

MOUNDS VIEW PUBLIC SCHOOLS - District 621

Agenda
Item #

4.1

School Board Meeting October 14, 2008
(date)

Subject Demographer's Report

1. Action 3. Report/Information
2. Consent Executive Summary on Reverse Side

Presenter/s Dan Hoverman, Superintendent; Hazel Reinhardt, Demographer

BACKGROUND (If necessary, additional information is attached)

In November 2006, a report was presented to the Board by demographer Hazel Reinhardt. Tonight's oral report will provide an update on the results of that first study.

ADMINISTRATIVE RECOMMENDATION

ACTION TAKEN

Motion by _____

Seconded by _____

Voting for _____

Voting against _____

ISD #621
MOUNDS VIEW
PUBLIC SCHOOLS

ENROLLMENT PROJECTIONS

Hazel H. Reinhardt
October 2008

Introduction

The Mounds View School District has a history of updating enrollment projections every two years. In 2006 and in 2008, actual total enrollment was at or near the highest enrollment projection. While this is not bad in itself, it means the assumptions could be fine tuned. Two changes largely explain the tendency for the projections to be low. The district has moved from having a large net out migration of students to a more modest net out migration or even net in migration. And, nonresident enrollment has grown rapidly.

Based on current district policy, nonresident enrollment is managed so that it remains at about six or seven percent of total enrollment. In light of this policy, enrollment analysis and projections must focus on resident students. This report differs from previous reports in that it analyzes resident enrollment not total enrollment and the projections are for resident students. For total enrollment, a percentage of nonresidents can be added to the resident projections.

Total enrollment in the Mounds View Public Schools continues to decline. (See Appendix) However, the rate of decline has slowed over the past several years. During this period, nonresident enrollment has increased and as of Fall 2008, it accounts for six percent of total enrollment.

No one knows the future; however, there were years when making enrollment projections was fairly simple. Today, projecting school enrollment has become more difficult and complex. We struggle not only with the traditional issues of birth rates and migration but also with the myriad of choices available to Minnesota students. Most recently, the mortgage meltdown and credit crisis slowed residential development and

created a larger than normal inventory of unsold homes. This past spring and summer high gasoline prices curtailed driving, but the long term effect on commuting patterns is unknown. The current financial crisis is likely to put the country into a recession that is likely to affect the education choices families make. For example, many school districts saw enrollment increases this fall and anecdotal evidence suggests that some nonpublic students have enrolled in the public schools in their district of residence.

In this report, projections extend to 2019-20. However, the current external environment and the pattern of enrollment change make focusing on the next five years prudent.

Executive Summary

Resident kindergarten and migration trends yielded more resident K-5 students than previously projected. In the past two years, a higher yield from the Mounds View kindergarten pool is the reason there are more resident kindergarten students. Whether this change is the result of more families with preschool children moving into the district or a higher capture rate of residents is unclear. Further, over the past three years more resident students progressed from one elementary grade to the next grade than projected earlier. This points to net in migration at K-5 as well.

Net in migration after Grade 5 is negligible, except for Grade 8 to Grade 9 when nonpublic students enter the Mounds View Public Schools. Therefore, net in migration is largely confined to preschool and elementary school children.

This report contains four resident enrollment projections that are based on three kindergarten assumptions and three migration assumptions. The lowest of these projections seems too low and the highest projection is probably too high. The middle two projections, which use the same kindergarten assumption but different migration assumptions, are the most likely to be realized.

The four resident enrollment projections show the following:

- High school enrollment declines throughout the projection period, with a few small fluctuations.
- Middle school enrollment declines and fluctuates some years, but is below its 2008-09 level in 2019-20.
- The direction of elementary enrollment varies with the assumptions.
 - The lowest projection shows elementary enrollment declining through 2015-16.
 - The second lowest projection also shows decline through 2015-16.
 - The second highest projection shows flat elementary enrollment. Enrollment increases slightly (+16 students), then drops, and in 2013-14, elementary enrollment is back at its 2008-09 level. Then enrollment declines slightly for several years, but is back at its 2008-09 level in 2018-19.
 - The highest projection shows elementary enrollment increasing throughout the projection period.

The potential of stable resident K-5 enrollment makes it essential to understand what is happening at the district's six elementary schools. The most striking finding is that no single pattern of change characterizes all six schools. There are four different patterns of change. Since, 2005-06, one school shows modest resident enrollment growth. Another school's resident enrollment is flat. Two other schools experienced modest decline and two schools showed significant decline. The two schools serving the western part of the district have the largest resident enrollment declines.

Wide annual fluctuations appear to be the norm in the district today, making "accurate" enrollment projections very difficult.

Enrollment in the Mounds View Public Schools

The following three tables show the history of total enrollment, resident enrollment and nonresident enrollment.

