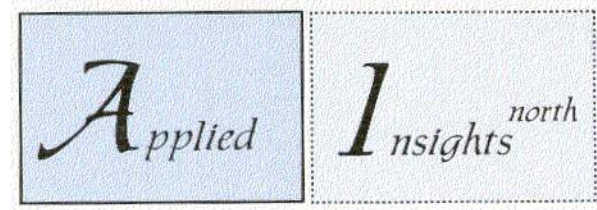




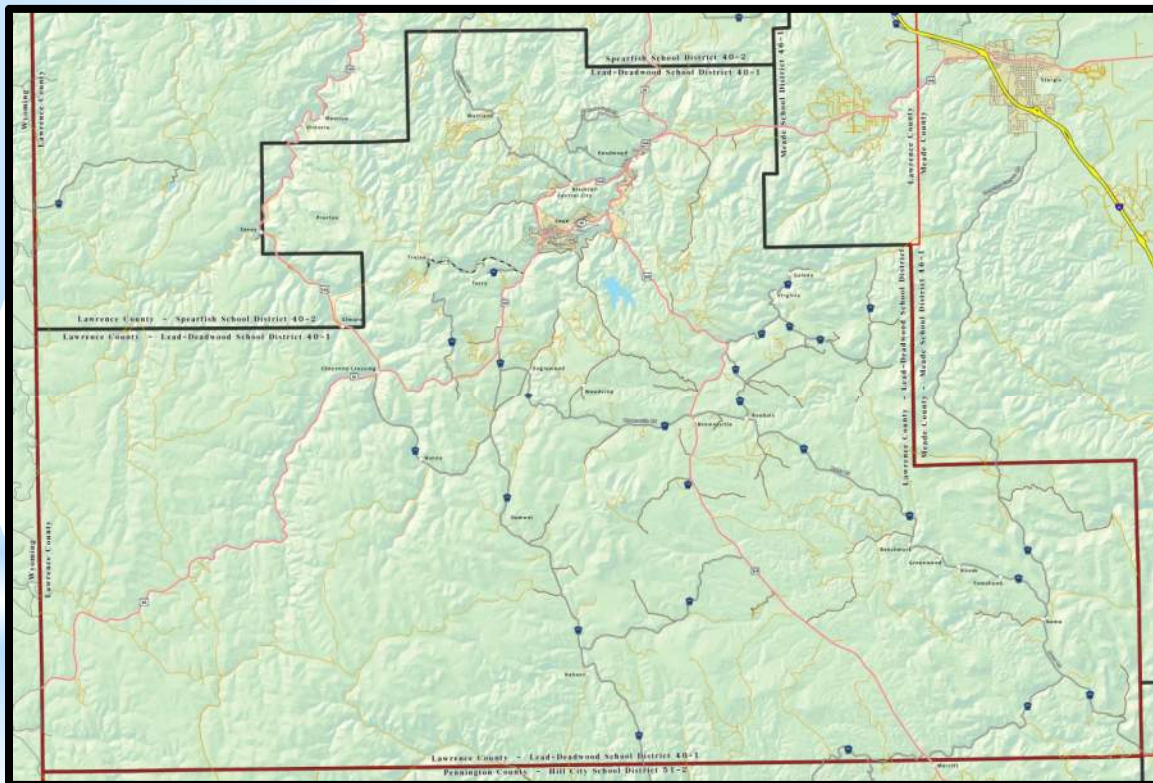
Lead-Deadwood School District Student Enrollment Projection to 2025/26



The Overview

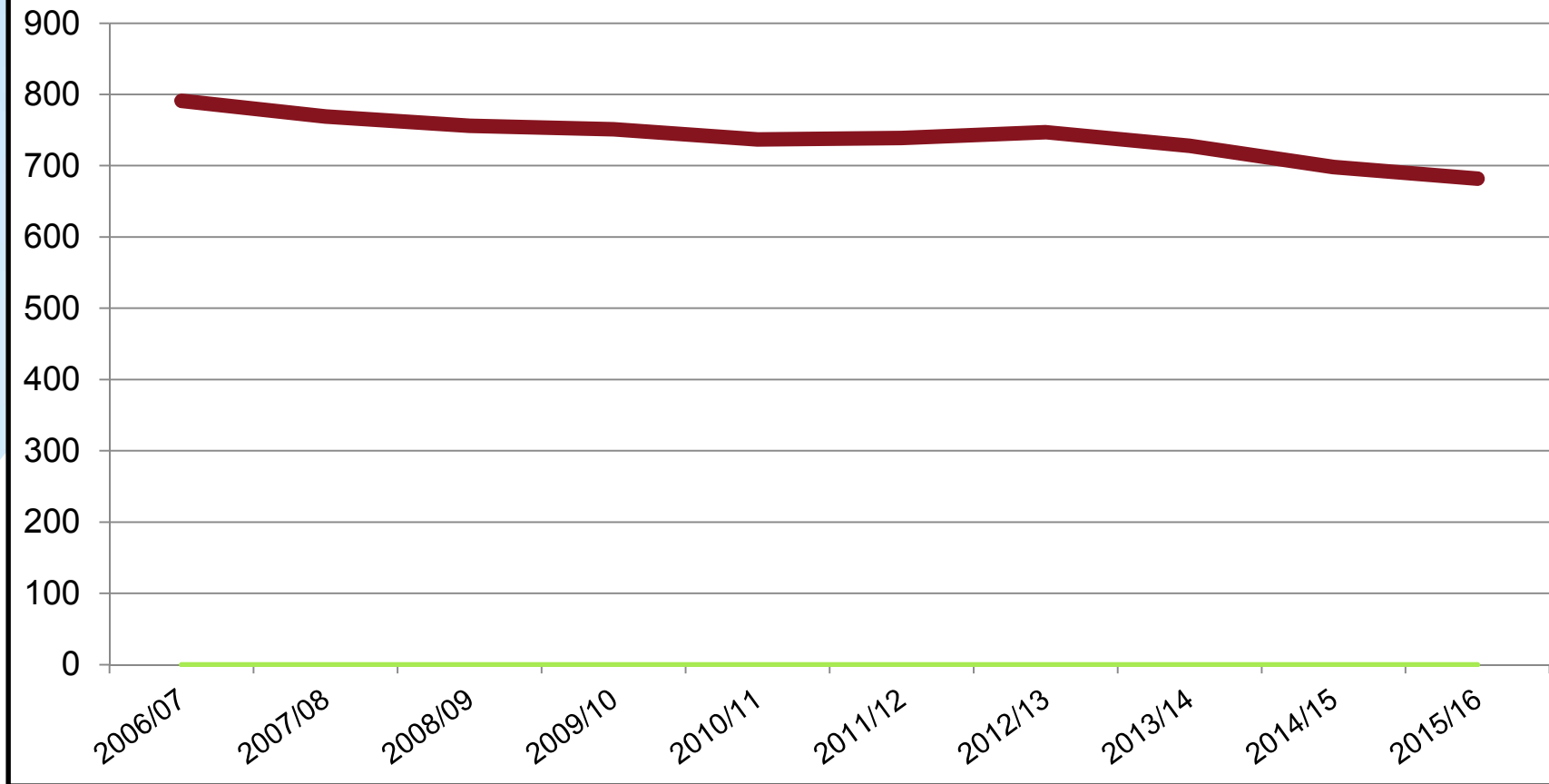
- Over the past 10 years Lead-Deadwood's K-12 enrollment decreased from 791 to 682 (-14%).
- The average size of K-5 classes rose in response to the peak births in 2004-07 and then declined (54 to 61 to 56). Average Grade 6-8 sizes declined from 64 to 47 and Grade 9-12 sizes from 70 to 52.
- Enrollment decline was driven by fewer students living in the district. The estimated "pool" of resident K-12 students (students living within the district regardless of where they attend) dropped from 813 to 692 (-15%).
- Open enrollment has been a minor factor in total enrollment with relatively few students opting to enroll elsewhere or come into the district. Over the past three years the district has averaged 39 resident students going to other districts and 29 coming in for an average net loss of 10 students.
- Births to residents of Lawrence County peaked in 2006 at 252 before declining to a rough plateau. Over the past five years births have averaged 200 per year. Future births are expected to be at or just above that level.
- **Projected K-12 enrollment is expected to continue to decline to around 513 in 2025/26.**

Factors Considered in Projection



- Pattern of student enrollment change within the district.
- Trends in adjacent districts including open enrollment exchanges.
- Economic activity and population change and development pattern for Lawrence County.
- Patterns of births relative to district kindergarten enrollment including projected births.

