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# **North Dakota Communities Acutely Impacted by Oil and Gas Development: Tioga Housing Demand Analysis**

**Final Report  
December 20, 2010**

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**Study timeframe August—December 2010**

## North Dakota Communities Acutely Impacted by Oil and Gas Development

### Introduction

#### Purpose

*North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis* is a large-scale research project conducted to inform decision-makers about housing needs given the magnitude, trajectory, and sustainability of oil and gas development in northwest North Dakota. As such, the study has many stakeholders and given the evolving nature of the Bakken and Three Forks “plays” the report authors have had to reconcile many facts and opinions in order to develop models that best reflect reality and model likely futures. Nonetheless, the purpose of the study is to document and demonstrate permanent ongoing housing needs in the northwest North Dakota communities of Parshall, New Town, Stanley, Tioga, Watford City, and Williston for the next 20 years at five-year intervals.

#### Study Delimitations

Delimitations are the boundaries that confine the study’s extent in time, space, and subject matter. *North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis* is restricted to northwest North Dakota in particular the North Dakota Bakken/Three Forks footprint. An understanding of the extent of this footprint was derived from a *Bakken Drilling/Spacing and Well Spot Basemap* issued by the Oil and Gas Division of North Dakota’s Department of Mineral Resources in mid-November, 2010.

While a number of oil and gas impacted cities in northwest North Dakota were invited to join the study, the study was capped at six cities. The participating cities are Parshall, New Town, Stanley, Tioga, Watford City, and Williston. Furthermore, the study’s boundaries were fixed at these cities’ current city limits.

The study’s time frame was set to cover a 20-year span (2010 to 2030) featuring snapshots at five-year increments—2010, 2015, 2020, 2025 and 2030. The populations reported for the six cities are forecasted population potentials based on oil and gas drilling and production. Housing needs are determined for permanent ongoing population rather than short-term housing needs for transient workers.

#### Study Limitations

Limitations are weaknesses and this study has several. First, this study was completed in a short time window. Data collection, analysis, and report generation occurred between September and December, 2010. Second, the Bakken//Three Forks oil and gas play is very dynamic and its potential is not yet fully known. Third, one of the documents necessary to complete the study, an oil and gas occupation and employment study was late. Fourth, this study’s population forecasts assume all of the six study cities can absorb their

proportionate population potential. Fifth, the study does not include current or future temporary and permanent population increases from infrastructure construction projects, oil and gas construction projects, development of other industries, or development of other mineral formations.

### **Methodology**

While the study's time dimension extends from 2010 to 2030, the actual study was more complex. Given that the 2010 census has not been released, it was necessary to determine a baseline 2010 population and demographic profile for each of the six study cities. The derived 2010 population baseline is in effect a count of each city's housing and includes those living in temporary quarters and those living in permanent housing. This baseline served as a performance milestone reported in an interim report circulated October 18, 2010.

The next challenge was to develop an understanding of Bakken/Three Forks oil and gas drilling, production, extent (footprint), duration, and lifecycle. While determining each city's 2010 population relied on visits, phone calls, and data requests to many individual informants across northwest North Dakota, this part of the study depended on gathering expert opinions from a small number of highly placed state and industry informants. Since industry estimates of the Bakken/Three Forks potential are so diverse, information supplied by Mr. Lynn Helms, Director of North Dakota's Oil and Gas Division, Department of Mineral Resources was used as the primary source to build a model of oil and gas development-driven population growth. This model was first derived for the entire Bakken/Three Forks footprint and recognizes permanent employment from primary, secondary, and induced sources. (Induced employment is employment needed to supply services to the primary and secondary sectors. Induced employment has been referred to as "the butchers, bakers, and candlestick makers.") These permanent employees were then converted to an estimate of household population.

The Bakken/Three Forks play has distinct lifecycle phases.

- Phase One is underway now and involves drilling to secure leaseholds. According to Director Helms, this phase should be completed by 2014 with the drilling of 7,000 wells.
- Phase Two has started in some districts and is pattern drilling, that is, drilling a number of wells to best exploit the oil and gas potential of a defined acreage.
- Phase Three is the production phase and has begun for completed wells. A key characteristic of the Bakken formation is that production output is gas-driven and total fluids recovered decline rapidly after the first years of production.

Phase Two pattern drilling information supplied by Director Helms spanned an upper and lower bound of 28,000 pattern wells to 14,000 pattern wells. To refine this spread three population scenarios were developed, one based on a Bakken/Three Forks expected pattern drilling of 21,000 wells as well as a pessimistic 14,000 wells and the optimistic 28,000 wells.

Total Phase One and Phase Two wells are a pessimistic 21,000 total wells (7,000 Phase One wells plus 14,000 Phase Two wells), an expected 28,000 total wells (7,000 Phase One wells plus 21,000 Phase Two wells), and an optimistic 35,000 total wells (7,000 Phase One wells plus 28,000 Phase Two wells).

The lifecycle phases, declining fluid production, and three pattern drilling options were incorporated into a unified model and population potentials for each of the six cities were determined. This is the brief report circulated December 6, 2010.

Again, population potentials are expected city populations if new comers can be accommodated. If a community falters and cannot provide housing, its share will live in those communities that can.

The final challenge was to allocate each city's population potential based on permanent employment projected at five-year intervals across key housing-related variables. These include the following.

- Housing projections by tenure and by type. (Tenure refers to renting versus owning and type includes single family, multi-family, and mobile homes. It is assumed that each city's housing tenure and type will normalize to pre-Bakken/Three Forks conditions. That is, while a city may in 2010 have a higher percentage of mobile homes than in 2000, by 2030 the percentage of mobile homes will be similar to what the city hosted in 2000.)
- Population by age cohort. (Population by age cohort reports cohorts in five-year increments and was derived by aging the current population, adding new comers at a ratio of 25 percent in cohorts 40 years and older and 75 percent to cohorts spanning zero to 39 years. Finally cohort increases and decreases were figured by applying North Dakota birth and mortality rates.)
- Households by age. (Households by age was determined using information developed in the first two variables described above to allocate householders to three age categories –young householders, 15 to 39 years of age; middle years householders, 40 to 64 years of age; and retired householders, 65 years and older— to three tenure categories owner, renter, and total households.)
- Household income by percent. (Known household median incomes and poverty rates for 2000 and 2010 anchored projections of future poverty rates and median incomes. Here it is assumed that over time poverty rates will fall to Mercer County, ND's current level (7.2 percent) since Mercer County reflects a mature extractive industrial base. It is assumed that median incomes and poverty thresholds will rise with the consumer price index (CPI). Median incomes should stabilize as less overtime will be paid as the oil and gas industry normalizes.)
- Household income by number of households. (This representation converts household income by percent to the number of households in particular income categories.)
- Households by affordable rent/mortgage. (This representation reports the level of rent affordable by the number of households in income categories. It assumes affordable rent and an affordable mortgage is 30 percent of household income.)

- Households by size. (Households by size report the number of individuals living in a household. These households were allocated across renter households and owner households. )

In addition, a model estimating new construction rental rates was generated. This model estimates the rental rates needed to pay back a multi-family apartment building in five, ten, 15, 20, and 25 years and is intended to provide an understanding of market-rate rent and investor time horizons.

### **Overall Findings for the Bakken/Three Forks Footprint**

It is an exciting time to live in northwest North Dakota. Jobs are readily available and the population is growing rapidly. Newcomers are younger than the region's typical resident and the population mix is changing. In future years more attention will be commanded by the needs of younger households rather than older households. For example, school-aged cohorts will increase strongly. Since the 2000 census, median household incomes have zoomed and rates of poverty have dropped dramatically.

Since the 2000 census, over 23,000 people have been attracted to northwest North Dakota. While this is favorable given the region's long history of population decline, it is important to understand the region 20 years into the future so that over building does not occur. Given the three pattern drilling options (14,000, 21,000 and 28,000 wells), at 2030, the permanent population of the Bakken/Three Forks footprint would be approximately 92,500, 106,000, or 128,500 people respectively. However this permanent population is similar to that of the Bakken/Three Forks footprint attained at 2018.

The rig-related transient population of the Bakken/Three Forks footprint will be significantly higher. Rig-related transients (including, direct, secondary, and induced workers) add approximately 6,250 people to the overall Bakken/Three Forks footprint before leaving with the end of pattern drilling.

The buildup and relative decline of population presents challenges and opportunities across northwest North Dakota. While a stable core of housing is needed to house the region's ongoing permanent population, a large population will need decent housing all during Phase Two. Second, infrastructure and services needs to be funded at levels that service not only the region's ongoing permanent population but meet the needs of the large permanent and transient population experienced before pattern drilling ends.

Creative housing solutions of all types are needed. Crew camps providing controlled, safe, decent, and all-weather housing must be encouraged. Semi-permanent housing solutions are a must. Permanent housing that conforms to the oil and gas lifecycle should be pursued.

Given 2010 construction costs, market rate rents for new two-bedroom apartments easily top \$1200.00. Since little construction has occurred in prior decades and the large demand associated with Phase Two pattern drilling and construction projects, apartment rents

will remain high. Affordability is an issue across the region since only about half of the region's households can afford new market rate housing.

North Dakota decision makers need to monitor oil and gas activity, infrastructure and construction projects, and other new industries, and be prepared to act depending on the scenario that unfolds. The Bakken/Three Forks is dynamic and the future is still uncertain.

### **Report Organization**

Each city's report is organized in the following manner. An executive summary highlighting key findings and concerns is followed by a recommendation section. After the recommendation comes Appendix A, Graphs and Tables. Here data elements for the city's population, housing units, mix of housing units, householders by age cohort, households by income, housing affordability by household income, and households by size are reported. Again, these customized data tables are constructed using the expected pattern drilling value of 21,000 wells (28,000 total wells). Also included in Appendix A is a model that develops market-rate rents for new apartment construction given paybacks set at five, ten, 15, 20, and 25 years. Appendix B is the interim report used to determine the city's 2010 population. This population includes transients as well as permanent people residing within the city's boundary, rental stock and rental rate information. Appendix C includes any materials received after December 6, 2010 about the city's infrastructure needed given population potentials.

## **Tioga**

### **Executive Summary**

While the future is bright, if pattern drilling in the Bakken/Three Forks conforms to the expected 21,000 wells, particular measures need to be taken. That is, Tioga must plan for accommodating a sustainable population in permanent housing units and accommodating a peak population in temporary and semi-permanent housing. At 2030 the city's population and housing units are equivalent to the population and associated housing units expected in 2018. That is, Tioga's 2018 and 2030 permanent population will be approximately 1,800 people requiring about 900 total housing units.