TOTAL ENROLLMENT									
1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
11,617	11,426	11,095	10,742	10,316	10,228	9,968	9,928	9,693	9,460

Source: Mounds View School District

RESIDENT ENROLLMENT									
1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
		10,822	10,446	9,984	9,797	9,505	9,405	9,144	9,065

Source: Mounds View School District

NONRESIDENT ENROLLMENT									
1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
		273	296	332	431	463	524	549	575

Source: Mounds View School District

As these data show, total enrollment declined by -1,635 students or -14.7 percent. During this same time, resident enrollment decreased by -1,757 students or -16.2 percent. Nonresident enrollment increased by +302 students or 110.6 percent, moderating the decline in total enrollment.

The next table shows resident enrollment change and the percentage change since Fall 2001 (2001-02 school year). Since 2001-02, resident enrollment decreased every year with the annual rates of decrease fluctuating from a -0.9 percent to -4.4 percent. This wide range in annual change shows how unpredictable the rate of decline has been. Despite this wide range in annual rates, a closer examination of the numbers shows that the annual rates of

change have moderated somewhat beginning with the change from Fall 2003 to Fall 2004. However, the annual rates of change continue to fluctuate.

RESIDENT ENROLLMENT CHANGE		
Fall to Fall	#	%
2001 to 2002	-376	-3.5
2002 to 2003	-462	-4.4
2003 to 2004	-187	-1.9
2004 to 2005	-292	-3.0
2005 to 2006	-100	-1.1
2006 to 2007	-261	-2.8
2007 to 2008	-79	-0.9

Like all population change, resident school enrollment change is the result of two different phenomena. For the total population, the difference between the number of births and the number of deaths is called natural increase/decrease. Resident school enrollment also experiences a type of natural increase/decrease. If incoming resident kindergarten classes are smaller than the previous year's resident Grade 12, natural decrease occurred. If incoming resident kindergarten classes are larger than the previous year's resident Grade 12, natural increase occurred. Natural increase/decrease in resident school enrollment reflects past differences in births per year.

The original Baby Boom (1947-1964) and the Baby Bust (1965-1976) set in motion cycles of rising and falling enrollment. Elementary enrollment rises five years after the number of births increases but when births decrease, elementary enrollment decreases five years latter. When these cycles change, elementary

enrollment goes down while secondary enrollment is still increasing. As this occurs, kindergarten is smaller than the previous year's graduating class. Today, Minnesota and the nation are at the end of a second enrollment cycle; therefore, kindergarten classes have been smaller than the previous year's grade 12 for more than ten years.

Natural decrease effected resident enrollment in the Mounds View Public Schools every year since 2001-02. This number also fluctuates from year to year. For example, there was a steady moderation of the loss caused by natural decrease from Fall 2002 to Fall 2003 through Fall 2005 to Fall 2006, after which the natural decrease number shot up again only to fall again in the most recent year.

RESIDENT COMPONENTS OF CHANGE			
Fall to Fall	Total	Natural Increase/Decrease	Net Migration
2001 to 2002	-376	-161	-215
2002 to 2003	-462	-290	-172
2003 to 2004	-187	-220	33
2004 to 2005	-292	-202	-90
2005 to 2006	-100	-180	80
2006 to 2007	-261	-245	-16
2007 to 2008	-79	-190	111

The other phenomenon affecting school enrollment is migration. Migration is the term used for the movement of people across a boundary or border, in this case, the boundary of the Mounds View School District. Migration is an estimate derived indirectly. In this report, net migration is determined by the progression

from grade-to-grade of resident public school students. With this method, the physical movement across the district's boundaries cannot be distinguished from choice, such as transferring from a nonpublic school to a public school, transferring to a charter school or deciding to open enroll in another public school. Further, resident students who move into or out of a school district but never enroll in the district's public schools are not reflected in the migration numbers as calculated in this report.

Net migration is calculated by progressing resident public school Kindergarten students to Grade 1 in the following year, Grade 1 students to Grade 2, etc. Because the probability of death is very low among children, the same number of children should be in the next higher grade the following year. Therefore, if the number of students changes, migration is assumed to have occurred. A positive number indicates a net flow into the public schools and a negative number implies a net flow out of the public schools.

Net migration, which is measured year-over-year, is different from another mobility measure called student mobility. Student mobility measures the number of students moving between schools, whether across district boundaries or not, during the school year. High student mobility is correlated with lower student achievement.

Resident student net migration numbers also fluctuated from year to year. For four of the seven years, resident net out migration occurred. In three years, resident net in migration occurred. Since 2001-02, the resident net out migration numbers have moderated (-215, -172, and -90) and the resident net in migration numbers have increased (+33, +80, and +111). However, since 2002-03, resident

net out migration and net in migration alternate every year, which makes establishing a projection trend line difficult.

At K-5, resident net in migration was positive four of the seven years since 2001-02. In the past three years, resident net in migration increased every year. In each of these years, the net migration number was about 20 students larger than the previous year. This suggests younger families have been moving into the district since Fall 2004.

In the middle school grades, resident net migration was positive five of the seven years. The positive numbers tend to be modest, except for the huge resident net in migration from Fall 2005 and Fall 2006. That year appears to truly have been an anomaly.

With the exception of the most recent year (+6), resident net migration has been negative at the high schools grades. These net out migration numbers tend to be large, reflecting high school drop outs or movement to alternative high schools.

