	2012	1,331	1,155	1,109	1,002	767
	2013	3,673	4,010	3,837	3,572	2,734
discount rate	2014	4,942	5,321	5,124	4,431	3,383
1.41%	2015	9,962	9,513	9,174	8,439	6,448
	2016	20,919	19,811	18,999	18,110	12,398
interest rate margin	2017	73,639	70,758	67,588	64,797	42,017
25 basis pts	2018	121,402	118,215	112,194	108,902	70,864
	2019	178,037	192,021	210,515	199,439	136,016
	2020	-	-	-	33,783	268,775
	<b>TOTAL</b>	<b>424,434</b>	<b>431,827</b>	<b>439,065</b>	<b>453,156</b>	<b>551,586</b>
	Change		7,393	7,238	14,091	

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

EXHIBIT B

IBNR

TABLE EXHIBIT B

Amounts in \$000s

IBNR	Ultimate Loss Ratio	Accident Year	Actual Oct. 2019	Actual Nov. 2019	Projected Dec. 2019	Projected Jan. 2020	Projected Dec. 2020
	-	prior	(37)	100	94	92	67
	122.0%	2000	13	13	12	12	11
	125.8%	2001	9	9	9	9	9
	117.9%	2002	63	63	60	59	46
	90.7%	2003	99	99	94	93	70
	77.7%	2004	227	227	216	214	164
	73.6%	2005	291	291	276	273	211
	100.4%	2006	522	533	506	501	386
	99.9%	2007	467	423	402	398	306
	120.7%	2008	1,097	1,225	1,164	1,152	884
	155.6%	2009	1,781	1,785	1,696	1,679	1,289
	152.0%	2010	2,432	2,346	2,229	2,207	1,695
	86.3%	2011	716	1,112	1,056	1,045	802
	84.1%	2012	692	563	535	530	408
	94.5%	2013	2,266	2,615	2,484	2,459	1,888
	100.5%	2014	1,474	1,909	1,814	1,796	1,378
	109.7%	2015	4,471	4,180	4,055	4,014	3,082
	116.7%	2016	11,524	10,810	10,269	9,550	6,085
	108.7%	2017	54,956	52,365	49,747	46,762	28,301
	121.2%	2018	94,146	91,436	85,950	82,512	49,949
	122.3%	2019	145,844	156,615	171,029	160,767	104,734
	125.2%	2020	-	-	-	27,987	218,245
		<b>TOTAL</b>	<b>323,053</b>	<b>328,719</b>	<b>333,697</b>	<b>344,111</b>	<b>420,010</b>
		Change		5,666	4,978	10,414	

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



**EXHIBIT C**
**Premium Liabilities**

TABLE EXHIBIT C

Premium Liabilities	Amounts in \$000s				
	Actual	Actual	Projected	Projected	Projected
	Oct. 2019	Nov. 2019	Dec. 2019	Jan. 2020	Dec. 2020
(1) unearned premium (UP)	218,535	230,224	220,611	214,389	256,312
<b>FOR MEMBER SHARING</b>					
(2) expected future costs ratio {% of (1)}	137.5%	137.9%	138.4%	138.4%	142.2%
(3) expected future costs {(1) x (2)}	300,436	317,476	305,289	296,668	364,543
(4) premium deficiency / (deferred policy acquisition cost)	81,901	87,252	84,678	82,279	108,231
<b>Excluding Actuarial Present Value Adjustments</b>					
(5) expected future costs ratio {% of (1)}	124.6%	125.0%	125.4%	125.4%	128.9%
(6) expected future costs {(1) x (5)}	272,288	287,731	276,690	268,873	330,387
(7) premium deficiency / (deferred policy acquisition cost)	53,753	57,507	56,079	54,484	74,075

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		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	28,048	94	28,142	(1,113)	178	2,831	(111)	2,720	1,785	29,927
2000	-	12	12	-	-	1	-	1	1	13
2001	639	9	648	(28)	5	65	(3)	62	39	687
2002	61	60	121	(6)	1	12	(1)	11	6	127
2003	342	94	436	(24)	4	44	(2)	42	22	458
2004	1,017	216	1,233	(75)	14	123	(8)	115	54	1,287
2005	57	276	333	(23)	4	33	(2)	31	12	345
2006	1,855	506	2,361	(179)	31	236	(18)	218	70	2,431
2007	1,770	402	2,172	(178)	30	217	(18)	199	51	2,223
2008	931	1,164	2,095	(182)	31	209	(18)	191	40	2,135
2009	4,270	1,696	5,966	(525)	89	597	(53)	544	108	6,074
2010	5,055	2,229	7,284	(590)	102	728	(59)	669	181	7,465
2011	8,142	1,056	9,198	(625)	110	920	(63)	857	342	9,540
2012	12,546	535	13,081	(798)	144	1,308	(80)	1,228	574	13,655
2013	23,646	2,484	26,130	(1,359)	235	2,613	(136)	2,477	1,353	27,483
2014	50,643	1,814	52,457	(2,046)	315	5,246	(205)	5,041	3,310	55,767
2015	68,248	4,055	72,303	(2,314)	434	7,230	(231)	6,999	5,119	77,422
2016	82,612	10,269	92,881	(2,972)	464	11,610	(372)	11,238	8,730	101,611
2017	105,938	49,747	155,685	(5,605)	934	23,353	(841)	22,512	17,841	173,526
2018	111,569	85,950	197,519	(8,098)	1,383	34,368	(1,409)	32,959	26,244	223,763
PAYs (sub-total):	507,389	162,668	670,057	(26,740)	4,508	91,744	(3,630)	88,114	65,882	735,939
CAY (2019)	108,836	171,029	279,865	(12,034)	2,239	51,495	(2,214)	49,281	39,486	319,351
claims liabilities:	616,225	333,697	949,922	(38,774)	6,747	143,239	(5,844)	137,395	105,368	1,055,290
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	220,611	56,079	276,690	(9,115)	1,657	37,288	(1,231)	36,057	28,599	305,289
*Total may not be sum of parts, as apvs apply to future costs within UPR										
policy liabilities:			1,226,612	(47,889)	8,404	180,527	(7,075)	173,452	133,967	1,360,579