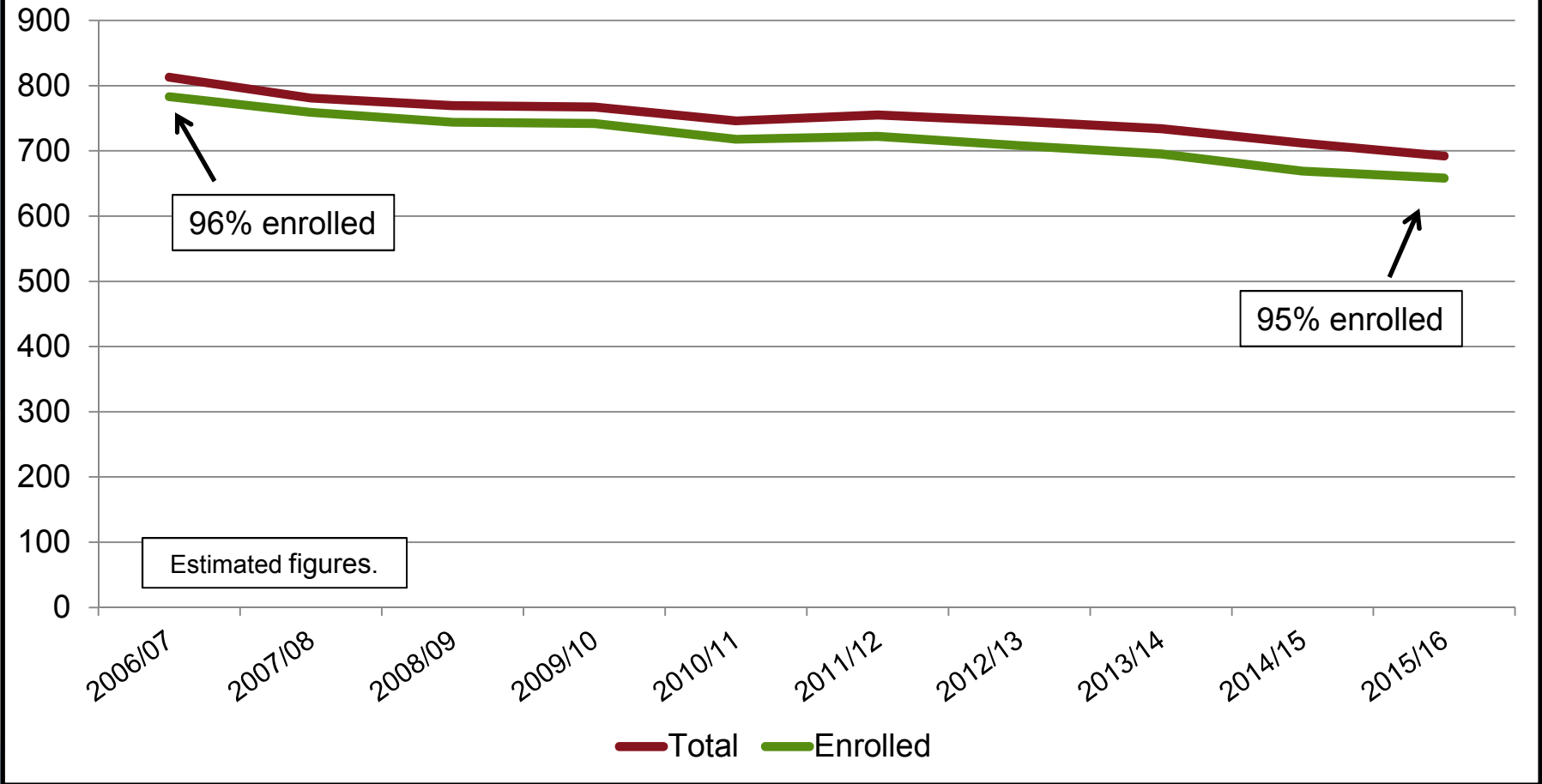
Lead-Deadwood K-12 Enrollment, 2006/07-2015/16



Avg Class	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
K - 5	54	54	54	53	53	57	61	59	55	56
6 - 8	64	60	56	58	55	49	52	54	51	47
9 - 12	70	67	66	66	63	62	56	53	53	52

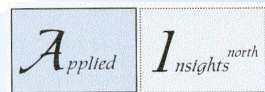
Source: SD DoE, district.

Lead-Deadwood: Total Number of Resident K-12 Student vs Those Enrolled in District



Residents	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Total	813	781	769	767	746	755	745	734	712	692
Enrolled	783	759	744	742	718	722	708	695	669	658

Source: SD DoE, Applied Insights North.

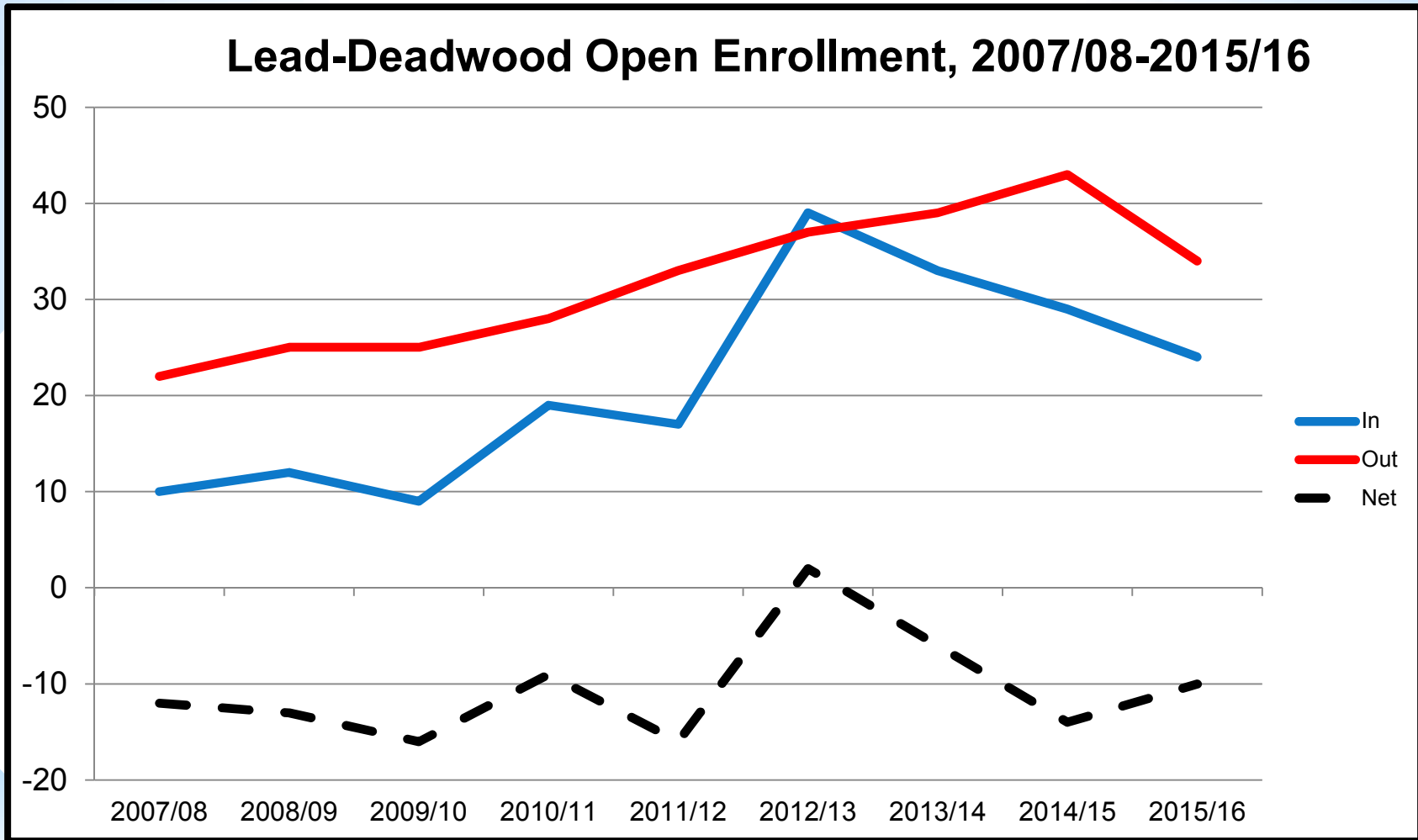


Lead-Deadwood Enrollment, 2006/07 – 2015/16

Grade	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
EC	12	16	16	25	20	14	23	21	30	24
Kg	59	52	48	48	67	75	61	51	45	42
1	48	57	57	47	45	67	79	66	54	47
2	51	48	53	60	53	46	74	68	63	54
3	56	55	49	59	53	52	47	69	64	63
4	52	53	57	49	53	51	53	46	66	65
5	55	58	60	52	47	53	53	54	40	64
6	58	54	55	63	50	42	54	54	50	41
7	65	56	53	55	61	48	47	58	47	49
8	68	70	61	55	55	57	56	50	56	50
9	64	68	69	72	65	61	63	56	55	52
10	67	66	67	68	60	64	52	59	56	51
11	71	67	63	60	63	52	55	49	56	53
12	77	65	64	63	65	71	53	48	46	51
Total EC-12	803	785	772	776	757	753	770	749	728	706
Total K-12	791	769	756	751	737	739	747	728	698	682
K - 6	379	377	379	378	368	386	421	408	382	376
7 - 12	412	392	377	373	369	353	326	320	316	306

Source: SD DoE, district.

Open Enrollment



Open Enrollment

	2013/14		2014/15		2015/16	
	In	Out	In	Out	In	Out
Belle Fourche	0	2	0	1	0	2
Hill City	0	8	0	7	0	7
Meade County	22	5	18	4	15	4
Rapid City	0	2	0	2	0	2
Spearfish	11	18	11	29	9	19
All Other Districts	0	4	0	0	0	0
Total	33	39	29	43	24	34
Net exchange		-6		-14		-10

Open Enrollment Summary									
	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
In	10	12	9	19	17	39	33	29	24
Out	22	25	25	28	33	37	39	43	34
Net	-12	-13	-16	-9	-16	2	-6	-14	-10