RESIDENT NET MIGRATION							
FALL TO FALL							
	01 to 02	02 to 03	03 to 04	04 to 05	05 to 06	06 to 07	07 to 08
K-5	-102	-90	65	-34	41	63	80
6-8	-19	1	17	-3	78	7	25
9-12	-94	-83	-49	-53	-39	-86	6
Total	-215	-172	33	-90	80	-16	111

Many public schools have an inflow of students (net in migration) at Grade 7 and/or Grade 9 because nonpublic elementary schools typically are K-6 or K-8. There is a clear pattern of resident net in migration from Grade 8 to Grade 9 among resident students in the Mounds View Public Schools. A net inflow of resident students also occurs from Kindergarten to Grade 1, which is typical of public schools in Minnesota. Like other enrollment changes, these numbers also fluctuate widely from year to year. Resident net migration is consistently small between Grade 1 and Grade 2 and Grade 7 and Grade 8. However, for the other grades, the annual fluctuations can be large.

RESIDENT NET MIGRATION							
FALL TO FALL							
	01 to 02	02 to 03	03 to 04	04 to 05	05 to 06	06 to 07	07 to 08
K to 1	-24	11	31	-3	11	41	20
1 to 2	1	-12	7	-3	-4	-3	-1
2 to 3	-28	-33	29	2	23	6	45
3 to 4	-19	-32	-8	-19	-2	5	15
4 to 5	-32	-24	6	-11	13	14	1
5 to 6	2	-4	-2	-1	40	14	17
6 to 7	-21	-2	17	2	25	-14	-2
7 to 8	0	7	2	-4	13	7	10
8 to 9	20	36	25	20	57	27	39
9 to 10	-23	-22	-10	-23	-2	-30	16
10 to 11	-58	-50	-31	-19	-33	-34	-19
11 to 12	-33	-47	-33	-31	-61	-49	-30
Total	-215	-172	33	-90	80	-16	111
Percent	-2.0	-1.6	0.3	-0.9	0.8	-0.2	1.2

Migration is converted to survival rates in the next table. These rates show the percentage change from grade to grade each year. For example, 1.00 indicates no change or 100 percent of the grade progressed to the next highest grade. Any number over 1.00 shows the percent increase while numbers below 1.00 show the percent decrease. For example, 0.98 indicates a 2 percent decrease. Survival rates of 0.99, 1.00 and 1.01 reflect a relatively stable progression from one grade to the next.

RESIDENT SURVIVAL RATES							
	2001 to 2002	2002 to 2003	2003 to 2004	2004 to 2005	2005 to 2006	2006 to 2007	2007 to 2008
K to 1	0.97	1.02	1.05	1.00	1.02	1.07	1.03
1 to 2	1.00	0.98	1.01	1.00	0.99	0.99	1.00
2 to 3	0.96	0.96	1.04	1.00	1.04	1.01	1.08
3 to 4	0.98	0.96	0.99	0.97	1.00	1.01	1.02
4 to 5	0.96	0.97	1.01	0.99	1.02	1.02	1.00
5 to 6	1.00	0.99	1.00	1.00	1.05	1.02	1.03
6 to 7	0.98	1.00	1.02	1.00	1.03	0.98	1.00
7 to 8	1.00	1.01	1.00	1.00	1.02	1.01	1.01
8 to 9	1.02	1.04	1.03	1.02	1.07	1.03	1.05
9 to 10	0.97	0.97	0.99	0.97	1.00	0.97	1.02
10 to 11	0.94	0.94	0.96	0.98	0.96	0.96	0.98
11 to 12	0.96	0.95	0.96	0.96	0.93	0.94	0.96

The survival rates for some grades vary more widely than for other grades. For example, the progression from Grade 8 to Grade 9 and the Kindergarten to Grade 1 progression show large annual variations. For other grades, the survival rates increased over time. Examples of this trend are the progressions from Kindergarten to Grade 1, from Grade 2 to Grade 3 and from Grade 3 to Grade 4. This trend becomes clearer when the average of the past two years is compared to the average of the past three years and then compared with the average of the past five years. These data also suggest more young families are moving into the district or at the very least, more district residents are attending the Mounds View Public Schools. There is not much change in grade to grade progressions over time after Grade 5.

The history of resident enrollment contains several patterns that have implications for the future. In 2008-09, the largest grade is Grade 10 with 821

students. This suggests that the largest resident Mounds View grade is a couple years younger than the largest grade in Minnesota. In Minnesota, the class that graduated in spring 2008 produced the largest number of high school graduates since 1978.

Of greater significance, however, is the distribution of resident enrollment by grade. In 2008-09, Grades 9 through 11 are significantly larger than the grades below Grade 9 and especially below Grade 8. Grade 6 is substantially smaller than Grade 7. The number of resident students by grade points to further resident enrollment decline, especially in resident high school students and middle school students.