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, 2019 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Sep. 30, 2019)

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%	10.0%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	10.0%	10.0%	10.0%	10.0%
2014	10.0%	10.0%	9.7%	10.0%
2015	10.0%	10.0%	9.9%	10.0%
2016	12.5%	12.5%	11.9%	12.5%
2017	15.0%	15.0%	15.0%	15.0%
2018	17.4%	17.5%	15.1%	17.4%
2019	18.1%	20.0%	6.0%	18.4%
2020	12.9%	20.0%	5.2%	13.5%
prem liab	12.9%	20.0%	5.2%	13.5%

discount rate: 1.41%  
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, 2019 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2019, and are based on more up-to-date information). We have included the most recent valuation selection (1.41%), the prior valuation assumption (1.40%) and the prior fiscal year end valuation assumption (2.22%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

\$ Format: \$000s

AY	Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2019 projected Unpaid							
	0.41%	0.91%	1.41%	1.91%	2.41%	2.91%	1.40%	2.22%
2002 & prior	31,554	31,099	30,655	30,226	29,803	29,394	30,665	29,964
2003	411	402	395	387	380	373	395	382
2004	1,285	1,256	1,229	1,203	1,177	1,152	1,230	1,187
2005	317	309	301	294	287	280	302	290
2006	2,508	2,438	2,372	2,309	2,247	2,188	2,374	2,270
2007	2,481	2,407	2,335	2,268	2,202	2,141	2,337	2,227
2008	2,292	2,219	2,149	2,083	2,020	1,960	2,151	2,044
2009	7,120	6,889	6,670	6,464	6,265	6,079	6,675	6,340
2010	8,342	8,094	7,859	7,638	7,425	7,226	7,865	7,505
2011	9,568	9,329	9,104	8,892	8,690	8,498	9,110	8,765
2012	14,768	14,439	14,127	13,834	13,553	13,288	14,135	13,658
2013	26,901	26,390	25,905	25,449	25,008	24,594	25,918	25,173
2014	51,022	50,284	49,585	48,919	48,278	47,671	49,600	48,516
2015	77,322	76,434	75,583	74,772	73,982	73,234	75,608	74,280
2016	105,083	103,866	102,692	101,558	100,459	99,403	102,717	100,875
2017	179,004	176,706	174,460	172,331	170,217	168,204	174,530	171,023
2018	232,978	229,473	226,114	222,859	219,695	216,647	226,182	220,888
2019	315,108	310,234	305,517	300,998	296,608	292,333	305,661	298,263
<b>Total</b>	<b>1,068,064</b>	<b>1,052,268</b>	<b>1,037,052</b>	<b>1,022,484</b>	<b>1,008,296</b>	<b>994,665</b>	<b>1,037,455</b>	<b>1,013,650</b>
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

AY	Dollar Impact Relative to Valuation Assumption							
	0.41%	0.91%	1.41%	1.91%	2.41%	2.91%	1.40%	2.22%
<b>Total</b>	<b>31,012</b>	<b>15,216</b>	<b>-</b>	<b>(14,568)</b>	<b>(28,756)</b>	<b>(42,387)</b>	<b>403</b>	<b>(23,402)</b>
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

