

# MOORHEAD PUBLIC SCHOOLS

ENROLLMENT PROJECTIONS

Hazel H. Reinhardt

April 13, 2015



# SUMMARY

- In the past ten years, enrollment increased 12.5 percent
  - Resident enrollment increased 12.9 percent
  - In 2014-15, nonresidents make up 3.1 percent of K-12 enrollment
  - The Moorhead Public Schools experienced net in migration all but two years in the past ten years; and kindergarten was larger than the previous year's Grade 12 in the past four years
  - The district's school age population increased as well
    - Moorhead Public Schools capture 79.3 percent of the school age population



# SUMMARY

- Projected enrollment
  - Enrollment projected to increase 25 percent to 30 percent in the next ten years
    - 7,154 students to 7,436 students compared to 5,724 students in 2014-15
      - **For growth to occur at this rate, the district must continue to have an increase in single-family detached housing units**



# SUMMARY

- Race/ethnicity projections show both the number of White students and the number of minority students increasing. Minority students projected to be 21.9 percent of K-12 students in five years



# SUMMARY

- Free/reduced lunch projections show this population decreasing. Free/reduced lunch students projected to be 32.8 percent of K-12 students down from 38.5 percent. The economy and eligibility requirements affect this population



# SUMMARY

- In five years, elementary enrollment increases at all elementary schools but especially at Robert Asp and S.G. Reinertsen



# HOUSING CHARACTERISTICS

- *Single-family detached units have the highest student yield per unit*
  - The per unit yield in the Moorhead School District is 0.38
    - 80 percent of resident students reside in single-family detached units
- *Newer single-family detached units yield more students per unit than older single-family detached units*
  - This is true in the Moorhead School District as well
    - The highest yield (0.62) is from the newest units (built 2000 or later)
    - The lowest yield (0.21) is from the oldest units (built pre 1940)

# HOUSING CHARACTERISTICS

Housing Type	Units	K-12 Students	K-12 Yield
Single-Family Detached	11,724	4,483	0.38
Duplex/Triplex	n.a.	67	n.a.
Apartments	n.a.	936	n.a.
Mobile Homes	n.a.	119	n.a.
Total	n.a.	5,605	n.a.





# HOUSING CHARACTERISTICS

- *As single-family detached units sell (turnover), student yield usually increases in the newer units. In older units, yield is likely to decrease*
  - In the Moorhead School District, as units sell, the yield of public school students increases
    - 0.44 for those that sell; 0.37 for those not sold
  - 266 new single-family units built from January 1, 2012 to December 31, 2014. Per unit yield of 0.49



# HOUSING CHARACTERISTICS

- *The market value of single-family detached units affects the yield per unit. Moderately priced to higher priced units yield more children per unit than the lowest priced units.*
  - Like most other school districts, in the Moorhead School District, the highest yield per unit of public school students comes from the most expensive single-family units
    - 0.56 for units \$200,000 or more
    - 0.23 for units less than \$100,000



