## Enrollment Projection Update

# Ad Hoc Subcommittee of the Advisory Committee 

November 27, 2018

## Overview

1. Addressing inconsistencies in 2017-2018 Enrollment Report
2. The 2018 Enrollment Report - Preliminary Projections
3. The ongoing impact of historic enrollment growth on Brookline's Public Schools

## PSB Annual Enrollment Projection Report



- What the Enrollment Projection Report is
* First published in 2016
* A snapshot of current enrollment and birth data used to project future enrollment
* Report created once per year after October 1 Enrollment is certified with the state and annual births are shared by Town Clerk's office
* Purpose is for it to be used as a planning tool.
* It is not meant to be a definitive prediction of actual enrollment
* Methodology continues to be refined
- "The report and its content will continue to be updated as more student based information and data becomes available."


## PSB Annual Enrollment Projection Report

Methodology - a combination of three factors

1. Annual births

- Future births based on three-year average of actual births

2. Progression Rates --

- Calculated for each grade
- Birth to K progression rate - recalculated each year using the new K class.
- Birth to Kindergarten Five-Year Average - Most recent five year average used to create the future K projections each year
- Specific grade level progression rates used to calculate enrollment at each grade

3. Enrollment from Known Housing Developments that have been filed with Planning Department. Each year PSB uses the list it gets from Planning Department

## Concerns Raised by Nobrega and Doggett



Two things are happening in this critique

1. Recalculating last year's report based on new information and then calling into question last year's report

- We will address this by sharing the new enrollment projections

2. Three questions raised about the methodology and the calculations in the $2017-18$ report
a. Adding 40 students in METCO and Materials Fee Program into the methodology throughout the ten-year forecast
b. Outdated birth data and the discrepancy between two different tables in the report
c. Housing development assumptions that generate projected student increases appear to overstate student population projections

## Question \#1

Adding 40 students in METCO and Materials Fee Program into the methodology throughout the ten-year forecast

* In checking the progression rates used, we confirmed that the 40 students were included in the methodology incorrectly.
* We recalculated the projections without the METCO and Material Fee students and compared them with the published report


## Responsé:

- 140 Students -- Revised 2017 Enrollment Projections result in a total of 140 student difference in FY 2022 across all elementary schools
- 18 Students per School - 140 students equals 18 students per elementary schools or 2 students per grade per school


## Comparison: 2017 Original and 2017 Revised Projections

| K-8 Projections | FY18 | FY19 | FY20 | FY21 | FY22 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Original 2017 Report | 5,482 | 5,567 | 5,626 | 5,640 | 5,585 |  |
| Revised 2017 | 5,482 | 5,527 | 5,545 | 5,520 | 5,425 |  |
| Difference | 0 |  | 40 | 81 | 120 | 160 |


| K-8 with New Housing | FY18 | FY19 | FY20 | FY21 | FY22 |
| :--- | ---: | ---: | ---: | ---: | ---: |
| Original 2017 Report | 5,482 | 5,567 | 5,654 | 5,737 | 5,856 |
| Revised 2017 | 5,482 | 5,527 | 5,573 | 5,636 | 5,716 |
| Difference |  | 40 | 81 | 101 | 140 |

NOTE: 2017 Revised Projections use the same progression rate and same average birth rate originally used in the 2017 report. 40 METCO and Materials Fee students originally included have been taken out.

## Revised 2017 Elementary Enrollment Projection with New Housing

Actual Enrollment through October 1 2017, Projected: through FY22


## Question \#2 raised by Nobrega and Doggett

1. Outdated birth data and the discrepancy between two different tables in the report

## Response

- All calculations in 2017-2018 report were based on accurate birth data; the data on page 35 of the 2017-18 report
- The data on page 26 was NOT used to calculate the progression rate or the average birth rate use in the report.


