# ALBERTA GRID RISK SHARING POOL

# OCTOBER 2018 OPERATIONAL REPORT

# ACTUARIAL HIGHLIGHTS

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FACILITY Association

# ACTUARIAL HIGHLIGHTS

## RSP ALBERTA GRID

## OPERATIONAL REPORT

## OCTOBER 2018

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# 1 Summary

## 1.1 Valuation Schedule (Fiscal Year 2018)

The October 2018 Operational Report incorporates the results of an updated valuation (as at September 30, 2018) – the impact of the implementation of the valuation is discussed in section 1.2. The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 2018.

**ALBERTA GRID RISK SHARING POOL**
**FISCAL YEAR 2018 – SCHEDULE OF VALUATIONS**

| Valuation Date | Discount Rate (per annum) | Operational Report | Description of Changes |
|---|---|---|---|
| Sep. 30, 2017 (completed) | 1.76% mfad: 25 bp | Oct. 2017 | updated valuation (roll forward): accident year 2017 loss ratio decreased 0.3 points to 89.9%; discount rate increased by 57 basis points; no change to selected margins for adverse deviations |
| Dec. 31, 2017 (completed) | 1.75% mfad: 25 bp | Mar. 2018 | update valuation: accident year 2018 loss ratio increased 4.9 points to 90.7%; discount rate decreased by 1 basis point; no change to selected margins for adverse deviations |
| Mar. 31, 2018 (completed) | 1.92% mfad: 25 bp | May 2018 | update valuation (roll forward): accident year 2018 loss ratio increased 1.2 points to 91.9%; discount rate increased by 17 basis points; no change to selected margins for adverse deviations |
| Jun. 30, 2018 (completed) | 1.87% mfad 25 bp | Aug. 2018 | updated valuation: accident year 2018 loss ratio decreased 0.1 point to 91.8%; discount rate decreased by 5 basis points; selected margins for adverse deviations were updated |
| Sep. 30, 2018 (completed) | 2.28% mfad 25 bp | Oct. 2018 | updated valuation (roll forward): accident year 2018 loss ratio decreased 2.0 points to 89.8%; discount rate increased by 41 basis points; no change to selected margins for adverse deviations |

Under the proposed schedule for fiscal year 2018, the "off-half" valuation quarters ending March 31, 2018 and September 30, 2018 would not reflect a full valuation update of assumptions, but would rather "roll-forward" key assumptions from the previous valuation.

## 1.2 New Valuation

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

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

The valuation implementation impact is summarized in the tables below.

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

| **AB Grid** | unfav / (fav) for the month and ytd | | | | | |
|---|---|---|---|---|---|---|
| | IMPACT in $000s from changes in: | | | | | |
| | ults & payout patterns | | | dsct rate | margins | |
| | Nominal [1] | apv adj. [2] | sub-tot [3] | apv adj. [4] | apv adj. [5] | TOTAL [6] |
| PAYs | (4,394) | (227) | (4,621) | (2,590) | - | (7,211) |
| CAY | (2,720) | (89) | (2,809) | (1,137) | - | (3,946) |
| Prem Def | (1,509) | (96) | (1,605) | (869) | - | (2,474) |
| TOTAL | (8,623) | (412) | (9,035) | (4,596) | - | (13,631) |

As indicated in the table above, the incorporation of the new valuation had an estimated ***$13.6 million favourable impact*** on the month's net result from operations, subtracting an estimated 10.1 points (see table immediately below) to the **year-to-date Combined Operating Ratio** to end at **120.1%.**

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

| **AB Grid** | ytd EP 134,622 (actual) | | | | | |
|---|---|---|---|---|---|---|
| | IMPACT unfav / (fav) as % ytd EP from changes in: | | | | | |
| | ults & payout patterns | | | dsct rate | margins | |
| | Nominal [1] | apv adj. [2] | sub-tot [3] | apv adj. [4] | apv adj. [5] | TOTAL [6] |
| PAYs | (3.3%) | (0.2%) | (3.4%) | (1.9%) | - | (5.4%) |
| CAY | (2.0%) | (0.1%) | (2.1%) | (0.8%) | - | (2.9%) |
| Prem Def | (1.1%) | (0.1%) | (1.2%) | (0.6%) | - | (1.8%) |
| TOTAL | (6.4%) | (0.3%) | (6.7%) | (3.4%) | - | (10.1%) |

The impact of the nominal changes is shown in column [1] of the two preceding summary tables. The change in the selected nominal ultimates was favourable by $8.6 million overall. This reflects the impact attributable to the changes in the selected ultimate loss ratios (i.e. for each accident year, it is the product of life-to-date earned premium for the accident year and the change in the selected ultimate loss ratio).

The prior accident years overall showed a $4.4 million favourable nominal variance driven by favourable TPL development, particularly related to favourable case reserves reduction across multiple companies during the quarter. The overall favourable impact is 1.8% of the prior accident

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

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

years' nominal unpaid balance of $244.5 million determined at the end of last month (September 2018).

The current accident year and premium deficiency impacts are a result of the change in the selected loss ratios for accident year **2018** (down 2.0 points from 91.8% to **89.8%**) and **2019** (down 1.6 points from 90.7% to **89.1%**).

Accident year 2019 loss ratios were updated to reflect the impact of AIRB Bulletin 10/2018, dated October 31, 2018, increasing the current Grid rate level by +5% (effective January 1, 2019).

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

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

Updated projected cash flows were reviewed against the selected risk-free yield curve, derived from Government of Canada benchmark bond yields monthly series using values for September 2018. Column [4] accounts for the change in the **discount rate** selected (increased 41 basis point to **2.28%**), indicating a favourable impact of $4.6 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was $3.7 million at October 2018 – this compares to the $3.7 million change one would estimate as the impact by interpolation using the interest rate sensitivity table provided in last month's Actuarial Highlights.

Column [5] accounts for any changes to selected MfADs. The selected **investment rate MfAD** was **left unchanged at 25 basis points** and the selected **claims development MfADs** at the coverage and accident year level were **left unchanged** as well. (Note: our usual practice is to review and update the claims development MfADs annually with the June 30 valuations. Based on discussion with the FA's Actuarial Committee, the claims development MfADs for this RSP were revisited with the September 30, 2018 valuation, but were left unchanged from the selections made with the June 30, 2018 valuation.)

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

### 1.3 Appointed Actuary and Hybrid Actuarial Services Model

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

Facility Association operates under a "hybrid" model in relation to the management and provision of actuarial services. Under this model, actuarial services are performed by both Facility Association's

internal staff and its external actuarial consulting firm. The hybrid model approach maximizes the efficiency of resource allocation while providing access to additional expertise and capacity as needed.

### 1.4 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation

These descriptions have been updated since last month's Highlights for updated references to the most recent valuation, that we do not believe the Saadati judgment will have a further impact on our valuation results, and to describe the release of Order 14/2018.

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.

In the **Alberta Treasury Board and Finance Notice 04-2018** (Clarification of Minor Injury Regulation), dated **May 17, 2018**, the Alberta Superintendent of Insurance advised that clarifying amendments have been made to the definition of minor injuries under the Minor Injury Regulation (MIR). With the most recent valuation (September 30, 2018), reform adjustments related to changes in the definition of minor injuries under the MIR, were included with the updated industry trend analysis (completed using industry data as at December 31, 2017), impacting the selection of ultimates.