# HOUSING CHARACTERISTICS

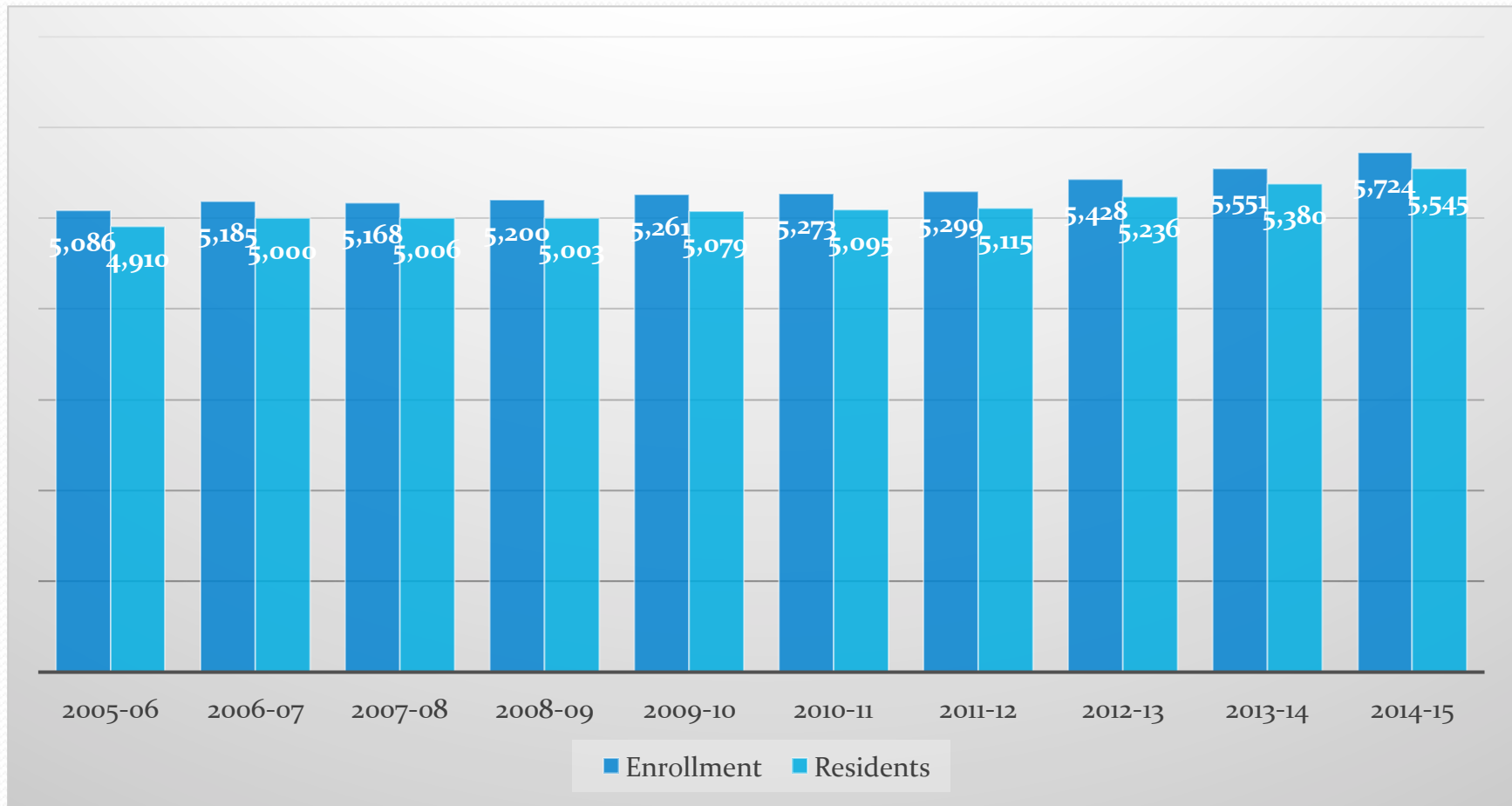
- 34% of single-family detached units have at least one person 55+ years of age in the Moorhead School District

# PROJECTED HOUSING GROWTH

## PROJECTED DEVELOPMENT TO 2017-18

City	Single-Family Detached	Townhomes/Twin Homes	Apartments
Dilworth	0	0	100
Georgetown	0	0	0
Moorhead	300-420	135-255	393
Sabin	7	0	0

# ENROLLMENT



# ENROLLMENT HISTORY

K-12 ENROLLMENT	
2005-06	5,086
2006-07	5,185
2007-08	5,168
2008-09	5,200
2009-10	5,261
2010-11	5,273
2011-12	5,299
2012-13	5,428
2013-14	5,551
2014-15	5,724
Excludes Early Childhood and ALC	