Student Location Analysis

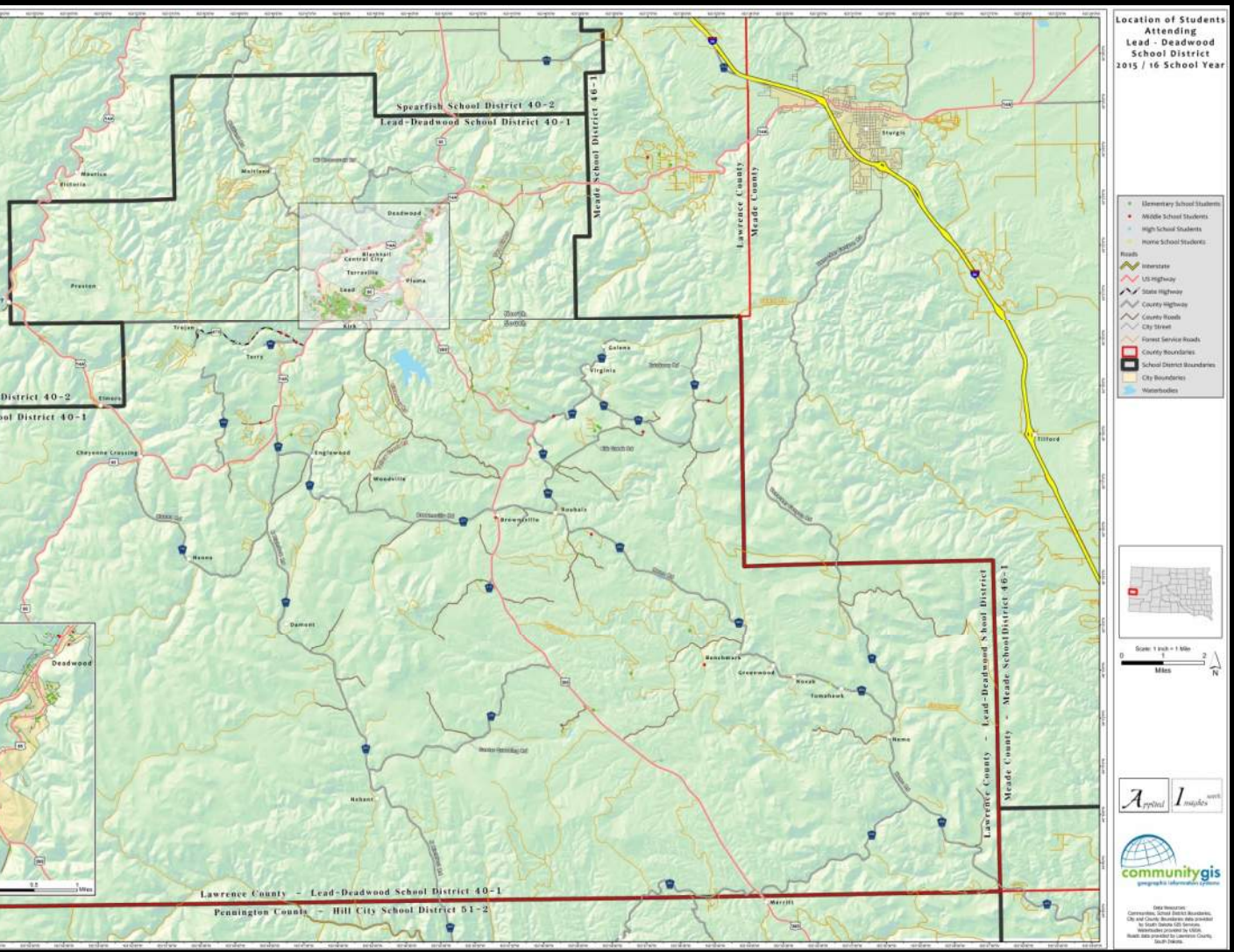
Addresses of students enrolled in the district in 2015/16 were mapped so as to provide a picture of student distribution across the district and identify spatial trends in enrollment. It must be stressed that the only data used for mapping were grade and address.

General Findings

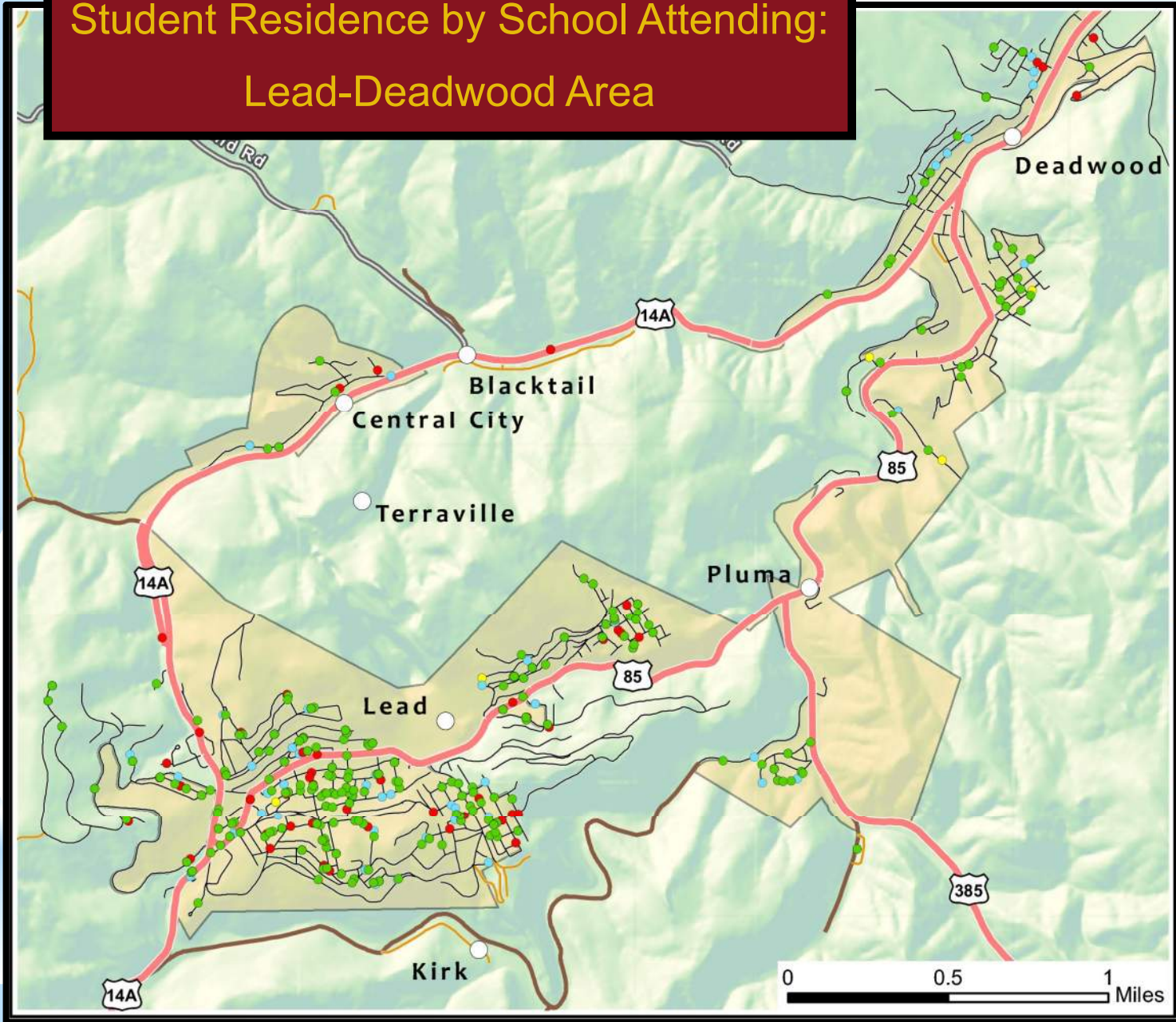
- Two-thirds of students live in Lead (when Unmatched/PO Box students are excluded, Lead has 65.6% of the students, Rural South has 10.9% and Deadwood 10.2%).
- The spatial distribution of students in elementary school compared to those in middle and high school indicates a trend towards more students living in Lead and, to a much lesser degree, Deadwood.
- The rural areas are seeing slight downward trends in the number of students living there.


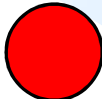
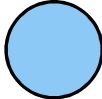
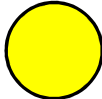
Student Residence by School Attending

Students are located by color code identifying the school they attended. Digital version of this map that can be examined in detail is available through the District.



Student Residence by School Attending: Lead-Deadwood Area



-  Elementary
-  Middle.
-  High.
-  Home Schooled.

Student Location Analysis

Number of Students Attending				
	Elementary	Middle	High	Total
Lead	248	92	111	451
Deadwood	46	8	16	70
Central City	4	4	2	10
Rural - North	26	10	16	52
Rural - South	33	18	24	75
Non-resident	13	7	9	29
Unmatched/PO	26	11	39	76
Total	396	150	217	763

Lead and Deadwood figures include students living within a quarter-mile of city limits.

Dividing line between north and south rural areas runs east/west just south of Lead city limits.

“Unmatched/PO” students are those with PO Box numbers or other addresses that could not be matched to a specific street location.

When the “Unmatched/PO” students (whose specific residence is not mapped) are subtracted, Lead’s total percentage rises to 65.6%, Rural South to 10.9% and Deadwood’s to 10.2%.



Percentage of Enrollment				
	Elementary	Middle	High	Total
Lead	62.6%	61.3%	51.2%	59.1%
Deadwood	11.6%	5.3%	7.4%	9.2%
Central City	1.0%	2.7%	0.9%	1.3%
Rural - North	6.6%	6.7%	7.4%	6.8%
Rural - South	8.3%	12.0%	11.1%	9.8%
Non-resident	3.3%	4.7%	4.1%	3.8%
Unmatched/PO	6.6%	7.3%	18.0%	10.0%
Total	100.0%	100.0%	100.0%	100.0%

Class Retention Ratios

Average Class Retention Ratios for 2007/08 to 2015/16 by Three-Year Groups

Grade Shift	All Years	First 3	Mid 3	Last 3	Projection
K > 1	1.02	1.01	1.00	1.06	1.06
1 > 2	1.01	0.99	1.08	0.94	0.94
2 > 3	1.00	1.07	0.96	0.96	0.96
3 > 4	0.98	0.99	0.96	0.98	0.98
4 > 5	1.00	1.05	1.00	0.95	0.95
5 > 6	0.98	0.99	0.96	0.99	0.99
6 > 7	0.99	0.98	1.02	0.97	0.97
7 > 8	1.04	1.07	1.03	1.03	1.03
8 > 9	1.07	1.06	1.13	1.01	1.01
9 > 10	0.95	1.00	0.89	0.95	0.95
10 > 11	0.93	0.95	0.88	0.95	0.95
11 > 12	0.98	0.96	1.08	0.91	0.91

These ratios indicate the number of students who move from one grade level to the next. A number less than 1.0 means fewer students moved from one grade level to the next and a number greater than 1.0 means additional students joined the class from one year to the next.

The projection uses the average of the past three years.

Analyze 2000-2010 trends:
Changes in age groups
Births per year

Add in county level projections by
State Dept of Labor & Regulations

**Future:
Estimating
Births and
Kindergarteners**

Key factor is women age 15-44

Evaluate optional
fertility rates

Sources: US Census
State projections
State Department of Health.

