

ANALYSIS OF LOWER MERION SCHOOL DISTRICT ENROLLMENT PROJECTIONS: 2002-2006

INTRODUCTION

The following analysis examines the changes in the enrollment projections for the Lower Merion School District (LMSD), presented in each school year's budget, over the five most recent budget years (2002-03 through 2006-07). The projections produced in those years are presented for the short term (a five-year period) and for the long term (encompassing the five years in the short-term projection plus a number of additional years). The projections are broken down into three components: elementary schools (grades K-5), middle schools (grades 6-8), and high schools (grades 9-12). The LMSD website cautions that it is difficult to predict the number of children entering school in the district more than five years out, because they have not yet been born, but that long-term enrollment projections are "very reliable for students who are already enrolled in the school district,"¹ because "these students generally follow previous trends."²

In its 2003-04 "Written Budget Description," LMSD indicated that district enrollment projections are produced by the "retention method," a model developed "several years ago" which is "based on the idea that students move routinely from one grade to another and that any internal policies and external factors that influenced grade progression in the past will continue to influence the progression of students from grade to grade in the future."³ A key factor in the model is "live birth information" obtained from the Pennsylvania Department of Health, Division of Health Statistics.⁴ The district noted that the retention method has been "very effective" in projecting enrollment.

At the same time, the 2003-04 "Written Budget Description" states that "enrollment trends in non-public schools may impact the enrollment in LMSD," and that projection do not account for the opening or closing of non-public schools or other factors that may impact the transition to or from non-public schools. Furthermore, it noted that the district's budget is created "on the basis of projected enrollments, with the understanding that additional adjustments may be necessary if enrollments change significantly."⁵

The above description of the "retention method" enrollment model has remained virtually unchanged over the three most recent budget years (2004-05 through 2006-07), although the 2004-05 "Written Budget Description" states that non-public enrollments have historically ranged from 35 to 40 percent of the total school-age population.⁶ In

¹ Lower Merion School District, http://www.lmsd.org/district_info/budget/02_03/to2011.php.

² Lower Merion School District, http://www.lmsd.org/district_info/budget/04_05/pdfs/2.pdf.

³ Lower Merion School District, http://www.lmsd.org/district_info/budget/03_04/budgetdesc.php.

⁴ *Ibid.*

⁵ *Ibid.*

⁶ Lower Merion School District, http://www.lmsd.org/district_info/budget/04_05/pdfs/2.pdf.

addition to the enrollment projections shown in each budget presentation, “an updated report is provided to the (school board) each fall.”⁷

This analysis compares the long-term enrollment projections presented annually in the Lower Merion School District budget on a year-to-year basis over the period from budget year 2002-03 (projections produced in 2002) to budget year 2006-07 (projections produced in 2006), and also compares the 2002 projections to the 2006 projections. It is intended to provide information about the changes in LMSD projected enrollment over time. The projections examined cover the following years:⁸

- 2002 (2002-03 budget)—2003-04 through 2010-11.
- 2003 (2003-04 budget)—2003-04 through 2012-13.
- 2004 (2004-05 budget)—2004-05 through 2014-15.
- 2005 (2005-06 budget)—2006-07 through 2019-20.
- 2006 (2006-07 budget)—2006-07 through 2019-20.

2002 vs. 2006: COMMON-YEAR PROJECTION COMPARISON

In order to provide context for the five years of enrollment projections examined, the analysis begins by examining the differences between the 2002 and 2006 LMSD enrollment projections for elementary, middle and high schools, as well as total enrollment for the district. The following table compares the 2002 and 2006 LMSD enrollment projections for five common years (2006-07 through 2010-11). The data indicate that the 2006 projections were higher than the 2002 projections in each of the five years common to both sets of projections, in terms of total enrollment and for the LMSD elementary (abbreviated “Elem” in the tables that follow), middle and high schools.

The 2006 total enrollment projections for LMSD exceeded the 2002 projections for each of the five years by a greater percentage in each succeeding year, with the 2006 projection for 2006-07 at 7.9 percent above the 2002 projection, and the 2006 projection for 2010-11 at 12.3 percent above its 2002 counterpart. For the period from 2006-07 to 2010-11, the 2002 projection estimated that LMSD total enrollment would decline by 4.3 percent; the 2006 projection, by contrast, estimated that total enrollment would decline by just 0.4 percent.

Among the components of district enrollment, the 2006 elementary school projections generally exceeded the 2002 projections by smaller amounts than observed for LMSD middle and high schools. In 2002, LMSD elementary school enrollment was projected to decline by 0.5 percent between 2006-07 and 2010-11; in 2006, the projected decline was 0.3 percent.

