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Estimates of Enrollment Projections: Ray, Stanley, Watford City, Williston and Dickinson

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Background

Rapid expansion in the petroleum sector has led to unprecedented growth in western North Dakota. Activities in the oil and gas sector and other associated sectors (e.g., residential and commercial construction) have spurred an economic expansion that has resulted in a booming economy in western North Dakota. Employment opportunities have attracted thousands of workers fueling population growth. While the rapid expansion of the oil and gas industry has fueled a booming economy, that same economic expansion and population growth has strained existing infrastructure and the delivery of public services, including public education.

This is in stark contrast to recent decades when western North Dakota experienced declining populations. School districts were forced to adopt strategies to cope with declining enrollments. With rapid development in the oil and gas industry and the associated increased population, school districts are now faced with the opposite scenario, increasing student enrollments. In some cases, increases to date have strained existing physical capacity and resources. For example, in 2011, the Williston Public School District converted a library into a classroom and moved the library into a hall way. Even when existing physical resources to date have been adequate, continued future growth has school districts looking forward in order to plan for and better manage the effects of rapid development in western North Dakota. Projected future student enrollments are needed so that school districts, policy makers, and administrators can plan appropriately for future growth, as well as develop strategies to mitigate the effects of rapid growth in the petroleum sector on public school districts. The objective of this study is to estimate future student enrollments for five case study public school districts in western North Dakota.

Methods

Five-year enrollment projections were made for five case study public school districts: Ray, Nesson (Stanley), Williston, McKenzie County (Watford City) and Dickinson. Because change associated with expansion of the oil and gas industry is occurring at such an accelerated rate and because of the unique characteristics of the workforce and associated population, use of traditional methods was not appropriate. Accordingly, three models, each based on a different metric, were used to estimate five-year future enrollment projections in the five case study school districts.

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Model 1

Model 1 was based on recent historic enrollment trends. The key assumption was that enrollment trends seen in the last two years will continue for the next five years. The two-year average annual change was applied to 2012-13 enrollments to estimate 2013-14 enrollments. The same change was applied to subsequent years to estimate future enrollments. See Table 1 for 2017-18 enrollment projections for the five case study school districts based on two-year average annual changes.

Table 1. Five-year Enrollment Projections, Model 1, (Two-year Average Annual Enrollment Change), Case Study School Districts

Stanley Public School District										
	Fall Enrollment[1]			Percent Change			Projections –Model 1			
Grade	2010-2011	2011-2012	2012-2013	2010-11 to 2011-12	2011-12 to 2012-13	2-Year Annual Average	2014-2015	2015-2016	2016-2017	2017-2018
Kindergarten	48	49	44	2%	-10%	-4%	42	40	39	37
1 to 6	246	295	286	20%	-3%	8%	310	336	365	395
7 to 8	86	99	87	15%	-12%	1%	88	90	91	92
9 to 12	145	178	177	23%	-1%	11%	197	218	243	270
K through 12	525	621	594	18%	-4%	7%	635	680	727	778
Sum[2]							637	685	737	795
Nesson Public School District (Ray)										
	Fall Enrollment[1]			Percent Change			Projections - Model 1			
Grade	2010-2011	2011-2012	2012-2013	2010-11 to 2011-12	2011-12 to 2012-13	2-Year Annual Average	2014-2015	2015-2016	2016-2017	2017-2018
Kindergarten	15	26	16	73%	-38%	17%	19	22	26	30
1 to 6	92	99	123	8%	24%	16%	143	165	192	222
7 to 8	45	48	36	7%	-25%	-9%	33	30	27	25
9 to 12	70	83	94	19%	13%	16%	109	126	146	170
K through 12	222	256	269	15%	5%	10%	296	327	360	397
Sum[2]							303	343	391	447
Williston Public School District										
	Fall Enrollment[1]			Change			Projections - Model 1			
Grade	2010-2011	2011-2012	2012-2013	2010-11 to 2011-12	2011-12 to 2012-13	2-Year Annual Average	2014-2015	2015-2016	2016-2017	2017-2018
Kindergarten	175	241	264	38%	10%	24%	326	404	499	617
1 to 6	1036	1130	1242	9%	10%	9%	1,360	1,489	1,630	1,785
7 to 8	400	441	450	10%	2%	6%	478	507	538	571
9 to 12	769	799	815	4%	2%	3%	839	864	889	916
K-12	2,380	2,611	2,771	10%	6%	8%	2,990	3,227	3,483	3,758
Sum[2]							3,003	3,263	3,557	3,889