Population Review

	1970	1980	1990	2000	2010	2015	2020	2025
Lawrence County								
Population	17,453	18,339	20,655	21,802	24,097	24,827	25,780	26,459
Change		5.1%	12.6%	5.6%	10.5%	3.0%	3.8%	2.6%
Lead-Deadwood Housing Market*								
Population			7,740	6,702	6,545	6,713	6,963	
Change				-13.4%	-2.3%	2.6%	3.7%	

*Housing market closely approximates Lead-Deadwood School District area.

Population Review

Observations on Regional Economy

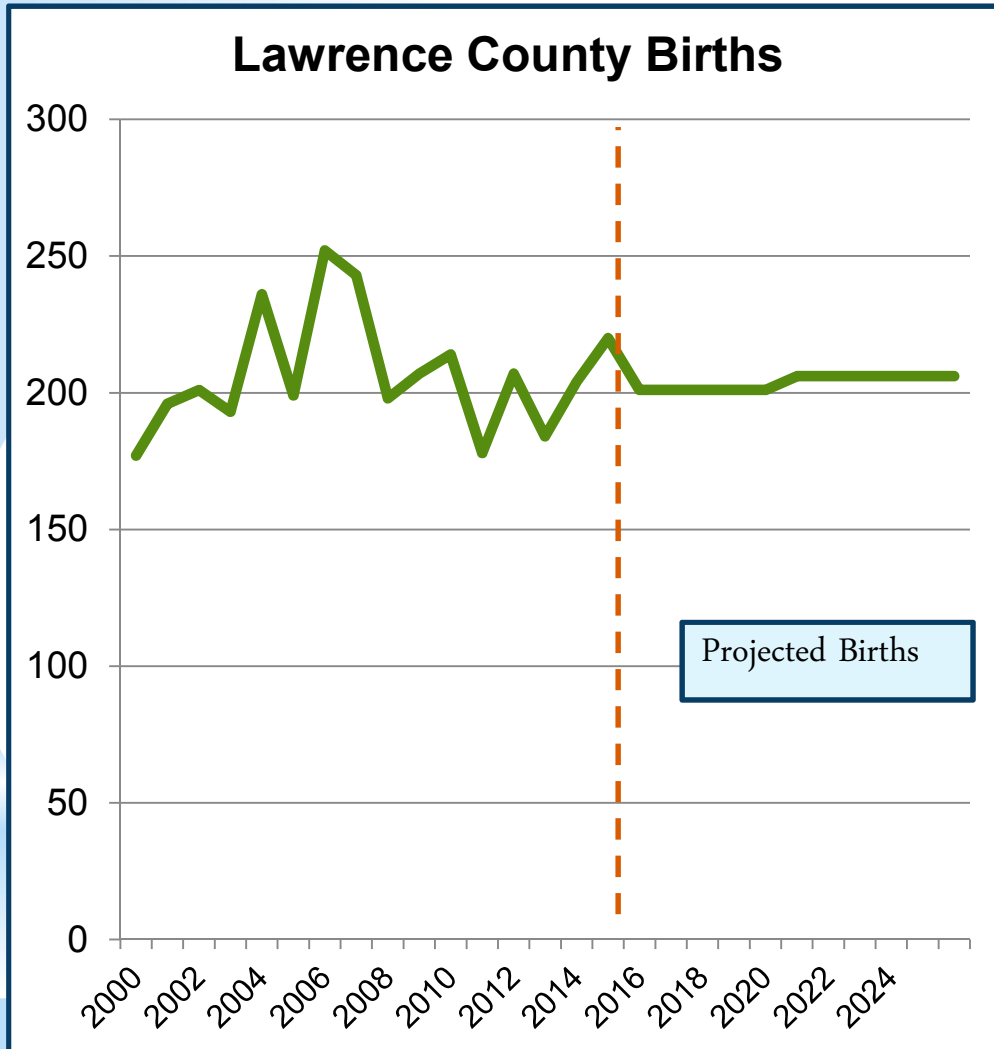
- The Sanford Underground Research Facility is key to Lead's economic rejuvenation. The 10-year construction phase will involve 200 workers. Current and future research projects will involve just a few permanent workers supplemented with crews that rotate in and out.
- Tourism drives Deadwood's economy. This sector has been strong and continues to grow but wages tend to be low making housing affordability an issue.
- Over 2000 workers commute daily into Lead and Deadwood.
- Housing—its availability and cost—is the major issue for both communities. Terrain makes it difficult and expensive to build new housing. There are some projects in the works in both communities. Lead is focused on developing “infill” properties for housing and there are several opportunities to provide a number of units but the city is not extending its utility service area primarily due to cost. Proposed projects will greatly help but not dent the potential need.
- The recently upgraded highway connections from Deadwood into Sturgis and Spearfish have made the commute for workers faster, easier and safer. These communities are now 15-20 minute drives from the local jobs. There is a plentiful amount of good, affordable housing in Spearfish which also has the range of amenities that make it attractive for residents. Further, it has a “softer” and shorter winter than Lead or Deadwood.
- Housing in the rural areas of the school district is dominated by second homes and those bought by retirees.

Population Review

Key Findings

- As Lawrence County's population has grown, the proportion of the people living within the Lead-Deadwood school district has decreased from 37.5% in 1990 to 27.0% in 2015.
- Between 2000 and 2010 the number of children ages 0-14 declined by 1.0% in Lawrence County as a whole but by 19.1% within the Lead-Deadwood market area.
- Within the market area the number of people ages 25-44 (prime family generation age group) declined by 25.1% from 2000 to 2010.
- For the Lead-Deadwood market area the anticipated change in households by age-group between 2010 and 2020 is heavily weighted towards older households. While only 20 new households between the ages of 15-44 are expected, 367 are expected for households ages 55 to 74 plus another 45 for those 75 and older. The 45-54 age group is expected to decline by 184 households. While the housing study notes that the actual numbers may be slightly overstated, the trend is clearly delineated.
- Regarding the size of the average household the housing market study found: "Household formation [in Lawrence County] has been occurring at a different rate than population change in recent decades due to a steady decrease in average household size. This has been caused by household composition changes, such as more single person and single parent households, fewer children per family, and more senior households due to longer life spans." The key takeaway is that even if near-term projections show an increase in population and the number of households, these do not translate into similarly sized increases in the number of school-aged children.

Estimating Future Births and Kindergarteners



Births peaked in 2006 then declined to a rough plateau at 202/year. Future births are expected to continue at that level and then rise slightly. Over the past three years an estimated 23% of county births have been to women living in the Lead-Deadwood district; given Spearfish’s growth, applying this rate in the future is an optimistic assumption.

Caveat

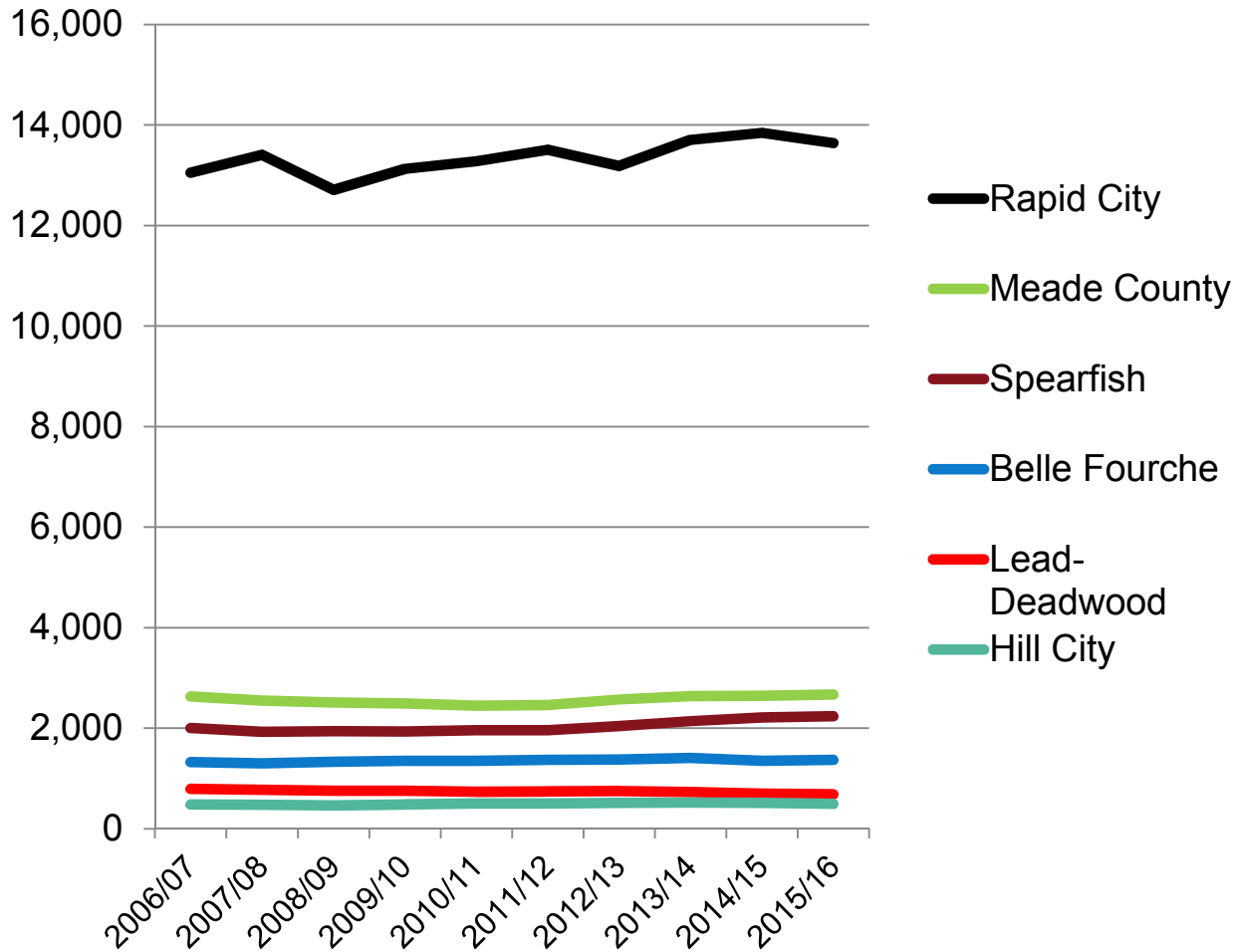
By necessity the projection uses average figures for annual births producing a smooth trend line. In reality, annual births vary dramatically:

- (1) The past eight years have averaged 202 births/year; the highest was 220 and lowest 178 for a year-to-year range of 44.
- (2) The number of those births occurring to school district residents averaged 26% with highest rate being 25% and lowest 20%.