RESIDENT ENROLLMENT								
Grade	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
K	719	627	582	607	565	570	591	608
1	779	695	638	613	604	576	611	611
2	790	780	683	645	610	600	573	610
3	808	762	747	712	647	633	606	618
4	830	789	730	739	693	645	638	621
5	802	798	765	736	728	706	659	639
6	892	804	794	763	735	768	720	676
7	890	871	802	811	765	760	754	718
8	814	890	878	804	807	778	767	764
9	873	834	926	903	824	864	805	806
10	932	850	812	916	880	822	834	821
11	905	874	800	781	897	847	788	815
12	788	872	827	767	750	836	798	758
Total	10,822	10,446	9,984	9,797	9,505	9,405	9,144	9,065

Excludes early childhood

Source: Mounds View School District

Enrollment Projections

There are two methodologies for projecting school enrollment. One method is called the cohort survival method and the other is the housing unit method. Both methods are modifications of methods used to project population. The housing unit method will not be used in this report because the current credit crisis and mortgage meltdown points to slow housing development over the next several years, which makes the housing unit method less useful. The Appendix contains a table showing that the projected number of adults 20 to 54 years of age barely increases between 2010 and 2020. If this occurs, the number of households with school age children will decline further and future development is likely to bring families without school age children.

Cohort Survival Method

The first step in the cohort survival method is aging the population. In a standard cohort survival model, advancing the population by age involves estimating the number of deaths expected in an age group before it reaches the next older age group. When the cohort survival method is applied to school enrollment, the first step is to move a grade to the next higher grade. However, because mortality is so low in the school age population, the entire grade is assumed to "survive" to the next higher grade in the following year.

Once a grade or cohort has been "survived" to the next grade, net migration is added to or subtracted from that grade. Therefore, over time, the size of a cohort will increase or decrease as a result of migration as it moves through the grades. For example, the 2001-02 resident kindergarten class had

719 members. This same cohort had 718 members when it reached Grade 7 in 2008-09. However, in the intervening years, this cohort shrunk and then grew back to its original size. The 2002-03 resident kindergarten class shows a very different pattern. This cohort increased in size every year going from 627 students in 2002-03 to 676 students in Grade 6 in 2008-09. The 2003-04 resident kindergarten shows a similar pattern of growth as do all the subsequent resident kindergarten classes. This pattern suggests that more families with elementary age children have moved into the district or the Mounds View Public Schools is capturing more of its resident population in recent years.

Kindergarten class size is an important variable in long-term school enrollment projections because this class will be with the school system for many years. If a school census exists, it is a resource for short-term kindergarten projections, i.e., a couple of years. However, school censuses are notoriously inaccurate for children less than four years of age.

For long-term projections, i.e., six years or more, several options exist. The best theoretical approach, but the least practical, is to project births based on the age of the female population. These birth projections then must be survived to age five and then adjusted for migration to yield a kindergarten projection. Determining the age of females in a school district is the first challenge and then, many assumptions must be made, making this approach impractical.

A simpler approach is to use resident births as a proxy for kindergarten five years later. However, this approach only yields kindergarten for a few years into the future. To project kindergarten longer term, state population projections of 5-year-olds can be used as a guide for future kindergarten classes.

Projection Background

- § Resident births in Minnesota declined or were flat for about a decade but starting in 2002, resident births began to increase. Resident births in Ramsey County and in suburban Ramsey County did not increase until 2006. From 2005 to 2006, resident births increase 3.6 percent in Minnesota and 3.7 percent in Ramsey County; however, the increase in suburban Ramsey County was 10.4 percent. The 2006 births translate into kindergarten age children in 2011-12 and 2012-13.

- § Minnesota's largest high school class since 1978 graduated in spring of 2008. (This class represents the largest Gen Y birth year of 1990.) This means Minnesota is near the end of a second enrollment cycle resulting from the Baby Boom and Baby Bust. These cycles are marked by rising and falling elementary enrollments followed by rising and falling secondary enrollments. The third cycle, marked by increasing elementary enrollment, is about to begin and secondary enrollment will be at a high again in the 2030s.

- § The number of minority students is increasing. In Minnesota, minority students are now 24 percent of total public school enrollment. Minority students comprise 22 percent of Mounds View's total enrollment.

Kindergarten Assumptions

Trends are more stable in large populations than in small populations; therefore, projections for large populations tend to be more accurate than projections for small populations. Tying a school district projection to the county in which it is located takes advantage of this principle. Births five years earlier are a good proxy for a kindergarten class. However, because kindergarten students must be 5 years old by September 1, about one-third of the kindergarten class is born six years earlier not five years earlier. For example, one-third of the 2008-09 kindergarten class was born in 2002 and two-thirds were born in 2003. The result of adjusting the births to fit the age requirements of kindergarten will be called the kindergarten pool.

The Minnesota Department of Health reports resident births by county and for urban places, which means resident births are reported for Arden Hills, Mounds View, New Brighton, North Oaks, and Shoreview. Resident births in these five cities will be used to calculate the Mounds View resident kindergarten pool.