Table 1. Five-year Enrollment Projections, Model 1, (Two-year Average Annual Enrollment Change), Case Study School Districts (cont.)

McKenzie County School District (Watford City)

Grade	Fall Enrollment[1]			Percent Change			Projections - Model 1			
	2010-2011	2011-2012	2012-2013	2010-11 to 2011-12	2011-12 to 2012-13	2-Year Annual Average	2014-2015	2015-2016	2016-2017	2017-2018
Kindergarten	44	66	84	50%	27%	39%	116	161	224	310
1 to 6	242	328	426	36%	30%	33%	565	750	996	1,321
7 to 8	90	102	123	13%	21%	17%	144	168	197	230
9 to 12	205	200	246	-2%	23%	10%	271	299	330	364
K-12	581	696	879	20%	26%	23%	1,082	1,331	1,637	2,015
Sum[2]							1,097	1,379	1,746	2,226

Dickinson Public School District

Grade	Fall Enrollment[1]			Percent Change			Projections - Model 1			
	2010-2011	2011-2012	2012-2013	2010-11 to 2011-12	2011-12 to 2012-13	2-Year Annual Average	2014-2015	2015-2016	2016-2017	2017-2018
Kindergarten	220	245	261	11%	7%	9%	284	310	338	368
1 to 6	1,217	1,289	1,392	6%	8%	7%	1,489	1,592	1,703	1,821
7 to 8	332	373	408	12%	9%	11%	452	501	556	616
9 to 12	809	759	747	-6%	-2%	-4%	718	690	663	638
K-12	2,578	2,666	2,808	3%	5%	4%	2,931	3,059	3,192	3,332
Sum[2]							2,943	3,094	3,260	3,443

[1]Source: Case study school districts.
[2]Sum is total of projected changes for each of the cohort groups; Kindergarten, 1-6, 7-8 and 9-12.

The two-year average annual changes were based on four cohort groups (Kindergarten, grades 1-6, 7-8, and 9-12). The model does not take into consideration cohort shifts because data were not available to suggest what proportion of students moved onto the next grade. This may be an important consideration as several school districts have reported high mobility rates, especially in the lower grades. Without additional information there is no way to estimate to what degree increased enrollments in lower grades result in increased enrollment in higher grades over time. High mobility rates may suggest increased enrollments in lower grades that do not necessarily result in increased enrollments in higher grades. Alternately, lower mobility rates may suggest increased enrollments in higher grades in the future. Further, in some cases single-grade cohort projections would have resulted in declining enrollments in higher grades. Because there were so few years' data reflective of the rapidly changing conditions in western North Dakota, it was necessary to average multiple grades to reduce the likelihood of using outlying observations to project trends for future enrollments. In some of the case study school districts, enrollment increases have only been observed for the past one or two years. Increased enrollments in other school districts can be observed over the past three or four years. There is no way to predict if enrollment trends will continue at the same rate or perhaps even increase before eventually stabilizing. However, several recent studies (Bangsund et al. 2012, Bangsund and Hodur 2012, Power Forecast 2012, Hodur and Bangsund 2013) have adopted development scenarios that assume economic conditions remain as they were in 2012 for the next 8-10 years. Accordingly, it seems reasonable to use recent trends as one metric to predict future

enrollments. More information on individual mobility rates are needed to include cohort shifts in modeling and refine enrollment projections using past enrollment and recent trends to project future enrollments.

