Williston Basin 2016: Employment, Population, and Housing Projections

Vision West Consortium Meeting
December 8, 2016
Dickinson, ND

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Acknowledgements

Funding

    Vision West ND

    North Dakota Association of Oil and Gas Producing Counties

    North Dakota Energy Infrastructure and Impact Office

Study Leadership

    Deb Nelson, Vision West ND Administrator

    Daryl Dukart, Vision West Consortium Chair

Contributing Groups

    DLN Consulting, Inc.
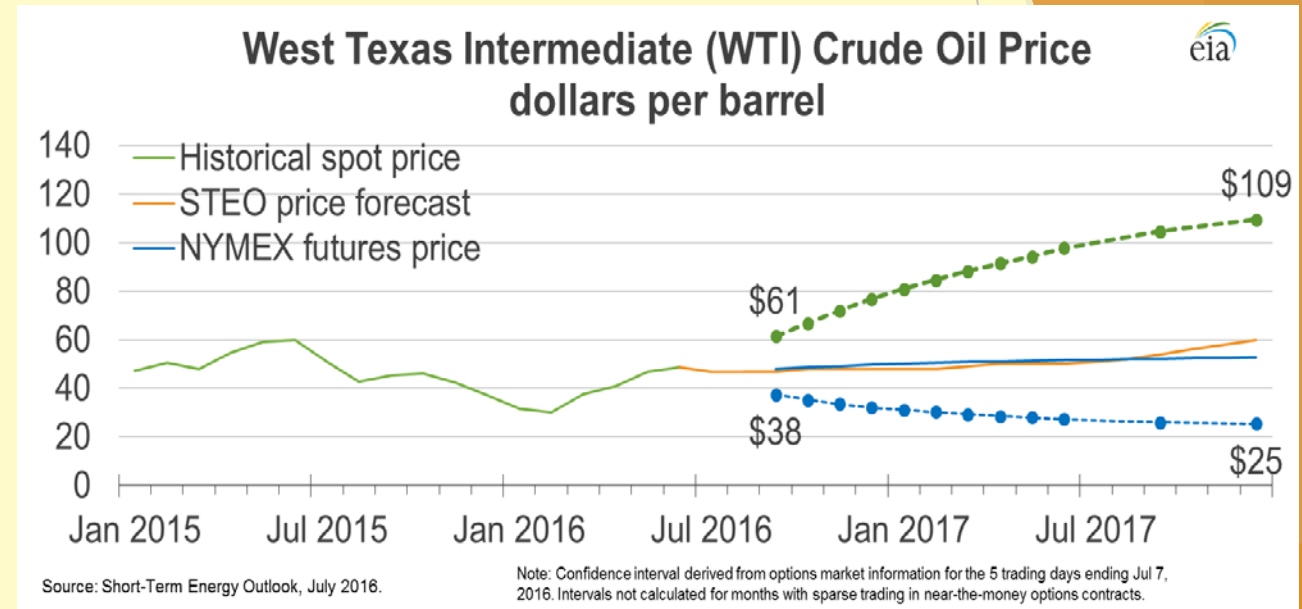
    Center for Social Research, NDSU

    Center for Rural Entrepreneurship, University of Nebraska, Lincoln

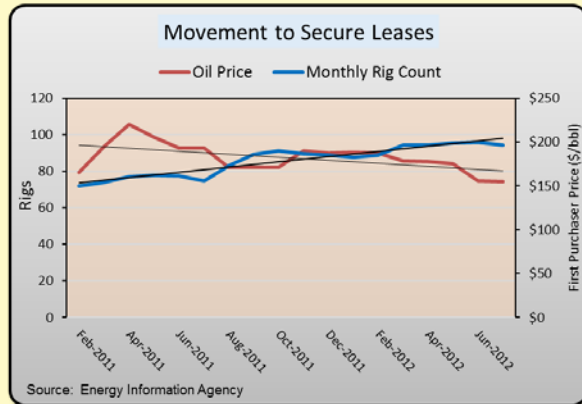**NDSU** NORTH DAKOTA STATE UNIVERSITY

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Presentation Goals

▶ Review the study methods, key inputs, and parameters

▶ Gain an understanding of how we arrived at our outcome

▶ How the results can provide guidance for future planning – complement the 19 webinars available for county-level estimates

▶ Additional considerations and What did we learn

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Crude oil prices? Industry behavior?
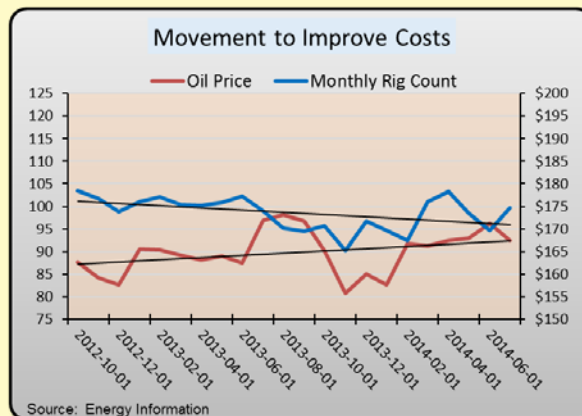
- Crude oil price recovery??
  - When
  - How much
  - How long

- Industry behavior and activity with future prices??
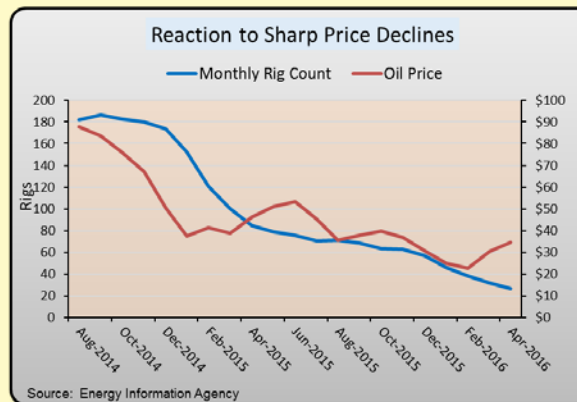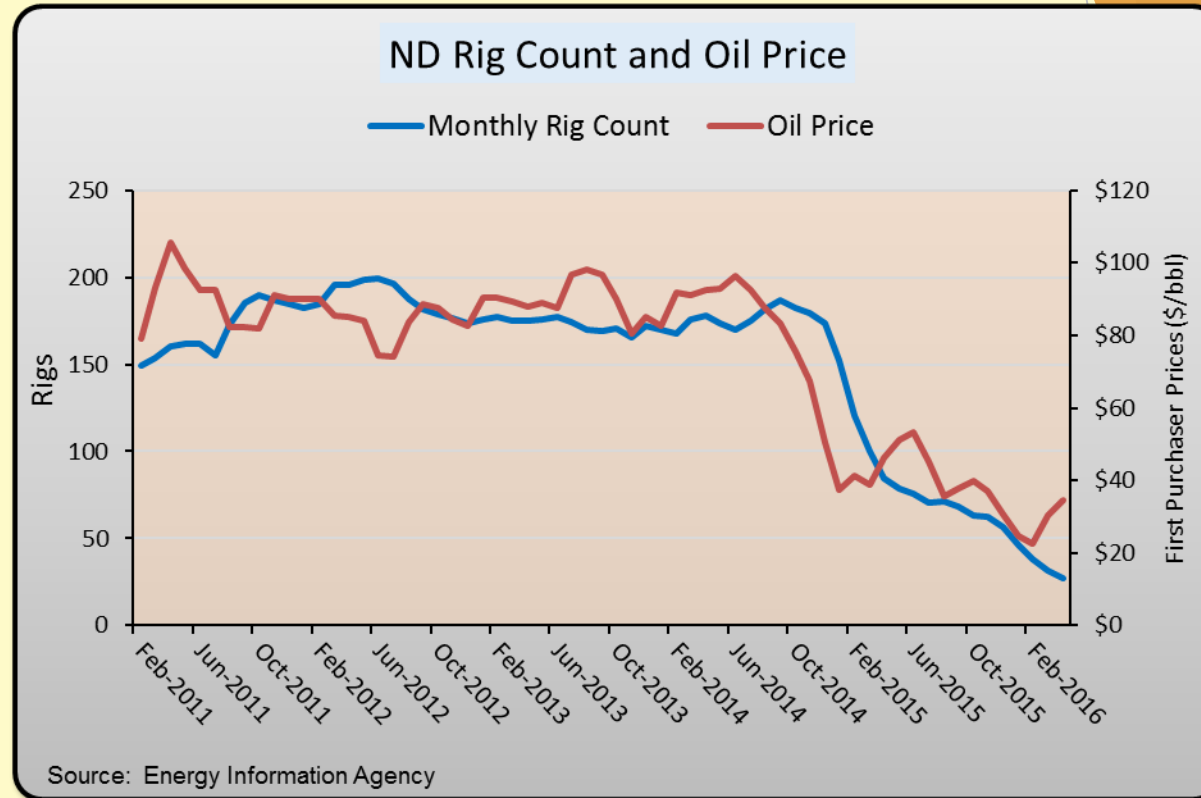
- How do we get around this uncertainty?

West Texas Intermediate (WTI) Crude Oil Price
dollars per barrel

- Historical spot price
- STEO price forecast
- NYMEX futures price

$109
$61
$38
$25

Jan 2015   Jul 2015   Jan 2016   Jul 2016   Jan 2017   Jul 2017

Source: Short-Term Energy Outlook, July 2016.

Note: Confidence interval derived from options market information for the 5 trading days ending Jul 7, 2016. Intervals not calculated for months with sparse trading in near-the-money options contracts.

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Past prices and drilling activity?

Price ↓ Rig Count ↑

Price ↑ Rig Count ↓

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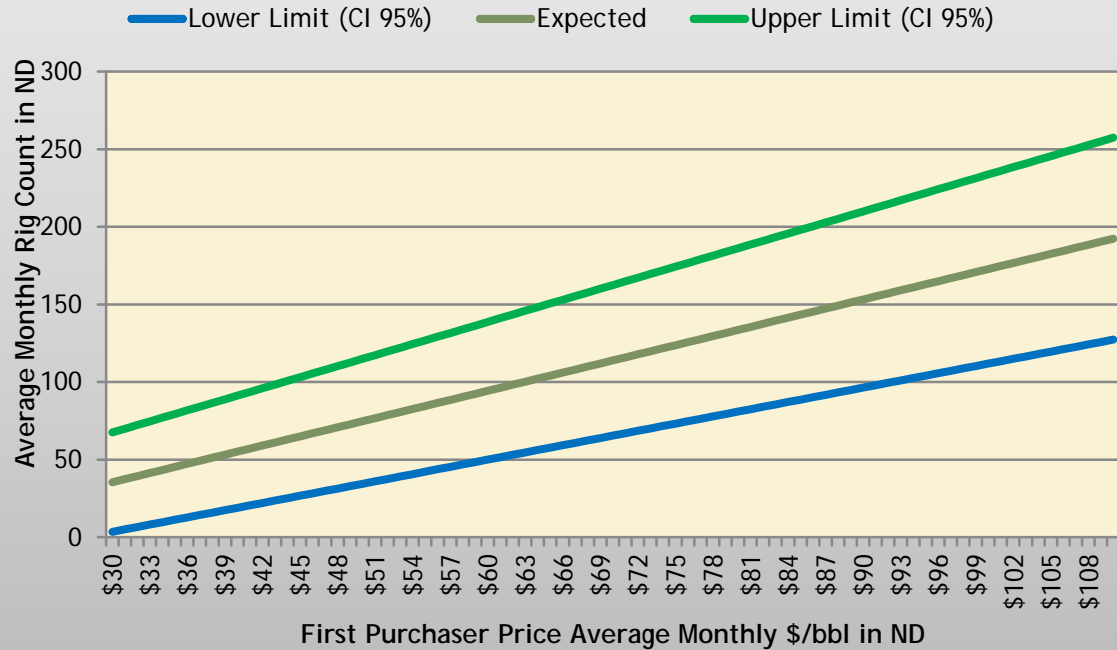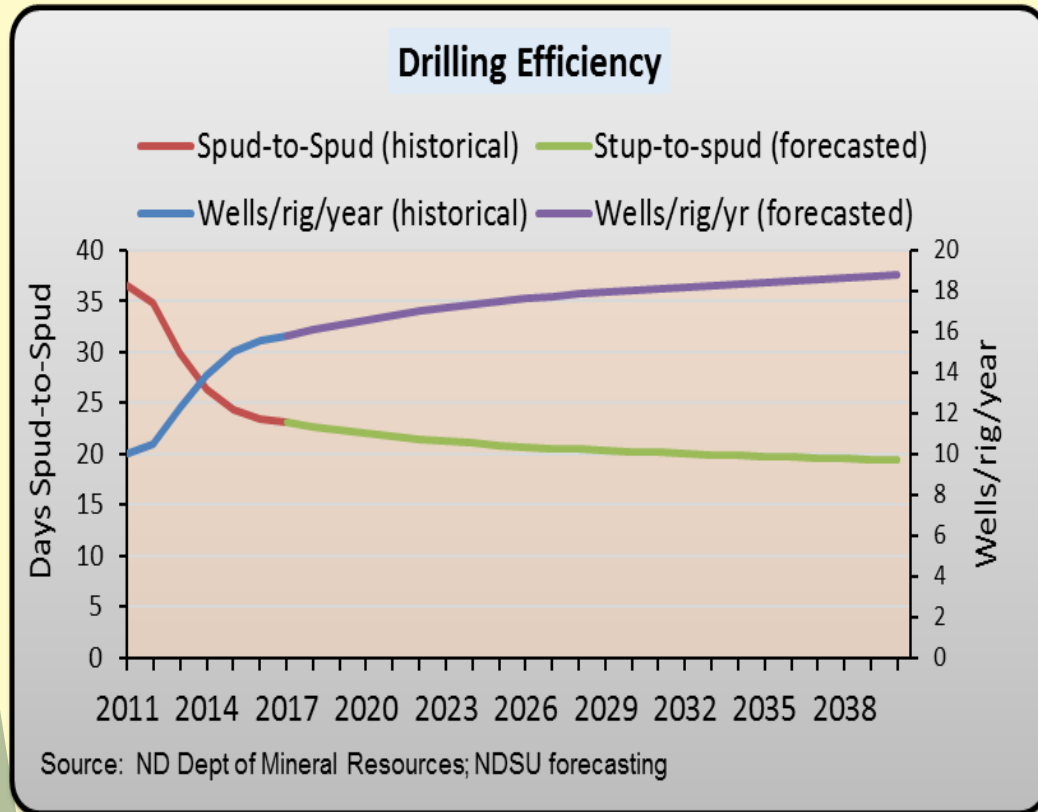
Regression Results for Rig Counts
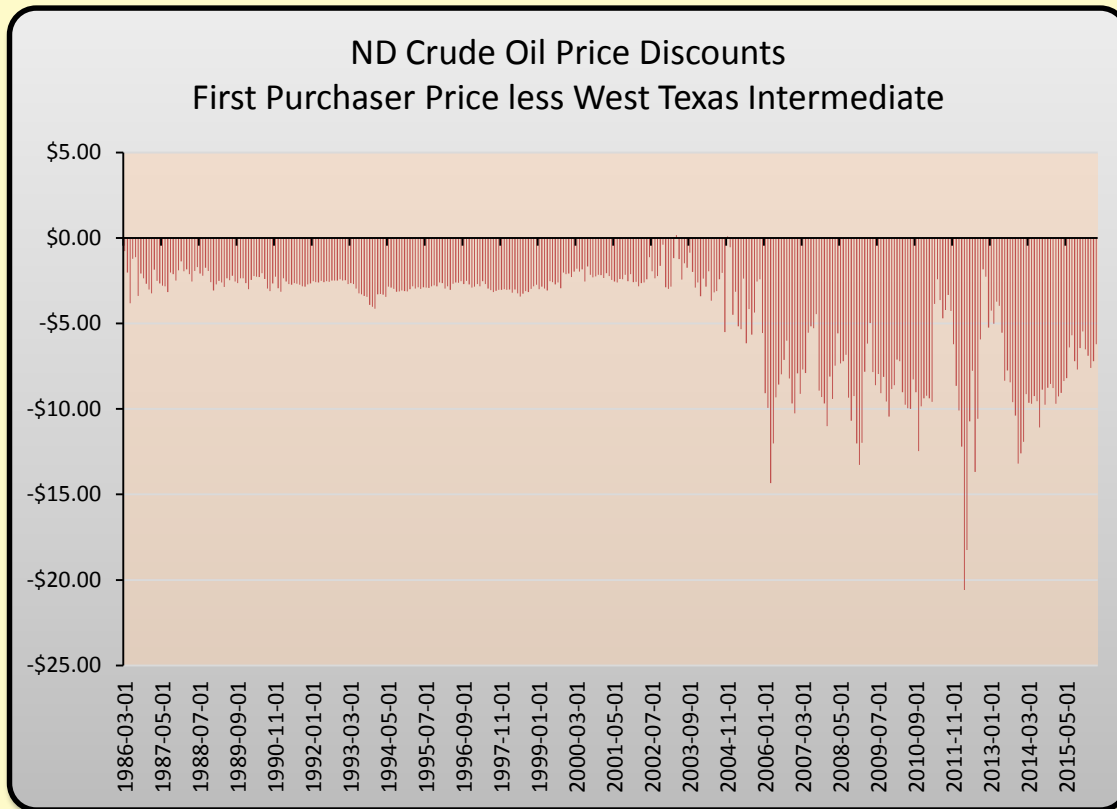First Purchaser Prices (4 mo lag)

Problems with Data

▶ Rig efficiencies

▶ Labor productivity is changing

▶ Well profitability is improving

▶ Past price-to-rig count relationships will not necessarily hold going forward

▶ Prices not only driver of activity

▶ Nonetheless, provides general guidance going forward

Account for recent gains in drilling efficiencies

Drilling Efficiency

Spud-to-Spud (historical)　Stup-to-spud (forecasted)
Wells/rig/year (historical)　Wells/rig/yr (forecasted)

Source: ND Dept of Mineral Resources; NDSU forecasting

▶ In 2017, 22% reduction in number of rigs to match drilling output 3 years ago

▶ 3,246 wells would be drilled with previous peak rig count (205 rigs per month for a year) using 2017 efficiencies

▶ In peak drilling year (2014), average monthly rig count was 190 rigs = about 2,350 wells drilled, in 20 years, only 125 rigs needed to match number of wells drilled in 2014

▶ **TAKE AWAY**—fewer rigs will be needed in the future to equal past drilling rates

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Price discounts

ND Crude Oil Price Discounts
First Purchaser Price less West Texas Intermediate

▶ ND receives substantial price discounts

▶ Net price received in North Dakota is likely to be lower than prices typically discussed in media
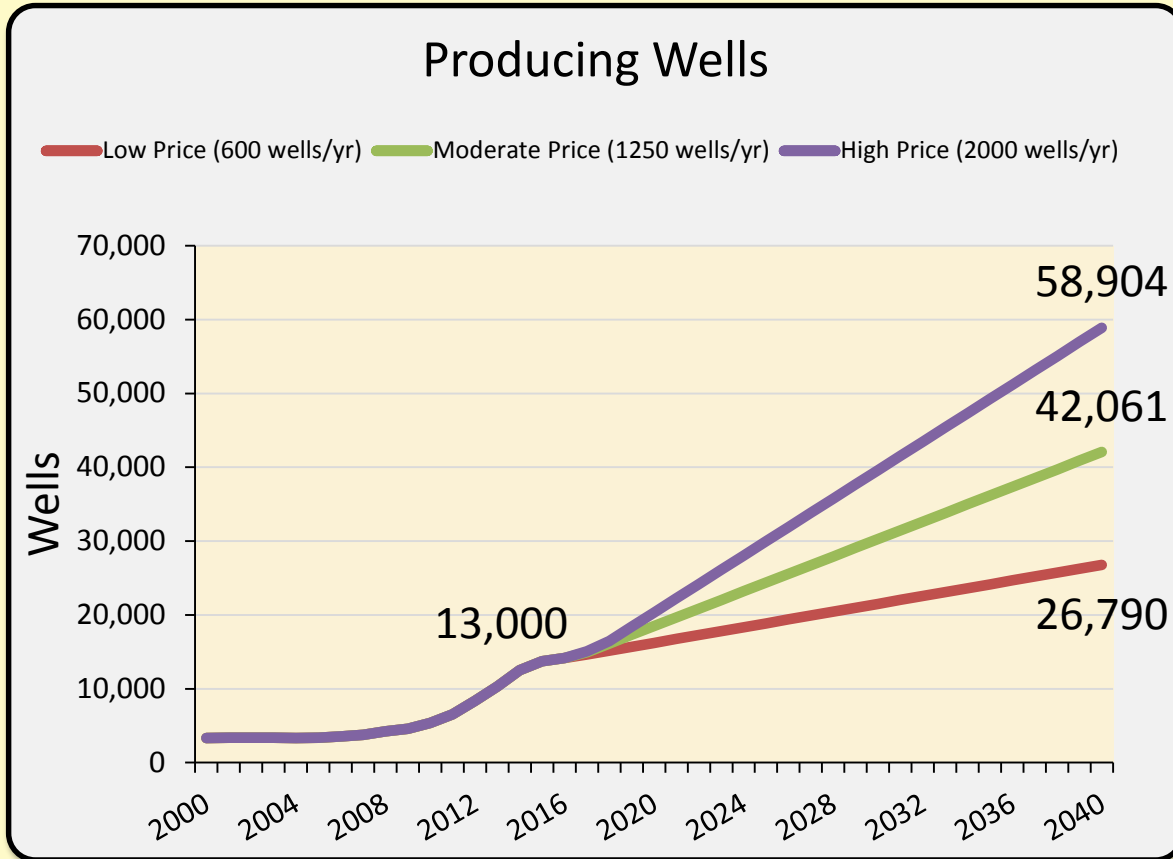
Study Scenarios

Scenarios*	Prices**	Wells Completed Per Year			Rig Counts Per Year	
	First Purchaser Prices in ND	Low	Moderate	High	Low	High
Low Price	$25-$60	400	600	800	25	50
Moderate Price	$60-$90	1,000	1,250	1,500	63	95
High Price	$>90	1,700	2,000	2,300	107	145

* Price ranges are approximate as many factors influence development activities.
* Scenarios do not include re-fracking, CO_2 EOR, or restrictions on fracking.