The median age cohort of Tioga will fall from the 40 to 44 year age cohort at 2010 to 30 to 34 years at 2015 to 25 to 29 years at 2020 and will return to 30 to 34 years at 2025. The greening of Tioga has a number of implications. First, those cohorts associated with primary and secondary education (five to nine years, ten to 14 years, and 15 to 19 years) will increase by almost 75 percent between 2000 and 2030. Second, those 65 years and older will decline in both percent and absolute numbers from 2010 to 2030.

Tioga is a much wealthier city in 2010 than in 2000. At the 2000 census Tioga's median household income was \$29,740. By 2010 its median household income zoomed to \$55,000. While the oil and gas industry is responsible for this increase, in subsequent years it is expected that employment will normalize and less overtime will be paid. Induced employment likely pays less well than does the oil

and gas industry so it is likely that the city's median will only rise with the consumer price index. Using this logic by 2030 Tioga's median household income will be just over \$69,800.

In the next years Tioga will see a decline in the rate of poverty. In absolute terms the number in poverty will rise slightly. Nonetheless, affordability of housing will be an issue in Tioga. Applying North Dakota Housing Finance Agency's rule of thumb, a median household income of \$55,000 will allow for a suggested 30 percent rent payment of \$1,375 per month. Since so few buildings have been constructed in the city in recent years, older buildings that should command lower rents are not available and new construction costs require rents of about this amount to payback an apartment building's cost in 15 years. (See Appendix A.)

### **Recommendations**

As a general recommendation, decision makers need to monitor oil and gas activity to understand the sort of drilling scenario that develops. The city must plan to accommodate its peak population with temporary and semi-permanent housing and must plan to accommodate its sustainable population with permanent housing options. Some moderate overbuilding is healthy and will trigger the removal of less desirable housing and housing types.

If possible, Tioga should control and rationalize contiguous developments by annexations and by enlarging its extra-territorial zone. Tioga should aggressively annex industrial and commercial properties adjacent to the city to enhance its tax base.

A very real possibility is that Tioga will be unable to accommodate its share of new employees and these people will gravitate to those communities that can.

As time passes the mix of housing unit type (single family homes, multi-family homes, and mobile homes) will normalize with a smaller percentage and number of mobile homes, a smaller percentage of apartments, and a larger percentage and number of single family homes. However, the need for multi-family units will remain strong into the next decade.

In addition to permanent housing, Tioga needs to encourage the development of more temporary or semi-permanent housing that can be withdrawn or converted to other uses as temporary workers are no longer needed and if permanent employment falls. Thus, pressure must be placed on industry to provide crew camps that provide all-weather, safe, decent, and controlled housing for temporary construction and drilling-related employees.

A style of housing that might prove useful for oil and gas impacted cities is one designed for the oil and gas drilling/production lifecycle. Such housing might consist of attached single-story suites that initially are intended for extended-stay use. As need dictates, two of these suites could be joined as an apartment. Later as need dictates, the apartments could be sold as condos.

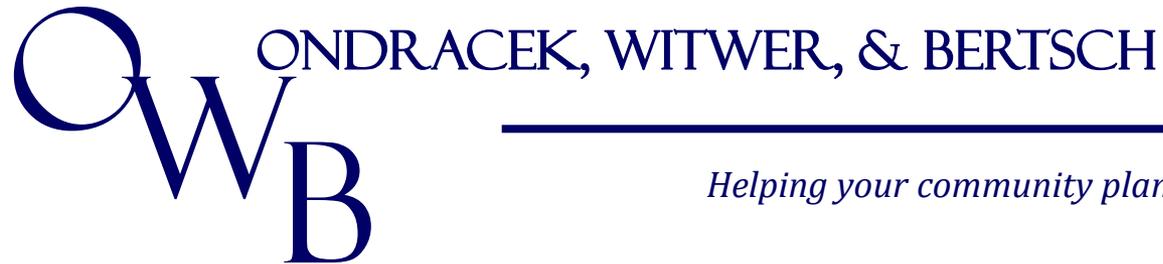
Currently there is little need for additional market-rate senior housing in Tioga. Tioga will need infrastructure that accommodates a younger rather than older population.

Housing affordability is an issue in Tioga. New construction is expensive and is affordable for those whose earnings are at and above the city's median income level. The city needs subsidized housing for its poor and lower income earners. Those who do not qualify for subsidized housing and do not earn incomes approaching the city's median are under extreme pressure.

Given the large budget deficits and national debt, aid from the federal government will be limited. Solutions for affordable housing must be sought at the upcoming North Dakota Legislative session since market mechanisms will fail those earning below median incomes. A possible state-level solution would be housing tax credits. Housing tax credits would be superior to a simple appropriation since the state's input is magnified. Instead of an unmatched appropriation, the state's input is foregone tax collections leveraged with private tax-payer funds paid to receive the tax credit benefit.

A final recommendation is this. *North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis* contains a wealth of data that can be mined by a variety of stakeholders to understand Tioga at 2010 and into the future. With this as a guide, fitting solutions can be crafted for many of the challenges facing the city.

# Appendix A: Graphs and Tables



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**North Dakota Communities Acutely Impacted  
by Oil and Gas Development:  
Housing Demand Analysis:  
Tioga Graphs and Tables**

**December 20, 2010**

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**Study timeframe August—December 2010**

**North Dakota Communities Acutely Impacted  
by Oil and Gas Development:  
Housing Demand Analysis**

- Purpose of study
  - To inform decision-makers about permanent housing needs given the magnitude, trajectory, and sustainability of oil and gas development in northwest ND

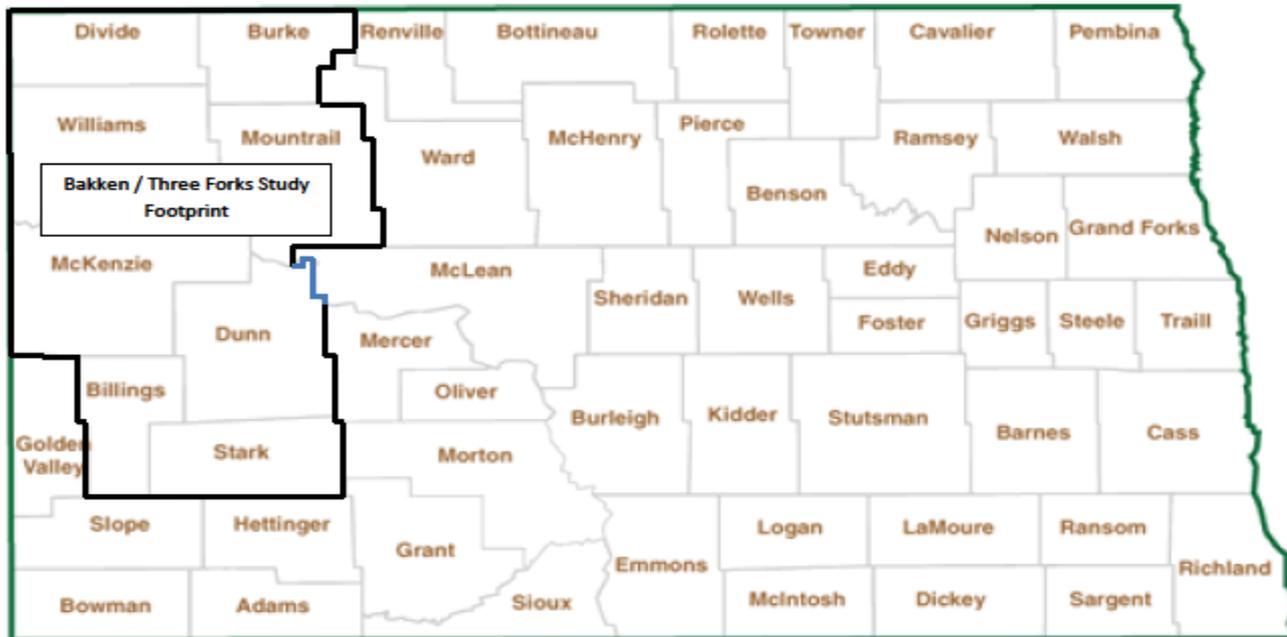
# **North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis**

- Study boundaries
  - Northwest North Dakota
  - ND Bakken/Three Forks footprint
  - Parshall, New Town, Stanley, Tioga, Watford City, and Williston – city limits
  - Twenty year span (2010 to 2030 in five-year increments)
  - Population potentials based on drilling and production
  - Housing needs of permanent population

# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

- Study limitations
  - Short time frame (Sept.-Dec. 2010)
  - Dynamic situation
  - Workforce Needs Study late
  - Population forecasts assume all cities can absorb their proportionate population potential
  - Study does not include current or future temporary and permanent population increases from
    - Infrastructure construction projects
    - Oil/gas construction projects
    - Development of other industries
    - Development of other mineral formations

# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

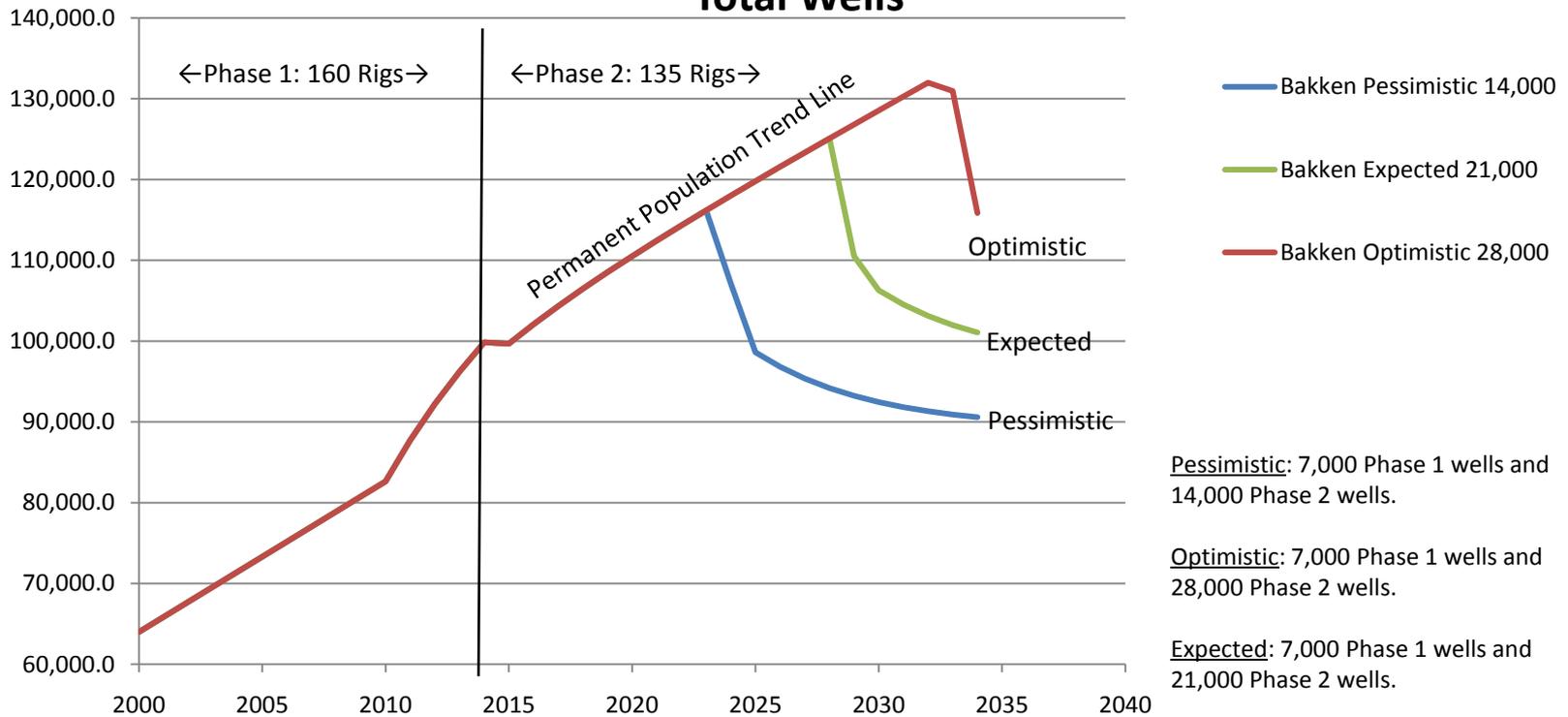


# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

- Bakken/Three Forks Population Forecast Based on Total Wells
  - Phase One: 7,000 wells completed 2014
  - Phase Two: Three scenarios
    - 14,000 pattern wells completed 2024-2025 (21,000 total wells)
    - 21,000 pattern wells completed 2029-2030 (28,000 total wells)
    - 28,000 pattern wells completed 2033-2034 (35,000 total wells)
  - Production
  - Permanent population includes permanent drilling-related and production-related primary, secondary, and induced workers with households
  - Transient population includes temporary drilling-related primary, secondary, and induced populations; does not include transient construction-related impacts

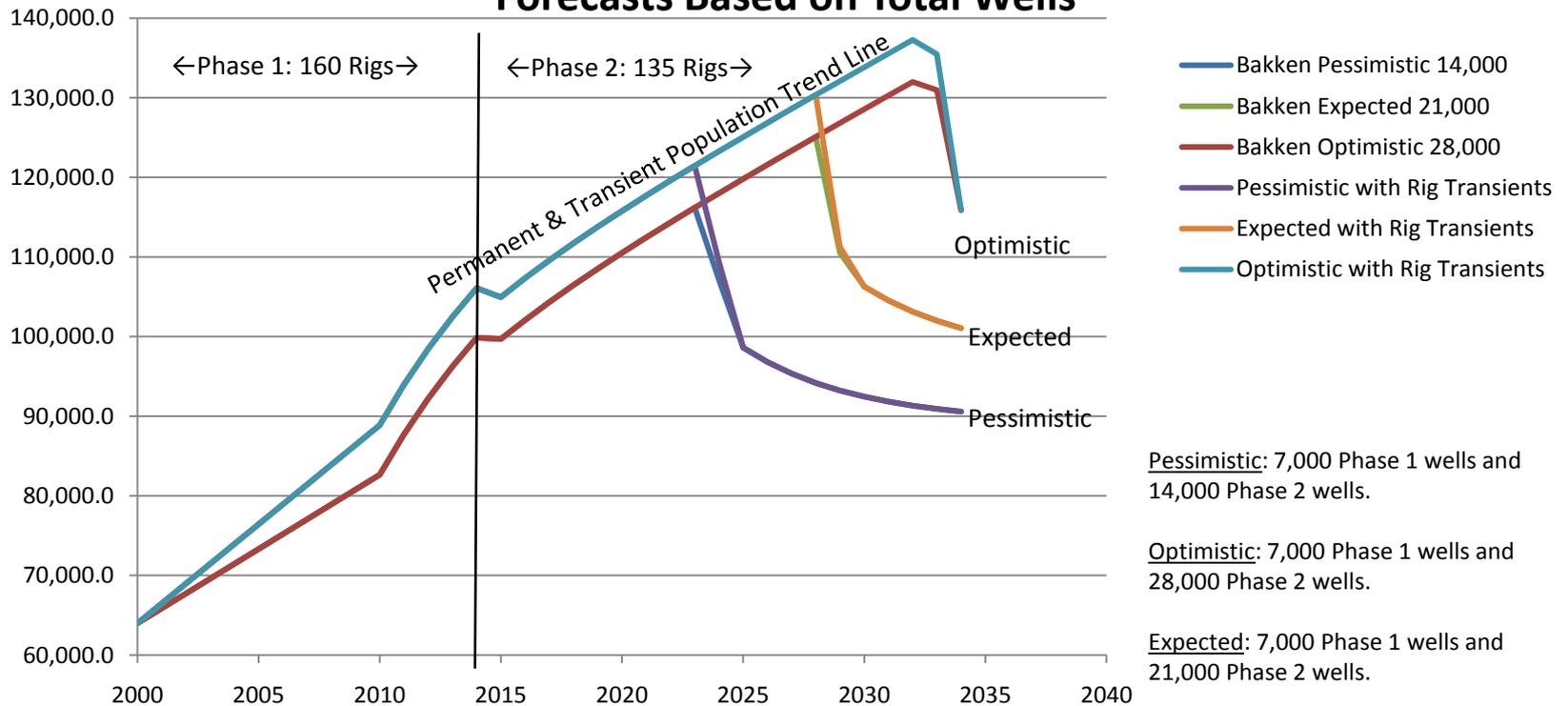
# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

## Bakken / Three Forks Permanent Population Forecasts Based on Total Wells



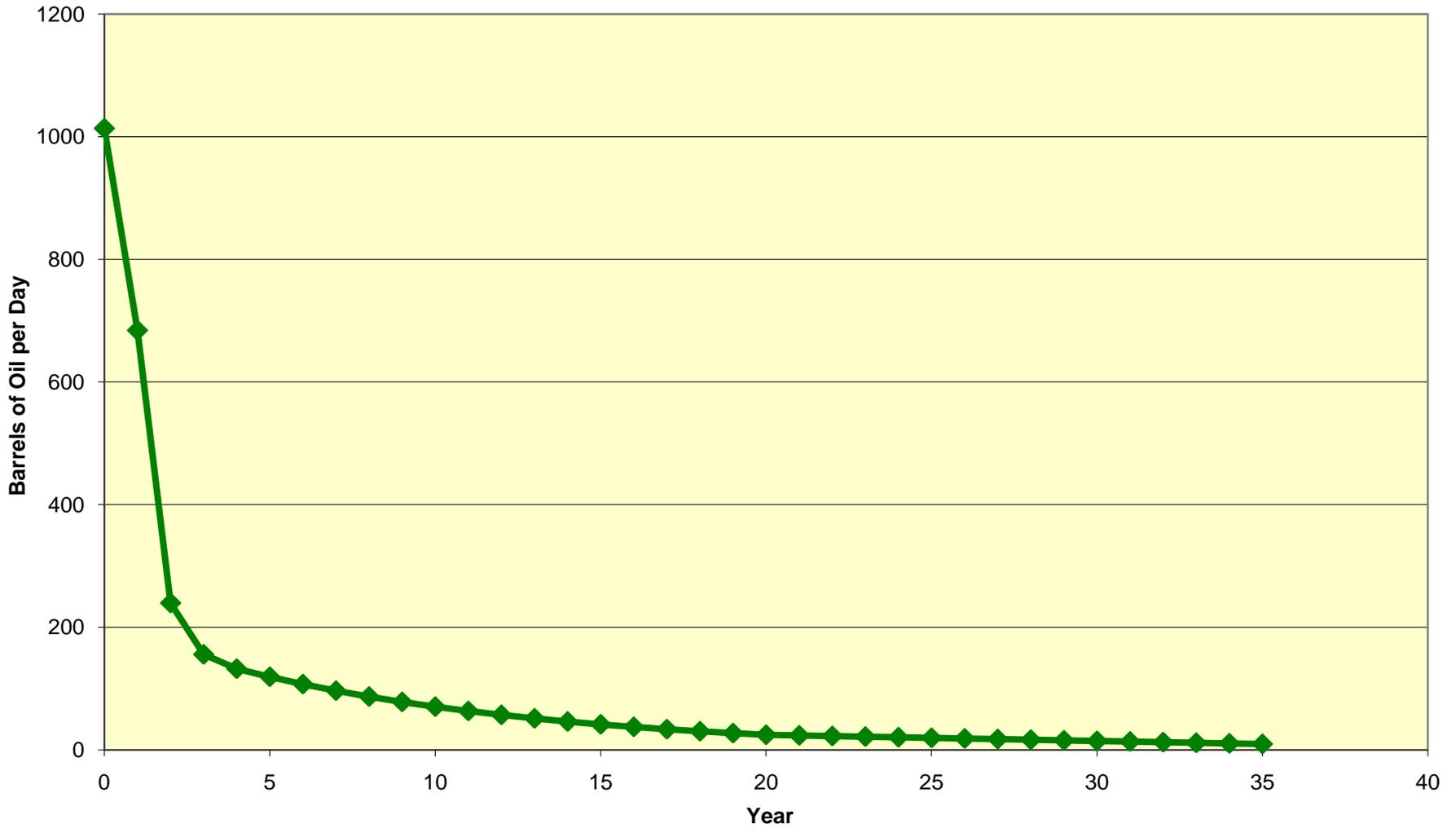
# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