Model 2

Model 2 was based on an employment model (Bangsund and Hodur 2012) and a population cohort model (Rathge 2012, NDHFA 2012). Because employment in the oil and gas sector is driving growth in western North Dakota, a model was developed to forecast regional employment, housing and population based on various oil and gas development scenarios. The population cohort model was used to develop age-specific projections for study area counties home to case study school districts.

Using 2010 Census data and city and township boundaries, the approximate population of children age 5 to 19 was calculated for each school district and the portion of county population associated with each of the case study school districts was estimated. Using the two models (employment and population cohort), projected change in population ages 5 to 19 (i.e., approximate school age cohort) was estimated at the county level and by the five case study school districts. The projected change in population of people ages 5 to 19 from 2010 to 2015 for each case study school district was applied to 2012-13 fall enrollments to estimate projected 2017-18 enrollments. See Table 2 for estimates for enrollment projections for the case study school districts using Model 2.

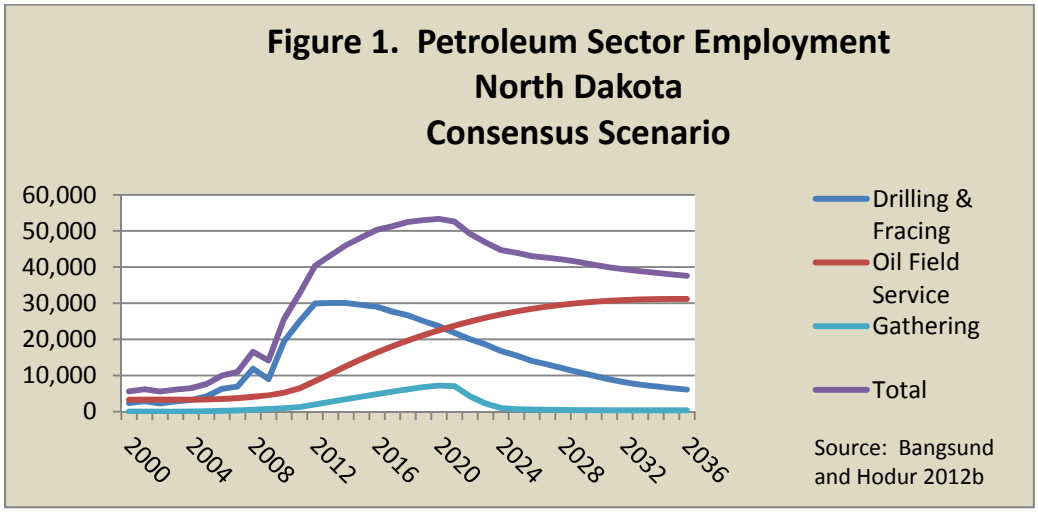
The model assumes that the geographic distribution of children ages 5 to 19 remains the same as historic distributions. The model also assumes that the rate of change in youth population will approximate the change in enrollments. That is, the rate of change in enrollments is the same as the rate of change in youth population ages 5 to 19 as projected using the employment and population cohort model.

Table 2. Five Year Enrollment Projections, Model 2 (Employment Model), Case Study School Districts