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Petroleum Industry Employment Factors
Annual Changes over 2017-39

▶ **Drilling efficiency** – 21% improvement 2016 to 2040

▶ **Employment /drilling rig** – 120/rig to 100/rig by 2028 (17%)

▶ **Fracking Labor** – 14% improvement 2016 to 2026

▶ **Oil field service**

  ▶ Model estimates service requirements based on well age

  ▶ Dynamic response in model, higher requirements in early years reduced requirements in later years

▶ **Oil Well Transportation (crude oil production)**

  ▶ Transportation requirements adjusted to account for time till completion of gathering systems

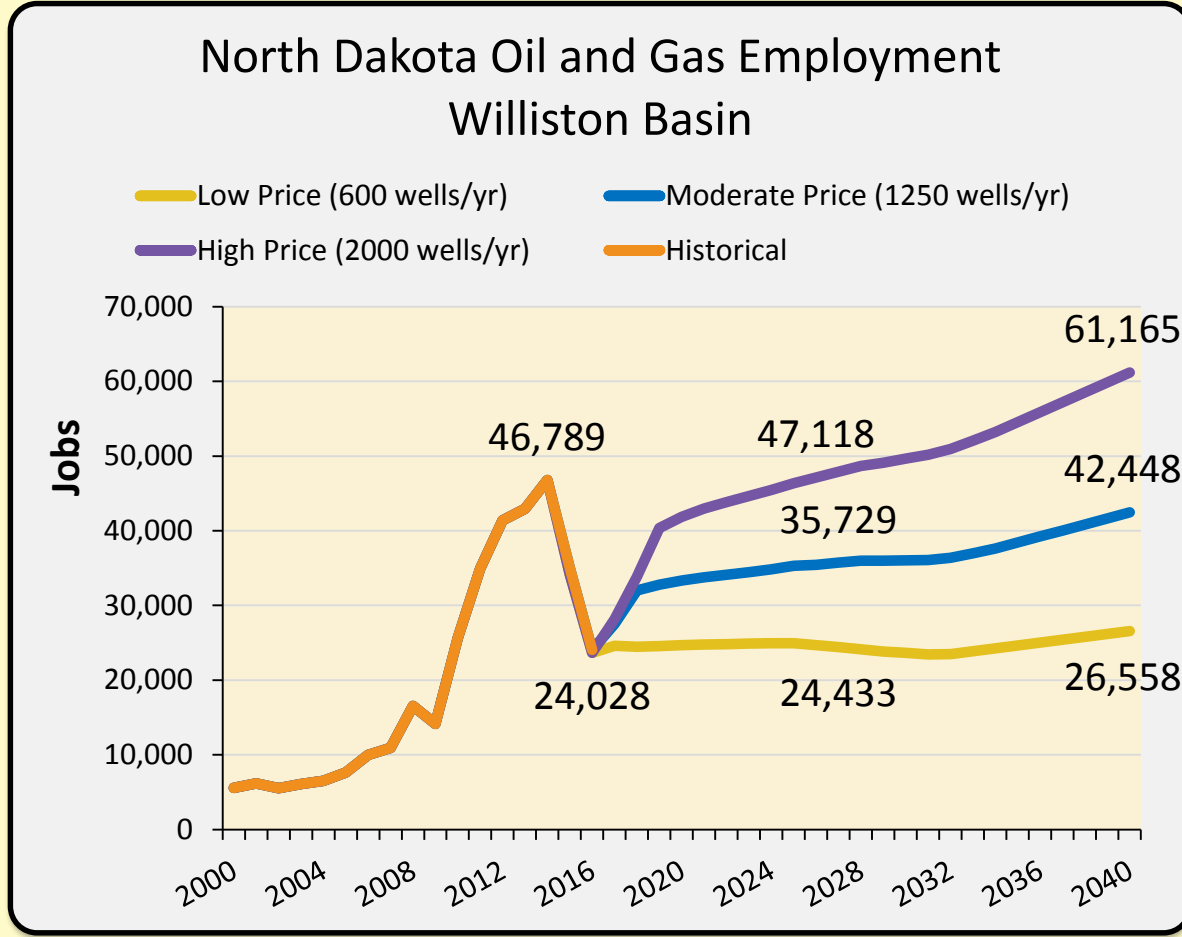 ▶ 75 percent reduction in oil well trucking labor requirements over 14 years

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Well Counts with Future Scenarios

Producing Wells

Low Price (600 wells/yr) — Moderate Price (1250 wells/yr) — High Price (2000 wells/yr)

58,904

42,061

13,000

26,790

Take Away

► Unlikely that well count potential is exhausted in next 20 years, even in sustained high price environment

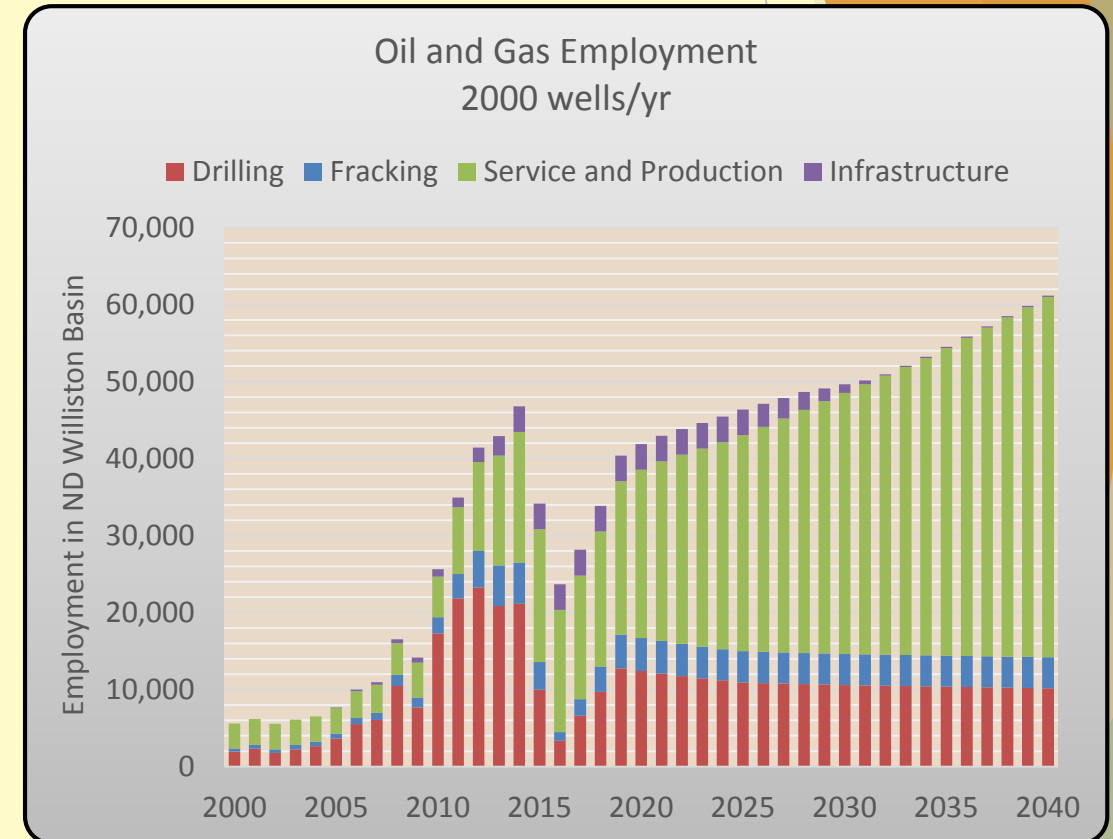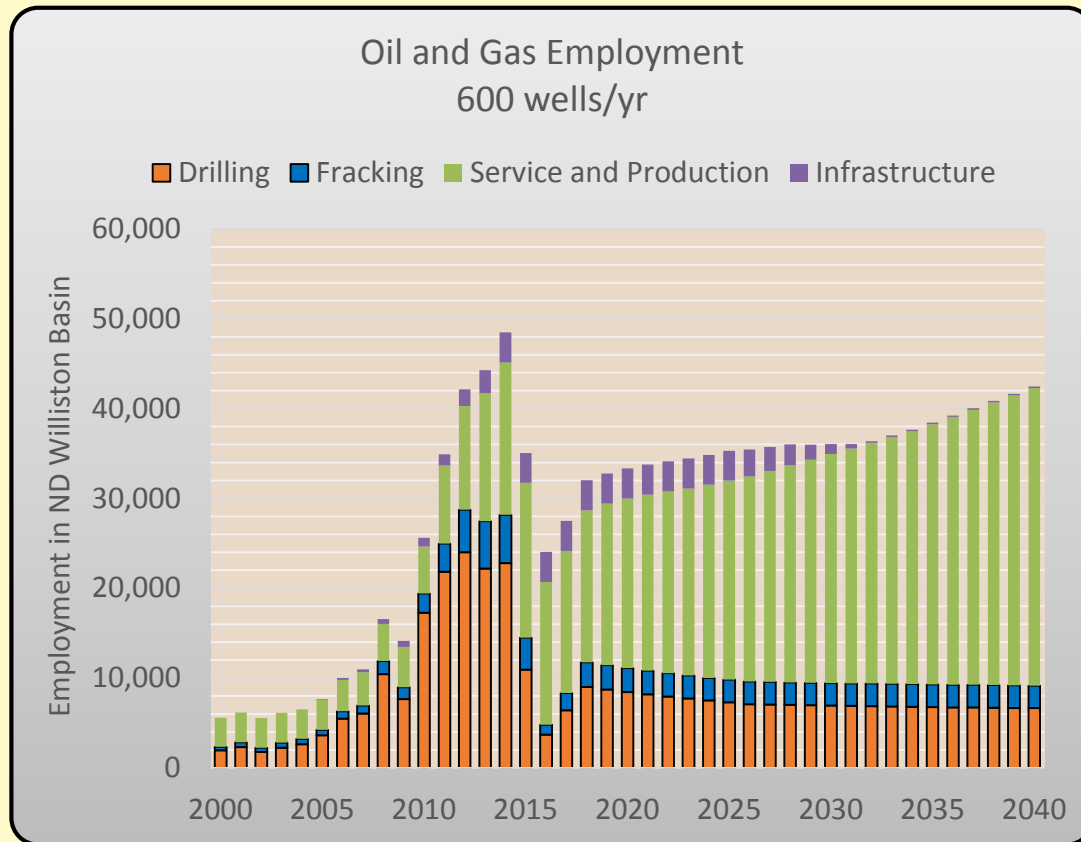► Low price environments can result in a doubling of well counts over next 20 to 25 years.

Oil and Gas Industry Employment by Scenario

North Dakota Oil and Gas Employment Williston Basin

Low Price (600 wells/yr) — Moderate Price (1250 wells/yr)
High Price (2000 wells/yr) — Historical

Jobs

46,789

47,118

61,165

42,448

35,729

24,028

24,433

26,558

2000 2004 2008 2012 2016 2020 2024 2028 2032 2036 2040

Take Away

1) Low price does produce employment growth

2) High price creates rapid growth rates

3) Industry expansion will not be constant over projection period. Path forward will likely include periods of no (very little) expansion and periods of rapid expansion.

4) Given current situation, exact level of employment less important than pace of employment growth

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Relative importance to Employment Changes within Petroleum Industry

Oil and Gas Employment
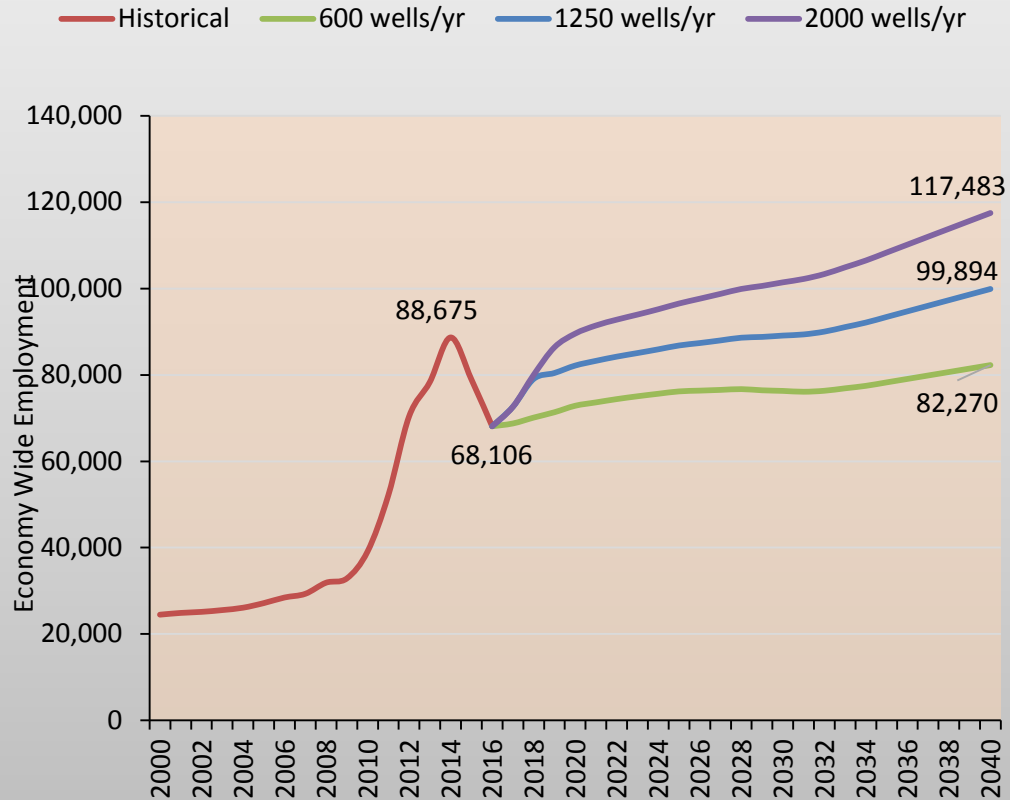600 wells/yr

Oil and Gas Employment
2000 wells/yr

Economy wide Wage and Salary Employment

▶ Includes Petroleum industry

▶ Secondary job creation (from growth in petroleum industry)

  ▶ Coefficients vary by scenario and by region

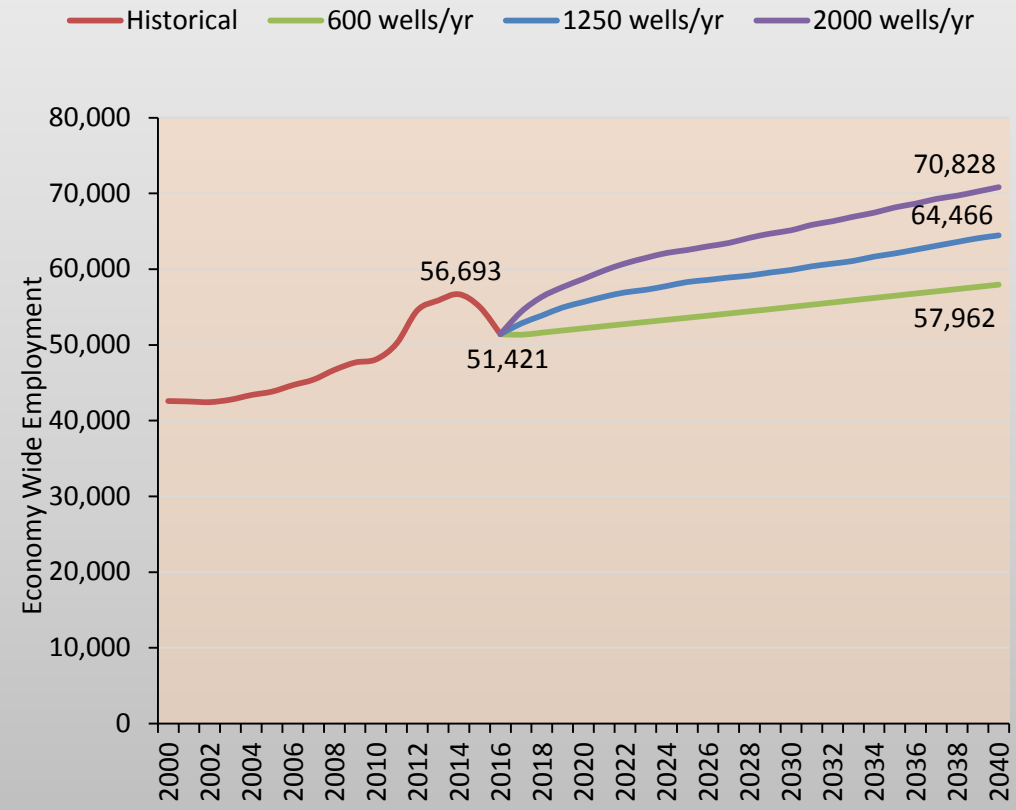▶ Growth in other sectors/industries

  ▶ Varies by scenario and by region

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Economy Wide Employment

Williams, McKenzie, Dunn, Stark, and Mountrail Counties
— Historical — 600 wells/yr — 1250 wells/yr — 2000 wells/yr

