



Use of Demographic Data in Analysis of School Projects

Presentation to the Public School Capital Outlay Oversight Taskforce

New Mexico Public School Facilities Authority

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NEWS/OPINION

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BURSTING AT THE SEAMS

It's Westside overcrowding at its worst, and one elementary school is smack dab in the middle of a debate between parents and APS about how to cope

By Marisa Demarco

Rebecca Cruz, an art teacher at Edward Gonzales, says APS is building as fast as it can.

CHRISTIE CHISHOLM


It's almost hidden in a maze of desert and sand-colored houses. At 554 90th Street



Decline In Santa Fe Student Enrollment Raises Questions About Closing Schools | Local News

By Lolly Garcia — Last updated Dec 13, 2021





Enrollment Projections – A Science and an Art

► Science

- Utilizes Actual Numbers – Births and Past Enrollment
- Establishes Trend that Forms Basis of Enrollment Projection

► Art

- Examines Other Variables At Work in the Community
- Makes Adjustment to the Trend Based on These Variables for Projection

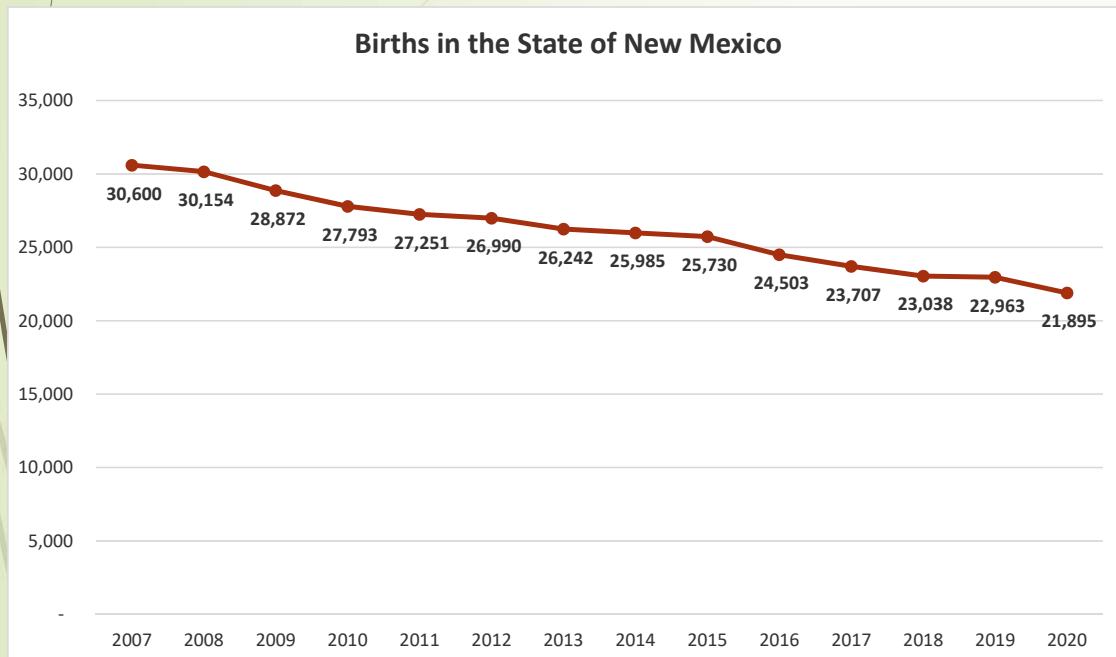
► Taken Together - Informs decision making

- Do we need a new or replaced school and at what capacity?
- Do we only need an addition?
- Do we need to adjust attendance boundaries to relieve overcrowding at one school and improve utilization at another?
- Do we have too much space and need to consolidate or repurpose?

Enrollment Projections - Inputs

- ▶ **Historic enrollment data – at least 10 years to determine trends**
- ▶ **Birth data – helps determine kindergarten enrollment**
- ▶ Educational programs at school or in district
- ▶ School boundary data and student location
- ▶ Demographic/Socioeconomic variables
 - ▶ Housing construction, location, residential zoning
 - ▶ Industry expansion/retraction – employment & economic development
 - ▶ Migration patterns – are people moving in/out of the community?
 - ▶ Institutional presence – military bases, universities
 - ▶ City/County growth trends
- ▶ Other Educational Options (BIE, charters, private schools)
- ▶ Capacity/Utilization at other district schools
- ▶ Unanticipated Occurrences – pandemic

Establishing the Baseline: Births (Science)



Birth Trends

- National and state decline in birth rates (Since Great Recession)
- Demographers appear to be split as to when and if this trend will reverse
 - US society is aging
 - People putting off having kids = smaller families
 - At some point, it will level out

Why the birth rate in the U.S. is falling

Children are really expensive to raise in the United States. Economists say people may be taking that into consideration when deciding whether to have kids. Fertility rates dropped ahead of the Great Recession in 2007, suggesting having children may be an indicator of people's confidence about the future. Despite this, public opinion polling suggests that financial anxiety is not actually deterring Americans from having children. Watch the video above to learn why the birth rate is falling and what the Covid pandemic may mean for future fertility rates.

