

### Enrolment Projection Methodology

Enrolment projection calculations are comprised of two main components - the historic school community and students generated by new residential development. Enrolment projection software (Paradigm STGI - SPS Plus) allows staff to analyze historical enrolment trends, examine yield rates (by dwelling type) of residential development and factor in this information when projecting enrolments. The software analyzes and summarizes the grade by grade, year by year, progression of students. Each school and community exhibits different trends or movements which are used to create retention rates for each grade at each school. The retention rates capture any gains or losses in enrolment that a school may experience as students move from one grade to another. Retention rate methodology is a common practice in Ontario School Boards.

New residential development forecasts allow planning staff the ability to estimate the number of students generated by new development. Planning staff apply historical student yields (by unit type) to municipally approved development forecasts to project the estimated numbers of students generated by housing units. The yields are broken down by housing types which include single-detached, semi-detached, townhome and apartment. Each community has its own unique yield. Historical yields are determined using Municipal Property Assessment Corporation (MPAC) data and historical student data. The MPAC data indicates the count and unit type of homes in the community and staff then compare the number of existing students living in the houses. By comparing the two sets of data, a student yield for new residential homes can be determined and applied to the residential forecast.

Student enrolments are revised annually to reflect current actual student counts, and calculation variables are re-examined for adjustments that may be required. Enrolments projections are compared against historical enrolments, population forecasts, Census and birth data to validate that population information is trending in a similar manner.

Any approved Board decision such as school closures, program or boundary changes are annually incorporated into the student enrolment projections. There are several other school specific assumptions captured in the projections as well. These assumptions can include programing (e.g. French Immersion), Board policy (e.g. Out of Catchment) or Ministry initiatives (e.g. full-day kindergarten). Multiple forms of current data are incorporated into enrolment projections but annual enrolment projections can be impacted by unexpected circumstances. Events such as economic recession/growth, increased immigration and real estate booms are challenging to anticipate and capture in enrolment projections. When these events impact school enrolment, staff review the short and long-term effects on accommodation and enrolment projections.

Enrolment projections can be created for a variety of time frames; one year, five-year or ten-year projections are typical time frames used by the Planning, Accommodation & Rentals Division. An added feature of the projection software also allows staff to create scenarios during accommodation and/or boundary reviews to show the effect of school closures or boundary changes on student enrolment.

### Student Yields

HWDSB’s student yield analysis for projected new residential development provides the actual student yields for a specified geography using the housing data from MPAC and the Board’s student data. The MPAC and student data are both geocoded (digitally referenced on a map) which allows for matching to be done on each individual property to determine the units that have HWDSB students. From this, yield factors are calculated based on dwelling types (single family homes, semidetached, townhomes, and apartments) to determine and become comprised within projected student enrolments.

Residential development yields will vary based on community and are calculated accordingly. The following graphic illustrates the 2018 Board- wide average student yields for elementary and secondary – they represent a single-family home yield and a townhome yield. As per the current Board-wide yield, 4 new single-family homes would yield 1 HWDSB elementary aged student ( $4 \times 0.24$ ) and approximately 6.5 townhome units for 1 student ( $6.6 \times 0.15$ ).

#### Elementary Yields



= .24 Students



= .15 Students

#### Secondary Yields



= .10 Students



= .05 Students

### Student Apportionment

HWDSB’s apportionment of students compared to our co-terminus Board is illustrated in the table below by elementary and secondary panel. HWDSB’s elementary apportionment has been steady at approximately 65% over the past 5 school years. HWDSB’s secondary apportionment has averaged approximately 60% but over the past 5 years HWDSB’s apportionment has reduced from 61% to 58.5%.