While expected, these year-to-year swings cannot be predicted.

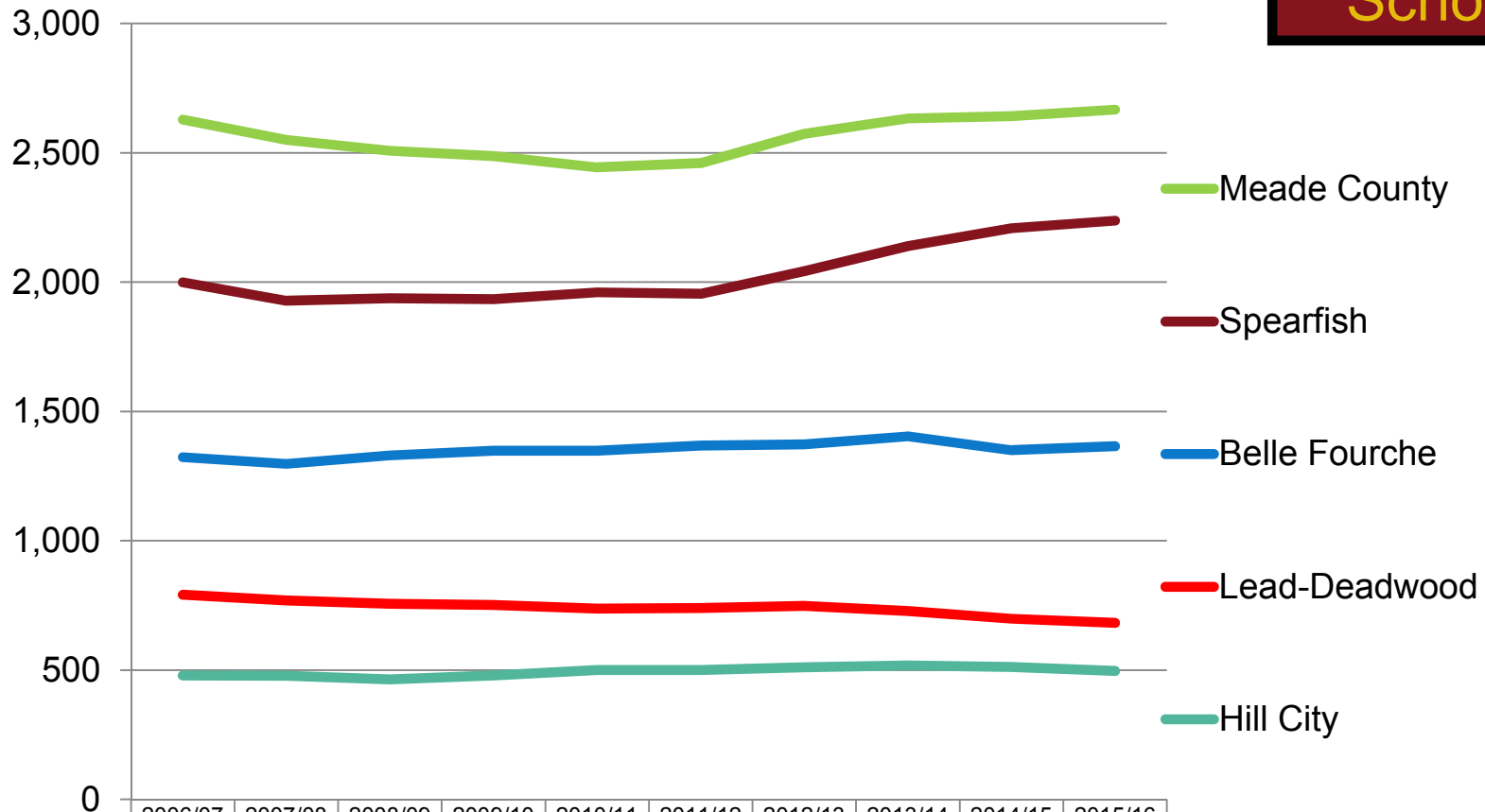
Context:
Area
Schools

K-12 Enrollment for Adjoining Districts,
2006/07- 2015/16



**Context:
Area
Schools**

K-12 Enrollment for Adjoining Districts (excluding Rapid City), 2006/07- 2015/16



	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Meade County	2,628	2,550	2,508	2,487	2,443	2,460	2,573	2,633	2,641	2,667
Spearfish	1,999	1,928	1,937	1,934	1,960	1,955	2,042	2,139	2,208	2,238
Belle Fourche	1,323	1,297	1,330	1,348	1,348	1,367	1,372	1,404	1,350	1,365
Lead-Deadwood	791	769	756	751	737	739	747	728	698	682
Hill City	478	477	463	478	500	500	510	517	511	496

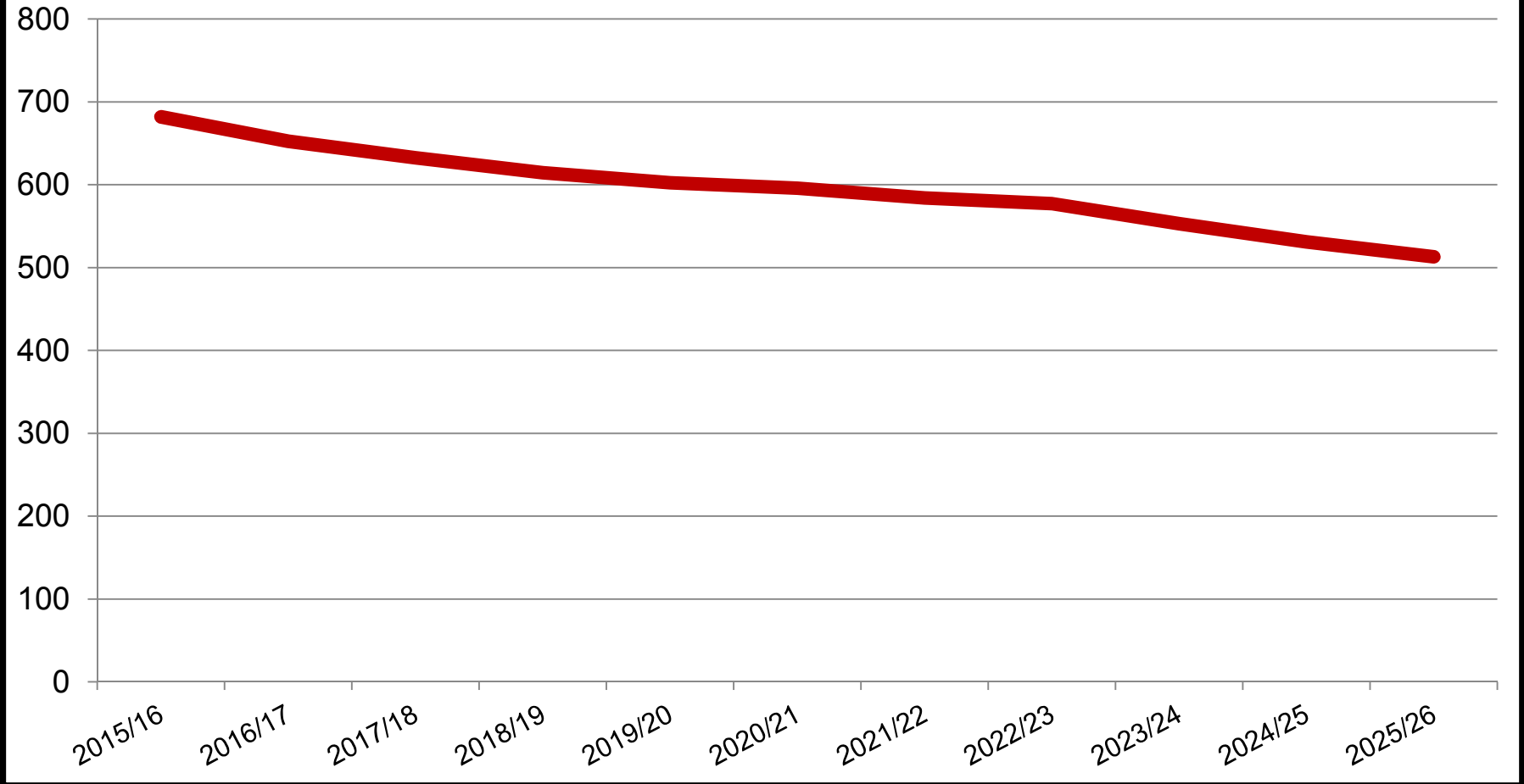
Assumptions for Projection

- No change in school district boundary.
- Current open enrollment dynamic continues.
- County population is expected to modestly grow with Lead-Deadwood district area not growing as much especially in terms of households with children.
- Incoming kindergarten classes reflect a sustained level of county births at just over 200 per year and continuation of Lead-Deadwood's current proportion of county births.