117,483
99,894
88,675
82,270
68,106

Sources: ND Job Service, NDSU VisionWest Study

Non Core Counties
— Historical — 600 wells/yr — 1250 wells/yr — 2000 wells/yr

70,828
64,466
57,962
56,693
51,421

Sources: ND Job Service, NDSU VisionWest Study

Reliance on Oil and Gas
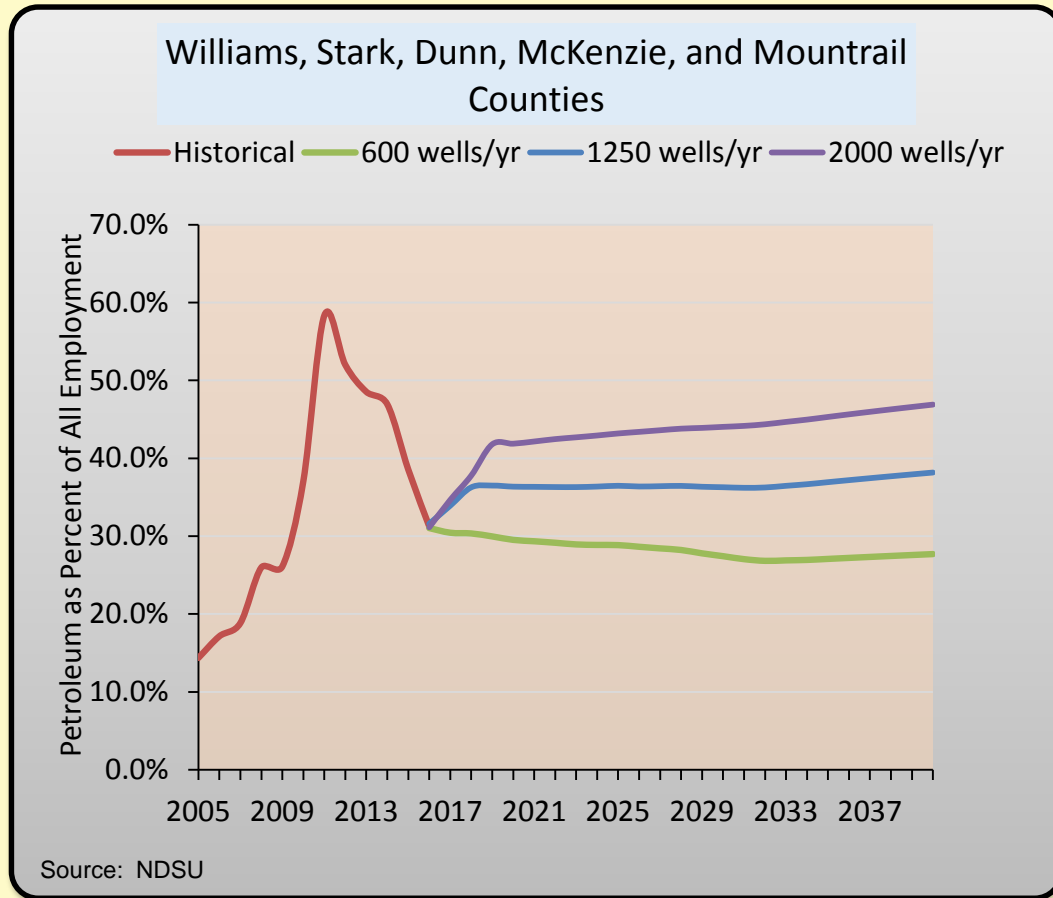
Williams, Stark, Dunn, McKenzie, and Mountrail Counties

— Historical — 600 wells/yr — 1250 wells/yr — 2000 wells/yr

Petroleum as Percent of All Employment

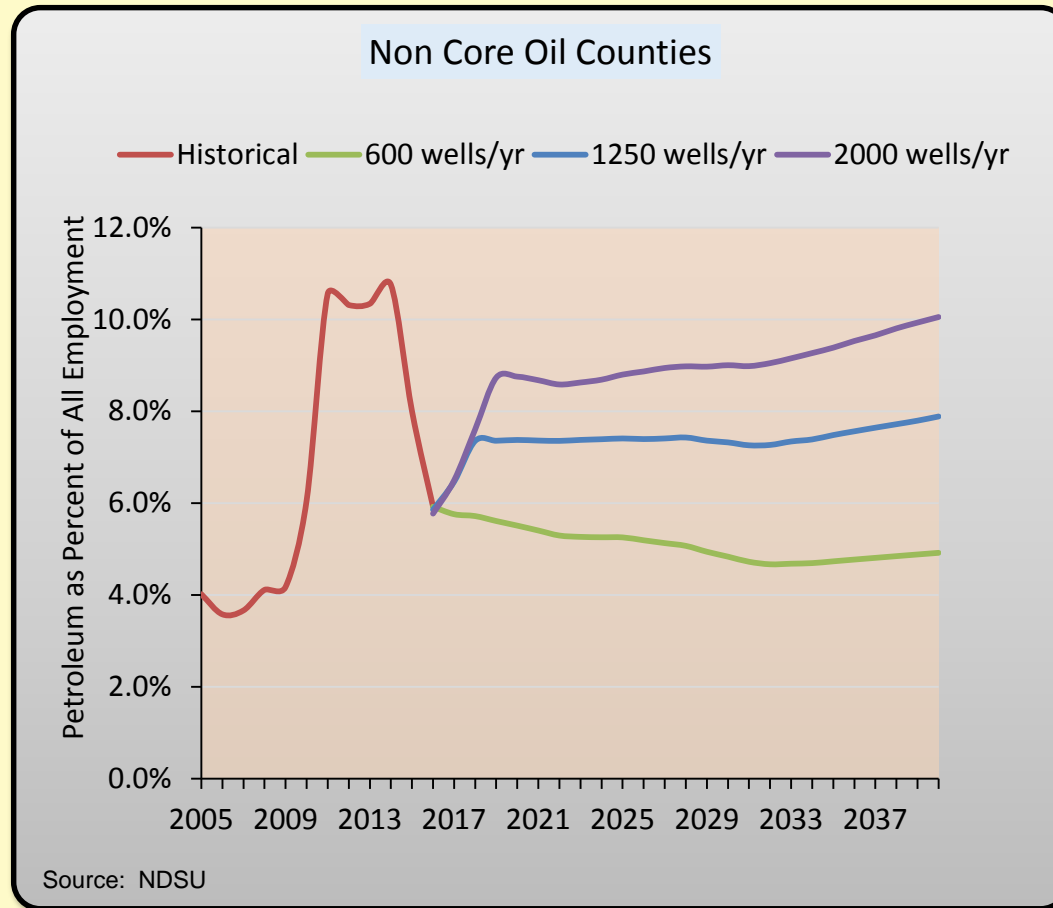Source: NDSU

Take Away

- Low price -- growth in other industries/economic sectors outpaces petroleum

- Moderate price – growth in other industries over long term is similar to petroleum

- High price – growth in other industries not on pace with expansion of petroleum industry

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Reliance on Oil and Gas

Non Core Oil Counties

Historical — 600 wells/yr — 1250 wells/yr — 2000 wells/yr

Source: NDSU

Take Away

- Low price -- growth in other industries/economic sectors outpaces petroleum

- Moderate price – growth in other industries over long term is similar to petroleum

- High price – growth in other industries not on pace with expansion of petroleum industry

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Components of Population Change

- ► Births

- ► Deaths

- ► Migration

  - ► Function of demographic changes

  - ► Function of resident/nonresident workforce (commuters)

  - ► Function of economic drivers
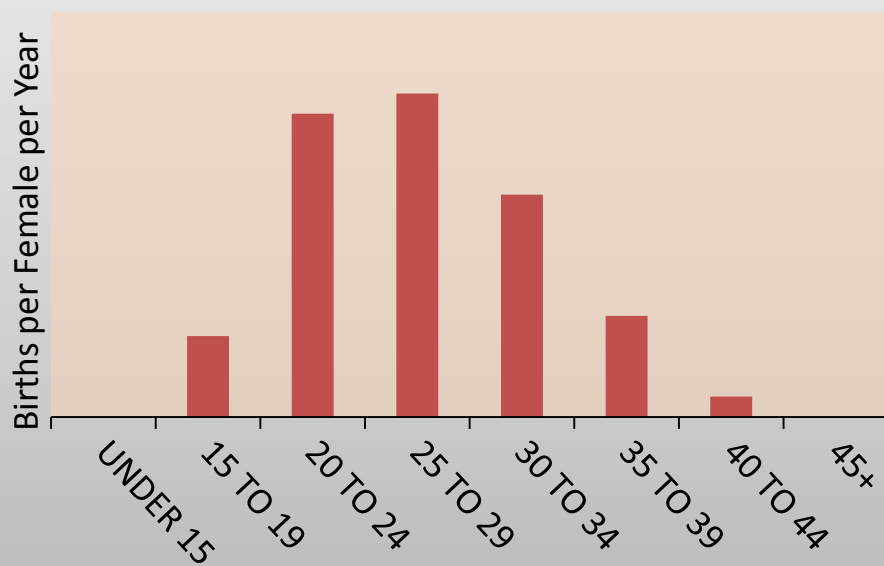
Cohort Population Models

Births, deaths, and migration are key inputs to forecasting population.

Study uses cohort modeling to capture these elements in the population forecasts.
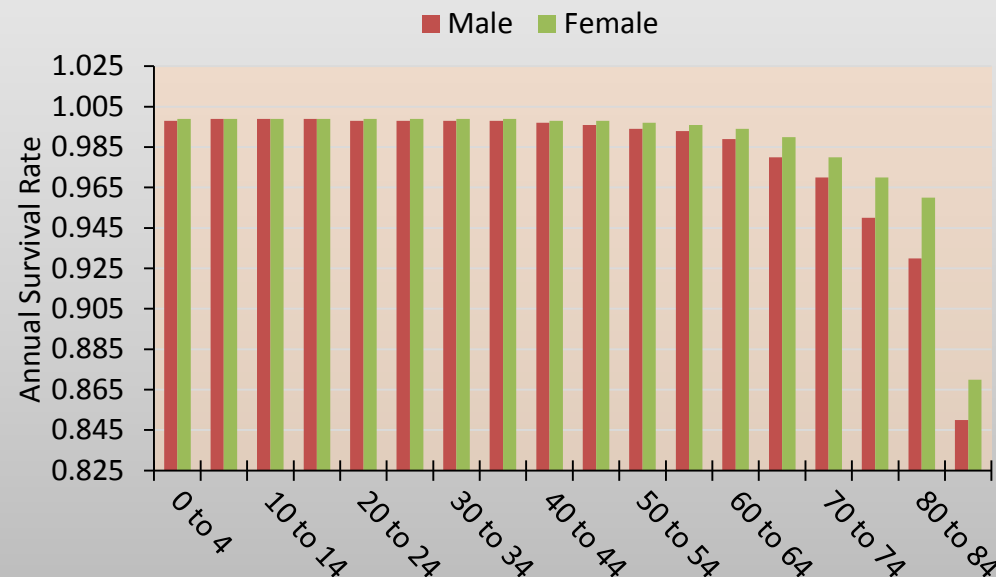
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Fertility and Mortality
Current data vary by county

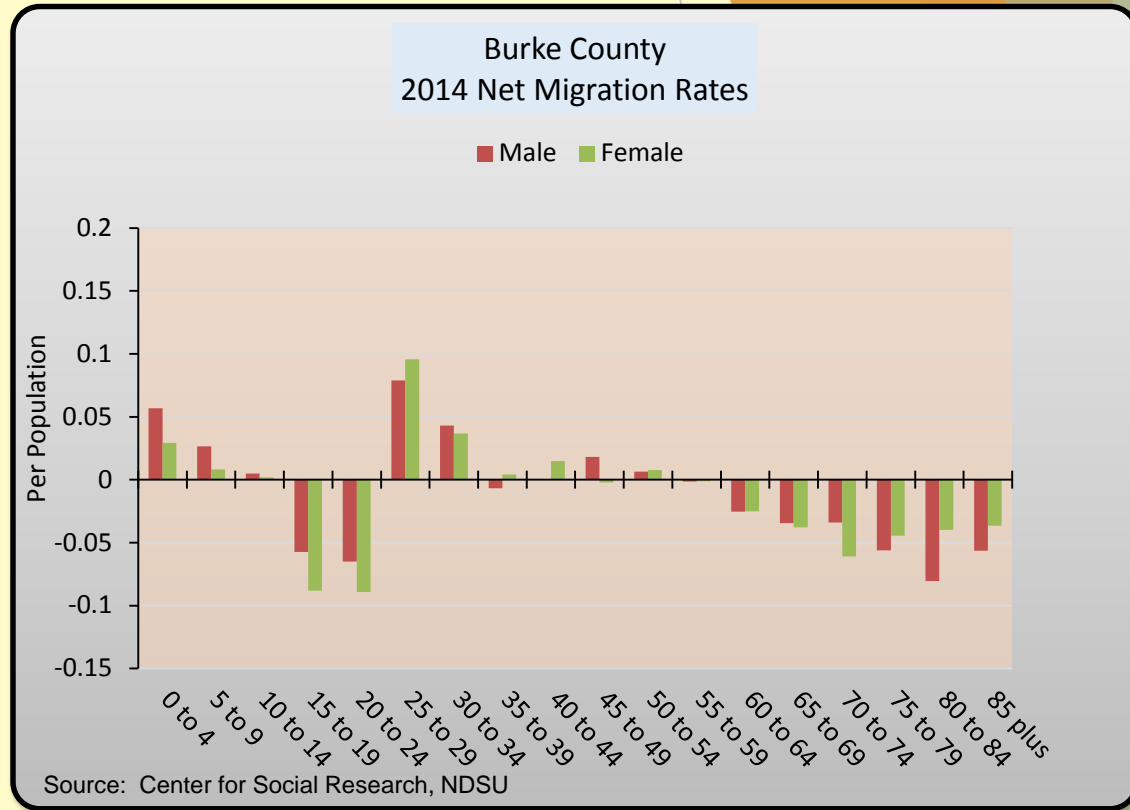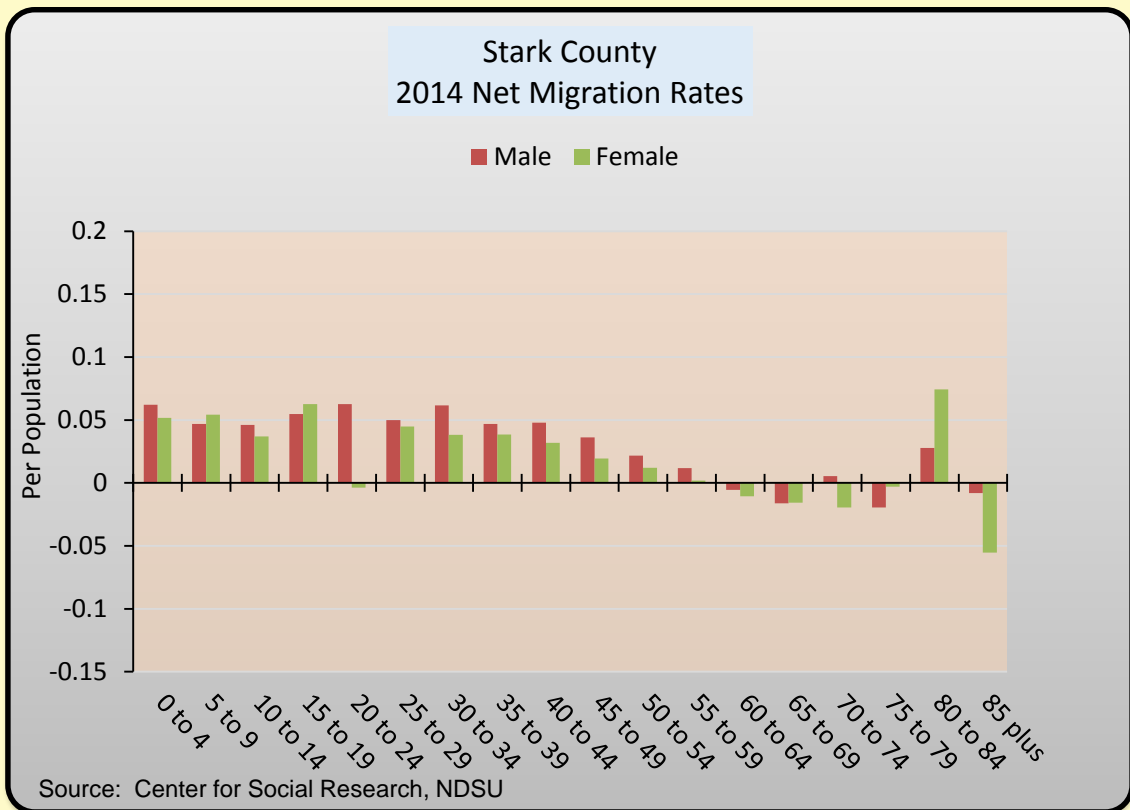Generic Pattern of Fertility Rates by 5-yr Cohort (0 to 0.3 per female)

Generic Example of Survival Rates by Gender, by 5-yr Cohort

Trends in Births and Deaths are available in the VisionWest County Webinars.

Net Migration Rates
Current data vary by county

Net Migration Trends are available in the VisionWest County Webinars.

Links between Employment and Population

► Employment requires Workforce (people)

► Workforce is comprised of working age adults (subset of the overall population)

► Not all working age adults have or are seeking jobs (participation rate)

► Not all working age adults in the workforce are employed (unemployment rate)

► **Not all jobs are filled from local workforce** Use commuter data to adjust for nonlocal workforce meeting local employment needs.

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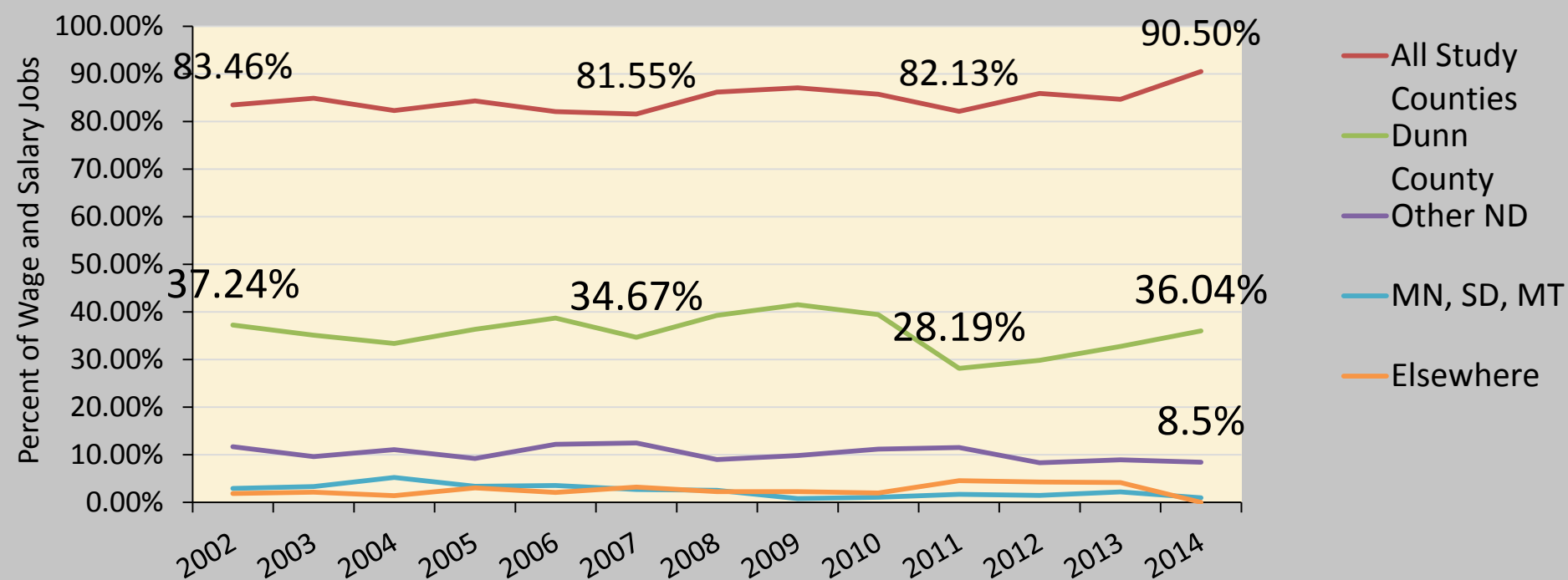
In-flows and out-flows of Workforce

Dunn County (in flows)
Where do people that work in Dunn County live?
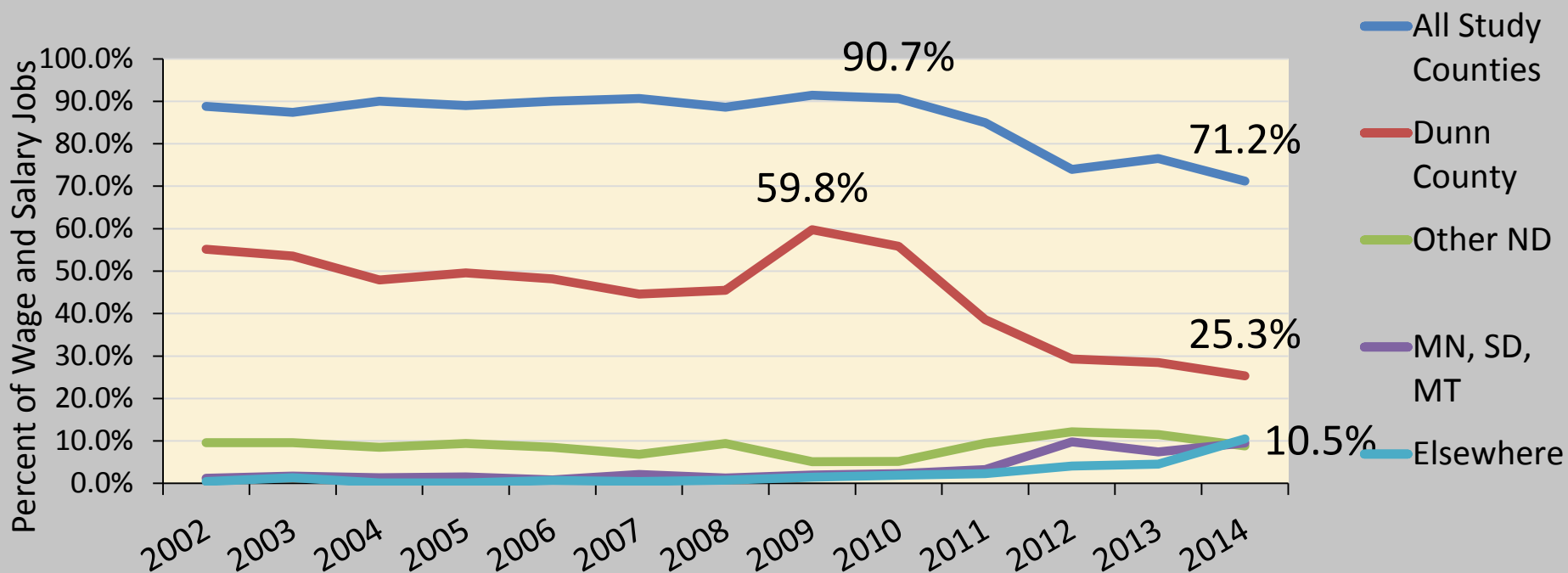
In-flows and out-flows of Workforce

Dunn County (out flows)
Where do people that live in Dunn County work?)