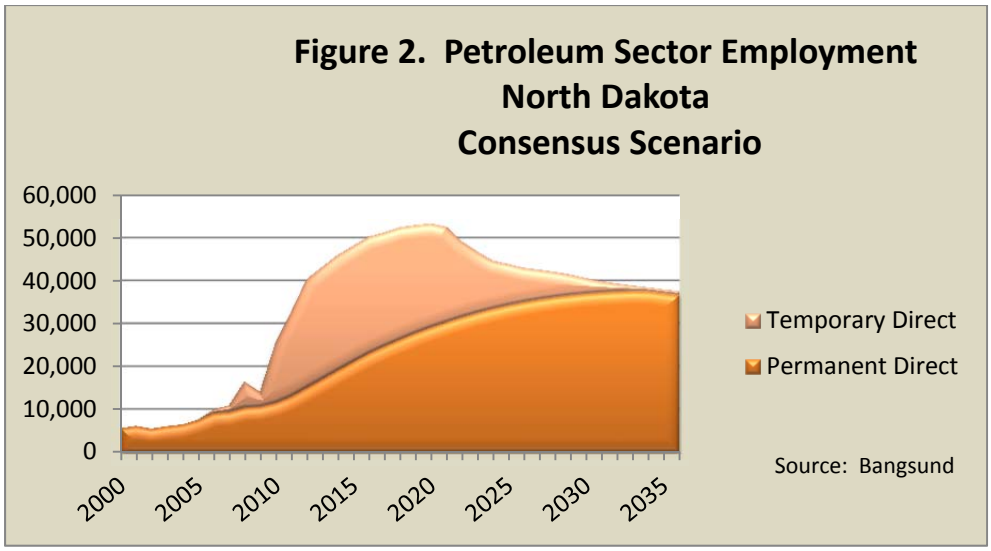
	Number and percent of children ages 5 to 19 [1]		Population projections of children ages 5 to 19		Current and Projected Enrollments	
Area	**Number**	**District as Percent of County Total**	**2015**	**% Change: 2010 Census to 2015 Projection**	**2012-13 Fall Enrollment K-12**	**Projected 2017-18 Enrollment**
McKenzie County	1,329		1,765			
McKenzie County Public School District (Watford City)	692	52%	919	33%	879	1,167
Mountrail County	1,517		2,262			
Stanley Public School District	456	30%	680	49%	594	886
Williams County	4,169		5,253			
Nesson Public School District (Ray)	207	5%	261	26%	269	339
Williston Public School District	3,011	72%	3,794	26%	2,771	3,491
Stark County	4,474		5,403			
Dickinson Public School District	3,752	84%	4,531	21%	2,808	3,391

[1]Source: 2010 U.S. Census

Another key assumption was that *only* population changes associated with the permanent workforce was included in population estimates that were used to estimate changes in student enrollments. The permanent workforce is made up of residents of North Dakota and is associated with long term jobs in activities related to oil field services, retail and commercial activities. The model in this scenario *does not* take into consideration population growth associated with the temporary workforce. Population associated with the temporary workforce consists of non-resident workers, shift workers that have alternating working and non-working periods that return to their normal residence during non-working periods, or workers employed in jobs defined as short-term (short-term relative to the oil field life cycle). The temporary workforce is usually associated with activities related to drilling, fracing, pipeline construction and gathering systems. Figure 1 illustrates employment estimates for the petroleum sector for North Dakota State Planning Region 1 for various types of activities and Figure 2 illustrates the surge in temporary employment in the early years of oil field exploration and development and the long-term permanent employment associated with oil field maintenance and service. For a complete discussion of the employment model and population estimates related to permanent and temporary workforces see Bangsund and Hodur (2012a), Bangsund and Hodur (2012b).



It is important to recognize that even though the model does not include population associated with the temporary workforce, it is likely that some people associated with the temporary workforce are enrolling children in schools in the region. Currently, 60 percent of current petroleum sector employment would be classified in the "temporary" category and it is very likely that at least some portion of the "temporary population" has similar demographic characteristics as the "permanent population" such as age, marital status, and dependents (Bangsund and Hodur 2012b). It is also likely that a portion of the population associated with the temporary workforce has different demographic characteristics. While not including any of the population associated with the temporary workforce likely underestimates enrollment projections in the near term, including estimates of the temporary population in enrollment projections would most assuredly overestimate enrollment projections. More information on workforce characteristics is needed to refine the employment model.



Model 3

Model 3 is based on the historic relationship between enrollment and total housing units.