# COMPONENTS OF ENROLLMENT CHANGE

Fall to Fall	Total		Natural Increase/ Decrease	Net Migration
	#	%		
2005 to 2006	99	2.0	24	75
2006 to 2007	-17	-0.3	-33	16
2007 to 2008	32	0.6	-8	40
2008 to 2009	61	1.2	48	13
2009 to 2010	12	0.2	-38	50
2010 to 2011	26	0.5	41	-15
2011 to 2012	129	1.4	133	-4
2012 to 2013	123	1.3	108	15
2013 to 2014	173	3.1	139	34
Total	638		414	244



# MANY CHANGES

- Today, enrollment changes result from
  - Demographic changes
    - Age of the population
    - Fertility rates
    - Amount of residential development
  - Education marketplace
    - Education choices
      - Nonpublic
      - Public
        - Open enrollment
        - Charter schools



# EDUCATION CHOICES

2013-14

	Minnesota	Moorhead
Nonpublic settings	9.2%	10.4%
Traditional schools	7.4%	8.4%
Home schools	1.9%	2.0%
Public Options		
Open enrollment		
In	7.4%	3.1%
Out	7.4%	7.7%
Charter schools	4.7%	0.3%
Capture Rate	77.3%	79.3%

# ENROLLMENT

Grade	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
K	377	421	381	397	417	387	429	483	494	500
1	411	401	431	405	402	432	405	441	490	499
2	358	413	392	426	407	421	427	413	434	515
3	368	358	415	398	440	396	421	437	433	459
4	359	379	356	417	391	446	405	418	433	436
5	390	372	386	379	417	392	444	407	418	442
6	352	420	374	401	397	435	400	444	414	441
7	410	363	423	370	403	418	417	398	446	409
8	419	398	373	404	374	407	417	434	395	432
9	393	432	413	377	423	382	406	403	448	401
10	420	387	436	420	367	415	381	397	402	425
11	432	427	383	437	398	354	397	367	383	378
12	397	414	405	369	425	388	350	386	361	387
Total	5,086	5,185	5,168	5,200	5,261	5,273	5,299	5,428	5,551	5,724



# AVERAGE CLASS SIZE

- “Average” grade size
  - 475 K-5
  - 427 6-8
  - 398 9-12
- Growth momentum. The distribution of students by grade suggests enrollment will increase, if kindergarten remains near its current size



# MACRO TRENDS

- Aging population
  - Less mobility
  - Decrease in school age population per household
  - Shift in size of adult age groups
    - Less demand for single-family detached housing
- More births this decade and the next (Gen Y)
  - Another enrollment cycle (third)
    - Rising elementary enrollment in the first half of the cycle
    - Another large graduating class about 2040 (end of cycle)



# PROJECTION METHODOLOGY

- Cohort survival method
  - Projections by grade
  - Reflects recent births and current size of grades
  - Difficult to calibrate survival rates to reflect additional housing units, especially if a large number of units

# RESIDENT BIRTHS

Calendar Year	Minnesota	Clay County	Moorhead City	
1999	65,953	647	439	
2000	67,451	516	302	
2001	66,617	430	289	
2002	68,037	587	361	
2003	70,053	694	412	
2004	70,617	654	406	
2005	70,950	715	417	
2006	73,515	757	485	
2007	<b>73,675</b>	782	474	
2008	72,382	780	<b>507</b>	
2009	70,617	771	491	
2010	68,407	817	543	
2011	68,416	750	494	
2012	68,783	807	567	
2013	69,183	812	555	

Birth Years	County Pool	Percentage	Kindergarten Year
1999; 2000	560	67.3%	2005-06
2000; 2001	458	91.9%	2006-07
2001; 2002	535	71.2%	2007-08
2002; 2003	659	60.2%	2008-09
2003; 2004	667	62.5%	2009-10
2004; 2005	695	55.7%	2010-11
2005; 2006	743	57.7%	2011-12
2006; 2007	774	62.4%	2012-13
2007; 2008	781	63.3%	2013-14
2008; 2009	774	64.6%	2014-15
2009; 2010	801		2015-16
2010; 2011	772		2016-17
2011; 2012	789		2017-18
2012; 2013	810		2018-19