| Elementary Apportionment   |         |         |         |         |        | Secondary Apportionment   |         |         |         |         |        |
|----------------------------|---------|---------|---------|---------|--------|---------------------------|---------|---------|---------|---------|--------|
| HWDSB Elementary Students  |         |         |         |         |        | HWDSB Secondary Students  |         |         |         |         |        |
| 2013-14                    | 2014-15 | 2015-16 | 2016-17 | 2017-18 | Avg    | 2013-14                   | 2014-15 | 2015-16 | 2016-17 | 2017-18 | Avg    |
| 31,013                     | 34,336  | 34,346  | 35,107  | 35,383  | 34,037 | 15,353                    | 14,801  | 14,391  | 13,895  | 13,902  | 14,468 |
| 64.8%                      | 64.7%   | 64.9%   | 65.4%   | 65.6%   | 65.0%  | 60.9%                     | 60.3%   | 59.6%   | 58.9%   | 58.5%   | 59.9%  |
| HWDCSB Elementary Students |         |         |         |         |        | HWDCSB Secondary Students |         |         |         |         |        |
| 2013-14                    | 2014-15 | 2015-16 | 2016-17 | 2017-18 | Avg    | 2013-14                   | 2014-15 | 2015-16 | 2016-17 | 2017-18 | Avg    |
| 16,846                     | 18,699  | 18,558  | 18,557  | 18,537  | 18,239 | 9,842                     | 9,763   | 9,759   | 9,697   | 9,856   | 9,783  |
| 35.2%                      | 35.3%   | 35.1%   | 34.6%   | 34.4%   | 35.0%  | 39.1%                     | 39.7%   | 40.4%   | 41.1%   | 41.5%   | 40.1%  |

### On the Ground Capacity

On the Ground Capacity (OTG) is the number that the Ministry of Education uses to quantify the capacity of a school for students. The OTG represents number of students the permanent structure of a school building can accommodate, by instructional space, and as per room loadings set by the Ministry of Education. The various types of rooms have a different loading and they differ between elementary and secondary panels. The total of the rooms

## 2018 Long-Term Facilities Master Plan Section 1.2: Enrolment and Capacity Trends

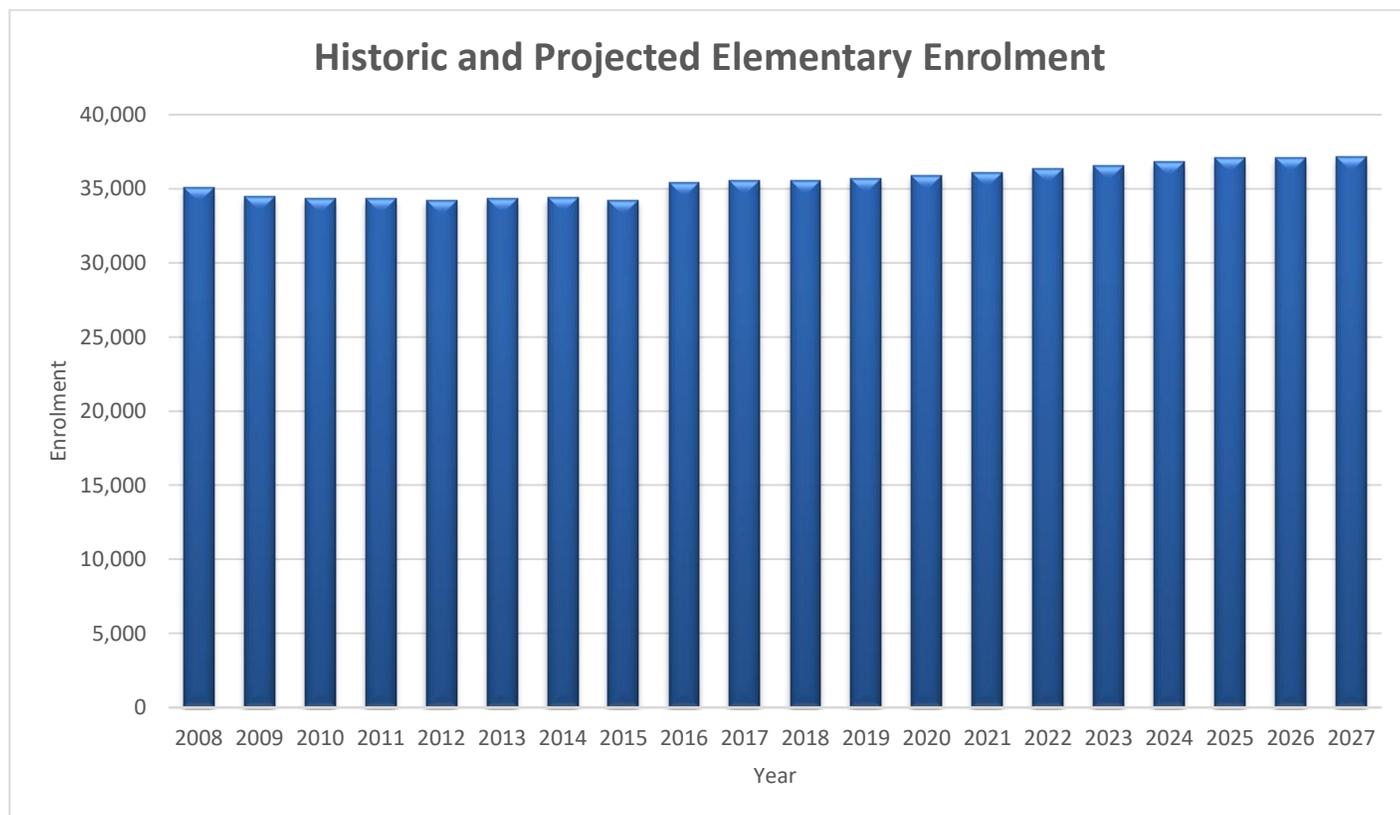
in a school, and their assigned capacities are added together to calculate its OTG. Loading examples of classroom types for elementary and secondary panels are shown below.