⁷ Lower Merion School District, http://www.lmsd.org/district_info/budget/03_04/budgetdesc.php.

⁸ The school year-to-school year comparisons of the projections presented begin with the budget year corresponding to the later of the two projection years (for example, the first school year included in the comparison of 2002 enrollment projections to 2003 enrollment projections is 2003-04—the budget year in which the 2003 enrollment projections appear).

For LMSD middle school enrollment, the 2006 projection for 2006-07 exceeded the 2002 projection for that year by 11.1 percent, and the 2006 projection for 2010-11 exceeded the 2002 projection for that year by 17.3 percent. LMSD middle school enrollment was projected to increase by 0.14 percent between 2006-07 and 2010-11 in 2002, but by 2006 middle school enrollment was projected to increase by 5.7 percent. Finally, LMSD projected high school enrollment for 2006-07 was 7.6 percent higher in 2006 than in 2002, and projected high school enrollment for 2010-11 was 15.8 percent higher in 2006 than in 2002. LMSD high school enrollment was projected to decline in both the 2002 and 2006 projections, but the decline was projected to be significantly smaller in the 2006 projection (4.4 percent) than in the 2002 projection (11.2 percent).

TABLE 1.

Lower Merion School District Grade Level Enrollment Projections: 2002 vs. 2006 Based Upon the Retention Method					
Year of Projection	2006-07	2007-08	2008-09	2009-10	2010-11
2002 Total Elem (from 2002-03 budget)	2,608	2,607	2,612	2,610	2,595
2006 Total Elem (from 2006-07 budget)	2,777	2,821	2,844	2,759	2,768
Difference from 2002 Proj.	169	214	232	149	173
% Difference from 2002 Proj.	6.5%	8.2%	8.9%	5.7%	6.7%
2002 Total Middle (from 2002-03 budget)	1,460	1,436	1,457	1,448	1,462
2006 Total Middle (from 2006-07 budget)	1,622	1,583	1,607	1,672	1,715
Difference from 2002 Proj.	162	147	150	224	253
% Difference from 2002 Proj.	11.1%	10.2%	10.3%	15.5%	17.3%
2002 Total High (from 2002-03 budget)	2,347	2,288	2,187	2,159	2,084
2006 Total High (from 2006-07 budget)	2,525	2,527	2,456	2,467	2,413
Difference from 2002 Proj.	178	239	269	308	329
% Difference from 2002 Proj.	7.6%	10.4%	12.3%	14.3%	15.8%
2002 Total (from 2002-03 budget)	6,415	6,331	6,256	6,217	6,141
2006 Total (from 2006-07 budget)	6,924	6,931	6,907	6,898	6,896
Difference from 2002 Proj.	509	600	651	681	755
% Difference from 2002 Proj.	7.9%	9.5%	10.4%	11.0%	12.3%

Source: Lower Merion School District, http://www.lmsd.org/district_info/budget/,
2002-03 and 2006-07 editions; Author's calculations

Given the change in LMSD enrollment projections between 2002 and 2006, the issue then becomes one of what happened to the projections on a year-to-year basis during that time period. The following section presents annual comparisons of the LMSD budget projections, focusing on budget years for which projections were made in both 2002 and 2006, for the purpose of attempting to identify how the projections changed

over time and if there were any annual changes that were of unusual size (in comparison to the others observed).

2002 vs. 2003

The following table shows the changes in the LMSD enrollment projections for the years 2002 (contained in the 2002-03 budget proposal) and 2003 (contained in the 2003-04 budget proposal for the eight-year period from 2003-04 through 2010-11 (the last school year common to both projections). Total district enrollment over this time period was expected to decline according to both projections, with the 2003 decline (7.4 percent) being larger than the 2002 decline (5.5 percent). For the first six years of the eight examined, the 2003 projected total enrollment figures were higher than the 2002 projections, but the percentage by which the 2003 projections exceeded the 2002 projections declined in each of those years. For 2009-10 and 2010-11, the 2003 total enrollment projections were lower than the 2002 projections.

TABLE 2.

