

Introduction

Cropper GIS Consulting (Cropper) performed a demographic study for the Carlisle Area School District (CASD) in the Summer of 2014. The results of the work provided a 10-year population and enrollment forecast for the district, along with a series of assumptions that were assumed to remain constant for the forecasts to track as analyzed.

The forecasts are developed to show how enrollment will change in 10 years if only demographics affect the population. There are certain factors that cannot be accounted for in demographic forecasting, hence assumptions. These can include migration, housing, fertility, and numerous other factors. If the demographic forecasts begin to deviate from actual enrollments, the non-demographic assumptions need to be explored to determine what has changed in the assumptions.

In order to evaluate the accuracy of the forecasts, enrollment data for the 2015 school year was collected from CASD. The actual 2015 enrollment data was evaluated in relation to forecasted enrollment for the 2015 school year. This evaluation gives the demographers and school district an understanding of how accurately the forecasts are tracking to actual enrollment. If a forecast deviates farther than 2% of the total district forecast, it is possible that the assumptions need to be evaluated to determine what is creating the deviation from forecast.

District-Level Forecast Evaluation

The table to the right compares the September 22, 2015 ADM counts (green column) to the enrollment forecast for 2015, which was performed in 2014 (shown in the blue column). The table indicates that the actual enrollment for 2015 is 56 students higher than what was forecasted for 2015.

The table also indicates that forecasts are tracking higher than actual enrollments that are being reported by 1.1%. As stated above, enrollment always deviates from what is forecasted, but the magnitude determines if the forecast assumptions have been violated. In the case of Carlisle Area Schools, forecast accuracy is running within 2% of actual enrollments, which means that the forecasts are tracking well.

Forecast Error by Grade				
Grade	2015 ADM	2014 Forecast for 2015	Difference	Percent Difference
K	372	362	-10	-2.7%
1	376	375	-1	-0.3%
2	390	395	5	1.3%
3	399	377	-22	-5.5%
4	393	388	-5	-1.3%
5	359	388	29	8.1%
6	379	393	14	3.7%
7	360	355	-5	-1.4%
8	381	369	-12	-3.1%
9	413	400	-13	-3.1%
10	417	411	-6	-1.4%
11	349	336	-13	-3.7%
12	337	320	-17	-5.0%
District total	4925	4869	-56	-1.1%

Source: Comparison of 2014 Cropper Enrollment forecast for 2015 to Fall 2015 CASD ADM Counts

School Level Evaluation of Forecasts

The enrollment forecasts are also analyzed in terms of school level accuracy. School level forecasts often deviate farther from actual enrollment because they are more highly subject to non-demographic influences that were not anticipated. For example, student mobility and transfers outside of attendance areas can affect the forecast results.

The table to the right shows the school level accuracy of the enrollment forecasts. The table shows that total elementary enrollment is within 4 students of what was forecasted. Middle School enrollment is within 3 students of the forecast. This indicates that there is not significant error in the total forecast, but the distribution of students to elementary and middle schools have affected the forecasts (one school forecast higher while another is lower so they balance out).

Carlisle Area School District Comparison of 2015 ADM Enrollment With 2014 forecasts				
School	2015 ADM Enrollment	2014 Forecast of 2015 Enrollment	Difference	Percent Difference
BELLAIRE	438	389	-49	-11.2%
CRESTVIEW	464	527	63	13.6%
HAMILTON	388	365	-23	-5.9%
LETORT	277	291	14	5.1%
MOORELAND	311	318	7	2.3%
MT. HOLLY	226	220	-6	-2.7%
N. DICKINSON	185	175	-10	-5.4%
ELEMENTARY TOTAL	2289	2285	-4	-0.2%
LAMBERTON	554	565	11	2.0%
WILSON	566	552	-14	-2.5%
MIDDLE SCHOOL TOTAL	1120	1117	-3	-0.3%
CARLISLE HIGH SCHOOL	1516	1467	-49	-3.2%
TOTAL	4925	4869	-56	-1.1%

Source: Comparison of 2014 Cropper Enrollment forecast for 2015 to Fall 2015 CASD ADM Counts.

The majority of the error in the forecast is in the 9-12 grades, where High School enrollment is 49 students higher than what was forecasted. This can possibly be attributed to a lower dropout rate or greater capture of high school-aged students in the region.