Envision SPPS:  
Enrollment & Sustainability

Exploratory Analysis of Class Size Limitations

Dr. Stacey Gray Akyea
Cindy Porter, Research Analyst
Kara Arzamendia, Assistant Director

Board of Education
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Envision SPPS & Enrollment

“Declining birth rates and increased competition from schools outside of SPPS are among the biggest challenges we are facing. Schools and programs with too few students make it too difficult to provide those students with a well-rounded education.”

Envision SPPS

Conversely

Schools and programs with healthy enrollments make it possible to provide and sustain a well-rounded education
In 2013-14...

Five Year Enrollment Projection Snapshot (2013-14)

REAs produced a 5-year enrollment projection for 2014-15, 2015-16, 2016-17, 2017-18, 2018-19:

- Snapshot predicted incremental increases
- Validated by external consultant and former state demographer, specializing in educational institutions and enrollment projections.
Inspire students to think critically, pursue their dreams and change the world.

Kindergarten “Pacesetter”

Five Year Enrollment Projection for Kindergarten 2013-14 Snapshot

Trend predicted very slight dip in 2015-16 then slight increases until 18-19
Inspire students to think critically, pursue their dreams and change the world.

Two Roads...
2013-14 Snapshot to Oct. 1 Comparison for K-5

Considerable difference between snapshot and Oct. 1

Divergence begins SY 2014-15

Difference of 2091 K-5 students
Influences

Although there have been numerous decisions that *may have* contributed to the current enrollment situation, one of the most controversial and contested decisions is the implementation of class size limitations (CSL).

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<tr>
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<tbody>
<tr>
<td>Completion of the first phase of Strong Schools, Strong Communities</td>
<td>SPED level 3 inclusion</td>
<td>School Improvement Grants Awarded</td>
<td>Voluntary Pre-K</td>
<td>Dr. Gothard hired as Superintendent</td>
<td>SPPS Achieves Office of Digital and Alternative Education</td>
<td>Changes in school start times</td>
</tr>
<tr>
<td>Class size limitations (range)</td>
<td>Strong Schools, Strong Communities 2.0</td>
<td>Valeria Silva resigned as Superintendent</td>
<td>Dr. Thein hired as Interim Superintendent</td>
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<td>SPFE strike</td>
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<tr>
<td>Racial equity policy</td>
<td>1:1 iPad</td>
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<td>COVID-19 Distance Learning</td>
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Class Size Limitation Background

<table>
<thead>
<tr>
<th>High Poverty</th>
<th>Low Poverty</th>
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<tbody>
<tr>
<td><strong>PreK</strong></td>
<td>20 or less</td>
</tr>
<tr>
<td><strong>K</strong></td>
<td>22-18</td>
</tr>
<tr>
<td><strong>1</strong></td>
<td>22-18</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td>22-18</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td>22-18</td>
</tr>
<tr>
<td><strong>4</strong></td>
<td>25 – 30</td>
</tr>
<tr>
<td><strong>5</strong></td>
<td>25 – 30</td>
</tr>
</tbody>
</table>

Class sizes in elementary will, on average, per grade level in each school, be within the class size range indicated below and will not, in any individual classroom, exceed the cap.
**Design**

Causal-Comparative research design to explore *possible* relationship between CSL and enrollment

**Data**

SPPS. Research, Evaluation and Assessment. Enrollment and Projections

**Questions**

1. In what ways could CSL impact school enrollment?
2. Does the yearly change in grades differ before CSL from after CSL?
3. Does the change in a K-5 cohort differ before CSL and after CSL?
4. How does the actual enrollment compare to the projected enrollment snapshot from 2013-14?