Lower Merion School District Grade Level Enrollment Projections: 2002 vs. 2003 Based Upon the Retention Method								
Year of Projection	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
2002 Total Elem (from 2002-03 budget)	2,602	2,588	2,616	2,608	2,607	2,612	2,610	2,595
2003 Total Elem (from 2003-04 budget)	2,594	2,546	2,541	2,511	2,512	2,517	2,515	2,501
Difference from 2002 Proj.	-8	-42	-75	-97	-95	-95	-95	-94
% Difference from 2002 Proj.	-0.3%	-1.6%	-2.9%	-3.7%	-3.6%	-3.6%	-3.6%	-3.6%
2002 Total Middle (from 2002-03 budget)	1,625	1,581	1,522	1,460	1,436	1,457	1,448	1,462
2003 Total Middle (from 2003-04 budget)	1,683	1,652	1,599	1,517	1,459	1,447	1,424	1,435
Difference from 2002 Proj.	58	71	77	57	23	-10	-24	-27
% Difference from 2002 Proj.	3.6%	4.5%	5.1%	3.9%	1.6%	-0.7%	-1.7%	-1.8%
2002 Total High (from 2002-03 budget)	2,273	2,348	2,352	2,347	2,288	2,187	2,159	2,084
2003 Total High (from 2003-04 budget)	2,313	2,406	2,422	2,437	2,406	2,317	2,274	2,164
Difference from 2002 Proj.	40	58	70	90	118	130	115	80
% Difference from 2002 Proj.	1.8%	2.5%	3.0%	3.8%	5.2%	5.9%	5.3%	3.8%
2002 Total (from 2002-03 budget)	6,500	6,517	6,490	6,415	6,331	6,256	6,217	6,141
2003 Total (from 2003-04 budget)	6,590	6,604	6,562	6,465	6,377	6,281	6,213	6,100
Difference from 2002 Proj.	90	87	72	50	46	25	-4	-41
% Difference from 2002 Proj.	1.4%	1.3%	1.1%	0.8%	0.7%	0.4%	-0.1%	-0.7%

Source: Lower Merion School District, http://www.lmsd.org/district_info/budget/,
2002-03 and 2003-04 editions; Author's calculations

Elementary, middle and high school enrollment for LMSD was expected to decline between 2003-04 and 2010-11 in both the 2002 and 2003 projections. The largest declines were expected in middle school enrollment (10 percent in the 2002 projection,

14.7 percent in the 2003 projection). Elementary school enrollment was expected to decline by a greater percentage in the 2003 projection (3.6 percent) than in the 2002 projection (0.3 percent) between 2003-04 and 2010-11, while the reverse was true for LMSD projected high enrollment (8.3 percent decline according to the 2002 projection, versus a 6.4 percent decline in the 2003 projection).

The 2003 LMSD elementary school enrollment projections were smaller than the 2002 projections for each year examined (ranging from 0.3 percent lower for 2003-04 to 3.7 percent lower for 2006-07), while the 2003 high school enrollment projections were higher than the 2002 projections for each school year between 2003-04 and 2010-11 (ranging between 1.8 percent higher for 2003-04 and 5.9 percent higher for 2008-09). The 2003 middle school enrollment projections were higher than the 2002 projections for each school year examined through 2007-08, but were lower than the 2002 projections for each of the three years that followed.

2003 vs. 2004

The following table shows the changes in the LMSD enrollment projections for the years 2003 (contained in the 2003-04 budget proposal) and 2004 (contained in the 2004-05 budget proposal) for the school years 2004-05 through 2012-13 (the last year common to both projections). During this period, both the 2003 and 2004 projections showed total district enrollment declining, with the 2003 projection showing a greater decline (8.8 percent) than the 2004 projection (6.7 percent). In each of the nine school years examined, the 2004 total enrollment projection was higher than its 2003 counterpart, with the percentage difference between the two projections becoming larger (or remaining constant) in each year after 2004-05.

On a percentage basis, LMSD enrollment was expected to decline in both the 2003 and 2004 projections at the elementary, middle and high school levels during the period from 2004-05 to 2012-13, with the largest declines projected to take place at the middle school level (13.2 percent according to the 2003 projection, 11.2 percent according to the 2004 projection). Elementary school enrollment was expected to show the smallest declines between 2004-05 and 2012-13, according to both projections (1.6 percent in the 2003 projection, 1.7 percent in the 2004 projection). The 2004 projected decline in high school enrollment (8.9 percent) was projected to be larger than it was projected to be in 2003 (13.3 percent).

The 2004 projected enrollments for each school year from 2004-05 to 2012-13 were higher than the 2003 projected enrollments for LMSD elementary, middle and high schools. The 2004 elementary school projected annual enrollments ranged from 2.7 percent higher than the 2003 projected enrollment for 2005-06 and 2007-08 to 2.1 percent above in each year from 2008-09 to 2011-12. Middle school 2004 projected enrollments moved from 1.9 percent above the 2003 projection for 2004-05 to 5.2 percent above the 2003 projection for 2008-09, before falling to 4.2 percent above the 2003 projection for 2012-13. High school 2004 projected enrollments exceeded their 2003 counterparts by a

greater percentage for each school year from 2004-05 (1.4 percent above the 2003 projection) to 2012-13 (6.5 percent above the 2003 projection).