## Bakken / Three Forks Permanent and Transient Population Forecasts Based on Total Wells



# Typical Bakken Well Production

Source: Lynn Helms, ND Oil and Gas Division

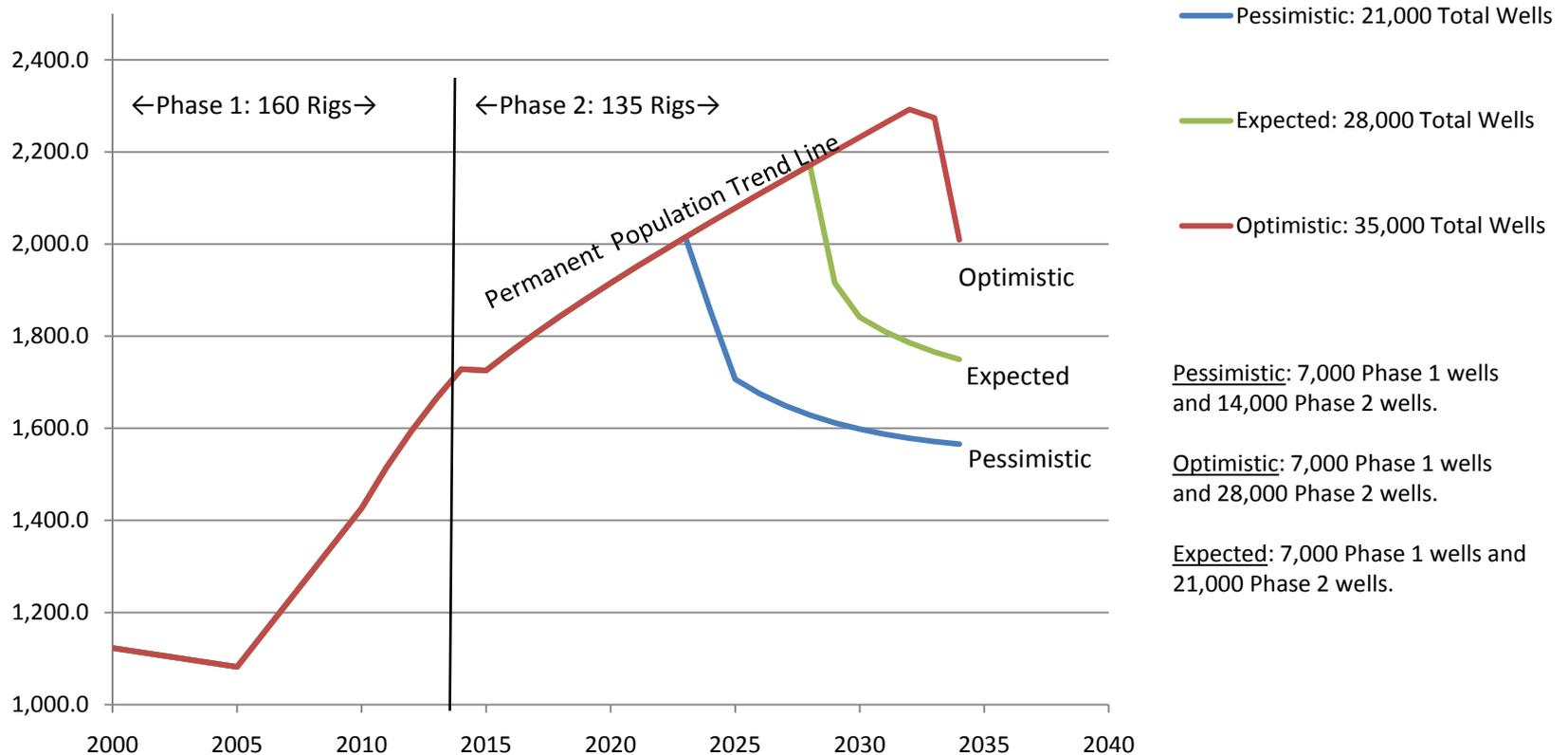


**North Dakota Communities Acutely Impacted  
by Oil and Gas Development:  
Housing Demand Analysis**

- **City Population Potential Based on Rigs and Wells**
  - Tioga
    - Allocation based on ND Bakken/Three Forks footprint population potential

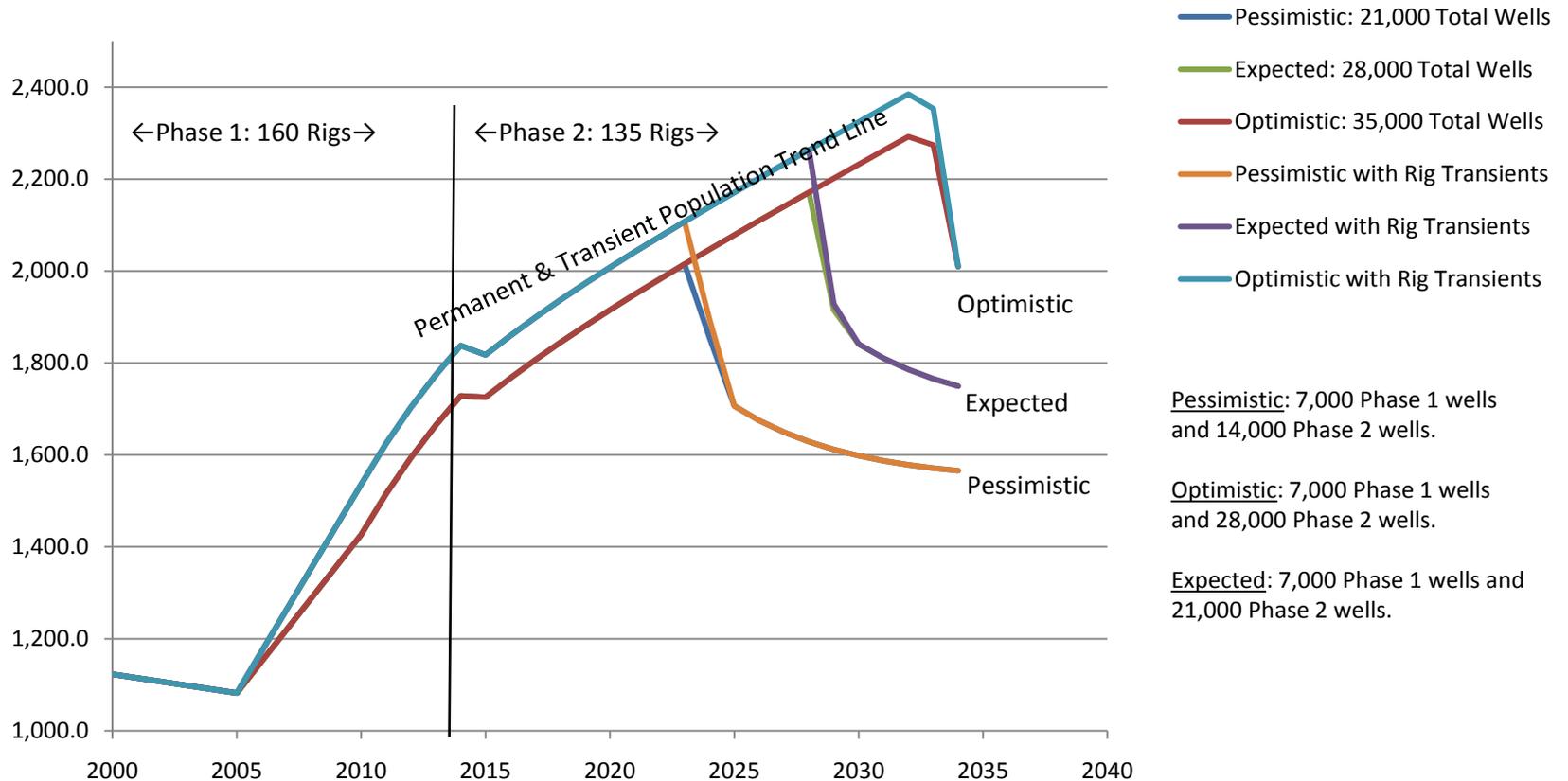
# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

## Tioga Permanent Population Potential Based on Total Wells



# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

## Tioga Permanent and Transient Population Potential Based on Total Wells



**North Dakota Communities Acutely Impacted  
by Oil and Gas Development:  
Housing Demand Analysis**

- Tioga permanent population proportion based on...
  - Rig count of 160 through Phase One
  - Rig count of 135 through Phase Two
  - Phase Two 21,000 expected wells
  - Production recognizes rapid decline of total fluids per well

**North Dakota Communities Acutely Impacted  
by Oil and Gas Development:  
Housing Demand Analysis**

- **Housing Projections by Tenure by Type**
  - Tenure (rent/own) and housing types (single family, multi-family, and mobile home)
  - Assume tenure and type will normalize to pre-Bakken/Three Forks percentages

# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

Tioga Housing Projections By Tenure By Type					
	2010	2015	2020	2025	2030
Population:	1,426	1,725	1,915	2,078	1,841
Single Family Units	468	585	670	749	682
SF Owned	411	513	588	657	598
SF Rented	57	72	82	92	84
Multi Family Units	129	149	157	161	134
MF Owned	10	12	13	13	11
MF Rented	119	137	144	148	123
Mobile Home Units	107	120	122	120	96
MH Owned	99	110	112	111	88
MH Rented	8	9	9	9	7
Total Units	704	854	949	1030	911
% SF Units	66.48%	68.56%	70.65%	72.74%	74.83%
% MF Units	18.32%	17.41%	16.50%	15.59%	14.69%
% MH Units	15.20%	14.02%	12.84%	11.67%	10.49%

Forecasted permanent population based on 21,000 Phase Two wells

# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

- Population by Age Cohorts
  - Aged existing population cohorts
  - Added new comers
    - 75 percent 0-39 years
    - 25 percent 40 years and older
  - Applied ND birth and death rates

# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

Tioga Population By Age Cohorts						
	2000	2010	2015	2020	2025	2030
Total Population:	1125	1,426	1,725	1,915	2,078	1,841
Age Cohorts						
0-5 years	48	78	133	141	147	113
5- 9 years	65	86	106	149	157	125
10-14 years	73	118	124	124	162	134
15-19 years	92	153	167	149	140	142
20-24 years	22	60	172	192	169	116
25-29 years	32	79	86	184	211	139
30-34 years	56	49	94	99	193	183
35-39 years	73	66	70	104	110	177
40-44 years	102	56	83	82	112	93
45-49 years	80	73	63	86	86	103
50-54 years	53	102	83	68	89	76
55-59 years	79	80	107	88	71	80
60-64 years	52	53	83	109	91	61
65-69 years	70	79	56	79	104	75
70-74 years	68	52	77	56	76	89
75-79 years	53	70	48	64	48	57
80-84 years	51	68	62	42	54	35
85-89 years	32	53	38	33	23	27
90 years and older	24	51	30	21	18	11
% Error		0.00%	-2.44%	-2.29%	-0.92%	-0.31%
Median Age Cohort:	40-44 years	40-44 years	30-34 years	25-29 years	30-34 years	30-34 years

Forecasted permanent population based on 21,000 Phase Two wells

**North Dakota Communities Acutely Impacted  
by Oil and Gas Development:  
Housing Demand Analysis**

- Households by Age
  - Age cohorts of householders
  - Allocated across rent/own

# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

Tioga Households By Age					
	2010	2015	2020	2025	2030
Total Population:	1,426	1,725	1,915	2,078	1,841
All Households					
15-39 years	250	381	474	532	472
40-64 years	224	271	282	290	257
65 years and older	230	202	193	208	182
Total All Household Units	704	854	949	1030	911
Owner Households					
15-39 years	185	284	356	403	361
40-64 years	165	202	212	220	197
65 years and older	170	150	145	158	139
Total Owner Household Units	520	636	713	781	697
Renter Households					
15-39 years	65	97	118	129	111
40-64 years	59	69	70	70	60
65 years and older	60	51	48	50	43
Total Renter Household Units	184	217	236	249	214