## Student Generation based on Known, and Planned Housing Developments

## Student Generation Rates

1. Have used the same student generation rate in each report
2. Based on looking at actual residences, \# of bedrooms in each residence and number of PSB students enrolled who live in these residences

## Location

BHA Properties Dexter Park
Dummer
Hancock Village

| Total \# <br> Units | 1-Bed |  |  | 2-Bed |  |  | 3-Bed |  |  | 4-Bed |  |  | 5-Bed |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | \# of Students | SGR | Total | $\#$ of Students | SGR | Total | \# of Students | SGR | Total | \# of Students | SGR | Total | \# of Students | SGR |
| 460 | 82 | 0 |  | 212 | 85 |  | 126 | 141 |  | 33 | 53 |  | 7 | 6 |  |
| 408 | 111 | 7 |  | 226 | 22 |  | 71 | 7 |  |  |  |  |  |  |  |
| 32 | 6 | 0 |  | 22 | 9 |  | 4 | 5 |  |  |  |  |  |  |  |
| 530 | 243 | 30 |  | 266 | 242 |  | 21 | 36 |  |  |  |  |  |  |  |
| 1430 | 442 | 37 | 8.37\% | 726 | 358 | 49.31\% | 222 | 189 | 85.14\% | 33 | 53 | 160.61\% | 7 | 6 | 85.71\% |

## Student Generation from Known Housing Developments

1. Claim: New and updated information on housing developments from the Planning Department makes the 2017-18 projections out of date

* It is inappropriate for new housing information to be applied retroactively to last year's data
* We have included the new housing data in the 2018-19 enrollment projections

2. Nobrega and Doggett use a different student generation rate on high rise units with elevators that they got from the Planning Department and recalculate student generation

* The school department does not have this student generation rate.
* We asked the Planning Department about this rate and they are not aware of it.

3. The methodology used anticipated additional births based on new housing developments beyond FY24. We are eliminating this in 2018-19 report

## 2018-2019 Enrollment Projections

## Initial 2018-19 Enrollment Report includes:

- New birth data from Town Clerk (September 1, 2017 - August 31, 2018)
- Updated Known Housing Developments from Planning Department
- Updated calculations on 3 year average birth rate (occurs annually)
- Updated calculations on 5 year average progression rate (occurs annually)
- The same student generation rate used in prior years


## The Magnitude of Brookline's Enrollment Growth

## K-8 Enrollment: FY2006-FY2029

- FY2006 through FY2019: Actual enrollment
- FY2020 - FY2024: Projections based on known births
- FY2025 - FY2029: Births not known. Projections based on average projected births of 581

| FY06 | FY07 | FY08 | FY09 | FY10 | FY11 | FY12 | FY13 | FY14 | FY15 | FY16 | FY17 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 3,904 | 4,062 | 4,098 | 4,299 | 4,473 | 4,643 | 4,825 | 5,067 | 5,227 | 5,353 | 5,465 | 5,437 |


| FY18 | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 | FY25 | FY26 | FY27 | FY28 | FY29 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 5,482 | 5,503 | 5,499 | 5,474 | 5,356 | 5,452 | 5,310 | 5,214 | 5,171 | 5,097 | 5,032 | 4,984 |

Projections based on known births

Births not known. Projections based on projection of average births

## 

FY 2006: Actual K-8 Enrollment was 3,904 students
2018 K-8 Enrollment Projections (including new housing developments)

| FY19 | FY20 | FY21 | FY22 | FY23 | FY24 | FY25 | FY26 | FY27 | FY28 | FY29 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 5,503 | 5,499 | 5,474 | 5,356 | 5,452 | 5,310 | 5,214 | 5,171 | 5,097 | 5,032 | 4,984 |

According to 2018-19 K-8 Enrollment Projections:

- In FY24, enrollment will still be 1,400 students more than it was in FY2006
- In FY29, enrollment will still be 1,080 students more than it was in FY2006


## 2018-2019 Projections

|  | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 | FY25 | FY26 | FY27 | FY28 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| K-8 | 5,503 | 5,494 | 5,457 | 5,326 | 5,230 | 5,045 | 4,942 | 4,891 | 4,807 | 4,737 |
| K-8 with new <br> housing | 5,503 | 5,499 | 5,474 | 5,356 | 5,452 | 5,310 | 5,214 | 5,171 | 5,097 | 5,032 |
|  |  |  |  |  |  |  |  |  |  |  |
| 9-12 | 2,084 | 2,132 | 2,199 | 2,301 | 2,314 | 2,404 | 2,431 | 2,323 | 2,317 | 2,235 |
| 9-12 with <br> new housing | 2,084 | 2,134 | 2,205 | 2,312 | 2,391 | 2,513 | 2,560 | 2,445 | 2,423 | 2,343 |
|  |  |  |  |  |  |  |  |  |  |  |
| Total | 7,587 | 7,626 | 7,656 | 7,627 | 7,544 | 7,449 | 7,373 | 7,214 | 7,124 | 6,972 |
| Total with <br> new housing | 7,587 | 7,633 | 7,679 | 7,668 | 7,843 | 7,823 | 7,774 | 7,616 | 7,520 | 7,375 |