Lead-Deadwood EC-12 Enrollment Projection to 2025/26

Grade	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
EC	24	23	20	23	25	22	22	22	22	22	22
Kg	42	38	44	39	44	47	43	43	43	43	43
1	47	45	40	47	42	46	50	46	46	46	46
2	54	44	42	38	44	39	44	47	43	43	43
3	63	52	42	40	36	42	37	42	45	41	41
4	65	62	51	42	39	35	42	37	41	44	40
5	64	62	59	48	40	38	34	40	35	39	42
6	41	63	61	58	48	39	37	33	39	35	39
7	49	40	62	60	57	47	38	36	33	38	34
8	50	51	41	64	62	59	48	39	37	34	40
9	52	50	51	42	64	62	59	49	40	38	34
10	51	50	48	49	40	61	59	57	46	38	36
11	53	48	47	46	46	38	58	56	54	44	36
12	51	48	44	43	41	42	34	53	51	49	40
Total EC - 12	706	676	653	637	627	618	607	600	575	553	536
Total K - 12	682	652	633	614	603	596	584	577	553	531	513
K - 5	335	302	279	254	245	248	250	254	253	256	255
6 - 8	140	154	164	182	167	145	124	109	109	107	112
9 - 12	207	196	190	178	191	203	211	214	191	168	146

Lead-Deadwood K-12 Projection to 2025/26



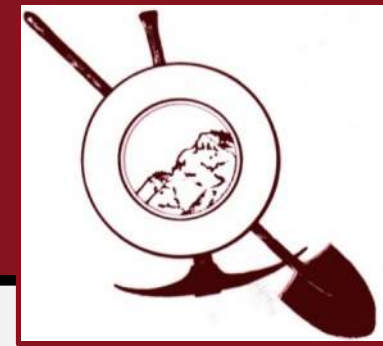
Average Class Size by Grade Group

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
K - 5	56	50	46	42	41	41	42	42	42	43	43
6 - 8	47	51	55	61	56	48	41	36	36	36	37
9 - 12	52	49	47	45	48	51	53	54	48	42	36

Using the Projection

- This is a projection not a prediction. It is built on assumptions regarding the best understanding of district dynamics such as open enrollment and future births.
- The projection produces relatively smooth trend lines because it uses averages and constants. The reality is there will be annual fluctuations especially in such things as incoming kindergarten classes.
- Do not be concerned when actual numbers vary in a given year from the projection. Each year:
 - Check to see if the TREND and the MAGNITUDE of the projection align with the unfolding actual numbers. Evaluate deviations to determine the likely reason.
 - Monitor annual births (state health department data) to see if there are significant deviations from what is assumed in the projection.

Lead-Deadwood Public Schools Student Enrollment Projection to 2025/26



Highlights

- K-12 enrollment is expected to decline from 682 in 2015/16 to about 513 students.
- Average class sizes will decline as follows: K-5 (56 in 2015/16 to 43); Gr 6-8 (47 to 37); Gr 9-12 (52 to 36).
- Primary demographic dynamics are: modest increase in population but not in households with children, and, flattening in number of births.

Appendix

And now the question everyone asks:



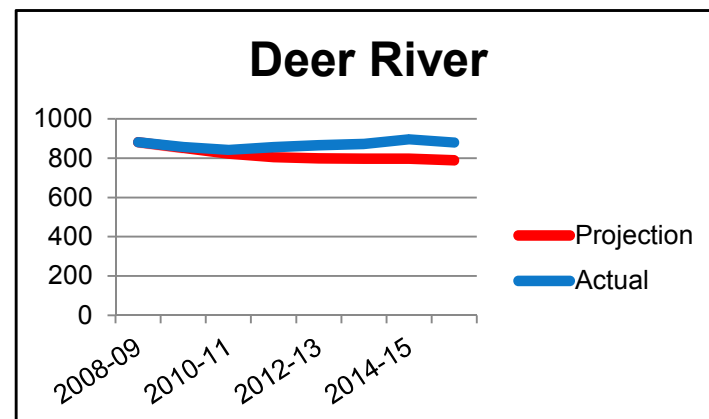
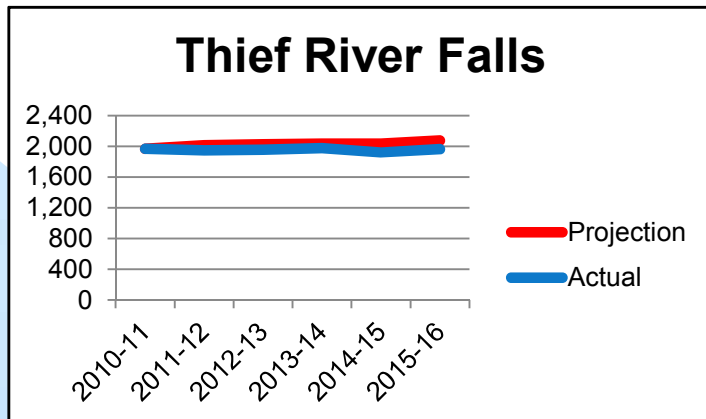
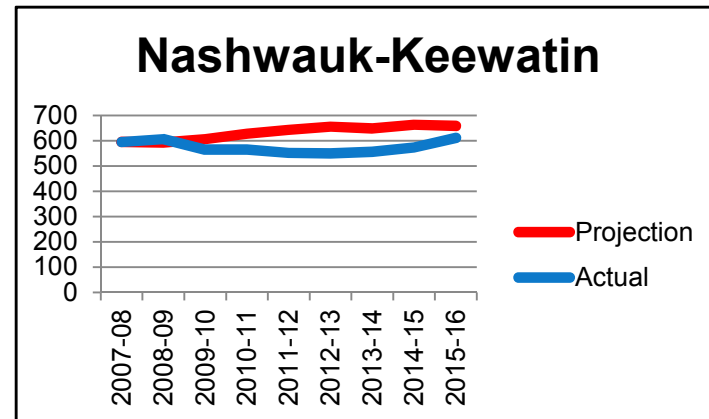
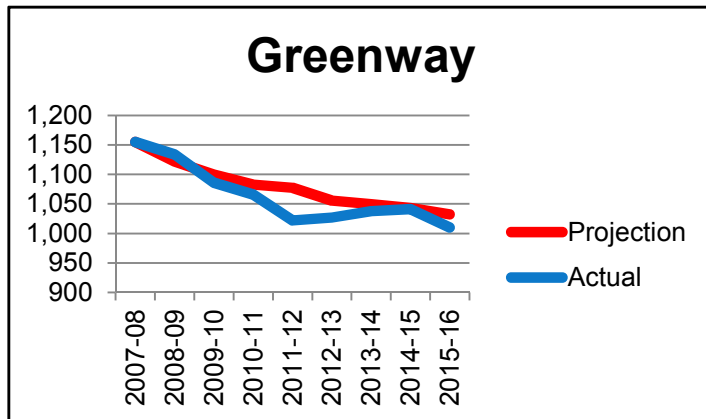
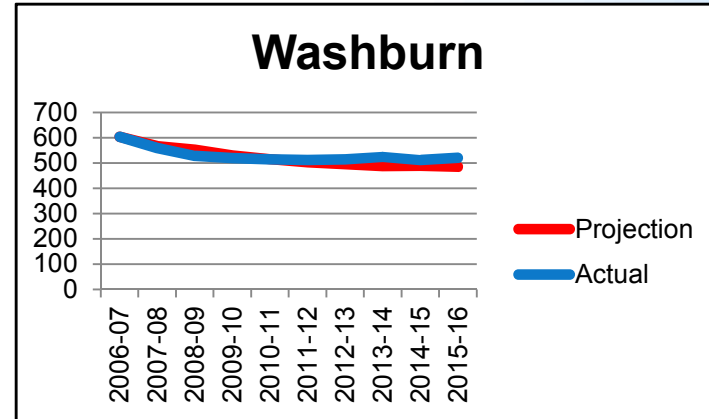
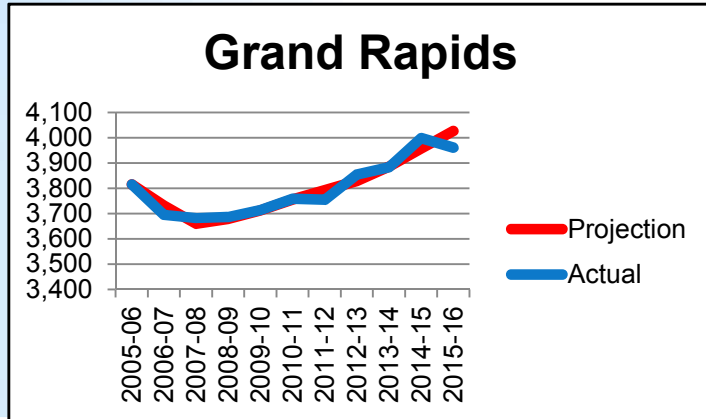
Enrollment Projections:
How Accurate are They?

The objective is to correctly identify the trend and magnitude of change of future enrollment.

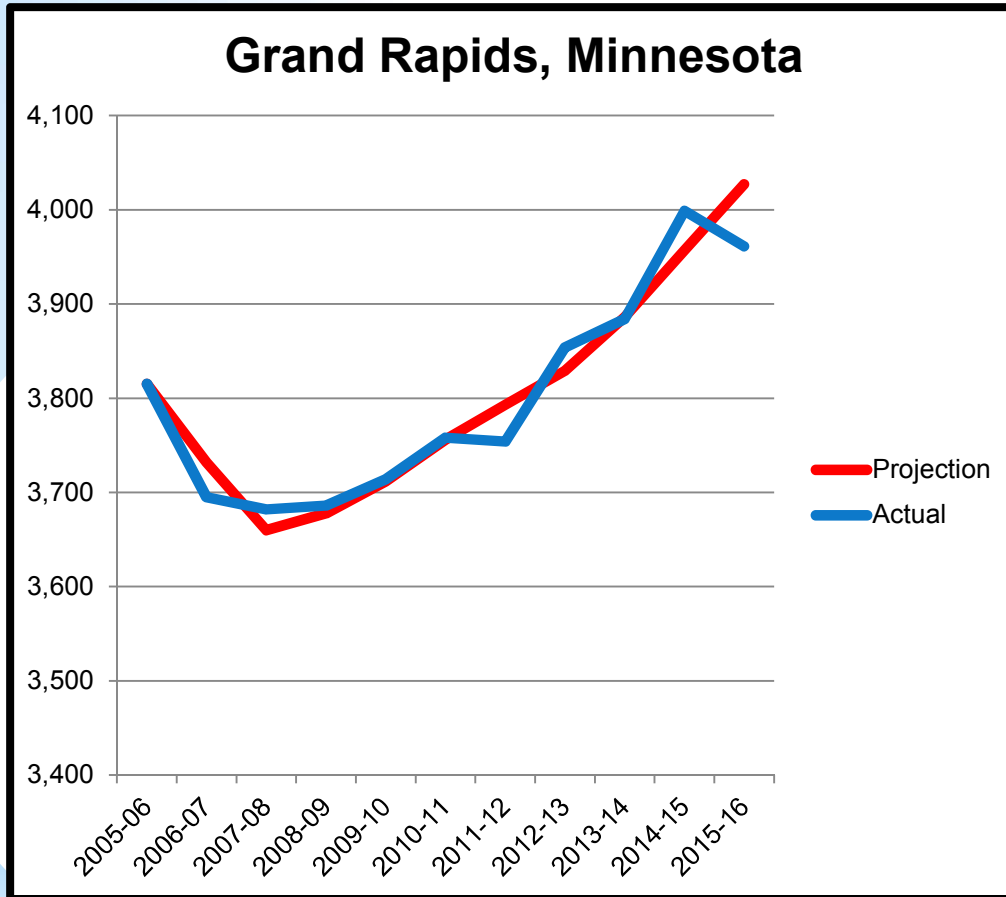
In most cases, this occurs. When it doesn't, reviews identifying the likely causes are used to improve the validity of future projections.