AY	Percentage Impact Relative to Valuation Assumption							
	0.41%	0.91%	1.41%	1.91%	2.41%	2.91%	1.40%	2.22%
2002 & prior	2.9%	1.4%	-	(1.4%)	(2.8%)	(4.1%)	0.0%	(2.3%)
2003	4.1%	1.8%	-	(2.0%)	(3.8%)	(5.6%)	-	(3.3%)
2004	4.6%	2.2%	-	(2.1%)	(4.2%)	(6.3%)	0.1%	(3.4%)
2005	5.3%	2.7%	-	(2.3%)	(4.7%)	(7.0%)	0.3%	(3.7%)
2006	5.7%	2.8%	-	(2.7%)	(5.3%)	(7.8%)	0.1%	(4.3%)
2007	6.3%	3.1%	-	(2.9%)	(5.7%)	(8.3%)	0.1%	(4.6%)
2008	6.7%	3.3%	-	(3.1%)	(6.0%)	(8.8%)	0.1%	(4.9%)
2009	6.7%	3.3%	-	(3.1%)	(6.1%)	(8.9%)	0.1%	(4.9%)
2010	6.1%	3.0%	-	(2.8%)	(5.5%)	(8.1%)	0.1%	(4.5%)
2011	5.1%	2.5%	-	(2.3%)	(4.5%)	(6.7%)	0.1%	(3.7%)
2012	4.5%	2.2%	-	(2.1%)	(4.1%)	(5.9%)	0.1%	(3.3%)
2013	3.8%	1.9%	-	(1.8%)	(3.5%)	(5.1%)	0.1%	(2.8%)
2014	2.9%	1.4%	-	(1.3%)	(2.6%)	(3.9%)	0.0%	(2.2%)
2015	2.3%	1.1%	-	(1.1%)	(2.1%)	(3.1%)	0.0%	(1.7%)
2016	2.3%	1.1%	-	(1.1%)	(2.2%)	(3.2%)	0.0%	(1.8%)
2017	2.6%	1.3%	-	(1.2%)	(2.4%)	(3.6%)	0.0%	(2.0%)
2018	3.0%	1.5%	-	(1.4%)	(2.8%)	(4.2%)	0.0%	(2.3%)
2019	3.1%	1.5%	-	(1.5%)	(2.9%)	(4.3%)	0.0%	(2.4%)
<b>Total</b>	<b>3.0%</b>	<b>1.5%</b>	<b>-</b>	<b>(1.4%)</b>	<b>(2.8%)</b>	<b>(4.1%)</b>	<b>0.0%</b>	<b>(2.3%)</b>
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

Page 1 of 2

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

RSP **Ontario**  
AccountCode Desc **IBNR - Discou**

M/S IBNR - in \$000s

AccYear	Values			Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances				
prior	1,829	(57)	168	-	111	6.1%	1,940
2000	14	-	-	-	-	-	14
2001	48	(1)	2	-	1	2.1%	49
2002	70	(2)	2	-	-	-	70
2003	122	(2)	2	-	-	-	122
2004	283	(4)	3	-	(1)	(0.4%)	282
2005	304	(4)	4	-	-	-	304
2006	594	(7)	18	-	11	1.9%	605
2007	521	(7)	(38)	-	(45)	(8.6%)	476
2008	1,138	(11)	139	-	128	11.2%	1,266
2009	1,896	(22)	23	-	1	0.1%	1,897
2010	2,626	(30)	(63)	-	(93)	(3.5%)	2,533
2011	1,084	(19)	400	-	381	35.1%	1,465
2012	1,331	(26)	(150)	-	(176)	(13.2%)	1,155
2013	3,673	(66)	403	-	337	9.2%	4,010
2014	4,942	(120)	499	-	379	7.7%	5,321
2015	9,962	(389)	(60)	-	(449)	(4.5%)	9,513
2016	20,919	(858)	(250)	-	(1,108)	(5.3%)	19,811
2017	73,639	(3,122)	241	-	(2,881)	(3.9%)	70,758
2018	121,402	(5,252)	2,065	-	(3,187)	(2.6%)	118,215
2019	178,037	14,261	(277)	-	13,984	7.9%	192,021
<b>Grand Total</b>	<b>424,434</b>	<b>4,262</b>	<b>3,131</b>	<b>-</b>	<b>7,393</b>	<b>1.7%</b>	<b>431,827</b>

EXHIBIT G

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

RSP **Ontario**  
AccountCode Desc **IBNR - Undiscounted**

IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
prior	(37)	(1)	138	-	137	(370.3%)	100
2000	13	-	-	-	-	-	13
2001	9	-	-	-	-	-	9
2002	63	(1)	1	-	-	-	63
2003	99	(1)	1	-	-	-	99
2004	227	(2)	2	-	-	-	227
2005	291	(3)	3	-	-	-	291
2006	522	(5)	16	-	11	2.1%	533
2007	467	(5)	(39)	-	(44)	(9.4%)	423
2008	1,097	(11)	139	-	128	11.7%	1,225
2009	1,781	(18)	22	-	4	0.2%	1,785
2010	2,432	(24)	(62)	-	(86)	(3.5%)	2,346
2011	716	(7)	403	-	396	55.3%	1,112
2012	692	(7)	(122)	-	(129)	(18.6%)	563
2013	2,266	(23)	372	-	349	15.4%	2,615
2014	1,474	(15)	450	-	435	29.5%	1,909
2015	4,471	(224)	(67)	-	(291)	(6.5%)	4,180
2016	11,524	(576)	(138)	-	(714)	(6.2%)	10,810
2017	54,956	(2,748)	157	-	(2,591)	(4.7%)	52,365
2018	94,146	(4,707)	1,997	-	(2,710)	(2.9%)	91,436
2019	145,844	11,048	(277)	-	10,771	7.4%	156,615
<b>Grand Total</b>	<b>323,053</b>	<b>2,670</b>	<b>2,996</b>	<b>-</b>	<b>5,666</b>	<b>1.8%</b>	<b>328,719</b>