TABLE 3.

Lower Merion School District Grade Level Enrollment Projections: 2003 vs. 2004 Based Upon the Retention Method									
Year of Projection	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
2003 Total Elem (from 2003-04 budget)	2,546	2,541	2,511	2,512	2,517	2,515	2,501	2,506	2,506
2004 Total Elem (from 2004-05 budget)	2,608	2,610	2,573	2,580	2,571	2,569	2,554	2,559	2,563
Difference from 2003 Proj.	62	69	62	68	54	54	53	53	57
% Difference from 2003 Proj.	2.4%	2.7%	2.5%	2.7%	2.1%	2.1%	2.1%	2.1%	2.3%
2003 Total Middle (from 2003-04 budget)	1,652	1,599	1,517	1,459	1,447	1,424	1,435	1,436	1,434
2004 Total Middle (from 2004-05 budget)	1,683	1,642	1,583	1,528	1,522	1,490	1,499	1,500	1,494
Difference from 2003 Proj.	31	43	66	69	75	66	64	64	60
% Difference from 2003 Proj.	1.9%	2.7%	4.4%	4.7%	5.2%	4.6%	4.5%	4.5%	4.2%
2003 Total High (from 2003-04 budget)	2,406	2,422	2,437	2,406	2,317	2,274	2,164	2,091	2,086
2004 Total High (from 2004-05 budget)	2,439	2,474	2,517	2,489	2,400	2,387	2,294	2,220	2,222
Difference from 2003 Proj.	33	52	80	83	83	113	130	129	136
% Difference from 2003 Proj.	1.4%	2.1%	3.3%	3.4%	3.6%	5.0%	6.0%	6.2%	6.5%
2003 Total (from 2003-04 budget)	6,604	6,562	6,465	6,377	6,281	6,213	6,100	6,033	6,026
2004 Total (from 2004-05 budget)	6,730	6,726	6,673	6,597	6,493	6,446	6,347	6,279	6,279
Difference from 2003 Proj.	126	164	208	220	212	233	247	246	253
% Difference from 2003 Proj.	1.9%	2.5%	3.2%	3.4%	3.4%	3.8%	4.0%	4.1%	4.2%

Source: Lower Merion School District, http://www.lmsd.org/district_info/budget/,
2003-04 and 2004-05 editions; Author's calculations

2004 vs. 2005

The following table shows the changes in the LMSD enrollment projections for the years 2004 (contained in the 2004-05 budget proposal) and 2005 (contained in the 2005-06 budget proposal) for the school years 2005-06 through 2014-15 (the last year common to both projections). During this period, the 2004 projection showed total district enrollment declining by 7.3 percent between 2005-06 and 2014-15—but the 2005 projection showed total district enrollment increasing by 1.1 percent.

For each of the ten school years examined, the 2005 total enrollment projection exceeded the 2004 enrollment projection. In addition, with each succeeding school year, the 2005 projection exceeded the 2004 projection by a greater percentage than did the previous year's projection, moving from 1.5 percent higher for 2005-06 to 10.6 percent higher for 2014-15.

The LMSD elementary, middle and high school enrollment projections followed the same pattern as those for total enrollment, with the 2004 projections showing a decline in enrollment and the 2005 projections showing an increase. The 2004 projections for the 10-year period from 2005-06 to 2014-15 showed LMSD elementary school enrollment declining by 1.8 percent, while the 2005 projections showed elementary school enrollment increasing by 0.7 percent during the same time period. The 2004 middle school enrollment projections for 2004 forecast a 9.7 percent decline for the period from 2005-06 to 2014-15, while the 2005 projections showed an increase of 2.0 percent. Finally, the 2004 projections showed high school enrollment decreasing by 11.5 percent between 2005-06 and 2014-15, while the 2005 projections showed an increase of 0.9 percent.

TABLE 4.