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 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:

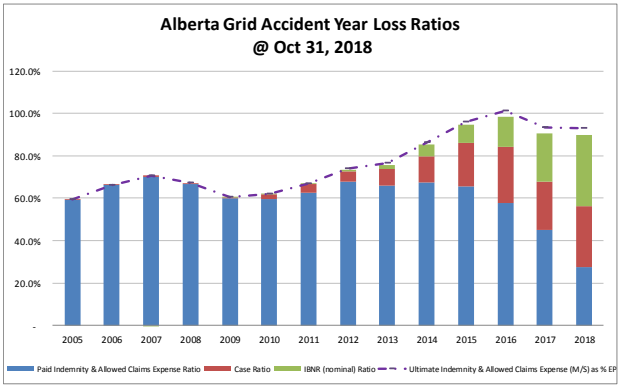
- "*A finding of legally compensable mental injury need not rest, in whole or in part, on the claimant proving a recognized psychiatric injury.*"
- "*...a trier of fact adjudicating a claim of mental injury is not concerned with diagnosis, but with symptoms and their effects.*"
- "*Expert evidence can 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*."

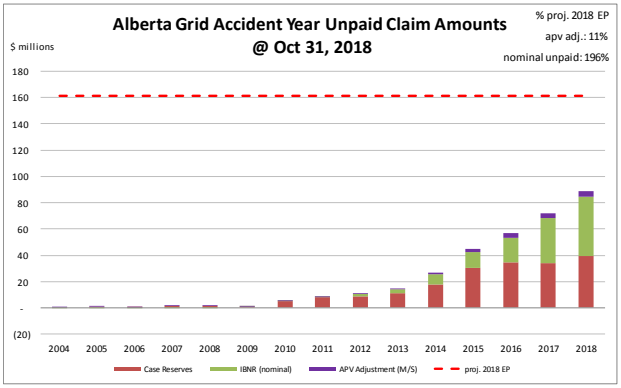
At the current time, no adjustments have been made to our valuation estimates or views based on the judgment as rendered, and at this point we do not believe this judgment will have a further impact on our valuation results.

The **Minister of Treasury Board and Finance issued Ministerial Order 14/2018**, on **October 31, 2018**, which states unless otherwise directed by the Minister, the AIRB may not approve filings from insurers for cumulative rate increases on private passenger vehicles greater than +5.0% during the period between December 1, 2018 and August 31, 2019. At the current time, no adjustments have been made to our valuation estimates or views based on this order.

## 1.5 Current Provision Summary

The charts immediately below show the current levels of claim liabilities[2] booked by accident year[3]. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the associated dollar amounts for the components of the claim liabilities and the current projected amount of 2018 full year earned premium (the red hash-mark line) to provide some perspective.




*"M/S" refers to "Member Statement" values – that is, actuarial present value adjustments at the selected discount rate.*

The current actuarial present value adjustments balance ($17.3 million – see table immediately below) represents 11% of the earned premium projected for the full year 2018 (see the upper right corner of the right chart above). If our current estimates of the nominal unpaid amounts prove to match actual claims payments, the actuarial present value adjustments will be released into the net operating result over future periods.

claim liabilities ($000s)

| | amt | % |
|---|---|---|
| case | 192,465 | 57.6% |
| ibnr | 124,262 | 37.2% |
| M/S apv adjust. | 17,272 | 5.2% |
| M/S total | 333,999 | 100.0% |

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 pool is in case reserves. Approximately 64% of the IBNR balance relates to accident years 2017 and 2018 (see Exhibit B). Approximately 87% 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 1% is related to accident years 2008 and prior (i.e. prior to the most recent 10 accident years).

[2]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.

[3]Accident year 2004 was an incomplete year and therefore has been excluded from the loss ratio chart.

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

premium liabilities ($000s)

| | amt | % |
|---|---|---|
| unearned prem | 88,089 | 106.8% |
| prem def/(dpac) | (9,138) | (11.1%) |
| M/S apv adjust. | 3,529 | 4.3% |
| M/S total | 82,480 | 100.0% |

policy liabilities ($000s)

| | amt | % |
|---|---|---|
| claim | 316,727 | 76.0% |
| premium | 78,951 | 19.0% |
| M/S apv adjust. | 20,801 | 5.0% |
| M/S total | 416,479 | 100.0% |

# 2 Activity During the Month of October 2018

## 2.1 Recorded Premium and Claims Activity

The table immediately below summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month's Operational Report[4].

*Alberta Grid RSP Actual vs Projected Summary: Recorded Transaction Amounts ($ thousands)*

| Table 01 | Earned Premium | | Paid Indemnity & Allowed Claims Expense | | Case increase / (decrease) | | Recorded increase / (decrease) | |
|---|---|---|---|---|---|---|---|---|
| Accident Year | Actual | Actual less Projected | Actual | Actual less Projected | Actual | Actual less Projected | Actual | Actual less Projected |
| Prior | 2 | 2 | 5,457 | 2,394 | (3,333) | (1,149) | 2,124 | 1,245 |
| 2016 | (8) | (8) | 1,307 | 192 | 324 | 1,007 | 1,631 | 1,199 |
| 2017 | (16) | (16) | 1,200 | (232) | (339) | (21) | 861 | (253) |
| 2018 | 13,575 | (74) | 5,127 | 662 | 2,767 | (174) | 7,895 | 488 |
| TOTAL | 13,552 | (96) | 13,091 | 3,016 | (580) | (336) | 12,511 | 2,680 |

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

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

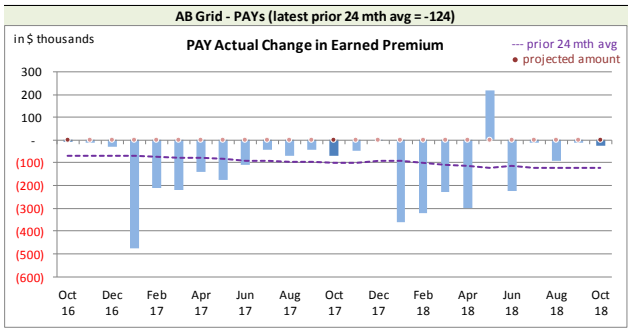
### 2.1.a Actual vs. Projected (AvsP): Earned Premium

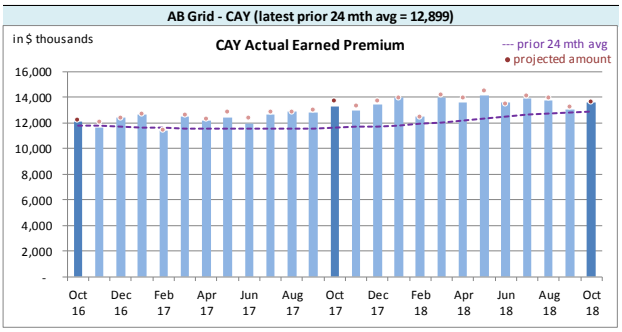
The charts at the top of the next page show actual **earned premium**[5] activity in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

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

[5]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.