Forecasted permanent population based on 21,000 Phase Two wells

**North Dakota Communities Acutely Impacted  
by Oil and Gas Development:  
Housing Demand Analysis**

- **Household Income by Percent**
  - Began with current county-level median incomes and poverty rates
  - Assumed median incomes and poverty threshold rise with Consumer Price Index (CPI)
  - Assumed poverty will fall to Mercer Co. levels

# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

Tioga Household Income by Percent						
	2000	2010	2015	2020	2025	2030
Total Population:	1125	1,426	1,725	1,915	2,078	1,841
Indexed Poverty Level:	\$12,488	\$14,716	\$15,620	\$16,580	\$17,599	\$18,681
Indexed Median:	\$29,740	\$55,000	\$58,380	\$61,968	\$65,776	\$69,819
Below Poverty	17.13%	9.90%	9.23%	8.55%	7.87%	7.20%
Poverty to \$19,999	13%	6.00%	4.98%	3.89%	2.73%	1.50%
\$20,000-\$24,999	9.24%	5.72%	5.84%	5.96%	6.09%	6.22%
\$25,000-\$29,999	11.50%	7.12%	7.27%	7.42%	7.57%	7.73%
\$30,000-\$34,999	8.42%	5.22%	5.32%	5.43%	5.54%	5.66%
\$35,000-\$39,999	6.78%	4.20%	4.28%	4.37%	4.46%	4.56%
\$40,000-\$44,999	5.95%	3.69%	3.76%	3.84%	3.92%	4.01%
\$45,000-\$49,999	3.29%	2.04%	2.08%	2.12%	2.16%	2.21%
\$50,000-\$54,999	9.86%	6.11%	6.23%	6.36%	6.49%	6.63%
\$55,000-\$74,999	6.57%	21.62%	22.06%	22.51%	22.98%	23.47%
\$75,000-\$99,999	5.75%	18.92%	19.30%	19.70%	20.11%	20.54%
\$100,000-\$124,999	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
\$125,000-\$149,999	0.82%	2.70%	2.76%	2.81%	2.87%	2.93%
\$150,000-\$199,999	0.82%	2.70%	2.76%	2.81%	2.87%	2.93%
\$200,000 or more	1.23%	4.05%	4.14%	4.22%	4.31%	4.40%
Total %	100%	100%	100%	100%	100%	100%

Forecasted permanent population based on 21,000 Phase Two wells

**North Dakota Communities Acutely Impacted  
by Oil and Gas Development:  
Housing Demand Analysis**

- Household Income by Number of Households
  - Applied percentages of household income to number of household to determine number of households at particular income categories

# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

Tioga Household Income by Number of Households					
	2010	2015	2020	2025	2030
Total Population:	1,426	1,725	1,915	2,078	1,841
Below Poverty	70	79	81	81	66
Poverty to \$19,999	42	43	37	28	14
\$20,000-\$24,999	40	50	57	63	57
\$25,000-\$29,999	50	62	70	78	70
\$30,000-\$34,999	37	45	52	57	52
\$35,000-\$39,999	30	37	41	46	42
\$40,000-\$44,999	26	32	36	40	36
\$45,000-\$49,999	14	18	20	22	20
\$50,000-\$54,999	43	53	60	67	60
\$55,000-\$74,999	152	188	214	237	214
\$75,000-\$99,999	133	165	187	207	187
\$100,000-\$124,999	0	0	0	0	0
\$125,000-\$149,999	19	24	27	30	27
\$150,000-\$199,999	19	24	27	30	27
\$200,000 or more	29	35	40	44	40
Total Households:	704	854	949	1030	911

Forecasted permanent population based on 21,000 Phase Two wells

**North Dakota Communities Acutely Impacted  
by Oil and Gas Development:  
Housing Demand Analysis**

- **Households by Affordable Rent/Mortgages**
  - Number of households in each income category and affordable rent/mortgage
  - Affordable rent 30% of income; affordable mortgage assumed to be same

# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

Tioga Households by Affordable Rent/Mortgage					
	2010	2015	2020	2025	2030
Total Population:	1,426	1,725	1,915	2,078	1,841
Affordable Rent/Mortgage (30%):					
Less than \$500	112	121	118	109	79
\$500 to \$625	40	50	57	63	57
\$625 to \$750	50	62	70	78	70
\$750 to \$875	37	45	52	57	52
\$875 to \$1000	30	37	41	46	42
\$1000 to \$1125	26	32	36	40	36
\$1125 to \$1250	14	18	20	22	20
\$1250 to \$1375	43	53	60	67	60
\$1375 to \$1875	152	188	214	237	214
\$1875 to \$2500	133	165	187	207	187
\$2500 to \$3125	0	0	0	0	0
\$3125 to \$3750	19	24	27	30	27
\$3750 to \$5000	19	24	27	30	27
Greater than \$5000	29	35	40	44	40
Total Households:	704	854	949	1030	911

Forecasted permanent population based on 21,000 Phase Two wells

**North Dakota Communities Acutely Impacted  
by Oil and Gas Development:  
Housing Demand Analysis**

- **Model Estimating New Construction Rental Rates**
  - Rental rates necessary to pay back eight-plex built using 2010 constructions costs
  - At five, ten, 15, 20 and 25 years

# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

## Appendix A: Model Estimating New Construction Rental Rates (Example of an 8-plex)

Structure		Lot & Site Development	
			Enter 'land' value:
		Land:	\$40,000.00
	Enter first 2:	Grading, graveling, paving, water, sewer, storm sewer, curb, sidewalks, landscaping, and design fees (2)	
Square Feet Per Unit:	750		
Number of Units:	8		
Construction per Sq Ft: (1,4)	\$127.50		\$80,000.00
Contractor Fees (Included):	\$0.00		
Architect Fees (7%) (1,4):	\$0.00	Enter Per Unit Upgrades:	
Total Costs per Sq Ft:	\$127.50	\$10,000.00	
Grand Total Construction:	\$765,000.00	Total Lot & Improvements:	\$120,000.00

Enter APR for building loan: (4d) 6.50%

### Per Unit Monthly (4)

	Monthly amortization per unit (4d)	Maint Fees (4a)	Mgmt Fees (4b)	Utility Costs (4c)	Taxes (6,6a,6b)	Insurance (4f,5)	Grand Total Per Unit *
5 year payback	(2,164.51)	216.45	151.52	67.23	126.55	31.67	\$2,757.91
10 year payback	(1,256.12)	125.61	87.93	67.23	126.55	31.67	\$1,695.11
15 year payback	(963.66)	96.37	67.46	67.23	126.55	31.67	\$1,352.93
20 year payback	(824.79)	82.48	57.74	67.23	126.55	31.67	\$1,190.45
25 year payback	(746.95)	74.69	52.29	67.23	126.55	31.67	\$1,099.37

\* Per unit rental rates assume a simple break even scenario. Any developer equity position is assumed to have an ROI equal to the APR of the loan.

#### Sources:

- (1) Wayne Whitty - 852-4850: Construction fees \$180 per sq ft with 7% architect fees
- (2) Ryan Ackerman - 852-6363
- (3) Lon Drevecky - 837-8737 - Left message on 9/27/2010
- (4) Bruce Walker - 852-0136: Construction costs (including contractor and architect fees) are about \$127.50 per sq ft.
- (4a) Approximate Maintenance Fees: 10% of rents collected
- (4b) Approximate Management Fees: 7% of rents collected
- (4c) Approximate Fuel Costs: 9% of rents collected
- (4d) Terms are running about 6.5% for up to 25 years. Lenders do not go beyond 25 years.
- (4e) Taxes are running 1.7% to 1.8% of assessed value
- (4f) Examples: \$1857 for a 5plex (\$371 per unit per year); \$14000 for a 36plex (\$389 per unit per year)
- (5) Kim Albert: Insurance is age-dependent (newer=cheaper)
- (6) Kevin Ternes - 857-4160, Minot City Assessor: Fair Market Value runs approximately 85% to 90% of total new construction and development costs
- (6a) Assessed value is allotted a 'leeway' of 5% of market value.
- (6b) Taxes are 1.7% of assessed value.

**North Dakota Communities Acutely Impacted  
by Oil and Gas Development:  
Housing Demand Analysis**

- **Household by Size**
  - Rental and owner households allocated based on number living in household

# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

Tioga Households by Size					
	2010	2015	2020	2025	2030
Population:	1,426	1,725	1,915	2,078	1,841
Total Owned Units	520	636	713	781	697
1-person household	163	199	224	245	219
2-person household	229	280	314	344	307
3-person household	66	81	90	99	88
4-person household	38	46	51	56	50
5-person household	15	19	21	23	21
6-person household	9	11	13	14	12
7-person household	0	0	0	0	0
Total Rented Units	184	218	236	249	214
1-person household	111	131	142	150	129
2-person household	41	49	53	56	48
3-person household	18	21	23	24	21
4-person household	9	11	11	12	10
5-person household	5	6	7	7	6
6-person household	0	0	0	0	0
7-person household	0	0	0	0	0
% Error:	-4.02%	-3.45%	-3.27%	-3.18%	-3.69%

Forecasted permanent population based on 21,000 Phase Two wells

# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

- Caveats

- Monitor oil and gas developments to understand unfolding scenarios
- Oil and gas resources are finite. Production in the Bakken/Three Forks will end
- In northwest ND population due to oil and gas will not increase forever; there will be significant fall-offs
- New technology will affect all factors of the oil/gas industry including labor
- Rig numbers are fluid and influenced by
  - Economics
  - Politics/regulations

# North Dakota Communities Acutely Impacted by Oil and Gas Development: Housing Demand Analysis

- Press inquiries should be directed to
  - Mr. Mike Anderson, Director, North Dakota Housing Finance Agency ,  
Bismarck, ND, 701-328-8080, [maanders@ndhfa.org](mailto:maanders@ndhfa.org)
- Technical inquiries should be directed to
  - James Ondracek, Ph.D., [ondracek@srt.com](mailto:ondracek@srt.com)

Appendix B: Interim Report from October 18, 2010



North Dakota Communities Acutely Impacted by Oil and Gas Development

City of Tioga

Housing Interim Report: Cumulative Data and Snapshot at the end of 2010

Ondracek, Witwer, and Bertsch

October 18, 2010

Contact Information:  
James Ondracek, PhD  
701-838-2645  
[ondracek@srt.com](mailto:ondracek@srt.com)

## Total Population in 2000 and 2010

Type	2000	Chg from 2000-2010 (2)	2010
<b>Single Family units</b>	428	+40	468
<b>Avg. Household Size S.F.</b>	2.2451145	(1)	2.0428519
<b>Multi Family units</b>	84	+45	129
<b>Avg. Household Size M.F.</b>	1.8094333	(1)	1.4781097
<b>Mobile Home units</b>	60	+47	107
<b>Avg. Household Size M.H.</b>	2.270165	(1)	1.9420578
Total population in housing	1086.36		1327.5508
<b>Group Quarters</b>	<b>37</b>		<b>37</b>
<b>Totals</b>	<b>1123.36</b>		<b>1364.5508</b>
Cumulative % change from 2010			21.47%

(1) The average size of households have declined due to such factors as aging, child maturation, and other household considerations.