## Comparison: 2017 Revised Projections and 2018 Initial Projections

| K-8 Projections | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
| :--- | ---: | ---: | :--- | :--- | :--- | :--- |
| Revised 2017 | 5,527 | 5,545 | 5,520 | 5,425 | 5,359 | 5,255 |
| Initial 2018 Projections | 5,503 | 5,494 | 5,457 | 5,326 | 5,230 | 5,045 |
| Difference | 24 | 51 | 63 | 99 | 129 | 210 |


| K-8 with New Housing | FY19 | FY20 * | FY21 | FY22 | FY23 | FY24 |
| :--- | ---: | ---: | :--- | ---: | ---: | ---: |
| Revised 2017 | 5,527 | 5,573 | 5,636 | 5,716 | 5,657 | 5,563 |
| Initial 2018 Projections | 5,503 | 5,499 | 5,474 | 5,356 | 5,452 | 5,310 |
| Difference | 24 | 74 | 162 | 360 | 205 | 253 |

NOTE: The 2017 Revised Projections show added enrollment begins to make a noticeable impact in FY21 and FY22. In 2018 Initial Projection, revised estimates from Planning Department show that the added enrollment from known developments begins to make a noticeable impact in FY23 and FY24

# What is Different in 2018 Enrollment <br> Projections: Impact of Birth Data 

Births and Corresponding Kindergarten Enrollment

| Year | Actual Births |  | KYear | Enrollment |
| :---: | :---: | :---: | :---: | :---: |
| 99-00 | 614 |  | 05-06 | 485 |
| 00-01 | 599 |  | 06-07 | 550 |
| 01-02 | 649 |  | 07-08 | 495 |
| 02-03 | 691 |  | 08-09 | 552 |
| 03-04 | 696 |  | 09-10 | 596 |
| 04-05 | 605 |  | 10-11 | 545 |
| 05-06 | 674 |  | 11-12 | 602 |
| 06-07 | 663 |  | 12-13 | 666 |
| 07-08 | 647 |  | 13-14 | 631 |
| 08-09 | 666 |  | 14-15 | 685 |
| 09-10 | 678 |  | 15-16 | 633 |
| 10-11 | 692 |  | 16-17 | 582 |
| 11-12 | 667 |  | 17-18 | 609 |
| 12-13 | 706 |  | 18-19 | 603 |
| 13-14 | 649 | Projected | 19-20 |  |
| 14-15 | 632 | Average | 20-21 |  |
| 15-16 | 615 |  | 21-22 |  |
| 16-17 | 579 | 581 | 22-23 |  |
| 17-18 | 548 | (2) | 23-24 |  |

Births have declined over the past 5 years

## 3-Year Average of Births

2013-14 to 2015-16 = 632 (2016-17 report)
2014-15 to 2016-17 = 609 (2017-18 report)
2015-16 to 2017-18 = 581 (2018-19 report)

The 3-year average is used to calculate the Kindergarten enrollment in years beyond known births (FY25-29 in 2018 report).

Source: Town of Brookline Town Clerk
(1) Birth counts are based on kindergarten eligibility dates -

September 1 to August 31
(2) $548=$ actual births from September 1, 2017 to August 31, 2018 as recorded by the Town Clerk as of November 15, 2018.

## What is Different in 2018 Enrollment Projections: Impact of K Progression Rate



## HISTORICAL BIRTH-to-K PROGRESSION RATES

| Year | $\underline{\text { Rate }}$ |  |
| :---: | :---: | :---: |
| $\mathbf{0 5 - 0 6}$ | 0.79 |  |
| $06-07$ | 0.92 |  |
| $07-08$ | 0.76 |  |
| $08-09$ | 0.80 |  |
| $09-10$ | 0.86 |  |
|  |  |  |
| $10-11$ | 0.90 |  |
| $11-12$ | 0.89 |  |
| $12-13$ | 1.00 |  |
| $13-14$ | 0.98 |  |
| $14-15$ | 1.03 |  |
| $15-16$ | 0.93 |  |
| $16-17$ | 0.84 |  |
| $17-18$ | 0.91 |  |
| $18-19$ | 0.85 |  |