*Alberta Grid RSP Actual **Earned Premium** by Calendar Month*



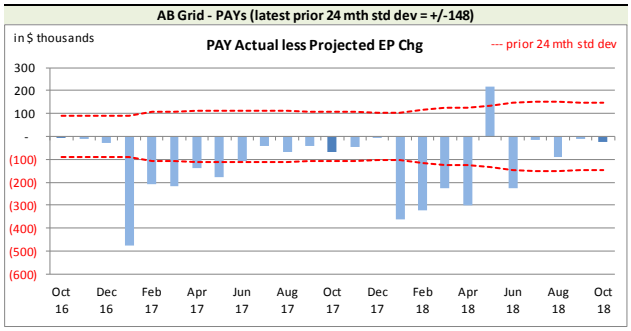



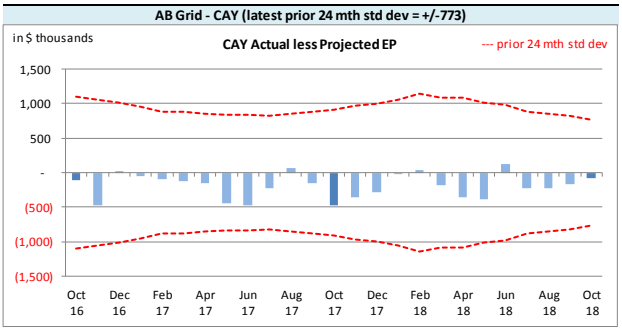

**Earned premium** changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels seem to occur at the beginning of each year.

We have noted and have investigated the unusually high level of PAYs earned premium activity earlier in 2017 and January through August 2018, particularly with respect to one member. FA management reviewed the activity and determined the 2017 transactions were correct and valid, but continues its investigation of the 2018 transactions.

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

*Alberta Grid 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) | (124) | 12,899 |
| std dev | 148 | 773 |
| A-P <> std dev | 11 | - |
| % <> std dev | 44.0% | 0.0% |
| norm <> std dev | 31.7% | 31.7% |

We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias[6], with actuals generally lower than projected, although the magnitude is not high relative to monthly

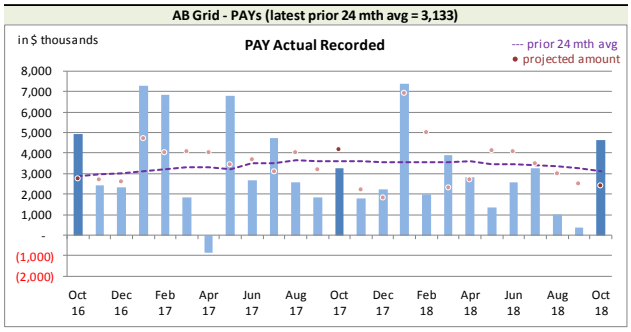
[6]The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

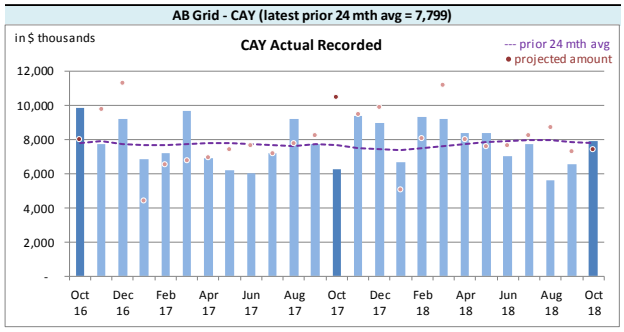
premium. In addition to the PAYs' bias, the CAY has also shown bias[7], with actuals being generally lower than projected, and while we modified our projections processes in response, bias still exists. Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority.

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

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

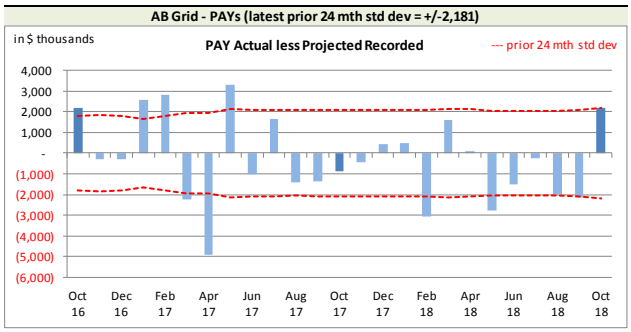
*Alberta Grid RSP Actual* **Recorded** *by Calendar Month*

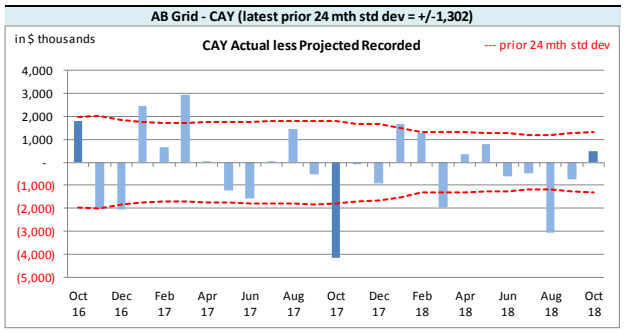



**Recorded** activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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




| On Latest $ thousands | | |
|---|---|---|
| **Recorded** | PAYs | CAY |
| Mthly Avg Recorded (prior 24 mths) | 3,133 | 7,799 |
| std dev | 2,181 | 1,302 |
| A-P <> std dev | 10 | 8 |
| % <> std dev | 40.0% | 32.0% |
| norm <> std dev | 31.7% | 31.7% |

With respect to **recorded** indemnity & allowed claims expense activity, 40% 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 worse than

[7]We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (24 in this case) and 50% probability of success. The 24-month variances at October 2018 has only 4 months where the actuals were higher than projected, and as the 95% confidence range is 7 to 17, bias continues to be indicated.

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 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 fell outside of one standard deviation 32% of the time over the last 25 calendar months (see table above), suggesting that the projection process has performed no better than simply projecting the prior 24-month average amount. Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

We note that there may be a change in the levels of CAY **recorded** and **paid** activity relative to year-to-date **earned premium**, as evidenced by the average of monthly ratios over the past several years shown in the tables immediately below. These tables show, in each row, the average monthly ratio for each calendar year. That is, each row in the *left* table (as at Dec) provides the average of the 12 monthly-ratios (i.e. Jan, Feb, ... Dec) for that row's calendar year, whereas each row in the *right* table (as at Oct) provides the average of the 10 monthly ratios (i.e. Jan-Oct) for that row's calendar year.

*Alberta Grid RSP year-to-date CAY claims activity (ratio to EP)*

CAY avg of mthly ratios for yr

| as at | Rec'd | yr-on-yr chg | Paid | yr-on-yr chg |
|---|---|---|---|---|
| Dec 2009 | 11.5% | | 4.4% | |
| Dec 2010 | 10.9% | (0.6%) | 4.5% | 0.1% |
| Dec 2011 | 12.8% | 1.9% | 4.8% | 0.3% |
| Dec 2012 | 12.4% | (0.4%) | 4.7% | (0.1%) |
| Dec 2013 | 12.6% | 0.2% | 4.8% | 0.1% |
| Dec 2014 | 13.8% | 1.2% | 5.3% | 0.5% |
| Dec 2015 | 14.4% | 0.6% | 5.5% | 0.2% |
| Dec 2016 | 14.0% | (0.4%) | 5.4% | (0.1%) |
| Dec 2017 | 15.5% | 1.5% | 5.6% | 0.2% |