Step 1: What is the size of current workforce?
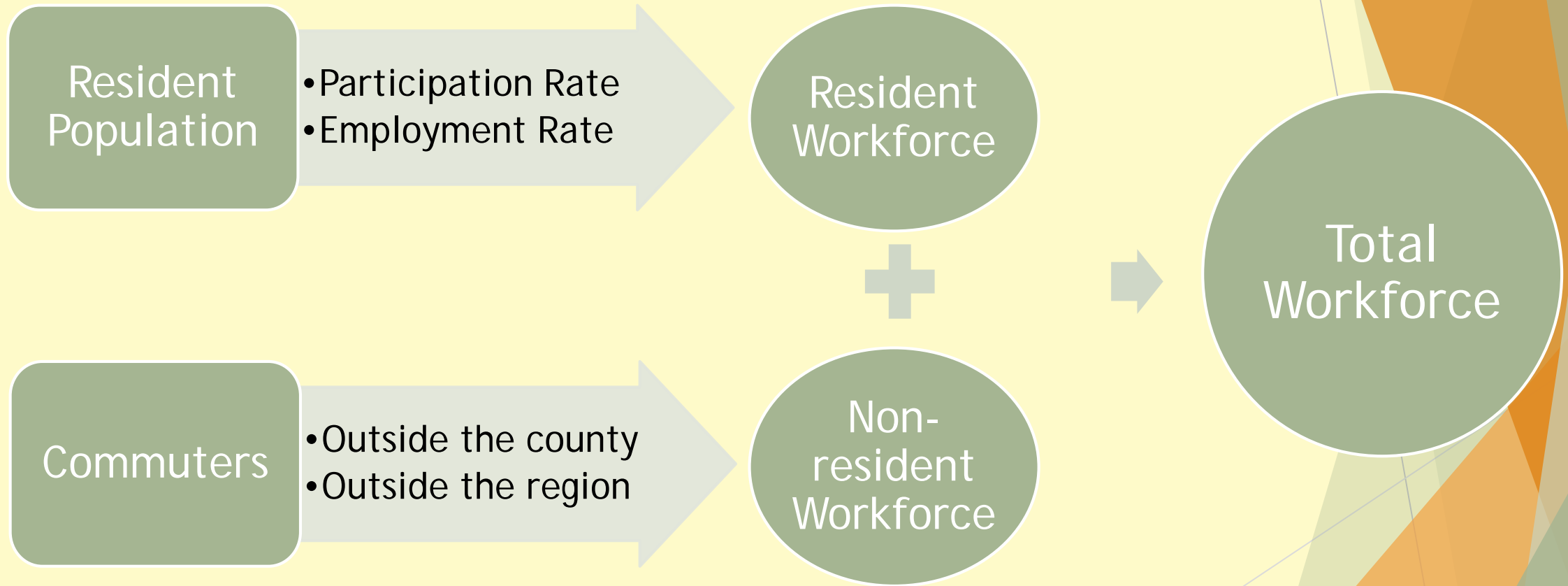
Step 2: How much workforce do we need?

Future Scenario using Employment Model

Employment Change combined with Workforce Characteristics

Demand

Future Labor Requirements

Residents

Nonresidents

Greater Less Equal

Greater Less Equal

Supply

Existing Labor Pool

Resident Workforce

Nonresident Workforce

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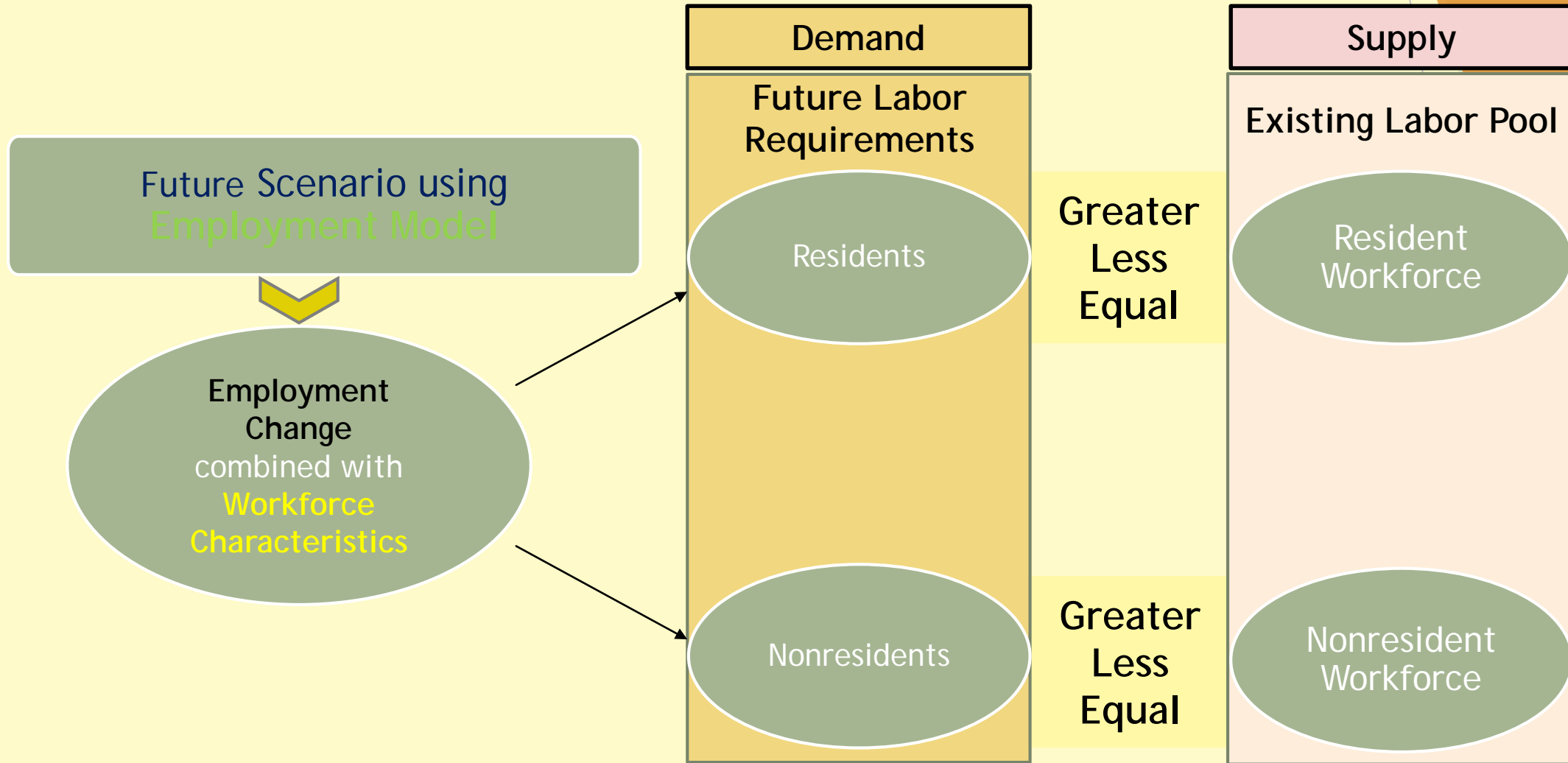
Step 3: Incorporate labor force (needs/changes) into cohort component model
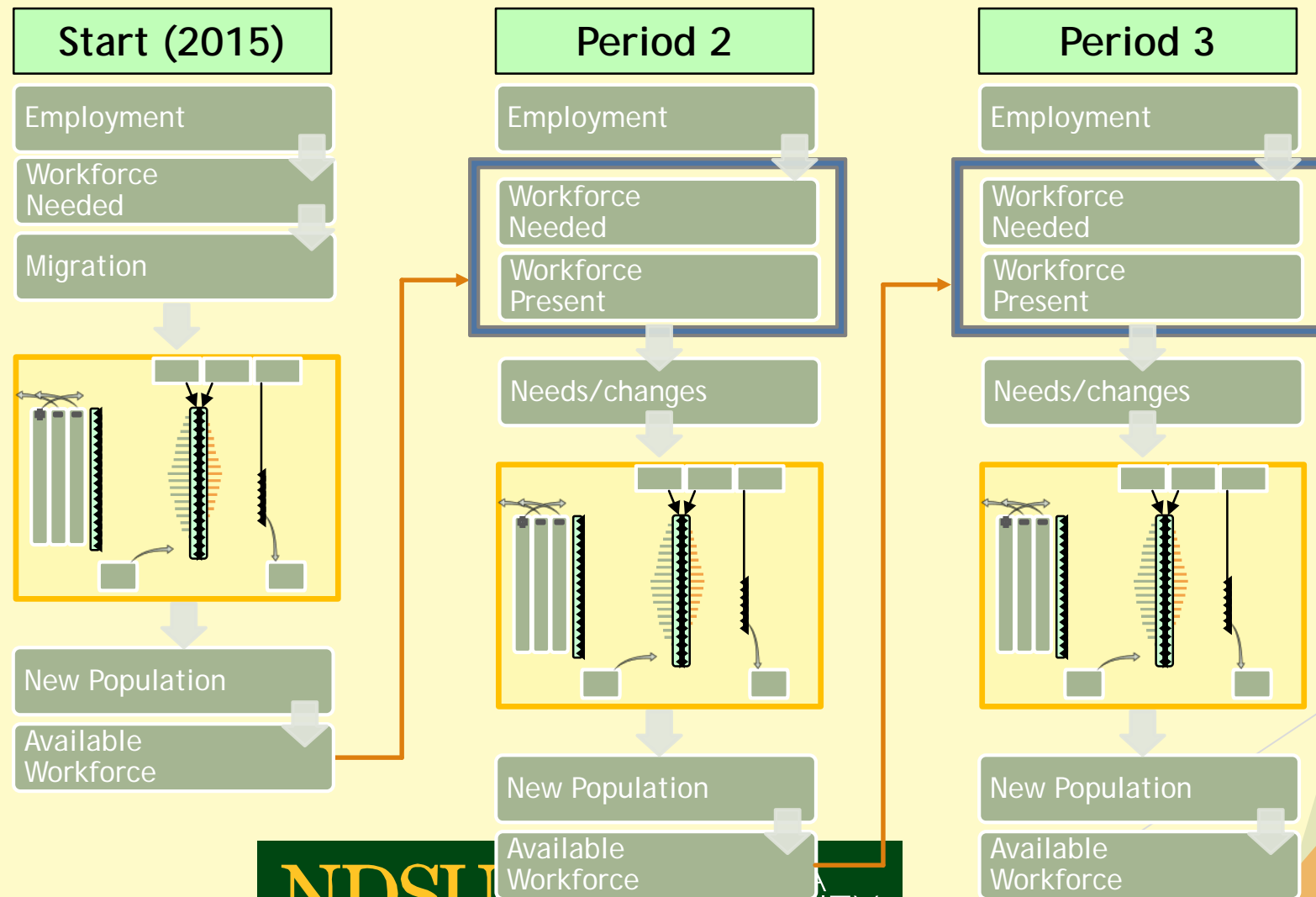
Housing Requirements?

▶ Housing now linked to population (previous studies linked housing to employment)

▶ Previously, lacked accurate housing inventories--data on housing inventory and characteristics was updated and verified as part of the 2016 ND Housing Needs Assessment

▶ Housing methods adopted from ND 2016 Statewide Housing Needs Assessment conducted by Center for Social Research at NDSU

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Housing Inventory verified and updated part of 2016 Statewide Housing Needs Assessment

▶ Collected building permit data from 12 largest cities

▶ Applied computational process used by the Census, but used actual building permit data rather than building permit data from the U.S. Census Bureau's Building Permit Survey

▶ For most jurisdictions, Census Bureau's estimates were accurate and within a few percentage points

▶ Adjusted census estimates to reflect actual housing inventory

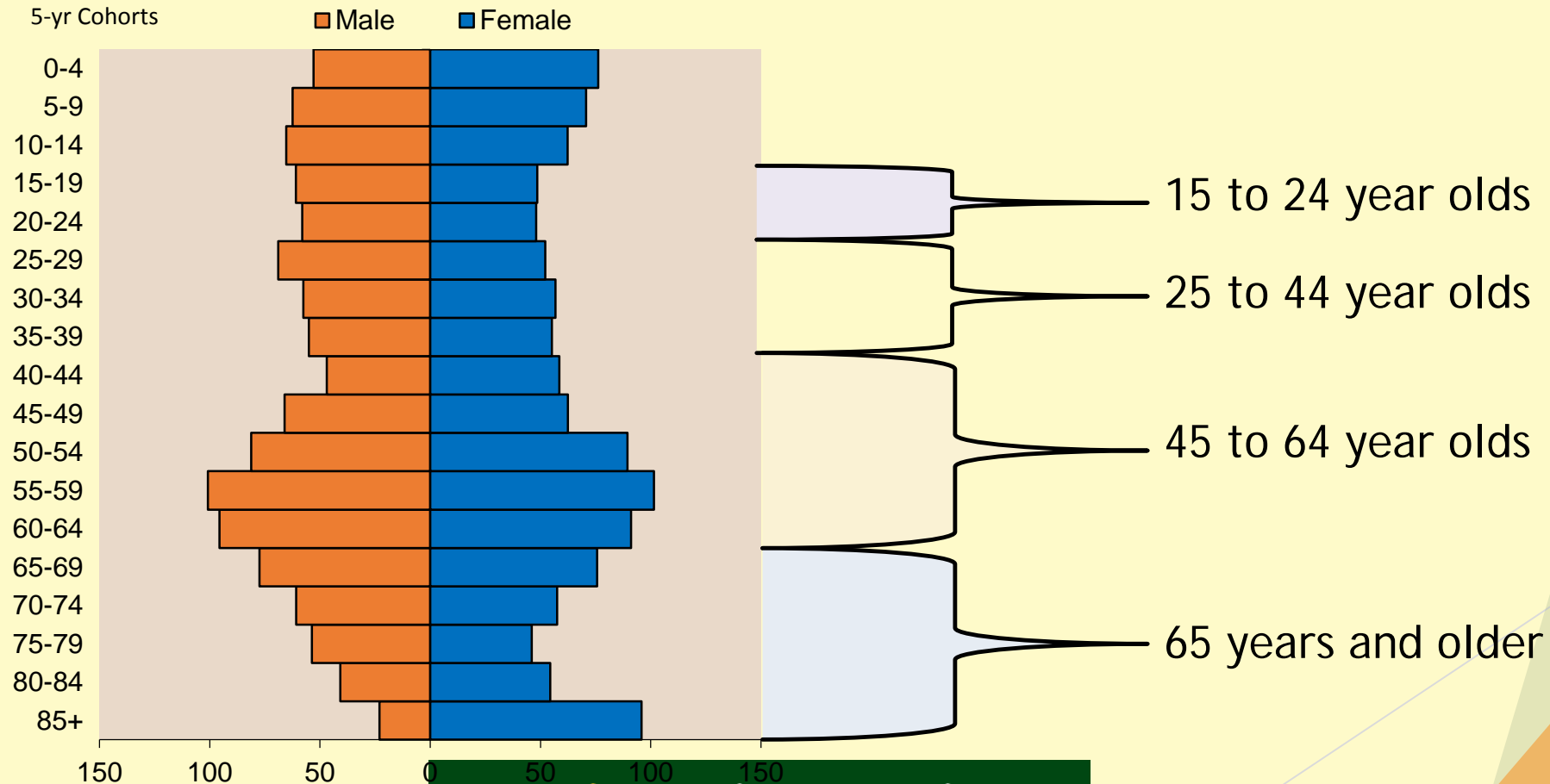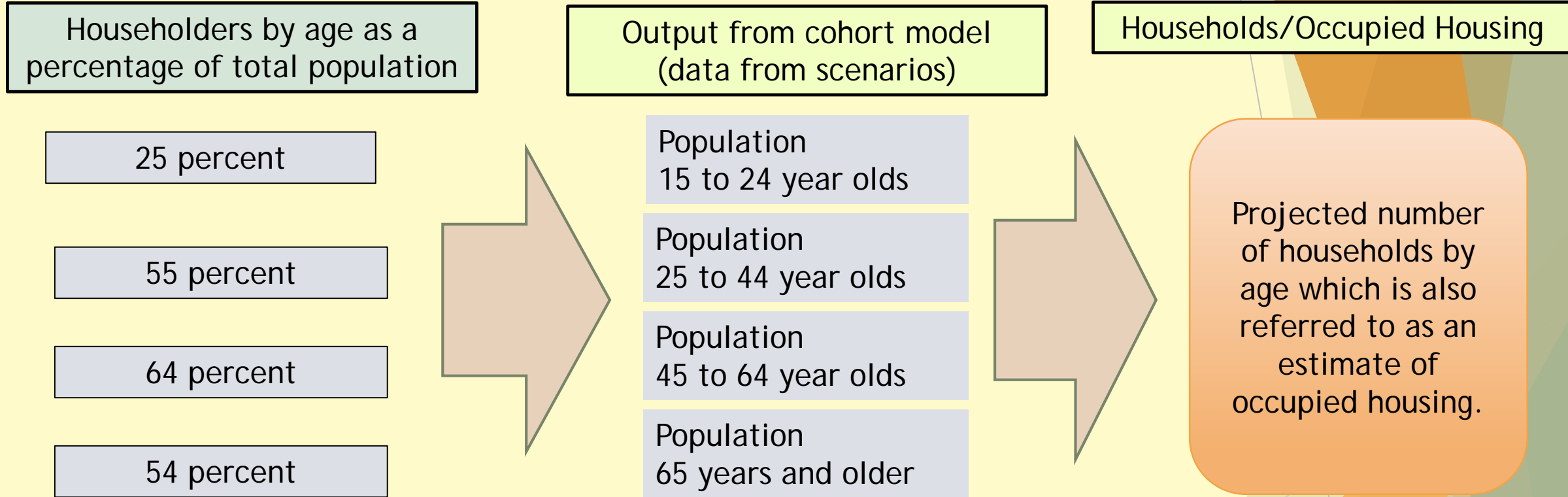# Inventory Adjustment: Total Housing Units

