Alexandria’s Schools, Families, Seniors What Happens Next?

ACPS & City of Alexandria
Today’s presentation – a mashup of

- Work being done with schools on enrollment forecasts
- Current forecasts
- Enhancements to our forecasting methods to support enrollment forecasting - include more attention to examining specifics of our expected future development
A Signal of Change: K–12 Enrollment up 2,600 since 2007

What’s happening now:
- Beginning in 2007, ACPS enrollment has increased by 2,589 students (24.6%).
- Most growth so far: elementary schools
- Middle schools seeing increases now
- High school impacts expected in 2017

Latest growth follows years of declining enrollment since 2000
What Else is Changing?

Race and Ethnicity:
- Black and African American population changing significantly since 1990, geographically specific
- Gradual growth in Hispanic population, citywide

Age:
- The aging of the baby boom continues.
- Families are coming back. Will they stay?
What Else is Changing?

2000 to 2010 Percent Change in Black Share of Population

- +50 to +300%
- +25 to +50%
- +10 to +25%
- +5 to +10%
- -5 to +5% or less than 20 people
- -10 to -5%
- -25 to -10%
- -50 to -25%
- -64 to -50%

Citywide - 3.2%

Census 2000 and Census 2010 Tract Data

0 1 Miles North
Examining change

Questions:

- Will these years of growth be followed by years of declining enrollment, as it has in the past?
- Or is this a “new normal” where growth continues for an extended period?

To answer:

- Examine sources and characteristics of recent growth
- Put growth into context (long term, regional)
- Study factors/trends that could spur or limit enrollment growth
School enrollment and population since 1960

Alexandria K-12 School Enrollment and Population Since 1960

- Enrollment
- Population

ACPS K-12 Enrollment

Population

Calendar Year


0 2,500 5,000 7,500 10,000 12,500 15,000 17,500

0 25,000 50,000 75,000 100,000 125,000 150,000 175,000 200,000
School enrollment, compared to population, was declining for 35+ years – until 2007
Alexandria’s age profile

Percent of Population by Single Years of Age
Alexandria 2000 and 2010 Census with United States 2010

- Alexandria 2000
- Alexandria 2010
- U.S. 2010

Episcopal High School effect
Significant increase in age 0-4 share of population since 2000
Alexandria’s share of school-age children continues to be among the lowest in the U.S.

55-65 share grows as baby boomers reach retirement age
Age distribution, all places in U.S.
Age distribution
# Moves In by Age

### Geographic Mobility by Age

**Percent in Age Group Moving to Current Alexandria Residence in the Past Year**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Moved from abroad</th>
<th>Moved from another state</th>
<th>Moved from within Virginia</th>
<th>Moved from within Alexandria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 4 years</td>
<td>2.1%</td>
<td>6.2%</td>
<td>6.2%</td>
<td>4.4%</td>
</tr>
<tr>
<td>5 to 17 years</td>
<td>1.5%</td>
<td>6.2%</td>
<td>6.1%</td>
<td>6.8%</td>
</tr>
<tr>
<td>18 to 24 years</td>
<td>2.4%</td>
<td>8.5%</td>
<td>8.5%</td>
<td>7.0%</td>
</tr>
<tr>
<td>25 to 34 years</td>
<td>2.7%</td>
<td>8.5%</td>
<td>6.8%</td>
<td>1.6%</td>
</tr>
<tr>
<td>35 to 44 years</td>
<td>1.5%</td>
<td>6.5%</td>
<td>4.8%</td>
<td>1.3%</td>
</tr>
<tr>
<td>45 to 54 years</td>
<td>1.6%</td>
<td>4.3%</td>
<td>4.1%</td>
<td>0.5%</td>
</tr>
<tr>
<td>55 to 64 years</td>
<td>1.3%</td>
<td>3.6%</td>
<td>2.8%</td>
<td>0.4%</td>
</tr>
<tr>
<td>65 to 74 years</td>
<td>1.9%</td>
<td>1.8%</td>
<td>2.5%</td>
<td>0.4%</td>
</tr>
<tr>
<td>75 years and over</td>
<td>1.9%</td>
<td>1.9%</td>
<td>1.9%</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

*Learning to Live • Loving to Learn*

**Alexandria City Public Schools**
Moves Out by Age

Geographic Mobility by Age
Percent in Age Group Moving From Alexandria in the Past Year