Information was collected from local sources to estimate the number of new housing units constructed since 2010, the number and type of new housing developments zoned and platted and likely annexations in the near future. The 2006-2010 Census Bureau's American Community Survey (ASC) was used to estimate the number of housing units in each school district for 2010 (the 2005-2009 ACS data was reported to provide historic context). A ratio of students to housing units using ACS data was calculated and used as a base line enrollment to housing ratio. New housing units constructed since 2010 were added to the baseline to estimate student-to-housing unit ratios for 2011 and 2012. In each of the case study school districts, the ratio of enrollment to housing has declined in recent years. No data are available to suggest whether that trend will continue or moderate or to what degree it may change. Accordingly, it was assumed that the ratio of enrollment to housing observed in 2012-13 will remain the same for the five year projection period.

The potential number of new housing units added over the study period was estimated based on planned housing developments and likely build-out rates. The number of potential housing units in planned housing developments was added to the baseline number of housing units and previous two years' build-out. The enrollment-to-housing ratio for 2012-13 was applied to future estimates of housing units to estimate future enrollment. Projections for the case study school districts are detailed in Table 3. Enrollment projections for Watford City are pending. Additional data regarding housing developments and build-out were needed to make enrollment projections with the housing model for Watford City. Build-out rates were based on the developer's intentions as conveyed to local officials in each case study community.

Table3. Five-year Enrollment Projections, Model 3 (Housing Model), Case Study School Districts							
Williston Public School District							
	Enrollment			**Housing**			
Year	**Fall Enrollment**	**Annual % Change**	**% Change over 5 Years**	**ACS Housing Units[1]**	**New Build Out[2]**	**Total Housing**	**Ratio: Enrollment to Housing**
2005-06	2,148						
2006-07	2,126	-1.02%					
2007-08	1,969	-7.38%					
2008-09	2,195	11.48%		6,461		6,461	0.34
2009-10	2,298	4.69%		6,966		6,966	0.33
2010-11	2,380	3.57%			696	7,662	0.31
2011-12	2,611	9.71%			1,440	9,102	0.29
2012-13	2,771	6.13%			1,897	10,999	0.25
2013-14	3,210	15.84%			1,742	12,741	0.25
2014-15	3,806	18.59%			2,368	15,109	0.25
2015-16	4,276	12.33%			1,863	16,972	0.25
2016-17	4,517	5.64%			958	17,930	0.25
2017-18	4,758	5.34%	71.72%		957	18,887	0.25
Stanley Public School District							
	Enrollment			**Housing**			
Year	**Fall Enrollment**	**Annual % Change**	**% Change over 5 years**	**ACS Housing Units[1]**	**New Build Out[2]**	**Total Housing**	**Ratio: Enrollment to Housing**
2005-06	356						
2006-07	361	1.40%					
2007-08	398	10.25%					
2008-09	446	12.06%		1,149		1,149	0.39
2009-10	446	0.00%		1,353		1,353	0.33
2010-11	525	17.71%			47	1,400	0.38
2011-12	621	18.29%			149	1,549	0.40
2012-13	594	-4.35%			174	1,723	0.34
2013-14	710	19.46%			364	2,087	0.34
2014-15	780	9.87%			206	2,293	0.34
2015-16	850	8.98%			206	2,499	0.34
2016-17	918	8.08%			220*	2,701	0.34
2017-18	987	7.48%	68.2%		220*	2,903	0.34

*If all identified housing developments are constructed according to developers' projections, all known housing developments will be completed by the 2015-16 period. If that assumption is fulfilled, it is unlikely that no additional housing will be constructed in the remainder of the study period. Accordingly it was assumed that building would continue at a rate equal to the previous five-year annual average.

Table3. Five-year Enrollment Projections, Model 3 (Housing Model), Case Study School Districts (cont.)