Lower Merion School District										
Grade Level Enrollment Projections: 2004 vs. 2005										
<u>Based Upon the Retention Method</u>										
Year of Projection	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
2004 Total Elem (from 2004-05 budget)	2,610	2,573	2,580	2,571	2,569	2,554	2,559	2,563	2,563	2,563
2005 Total Elem (from 2005-06 budget)	2,738	2,741	2,779	2,816	2,784	2,769	2,774	2,779	2,756	2,756
Difference from 2004 Proj.	128	168	199	245	215	215	215	216	193	193
% Difference from 2004 Proj.	4.9%	6.5%	7.7%	9.5%	8.4%	8.4%	8.4%	8.4%	7.5%	7.5%
2004 Total Middle (from 2004-05 budget)	1,642	1,583	1,528	1,522	1,490	1,499	1,500	1,494	1,477	1,482
2005 Total Middle (from 2005-06 budget)	1,643	1,610	1,571	1,591	1,631	1,675	1,703	1,663	1,670	1,676
Difference from 2004 Proj.	1	27	43	69	141	176	203	169	193	194
% Difference from 2004 Proj.	0.1%	1.7%	2.8%	4.5%	9.5%	11.7%	13.5%	11.3%	13.1%	13.1%
2004 Total High (from 2004-05 budget)	2,474	2,517	2,489	2,400	2,387	2,294	2,220	2,222	2,203	2,190
2005 Total High (from 2005-06 budget)	2,444	2,483	2,481	2,412	2,422	2,367	2,320	2,412	2,438	2,465
Difference from 2004 Proj.	-30	-34	-8	12	35	73	100	190	235	275
% Difference from 2004 Proj.	-1.2%	-1.4%	-0.3%	0.5%	1.5%	3.2%	4.5%	8.6%	10.7%	12.6%
2004 Total (from 2004-05 budget)	6,726	6,673	6,597	6,493	6,446	6,347	6,279	6,279	6,243	6,235
2005 Total (from 2005-06 budget)	6,825	6,834	6,831	6,819	6,837	6,811	6,797	6,854	6,864	6,897
Difference from 2004 Proj.	99	161	234	326	391	464	518	575	621	662
% Difference from 2004 Proj.	1.5%	2.4%	3.5%	5.0%	6.1%	7.3%	8.2%	9.2%	9.9%	10.6%

Source: Lower Merion School District, http://www.lmsd.org/district_info/budget/, 2004-05 and 2005-06 editions; Author's calculations

The year-by-year LMSD elementary school enrollment projections from 2004 and 2005 show that the 2005 projections were higher than the 2004 projections for each school year from 2005-06 to 2014-15, moving from 4.9 percent above (2005 vs. 2004) for 2004-05 to a high of 9.5 percent above (2005 vs. 2004) for 2008-09, before falling back to 7.5 percent above (2005 vs. 2004) for 2014-15.

The year-by-year LMSD middle school enrollment projections for 2004 and 2005 the 2004 projection was higher than the 2005 projection in each year from 2005-06 to 2014-15. The percentage by which the 2005 projection exceeded the 2004 projection then increased for each school year from 2005-06 (0.1 percent) through 2011-12 (13.5 percent), fell to 11.3 percent for 2012-13, and then rose to 13.1 percent for both 2013-14 and 2014-15.

Finally, the 2004 LMSD high school enrollment projections for each school year from 2005-06 through 2007-08 were higher than their 2005 counterparts. Beginning with the 2008-09 school year, the 2005 projections exceeded the 2004 projections by a greater percentage each year through 2014-15 (12.6 percent).

2005 vs. 2006

The final comparison of LMSD enrollment projections, presented in the following table, shows the changes for the years 2005 (contained in the 2005-06 budget proposal) and 2006 (contained in the 2006-07 budget proposal), covering school years from 2006-07 through 2019-20 (the last year common to both projections). During this period, the 2005 projection showed an increase in total district enrollment of 0.7 percent, while the 2006 projection showed a slight decline of 0.1 percent.

For each of the school years shown, the 2006 total enrollment projections were higher than the 2005 projections, reaching a high of 1.5 percent above (2006 vs. 2005) for 2007-08 and eventually falling to a low of 0.5 percent above for 2019-20. The 2005 LMSD elementary school enrollment projections showed an increase of 0.5 percent for the period from 2006-07 to 2019-20, while the 2006 projections showed a decline of 0.8 percent for the same time period. LMSD middle school enrollment was projected to increase between 2006-07 and 2019-20 in both the 2005 and 2006 projections, while high school enrollment was projected to decline over the same period for both projections.