CAY avg of mthly ratios for yr

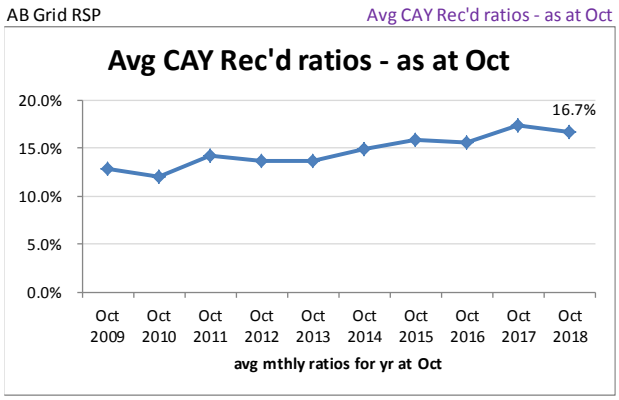
| as at | Rec'd | yr-on-yr chg | Paid | yr-on-yr chg |
|---|---|---|---|---|
| Oct 2009 | 12.8% | | 4.7% | |
| Oct 2010 | 12.0% | (0.8%) | 4.7% | 0.0% |
| Oct 2011 | 14.2% | 2.2% | 5.1% | 0.4% |
| Oct 2012 | 13.6% | (0.6%) | 5.0% | (0.1%) |
| Oct 2013 | 13.7% | 0.1% | 5.2% | 0.2% |
| Oct 2014 | 14.9% | 1.2% | 5.6% | 0.4% |
| Oct 2015 | 15.8% | 0.9% | 5.9% | 0.3% |
| Oct 2016 | 15.5% | (0.3%) | 5.7% | (0.2%) |
| Oct 2017 | 17.3% | 1.8% | 6.0% | 0.3% |
| Oct 2018 | 16.7% | (0.6%) | 5.8% | (0.2%) |

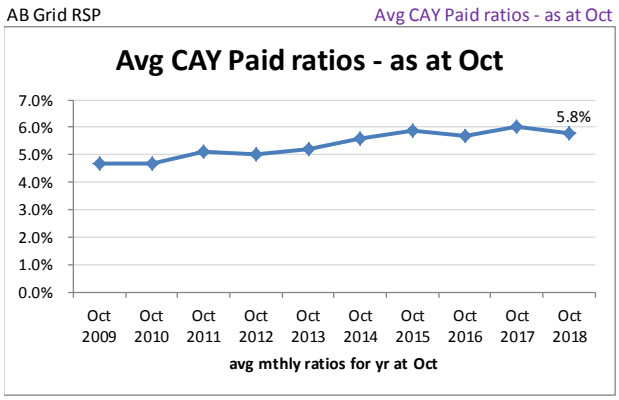
Both **recorded** and **paid** monthly average ratios for the 12-months at Dec. 2017 relative to Dec. 2009 have increased at an annual rate of almost 4% over and above any premium rate level increases. At this point, we are only monitoring, but the valuation team has been advised and is taking this information into consideration. Further, while the average of the 12 monthly ratios at December for 2016 was down from 2015, the December 12-month average ratios for calendar year 2017 were at the highest level for both **recorded** and **paid**.

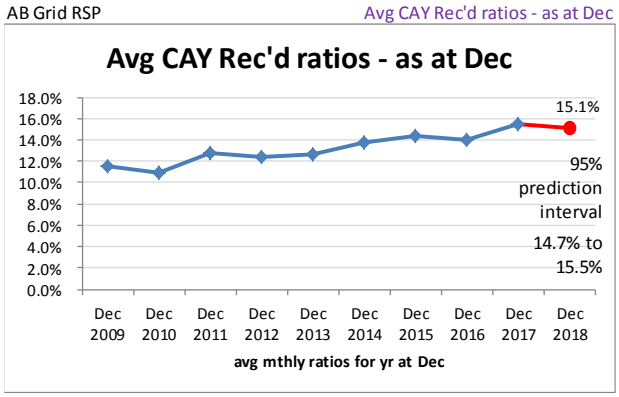
As can be seen in the *right* table above, (average of 10 months to October of each year), the **recorded** ratio is the second highest ratio in the last 10 years, (behind ratio as at Oct 2017) and the **paid** ratio is the third highest ratio in the last 10 years. There has been strong (over 95%) correlation between the ytd monthly average ratios at October each year and the corresponding monthly average ratios at December, suggesting the monthly average ratios for 2018 at October (that is, the average of the 10 monthly ratios Jan 2018 to Oct 2018) are predictive of where the 2018 monthly average ratios will be at year-end (that is, the 12 monthly ratios Jan 2018 – Dec 2018). Using simple regression, we forecast the average of the 12 monthly ratios for calendar year 2018 (i.e. the average of the monthly ratios for Jan 2018 – Dec 2018) will be 15.1% (95% prediction interval of 14.7% to 15.5%) for recorded and 5.4% (95% prediction interval of 5.3% to 5.6%) for paid. The results are presented

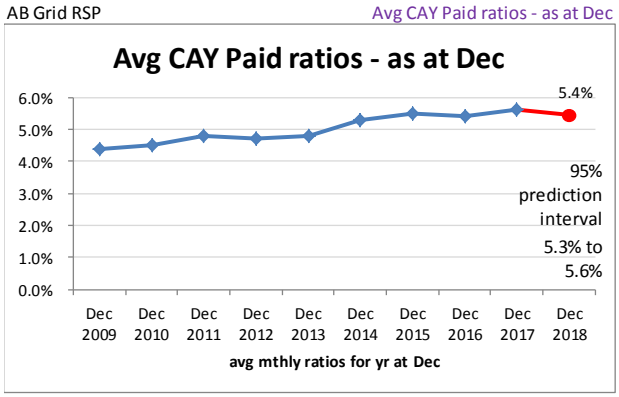
in charts immediately below.