Birth to K Progression Rate has declined as a result of declining births

2012-13 to 2016-17 Average $=0.96$ (16 report) 2013-14 to 2017-18 Average $=0.94$ (17 report) 2014-15 to 2018-19 Average $=0.91$ (18 report)

## Planning Department Known Developments, Fall 2018

| Project | Total \# Units | Studio | 1-Bed | 2-Bed | 3-Bed | 4-Bed | Projected Students | District | Estimated Completion Date | School Year Impacted |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Student Generation Ratio: |  | 8.37\% | 49.31\% | 85.14\% | 160.61\% | K through 12 |  |  |  |
| 40 Centre St | 40 | 16 | 14 | 5 | 5 |  |  |  | 06-2021 | 2021-2022 |
| Projected Students |  |  |  | 2 | 4 |  | 7 | Coolidge Corner |  |  |
| 420 Harvard/49 Coolidge | 25 | 3 | 6 | 11 | 5 |  |  |  | 01-2020 | 2020-2021 |
| Projected Students |  |  |  | 5 | 4 |  | 10 | Coolidge Corner |  |  |
| Waldo/Durgin | 143 |  | 85 | 58 |  |  |  |  | 02-2022 | 2022-2023 |
| Projected Students |  |  |  | 29 |  |  | 36 | Coolidge Corner |  |  |
| 455 Harvard | 17 |  | 10 | 5 | 2 |  |  |  | 11-2019 | 2020-2021 |
| Projected Students |  |  |  | 2 | 2 |  | 5 | Coolidge Corner |  |  |
| 134 Babcock | 45 | 20 | 13 | 7 | 5 |  |  |  | 10-2020 | 2021-2022 |
| Projected Students |  |  |  | 3 | 4 |  | 8 | Coolidge Corner |  |  |
| 21 Crowninshield | 8 |  |  |  | 8 |  |  |  | 07-2019 | 2019-2020 |
| Projected Students |  |  |  |  | 7 |  | 7 | Coolidge Corner |  |  |
| Residences of South Brookline (Hancod Virage) | ) 161 |  | 57 | 59 | 22 | 23 |  |  | 10-2021 | 2022-2023 |
| Projected Students |  |  |  | 29 | 19 | 37 | 90 | Baker |  |  |
| Puddingstone (Mancock Vilage) | 230 |  | 54 | 140 | 24 | 12 |  |  | 10-2021 | 2022-2023 |
| Projected Students |  |  |  | 69 | 20 | 19 | 113 | Baker |  |  |
| 1223 Beacon Street (Haroton Cour) | 123 | 8 | 38 | 52 | 25 |  |  |  | 08-2023 | 2023-2024 |
| Projected Students |  |  |  | 26 | 21 |  | 50 | Lawrence |  |  |
| 445 Harvard | 25 |  | 12 | 10 | 3 |  |  |  | 07-2022 | 2022-2023 |
| Projected Students |  |  |  | 5 | 3 |  | 9 | Coolidge Corner |  |  |
| 500 Harvard | 30 | 3 | 17 | 7 | 3 |  |  |  | 09-2022 | 2022-2023 |
| Projected Students |  |  |  | 3 | 3 |  | 7 | Coolidge Corner |  |  |
| TOTALS | 847 | 50 | 306 | 354 | 102 | 35 |  |  |  |  |
| Projected Students |  |  |  | 173 | 87 | 56 | 342 |  |  |  |

## Questions to Consider when Assessing Enrollment Projection Report

1. What weight should the outlying years (years 6-10) have in the projections?
2. How predictive are actual births in Brookline predictive of K enrollment?
3. What impact should be considered of larger demographic trends such as those predicted by MAPC?
4. Should student generation rate be recalculated using newer data and condo conversions/T-districts?
5. Should we use different student generation rates for specific properties based on actual enrollment (e.g. Hancock Village, BHA residences, etc)?
6. Should new growth be calculated in the out years?