# KINDERGARTEN/BIRTH RATIOS

- Cohort survival method
  - Kindergarten Assumptions
    - Low is 63.4% (average of the past three years)
    - High is 65.7% (average of the past ten years)
  - Longer-term
    - Clay County resident births will be 1.17 percent of projected Minnesota resident births



# KINDERGARTEN PROJECTIONS

Year	@63.4%	@65.7%
2014-15	500	500
2015-16	508	526
2016-17	489	507
2017-18	500	518
2018-19	514	532
2019-20	519	537
2020-21	525	544
2021-22	531	550
2022-23	536	556
2023-24	543	563
2024-25	548	568
Total	5,213	5,401

Past 10 years 4,286 kindergarten students

# NET MIGRATION

SCHOOL YEAR TO SCHOOL YEAR									
Grade	05 to 06	06 to 07	07 to 08	08 to 09	09 to 10	10 to 11	11 to 12	12 to 13	13 to 14
K-5	50	8	50	14	30	20	29	16	67
6-8	29	15	-8	24	43	-11	15	6	4
9-12	-4	-7	-2	-25	-23	-24	-48	-7	-37
Total	75	16	40	13	50	-15	-4	15	34

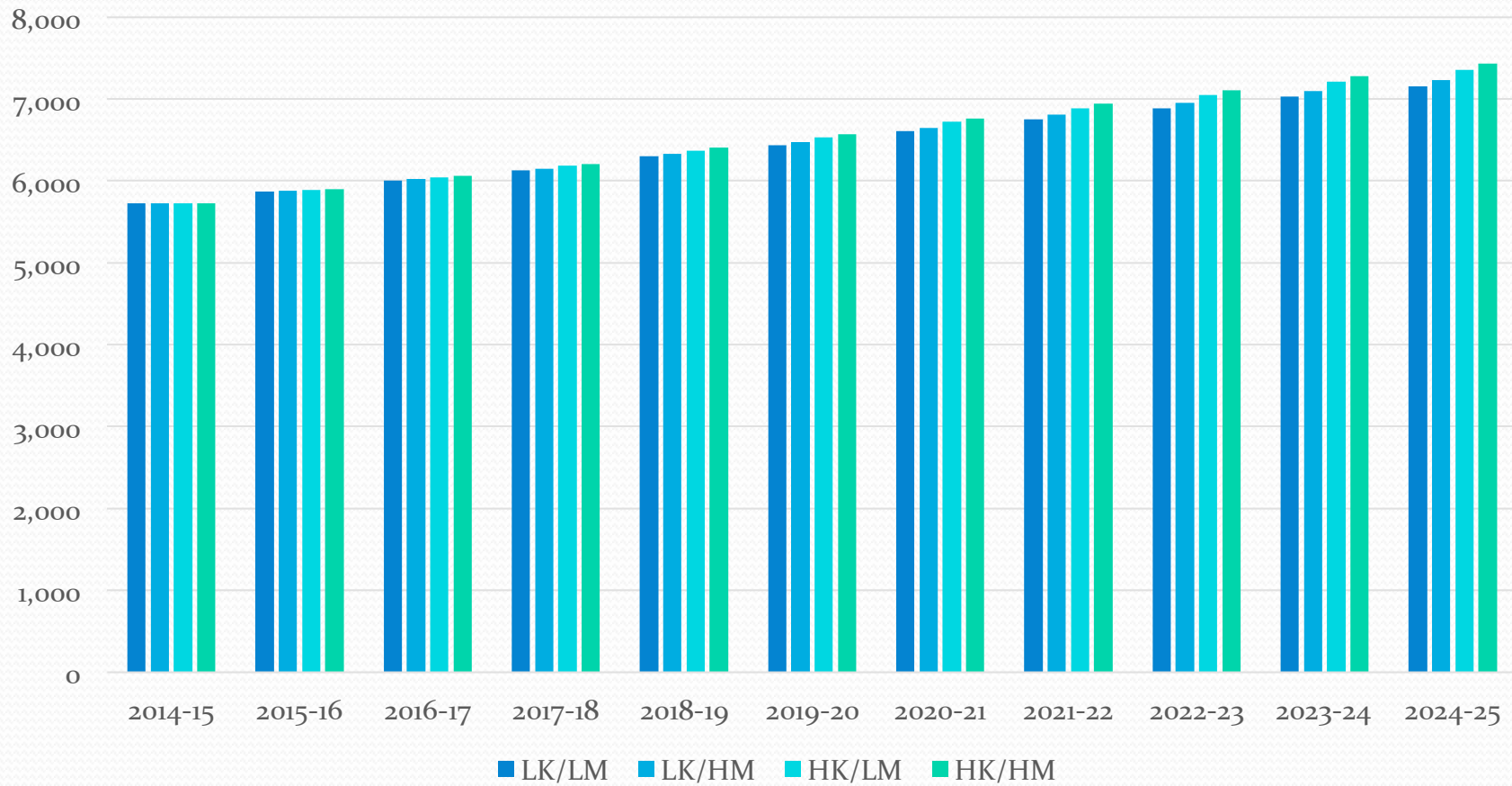
# TOTAL MIGRATION BY GRADE

Grade	05 to 06	06 to 07	07 to 08	08 to 09	09 to 10	10 to 11	11 to 12	12 to 13	13 to 14
K to 1	24	10	24	5	15	18	12	7	5
1 to 2	2	-9	-5	2	19	-5	8	-7	25
2 to 3	0	2	6	14	-11	0	10	20	25
3 to 4	11	-2	2	-7	6	9	-3	-4	3
4 to 5	13	7	23	0	1	-2	2	0	9