*Alberta Grid RSP average of monthly CAY claims activity ratios to EP*



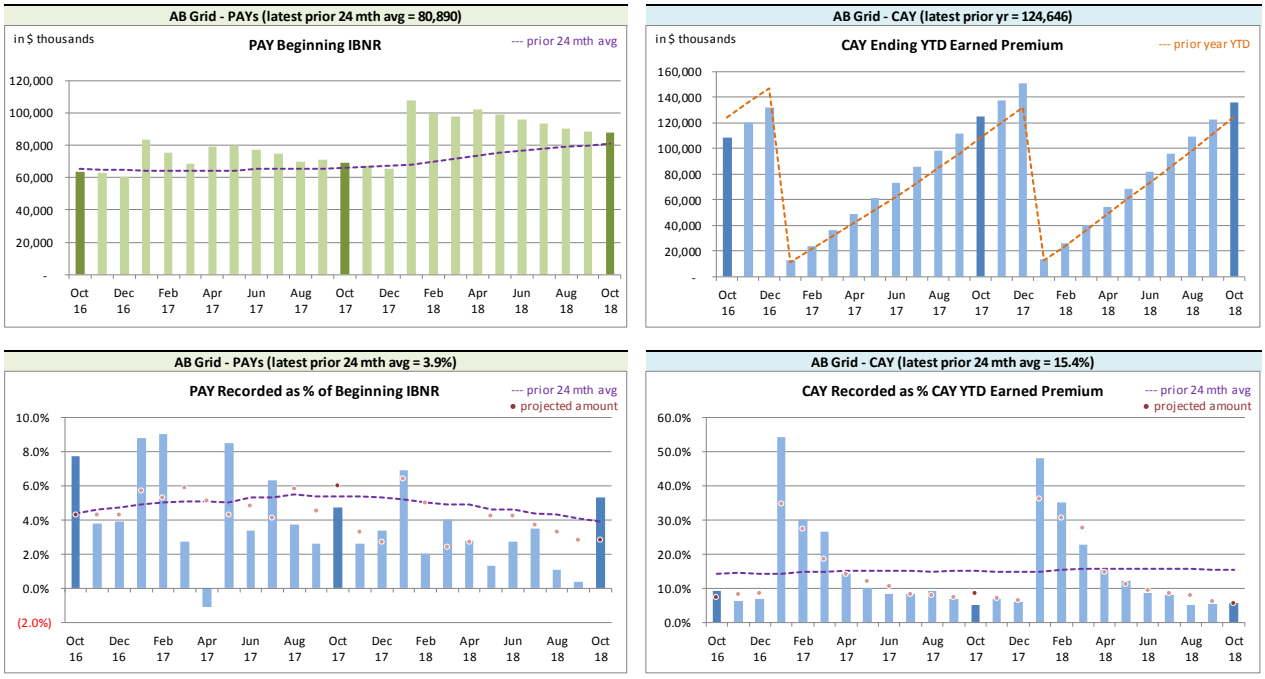




We are taking this information into consideration as part of our projection process.

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 changes 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).

*Alberta Grid RSP Levels that influence*[8] ***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:

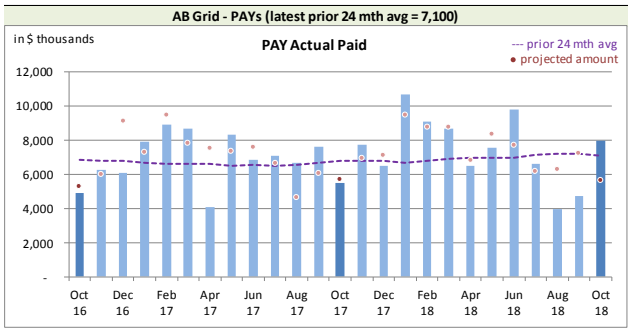
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate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

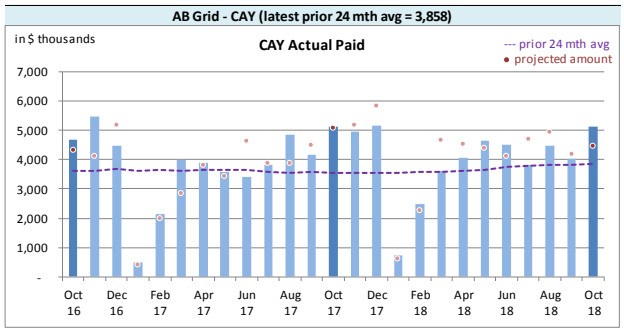
### 2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

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.

[8]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.

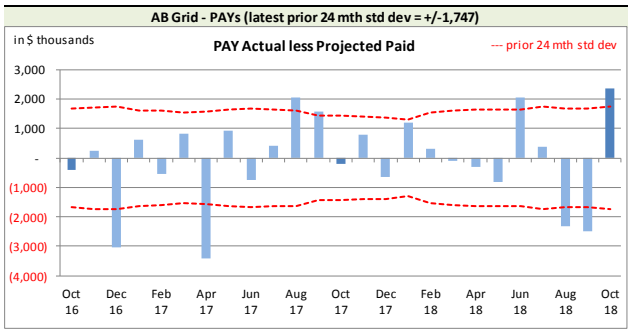
*Alberta Grid RSP Actual **Paid** activity by Calendar Month*

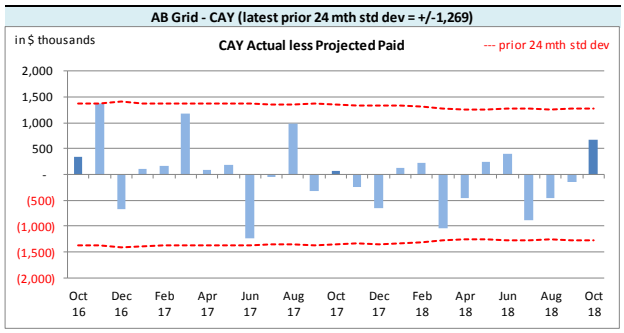



**Paid** activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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




| On Latest $ thousands | | |
|---|---|---|
| **Paid** | PAYs | CAY |
| Mthly Avg Paid (prior 24 mths) | 7,100 | 3,858 |
| std dev | 1,747 | 1,269 |
| A-P <> std dev | 8 | - |
| % <> std dev | 32.0% | 0.0% |
| norm <> std dev | 31.7% | 31.7% |

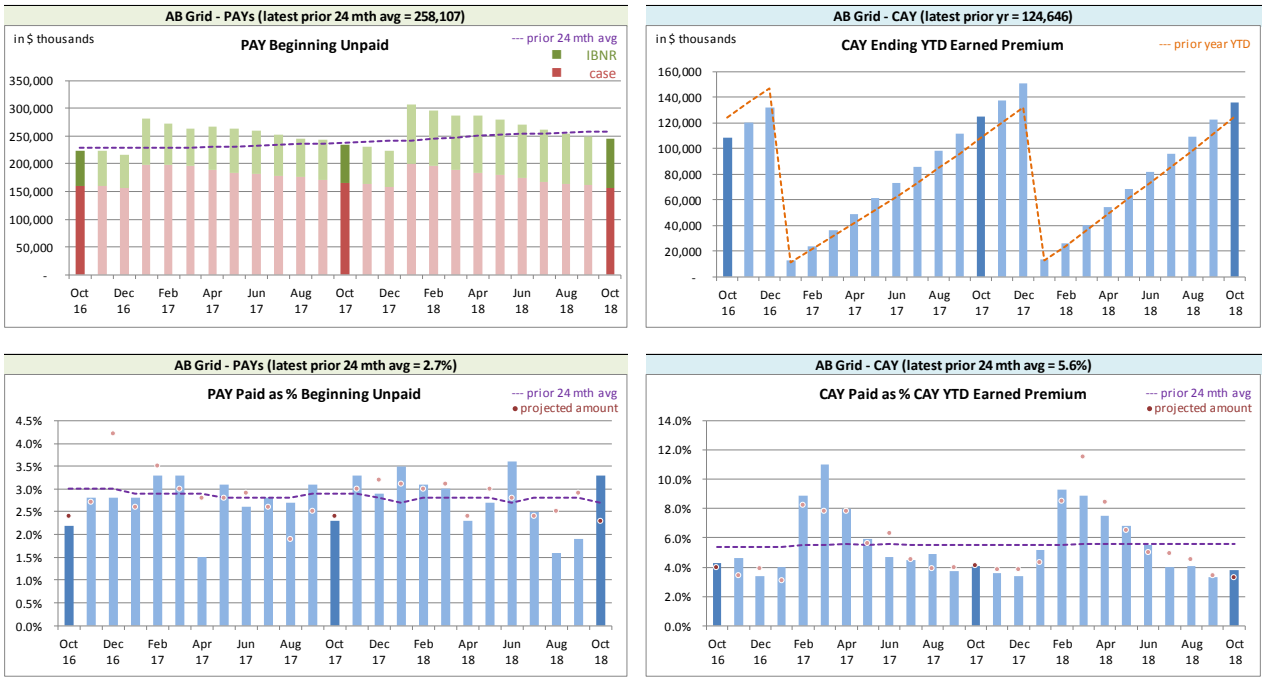
With respect to **paid** indemnity & allowed claims expense, 32% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on left), suggesting the projection process has performed no better than simply projecting the prior 24-month average amount (assuming it follows a normal distribution). Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

The PAY **paid** variance 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) **paid** variances fell outside one standard deviation 0% 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 lagging 24-month basis.