Difference in Census Estimate
Minot
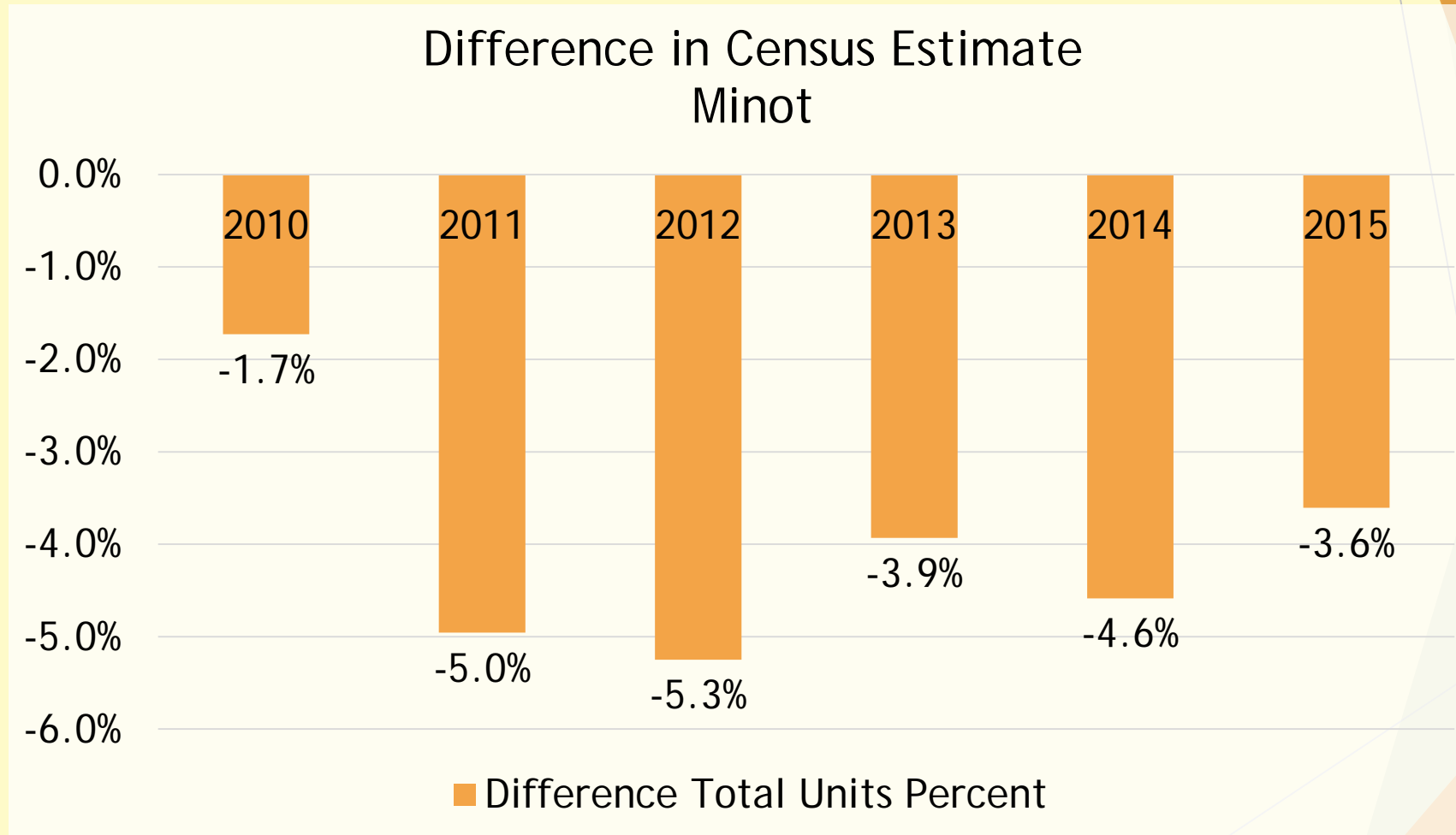
Step 1: Project population by age

Population divided into age groups

15 to 24 year olds

25 to 44 year olds

45 to 64 year olds

65 years and older

Step #2: Calculate population ratio and occupied housing

Householders by age as a percentage of total population	Output from cohort model (data from scenarios)	Households/Occupied Housing

25 percent

55 percent

64 percent

54 percent

Population
15 to 24 year olds

Population
25 to 44 year olds

Population
45 to 64 year olds

Population
65 years and older

Projected number of households by age which is also referred to as an estimate of occupied housing.
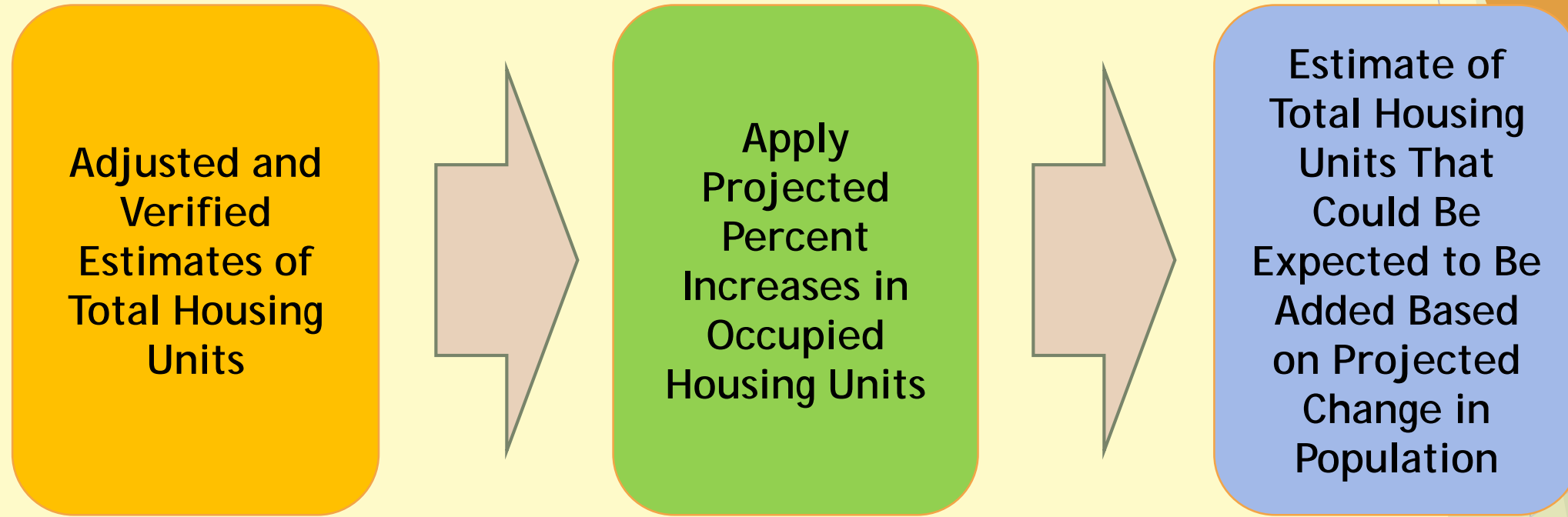
Householder: The person, or one of the people, who own a home, are purchasing a home, or have a rental contract. Householders can be either family members or non-family members. Findings do not take into consideration if householders are family or non-family.

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Step #3: Project total housing units

Adjusted and Verified Estimates of Total Housing Units

→

Apply Projected Percent Increases in Occupied Housing Units

→

Estimate of Total Housing Units That Could Be Expected to Be Added Based on Projected Change in Population

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Step #4: Projected total housing units by type of housing unit
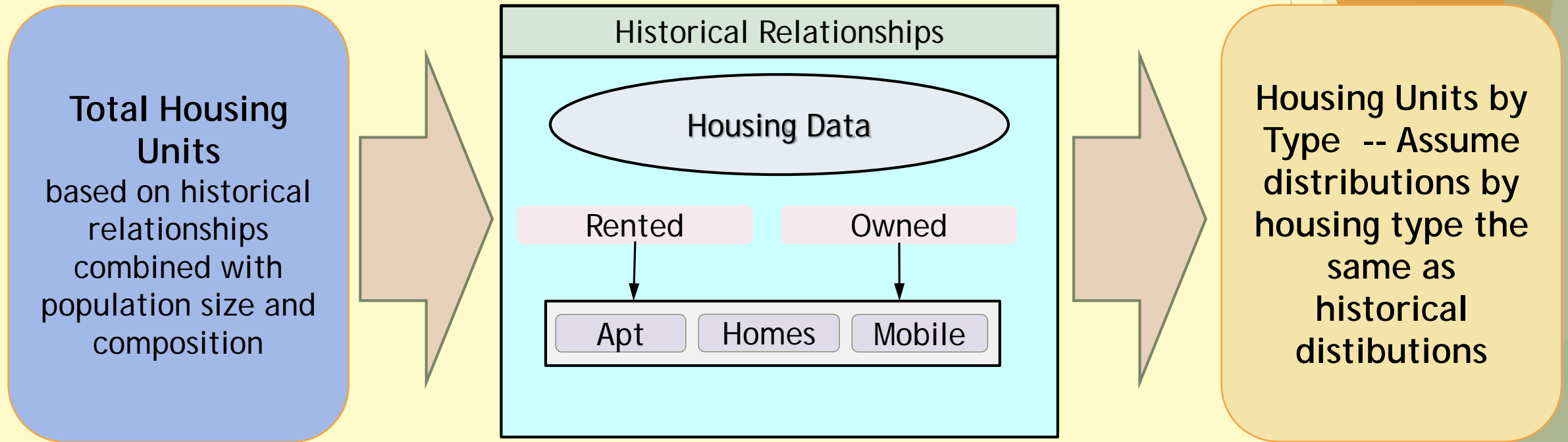
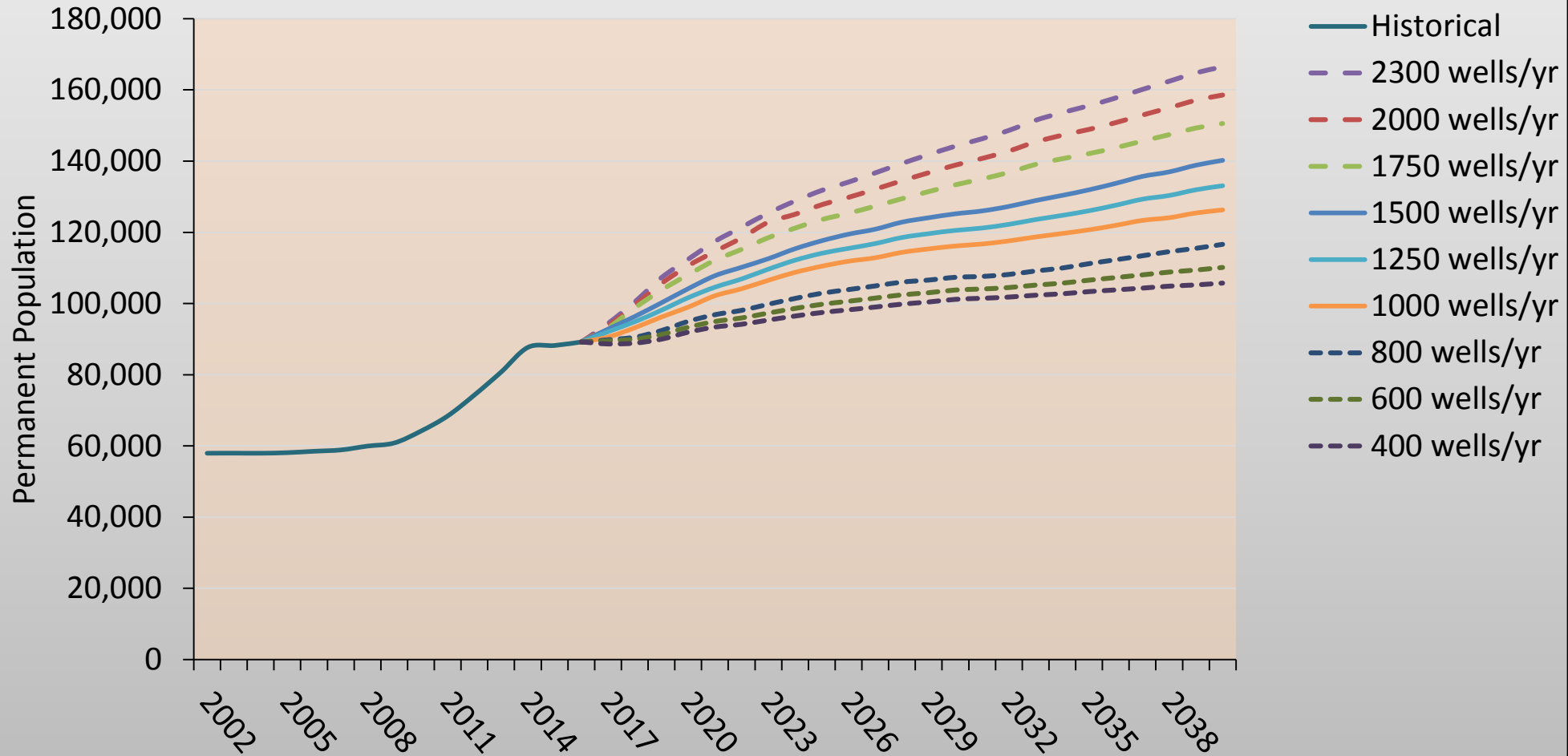Williams, McKenzie, Dunn, Mountrail, and Stark Counties
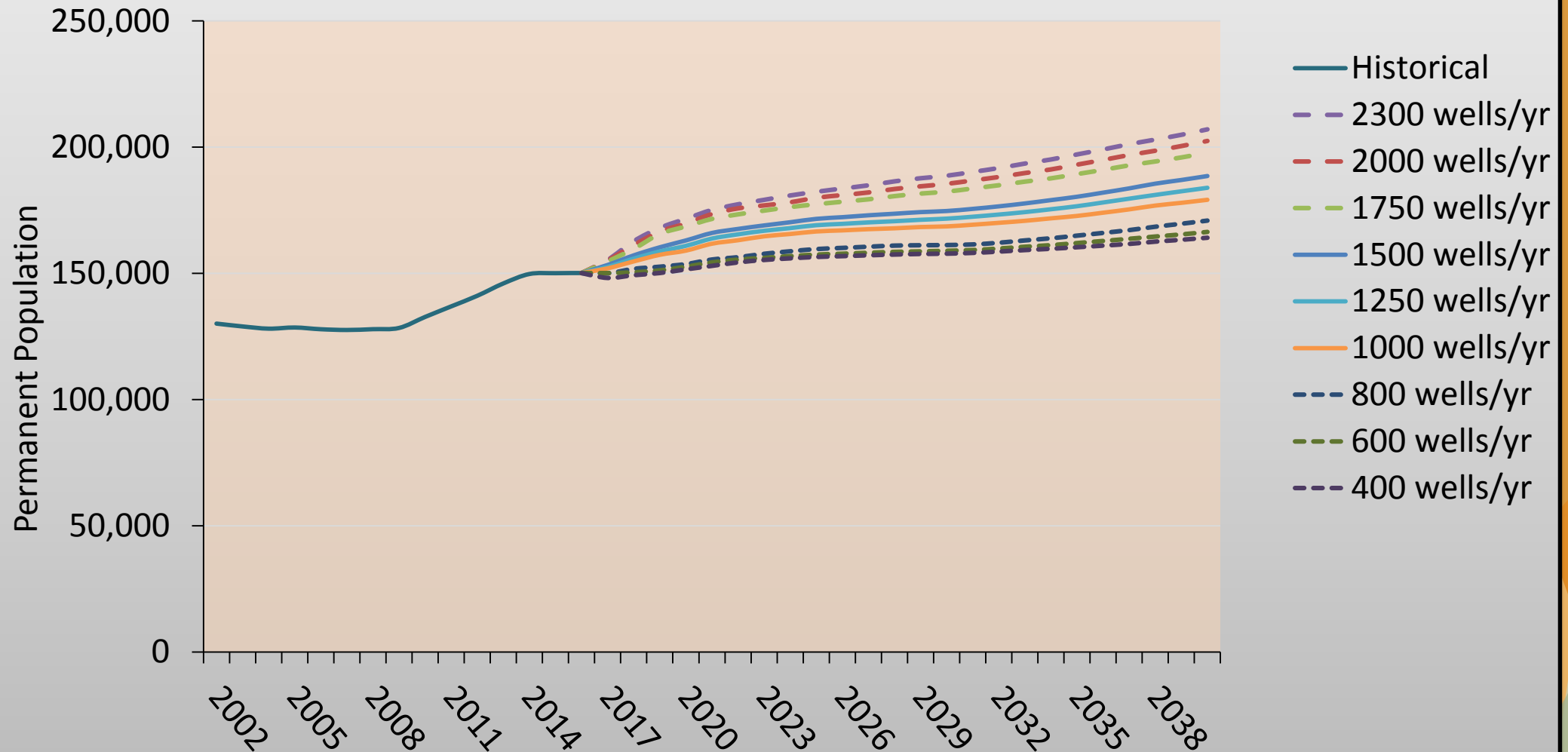Permanent Population

Take Away

Population growth still occurs in low price environment, about 1% or less per year

When industry starts expanding over 1,200 wells per year, population growth is generally over 2% per year

With expansion of 2,000 wells/yr, population growth will be very challenging and average 2.5% to just over 3% per year

Permanent Population with Petroleum Industry Growth in North Dakota					
Core County	Wells Drilled Per Year	2017 to 2035 Population			
		Total Change		Average Annual	
Dunn	600 (Low Price)	560	12%	30	0.6%
	1,250 (Moderate Price)	1,300	28%	68	1.3%
	2,000 (High Price)	2,100	45%	109	2.0%
Williams	Low	6,900	21%	361	1.0%
	Mod	16,500	51%	865	2.2%
	High	26,800	82%	1,410	3.2%
McKenzie	Low	3,700	31%	195	1.4%
	Mod	5,550	47%	292	2.0%
	High	8,300	70%	437	2.8%
Mountrail	Low	2,450	25%	129	1.2%
	Mod	3,800	39%	199	1.7%
	High	5,200	54%	275	2.3%
Stark	Low	3,800	12%	200	0.6%
	Mod	9,800	32%	516	1.5%
	High	17,300	57%	912	2.4%

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All Other Study Counties (Non Core Counties)
Permanent Population

Take Away

For most counties, population growth still occurs in low price environment, less than 1% per year

With expansion of 2,000 wells/yr, population growth will approach or slightly exceed 1% per year

Permanent Population with Petroleum Industry Growth in North Dakota					
Non Core County	Wells Drilled Per Year	2017 to 2035 Population			
		Total Change		Average Annual	
Adams	600 (Low Price)	200	9%	11	0.4%
	2,000 (High Price)	525	22%	28	1.1%
Billings	Low	24	3%	1.3	0.1%
	High	145	16%	7.5	0.8%
Bowman	Low	200	6%	11	0.3%
	High	820	25%	43	1.2%
Bottineau	Low	290	4%	15	0.2%
	High	1,200	18%	64	0.9%
Burke	Low	90	4%	5	0.2%
	High	430	19%	23	0.9%
Divide	Low	-40	-1.5%	-2	-0.08%
	High	360	14%	19	0.7%
Golden Valley	Low	250	13%	13	0.7%
	High	430	24%	23	1.1%