| Instructional Space | Elementary Loading | Secondary Loading |
|---------------------|--------------------|-------------------|
| Kindergarten        | 26                 | -                 |
| Classroom           | 23                 | 21                |
| Special Education   | 9                  | 9                 |
| Resource Room       | 12                 | 12                |

School OTGs are recorded in a Ministry database that tracks information for all schools in Ontario. The database, entitled School Facilities Inventory System (SFIS), indicates a capacity for each school based on the number and type of instructional spaces it has (see above table). HWDSB has undergone the process of renewing all school architectural floor plans which helps ensure accurate data is being used for long term capital planning and that room information aligns with the Ministry SFIS.

### Elementary Historic and Projected Enrolment

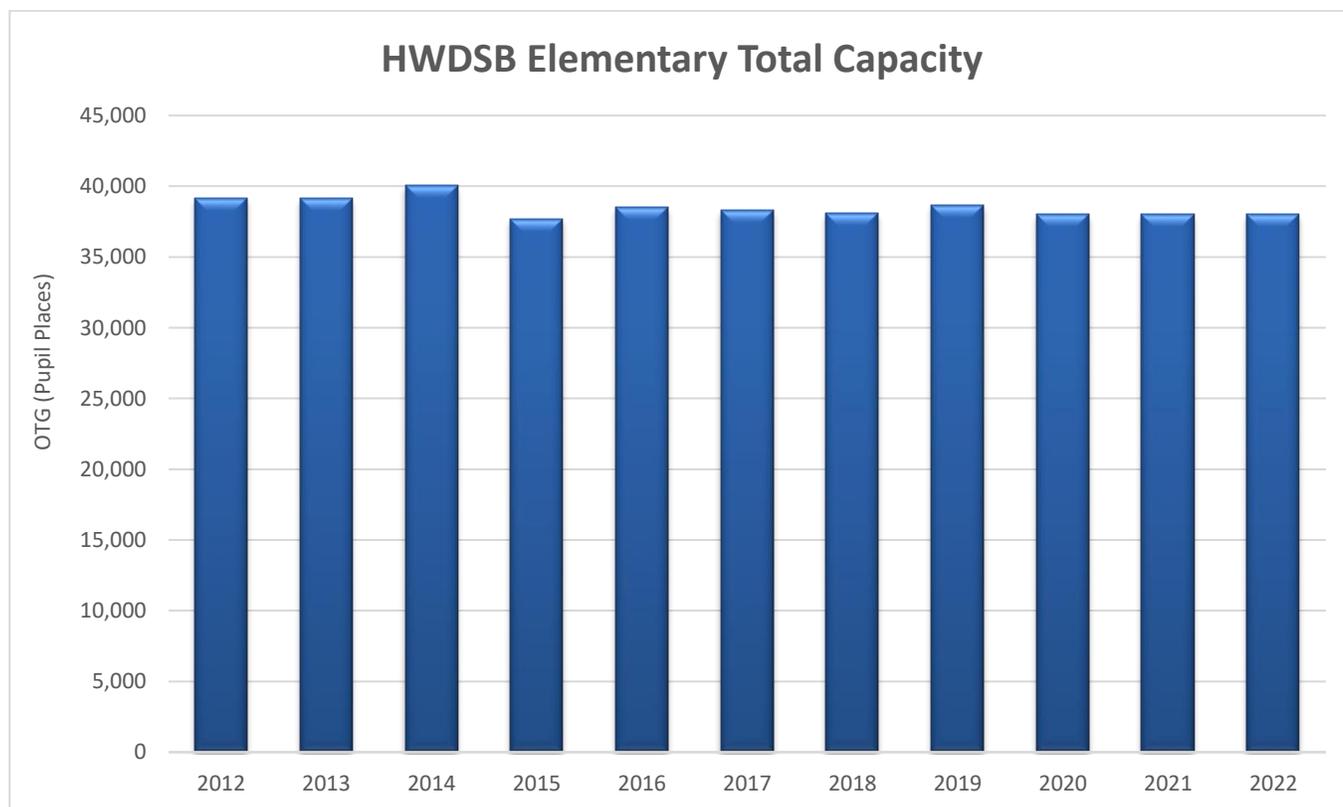
The following graph illustrates the elementary historical and projected enrolment of Hamilton-Wentworth District School Board from 2008 to 2027. Current and projected enrolments are as of October 31<sup>st</sup>, 2017.