<b>5 to 6</b>	<b>30</b>	<b>2</b>	<b>15</b>	<b>18</b>	<b>18</b>	<b>8</b>	<b>0</b>	<b>7</b>	<b>23</b>
6 to 7	11	3	-4	2	21	-18	-2	2	-5
7 to 8	-12	10	-19	4	4	-1	17	-3	-14
<b>8 to 9</b>	<b>13</b>	<b>15</b>	<b>4</b>	<b>19</b>	<b>8</b>	<b>-1</b>	<b>-14</b>	<b>14</b>	<b>6</b>
9 to 10	-6	4	7	-10	-8	-1	-9	-1	-23
10 to 11	7	-4	1	-22	-13	-18	-14	-14	-24
11 to 12	-18	-22	-14	-12	-10	-4	-11	-6	4
Total	75	16	40	13	50	-15	-4	15	34

# PROJECTED SURVIVAL RATES

Grade	Low (past 5 years)	High (past 2 years)
K to 1	1.027	1.012
1 to 2	1.018	1.018
2 to 3	1.020	1.053
3 to 4	1.006	0.999
4 to 5	1.005	1.011
<b>5 to 6</b>	<b>1.027</b>	<b>1.036</b>
6 to 7	1.000	0.997
7 to 8	1.002	0.981
<b>8 to 9</b>	<b>1.006</b>	<b>1.024</b>
9 to 10	0.981	0.974
10 to 11	0.958	0.953
11 to 12	0.986	0.997

# ENROLLMENT PROJECTIONS



# ENROLLMENT PROJECTIONS

Year	Low K Low Mig	Low K High Mig	High K Low Mig	High K High Mig
2014-15	5,724	5,724	5,724	5,724
2015-16	5,867	5,877	5,885	5,895
2016-17	6,007	6,021	6,043	6,057
2017-18	6,129	6,150	6,185	6,204
2018-19	6,297	6,329	6,372	6,404
2019-20	6,438	6,473	6,532	6,566
2020-21	6,606	6,650	6,721	6,765
2021-22	6,751	6,808	6,886	6,944
2022-23	6,886	6,951	7,044	7,109
2023-24	7,030	7,100	7,209	7,280
2024-25	7,154	7,233	7,355	7,436