We have included, for reference, additional charts at the top of the next page related to levels influencing **paid** activity.

*Alberta Grid RSP Levels that influence*[9] ***Paid*** *activity by Calendar Month*




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

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

## 2.2 Actuarial Provisions

An "ultimate loss ratio matching method" (described in section 3) is used to determine the month's IBNR[10], 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 at the top of the next page summarizes variances in provisions included in this month's Operational Report and the associated

[9]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.

[10]For ease of discussion, "IBNR" is used in place of "provisions for incurred but not recorded (IBNR) and development".

one-month projections from last month's Report.

*Alberta Grid RSP Actual vs Projected Summary: IBNR and APV Amounts ($ thousands)*

Table 02

| | IBNR | | actuarial present value adjustments: Discount Amount | | actuarial present value adjustments: Provisions for Adverse Deviations | | IBNR + actuarial present value adjustments | |
|---|---|---|---|---|---|---|---|---|
| Accident Year | Actual | Actual less Projected | Actual | Actual less Projected | Actual | Actual less Projected | Actual | Actual less Projected |
| Prior | 25,784 | (2,494) | (5,235) | (792) | 11,088 | (427) | 31,637 | (3,713) |
| 2016 | 18,895 | (2,256) | (3,257) | (525) | 6,587 | (230) | 22,225 | (3,011) |
| 2017 | 34,152 | (1,856) | (4,576) | (716) | 8,444 | (270) | 38,020 | (2,842) |
| 2018 | 45,431 | (3,276) | (5,753) | (822) | 9,974 | (450) | 49,652 | (4,548) |
| TOTAL | 124,262 | (9,882) | (18,821) | (2,855) | 36,093 | (1,377) | 141,534 | (14,114) |

The IBNR provision is $9.9 million lower than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1, and due to the valuation implementation.

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

(i) the change projected last month;

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

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

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

The table below 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 deferred policy acquisition cost asset position (shown as a negative amount) prior to and after actuarial present value adjustments. Actuarial present value adjustments decrease the asset value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance and due to the valuation implementation.

*Alberta Grid 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: | (9,138) | (1,629) | 3,529 | (894) | (5,609) | (2,523) |
| balance as % unearned premium: | (10.4%) | (1.7%) | 4.0% | (1.1%) | (6.4%) | (2.8%) |
| actual unearned premium: | 88,089 | | | | | |
| less projected: | 1,413 | | | | | |

## 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[11] 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 below summarizes the calendar year-to-date results for indemnity & allowed claims expenses[12], 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 90.7% rather than 89.8% (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 Alberta Grid RSP Summary of Operations due to rounding.)

*Alberta Grid 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 | 552 | 0.4% | (7,479) | (5.6%) | (6,927) | (5.1%) | (7,750) | (5.8%) |
| CAY | 122,102 | 90.7% | 4,221 | 3.1% | 126,323 | 93.8% | 8,973 | (3.1%) |
| TOTAL | 122,654 | 91.1% | (3,258) | (2.4%) | 119,396 | 88.7% | 1,223 | (8.9%) |

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

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

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

[11] "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).

[12] 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.

## 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 Alberta Grid Risk Sharing Pool for the purposes of the most recent quarterly valuation. As discussed in section 3, IBNR reflected 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

IBNR + M/S actuarial present value adjustments

discount rate
2.28%

interest rate margin
25 basis pts

| Accident Year | Actual Sep. 2018 | Actual Oct. 2018 | Projected Nov. 2018 | Projected Dec. 2018 | Projected Dec. 2019 |
|---|---|---|---|---|---|
| 2004 | (71) | (71) | (71) | (71) | (71) |
| 2005 | (302) | (17) | (15) | (16) | 3 |
| 2006 | (148) | (71) | (67) | (67) | (39) |
| 2007 | (73) | (160) | (151) | (153) | (88) |
| 2008 | (5) | (9) | (7) | (12) | (2) |
| 2009 | 240 | 240 | 226 | 221 | 135 |
| 2010 | 224 | 665 | 628 | 608 | 375 |
| 2011 | 467 | 846 | 800 | 769 | 480 |
| 2012 | 3,048 | 2,524 | 2,379 | 2,324 | 1,394 |
| 2013 | 5,456 | 4,056 | 3,820 | 3,744 | 2,292 |
| 2014 | 10,415 | 9,045 | 8,748 | 8,387 | 5,129 |
| 2015 | 17,170 | 14,589 | 14,151 | 13,727 | 8,246 |
| 2016 | 25,751 | 22,225 | 21,781 | 21,160 | 14,674 |
| 2017 | 42,076 | 38,020 | 36,917 | 35,848 | 27,075 |
| 2018 | 48,574 | 49,652 | 51,822 | 53,916 | 37,567 |
| 2019 | - | - | - | - | 43,185 |
| TOTAL | 152,822 | 141,534 | 140,961 | 140,385 | 140,355 |
| Change | | (11,288) | (573) | (576) | |

*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 Sep. 2018 | Actual Oct. 2018 | Projected Nov. 2018 | Projected Dec. 2018 | Projected Dec. 2019 |
|---|---|---|---|---|---|---|
| 51.6% | 2004 | (79) | (79) | (79) | (79) | (79) |
| 59.4% | 2005 | (337) | (69) | (65) | (64) | (39) |
| 66.3% | 2006 | (156) | (80) | (75) | (74) | (44) |
| 70.6% | 2007 | (156) | (235) | (221) | (219) | (130) |
| 67.1% | 2008 | (93) | (89) | (84) | (83) | (49) |
| 60.4% | 2009 | 169 | 177 | 166 | 164 | 97 |
| 61.9% | 2010 | (162) | 352 | 331 | 328 | 194 |
| 66.7% | 2011 | (77) | 346 | 325 | 322 | 192 |
| 73.5% | 2012 | 2,289 | 1,882 | 1,769 | 1,751 | 1,038 |
| 75.8% | 2013 | 4,432 | 3,235 | 3,041 | 3,011 | 1,784 |
| 85.2% | 2014 | 8,719 | 7,744 | 7,512 | 7,212 | 4,273 |
| 94.7% | 2015 | 14,608 | 12,600 | 12,222 | 11,855 | 6,747 |
| 98.6% | 2016 | 21,583 | 18,895 | 18,517 | 17,961 | 11,819 |
| 90.6% | 2017 | 37,122 | 34,152 | 33,127 | 32,133 | 23,697 |
| 89.8% | 2018 | 43,584 | 45,431 | 47,282 | 49,056 | 34,197 |
| 89.1% | 2019 | - | - | - | - | 38,489 |
| | TOTAL | 131,446 | 124,262 | 123,768 | 123,274 | 122,186 |
| | Change | | (7,184) | (494) | (494) | |