(2) This represents the number of additional units since 2000 (e.g. building permits, HUD data, and observations/interviews).

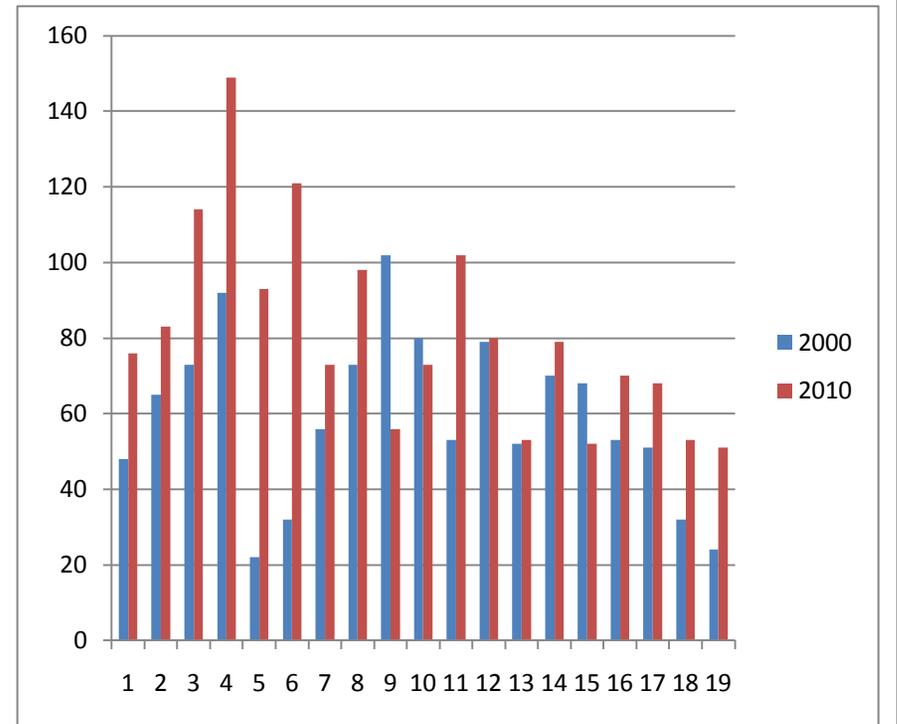
<b>Additional Population Adjustments:</b>				
"Double Up" @ 1% (National Avg)				13.645508
Informal RV Parking @ 1% Single Family Homes (units)				4.68
Informal RV Parking population				8.5223103
RV Parks in City (2010 only).				80.124284
Motel Dwellers (2010 only).				72.840259
Skid Shacks (2010 only).				0
Total population:				1539.6831
Cumulative % change from 2010				37.06%

<b>Housing Units by Age: 2000 to 2010</b>			
		<b>2000</b>	<b>End of 2010</b>
<b>Median Year Built: All Owned</b>		1955	1972.94959
<b>Median Year Built: All Rentals</b>		1967	1976.66564
		<b>2000</b>	<b>End of 2010</b>
<b>Single Family % Owned</b>		87.72%	87.72%
<b>Single Family % Rented</b>		12.28%	12.28%
<b>Multi Family % Owned</b>		8.00%	8.00%
<b>Multi Family % Rented</b>		92.00%	92.00%
<b>Mobile Home % Owned</b>		92.31%	92.31%
<b>Mobile Home % Rented</b>		7.69%	7.69%
<b>Total Single Family Units</b>		428	468
	<b># owned</b>	375.46	410.547315
	<b># rented</b>	52.542	57.4526854
	<b>Avg Age S.F. Owned</b>	45	41.2393162
	<b>Avg Age S.F. Rented</b>	33	30.2649573
	<b>Avg Age all S.F.</b>	43.527	39.8920804
<b>Total Multi Family Units</b>		84	129
	<b># owned</b>	6.72	10.32
	<b># rented</b>	77.28	118.68
	<b>Avg Age M.F. Owned</b>	45	29.6511628
	<b>Avg Age M.F. Rented</b>	33	21.8372093
	<b>Avg Age all M.F.</b>	33.96	22.4623256
<b>Total Mobile Homes</b>		60	107

	<b># owned</b>	55.385	98.7692308
	<b># rented</b>	4.6154	8.23076923
	<b>Avg Age M.H. Owned</b>	45	25.6728972
	<b>Avg Age M.H. Rented</b>	33	18.9439252
	<b>Avg Age all M.H.</b>	44.077	25.155284

### Age Cohorts at 2000 and 2010

Category	Age Cohorts	2000	% of total	2010 Shifted	2010 Adj
1	0-5 years	48	4.27%	32	76
2	5- 9 years	65	5.78%	24	83
3	10-14 years	73	6.49%	48	114
4	15-19 years	92	8.18%	65	149
5	20-24 years	22	1.96%	73	93
6	25-29 years	32	2.84%	92	121
7	30-34 years	56	4.98%	22	73
8	35-39 years	73	6.49%	32	98
9	40-44 years	102	9.07%	56	56
10	45-49 years	80	7.11%	73	73
11	50-54 years	53	4.71%	102	102
12	55-59 years	79	7.02%	80	80
13	60-64 years	52	4.62%	53	53
14	65-69 years	70	6.22%	79	79
15	70-74 years	68	6.04%	52	52
16	75-79 years	53	4.71%	70	70
17	80-84 years	51	4.53%	68	68
18	85-89 years	32	2.84%	53	53
19	90 years and older	24	2.13%	51	51
		1125		1125	1544



Error: 0.28%

**By Tenure By Type at 2010**

Error = 0.21%

Total		1539.683117		
<b>Single Family Dwellers</b>		<b>1075.409306</b>	Population	Units
	SF Owners		943.3897493	410.5473146
	SF Renters		132.0195567	57.45268542
<b>Multi Family Dwellers</b>		<b>110.8335234</b>		
	MF Owners		8.866681871	10.32
	MF Renters		101.9668415	118.68
<b>Mobile Home Dwellers</b>		<b>144.6169867</b>		
	MH Owners		133.4926031	98.76923077
	MH Renters		11.12438359	8.230769231
<b>Group Quarters Dwellers</b>		<b>37</b>	Renters	
<b>Double Up Dwellers</b>		<b>13.64550756</b>	Renters	
<b>1% Informal RV Dwellers</b>		<b>8.522310253</b>	Renters	
<b>RV Dwellers</b>		<b>80.12428443</b>	Renters	
<b>Motel Dwellers</b>		<b>72.84025857</b>	Renters	
<b>Skid Shack Dwellers</b>		<b>0</b>	Renters	
<b>Total Renters:</b>		<b>457.2431427</b>	29.63%	
<b>Total Owners:</b>		<b>1085.749034</b>	70.37%	
<b>Total Owned Units</b>		519.6365453		
<b>Total Rented SF MF &amp; MH Units</b>		184.3634547		
<b>Total Rented Motel, Skid Shacks, RV Spaces</b>		84		

### Householder by Age in 2000 and 2010

<b>All Householder by Age</b>	<b>2000</b>	<b>% of Total</b>	<b>2010</b>	<b>% of Total</b>
15-24 years	9	1.84%	24	3.42%
25-34 years	43	8.78%	84	11.97%
35-44 years	90	18.37%	187	26.64%
45-54 years	75	15.31%	90	12.82%
55-64 years	71	14.49%	75	10.68%
65-74 years	93	18.98%	71	10.11%
75-84 years	78	15.92%	93	13.25%
85 years and older	31	6.33%	78	11.11%
		This method	702	
		HUM method	704	
		Error	0.28%	
<b>Owner Householder by Age</b>	<b>2000</b>	<b>% of Total</b>	<b>2010</b>	<b>% of Total</b>
15-24 years	1	0.26%	3	0.43%
25-34 years	24	6.20%	47	6.70%
35-44 years	81	20.93%	168	23.93%
45-54 years	64	16.54%	77	10.97%
55-64 years	62	16.02%	65	9.26%
65-74 years	84	21.71%	64	9.12%
75-84 years	63	16.28%	75	10.68%
85 years and older	8	2.07%	20	2.85%
<b>Renter Householder by Age</b>	<b>2000</b>	<b>% of Total</b>	<b>2010</b>	<b>% of Total</b>
15-24 years	8	7.77%	21	2.99%
25-34 years	19	18.45%	37	5.27%
35-44 years	9	8.74%	19	2.71%
45-54 years	11	10.68%	13	1.85%
55-64 years	9	8.74%	10	1.42%
65-74 years	9	8.74%	7	1.00%

75-84 years	15	14.56%	18	2.56%
85 years and older	23	22.33%	58	8.26%

### Household Income Levels by Percentage

	2000	Cum 2000	2010	Cum 2010
<b>Below Poverty</b>	17.13%	17.13%	9.90%	9.90%
<b>Poverty to \$19,999</b>	12.64%	29.77%	6.00%	15.90%
<b>\$20,000-\$24,999</b>	9.24%	39.01%	5.72%	21.63%
<b>\$25,000-\$29,999</b>	11.50%	50.51%	7.12%	28.75%
<b>\$30,000-\$34,999</b>	8.42%	58.93%	5.22%	33.97%
<b>\$35,000-\$39,999</b>	6.78%	65.71%	4.20%	38.17%
<b>\$40,000-\$44,999</b>	5.95%	71.66%	3.69%	41.86%
<b>\$45,000-\$49,999</b>	3.29%	74.95%	2.04%	43.89%
<b>\$50,000-\$59,999</b>	9.86%	84.80%	6.11%	50.00%
<b>\$60,000-\$74,999</b>	6.57%	91.37%	21.62%	71.62%
<b>\$75,000-\$99,999</b>	5.75%	97.12%	18.92%	90.54%
<b>\$100,000-\$124,999</b>	0.00%	97.12%	0.00%	90.54%
<b>\$125,000-\$149,999</b>	0.82%	97.95%	2.70%	93.24%
<b>\$150,000-\$199,999</b>	0.82%	98.77%	2.70%	95.95%
<b>\$200,000 or more</b>	1.23%	100.00%	4.05%	100.00%