**Limitations**

- Inquiry is after the fact “ex post facto”
- No certainty of causation
- There was no opportunity to control any of the variables. No way to discern interplay among multiple possible factors, one factor at one time, another factor at another time or individual school factors.
Analysis 1

In what ways could CSL impact school enrollments?
Comparison of enrollment models

1. Most K-5 schools across the district were organized into categories based on prior enrollment trends (increasing, declining)

2. Immersion K-5 schools across the district were grouped

3. Statistical modeling to “predict” future enrollment for schools with increasing enrollment trends based on CSL (no limits, limits)

4. Statistical modeling to “predict” future enrollment for schools with declining enrollment trends based on CSL (no limits, limits)
   K size (stable grade K enrollment, declining grade K enrollment)
Comparison of enrollment models
School modeling by enrollment trends

School with increasing enrollment trend before CSL predicted to have continual increase in enrollment before plateau

School with declining enrollment trend before CSL predicted to have continual decrease in enrollment before plateau
Inspire students to think critically, pursue their dreams and change the world.

Comparison of enrollment models
School with increasing enrollment modeled using CSL factor

- see incremental increase when CSL are applied (n=408)
- over time the difference in school enrollment is 47 students
Comparison of enrollment models
School with declining enrollment modeled using CSL factor

- sharper declines when modeled with CSL (n=382)
- with CSL the declines are noticeable; a difference in school enrollment is 66 students
Inspire students to think critically, pursue their dreams and change the world.

Comparison of enrollment models
School with decreasing enrollment model with CSL and grade K size

School with declining enrollment before CSL
increasingly dramatic decline based on factors in the model -

- declining K without CSL (420)
- steady K and CSL (382), then
- declining K and CSL (354)
Comparison of enrollment models
One Way Immersion school with increasing enrollment model

- continue to increase slowly with no CSL (n=749) and plateau with CSL (n=658)
- over time the difference in school enrollment is 91 students
Analysis 2

*Does the average change in grades differ before CSL and after CSL?*

**Average year to year change by grade**

1. October 1 enrollment was divided into two categories
   - Before CSL (2007-08 to 2012-13)
   - After CSL (2013-14 to 2019-20)

2. Within each category, the year to year change was calculated

3. The year to year changes were averaged
Inspire students to think critically, pursue their dreams and change the world.

Average year to year change by grade

Average change by grade level

- Prior to CSL, average change was positive at early elementary grades
- Prior to CSL upper elementary grades on average declined by 20 students a year
- After CSL all grades saw decreases
- Larger average decreases from year to year after CSL for all elementary grades; the largest difference observed at K
Analysis 3

Does the change in a K-5 cohort differ before CSL and after CSL? Comparison of K-5 cohort changes before and after CSL

1. A cohort was defined by students that entered Kindergarten and stayed to complete grade 5 for each of the following windows of time
   - Last cohort prior to CSL (K in 2007-08; 5th in 2011-12)
   - First cohort after CSL (K in 2013-14; 5th in 2018-19)
   - Most recent cohort (K in 2015-16; 5th in 2020-21)

2. The change in enrollment from K to 5 was calculated
Comparison of K-5 cohort changes before and after CSL

- All cohorts lose students between grades K and 5
- Larger decrease from year to year after CSL; most recent cohort has largest decrease
## Comparison of K-5 cohort changes before and after CSL

Comparison of K-5 cohort changes by student racial/ethnic groups

<table>
<thead>
<tr>
<th></th>
<th>Last cohort with no class size limits</th>
<th>First Cohort with class size limits</th>
<th>Most recent cohort with class size limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>-11%</td>
<td>-19%</td>
<td>-21%</td>
</tr>
<tr>
<td>AI</td>
<td>-9%</td>
<td>-13%</td>
<td>-7%</td>
</tr>
<tr>
<td>AS</td>
<td>3%</td>
<td>-18%</td>
<td>-22%</td>
</tr>
<tr>
<td>HS</td>
<td>-19%</td>
<td>-20%</td>
<td>-24%</td>
</tr>
<tr>
<td>BK</td>
<td>-11%</td>
<td>-11%</td>
<td>-15%</td>
</tr>
<tr>
<td>WT</td>
<td>-20%</td>
<td>-28%</td>
<td>-25%</td>
</tr>
</tbody>
</table>