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Take Away

For most counties, population growth still occurs in low price environment, less than 1% per year
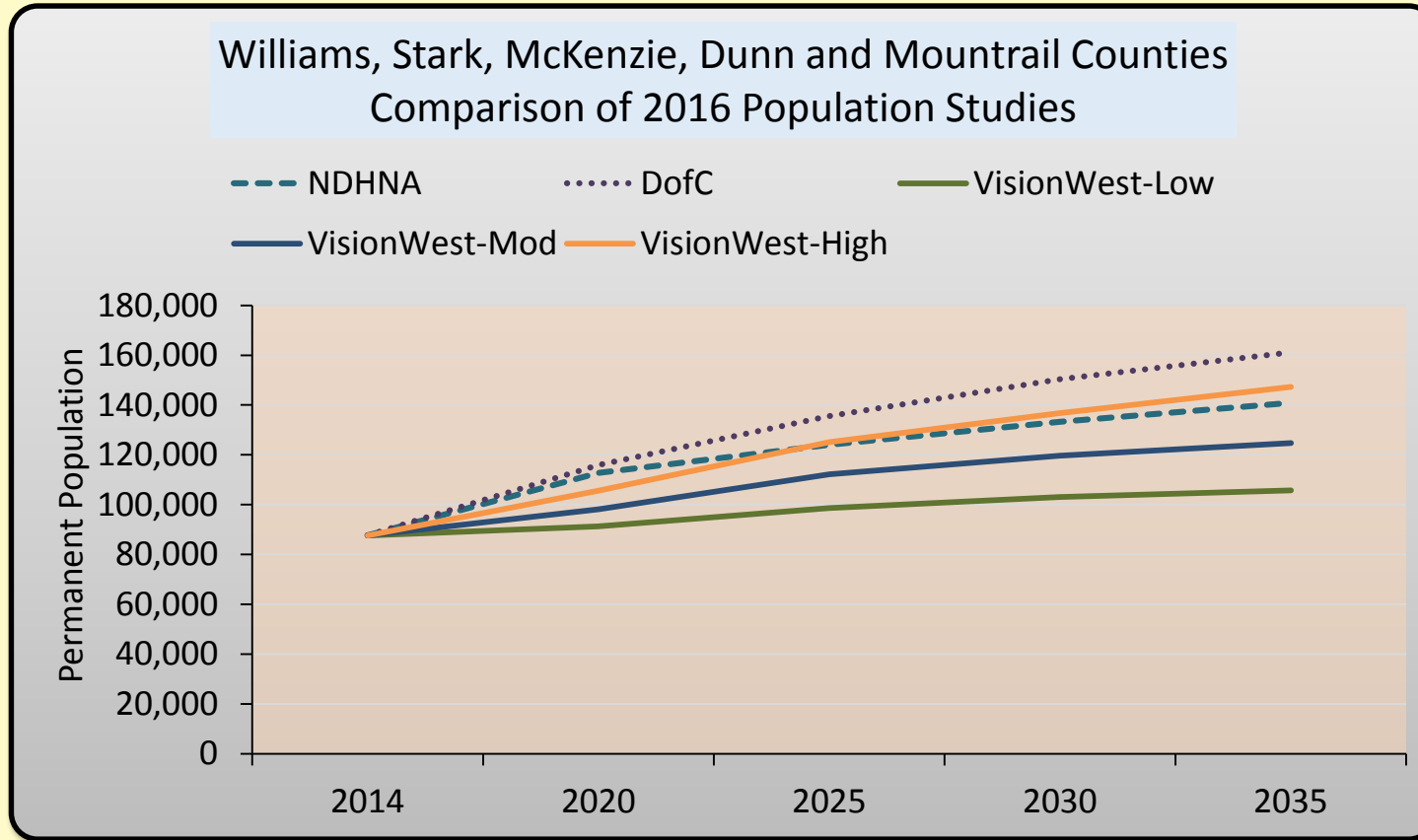
With expansion of 2,000 wells/yr, population growth will approach or slightly exceed 1% per year

Permanent Population with Petroleum Industry Growth in North Dakota					
Non Core County	Wells Drilled Per Year	2017 to 2035 Population			
		Total Change		Average Annual	
Hettinger	600 (Low Price)	81	3%	4	0.2%
	2,000 (High Price)	330	12	17	0.6%
McHenry	Low	400	7%	21	0.3%
	High	1200	20%	63	1%
McLean	Low	250	2.5%	13	0.1%
	High	1400	15%	74	0.7%
Mercer	Low	36	0.7%	2	0.02%
	High	990	11%	52	0.6%
Renville	Low	-5	-0.2%	-0.3	-0.01%
	High	370	14%	19	0.7%
Slope	Low	-10	-1.3%	-0.5	-0.07%
	High	30	4%	1.7	0.2%
Ward	Low	6260	9%	330	0.5%
	High	17300	25%	911	1.2%

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Population Comparisons among other recent studies Core Oil Producing Counties

Williams, Stark, McKenzie, Dunn and Mountrail Counties
Comparison of 2016 Population Studies

- - - NDHNA   ······· DofC   —— VisionWest-Low

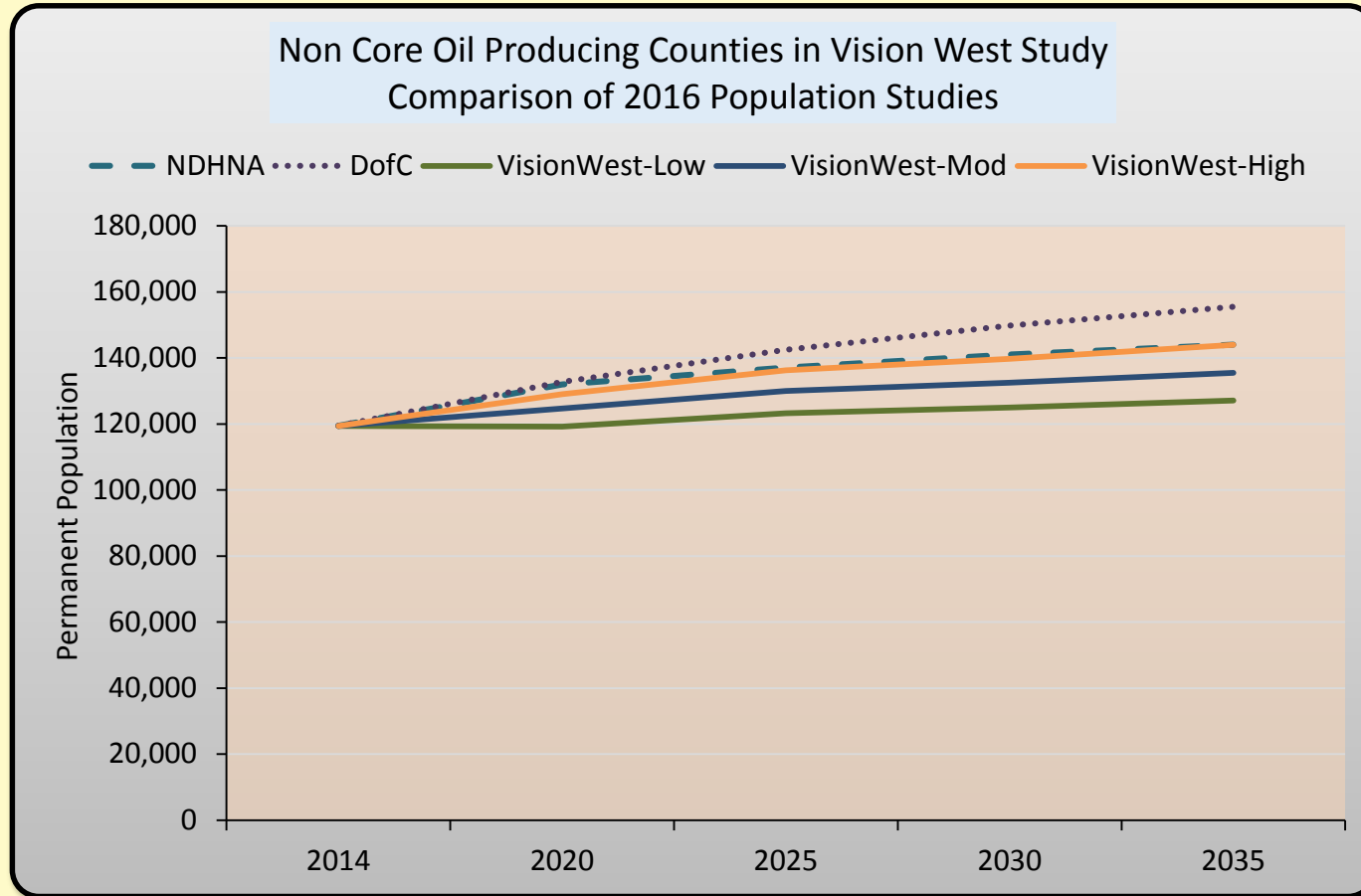—— VisionWest-Mod   —— VisionWest-High

2016 ND Housing Needs Assessment is similar to the 2000 wells/yr scenario

ND Department of Commerce projections are around the 2,300 wells/yr scenario

All three studies provide valuable information and would be expected to have somewhat varying results based on different fundamental assumptions and methods

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Population Comparisons among other recent studies
Non Core Oil Producing Counties

Non Core Oil Producing Counties in Vision West Study
Comparison of 2016 Population Studies

2016 ND Housing Needs Assessment similar to the 2,000 wells/yr scenario

ND Department of Commerce projections are around the 2,300 wells/yr scenario

All three studies provide valuable information and would be expected to have somewhat varying results based on different fundamental assumptions and methods

Population ages 0 to 19

Core Oil and Non Core Counties
Population for Ages 0 to 19
1250 wells/yr
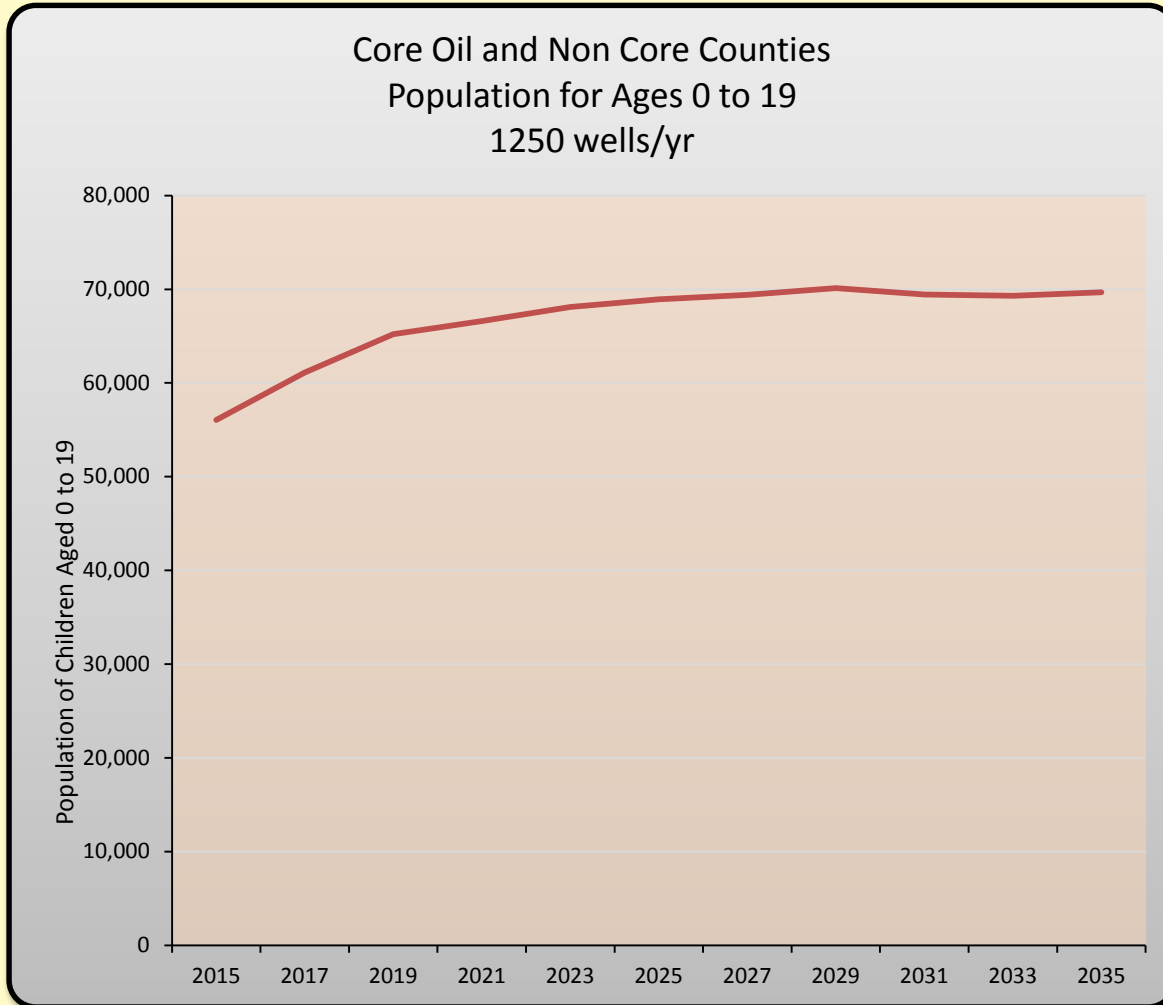
Requires Careful Interpretation

All 5-year cohort migration rates for children were based on rates used in the 2016 Statewide Housing Needs Assessment

That study's population forecasts most closely align with the moderate price forecast. Under those factors, population of children increase over the next 5 years, but then show only minor growth over remainder of period.

Reliance on past migration rates for children may "over" or "under" estimate migration and change in population of children, depending upon county and growth scenario
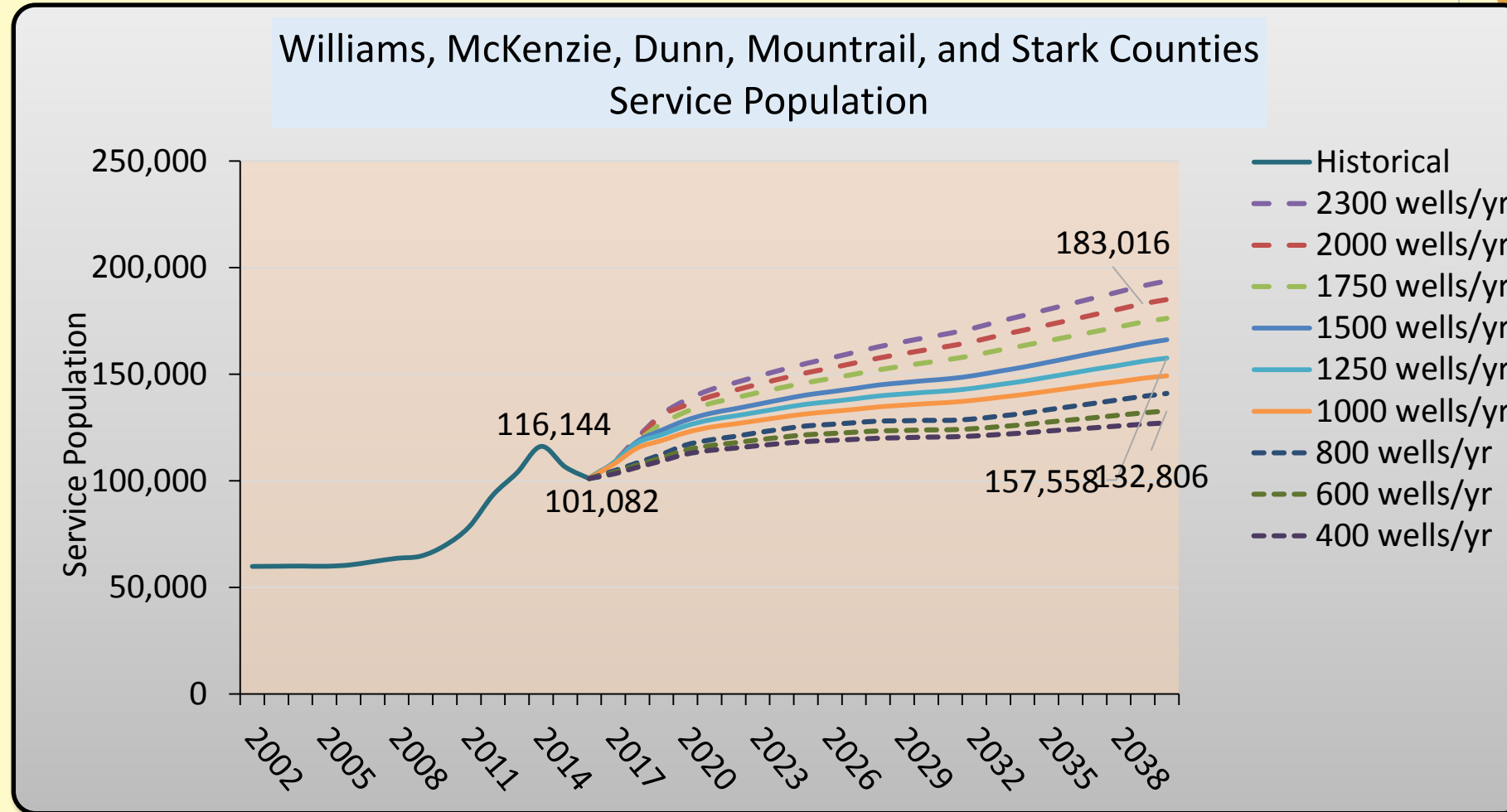
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Service Population

- Includes permanent population

- Includes commuters and non-local workforce

- Important for some infrastructure planning (e.g., transportation)

- Important for local government service delivery (e.g., police)

- Should not be used for development of permanent housing needs

- Indicates importance of having overflow/temporary/conditional housing

## Methodology

1) Examined trends in service population as a percentage of permanent population

2) Used commuter data to estimate number of non-local workers, added non-local workers to permanent population

3) Both methods produced very similar estimates

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Service Population
Core Oil producing Counties

Williams, McKenzie, Dunn, Mountrail, and Stark Counties
Service Population

Service Population
Non Core producing Counties

Non Core Counties
Service Population
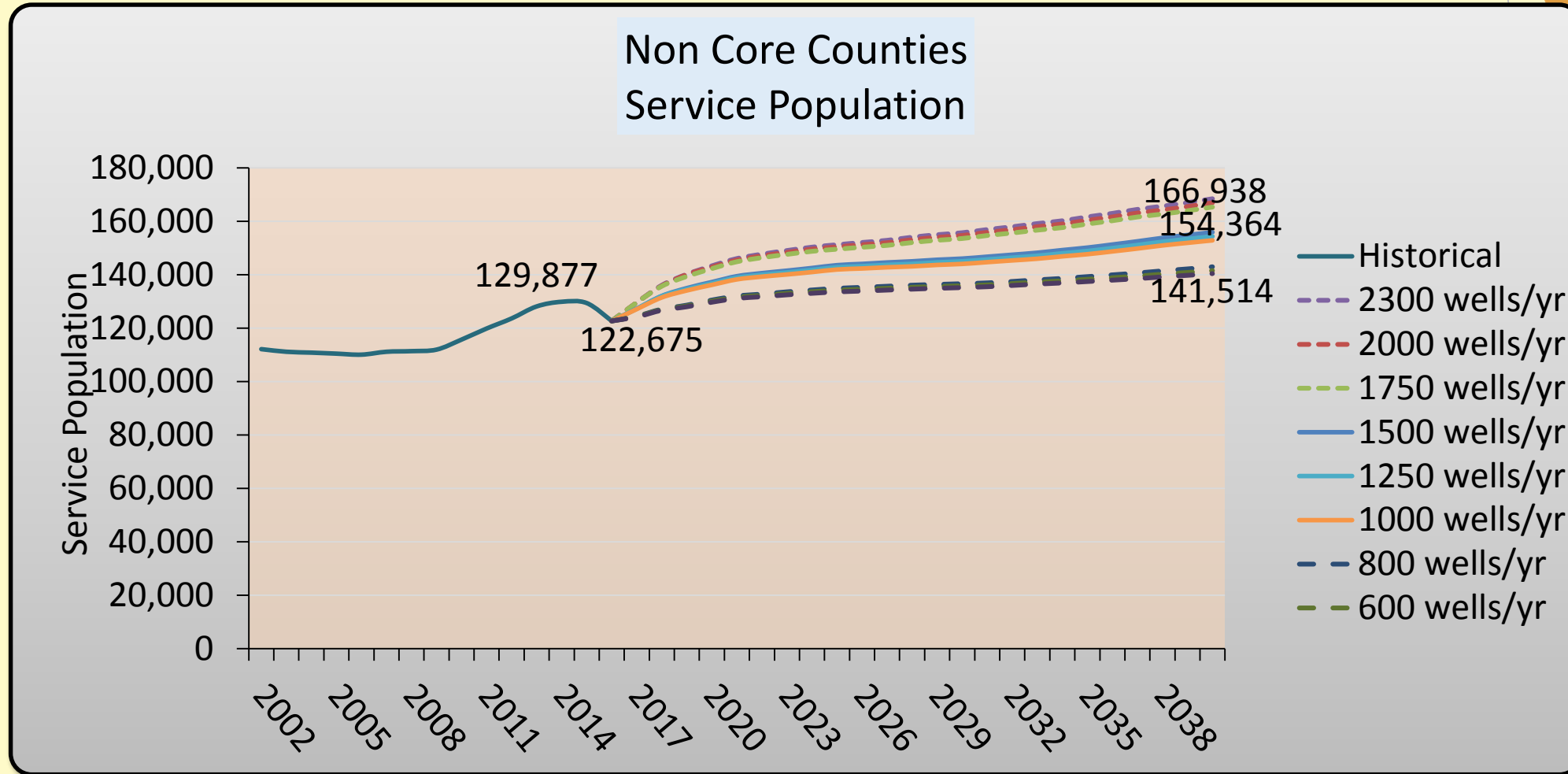
Core and Non Core Counties Permanent and Service Populations