On a year-to-year basis, the 2006 LMSD elementary school enrollment projections were higher than their 2005 counterparts for each school year from 2006-07 to 2008-09, but for each succeeding year (2009-10 to 2019-20), the 2005 projections were higher than the corresponding figures for 2006. The 2006 middle school enrollment projections were higher than the corresponding 2005 figures for each school year from 2006-07 through 2014-15, lower than the corresponding 2005 figures for 2015-16 and 2016-17, and then exceeded the 2005 figures for 2017-18 through 2019-20. Finally, the 2006 LMSD high school enrollment projections were higher than the 2005 projections for each school year between 2006-07 and 2019-20, rising from 1.7 percent above (2006 vs. 2005) for 2006-07, to 3.4 percent above for 2014-15 and 2015-16, before falling back to 1.1 percent above for 2019-20.

TABLE 5.

Lower Merion School District Grade Level Enrollment Projections 2005 vs 2006 Based Upon the Retention Method														
Year of Projection	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
2005 Total Elem (from 2005-06 budget)	2,741	2,779	2,816	2,784	2,769	2,774	2,779	2,755	2,755	2,755	2,755	2,755	2,755	2,755
2006 Total Elem (from 2006-07 budget)	2,777	2,821	2,844	2,759	2,768	2,766	2,763	2,728	2,755	2,754	2,754	2,754	2,754	2,754
Difference from 2005 Proj.	36	42	28	-25	-1	-8	-16	-28	-1	-2	-2	-2	-2	-2
% Difference from 2005 Proj.	1.3%	1.5%	1.0%	-0.9%	0.0%	-0.3%	-0.6%	-1.0%	0.0%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
2005 Total Middle (from 2005-06 budget)	1,610	1,571	1,591	1,631	1,675	1,703	1,663	1,670	1,676	1,680	1,666	1,666	1,666	1,666
2006 Total Middle (from 2006-07 budget)	1,622	1,583	1,607	1,672	1,715	1,746	1,680	1,707	1,678	1,676	1,639	1,667	1,666	1,666
Difference from 2005 Proj.	12	12	16	41	40	43	17	37	2	-4	-17	11	10	10
% Difference from 2005 Proj.	0.7%	0.8%	1.0%	2.5%	2.4%	2.5%	1.0%	2.2%	0.1%	-0.2%	-1.0%	0.7%	0.6%	0.6%
2005 Total High (from 2005-06 budget)	2,483	2,481	2,412	2,422	2,367	2,320	2,412	2,438	2,465	2,485	2,480	2,463	2,469	2,473
2006 Total High (from 2006-07 budget)	2,525	2,527	2,465	2,467	2,413	2,369	2,487	2,518	2,548	2,581	2,554	2,505	2,503	2,500
Difference from 2005 Proj.	42	46	44	45	46	49	75	80	83	86	74	42	34	27
% Difference from 2005 Proj.	1.7%	1.9%	1.8%	1.9%	1.9%	2.1%	3.1%	3.3%	3.4%	3.4%	3.0%	1.7%	1.4%	1.1%
2005 Total (from 2005-06 budget)	6,834	6,831	6,819	6,837	6,811	6,797	6,854	6,864	6,897	6,931	6,882	6,875	6,881	6,885
2006 Total (from 2006-07 budget)	6,924	6,931	6,907	6,888	6,886	6,881	6,940	6,953	6,981	7,011	6,947	6,926	6,923	6,920
Difference from 2005 Proj.	90	100	88	61	85	84	86	89	84	80	55	51	42	35
% Difference from 2005 Proj.	1.3%	1.5%	1.3%	0.9%	1.2%	1.2%	1.3%	1.3%	1.2%	1.2%	0.8%	0.7%	0.6%	0.5%

Source: Lower Merion School District, http://www.lmsd.org/district_info/budget/, 2005-06 and 2006-07 editions; Author's calculations

ACTUAL ENROLLMENT VS. ANNUAL PROJECTIONS

During the period covered by this analysis of LMSD enrollment projections, actual enrollment data are available from the Pennsylvania Department of Education for the school years 2002-03 through 2004-05, and the Department has also projected district enrollments for the 2005-06 school year.⁹ The following table shows the difference between actual enrollment for each year during that period and the LMSD enrollment projections made in each year between 2002 (contained in the 2002-03 budget) and 2005 (contained in the 2005-06 budget).

The structure of the table illustrates that the 2002-03 actual enrollment figures are compared to the 2002 LMSD projections for that year, that the 2003-04 actual enrollment figures are compared to the 2002 and 2003 LMSD projections for that year, and so on. The table shows that the LMSD enrollment projections generally became closer to the actual enrollment figure reported by the Pennsylvania Department of Education in years closer to the school year for which enrollment was being projected.