- Across student racial groups, Asian students saw the most decrease
- American Indian and White students saw dips then improvement
Comparison of K-5 cohort changes before and after CSL
Comparison of K-5 cohort changes by student groups

<table>
<thead>
<tr>
<th></th>
<th>Last cohort with no class size limits</th>
<th>First Cohort with class size limits</th>
<th>Most recent cohort with class size limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>K in sy 2007-08</td>
<td>K in sy 2013-14</td>
<td>K in sy 2015-16</td>
</tr>
<tr>
<td></td>
<td>5 in sy 2011-12</td>
<td>5 in sy 2018-19</td>
<td>5 in sy 2020-21</td>
</tr>
<tr>
<td>Not SPED</td>
<td>-20%</td>
<td>-22%</td>
<td>-24%</td>
</tr>
<tr>
<td>SPED</td>
<td>68%</td>
<td>14%</td>
<td>5%</td>
</tr>
<tr>
<td>Not FRL</td>
<td>-29%</td>
<td>-2%</td>
<td>-15%</td>
</tr>
<tr>
<td>FRL</td>
<td>-3%</td>
<td>-25%</td>
<td>-24%</td>
</tr>
<tr>
<td>Female</td>
<td>-12%</td>
<td>-18%</td>
<td>-19%</td>
</tr>
<tr>
<td>Male</td>
<td>-10%</td>
<td>-20%</td>
<td>-23%</td>
</tr>
<tr>
<td>Not EL</td>
<td>14%</td>
<td>3%</td>
<td>-1%</td>
</tr>
<tr>
<td>EL</td>
<td>-45%</td>
<td>-51%</td>
<td>-52%</td>
</tr>
</tbody>
</table>

- Across student groups, students receiving free/reduced meals, males, and EL students saw the most negative change.
- Most severe is the most recent EL cohort which decreases by 52% of students between K and 5.
Analysis 4

How does the actual enrollment compare to the projected enrollment snapshot from 2013-14?

2013-14 Snapshot to October 1 Comparison

1. In school year 2013-14, REA produced a 5-year enrollment projection
   b. Snapshot predicted incremental increase
   c. Validated by external consultant and former state demographer specializing in educational institutions and enrollment projections

2. 2013-14 snapshot used as a baseline to compare the actual October 1 enrollment
2013-14 5-Year Trend to October 1 Comparison
2013-14 5-Year Trend to October 1 Comparison for Grade K

- Oct 1 for K is noticeably lower than snapshot within two school years of CSL
- Once introduced; the gap between the snapshot and Oct 1 remains across subsequent years
Once the Oct 1 enrollment for K deviates from snapshot, it matriculates through grades levels
## Results Summary

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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</thead>
</table>
| In what ways could CSL impact school enrollments?                        | - Schools with increasing enrollment trend would see less potential to grow with CSL  
- Schools with declining enrollment trend would experience expedited declines particularly when the size of the incoming K cohort decreases  
- Immersion schools would experience noticeable interruption of increasing enrollment |
| Does the average change in grades differ before CSL and after CSL?      | The average changes differ substantially for early elementary grades; K is observed as the most extreme difference                           |
| Does the change in a K-5 cohort differ before CSL and after CSL?        | Although K-5 cohorts decrease for all cohorts, larger decreases are observed after CSL and more substantial decreases are observed for Asian, Hispanic, White, SPED, EL and FRL  |
| How does the actual enrollment compare to the projected enrollment snapshot | A noticeable decrease from snapshot within 2 years of CSL at K that persist both horizontally across subsequent K cohorts as well as through higher grade levels |
Conclusion

All analyses yield results that associate CSL with the subsequent enrollment deviation (decline) beginning 2013-14.

Results suggest continual declines.