From 2009 to 2015 HWDSB’s elementary enrolment remained relatively stable between 34,000 and 34,500 students. In 2004, elementary enrolment was over 38,000 students and from 2004 to 2008, enrolment declined rapidly to below 35,000. This decline was not only in Hamilton but was experienced across Ontario. In 2016, HWDSB’s elementary enrolment grew beyond 35,000 for the first time since 2008. Currently in 2017, elementary enrolment is approximately 35,550 students. HWDSB’s elementary enrolment total is projected to grow at a stable rate for the next ten years. Factors for projected enrolment growth include residential development, Hamilton’s growing population, recent increased immigration and a change in demographics as described in section 1.1. Although the total enrolment is project to grow, individual school enrolments will fluctuate based on neighbourhood demographics or new residential development.

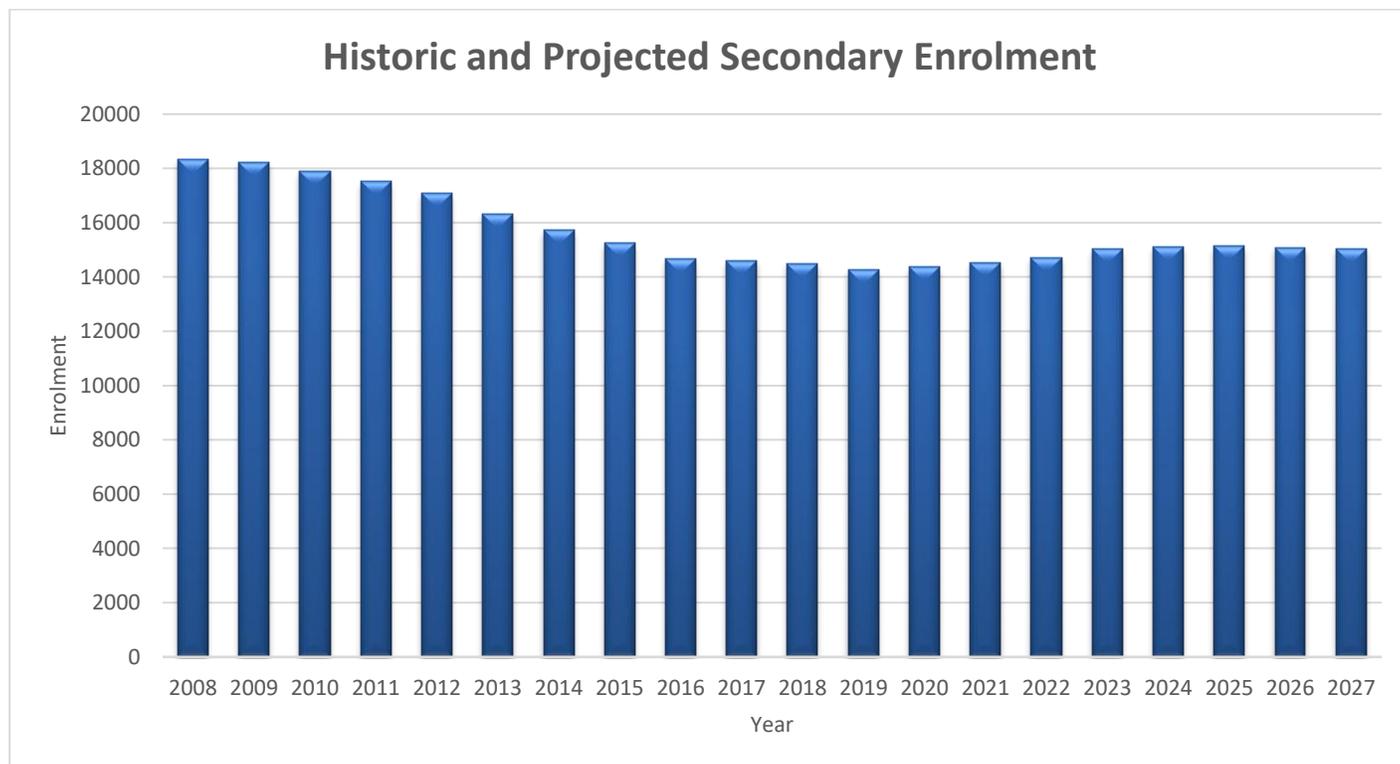
### Elementary Capacity

HWDSB’s elementary capacity has changed significantly over the past 5 years. Through accommodation reviews and new construction, the elementary capacity has dropped from over 40,000 pupil places in 2014 to approximately 38,300 pupil places in 2017. The change will continue as Trustees have approved the closure of 20 elementary facilities based on the construction of new/replacement schools or significant renovations to existing facilities. Based on the approved closures and approved school construction, overall capacity of the elementary panel in Hamilton should decrease to just under 38,000 pupil places by 2020. Projected elementary enrolment beyond 2025 is slightly above 37,000 students resulting is a projected 97% Board wide elementary utilization. This calculation only includes approved capital projects and does not include identified future schools in Binbrook, Upper Stoney Creek, Winona and Waterdown.



### Secondary Historic and Projected Enrolment

The following graph demonstrates the secondary historic and projected enrolment of the Hamilton-Wentworth District School Board from 2006 to 2026. Current and projected enrolments are as of October 31<sup>st</sup>, 2017.