⁹ The Pennsylvania Department of Education notes that in the enrollment figures for school districts, elementary and secondary ungraded students were distributed among the grades, with the result that enrollments by grade may differ from those reported by local education agencies.

TABLE 6.

Lower Merion School District Enrollment Actual vs. District Projections: 2002-2005				
Enrollment	2002-03	2003-04	2004-05	2005-06*
Actual Total Elementary Enrollment	2,695	2,653	2,697	2,768
2002 Total Elem. Proj. (from 2002-03 budget)	2,673	2,602	2,588	2,616
2003 Total Elem. Proj. (from 2003-04 budget)	-----	2,594	2,546	2,541
2004 Total Elem. Proj. (from 2004-05 budget)	-----	-----	2,608	2,610
2005 Total Elem. Proj. (from 2005-06 budget)	-----	-----	-----	2,738
	Number of Students (Actual-Projected)			
Actual Elem. Enrollment vs. 2002 Projection	22	51	109	152
Actual Elem. Enrollment vs. 2003 Projection		59	151	227
Actual Elem. Enrollment vs. 2004 Projection			89	158
Actual Elem. Enrollment vs. 2005 Projection				30
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Actual Total Middle School Enrollment	1,658	1,679	1,665	1,657
2002 Total Middle Proj. (from 2002-03 budget)	1,635	1,625	1,581	1,522
2003 Total Middle Proj. (from 2003-04 budget)		1,683	1,652	1,599
2004 Total Middle Proj. (from 2004-05 budget)			1,683	1,642
2005 Total Middle Proj. (from 2005-06 budget)				1,643
	Number of Students (Actual-Projected)			
Actual Middle Enrollment vs. 2002 Projection	23	54	84	135
Actual Middle Enrollment vs. 2003 Projection		-4	13	58
Actual Middle Enrollment vs. 2004 Projection			-18	15
Actual Middle Enrollment vs. 2005 Projection				14
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Actual Total High School Enrollment	2,228	2,330	2,427	2,468
2002 Total High Proj. (from 2002-03 budget)	2,202	2,273	2,348	2,352
2003 Total High Proj. (from 2003-04 budget)		2,313	2,406	2,422
2004 Total High Proj. (from 2004-05 budget)			2,439	2,474
2005 Total High Proj. (from 2005-06 budget)				2,444
	Number of Students (Actual-Projected)			
Actual High Enrollment vs. 2002 Projection	26	57	79	116
Actual High Enrollment vs. 2003 Projection		17	21	46
Actual High Enrollment vs. 2004 Projection			-12	-6
Actual High Enrollment vs. 2005 Projection				24
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Actual Total District Enrollment	6,581	6,662	6,789	6,893
2002 Total Proj. (from 2002-03 budget)	6,510	6,500	6,517	6,490
2003 Total Proj. (from 2003-04 budget)		6,590	6,604	6,562
2004 Total Proj. (from 2004-05 budget)			6,730	6,726
2005 Total Proj. (from 2005-06 budget)				6,825
	Number of Students (Actual-Projected)			
Actual Total Enrollment vs. 2002 Projection	71	162	272	403
Actual Total Enrollment vs. 2003 Projection		72	185	331
Actual Total Enrollment vs. 2004 Projection			59	167
Actual Total Enrollment vs. 2005 Projection				68

*2005-06 actual enrollment figures are projections from the Pennsylvania Dept. of Education

Source: Pennsylvania Department of Education; Lower Merion School District (http://www.lmsd.org/district_info/budget/)
2002-03 through 2005-06 editions; Author's calculations

DEPARTMENT OF EDUCATION PROJECTIONS

The Pennsylvania Department of Education produces enrollment projections for individual school districts by using an enrollment projection model that is “patterned after projection models variously called educational progression or school retention”—suggesting that it may be somewhat similar to the “retention method” used by LMSD. The Department’s definition of its projection model is, in part, nearly identical to LMSD’s, in that it states that “projection models of this nature are based on the concept that students progress routinely from one grade to another and that any internal policies or external factors that influenced grade progression in the past will continue to influence the progression of students from grade to grade in the future.”¹⁰ It is not clear, however, just how similar the two models are.

The description of the Department of Education model goes on to state that it uses enrollment data provided annually by all local education agencies on the Public School Enrollment Report, as well as resident live birth data provided by the Department of Health. Grade progression “is then calculated by calculating retention rates for grades 2 to 12 using the five most recent years of enrollment data. Retention rates for kindergarten are determined by births five years earlier and for first grade from births six years earlier. These rates are then evaluated to determine if a pattern is discernible, or if any retention rates are unusual. If a pattern is found, the pattern is continued in making the projections. Unusual retention rates are discarded and the average of the remaining rates is used in making the projections. Nongraded elementary and secondary students are prorated across grades before retention rates are calculated. Because of that proration, the number of students in various grades will differ from the number of students reported. The total number of students may also vary slightly.”¹¹ The Department’s model is also limited by a number of internal and external factors.