RESIDENT LIVE BIRTHS			
	Minnesota	Ramsey County Total	Suburban Ramsey County
1993	64,646	7,736	2,880
1994	64,277	7,605	2,666
1995	63,259	7,474	2,710
1996	63,681	7,330	2,568
1997	64,491	7,435	2,573
1998	65,207	7,477	2,500
1999	65,953	7,574	2,481

2000	67,451	7,572	2,434
2001	66,617	7,414	2,299
2002	68,037	7,359	2,323
2003	70,053	7,420	2,312
2004	70,617	7,272	2,236
2005	70,950	7,305	2,140
2006	73,515	7,578	2,362

Suburban Ramsey County is all of Ramsey County outside St. Paul
Source: Minnesota Department of Health

The next table shows resident live births by city. In four of the five cities, resident births are lower in 2006 than in 1993. Only New Brighton's resident births are higher in 2006 than in 1993. Between 2005 and 2006, resident births increased in New Brighton and Shoreview. Mounds View was essentially flat, with an increase of 5 resident births. Resident births continued to decline between 2005 and 2006 in Arden Hills and North Oaks. Based on these data, the 2005 to 2006 increase in suburban Ramsey County births occurred elsewhere.

RESIDENT BIRTHS						
	Arden Hills	Mounds View	New Brighton	North Oaks	Shoreview	Total
1993	94	187	250	31	321	883
1994	88	180	255	21	321	865
1995	83	206	271	21	300	881
1996	65	191	257	14	270	797
1997	67	199	251	21	288	826
1998	67	168	254	19	276	784
1999	73	184	246	17	248	768
2000	74	190	256	22	261	803
2001	72	169	259	16	255	771
2002	62	150	256	21	257	746
2003	66	171	234	24	268	763
2004	49	146	256	21	234	706
2005	57	142	225	26	220	670
2006	49	147	280	15	246	737

Source: Minnesota Department of Health

Applying a ratio of Mounds View's resident kindergarten to the Mounds View kindergarten pool takes advantage of actual births during the past several years. With birth data available through 2006, the kindergarten classes through 2011-12 can be projected on actual births. The kindergarten pool for the next several years suggests that resident kindergarten classes will fluctuate in size but will not be larger than the 2008-09 resident kindergarten.

The next table shows that the percentage of the Mounds View kindergarten pool enrolled in Mounds View's resident kindergarten class fluctuated from 71.4 percent to 87.2 percent since the kindergarten class of 2001-02. If nonresident kindergarten was 15 or 20 students, the resident capture rate percentages are near or above 90 percent in 1999-00 and 2000-01.

Ten years ago, the Mounds View Public schools captured a much larger share of its kindergarten pool. However, over these past ten years, the percentages fluctuated widely. In the past two years, the percentages were at or near 80 percent again. What caused these percentages to decline and then increase? No one event stands out. Movement of families with preschool or kindergarten age children obviously varies substantially from year to year. Some change is the result of the rise and fall of attendance in nonpublic schools, open enrollment and charter schools. The reasons are most likely complex.

Despite these fluctuations, the data suggest a likely range for future kindergarten class size. To reflect this expected range, three kindergarten projections were made. The first assumption is designed to capture the low end of the "normal" range. (Normal is defined as the range in the past decade.) The average of the past five years' percentages is 75.8 percent. While this is not as

low as three of the past eight years, it is a relatively low percentage given the history of the past eight years. For projection purposes, the 75.8 percent ratio will be called the low kindergarten assumption.

If the resident kindergarten class is 75.8 percent of the Mounds View kindergarten pool, kindergarten in 2009-10, 2010-11 and 2011-12 will be 550, 517 and 542 respectively. These projections seem low in light of the past several years; however, the pool is also smaller. Resident kindergarten in 2008-09 was 608.

The Minnesota State Demographer’s projection for Ramsey County 5-year-olds shows a small increase in that population. The 2015 projection is 0.7 percent larger than the 2010 projection and the 2020 projection is 1.1 percent larger than the 2015 projection. If 2010 to 2020 is viewed as a single period, the 5-year-old population increases 1.8 percent. Mounds View’s resident kindergarten is projected to increase at the same rate as Ramsey County 5-year-olds between 2010 and 2015 and 2015 and 2020.

MOUNDS VIEW KINDERGARTEN POOL			
AND			
PERCENT OF POOL IN MOUNDS VIEW’S RESIDENT KINDERGARTEN			
Birth Years	Pool	Percentage	Kindergarten Year
1993; 1994	871		1999-00
1994; 1995	875		2000-01
1995; 1996	825	87.2%	2001-02
1996; 1997	816	76.8%	2002-03
1997; 1998	798	72.9%	2003-04
1998; 1999	774	78.4%	2004-05
1999; 2000	791	71.4%	2005-06
2000; 2001	782	72.9%	2006-07

2001; 2002	754	78.4%	2007-08
2002; 2003	756	80.4%	2008-09
2003; 2004	725		2009-10
2004; 2005	682		2010-11
2005; 2006	715		2011-12

5-YEAR-OLDS	
	Ramsey Co.
2000	7,034
2010	6,470
2015	6,514
2020	6,584

The average of the past two years' resident kindergarten to Mounds View's kindergarten pool is 79.4 percent. This percentage reflects the recent past and will be called a middle kindergarten projection. Using this assumption, Mounds View's resident kindergarten in 2009-10, 2010-11 and 2011-12 will be 576, 542 and 568 respectively. For the middle resident kindergarten assumption, resident kindergarten will increase at the same rate as Ramsey County 5-year-olds between 2010 and 2015 and 2015 and 2020.