Permanent and Service Population
1,250 wells per year

- - - Core Counties Permanent Population
——— Core Counties Service Population
- - - Non Core Counties Permanent Population
——— Non Core Counties Service Population
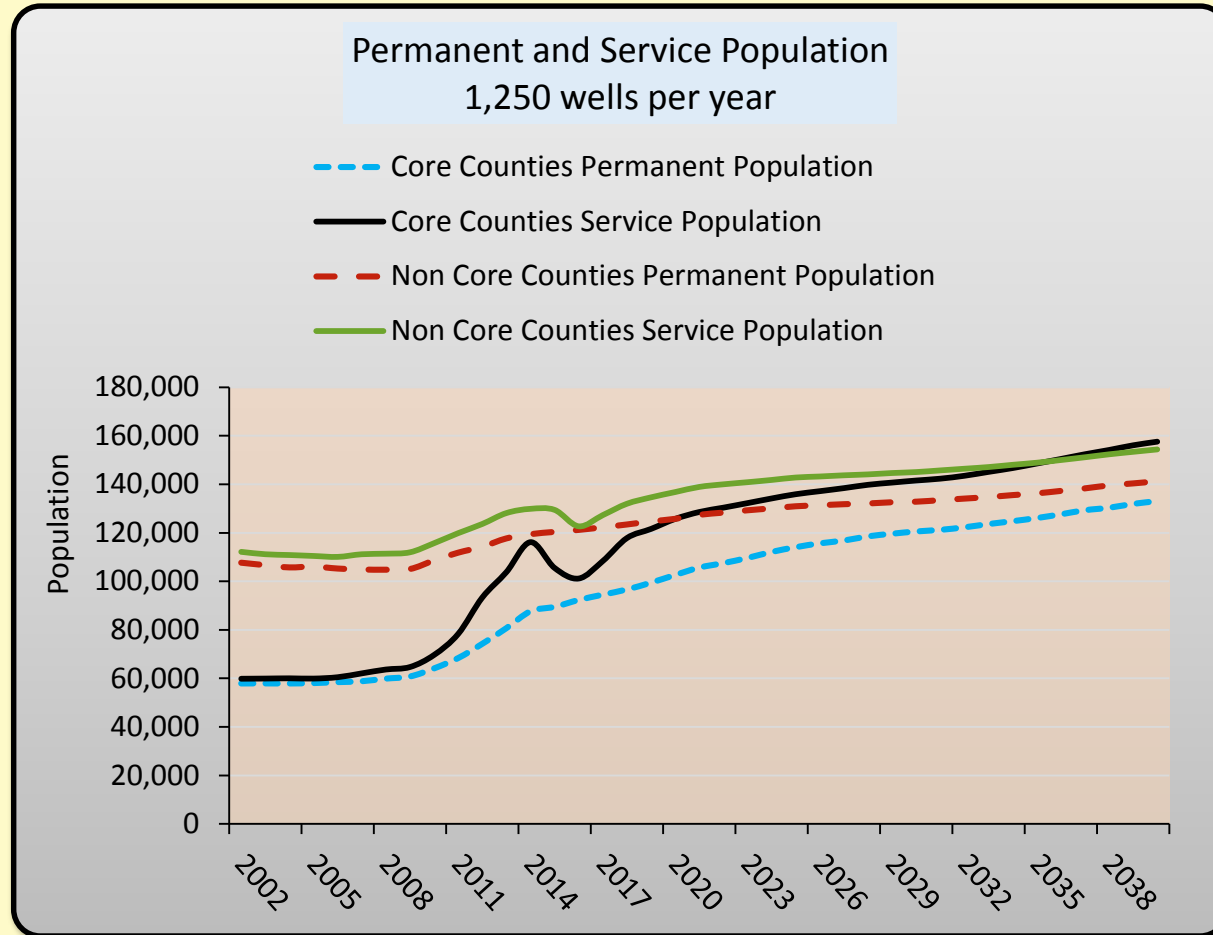
Take Away

▶ Core Oil Producing Counties
  ▶ Service population ranges from **15 to 23 percent of permanent population**

▶ Non Core Oil Producing Counties
  ▶ Service population ranges from **7 to 10 percent of permanent population**

Service Population -- Additional Thoughts

Comparison of Permanent and Service Population
Moderate Price 1250 wells per year

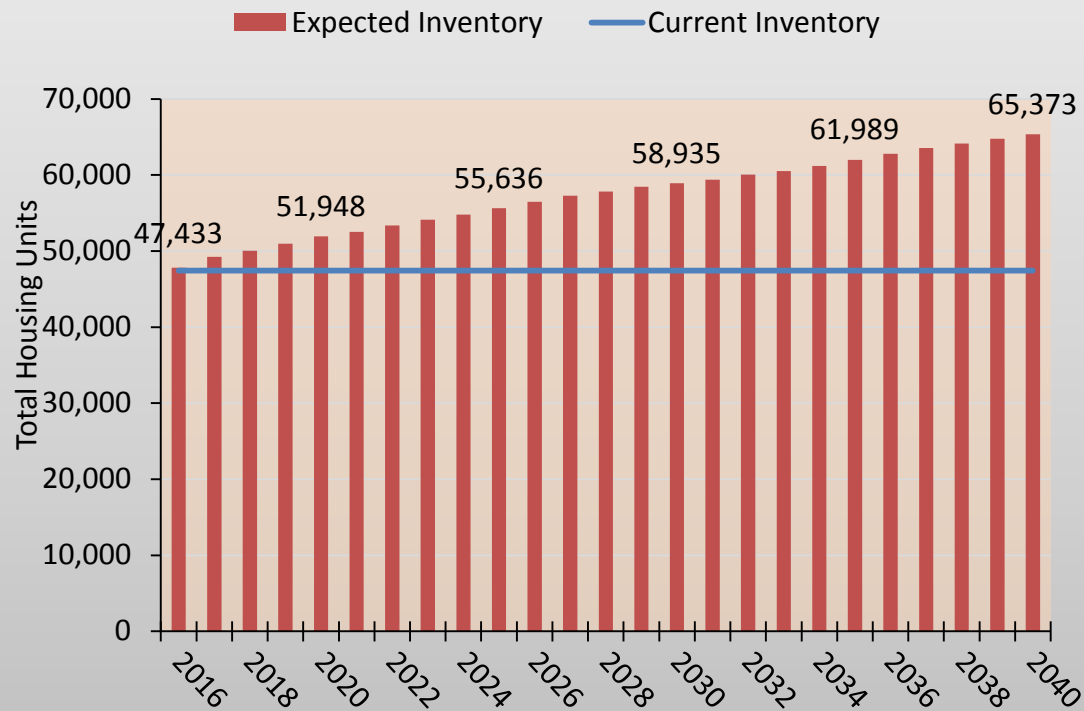Series11   Series7   Series1   Series4
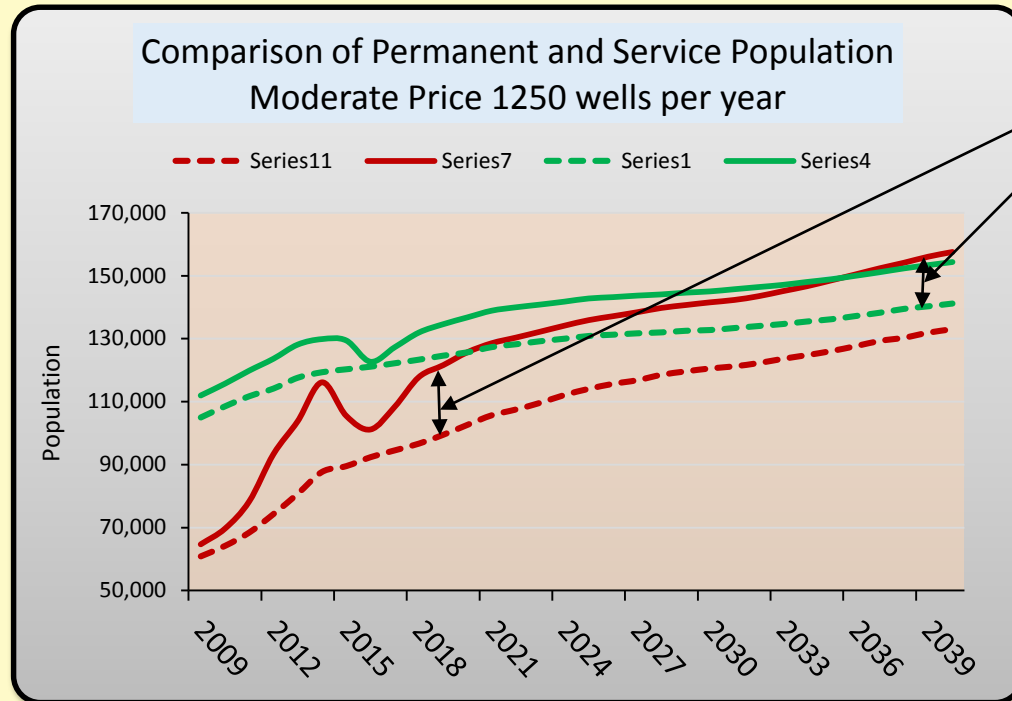
Reasons for Service Population

1) Specialized labor

2) Workers unwilling to re-locate

3) Job uncertainty

4) ** Not finding what they want ** (housing has been identified as huge factor influencing worker relocation to ND)

Communities need to continue to address quality of life amenities and address factors in their control. No matter what is done, not all workers will relocate. Small adjustments in retaining non-local workers will have meaningful impacts on local permanent populations.
**Source: Workforce Characteristics Study, 2015, NDSU

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Housing Requirements for Permanent Population

Core Counties Housing Inventory Requirements
600 wells/yr

Expected Inventory — Current Inventory

Total Housing Units

47,433 · 51,948 · 55,636 · 58,935 · 61,989 · 65,373

Source: 2016 ND Housing Needs Assessment' NDSU VisionWest Study

Core Counties 600 wells/yr	
Period	Annual housing units required above current inventory*
2016 to 2020	825
2021 to 2025	620
2026 to 2030	495
2031 to 2035	515
2016 to 2035	14,170 (total)
Average Annual	700

*Inventory obtained from 2016 ND Housing Needs Assessment

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Housing Requirements for Permanent Population

Non Core Counties Housing Inventory Requirements
600 wells/yr

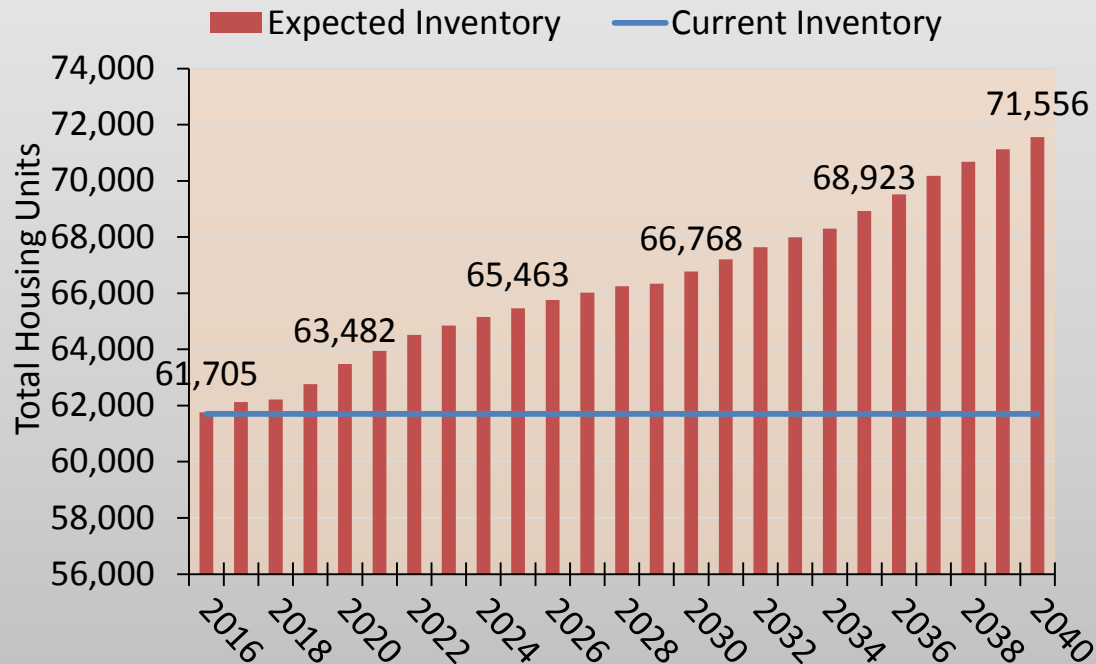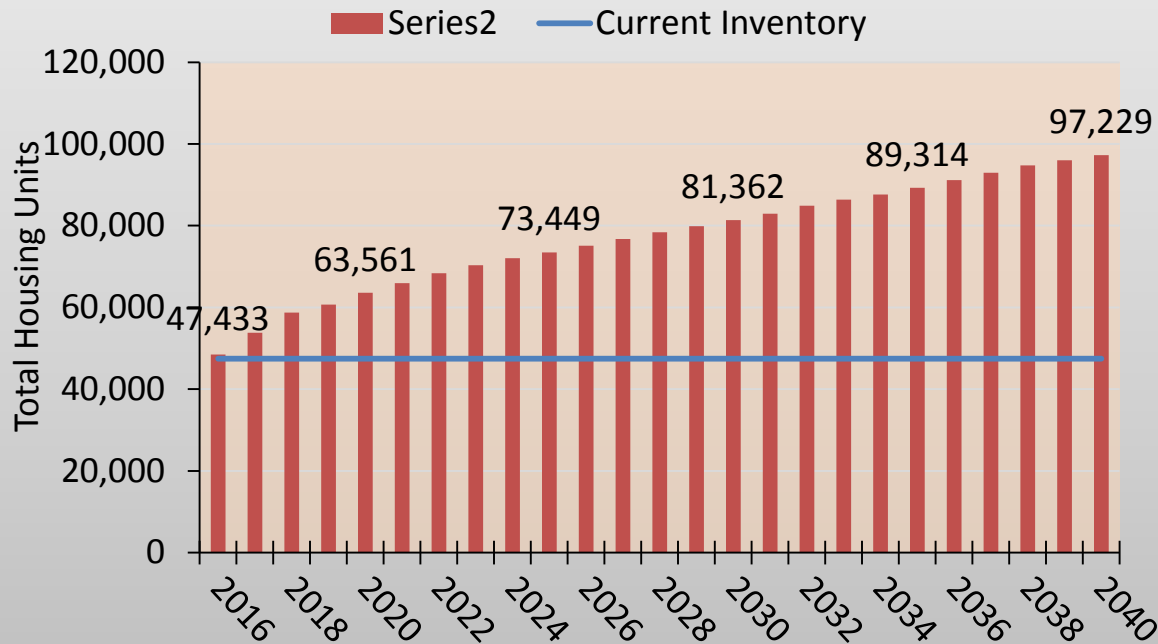Source: 2016 ND Housing Needs Assessment' NDSU VisionWest Study

Non Core Counties 600 wells/yr	
Period	Annual housing units required above current inventory*
2016 to 2020	345
2021 to 2025	300
2026 to 2030	200
2031 to 2035	345
2016 to 2035	7,170
Average Annual	**360**

*Inventory obtained from 2016 ND Housing Needs Assessment

Housing Requirements for Permanent Population

Core Counties Housing Inventory Requirements 2000 wells/yr

Series2 — Current Inventory

Total Housing Units: 47,433 · 63,561 · 73,449 · 81,362 · 89,314 · 97,229

Source: 2016 ND Housing Needs Assessment' NDSU VisionWest Study

Core Counties 2,000 wells/yr	
Period	Annual housing units required above current inventory*
2016 to 2020	3,020
2021 to 2025	1,510
2026 to 2030	1,260
2031 to 2035	1,280
2016 to 2035	40,850
Average Annual	2,040

*Inventory obtained from 2016 ND Housing Needs Assessment

Housing Requirements for Permanent Population

Non Core Counties Housing Inventory Requirements 2000 wells/yr

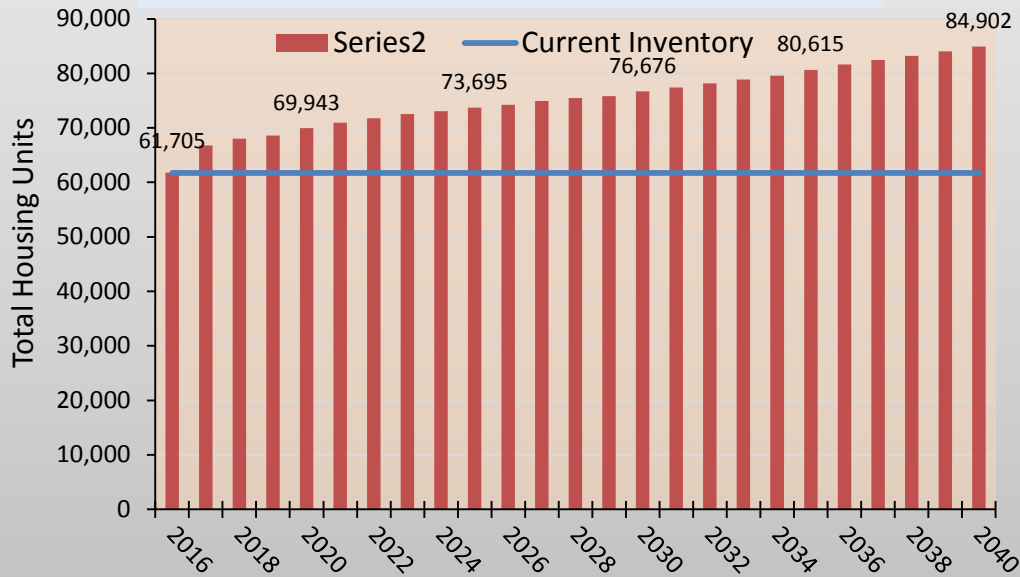Source: 2016 ND Housing Needs Assessment' NDSU VisionWest Study

Non Core Counties 2,000 wells/yr	
Period	Annual housing units required above current inventory
2016 to 2020	1,600
2021 to 2025	550
2026 to 2030	490
2031 to 2035	640
2016 to 2035	18,860
Average Annual	940

*Inventory obtained from 2016 ND Housing Needs Assessment

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Comparison of Recent Changes in Housing Inventories