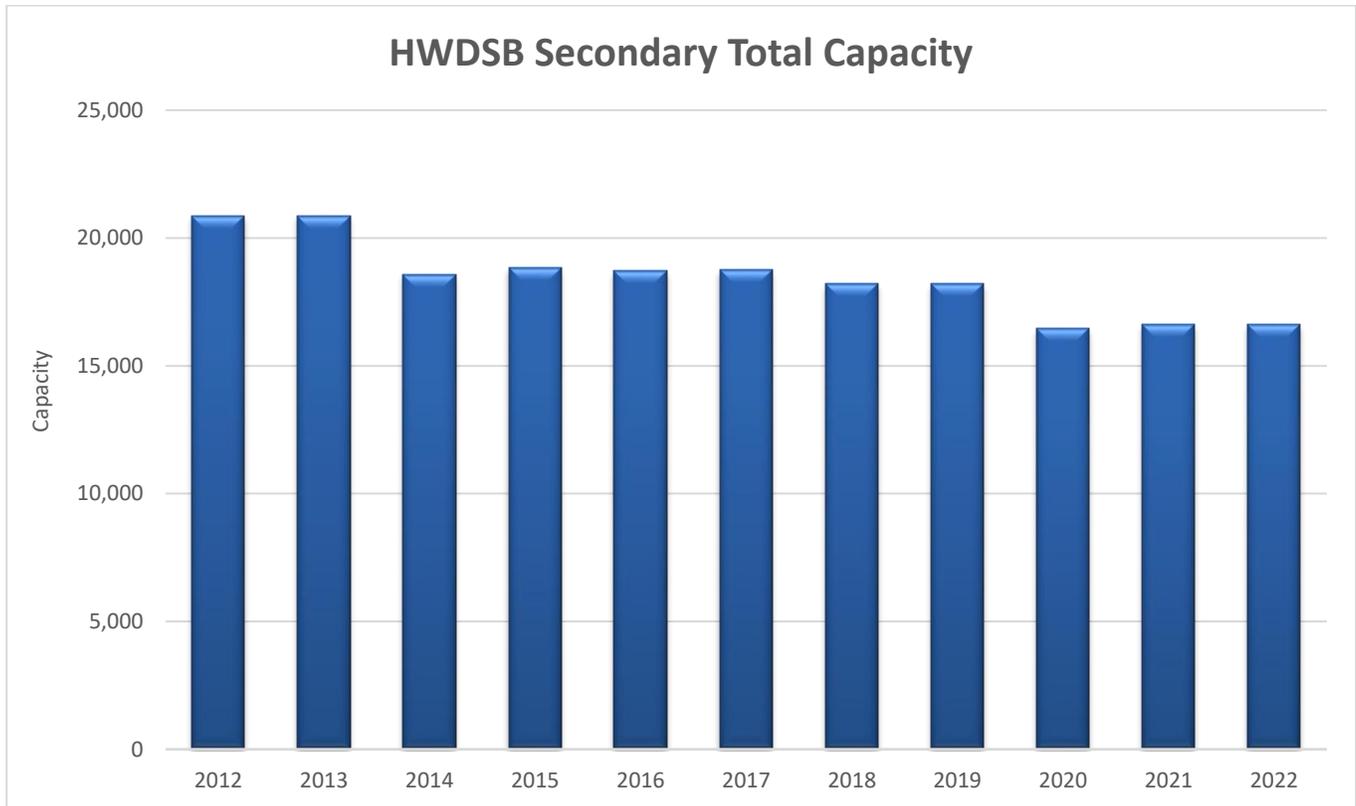
Since 2008, HWDSB secondary enrolment has decreased from over 18,000 students to approximately 14,600 students in 2017. Total secondary enrolment is expected to continue to decline, then projected to stabilize and slightly increase by the early 2020s. The projected increase is due to the increasing elementary enrolment, residential development and population growth. By 2023, it is expected that the secondary enrolment will be approximately 15,000 students.

### Secondary Capacity

From 2004 to 2012, the Board’s total secondary panel capacity remained stable at approximately 20,000 pupil places. HWDSB secondary enrolment counts that last matched this total capacity (20,000 pupil places) was in 2000 - approximately 19,500 students. Significant changes to secondary capacity have taken place since 2012.

Construction of a new wing at Waterdown District High School in 2012, the closures of Hill Park, Parkside and Parkview in 2014 and in 2015, an addition was completed at Saltfleet Secondary School. Mountain Secondary closed in June of 2017. Please see the chart below which depicts secondary capacity since 2012.

As of October 31, 2017, the secondary enrolment was approximately 14,600 students which equates to approximately 4,100 excess secondary pupil places. Hamilton-Wentworth District School board has approved the closure of Barton (currently the temporary site of Nora Frances Henderson Secondary), Delta and Sir John A. Macdonald. To replace these schools, the Ministry of Education has approved the construction of Nora Frances Henderson Secondary School (Rymal Road East at Upper Sherman) and a New North Secondary school located at south of Tim Hortons Field. With these closures and new construction, the capacity of the secondary panel will be approximately 16,600 pupil places. This results in a projected 86% total utilization rate by 2020 and 91% utilization by 2025.