Nesson Public School District (Ray)[**]

	Enrollment			Housing			
Year	Fall Enrollment	Annual % Change	% Change over 5 years	ACS Housing Units[1]	New Build Out[2]	Total Housing	Ratio: Enrollment to Housing
2005-06	167						
2006-07	162	-2.99%					
2007-08	158	-2.47%					
2008-09	172	8.86%		680		680	0.25
2009-10	195	13.37%		648		648	0.30
2010-11	222	13.85%			200	848	0.26
2011-12	256	15.32%			200	1,048	0.24
2012-13	269	5.08%			165	1,213	0.22
2013-14	276	2.64%			42	1,255	0.22
2014-15	276	0.00%			0**	1,255	0.22
2015-16	276	0.00%			0**	1,255	0.22
2016-17	276	0.00%			0**	1,255	0.22
2017-18	276	0.00%	2.64%		0**	1,255	0.22

[**] At the time of publication sewer and water infrastructure in Ray were at full capacity. No additional housing can be added until sewer and waste infrastructure are expanded. To what degree and when infrastructure upgrades would be complete and how that would affect future development was unknown. Accordingly, no estimate of potential future housing was made.

Table3. Five-year Enrollment Projections, Model 3 (Housing Model), Case Study School Districts (cont.)

Dickinson Public School District							
	Enrollment			Housing			
Year	Fall Enrollment	Annual % Change	% Change over 5 years	ACS Housing Units[1]	New Build Out[2]	Total Housing	Ratio: Enrollment to Housing
2005-06	2,587						
2006-07	2,583	-0.15%					
2007-08	2,505	-3.02%					
2008-09	2,461	-1.76%		8,497		8,497	0.29
2009-10	2,574	4.59%		8,985		8,985	0.29
2010-11	2,578	0.16%			316	9,301	0.28
2011-12	2,666	3.41%			331	9,632	0.28
2012-13	2,808	5.33%			1,517	11,149	0.25
2013-14	3,500	24.65%			2,852	14,001	0.25
2014-15	4,192	19.77%			2,644	16,645	0.25
2015-16	4,721	12.62%			2,240	18,885	0.25
2016-17	5,190	9.94%			1,723	20,608	0.25
2017-18	5,262	1.37%	87.38%		438	21,046	0.25

[1]ACS data reflect information from the U.S. Census Bureau' American Community Survey (ACS). The number of housing units in 2008-09 was obtained from the 2005-2009 ACS 5-year assessments dataset; data for 2009-2010 were obtained from the 2006-2010 ACS 5-year estimates data set.
[2]Estimated new housing build-out was obtained from local official in the communities that are home to each of the case study school districts.

Model 3 is based on housing potential. The model assumes *all* housing developments that are known (platted and zoned developments and likely annexations) will be built within the study period according to developer's plans. The model also assumes that occupants of new housing will have similar demographic characteristics as permanent residents. Assuming all occupants of new housing have similar characteristics as historic estimates likely overestimates enrollments, at least in the near term. It is probable that some occupants of new housing units in the case study school districts will be associated with the temporary workforce and do not have demographic characteristics similar to the permanent population. However, based on current housing potential in case study school districts, this model estimates maximum enrollment potential assuming all housing units are constructed and occupied by population associated with permanent employment.

Comparison of Scenarios.

Five-year projections based on the last 2-years' average annual change in enrollment (i.e., Model 1) ranged from a 23 percent increase in total student enrollments in Dickinson to a 153 percent increase in total student enrollments in

Watford City. Projections for Stanley, Williston and Ray were 34 percent, 40 percent and 66 percent, respectively. Both Ray and Watford City have seen substantial enrollment increases in the last two years, 66 percent and 153 percent, respectively. However, it is unlikely that Ray will continue to see similar increases in the near term due to severe infrastructure limitations in the community. Both the sewer and water systems in the city are at full capacity and no additional housing can be added until those issues are resolved. The lack of available housing in Ray will likely constrain enrollment in the near term. The 153 percent increase in Watford City is a substantial increase with an additional 1,347 students over five years (approximately 336 students per year). To what extent that trend will continue is unknown. Given that several studies are suggesting continued high levels of activity in the oil field for the next 8-10 years, it does not seem unreasonable to consider that observed enrollment trends, baring known limitations, will continue in the near term. Additional information regarding mobility rates is needed to refine estimates. Additional information on workforce characteristics would also help to refine the estimate by providing a better understanding of the demographic make-up of the workforce and what percentage of that workforce will ultimately become long-term residents.