## Households by Size

	2000		2010	
Owner Household Size	Units	Percent	Units	Percent
Total owner occupied housing units	387	100.00%	519.6365453	100.00%
1-person household	109	28.17%	165.8336763	31.91%
2-person household	153	39.53%	232.7757108	44.80%
3-person household	44	11.37%	42.6015597	8.20%
4-person household	49	12.66%	47.44264603	9.13%
5-person household	20	5.17%	19.36434532	3.73%
6-person household	12	3.10%	11.61860719	2.24%
7-person household	0	0.00%	0	0.00%
	2000		2010	
Renter Household Size	Units	Percent	Units	Percent
Total renter occupied housing units	103	100.00%	184.3634547	100.00%
1-person household	62	60.19%	123.0910937	66.77%
2-person household	23	22.33%	45.66282507	24.77%
3-person household	10	9.71%	8.671964397	4.70%
4-person household	5	4.85%	4.335982198	2.35%
5-person household	3	2.91%	2.601589319	1.41%
6-person household	0	0.00%	0	0.00%
7-person household	0	0.00%	0	0.00%

**Building Permits by Year: 2000 through 2010**

	HUD (1)	Corrected (2)
2010 single family		8
2010 multiple unit		17
2010 mobile home		47
2009 single family	4	15
2009 multiple unit	0	12
2009 mobile home		0
2008 single family	5	12
2008 multiple unit	2	12
2008 mobile home		0
2007 single family	0	3
2007 multiple unit	0	4
2007 mobile home		0
2006 single family	0	0
2006 multiple unit	0	0
2006 mobile home		0
2005 single family	0	0
2005 multiple unit	0	0
2005 mobile home		0
2004 single family	1	1
2004 multiple unit	0	0
2004 mobile home		0
2003 single family	0	0
2003 multiple unit	0	0
2003 mobile home		0
2002 single family	0	0
2002 multiple unit	0	0
2002 mobile home		0

2001 single family	1	1
2001 multiple unit	0	0
2001 mobile home		0
2000 single family	0	0
2000 multiple unit	0	0
2000 mobile home		0
total 2000-2010 all units		132
total 2000-2010 single family		40
total 2000-2010 multiple unit		45
total 2000-2010 mobile home		47

(1) <http://socds.huduser.org/permits/index.html>

(2) Building permit records, observations and interviews

## 2010 Rents

### City of Tioga Market-Rent Levels

Condition	Single family home	Multi-family apartment (One- bedroom unit)	Multi-family apartment (Two bedroom unit)	Multi-family apartment (Three bedroom unit)	Multi-family apartment (Four bedroom unit)	Mobile home	Mobile home court rental	RV court rental
Existing (facility/building)	\$700/mo.	---	\$350--\$750/mo.	---	---	---	\$125--\$350/mo.	\$250--\$350/mo.
New (facility/building constructed 2007 or later)	---	---	\$1000/mo.	---	---	\$1000/mo.	---	Unknown

Source: Ondracek, Witwer, & Bertsch

## Vacancy Rates

All rental properties are fully absorbed at 2010. See Appendix A.

### Model Estimating New Construction Rental Rates (Example of an 8-plex)

Structure		Lot & Site Development	
			Enter 'land' value: <b>\$40,000.00</b>
		<b>Land:</b>	
	Enter first 2:	<b>Grading, graveling, paving, water, sewer, storm sewer, curb, sidewalks, landscaping, and design fees (2)</b>	Enter Per Unit Upgrades: <b>\$10,000.00</b>
<b>Square Feet Per Unit:</b>	<b>861</b>		
<b>Number of Units:</b>	<b>8</b>		
Construction per Sq Ft: (1,4)	\$127.50		
Contractor Fees (Included):	\$0.00		<b>\$80,000.00</b>
Architect Fees (7%) (1,4):	\$0.00		
Total Costs per Sq Ft:	\$127.50		
Grand Total Construction:	\$878,220.00	Total Lot & Improvements:	\$120,000.00

Enter APR for building loan: (4d) **6.50%**

#### Per Unit Monthly (4)

Monthly amortization per unit		Maint Fees (4a)	Mgmt Fees (4b)	Utility Costs (4c)	Taxes (4e)	Insurance (4f,5)	Total Per Unit
5 year payback	(2,441.42)	244.14	170.90	219.73	42.72	31.67	<b>\$3,150.57</b>
10 year payback	(1,416.82)	141.68	99.18	127.51	24.79	31.67	<b>\$1,841.66</b>
15 year payback	(1,086.95)	108.69	76.09	97.83	19.02	31.67	<b>\$1,420.24</b>
20 year payback	(930.31)	93.03	65.12	83.73	16.28	31.67	<b>\$1,220.13</b>
25 year payback	(842.51)	84.25	58.98	75.83	14.74	31.67	<b>\$1,107.97</b>

(1) Wayne Whitty - 852-4850: Construction fees \$180 per sq ft with 7% architect fees

(2) Ryan Ackerman - 852-6363

(3) Lon Drevecky - 837-8737 - Left message on 9/27/2010

(4) Bruce Walker - 852-0136: Construction costs (including contractor and architect fees) are about \$127.50 per sq ft.

(4a) Approximate Maintenance Fees: 10% of rents collected

(4b) Approximate Management Fees: 7% of rents collected

(4c) Approximate Fuel Costs: 9% of rents collected

(4d) Terms are running about 6.5% for up to 25 years.

(4e) Taxes are running 1.7% to 1.8% of assessed value

(4f) Examples: \$1857 for a 5plex (\$371 per unit per year); \$14000 for a 36plex (\$389 per unit per year)

(5) Insurance is age-dependent (newer=cheaper)

## Discussion of Developments and Developable Land

### City of Tioga: Developments and Developable Land

	Number of lots	Type	Owner/identifier	Description	Comments
Commercial					
Industrial					
City of Tioga Industrial Park (35 acres)	20 developed	Industrial	All sold		
Residential lots					
City of Tioga	1	Residential	City of Tioga	1 residential lot	Since 2007 the City of Tioga has sold approx. 20 city-owned lots on bid for \$5,000 to \$15,000; lot sales avg. \$5000-\$5,500
K-Dak	Developed and undeveloped	Residential	K-Dak	30 acres in 3 development phases	5 homes built; As of 10/8/10, two (2) homes have sold with 3 <sup>rd</sup> expecting to sell in 45 days. Intention to build up to 79 homes, of which there will be 8 sets of twin homes. Single family homes will be from \$185,000 to \$260,000. Twin homes in the area of \$150,000 per unit.
<b>Potential residential developments</b>					
City of Tioga	Undeveloped		City of Tioga	40-50 acres in north Tioga	40-50 acres available for residential development
Minnesota developer	Undeveloped	Residential		51 acres	Currently applying for permits for water and sewer. Intends to erect up to 50 manufactured homes in price area of \$150,000. Will be single family with 3 bedroom, 2 baths, and a 24 x 24 garage. Also planning a mobile home park to house up to 25-30 mobile homes. Only mobile homes provided by developer will be permitted, with an expected price of \$25,000 to \$30,000 plus the monthly rental. Lot rental prices have not yet been determined.
Olson	Undeveloped	Residential	Ellwood & Bernice Olson	80 acres west of Hillcrest	80 acres available for residential development
Guttormson	Undeveloped	Residential	Dave Guttormsom	10 acres at KTGO radio station	10 acres available for residential development
Total residential lots				Total 1 lot; 160-170 developable acres	

Source: Kathy Jorgenson, Tioga Economic Development Coordinator; Jamie Eraas, City of Tioga Auditor

Tioga has annexed few if any properties since the 2000 census. However, as developed in the table above Tioga has land available for development and annexation. The City of Tioga maintains a one half mile extra-territorial area (ETA) and seeks to place man camp developments within this half-mile zone.

## Property Values

### Williams County Home Sales

Home sales	2010*	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
Number of sales	63	46	32	54	33	34	34	37	37	47	53
Average value	\$78,292	\$60,546	\$52,507	\$56,047	\$58,259	\$33,271	\$34,532	\$37,497	\$32,820	\$34,435	\$37,136
Sales volume	\$4,932,400	\$2,785,136	\$1,680,235	\$3,026,550	\$1,922,550	\$1,131,200	\$1,174,075	\$1,387,400	\$1,214,350	\$1,618,460	\$1,968,210

Source: ND State Tax Office

\*2010 data is tabulated from the first two quarters of 2010

### Williams County Lot Sales

Lot sales	2010*	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
Number of sales	11	22	18	14	7	4	6	4	7	6	3
Average value	\$17,980	\$16,773	\$12,483	\$19,450	\$10,821	\$9,225	\$13,033	\$13,225	\$12,000	\$8,433	\$3,083
Sales volume	\$197,775	\$369,000	\$224,700	\$272,300	\$75,750	\$36,900	\$78,200	\$52,900	\$84,000	\$50,000	\$9,250

Source: ND State Tax Office

\*2010 data is tabulated from the first two quarters of 2010

### Williams County Mobile Home Sales

Mobile home sales	2010*	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
Number of sales	14	18	27	14	6	16	17	17	12	7	18
Average value	\$22,200	\$22,500	\$16,750	\$30,811	\$18,000	\$16,388	\$13,168	\$10,796	\$14,471	\$5,571	\$12,881
Sales volume	\$459,826	\$448,905	\$692,381	\$431,354	\$18,000	\$262,213	\$223,860	\$183,526	\$173,655	\$39,000	\$231,871

Source: ND State Tax Office

\*2010 data is tabulated from the first two quarters of 2010

### City of Tioga Real Estate Historical Sales: Home Sales

Home sales	2010	2009	2008	2007	2006	2005
Number of sales	3		3		3	
Average value	\$104,167		\$86,333		\$43,167	
Median value	\$82,500		\$68,000		\$35,000	
Maximum price	\$194,000		\$155,000		\$74,500	
Minimum price	\$36,000		\$36,000		\$20,000	

Source: Carrie Montoya, Watne Realty, Minot, ND; Multi-List Service accessed October 1, 2010

### City of Tioga Real Estate Historical Sales: Lot Sales

Lot sales	2010	2009	2008	2007	2006	2005
Number of sales			1			
Average value			\$15,000			

Source: Carrie Montoya, Watne Realty, Minot, ND; Multi-List Service accessed October 1, 2010

### City of Tioga Existing Residential Homes for Sale as of October 8, 2010

Description	Asking Price	Status
For sale by owner	\$124,000	Has signed contract
For sale by owner	\$210,000	On market

Source: Carrie Montoya, Watne Realty, Minot, ND; Multi-List Service accessed October 8, 2010

### City of Tioga Infrastructure Discussion

Steven Ike, AmeriTech Engineering (ATEC), has been Tioga's City Engineer for approximately one year. ATEC is currently evaluating Tioga's infrastructure and community needs. The following is an outline of existing infrastructure and condition/capacity provided by Mr. Ike. Additional comments were supplied by Jamie Eraas, City of Tioga Auditor.