Based on the increase in the ratio of resident kindergarten to the Mounds View kindergarten pool, it is possible that the ratio will continue to increase and be closer to its 2000-01 to 2002-03 level. The average of these three earlier years is 84.3 percent. This percentage will be called the high kindergarten assumption. It represents the high end of the "normal" range. Using this assumption, resident kindergarten in 2009-10, 2010-11 and 2011-12 will be 611, 575, and 603

respectively. For the high kindergarten assumption, resident kindergarten will increase at the same rate as Ramsey County 5-year-olds between 2010 and 2015 and 2015 and 2020.

RESIDENT KINDERGARTEN PROJECTIONS						
Resident Kindergarten	Based on Kindergarten Pool			Based on 5-Year-Olds Increasing		
	@75.8%	@79.4%	@84.3%	@0.7% and 1.1% (2010-2015 and 2015-2020)		
2009-10	550	576	611			
2010-11	517	542	575			
2011-12	542	568	603			
2015-16				546	572	607
2020-21				552	578	614

Resident kindergarten classes were interpolated between 2011-12 and 2019-20. Of course, future growth will not be as gradual as these projections suggest, if the past is any guide. The numbers in the following table were used in the projection models.

RESIDENT KINDERGARTEN PROJECTIONS			
Year	Low	Middle	High
2009-10	550	576	611
2010-11	517	542	575
2011-12	542	568	603
2012-13	543	570	604
2013-14	544	570	605
2014-15	545	572	606
2015-16	546	572	607
2016-17	548	574	609
2017-18	549	575	610
2018-19	550	576	612
2019-20	551	577	613

Net Migration Assumptions

One of the advantages of the cohort survival method is that it produces projections for each grade. However, this requires migration assumptions for each grade. To mirror possibilities, three migration assumptions were developed. Again, the desired outcome was a low end and a high end of a “normal” range. The low migration assumption is based on the average of survival rates by grade for the past five years. A middle migration assumption is based on the average of survival rates by grades for the past three years. A high net migration assumption is based on the average of survival rates by grade for the past two years.

Note the increase in the survival rates in the progression from Kindergarten to Grade 1, Grade 2 to Grade 3 and Grade 3 to Grade 4 in these three assumptions. Survival rates for the other grades are fairly constant over time.

RESIDENT SURVIVAL RATES			
	Low Migration	Mid Migration	High Migration
K to 1	1.03	1.04	1.05
1 to 2	1.00	0.99	1.00
2 to 3	1.03	1.04	1.05
3 to 4	1.00	1.01	1.02
4 to 5	1.01	1.01	1.01
5 to 6	1.02	1.03	1.03
6 to 7	1.01	1.00	0.99
7 to 8	1.01	1.01	1.01
8 to 9	1.04	1.05	1.04
9 to 10	0.99	1.00	1.00
10 to 11	0.97	0.97	0.97
11 to 12	0.95	0.94	0.95

Because net migration is projected using survival rates for each grade, the percentage change will be the same each year while the actual number of students added or subtracted by grade may change from year to year.

The kindergarten and net migration assumptions are smoothed trend lines. The future, like the past, will be characterized by annual fluctuations, sometimes substantial, around the trend lines. Because there is no reasonable way to forecast when fluctuations around trend lines will occur, it is arbitrary to project

them. Furthermore, long-term projections are designed to approximate a point in the future, not each intervening year between the present and the projection date. For this reason, long-term projections should not be used for annual budgeting purposes. The district should continue to use its version of the cohort survival methodology for annual enrollment projections.

Projection Results

Four cohort projections were made based on the three kindergarten assumptions and the three migration assumptions. Two projections show resident enrollment decreasing throughout the projection period. The other two projections show resident enrollment at its lowest in 2014-15 or in 2015-16.

The lowest projection results from the low kindergarten and the low migration assumptions. This projection shows resident enrollment decreasing 928 students or 10.2 percent from 2008-09 to 2013-14. In 2013-14 resident enrollment is 8,137. By 2019-20, resident enrollment drops to 7,761. Resident enrollment was 9,065 in 2008-09. In light of the past two years, this projection appears low.

The high kindergarten and high migration assumptions yield the highest projection and results in a decrease of 439 resident students or 4.8 percent from 2008-09 to 2013-14. Between 2008-09 and 2019-20, resident enrollment decreases 201 students or 2.2 percent. Resident enrollment is 8,626 in 2013-14 and 8,864 in 2019-20. This projection is probably too high.

Between the high and low projections are two other projections. Both these projections are based on the middle kindergarten assumption, only the

migration assumptions are different. One projection is based on the middle migration assumption and the other is based on the high migration assumption. The lower of these two projections (the second lowest projection) yields 8,371 resident students in 2013-14 and 8,231 resident students in 2019-20. In this projection, resident enrollment declines throughout the projection period.