At any rate, the following table shows the annual enrollment projections for Lower Merion School District for the school years 2006-07 through 2015-16, as presented in the 2006-07 LMSD budget and as presented by the Pennsylvania Department of Education as of July 2006. While the LMSD projections for this time period show district enrollment increasing from 2006-07 to 2015-16, the Department’s projections show a decline in district enrollment for the same time period. At the same time, while the LMSD enrollment projection for 2006-07 is slightly lower than the Department’s projection for the same year, the Department’s projections are lower than LMSD’s projections for each year from 2007-08 through 2015-16. The available information about the models used to arrive at those estimates is not sufficient to explain the differences in the projections, but it is important to note those differences.

¹⁰ Pennsylvania Department of Education, “The Enrollment Projection Model,” http://www.pde.state.pa.us/k12statistics/lib/k12statistics/enrollment_projection_model.pdf.

¹¹ *Ibid.*

TABLE 7.

Enrollment Projections for Lower Merion School District			
Lower Merion District Projections vs. Pennsylvania Department of Education Projections			
2006-07 to 2015-16			
School Year	LMSD 2006 Enrollment Projection (2006-07 Budget Proposal)	PDE July 2006 Enrollment Projection	% Difference (LMSD vs. PDE)
2006-07	6,924	6,937	-0.2%
2007-08	6,931	6,926	0.1%
2008-09	6,907	6,902	0.1%
2009-10	6,898	6,894	0.1%
2010-11	6,896	6,817	1.2%
2011-12	6,881	6,753	1.9%
2012-13	6,940	6,752	2.8%
2013-14	6,953	6,697	3.8%
2014-15	6,981	6,651	5.0%
2015-16	7,011	6,599	6.2%
% Change (2006-07 to 2015-16)	1.3%	-4.9%	-----

CONCLUSION

Over the past five budget years, the description of the “retention method” model used by the Lower Merion School District (LMSD) to project student enrollment has not changed significantly. An examination of the projected enrollments from 2002 (contained in the 2002-03 budget proposal) to 2006 (contained in the 2006-07 budget proposal) does show that for the period encompassing the 2006-07 to 2010-11 school years (which were common to all five long-term enrollment projections produced between 2002 and 2006), LMSD’s 2006 projected enrollments for each of those five years were higher than its 2002 projections. This was true of total district enrollment and of each its components (elementary, middle and high schools).

The 2002 enrollment projection also estimated that LMSD total enrollment would decline by 4.3 percent from 2006-07 to 2010-11, while the 2006 enrollment projection estimated that total enrollment over the same time period would decline by just 0.4 percent. The 2006 LMSD total enrollment projections for each year between 2006-07 and 2010-11 also exceeded their 2002 counterparts, with a greater margin between the two projections for each succeeding year.

In examining the LMSD long-term enrollment projections on a year-to-year basis by comparing years common to consecutive annual projections (beginning with the budget year/school year in which the more recent of the two projections was made and ending with the last school year common to both projections), one comparison is of particular interest. The comparison of the 2004 and 2005 projections (encompassing the 2005-06 through 2014-15 school years) reveals that total LMSD enrollment was projected to increase over that time period according to the 2005 projection, while the 2004 projection showed it as declining. In addition, the 2005 LMSD enrollment

projections for each school year from 2005-06 to 2014-15 were higher than their 2004 counterparts by an increased percentage for each succeeding year, moving from 1.5 percent higher in 2005-06 to 10.6 percent higher in 2014-15.

Finally, a comparison of the LMSD enrollment projections for the school years 2006-07 through 2015-16 included in the district's 2006-07 proposed budget differ from those produced as of July 2006 by the Pennsylvania Department of Education for LMSD over the same time period. It is not clear what differences, if any, exist between the models used to generate those projections, but the written descriptions provided for the models are similar in a number of ways.

It should be noted that projections of enrollment beyond five years are subject to a great deal of inconsistency due to the inconsistencies that arise when attempting to project the number of children that will be born in years beyond that point. However, since projections of future enrollment are an important factor in determining future school district budget levels, it is equally important to examine how those projections have changed over time. It is hoped that this analysis can provide some insight as to how this process has evolved in the Lower Merion School District.