Here is a review of six recent projections.

Six Projections: A Review



Six Projections: A Review



Getting it Right

Projection made: 2006

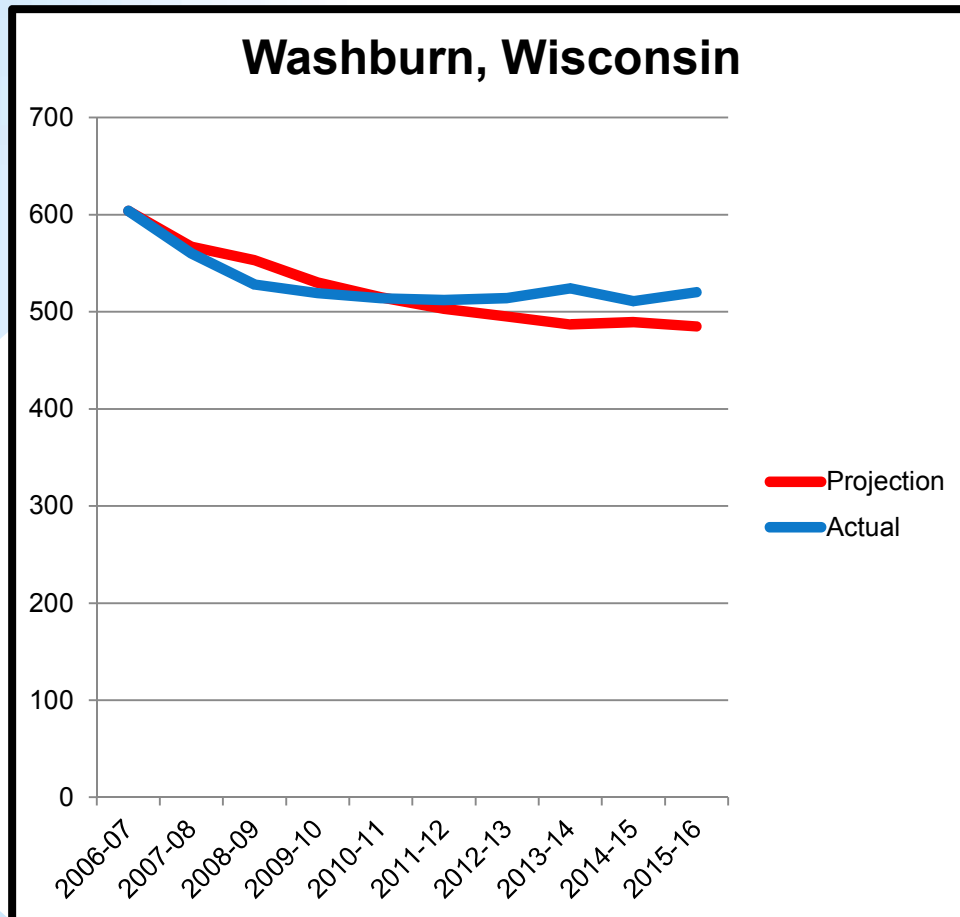
No. of years in review: 10

Projected trend vs actual:
Nearly an exact alignment.

Observations:

Trend lines closely align with variation due to projection “smoothing” vs “zig/zag” of the actual numbers. At end of time period projection varies from actual by 66 students (1.6%).

Six Projections: A Review



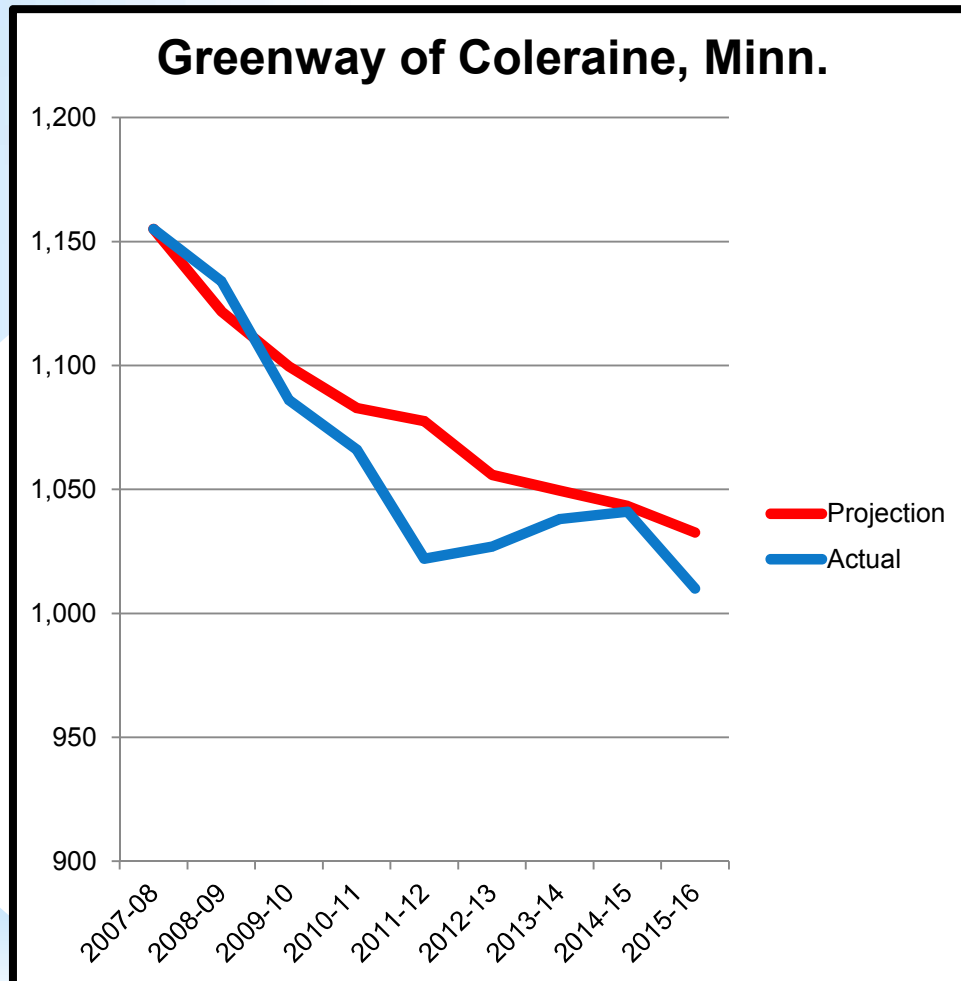
Getting it Right

Projection made: 2007
No. of years in review: 9

Projected trend vs actual:
Nearly an exact alignment.

Observations:
Trend lines closely align with variation due to projection “smoothing” vs “zig/zag” of the actual numbers. At end of time period the projection under estimated the number of students by 35 (7.2%).

Six Projections: A Review



Getting it Right: With a Twist

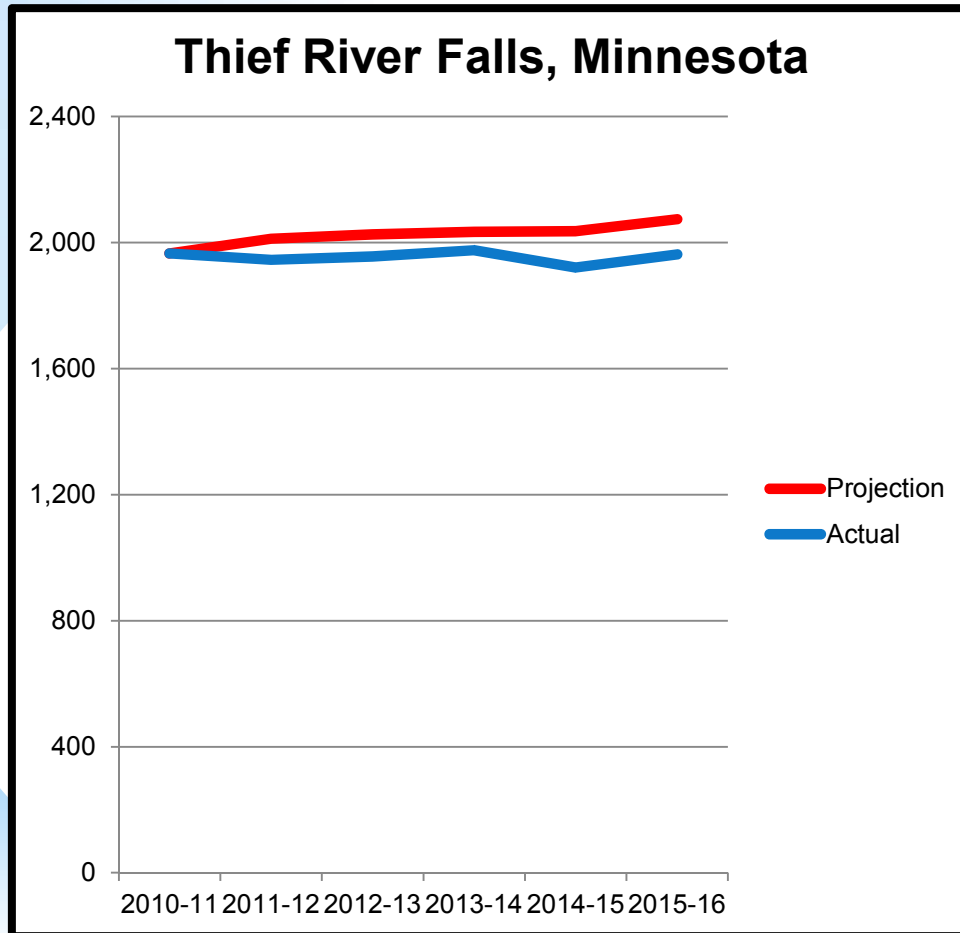
Projection made: 2008
No. of years in review: 8

Projected trend vs actual:
Direction and magnitude of change aligned.