- Moved to another state
- Moved within Virginia
- Moved within Alexandria

Percent Moving in Age Group

Age Group
1 to 4 yrs
5 to 17 yrs
18 and 19 yrs
20 to 24 yrs
25 to 29 yrs
30 to 34 yrs
35 to 39 yrs
40 to 44 yrs
45 to 49 yrs
50 to 54 yrs
55 to 59 yrs
60 to 64 yrs
65 to 69 yrs
70 to 74 yrs
75 yrs +

Percent
5.8% 6.3% 17.3% 8.8% 11.0% 6.9% 7.3% 7.0% 4.6% 4.7% 2.9% 2.9% 2.1% 3.0% 1.9%
Population by Race and Ethnicity

Population by Single Years of Age by Race and Ethnicity
City of Alexandria, 2010 Census
Factors affecting the size of Alexandria’s school-age population

Low household size

More single person households

Low percentage of single family homes
Historic Eras of Enrollment and Population

Population Growth and School Enrollment Eras Since 1950

- **1970 - 1980**: Enrollment and population fall as boomers leave for college and work. New apartments for workers.
- **1990 - 2000**: Urban population character. Enrollment grows with population, followed by disruption of housing boom and recession.
- **2020 - 2040**: The future: Baby boomers become seniors. Senior population doubles. Families seek urban living, new young residents form new families. Which path to a new steady state?

Acadia Learning to Live. Loving to Learn.
School enrollment, compared to population, was declining for 35+ years – until 2007
Historic Eras of Enrollment and Population

Population Growth and School Enrollment Eras Since 1950

25-year enrollment trend under 90 per 1000 people

ACPS K-12 Enrollment

Enrollment

Population

Baby boomers enter school 1950 - 1969

Enrollment and population fall as boomers leave for college and work. New apartments for workers.

Urban population character. Enrollment grows with population, followed by disruption of housing boom and recession

The future: Baby boomers become seniors. Senior population doubles. Families seek urban living, new young residents form new families. Which path to a new steady state?
Enrollment Projection – Short Term

- Births, and share of births that become kindergarten students five years later (kindergarten capture), based on average of recent years, modified by trends
- Share of students moving from one grade to the next in each grade (cohort survival), based on average of recent years by school by grade, modified by trends
Estimating future enrollment

- Births, and share of births that become kindergarten students five years later (kindergarten capture)
- Share of students moving from one grade to the next in each grade (cohort survival)
- Share of age cohort attending public school

Affected by

- Factors that determine moves in and out of Alexandria by families with children
- New development and redevelopment
- Neighborhood turnover
More than half of Alexandria’s housing stock has 4 rooms or less
Several factors reduced families ability to move out of the City beginning in 2007

- Home sales fell
- Unemployment rate rose
- Gas prices rose
12.1% of Alexandria’s children enrolled in school attend private school

American Community Survey 2006-2010 5-year average data, corrected for residential high school population for Alexandria only.
Recent enrollment growth is from single-family and gardens, not mid- and high-rise
# Impact of future development

Students estimated from planned development and redevelopment, 2010-2020

<table>
<thead>
<tr>
<th></th>
<th>2010-15</th>
<th>2015-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Townhouse</td>
<td>74</td>
<td>22</td>
</tr>
<tr>
<td>Garden apartment</td>
<td>-63</td>
<td>-274</td>
</tr>
<tr>
<td>Mid-rise apartment</td>
<td>103</td>
<td>85</td>
</tr>
<tr>
<td>High-rise apartment</td>
<td>-4</td>
<td>40</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>110</strong></td>
<td><strong>-127</strong></td>
</tr>
</tbody>
</table>
Past forecasts vs enrollment
Goal and Work Program

Research topics:
1. Kindergarten capture, cohort survival – by neighborhood attendance area
2. Who moves in and out as a predictor?
3. Family structure a factor?
4. Neighborhood turnover – where, what effect?
5. Long term – is this a new era? If so, what is the direction?
New Development

- As a contributor to changes in school enrollment, particularly in the long term.
- Types of new development.
- What existing housing is replaced?
- With about 1% annual growth in housing units, is in general a slow, upward-trending force on future enrollment.
- Unit mix moderates growth effect at least in early years after occupancy.
Annual Development Forecast

- Approved and in-process development from permit tracking system
- Area and corridor plans by development block from plan documents
- Infill under current zoning – parcels with substantial potential
- Long-term potential with typical redevelopment (shopping centers, garden apartments most susceptible)
Forecasting Project Data Base

Projects since 2010 Baseline
- Development Projects
- Current Plans
- Infill Sites
- Long-Term Potential