The second highest projection results from the combination of the middle kindergarten and high migration assumption. Resident enrollment decreases to 8,384 students in 2013-14. In the following year (2014-15), resident enrollment is at its lowest (8,384) and then increases to 8,433 students in 2019-20.

Both of these middle projections are very reasonable from today's vantage point.

RESIDENT ENROLLMENT PROJECTIONS				
Year	Low K Low Migration	Middle K Middle Migration	Middle K High Migration	High K High Migration
2008-09	9,065	9,065	9,065	9,065
2009-10	8,884	8,929	8,947	8,982
2010-11	8,651	8,748	8,777	8,847
2011-12	8,460	8,610	8,650	8,757
2012-13	8,291	8,488	8,541	8,685
2013-14	8,137	8,371	8,443	8,626
2014-15	8,023	8,298	8,389	8,611
2015-16	7,944	8,267	8,384	8,646
2016-17	7,891	8,254	8,397	8,700

2017-18	7,851	8,256	8,425	8,769
2018-19	7,811	8,252	8,441	8,828
2019-20	7,761	8,231	8,433	8,864

Note: Projections do not include Early Childhood

As these four resident projections show, the kindergarten assumptions have the largest effect on projected enrollment. This is to be expected because the migration assumptions were very similar beginning with Grade 5. However, as the two projections based on the middle kindergarten assumption show, the middle versus the high migration assumption results in a difference of 62 resident students in 2013-14 and a difference of 202 resident students in 2019-20.

As the next table shows, high school enrollment decreases in all four projections and is lower in 2019-20 than in 2008-09. From 2008-09 to 2013-14, the decrease ranges from 460 to 467 resident students, which shows how little difference the migration rates make for these grades in the short term. However, in 2019-20, the spread between the high and low projections results in 387 to 665 fewer resident high school students than in 2008-09. In the highest projection, resident high school enrollment increases between 2013-14 and 2019-20.

Resident middle school enrollment is also lower in 2019-20 than in 2008-09. Again, the highest projection shows an increase between 2013-14 and 2019-20. In the middle school grades, resident students decrease by 149 to 206 students. In 2019-20, the resident middle school enrollment is projected to be from 45 to 360 lower than in 2008-09.

The largest difference between the four projections is in the elementary

grades. At K-5, the 2013-14 middle kindergarten/high migration projection yields a resident enrollment very similar to 2008-09, 3,701 and 3,707 respectively. The middle kindergarten/middle migration projection shows a decrease of 92 resident students between 2008-09 and 2013-14. The highest projection (high kindergarten/high migration) shows an increase (177) in resident K-5 students between 2008-09 and 2013-14.

RESIDENT ENROLLMENT PROJECTIONS				
	K-5	6-8	9-12	Total
2008-09	3,707	2,158	3,200	9,065
2013-14				
Low K/Low M	3,445	1,952	2,740	8,137
Middle K/Middle M	3,615	1,983	2,773	8,371
Middle K/High M	3,701	2,009	2,733	8,443
High K/High M	3,884	2,009	2,733	8,626
2019-20				
Low K/Low M	3,428	1,798	2,535	7,761
Middle K/Middle M	3,626	1,928	2,677	8,231
Middle K/High M	3,711	1,991	2,730	8,433
High K/High M	3,938	2,113	2,813	8,864

In 2018-19, the 2007-08 kindergarten class will be in Grade 11, which means that all the grades below Grade 11 are a product of the projection assumptions. Detailed grade by year projections are at the end of this report.

As the projections clearly show, K-5 are the grades to monitor carefully. Resident enrollment in K-5 lies at the center of future policy decisions. Nearly one-half of all nonresident students are in K-5.

NONRESIDENT STUDENTS								
	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
K-5	140	121	140	186	198	239	253	275
6-8	49	61	73	87	105	103	108	101
9-12	84	114	119	158	160	182	188	199
Total	273	296	332	431	463	524	549	575

Individual Elementary Schools

Starting in 2005-06, the Mounds View School District has operated six elementary schools. Since 2005-06, resident enrollment change in the six schools

shows four different patterns. Resident students increased modestly in one school (Valentine Hills). In another, resident enrollment was essentially flat (Island Lake). Resident enrollment declined modestly at two schools (Turtle Lake and Sunnyside), while resident enrollment declined more significantly at two other schools (Bel Air and Pinewood). This pattern shows resident K-5 enrollment declining in the western part of the district. The remaining patterns are mixed.

RESIDENT ENROLLMENT CHANGE BY SCHOOL 2005-06 TO 2008-09	
Elementary Schools	
Bel Air	-8.6%
Island Lake	0.6%
Pinewood	-11.5%
Sunnyside	-3.3%
Turtle Lake	-2.5%
Valentine Hills	2.6%
Middle Schools	
Chippewa	-16.6%
Edgewood	10.0%
Highview	-3.6%
High Schools	
Irondale	-0.9%
Mounds View	-7.3%

When kindergarten and net migration are examined, the resident enrollment dynamics become even more complex. For example, Valentine Hills, which grew, had basically flat kindergarten classes. It benefited from kindergarten being flat and net in migration. On the other hand, Turtle Lake showed moderate decline. Its kindergarten fluctuated earlier but in 2008-09, it was 22 students higher than in 2007-08. Will resident kindergarten continue to increase at Turtle Lake? Probably not. The two schools with significant declines had fluctuating kindergartens and more modest net migration. With these

dynamics, accurately projecting enrollment at the elementary schools is very difficult.