### Portables

In 2011, a new approach to portable and portapak management was established at HWDSB. The Portable Allocation Process provides the framework for making use of, and reducing the reliance of temporary accommodation. The result of the process has decreased operating expenses, eliminated old portables in need of repair and ensured equitable allocation of temporary classrooms across the system. The process has ensured that schools who have temporary accommodation are utilizing the built space to its maximum capacity before using portables. If the built space is deemed sufficient then the portables are to be moved, locked or demolished depending on their condition.

There are three different types of temporary accommodation. There are portables, portapaks and relocatable classroom modules (RCM). A portable is an individual transportable classroom that is independent from the school. A portapak and RCM are larger spaces configured for instructional use.

There are significant costs associated with the purchase, maintenance and relocation of portables. The purchase price of a portable is approximately \$75,000, while the cost of moving a portable is approximately \$40,000. Annual operating cost of a portable is approximately \$20,000 which includes heating, cooling, electricity, regular cleaning, maintenance and capital costs. The demolition costs for a portable is roughly \$7,500 and is strongly recommended for portables in poor condition which cannot be sold.

Since 2010/11, HWDSB has reduced its portable count from 248 to 161 in 2017/18. Please see the reduction transition in the chart below. Due to some significant capital projects at schools, additional portables were leased to provide temporary accommodation while portions of the school were offline for renovations.

|                      | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 |
|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>Portables</b>     | 148     | 143     | 114     | 111     | 106     | 108     | 97      | 105     |
| <b>Portapaks/RCM</b> | 100     | 90      | 77      | 72      | 56      | 62      | 56      | 56      |
| <b>Total</b>         | 248     | 233     | 191     | 183     | 162     | 170     | 153     | 161     |

Portables will be used to aid in short term accommodation pressures. School's enrolment can fluctuate year to year which may cause a need for temporary accommodation. Portables are allocated to schools based on year to year needs. Portapaks will only be issued to schools with significant long-term enrolment pressure with no future accommodation relief anticipated. Accommodation relief can be in the form of a boundary change, program change or new construction (school or addition). In the case where these three solutions are not viable, a portapak for schools with long term needs will be considered.

Portable Inventory as of March 2018

| Elementary School | Portables | Portapaks |
|-------------------|-----------|-----------|
| AM Cunningham     | 4         |           |
| Ancaster Meadow   | 6         |           |
| Bellmoore         | 10        | 6         |
| Billy Green       | 8         |           |
| C.B. Stirling     |           | 6         |
| C.H. Bray         | 2         | 6         |
| Central           | 2         |           |
| Earl Kitchener    | 1         |           |
| Fessenden         | 6         |           |
| Flamb. Centre     |           | 6         |
| Franklin Road     | 2         |           |
| Glen Echo         | 3         |           |
| Guy Brown         | 3         |           |
| Helen Detwiler    |           | 6         |
| Huntington Park   |           | 6         |
| Janet Lee         | 4         |           |
| Lake Ave          | 2         |           |
| Lawfield          | 5         |           |
| Mary Hopkins      | 2         |           |
| Memorial (SC)     | 2         |           |
| Mount Albion      | 3         | 4         |
| Mount Hope        | 2         |           |
| Mountain View     |           | 6         |
| Norwood Park      | 3         |           |
| Queensdale        | 1         |           |
| R.A. Riddell*     | 4         |           |
| Ray Lewis         | 1         |           |
| Ridgemount        | 2         |           |
| Ryerson           | 4         |           |
| Spencer Valley    | 3         |           |
| Tapleystown       | 4         |           |
| Templemead        | 2         |           |
| Winona            | 1         | 6         |
| Yorkview          |           | 4         |
| <b>Total</b>      | <b>92</b> | <b>56</b> |

| Secondary School | Portables | Portapaks |
|------------------|-----------|-----------|
| Saltfleet        | 3         |           |
| Westmount        | 8         |           |
| <b>Total</b>     | <b>11</b> | <b>0</b>  |

| Administration Building | Portables | Portapaks |
|-------------------------|-----------|-----------|
| Vincent Massey          | 2         |           |
| <b>Total</b>            | <b>2</b>  | <b>0</b>  |

| Grand Total  | Portables  | Portapaks |
|--------------|------------|-----------|
| <b>Total</b> | <b>105</b> | <b>56</b> |

\*RA Riddell 4th portable is owned by day