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

# EXHIBIT C

## Premium Liabilities

TABLE EXHIBIT C

| Premium Liabilities | Actual Sep. 2018 | Actual Oct. 2018 | Projected Nov. 2018 | Projected Dec. 2018 | Projected Dec. 2019 |
|---|---|---|---|---|---|
| | Amounts in $000s | | | | |
| (1) unearned premium (UP) | 85,667 | 88,089 | 87,156 | 83,479 | 83,799 |
| FOR MEMBER SHARING | | | | | |
| (2) expected future costs ratio {% of (1)} | 96.6% | 93.6% | 93.5% | 93.4% | 95.1% |
| (3) expected future costs {(1) x (2)} | 82,746 | 82,480 | 81,517 | 77,985 | 79,694 |
| (4) premium deficiency / (deferred policy acquisition cost) | (2,921) | (5,609) | (5,639) | (5,494) | (4,105) |
| Excluding Actuarial Present Value Adjustments | | | | | |
| (5) expected future costs ratio {% of (1)} | 91.5% | 89.6% | 89.5% | 89.4% | 91.0% |
| (6) expected future costs {(1) x (5)} | 78,370 | 78,951 | 78,029 | 74,647 | 76,283 |
| (7) premium deficiency / (deferred policy acquisition cost) | (7,297) | (9,138) | (9,127) | (8,832) | (7,516) |

EXHIBIT D

## Projected Year-end Policy Liabilities

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

| Alberta Grid | Projected Balances as at Dec. 31, 2018 ($000s) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ending 2018 | nominal values | | | actuarial present value adjustments (apvs) | | | | | | |
| Acc Yr | Case | IBNR | Total Unpaid | discount | investment PfAD | nominal development PfAD | development PfAD discount | development PfAD | Total apvs | TOTAL |
| 2004 | - | (79) | (79) | - | - | 8 | - | 8 | 8 | (71) |
| 2005 | 710 | (64) | 646 | (17) | 2 | 65 | (2) | 63 | 48 | 694 |
| 2006 | 188 | (74) | 114 | (4) | - | 11 | - | 11 | 7 | 121 |
| 2007 | 1,225 | (219) | 1,006 | (35) | 4 | 101 | (4) | 97 | 66 | 1,072 |
| 2008 | 1,191 | (83) | 1,108 | (40) | 4 | 111 | (4) | 107 | 71 | 1,179 |
| 2009 | 772 | 164 | 936 | (37) | 4 | 94 | (4) | 90 | 57 | 993 |
| 2010 | 4,337 | 328 | 4,665 | (187) | 19 | 467 | (19) | 448 | 280 | 4,945 |
| 2011 | 7,127 | 322 | 7,449 | (298) | 30 | 745 | (30) | 715 | 447 | 7,896 |
| 2012 | 7,462 | 1,751 | 9,213 | (350) | 37 | 921 | (35) | 886 | 573 | 9,786 |
| 2013 | 9,670 | 3,011 | 12,681 | (533) | 51 | 1,268 | (53) | 1,215 | 733 | 13,414 |
| 2014 | 15,775 | 7,212 | 22,987 | (1,126) | 115 | 2,299 | (113) | 2,186 | 1,175 | 24,162 |
| 2015 | 28,314 | 11,855 | 40,169 | (2,169) | 241 | 4,017 | (217) | 3,800 | 1,872 | 42,041 |
| 2016 | 33,320 | 17,961 | 51,281 | (3,128) | 308 | 6,410 | (391) | 6,019 | 3,199 | 54,480 |
| 2017 | 33,464 | 32,133 | 65,597 | (4,395) | 459 | 8,200 | (549) | 7,651 | 3,715 | 69,312 |
| PAYs (sub-total): | 143,555 | 74,218 | 217,773 | (12,319) | 1,274 | 24,717 | (1,421) | 23,296 | 12,251 | 230,024 |
| CAY (2018) | 48,324 | 49,056 | 97,380 | (6,622) | 682 | 11,588 | (788) | 10,800 | 4,860 | 102,240 |
| **claims liabilities:** | 191,879 | 123,274 | 315,153 | (18,941) | 1,956 | 36,305 | (2,209) | 34,096 | 17,111 | 332,264 |
| | Unearned Premium | Premium Defiency / (DPAC) | Total Provision | discount | investment PfAD | nominal development PfAD | development PfAD discount | development PfAD | Total apvs | TOTAL* |
| **premium liabilities:** | 83,479 | (8,832) | 74,647 | (4,388) | 446 | 7,736 | (456) | 7,280 | 3,338 | 77,985 |
| | | | | | | | | | | *Total may not be sum of parts, as apvs apply to future costs within UPR |
| **policy liabilities:** | | | **389,800** | **(23,329)** | **2,402** | **44,041** | **(2,665)** | **41,376** | **20,449** | **410,249** |

EXHIBIT E

Discount Rate & Margins for Adverse Deviations

The tables below present selected margins for adverse development by coverage (the total is a weighted average, based on the unpaid claims projection for December 31, 2018 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Sep. 30, 2018)

| Accident Year | Third Party Liability | Accident Benefits | Other Coverages | Total |
|---|---|---|---|---|
| | Margins | Margins | Margins | Margins |
| 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% | 8.5% | 10.0% |
| 2013 | 10.0% | 10.0% | 9.9% | 10.0% |
| 2014 | 10.0% | 10.0% | 10.0% | 10.0% |
| 2015 | 10.0% | 10.0% | 10.0% | 10.0% |
| 2016 | 12.5% | 10.0% | 12.5% | 12.5% |
| 2017 | 12.4% | 10.0% | 12.5% | 12.5% |
| 2018 | 12.2% | 10.0% | 8.2% | 11.9% |
| 2019 | 11.8% | 10.0% | 5.1% | 10.4% |
| prem liab | 11.8% | 10.0% | 5.1% | 10.4% |

| | |
|---|---|
| discount rate: | 2.28% |
| 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 (2.28%), the prior valuation assumption (1.87%) and the prior fiscal year end valuation assumption (1.76%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

$ Format: $000s

| | Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2018 projected Unpaid | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AY** | 1.28% | 1.78% | 2.28% | 2.78% | 3.28% | 3.78% | 1.87% | 1.76% |
| 2004 | - | - | - | - | - | - | - | - |
| 2005 | 837 | 832 | 827 | 822 | 817 | 812 | 831 | 832 |
| 2006 | 255 | 253 | 251 | 249 | 247 | 245 | 252 | 253 |
| 2007 | 1,249 | 1,240 | 1,230 | 1,221 | 1,212 | 1,203 | 1,238 | 1,240 |
| 2008 | 1,192 | 1,182 | 1,173 | 1,163 | 1,154 | 1,146 | 1,180 | 1,182 |
| 2009 | 916 | 908 | 900 | 893 | 885 | 878 | 907 | 909 |
| 2010 | 5,995 | 5,943 | 5,891 | 5,840 | 5,791 | 5,742 | 5,933 | 5,945 |
| 2011 | 7,863 | 7,793 | 7,725 | 7,659 | 7,594 | 7,530 | 7,781 | 7,797 |
| 2012 | 10,131 | 10,046 | 9,962 | 9,880 | 9,800 | 9,722 | 10,030 | 10,049 |
| 2013 | 14,396 | 14,262 | 14,130 | 14,001 | 13,876 | 13,751 | 14,237 | 14,267 |
| 2014 | 26,583 | 26,298 | 26,014 | 25,739 | 25,473 | 25,209 | 26,245 | 26,309 |
| 2015 | 43,967 | 43,445 | 42,925 | 42,423 | 41,938 | 41,458 | 43,345 | 43,464 |
| 2016 | 55,220 | 54,473 | 53,736 | 53,024 | 52,332 | 51,654 | 54,338 | 54,500 |
| 2017 | 71,927 | 70,852 | 69,801 | 68,789 | 67,805 | 66,843 | 70,660 | 70,899 |
| 2018 | 104,823 | 103,231 | 101,676 | 100,169 | 98,718 | 97,302 | 102,946 | 103,299 |
| Total | 345,354 | 340,758 | 336,241 | 331,872 | 327,642 | 323,495 | 339,923 | 340,945 |
| | curr - 100 bp | curr - 50 bp | curr val assumption | curr + 50bp | curr + 100bp | curr + 150bp | prior val assumption | prior fyr end assumption |