RESIDENT ENROLLMENT BY ELEMENTARY SCHOOL								
	Percent Change 2005-06 to 2008-09	Kindergarten Class				Net Migration		
		2005- 06	2006- 07	2007- 08	2008- 09	2005 to 2006	2006 to 2007	2007 to 2008
Modest Growth								
Valentine Hills	2.6%	100	104	91	104	-0.3%	2.8%	2.6%
Flat								
Island Lake	0.6%	98	96	96	106	3.6%	3.0%	4.0%
Modest Decline								
Turtle Lake	-2.5%	128	113	124	146	2.9%	2.7%	3.6%
Sunnyside	-3.3%	82	77	90	83	-7.1%	0.5%	2.2%
Decline								
Bel Air	-8.6%	80	81	110	87	4.5%	2.3%	-0.4%
Pinewood	-11.5%	77	97	80	82	1.7%	-3.0%	0.6%

ENROLLMENT				
	2005-06	2006-07	2007-08	2008-09
Bel Air				
Total	672	667	656	633
Resident	626	606	601	572
Nonresident	46	61	55	61
Island Lake				
Total	690	685	684	701
Resident	674	667	657	678
Nonresident	16	18	27	23
Pinewood				
Total	599	586	55	530
Resident	575	566	531	509
Nonresident	24	20	24	21
Sunnyside				
Total	518	481	496	517
Resident	478	433	445	462
Nonresident	40	48	51	55
Turtle Lake				
Total	936	913	905	654
Resident	884	853	839	862
Nonresident	52	60	66	92
Valentine Hills				

Total	630	637	635	647
Resident	608	612	605	624
Nonresident	22	25	30	23

The table above shows the history of resident and nonresident enrollment by elementary school. As the data show, some schools are requested more often by nonresidents than other. This too compounds policy decisions and enrollment projections.

APPENDIX

NONRESIDENT ENROLLMENT										
Grade	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
K			26	22	38	46	42	46	52	59
1			8	19	27	39	40	46	49	51
2			33	8	17	33	38	43	50	54
3			32	28	11	16	29	38	37	40
4			18	24	25	23	28	37	35	34
5			23	20	22	29	21	29	30	37
6			22	20	25	25	32	24	35	32
7			12	23	27	33	41	33	32	35
8			15	18	21	29	32	46	41	34
9			19	19	24	44	37	44	47	51
10			19	26	23	43	43	41	48	47
11			23	34	34	31	44	48	46	53
12			23	35	38	40	36	49	47	48
Total			273	296	332	431	463	524	549	575

Excludes early childhood

Source: Mounds View School District

NONRESIDENT K-5 SURVIVAL RATES				
	2004-05 to 2005-06	2005-06 to 2006-07	2006-07 to 2007-08	2007-08 to 2008-09
K to 1	0.87	1.10	1.07	0.98
1 to 2	0.97	1.08	1.09	1.10
2 to 3	0.88	1.00	0.86	0.80
3 to 4	1.75	1.28	0.92	0.92
4 to 5	0.91	1.04	0.81	0.97

TOTAL ENROLLMENT										
Grade	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
K	819	787	745	649	620	653	607	615	643	667
1	864	852	787	714	665	652	644	616	660	662
2	876	861	823	788	700	678	648	642	623	664
3	834	873	840	790	758	728	676	672	643	658
4	915	831	848	813	755	762	721	676	673	655
5	902	922	825	818	787	765	749	736	689	676
6	855	889	914	824	819	788	767	791	755	708
7	894	859	902	894	829	844	806	793	786	753
8	937	884	829	908	899	833	839	824	808	798
9	1,027	964	892	853	950	947	861	911	852	857
10	915	983	951	876	835	959	923	864	882	868
11	898	857	928	908	834	812	941	898	834	868
12	881	864	811	907	865	807	786	890	845	806
Total	11,617	11,426	11,095	10,742	10,316	10,228	9,968	9,928	9,693	9,640

Excludes early childhood

Source: Mounds View School District

The different size of the Baby Boom generation and the Baby Bust generation, reflected in the table below, will result in significant changes in the age of the adult population, which is likely to affect the type of new housing units built in the future. The modest growth in the 20-34 year-olds population between 2010 and 2020 is especially significant for demand for “first” homes and the decrease in 35-54 year-olds is likely to affect the “move up” market.

AGE MINNEAPOLIS-ST. PAUL METRO AREA (11-COUNTIES)					
	2000	2010	2020	CHANGE 2000-2010	CHANGE 2010-2020
20-34 yrs	629,898	693,040	725,670	63,142	32,630
35-54 yrs	902,531	981,060	952,870	78,529	-28,190
55-64 yrs	217,880	359,720	460,080	41,840	100,360
65+ yrs	275,183	338,110	499,110	62,927	161,000

Source: Minnesota State Demographer, 2007