WED, JUL 20 2022 • 2:00 PM EDT

Charlotte Morabito | Jason Reginato | Lindsey Jacobson

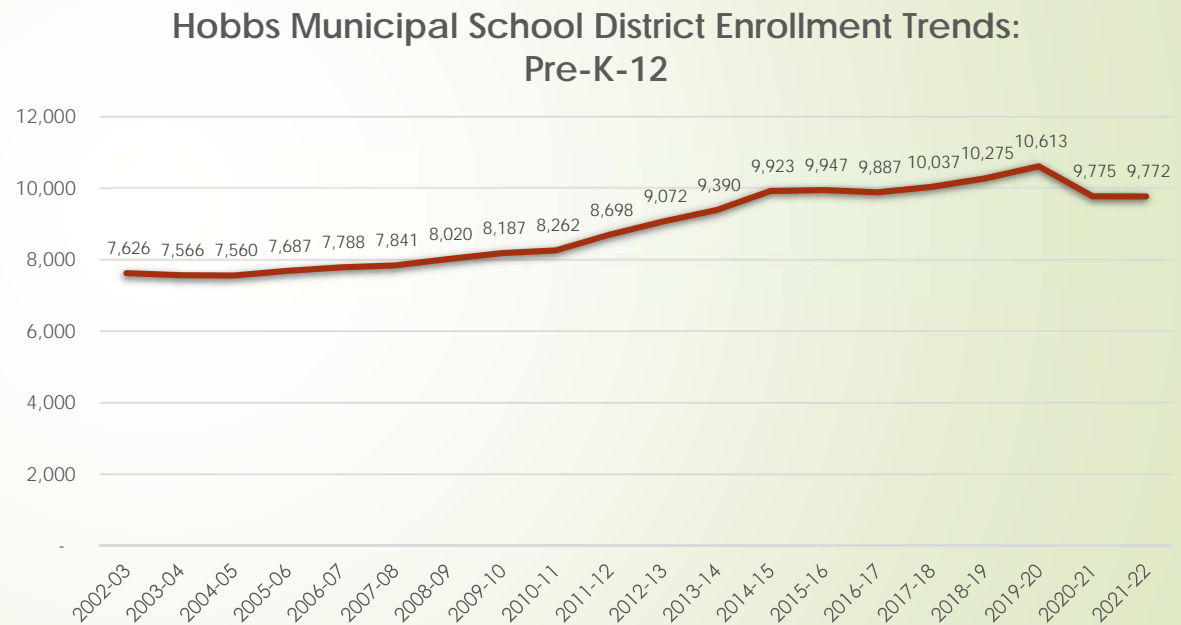
Establishing the Baseline: Births (Science)

- ▶ Examines births by County
- ▶ Compares births to kindergarten enrollment five years later
- ▶ Establishes trend data we use to project kindergarten enrollment
- ▶ Data collected based on mother's address

Farmington Municipal School District				
Births		Kindergarten 5 Years Later		
Year	Births	Year	K 5 Year Later	Ratio
2010	1928	2015	836	0.43
2011	1910	2016	839	0.44
2012	1862	2017	842	0.45
2013	1901	2018	827	0.44
2014	1839	2019	844	0.46
2015	1826	2020	707	0.39
2016	1722	2021	723	0.42

Establishing the Baseline: Historic Enrollment (Science)

- Examines trends on both district level, school level, and grade level
- Reviews enrollment from one year to the next in order to establish trends
- Data is useful for our enrollment projection model called "Cohort Projection"



Establishing the Baseline: Cohort Survival Method (Science)

- ▶ Primary method to project school enrollment
- ▶ Treats grades as “cohorts” and monitors them as they progress over school years
- ▶ Establishes a “survival ratio” for each grade level to use as a multiplier to project enrollment
- ▶ 100 second graders in a school become 105 third graders – survival ratio = 1.05

Desert Hills Elementary Growth by Grade Level							
Grade Levels	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Trend Line
Pre-K	14	11	16	16	29	32	
K	100	77	98	97	95	104	
1st	104	135	83	108	109	113	
2nd	102	122	127	84	102	113	
3rd	91	116	123	128	103	114	
4th	105	97	121	121	120	117	
5th	91	102	102	114	118	122	
TOTALS	607	660	670	668	676	715	