- Streets are generally in poor to fair condition. The City is considering a major project to upgrade underground utilities (water and sewer) and streets.
- Curb and gutter conditions vary from poor to good.
- Sidewalks conditions vary from no sidewalk to fairly new sidewalk.
- Street lighting – No Information
- Storm sewers – No Information
- Sanitary sewers vary in condition and some areas need improvements.
- Sewer treatment – ATEC is in the process of evaluating the capacity and condition. According to Jamie Eraas Tioga's waste water treatment facility has empty cells.
- Garbage collection – A private company provides this service
- Recycling facilities – No Information
- Landfill – The City of Tioga has an inert landfill; municipal waste is collected by Circle Sanitation.
- Water supply is provided by R&T Water. According to Jamie Eraas, R&T Water has a new 1,000,000 gallon storage tank west of Tioga, but Tioga's needs a new water tower.
- Water treatment is provided by R&T Water; R&T will cut off commercial sales if not enough supply for residential uses.
- Water lines are being evaluated, improvements are needed as the pipes are old and are experiencing many breaks.
- Parks – No Information.
- Recreation facilities – No Information.
- City offices – No Information.
- City shop – No Information.

### City of Tioga Utility Rates

The City of Tioga provides water, sewer, and garbage collection services. The following rates were provided by Jamie Eraas, City of Tioga Auditor.

Residential:

Water: \$10.50 plus \$3.60/1000 gallons of water usage

Sewer: \$10.00 (includes 10,000 gallons of usage) plus \$0.10/1000 gallons of usage over 10,000 gallons

Garbage: \$17.00

Commercial:

Water: \$20.50 plus \$3.60/1000 gallons of water usage

Sewer: \$20.00 (includes 10,000 gallons of usage) plus \$0.10/1000 gallons of usage over 10,000 gallons

Garbage: varies depending on size of dumpster and number of pickups per week

# Appendix

## Housing Particulars

### City of Tioga Subsidized, Low-Income Tax Credit, Market-Rate, and Income Targeted/Moderate Income Apartments

City identifier and age	Contact	Units	Efficiency	1-bedroom	2-bedroom	3-bedroom	4-bedrooms	Garage	Current rent, waiting list, number of calls in last week	Number living in the building; percent under 18	Percent permanent; percent temporary	Renter (company or individual)	Notes	Comments	Type
<b>Tioga has no subsidized apartments</b>															
<b>Market</b>															
Almer Hillcrest School Apts.  Renovation 2009	Merle Almer, owner  701-664-3429	12  <b>Details not revealed</b>						0	Believed to be \$1000 per month				Turnover rate (1-3%)		Market
Almer Hillcrest School-site Apartments  2010	Merle Almer, owner  701-664-3429	17  <b>Details not revealed</b>						0	Believed to be \$1000 per month				Turnover rate (1-3%)  One-level senior friendly apartments		Market
Green Safari Duplex I		2													Market
Green Safari Duplex II		2													Market
Holmen 4-Plex  1989	Linda Holmen, owner  701-664-2450	4			4			0	\$350*; waiting list 15; *new tenants would be charged current market rates		Permanent	Individual	Turnover rate (1-3%); historically low vacancy rate	Stove, refrigerator, washers & dryers	Market*  new tenants would be charged current market rates

Paradise Manor 1970s	Paradise Enterprises Fred Evans, owner  Fran Stewart, manager, 701-664- 2883	24		24			0	\$550; all utilities included in rent  waiting list 7 individuals and 2 companies		Permanent	Individual	Turnover rate (1- 3%)	Stove, refrigerator, common washers & dryers	Market  <b>Recently converted from HUD 30% AGI; Williston Housing Authority was able to issue vouchers for affected tenants</b>
Paradise Suites 1970s	Paradise Enterprises Fred Evans, owner  Fran Stewart, manager, 701-664- 2883	6		6			0	\$750; all utilities included in rent;  waiting list 10 individuals		Permanent	Individual	Turnover rate (1- 3%)	Stove, refrigerator, common washers & dryers	Market  <b>Recently converted from HUD 30% AGI; Williston Housing Authority was able to issue vouchers for affected tenants</b>
Jason Rice 4-Plex	Jason and Danett Rice, owners 701-664-3438	4		4			0						<b>Called—no answer</b>	Market
<b>Potential Apartment Developments</b>														
Almer Hillcrest School-site 4-plex	Merle Almer, owner  701-664-3429	4  <b>Details not revealed</b>						0						Market
Nordic Hills Apartments Tioga	Lutheran Social Services Jessica Thomasson 701-271-3201	26 units		1	17	8	26	0					Construction to begin spring 2011	100% LITCH

Source: Kathy Jorgenson, Tioga Economic Development Coordinator; Jamie Eraas, City of Tioga Auditor; Named contacts

### City of Tioga Mobile Home Courts and Recreational Vehicle Courts

City identifier and age	Contact	Lots MH; RV	Lot rental MH	Lot rental RV	Amenities	Current vacancy rate MH; RV	Number living in the court; percent under 18	Percent permanent; percent temporary	Renter (company or individual)	Future plans
Sand Creek Mobile Home Court	Kathy Mita 701-570-5765	57 spaces--43 mobile home; 14 RV	Believed to be \$350 per mo.							Doing an expansion
R&R outside city limits; depends on well water	Ralph Meyers 701-664-3855	25; some of the MH lots are split into two for RVs; Currently have 6 MH, 7 Skid Shacks; 20 RVs	\$125/mo.MH; \$300/mo. Skid Shacks	\$250/mo. RVs	None	Could accommodate about four more RVs	75-80/7; 9.3% under 18	25%/75%	Both company and individual	Would be interested in expanding; empty lot next door but probably too high a price to buy it
<b>MH and RV Courts Under Construction</b>										
Moberg RV Park 2010  1 city block near motel	Jeff Moberg 701-641-3550	Will have approx. 30 RV spaces; 0 MH	<b>Declined to comment</b>		No amenities					Intends to have the RV park open year-round; intends to open before Jan. 2011

Source: Kathy Jorgenson, Tioga Economic Development Coordinator; Jamie Eraas, City of Tioga Auditor;  
<http://www.mobilehomeparkstore.com>; Named contacts

### City of Tioga Mobile Home Rentals

City identifier and age	Contact	Rental mobile home and age	Size (single/dbl; bedrooms)	Mobile home rental rate; does this include the lot rent?	Current rent, waiting list, number of calls in last week	Number living in the mobile home; percent under 18	Percent permanent; percent temporary	Renter (company or individual)	Notes	Comments
Almer/Main Street Mobile Homes 4	Merle Almer, owner  701-664-3429	4 new (2010) 2-bed mobile homes  <b>Details not revealed</b>		Believed to be \$1000 per month and rented to a company				Believed to be rented to a company		

Source: Kathy Jorgenson, Tioga Economic Development Coordinator; Jamie Eraas, City of Tioga Auditor

City of Tioga Rental Houses

City identifier and age	Contact	1-bedroom	2-bedroom	3-bedroom	4-bedrooms	5-bedrooms	Garage	Current rent, waiting list, number of calls in last week	Number living in the building; percent under 18	Percent permanent; percent temporary	Renter (company or individual)	Notes	Comments
Stewart house 1	Fran Stewart 701-664-2883			X				\$700 per mo.; tenant pays all utilities  10 on waiting list					
Stewart house 2	Fran Stewart 701-664-2883			X				\$700 per mo. ; tenant pays all utilities  10 on waiting list					
Houstveit	Kyle & Shane Haustveit <b>Unlisted number</b>												

Source: Kathy Jorgenson, Tioga Economic Development Coordinator; Jamie Eraas, City of Tioga Auditor; Named contacts

City of Tioga Man Camps/Temporary Recreational Vehicle Courts and Trailer Courts

Identifier	Contact	Type	Permitted units	Permitted capacity (individuals)	Company	Amenities	Current occupancy rate	Percent permanent; percent temporary	Open closed	Rate	Notes
Ameritech  Permitted and in the process of development  Within ½ mile Tioga territorial limit	Jim Donnan	All-weather units			Ameritech	Tioga water and sewer					Man Camp
<b>Potential Man Camp Developments</b>											
Man Camp to serve Hess's rail load construction project Potential site near R&T Water's 1,000,000 gal. tank		All-weather units				Tioga water and sewer					Man Camp

Man Camp to serve Hess's gas plant expansion project Potential site north of Hess's gas plant		All-weather units		300-500 people according to press release and reported in Minot Daily News		Tioga water and sewer					Man Camp
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Source: Kathy Jorgenson, Tioga Economic Development Coordinator; Jamie Eraas, City of Tioga Auditor

### City of Tioga Senior Apartments

City identifier and age	Contact	Units	Efficiency	1-bedroom	2-bedroom	Garage	Rent and waiting list	Current vacancy rate	Historic vacancy rate	Comments	Type
Tioga Medical Center Independent Living Apartments  8 units added in 2008	Randy Peterson, Hospital Administrator	22		20	2	1 stall per apt	Market beginning at \$960; all utilities included except telephone; includes one meal per day  Stove, refrig, all drapes; common washer and dryer;	0%		Tioga does not have assisted living apartments; it does have a 30 bed nursing home, however	Independent Living  Market \$960--

Source: Kathy Jorgenson, Tioga Economic Development Coordinator; Jamie Eraas, City of Tioga Auditor

### City of Tioga Motels, Hotels, and Sleeping Rooms

City identifier and age	Contact	Units	1-bed	2-bed	3-bed	Rental rate	Occupancy	Number in building	Traveler/workers percentages	Spot; long term percentages	Renter (company or individual)	Notes	Type
Tioga Motel  1980	Gary Hawkinson  <b>Details not revealed</b>	30										Units rented on both a spot and long-term basis	Motel

Historic building; renovated 2010	Brian Illerbrun 701-664-3066	10 sleeping rooms; two floors with two shared baths	10			\$35/day one person; \$50/day two people	100%: when one leaves another comes	10-20	0%/100%	Most stay for weeks at a time; some one, some two, and some for a month; Four tenants would like to rent apartments and be in Tioga on a long term basis	Individual	Nice place has a common area includes CATV, internet, and usually food once a week; coffee and muffins in the morning	Sleeping rooms
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Source: Kathy Jorgenson, Tioga Economic Development Coordinator; Jamie Eraas, City of Tioga Auditor