What is the ten-year accuracy
of
Western Suffolk BOCES projections?

While this may appear to be a simple question, it actually is a very complicated one. Each district is unique; neighboring districts can see very different enrollment patterns. Enrollment projections are based on trends – in demographics and in enrollment. They are based on detailed assumptions about birth, population, housing and non-public enrollment trends. These assumptions are developed based on recent tendencies and known future factors – but it is important to note that these trends and factors can change. All projections have inherent uncertainties, especially for years further in the future. They can be affected by changes in behavior, the economy, and by other unforeseen events.

Western Suffolk BOCES includes the following passages in its reports:

"The enrollment projections in this report incorporate past and present demographic factors, which include population characteristics, birthrates, housing, and non-public school enrollment. If any significant changes in these factors occur, as detailed below, the enrollment projections should be recalculated. It is, in fact, recommended that the district update these projections regularly.

The enrollment projections are based on historical trends in the district. The projected enrollment is a reflection of stable incoming classes and gains and losses within grade transitions, paired with housing and non-public school factors. Enrollment projections are based on several assumptions, including continued migration patterns, maintained birth to kindergarten relationships, and general demographics not experiencing extraordinary changes."

"It is important for the reader to understand the nature of enrollment projections. Regardless of the methodology employed to produce projections, all outcomes fall into three categories of reliability:

> *Category 1 - Those projections based on students already enrolled in the system are the most reliable projections.*

> *Category 2 - Those projections based on documented births are slightly less reliable than those of Category 1.*

> *Category 3 - Those projections based on estimates of future births are the least reliable.*

Therefore, the most reliable projections are those calculated for the periods closest in time. Projections for periods further out in time are less reliable, particularly those beyond five years from the year of the study. The five-year period (2014 - 2018) projections are those best used in district planning and decision making. That is because this period consists mainly of Category 1 projections.

It is noted that the overall enrollment projections produced by Western Suffolk BOCES generally fall within a 4 percent margin of error. The greatest discrepancies in projections occur in the smallest subsets

of those projections. For example, the projections for the district as a whole are likely to be the most accurate, while the projection of a building's particular grade level in a specific year is likely to be the least accurate. It is advised that updates to projections be continued on a periodic basis to maintain modifications warranted by subtle shifts in migration trends and demographic factors."

The following chart details the enrollment projected for the Clarkstown Central School District. The green shaded area denotes the children that are already in the school system. The further out in time, the shading decreases. For example, in 2019, the projected enrollment includes K – 5 students that are not yet in the system; also, the children entering kindergarten might not have been born yet – this cohort reflects 2014 births. From 2019 to 2023, the kindergarten projections are boxed to indicate that these children have not been born yet; they are based on birth projections and the birth persistence forecasting model.

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CLARKSTOWN CENTRAL SCHOOL DISTRICT

PROJECTED ENROLLMENT

GRADE	2013 Actual	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
KINDERGARTEN	566	491	487	489	488	494	494	493	492	492	491
FIRST	541	579	502	498	500	499	505	505	504	503	503
SECOND	564	553	592	513	509	511	510	516	516	515	514
THIRD	571	575	564	604	523	519	521	520	526	526	525
FOURTH	636	580	584	573	613	531	527	529	528	534	534
FIFTH	626	645	588	592	581	622	538	534	536	535	542
SIXTH	663	636	656	598	602	591	632	547	543	545	544
SEVENTH	734	674	647	667	608	612	601	643	556	552	554
EIGHTH	714	744	683	656	676	616	620	609	652	564	560
NINTH	689	700	730	670	644	663	604	608	597	640	553
TENTH	720	696	708	738	677	651	670	610	615	603	647
ELEVENTH	794	723	698	710	741	679	653	672	612	617	605
TWELFTH	770	803	731	706	718	750	687	661	680	619	624
UNGRADED	72	68	66	65	64	63	61	60	60	59	58
TOTAL K - 12	8,660	8,467	8,236	8,079	7,944	7,801	7,623	7,507	7,417	7,304	7,254
% CHANGE		-2.2%	-2.7%	-1.9%	-1.7%	-1.8%	-2.3%	-1.5%	-1.2%	-1.5%	-0.7%

This chart is used to illustrate that those projections that occur further out in time are the least reliable – due to the number of uncertain variables that can intervene over time.

Western Suffolk BOCES reviewed the projection period 2002 through 2012 – in the ten-year period and in five year intervals. The districts that were analyzed in 2002 are not necessarily ones that we worked with in 2012. Therefore, we needed to refer to the BEDS enrollment data that was reported to New York State. This information is available through 2012.