# ENROLLMENT PROJECTIONS

	K-5	6-8	9-12	Total
<b>2014-15</b>	<b>2,851</b>	<b>1,282</b>	<b>1,591</b>	<b>5,724</b>
<b>2019-20</b>				
Low K/Low Mig	3,175	1,561	1,702	6,438
Low K/High Mig	3,183	1,595	1,694	6,473
High K/Low Mig	3,269	1,561	1,702	6,532
High K/High Mig	3,277	1,595	1,694	6,566
<b>2024-25</b>				
Low K/Low Mig	3,355	1,665	2,134	7,154
Low K/High Mig	3,363	1,692	2,177	7,233
High K/Low Mig	3,477	1,725	2,154	7,355
High K/High Mig	3,485	1,753	2,198	7,436

# K-12 ENROLLMENT BY RACE/ETHNICITY AND FREE/REDUCED MEALS

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
White	<b>4,546</b>	4,673	4,778	4,866	5,015	5,128
Minority	<b>1,178</b>	1,223	1,284	1,342	1,390	1,441
Sum	<b>5,724</b>	5,896	6,062	6,208	6,405	6,569
Districtwide	<b>5,724</b>	5,895	6,057	6,204	6,404	6,566
Free/Reduced	<b>2,201</b>	2,207	2,181	2,156	2,156	2,153



# PROJECTIONS BY RACE/ETHNICITY

	White	Minority
<b>2014-15</b>	<b>4,559</b>	<b>1,185</b>
2019-20	5,128	1,441
Change		
<b>2010-11 to 2014-15</b>	<b>5.3%</b>	<b>26.7%</b>
2014-15 to 2019-20	12.5%	21.6%
Percent Distribution		
<b>2014-15</b>	<b>79.4%</b>	<b>20.6%</b>
2019-20	78.1%	21.9%

# PROJECTIONS BY FREE/REDUCED MEALS

	Free/Reduced Meals
<b>2014-15</b>	<b>2,201</b>
2019-20	2,153
Change	
<b>2010-11 to 2014-15</b>	<b>7.3%</b>
2014-15 to 2019-20	-2.2%
Percent Distribution	
<b>2014-15</b>	<b>38.5%</b>
2019-20	32.8%

## K-5 ENROLLMENT BY SCHOOL

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Robert Asp	786	827	894	923	926	943
Ellen Hopkins	732	745	779	809	818	827
S.G. Reinertsen	833	882	914	947	954	969
Kindergarten	500	526	507	518	532	537
Sum	2,851	2,980	3,094	3,197	3,230	3,276
District wide	2,851	2,982	3,095	3,197	3,231	3,277

# K-5 RESIDENT STUDENT YIELD FROM SINGLE-FAMILY UNITS

Attendance Area	Existing Units (pre 2012)				New Units (2012-2014)	
	Non Movers		Movers (New Residents)		#	Yield
	#	Yield	#	Yield		
Robert Asp	4,072	0.16	601	0.21	96	0.21
Ellen Hopkins	2,662	0.14	447	0.21	2	0.00
S.G. Reinertsen	3,265	0.21	411	0.41	168	0.40
Total	9,999	0.17	1,459	0.27	266	0.33

# COMPARISON OF COHORT PROJECTIONS AND HOUSING UNIT PROJECTIONS

- 2017-18
  - 3,216 all K-5 students (cohort method)
  - 3,086 resident K-5 students (housing unit method)
    - If nonresidents remain at 1.2 percent of K-5 enrollment, housing unit method, with nonresidents added, would result in 3,123 K-5 students
    - Estimate 84 additional students from townhomes and apartments
    - Total housing unit method projection of 3,207 (only 9 students less than the cohort projection)