| | Dollar Impact Relative to Valuation Assumption | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AY** | 1.28% | 1.78% | 2.28% | 2.78% | 3.28% | 3.78% | 1.87% | 1.76% |
| Total | 9,113 | 4,517 | - | (4,369) | (8,599) | (12,746) | 3,682 | 4,704 |
| | curr - 100 bp | curr - 50 bp | curr val assumption | curr + 50bp | curr + 100bp | curr + 150bp | prior val assumption | prior fyr end assumption |

| | Percentage Impact Relative to Valuation Assumption | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AY** | 1.28% | 1.78% | 2.28% | 2.78% | 3.28% | 3.78% | 1.87% | 1.76% |
| 2004 | - | - | - | - | - | - | - | - |
| 2005 | 1.2% | 0.6% | - | (0.6%) | (1.2%) | (1.8%) | 0.5% | 0.6% |
| 2006 | 1.6% | 0.8% | - | (0.8%) | (1.6%) | (2.4%) | 0.4% | 0.8% |
| 2007 | 1.5% | 0.8% | - | (0.7%) | (1.5%) | (2.2%) | 0.7% | 0.8% |
| 2008 | 1.6% | 0.8% | - | (0.9%) | (1.6%) | (2.3%) | 0.6% | 0.8% |
| 2009 | 1.8% | 0.9% | - | (0.8%) | (1.7%) | (2.4%) | 0.8% | 1.0% |
| 2010 | 1.8% | 0.9% | - | (0.9%) | (1.7%) | (2.5%) | 0.7% | 0.9% |
| 2011 | 1.8% | 0.9% | - | (0.9%) | (1.7%) | (2.5%) | 0.7% | 0.9% |
| 2012 | 1.7% | 0.8% | - | (0.8%) | (1.6%) | (2.4%) | 0.7% | 0.9% |
| 2013 | 1.9% | 0.9% | - | (0.9%) | (1.8%) | (2.7%) | 0.8% | 1.0% |
| 2014 | 2.2% | 1.1% | - | (1.1%) | (2.1%) | (3.1%) | 0.9% | 1.1% |
| 2015 | 2.4% | 1.2% | - | (1.2%) | (2.3%) | (3.4%) | 1.0% | 1.3% |
| 2016 | 2.8% | 1.4% | - | (1.3%) | (2.6%) | (3.9%) | 1.1% | 1.4% |
| 2017 | 3.0% | 1.5% | - | (1.4%) | (2.9%) | (4.2%) | 1.2% | 1.6% |
| 2018 | 3.1% | 1.5% | - | (1.5%) | (2.9%) | (4.3%) | 1.2% | 1.6% |
| Total | 2.7% | 1.3% | - | (1.3%) | (2.6%) | (3.8%) | 1.1% | 1.4% |
| | curr - 100 bp | curr - 50 bp | curr val assumption | curr + 50bp | curr + 100bp | curr + 150bp | prior val assumption | prior fyr end assumption |

EXHIBIT G



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

| | |
|---|---|
| RSP | **Alberta Grid** |
| AccountCode Desc | **IBNR - Discou d** |

**M/S IBNR - in $000s**

| | Values | | | | | | |
|---|---|---|---|---|---|---|---|
| **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** |
| 2004 | (71) | - | - | - | - | - | (71) |
| 2005 | (302) | 23 | (23) | 285 | 285 | (94.4%) | (17) |
| 2006 | (148) | 11 | 67 | (1) | 77 | (52.0%) | (71) |
| 2007 | (73) | 8 | (87) | (8) | (87) | 119.2% | (160) |
| 2008 | (5) | 6 | (2) | (8) | (4) | 80.0% | (9) |
| 2009 | 240 | (14) | 22 | (8) | - | - | 240 |
| 2010 | 224 | (1) | 15 | 427 | 441 | 196.9% | 665 |
| 2011 | 467 | (12) | (185) | 576 | 379 | 81.2% | 846 |
| 2012 | 3,048 | (183) | 118 | (459) | (524) | (17.2%) | 2,524 |
| 2013 | 5,456 | (341) | (152) | (907) | (1,400) | (25.7%) | 4,056 |
| 2014 | 10,415 | (225) | (124) | (1,021) | (1,370) | (13.2%) | 9,045 |
| 2015 | 17,170 | (343) | (1,035) | (1,203) | (2,581) | (15.0%) | 14,589 |
| 2016 | 25,751 | (515) | (1,223) | (1,788) | (3,526) | (13.7%) | 22,225 |
| 2017 | 42,076 | (1,214) | 254 | (3,096) | (4,056) | (9.6%) | 38,020 |
| 2018 | 48,574 | 5,626 | (602) | (3,946) | 1,078 | 2.2% | 49,652 |
| **Grand Total** | **152,822** | **2,826** | **(2,957)** | **(11,157)** | **(11,288)** | **(7.4%)** | **141,534** |

EXHIBIT G



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

| RSP | Alberta Grid |
|---|---|
| AccountCode Desc | IBNR - Undisc nted |

**IBNR - in $000s**

| AccYear | Values<br>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 |
|---|---|---|---|---|---|---|---|
| 2004 | (79) | - | - | - | - | - | (79) |
| 2005 | (337) | 24 | (24) | 268 | 268 | (79.5%) | (69) |
| 2006 | (156) | 11 | 65 | - | 76 | (48.7%) | (80) |
| 2007 | (156) | 11 | (90) | - | (79) | 50.6% | (235) |
| 2008 | (93) | 7 | (3) | - | 4 | (4.3%) | (89) |
| 2009 | 169 | (12) | 20 | - | 8 | 4.7% | 177 |
| 2010 | (162) | 11 | 65 | 438 | 514 | (317.3%) | 352 |
| 2011 | (77) | 5 | (182) | 600 | 423 | (549.4%) | 346 |
| 2012 | 2,289 | (160) | 119 | (366) | (407) | (17.8%) | 1,882 |
| 2013 | 4,432 | (310) | (153) | (734) | (1,197) | (27.0%) | 3,235 |
| 2014 | 8,719 | (174) | (77) | (724) | (975) | (11.2%) | 7,744 |
| 2015 | 14,608 | (292) | (982) | (734) | (2,008) | (13.7%) | 12,600 |
| 2016 | 21,583 | (432) | (1,208) | (1,048) | (2,688) | (12.5%) | 18,895 |
| 2017 | 37,122 | (1,114) | 238 | (2,094) | (2,970) | (8.0%) | 34,152 |
| 2018 | 43,584 | 5,123 | (556) | (2,720) | 1,847 | 4.2% | 45,431 |
| **Grand Total** | **131,446** | **2,698** | **(2,768)** | **(7,114)** | **(7,184)** | **(5.5%)** | **124,262** |