## Ongoing Impact of Brookline's Historic Enrollment Growth

## Impact of Enrollment Growth

## Between 2005 and 2018 the Town of Brookline has added 1,599 K-8

 students into our existing eight elementary schools.The result:

- Degradation of existing facilities
- Carving learning spaces out of locker rooms, hallways, and windowless storage spaces
- Overburdened teaching and learning spaces, as well as cafeterias, gyms, and administrative offices
- Our schools lack proper spaces for special education, English language instruction, guidance, nursing, and math and literacy support
- School facilities falling behind peer communities


## A Townwide Challenge

- Historic and Ongoing Enrollment Growth - Since 2005, we have absorbed the equivalent of three K-8 schools into our existing schools through expand in place. Every school is overcrowded and needs relief in some way.
- Overdue Renovation and Updating of Facilities - Driscoll and Pierce School need renovation to update facilities and address overcrowding. Driscoll has never completed a full renovation.
- Core Facilities are Inadequate- Core facilities in 7 of $8 \mathrm{~K}-8$ schools (gyms, libraries, cafeterias, hallways) no longer have the capacity to handle the current student population.
- Substandard Spaces - at each school, we have substandard classrooms because they have been created out of offices, hallways, locker rooms, etc.
- Temporary Rentals used for K-8 Classrooms - Pierce and Baker Schools have a total of 6 classrooms that are in rented space
- Early Education Programs - currently 11 BEEP classrooms in rental space. With a new BEEP building 5 BEEP classrooms will remain in rental space. 5 more remain at Lynch Center.


## Enrollment Growth from 2005 to 2018

|  | 2005-2006 | 2018-2019 | \# Growth <br> since 2005 | \% Growth <br> since 2005 |
| :--- | :---: | :---: | :---: | :---: |
| Baker | 647 | 762 | 115 | $18 \%$ |
| Coolidge Corner | 670 | 873 | 203 | $30 \%$ |
| Driscoll | 366 | 614 | 248 | $68 \%$ |
| Heath | 360 | 522 | 162 | $45 \%$ |
| Lawrence | 478 | 705 | 227 | $47 \%$ |
| Lincoln | 410 | 581 | 171 | $42 \%$ |
| Pierce | 546 | 865 | 319 | $58 \%$ |
| Runkle | 427 | 581 | 154 | $36 \%$ |
|  | $\mathbf{3 , 9 0 4}$ | $\mathbf{5 , 5 0 3}$ | $\mathbf{1 , 5 9 9}$ | $\mathbf{4 1 \%}$ |

2005-2018 growth is equivalent to combined 2005 enrollment of Driscoll, Heath, Lincoln, and Runkle

## Substandard Spaces at Driscoll



## Substandard Spaces at Heath



Converted storage space - 4 educators,
4 different programs, no windows


Public Schools of Brookline, 2005-2018 Enrollment v. Capacity

|  | 2005 <br> Enrollment | 2008 <br> Enrollment | 2012 <br> Enrollment | 2018 <br> Enrollment | Capacity* | Number of <br> Students <br> Over + or <br> (Under) <br> Capacity |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Heath | 360 | 402 | 494 | 522 | 553 | $(31)$ |



## Substandard Spaces at Baker



Public Schools of Brookline, 2005-2018 Enrollment v. Capacity

|  | 2005 <br> Enrollment | 2008 <br> Enrollment | 2012 <br> Enrollment | 2018 <br> Enrollment | Capacity* | Number of Students <br> Over + or (Under) <br> Capacity |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Baker | 647 | 672 | 678 | 762 | 679 | +83 |

[^0]Substandard Spaces at
Lawrence and Lincoln

Guidance carved out of hallway
Public Schools of Brookline, 2005-2018 Enrollment v. Capacity

|  | 2005 <br> Enrollment | 2008 <br> Enrollment | 2012 <br> Enrollment | 2018 <br> Enrollment | Capacity* | \# of Students Over + or <br> (Under) Capacity |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Lawrence | 478 | 557 | 623 | 705 | $572^{* *}$ | +133 |
| Lincoln | 410 | 469 | 545 | 581 | 437 | +144 |

*Capacity information based on March 29, 2012 MGT Enrollment Capacity and Utilization Report
${ }^{* *}$ Four additional classrooms were added at Lawrence in 2015, but there was no addition of common core spaces or small instructional spaces

## Substandard Spaces at Pierce



Public Schools of Brookline, 2005-2018 Enrollment v. Capacity

|  | 2005 <br> Enrollment | 2008 <br> Enrollment | 2012 <br> Enrollment | 2018 <br> Enrollment | Capacity* | Number of <br> Students Over + or <br> (Under) Capacity |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Pierce | 546 | 630 | 699 | 865 | 634 | +231 |


[^0]:    *Capacity information based on March 29, 2012 MGT Enrollment Capacity and Utilization Report