Results suggest the association with CSL and enrollment decline is stronger for high needs schools and high needs students.

The combination of smaller birth rates, thus smaller K cohorts with continual declines associated with CSL is a risk to sustainability.

Limitations and caution for interpretation

Inquiry is after the fact “ex post facto”; here was no opportunity to control any of the variables.

No certainty of causation.

No way to discern interplay among multiple possible factors, one factor at one time, another factor at another time or individual school factors.
How Does It Happen?
An Example: Three Schools

**School A**
- Neighborhood
- Increasing enrollment trend
- 85% of students return in fall
- SY 2013-14 enrollment = 476
- SY 2020-21 enrollment = 532
- Net gain of 56 students
  + 8% change

**School B**
- Neighborhood
- Declining enrollment trend
- 60% of students return in fall
- SY 2013-14 enrollment = 527
- SY 2020-21 enrollment = 387
- Net loss of 140 students
  -27% change

**School C**
- One Way Immersion
- Increasing enrollment trend
- 70% of students return in fall
- SY 2013-14 enrollment = 609
- SY 2020-21 enrollment = 419
- Net loss of 190 students
  -31% change
### School A

**K-5 neighborhood**

**Increasing enrollment pattern**

SY 2013-14 enrollment = 476

| SY 2014-15 | Projection is higher than previous year Oct. 1  
Oct. 1 is higher than projection  
Four grades accept three students over CSL for each section (+12) |
|-------------|-------------------------------------------------------------------------------------------------|
| 1 2 3 4 5 6 | 7 8 9 10 11 12  
13 14 15 16 17 18  
19 |
| SY 2015-16 | Projection is higher than previous year Oct. 1  
Four grades accept three students over CSL for each section (+12)  
School increases by one section |
| 1 2 3 4 5 6 | 7 8 9 10 11 12  
13 14 15 16 17 18  
19 20 |
| SY 2016-17 | Projection is higher than previous year Oct. 1  
Four grades accept three students over CSL for each section (+12) |
| 1 2 3 4 5 6 | 7 8 9 10 11 12  
13 14 15 16 17 18  
19 20 21 |
| SY 2017-18 | Projection is higher than previous year Oct. 1  
Three grades accept three students over CSL for each section (+9)  
School increases by one section |
| 1 2 3 4 5 6 | 7 8 9 10 11 12  
13 14 15 16 17 18  
19 20 21 22 |
| SY 2018-19 | Projection is higher than previous year Oct. 1 |
| 1 2 3 4 5 6 | 7 8 9 10 11 12  
13 14 15 16 17 18  
19 20 21 22 |
| SY 2019-20 | Projection is higher than previous year Oct. 1  
Three grades accept three students over CSL for each section (+9)  
School increases by one section |
| 1 2 3 4 5 6 | 7 8 9 10 11 12  
13 14 15 16 17 18  
19 20 21 22 |
| SY 2020-21 | SY 2020-21 enrollment = 532  
Net gain of 56 students  
+8% change |
| 1 2 3 4 5 6 | 7 8 9 10 11 12  
13 14 15 16 17 18  
19 20 21 22 |
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<tr>
<th>Year</th>
<th>Details</th>
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<tbody>
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<td>SY 2014-15</td>
<td>Projection is lower than previous year Oct. 1 but not substantial</td>
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<tr>
<td></td>
<td>Enrollment is kept at CSL; additional applicants not accepted</td>
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<tr>
<td>SY 2015-16</td>
<td>Projection is lower than previous year Oct. 1</td>
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<tr>
<td>SY 2016-17</td>
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<td></td>
<td>3rd year of resources loss</td>
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<td></td>
<td>3rd year of Oct. 1 under school projection</td>
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<td></td>
<td>School eliminates one section</td>
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<tr>
<td>SY 2017-18</td>
<td>Projection is lower than previous year Oct. 1</td>
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<tr>
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<td>4th year of resource loss</td>
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Questions