Projects for Spring 2013 Development Forecast
Population Forecast

Alexandria Population Forecast
Round 8.1 vs. Round 8.2

Year

2010 2015 2020 2025 2030 2035 2040

Forecast Total Population

139,958 147,091 157,304 165,719 172,423 181,885 189,327

140,032 148,513 158,102 167,085 174,030 184,741 194,890

Legend:
- Round 8.2 Forecast
- Round 8.1 Forecast
Summary by Project Category

Residential Development

- Long Term Potential: 3,854
- Approved Plans: 13,639
- Long Term Unlikely: 16,893

Time Period:
- 2011-2040
- 2040+

Nonresidential Development

- Long Term Unlikely: 109
- Approved Plans: 13,481
- Infill: 296
- Development Projects: 6,385
- Long Term Potential: 8,242

Time Period:
- 2010-2040
- 2040+
Residential Development Forecast

2010 - 2040 Housing Growth Forecast

Forecast Added Housing Units

- 10
- 100
- 1,000

2012 Forecast by Transportation Analysis Zone

0 1 Miles North
Unit Type Changes over Time

Development Forecast by Residential Unit Type

- Senior Housing
- Public Family Housing
- High-Rise Apartment or Condo
- Mid-Rise Apartment or Condo
- Garden Condominium
- Garden Apartment or Co-op
- Duplex and Townhouse
- Single-Family Detached

Number of Dwelling Units

Year

2010: Senior Housing - 100,000 (23.2%)
2015: Public Family Housing - 70,000
2020: High-Rise Apartment or Condo - 60,000
2025: Mid-Rise Apartment or Condo - 50,000
2030: Garden Condominium - 40,000
2035: Garden Apartment or Co-op - 30,000
2040: Duplex and Townhouse - 20,000
2045: Single-Family Detached - 10,000
2050: Number of Dwelling Units - 0
Number of Units

Development Forecast by Residential Unit Type

- Senior Housing
- Public Family Housing
- High-Rise Apartment or Condo
- Mid-Rise Apartment or Condo
- Garden Condominium
- Garden Apartment or Co-op
- Duplex and Townhouse
- Single-Family Detached

Year: 2010, 2015, 2020, 2025, 2030, 2035, 2040

Number of Dwelling Units:
- 16,811
- 13,928
- 7,141
- 10,835
- 12,992
- 9,021

Percentages:
- 23.2%
- 19.2%
- 9.9%
- 15.0%
- 17.9%
- 12.5%
- 22.7%
- 35.2%
- 7.4%
- 8.2%
- 15.9%
- 9.1%

Total:
- 34,932
- 22,504
- 8,138
- 15,764
- 9,017
The number of births in the city is going up, as is kindergarten enrollment.
Our “kindergarten capture” rate is increasing

What percentage of the children born in Alexandria attend Alexandria kindergarten 5 years later?
More students are continuing on to the next grade

What is a “Cohort Survival” rate? It tracks the number of students continuing from one grade to the next. Example:

<table>
<thead>
<tr>
<th>Grade</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>118</td>
<td>121</td>
</tr>
<tr>
<td>1</td>
<td>110</td>
<td>116</td>
</tr>
</tbody>
</table>

Cohort Survival from K to 1st grade: 98%

<table>
<thead>
<tr>
<th></th>
<th>Average Cohort Survival</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Elem.</td>
</tr>
<tr>
<td>Pre 2007</td>
<td>93.2%</td>
</tr>
<tr>
<td>Post 2007</td>
<td>97.8%</td>
</tr>
<tr>
<td>Difference</td>
<td>+4.6%</td>
</tr>
</tbody>
</table>

Since 2007, the cohort survival rate has increased at ALL levels.
Summary of key trends

• The latest data for key indicators are continuing to show growth

• More children being born in Alexandria, but increase is moderating

• More of the children born in Alexandria are entering kindergarten five years later

• More of them staying in Alexandria schools after kindergarten…through high school.
Assumptions for the 2019 medium forecast

- Births: modest increase continuing recent growth trend
- Kindergarten capture (3yr average) : 64%
- Cohort Survival (3yr average)
  - Grades K-5: 96.7%
  - Grades 6-8: 96.5%
  - Grades 9-12: 99.7%
- New development: apply 3yr average student generation rates
- Projection for FY2019: 16,270
ACPS enrollment: historical and projected

Citywide growth rate about 1% per year

Scenario 1. Low Growth. K capture to 60% in three years, cohort survival -.005 per year from 2010-2012 3-year avg for three years

Scenario 2. Current Trends. Kindergarten capture and cohort survival at 2010-2012 3-year average

Scenario 3. High Growth. K capture to 80% over 5 years, cohort survival per 2010-2012 3-year average
### Enrollment Projections FY14–FY19