Model 2 produced more consistent estimates of changes in school enrollments across case study districts than the other two models. Five-year enrollment changes ranged from 21 percent in Dickinson to 50 percent in Stanley. Given model assumptions, Model 2 likely underestimates potential enrollments in the near term. The model does not take into consideration population potential associated with the temporary workforce. Currently, approximately 60 percent of the oil and gas industry workforce can be defined as "temporary workforce". It is assumed that population is characterized by individuals that work in North Dakota and live elsewhere or are only residents of North Dakota for a short period of time (e.g., only here while working on a particular job such as a pipeline). However, some of the population associated with the "temporary" workforce, reside in North Dakota for anywhere from several months to several years, have similar demographic characteristics as the permanent population and do enroll children in school. Anecdotal reports confirm that assumption. However, it is unknown what portion of the temporary workforce and the associated population has similar demographic characteristics as the permanent population. In the short-term, Model 2 likely underestimates enrollment potential; however, if the temporary workforce and associated population was assumed to have the same characteristics as the permanent workforce and associated population, the model would most assuredly overestimate potential enrollments.

Model 3 produced the highest potential enrollment increases with the exception of Ray, where development constraints limit further housing development. Model 3 assumptions are the most liberal and represent a population and enrollment potential based on the assumption that all known housing developments and likely annexations will be built and occupied by individuals with similar demographic characteristics as historic observations. Model 3 estimates represent a high side potential, especially in the near term.

Table 4. Five Year Enrollment Projections, Comparison of Models, Case Study School Districts

	Williston Public School District		Nesson Public School District (Ray)		Stanley Public School District		McKenzie County Public School District (Watford City)		Dickinson Public School District	
	Enrollment	5-Year Percentage Change	Enrollment	5-Year Percentage Change	Enrollment	5-Year Percentage Change	Enrollment	5-Year Percentage Change	Enrollment	5-Year Percentage Change
Current Enrollment 2012-13	2,771		269		594		879		2,808	
Model 1[1] Projections 2017-18	3,889	40.3%	447	66.1%	795	33.8%	2,226	153.2%	3,443	22.6%
Model 2[2] Projections 2017-18	3,491	26.0%	339	26.0%	886	49.1%	1,167	32.8%	3,391	20.8%
Model 33Projections 2017-18	4,439	60.2%	276	2.6%	987	68.2%	pending	pending	5,262	87.4%

[1]Two Year Average Annual Change
[2]Petroleum Sector Employment Model and Population Cohort Model
[3]Housing Model

Conclusions/Implications/Need for Study

Enrollment projections were made using models based on different metrics. All models forecast substantial increases in enrollments in case study school districts after a decade of steady to slightly declining enrollments. Recent increases in regional school enrollments coincide with the rapid expansion and development of the region's oil and gas industry.

Model 1, two-year average annual change, is reflective of trends observed in the last two years with projected increases in enrollments from 30 to over 150 percent. That would mean an additional 178 students in Ray, 200 students in Stanley, 635 in Dickinson, 1,118 in Williston and over 1,300 in Watford City. To what degree current trends will continue is unknown. However, based on industry projections published in other recently completed studies, it is not unreasonable to assume that the current rate of growth associated with oil field development will continue in the near term. Continued growth in the oil and gas industry will continue to drive population growth and accordingly school enrollments.