While it is very easy to review the work done in 2002 through today's lens, it is important to review what the world and country were experiencing throughout the period analyzed.

In 2002, the nation – and New York, in particular – was reeling from the aftermath of the 9/11 terrorist attacks. Other news events included the D.C. sniper shootings, the Catholic Church scandals, warnings issued to Iraq, the Pennsylvania mine rescue and corporate scandals. Although the unemployment rate was at an eight-year high of six percent, Federal Reserve Chairman Alan Greenspan felt that the nation was recovering from the financial shock of the September 11th attacks and was slowing emerging from recession.

By 2007, the nation was moving into the housing crisis – home values were declining. Most areas in downstate New York had seen the peak of the housing bubble between 2004 and 2005. Subprime mortgages written during the "housing boom" began to reset to higher monthly payments for many homeowners. In many cases, those payments exceeded what homeowners could afford. And with prices falling, many people owed more than their homes were worth. Along with risky loans, regulators found widespread mortgage fraud, particularly in the form of cash-back deals that inflated an area's home values and cost lenders and innocent homeowners billions of dollars. Foreclosures started to become commonplace; it was apparent that the housing market was headed for a serious downturn. Other news events in 2007 included the Virginia Tech shooting massacre, the Iraq troop surge, rising gas prices, the Chinese recall of their exports, global warming, Minneapolis Bridge collapse, the presidential campaign, illegal immigration and the Iran nuclear program.

In 2012, after five years of a depressed economy – which impacted employment, housing, construction, jobs, and births – it appeared that the economy was stabilizing. The unemployment rate dipped to a four-year low of 7.7 percent, stock markets rose and builders began to break ground on new projects again (at a much reduced level than seen in the past). Any positive news, however, was overshadowed by a deep anxiety about the economy and the "fiscal cliff." Other events that year included Superstorm Sandy that impacted the east coast, the mass shootings at Sandy Hook School and in Aurora, Colorado, the U.S. presidential election, Obamacare, turmoil in Libya, and the Penn State scandal.

In 2002, many schools were seeing positive trends in their enrollment. With housing turnover high, there was an increase in school enrollments. A few years later, some districts began to see decreasing enrollment and smaller kindergarten classes. By 2007, the tide had turned with many more districts seeing significant decreases. The trends had changed.

Since then a number of Catholic schools have closed impacting some public districts' enrollments. Other districts implemented full-day kindergarten programs, which also impacted enrollment. Some districts

saw major demographic shifts in their resident populations; some groups, particularly those of Hispanic origin, have higher fertility rates, thus producing more children. A number of districts saw a major influx of foreign-born people, which would account for changes in trends in enrollment. Other districts have been impacted by the relocation of large business concerns; a number of them have moved out-of-state, forcing some of the workforce to relocate also – thus impacting enrollment. Some locales planned and executed building projects and downtown revitalizations after the early report (2002) was done – that were well underway at the end of the ten-year period. These had an impact on enrollment. Finally, unexpected natural disasters – such as Superstorm Sandy – caused a number of people, particularly on the south shore of Long Island to relocate either temporarily or permanently. This was an unforeseen development which impacted enrollment in some districts.

In addition, it has to be noted that Western Suffolk BOCES works with a number of districts. Some are very small; one district has a total of 140 students, for example. Others are large – over 10,000 students. Doing an aggregate accuracy determination could be misleading, since the small school districts could easily skew the results.

With the above being noted, the following are the results of our analysis:

- 2002/2003 – 2012/2013   111% accuracy
- 2002/2003 – 2007/2008   106% accuracy
- 2007/2008 – 2012/2013   102% accuracy

It should be noted that the overall enrollment was over-projected. This could be explained by looking at the economic and demographic factors that have affected the nation. The length and severity of the downturn was more significant than most predicted. Some felt it would "rebound" quickly – but it did not. Therefore, with few exceptions, district enrollments were projected at a higher level than actual recorded enrollments.

Enrollment forecasting is not done using a crystal ball. They are not predictions. They are based on trends seen in the school district and in the surrounding areas. Base assumptions are made using the best information available. However, trends change over time. Therefore, we always recommend that districts monitor the projections carefully. If there are changes to enrollment patterns, kindergarten enrollments, or migration patterns into or out of the district, the projections need to be examined. Some districts contract for enrollment projections every year to monitor any subtle – or not so subtle – changes in enrollment patterns. Others do it every other year to "catch" any changes. Anomalies do occur – a larger than expected kindergarten class one year, for example – but they, too, should be monitored carefully.