Observations:
“Smoothing” effect of projection masked actual variations year-to-year change and may have understated impact of the Recession. Seven years out the two converged; in the past year actual enrollment declined – variation of 23 students (2.2%).

Six Projections: A Review

Power of Grade Retention Rates

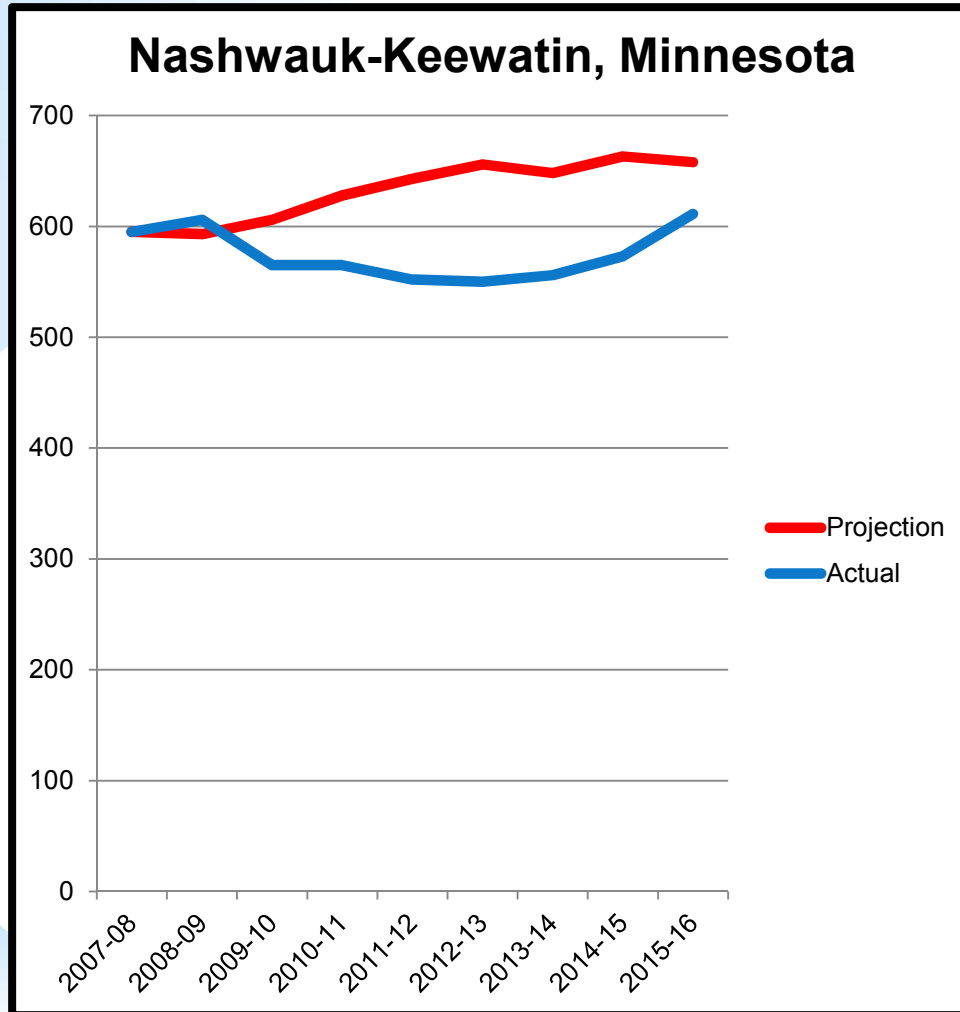


Projection made: 2011
No. of years in review: 5

Projected trend vs actual:
Modest projected growth (+5.5%) compared to actual figure that is essentially unchanged (-0.2%).

Observations:
Almost all variation is explained by the use of a faulty class retention rate for the K-to-Grade 1 shift. Consultant and superintendent agreed historic trends suggested there should be a gain of 6% each year. Actual results were an unanticipated loss of students. As a result, by is off by 112 students (5.4%).

Six Projections: A Review



Power of Regional Development

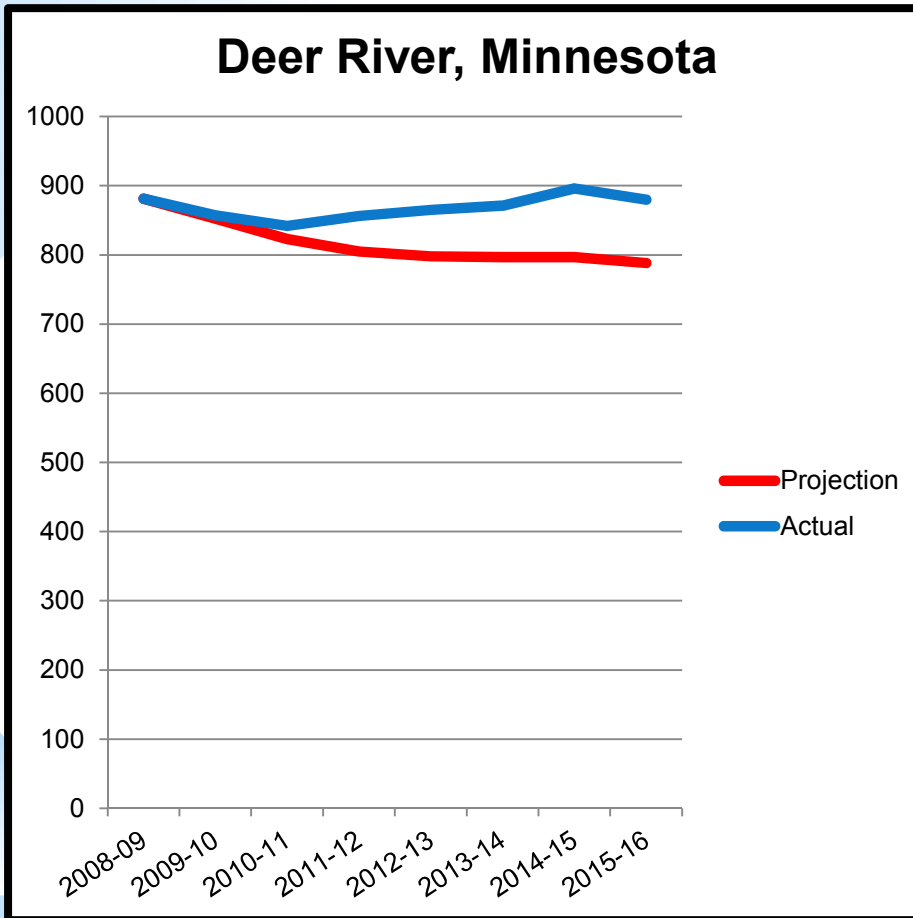
Projection made: 2008
No. of years in review: 8

Projected trend vs actual:
Steady projected growth (+10.6%) compared to actual growth of (2.7%).

Observations:
Projection assumed moderate area growth due to expansion of mining industry. Actual pace of development was much slower with smaller impact on population. As a result, by 2015/16 the projection was off by 47 students (7.1%).

Six Projections: A Review

The Art of Projecting Kindergarten Classes



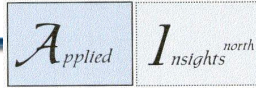
Projection made: 2009
No. of years in review: 7

Projected trend vs actual:
*Steady projected decline (-10.5%)
compared to actual figure that is
essentially unchanged (-0.1%).*

Observations:
*Difference centers on estimated
kindergarten classes. Projected
and actual births were close
(474/yr. vs 470/yr.). But: projected
high/low range was 45 vs
astounding 106 actual; projection
used district's historic "capture" rate
of 13.7% but actual rate was 16.7%
which was higher than any prior
rate. The extra 3% grabbed 14
more students each year. As a
result, by 2015/16 the projection
was off by 92 students (11.7%).*

The Takeaway

- These are projections not predictions.
- They rely on assumptions regarding the best understanding of district dynamics such as open enrollment and future births.
- In most cases the projections get the trend and magnitude of change right. But the unexpected can happen.



This enrollment projection was prepared for
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Previous enrollment projections and education projects by Applied Insights^{north}:

Enrollment projections:

Minnesota: Greenway, Nashwauk-Keewatin, Mora, Grand Rapids/Bigfork, Thief River Falls,
Deer River, St. Louis County, Mountain Lake, Hermantown, Fosston, Northland (Remer),
Nevis, Wheaton, Melrose, Red Lake Falls, Sebeka, Aitkin, Mahnomen, Eveleth-Gilbert, Hill
City, Hinckley-Finlayson
North Dakota: Grafton, Minto, Park River, North Border, Carrington, Thompson
South Dakota: Groton
Wisconsin: Northwestern (Maple, WI), Washburn, Ashland

Itasca Area Schools Collaborative

Red Lake College Enrollment Assessment

Iron Range Higher Education Committee

Northeast Higher Education District (Minnesota State College and University system)

St. Louis County Schools long-range facilities plan