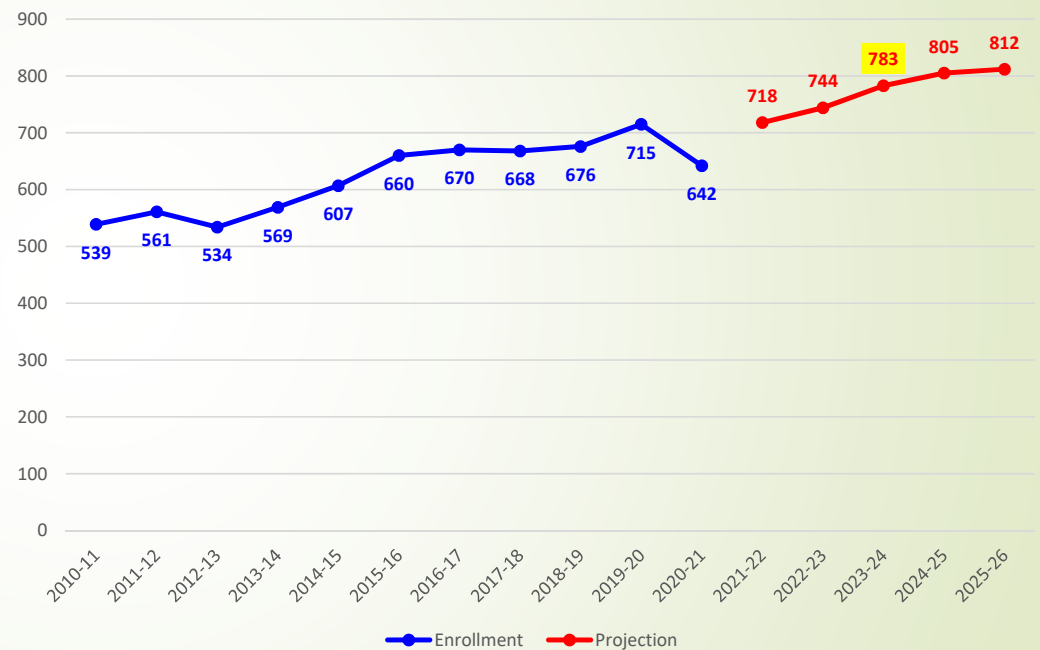
- ▶ Chart tells us historically, 1st gains students from Kindergarten
- ▶ Survival ratios, on average of 1.1, suggest stability to growth over the next five years

Enrollment Projections

Enrollment projections necessary to determine the type of project the school may need.

- We examine five years into the future
- While the previous enrollment trend number shows incremental growth, this projection shows a nearly 100 student increase – why?

Desert Hills Elementary School Enrollment Trends and Projection



Enrollment Projections: Art

- ▶ Examination of Other Variables
 - ▶ Development
 - ▶ Attendance Boundary Adjustment
 - ▶ Migration Patterns
 - ▶ School Capacity
 - ▶ General economic conditions
- ▶ Leads to Adjustment in cohort survival rates

Students Living in Attendance Zone vs Capacity






Enrollment Projections: Art




Sources

- School District Facilities Master Plan
- Bureau of Business and Economic Research (BBER)
- Office of Economic Adjustment (Department of Defense)
- Municipal/County Planning Departments
- NM Public Education Department
- NM Department of Health/Vital Statistics



Challenges in Enrollment Analysis and Projection

- Projections may not come to fruition – requires monitoring at various steps of the planning process – don't want to overbuild/under build
- Other school entities – private/BIE/charters could impact projections and capacity/utilization
- Large employer may leave, arrive, change (i.e. military base may add a mission)
- Housing may or may not always translate into kids
- Land uses may change
- Births are difficult to forecast (long term)
- Parent decisions are hard to forecast
- School may change its program
- Neighborhoods change over time
- Is it a “bubble”?



Enrollment Growth or Decline: Impacts on Space

- ▶ Enrollment loss or growth does not necessarily mean empty/overcrowded classrooms:
 - ▶ Growth/decline of 50 students appears to suggest the need for two classrooms or two vacant classrooms
 - ▶ It could but needs further examination
 - ▶ A group of 50 students often does not fall into precise cohorts (i.e. 25 2nd graders/25 3rd graders)
 - ▶ More likely the 50 student growth/loss spread across each grade level/classroom
 - ▶ This **could** mean a school with Pre-K-5th (7 grade levels) with two classrooms/grade level = 4 empty seats per classroom