Model 2, the employment model, has the most conservative assumptions and accordingly produced more modest enrollment projections than the other two models. Enrollments increased from 21 to 49 percent. Even the more modest enrollment projections produced projected increased enrollments of 70 students in Ray, nearly 300 in Stanley and Watford City, nearly 600 in Dickinson and over 700 in Williston over the next five years. This model likely is the best indicator of long term projections as it only considers population changes associated with long-term permanent workforce. However, the model likely underestimates projections in the short-term. While the model only considers the "permanent" population, currently 60 percent of the oil and gas industry workforce is associated with temporary employment and enrollments are still rising. At least a portion of the temporary workforce has similar demographic characteristics as the permanent population. Model 2 does not take that portion of the temporary workforce into consideration when projecting enrollments.

Model 3, the housing model, has the most liberal assumptions and represents an enrollment potential when all known housing has been constructed and is occupied by individuals with demographic characteristics similar to historic characteristics. With the exception of Ray, where additional housing development is limited by infrastructure constraints, enrollments were projected to increase by over 60 percent in Williston and Stanley, an additional 1,668 and 393 students respectively, and over 87 percent in Dickinson an additional 2454 students. Estimates for Watford City are pending. Model 3 provides a solid estimate of enrollment estimates when all housing currently slated for development is completed and occupied. The timing for achieving these levels is contingent upon when housing is constructed. Build out constraints may slow developers intended plans for construction.

In the near term, housing is likely to be a key driver affecting student enrollments. Continued lack of housing will act as a constraint for student enrollments as new workers cannot relocate dependents if housing is not available.

Which model provides the best projection depends on specific conditions in the various case study school districts. While each projection has strengths and limitations, collectively the three models provide a range of estimates based on observed trends with both conservative and liberal assumptions. Each model forecasts enrollment increases that will likely be sufficient to strain existing infrastructure. Growth will require school districts to add classrooms and teachers and perhaps school buildings, depending on circumstances and existing infrastructure within individual school districts.

Enrollments should continue to be monitored closely. Additional information on student mobility rates is needed to refine estimates. Further, additional information on workforce characteristics would enable refinements to the employment model. All three models should be maintained and updated on a regular basis to continue to monitor enrollment trends and update models to reflect current conditions.

For years, school districts in western North Dakota were challenged with steady to declining enrollments. For districts more accustomed to managing enrollment contractions, rapid growth has presented school districts with a series of new and unfamiliar challenges. The first challenge is predicting future enrollments in order to effectively plan for future growth. No system of best practices or standard methods exists that school districts can use to estimate future enrollments. Further study is needed to identify additional data needs and to develop methods and models to project future enrollments. An understanding of future demand is critical for school districts, administrators and policy makers to appropriately plan for and manage growth in public school systems in North Dakota. This is especially relevant in western North Dakota where growth in the oil and gas industry has had a sudden and substantial impact on delivery of public services including public education.

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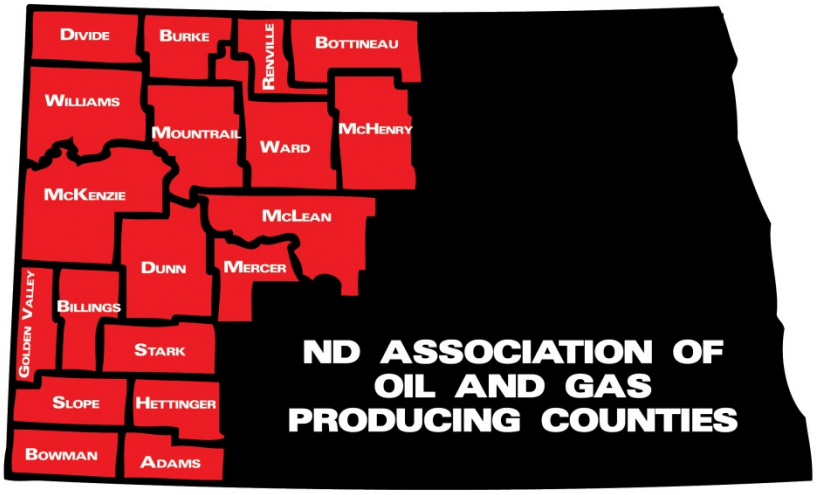

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