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>3.0%</td>
<td>7.2%</td>
<td>6.0%</td>
<td>5.7%</td>
<td>6.6%</td>
<td>5.8%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Middle</td>
<td>-2.7%</td>
<td>5.1%</td>
<td>2.9%</td>
<td>0.9%</td>
<td>1.2%</td>
<td>5.1%</td>
<td>3.2%</td>
</tr>
<tr>
<td>High</td>
<td>3.6%</td>
<td>5.5%</td>
<td>-0.4%</td>
<td>2.8%</td>
<td>-2.1%</td>
<td>5.7%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Total</td>
<td>2.2%</td>
<td>6.3%</td>
<td>3.5%</td>
<td>3.2%</td>
<td>3.3%</td>
<td>5.8%</td>
<td>4.6%</td>
</tr>
</tbody>
</table>
Enrollment by level: past and future

<table>
<thead>
<tr>
<th></th>
<th>FY2003 Sept</th>
<th>FY2008 Sept</th>
<th>FY2013 Sept</th>
<th>FY15 Total Enrollment Projected</th>
<th>FY17 Total Enrollment Projected</th>
<th>FY19 Total Enrollment Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>5,873</td>
<td>5,576</td>
<td>7,563</td>
<td>8,450</td>
<td>9,067</td>
<td>9,771</td>
</tr>
<tr>
<td>Middle School</td>
<td>2,324</td>
<td>2,075</td>
<td>2,350</td>
<td>2,517</td>
<td>2,684</td>
<td>2,842</td>
</tr>
<tr>
<td>High School</td>
<td>2,889</td>
<td>2,794</td>
<td>3,122</td>
<td>3,230</td>
<td>3,393</td>
<td>3,596</td>
</tr>
</tbody>
</table>
Without action, forecast results in classroom deficits in all areas of the City

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Central</th>
<th>East</th>
<th>West</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY14</td>
<td>(2.5)</td>
<td>8</td>
<td>(1.5)</td>
</tr>
<tr>
<td>FY15</td>
<td>(2.5)</td>
<td>1.5</td>
<td>(6.0)</td>
</tr>
<tr>
<td>FY16</td>
<td>(4.0)</td>
<td>(8.0)</td>
<td>(11.0)</td>
</tr>
<tr>
<td>FY17</td>
<td>(7.0)</td>
<td>(13.5)</td>
<td>(19.0)</td>
</tr>
<tr>
<td>FY18</td>
<td>(20.0)</td>
<td>(27.0)</td>
<td>(41.0)</td>
</tr>
<tr>
<td>FY19</td>
<td>(23.5)</td>
<td>(33.5)</td>
<td>(53.0)</td>
</tr>
</tbody>
</table>

Table shows number of classrooms needed to accommodate forecast growth. Does not include possible capacity from construction projects (funded or proposed), class size changes, or other initiatives.

- Central: C. Barrett, D. MacArthur, G. Mason
- East: C. Kelly, J.-Houston, L.-Crouch, M. Maury, Mt. Vernon
Capacity Projects– FY14

- Capacity Projects Approved for FY2014 (begins July 1, 2013)
  - James K. Polk – Second Story Modular Classrooms (4.5)
  - Patrick Henry – New/Expanded building (A/E begins in FY14)
  - Charles Barrett – Second Story Modular Classrooms (4), parking lot expansion
  - George Mason – Expand cafeteria
  - Matthew Maury – Additional Classrooms (2)
  - Douglas MacArthur – Additional Classroom (1), cafeteria expansion
Capacity Projects– ACPS identified potential for FY15 and beyond

- **Additional Classrooms**
  - George Mason – Additional classrooms FY15
  - James K. Polk- Additional wing FY15
  - Patrick Henry – Per analysis FY14, const FY 15, FY 16
  - T.C. Minnie Howard- Expansion FY17

- **Core Space Expansion**
  - Charles Barrett – Cafeteria Expansion FY15
  - Matthew Maury – Parking lot expansion FY15

- **New Facility**
  - New School, Site TBD FY16
  - Cora Kelly- New Building FY18
Issues for further study over the next 6 months

- Economy and Housing Market
  - Ability of families to relocate for larger units
  - Ability to send children to private school
  - Ability to afford housing in Alexandria
  - Transportation impacts (Potomac Yard Metro, Silver Line)
  - Quality of life

- Demographics
  - Family households choosing urban areas
  - Neighborhood turnover
  - Doubling of 65+ population over long term

- School System
  - Program and physical changes
  - Reputation
For more information and to stay in touch...

www.alexandriava.gov/68540
Comments?
Questions?
How can this work help you?