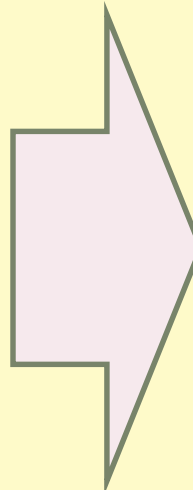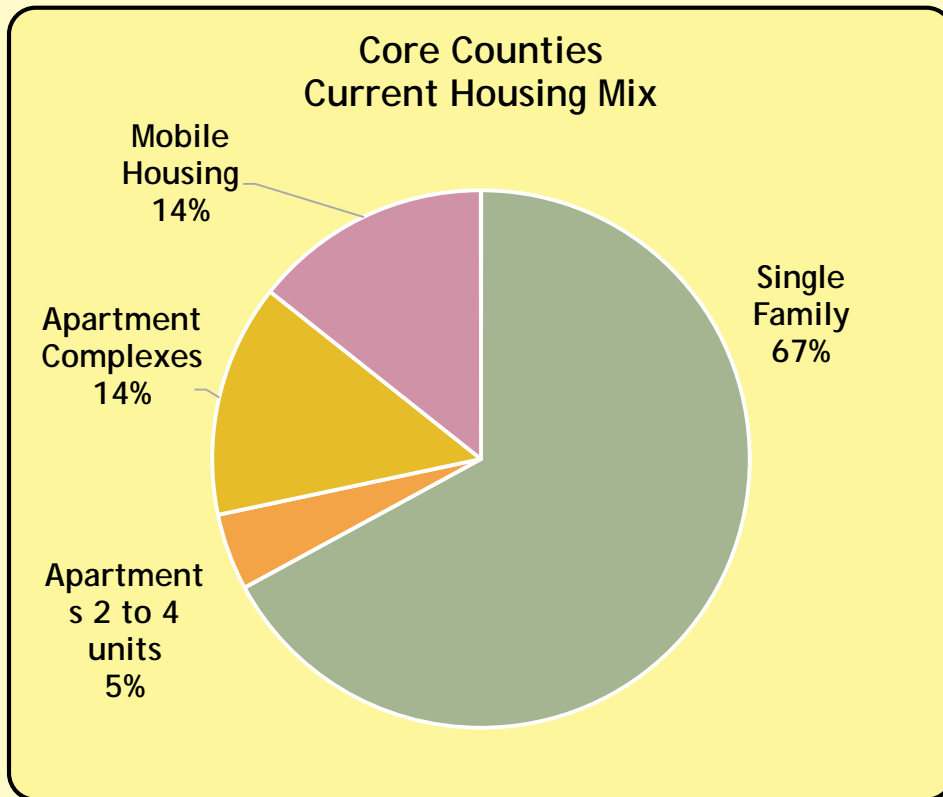|	Core Oil Producing Counties		Non Core Counties	
	2011-2014	2017-2020	2011-2014	2017-2020
Housing Units Added (total)*	23,625	---	20,695	---
Units Added (annual average)*	5,900	---	5,170	---
Housing Units Required (1,250 wells/yr)(additional)**		9,000		4,800
Units Required (1,250 wells/yr) (average annual)**		1,800		965

NOTES:
* Based on 2010 Decennial Census reported inventory, adjusted by 2016 ND Statewide Housing Needs Assessment
** Using current housing inventories reported in 2016 Statewide Housing Needs Assessment

Sources: 2016 ND Housing Needs Assessment; NDSU VisionWest Project

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Housing Mix -- Core Oil Producing Counties

Mix of housing types has been changing in some counties. Trends in housing mix were briefly discussed in the County Webinars. Changes in housing types, and anticipated market needs (cost, amenities, location, etc.), must be included when estimating the additional housing needed.
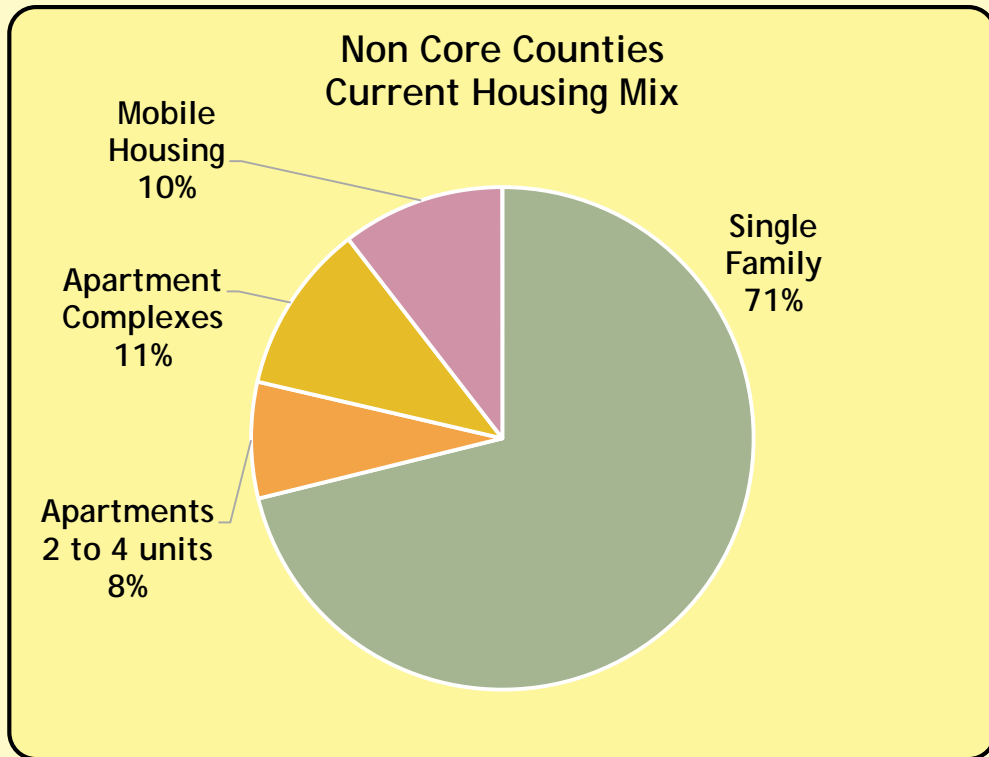
Core Counties Current Housing Mix

- Single Family 67%
- Mobile Housing 14%
- Apartment Complexes 14%
- Apartments 2 to 4 units 5%

Core Oil Producing Counties (assuming no change in current housing mix)		
Total Housing Units Required By Housing Type (1,250 wells/yr)	2017-2020	2017-2035
Single Family Homes	6,000	17,700
Apartments (2 to 4 units)	420	1,200
Apartment Complexes (5 units or greater)	1,275	3,700
Mobile Homes	1,300	3,800
Source: NDSU VisionWest Project		

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Housing Mix -- Non Core Counties

Mix of housing types has been changing in some counties. Trends in housing mix were briefly discussed in the County Webinars. Changes in housing types, and anticipated market needs (cost, amenities, location, etc.), must be included when estimating the additional housing needed.

Non Core Counties Current Housing Mix

Mobile Housing 10%

Apartment Complexes 11%

Apartments 2 to 4 units 8%

Single Family 71%

| Non Core Counties (assuming no change in current housing mix)		
Total Housing Units Required By Housing Type (1,250 wells/yr)	2017-2020	2017-2035
Single Family Homes	8,400	11,650
Apartments (2 to 4 units)	880	1,220
Apartment Complexes (5 units or greater)	1,290	1,790
Mobile Homes	1,240	1,715

Source: NDSU VisionWest Project

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Recent Trends and Other Research Findings

▶ Household Composition

▶ Trends in the mix of housing of housing

▶ Workforce characteristics

▶ Changing makeup of the population, results of state wide housing needs assessment

    ▶ Seniors

    ▶ Younger population

    ▶ First-time homebuyers

    ▶ Cost burdened seniors

    ▶ Age of housing inventory

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Characteristics: Household composition

▶ Continued increase in non-family household

▶ Continued increase in married with out children

▶ First increase in households that are married with children

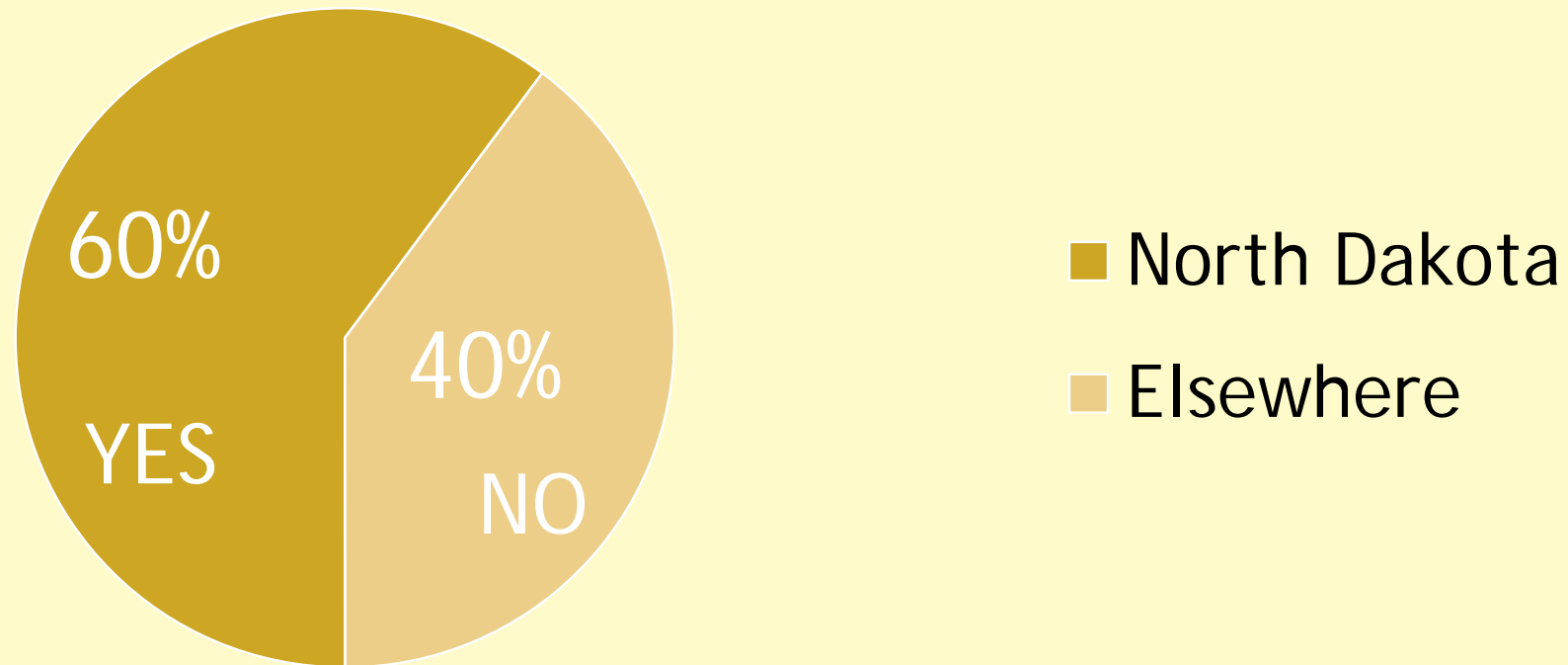▶ Potentially substantial implications for future mix of housing
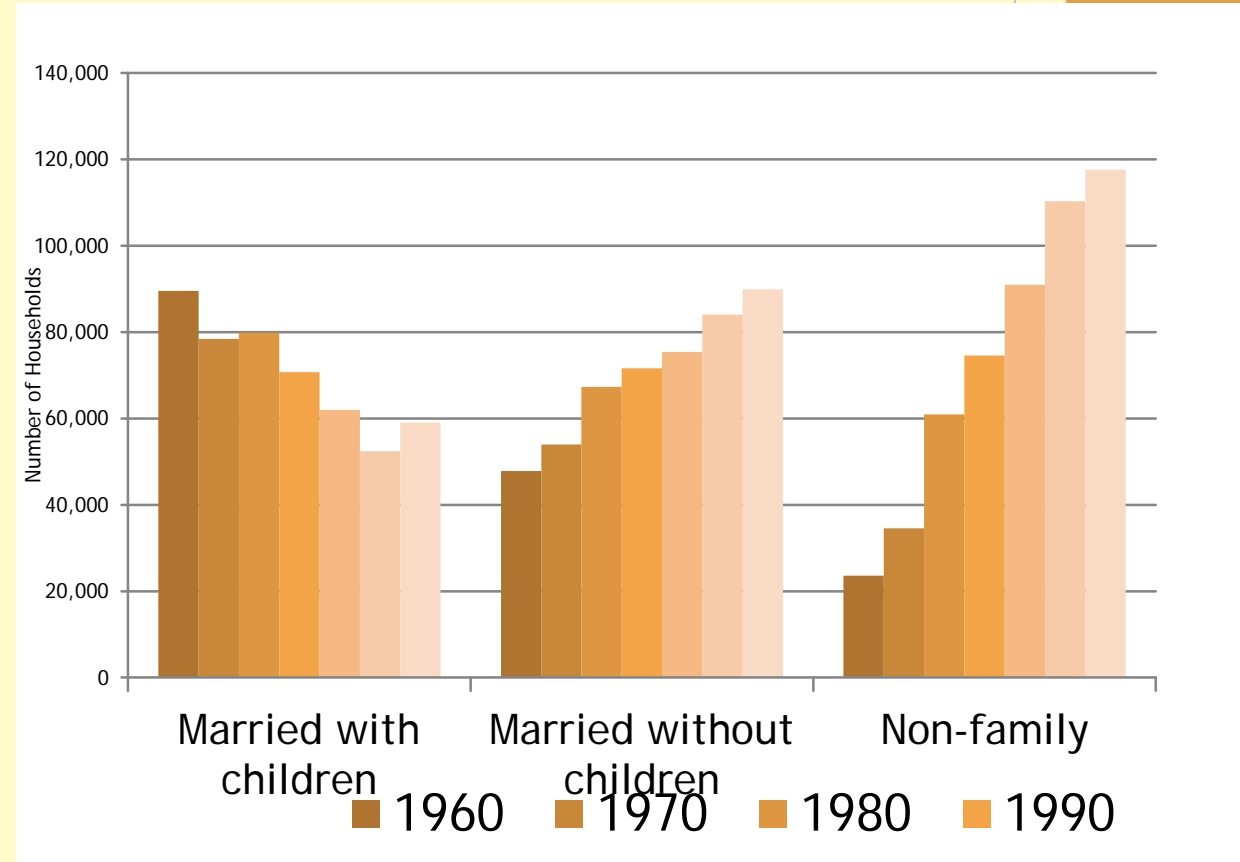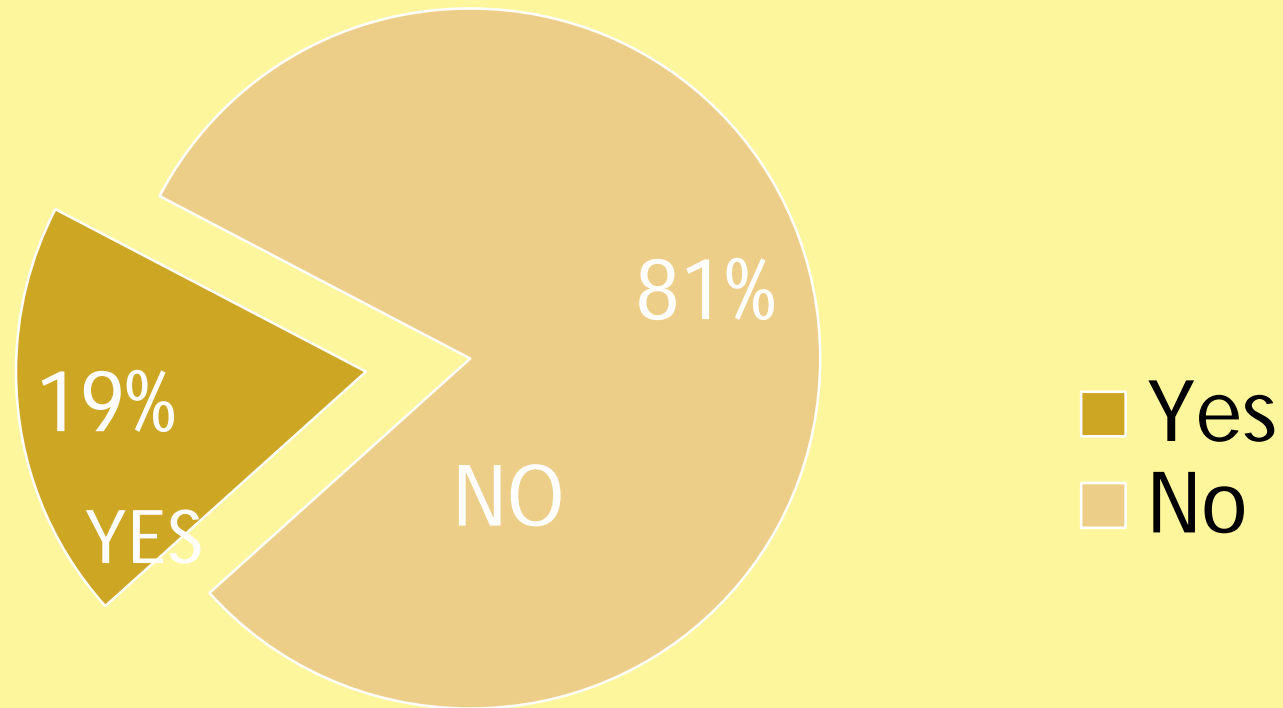
Percent of Total Housing, by Type of Housing Unit

Stark County, North Dakota
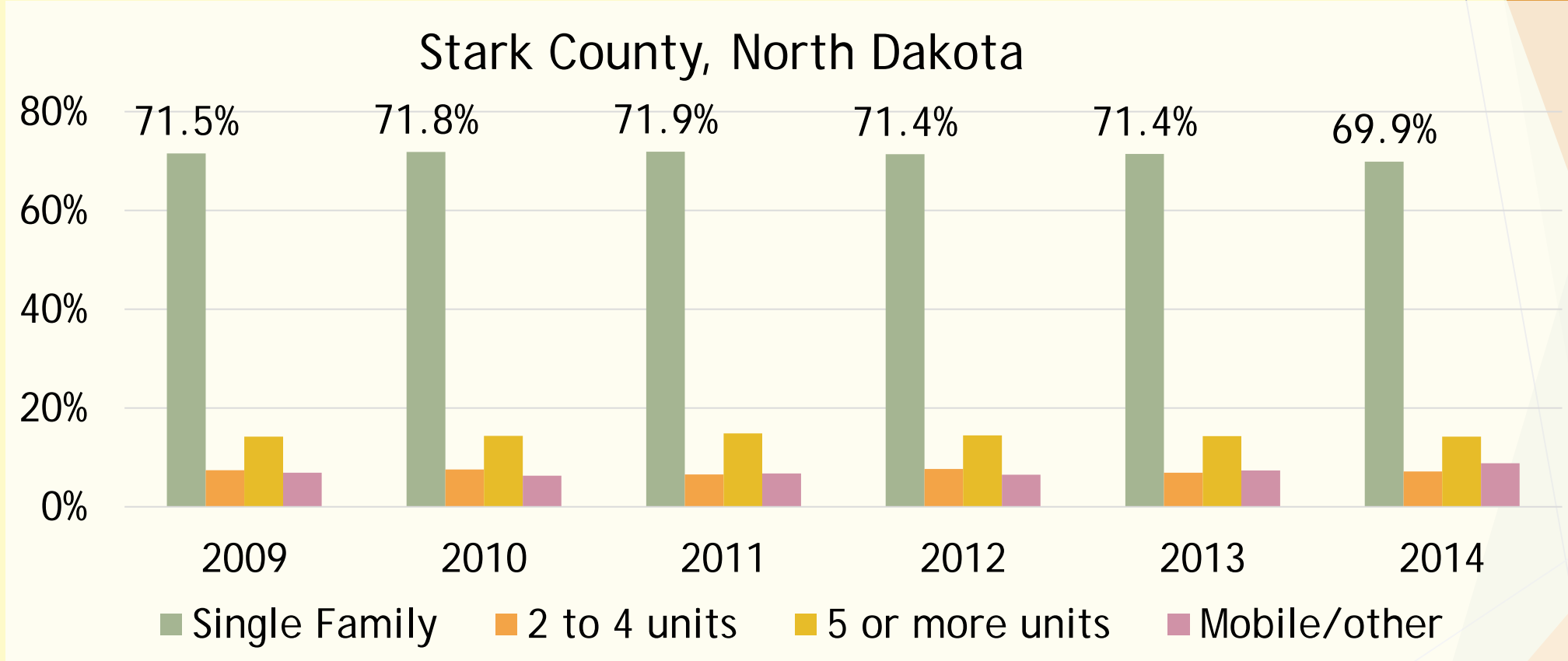
Source: U.S. Census 5-year American Community Survey

Non-Resident Workforce Intentions to Move to North Dakota

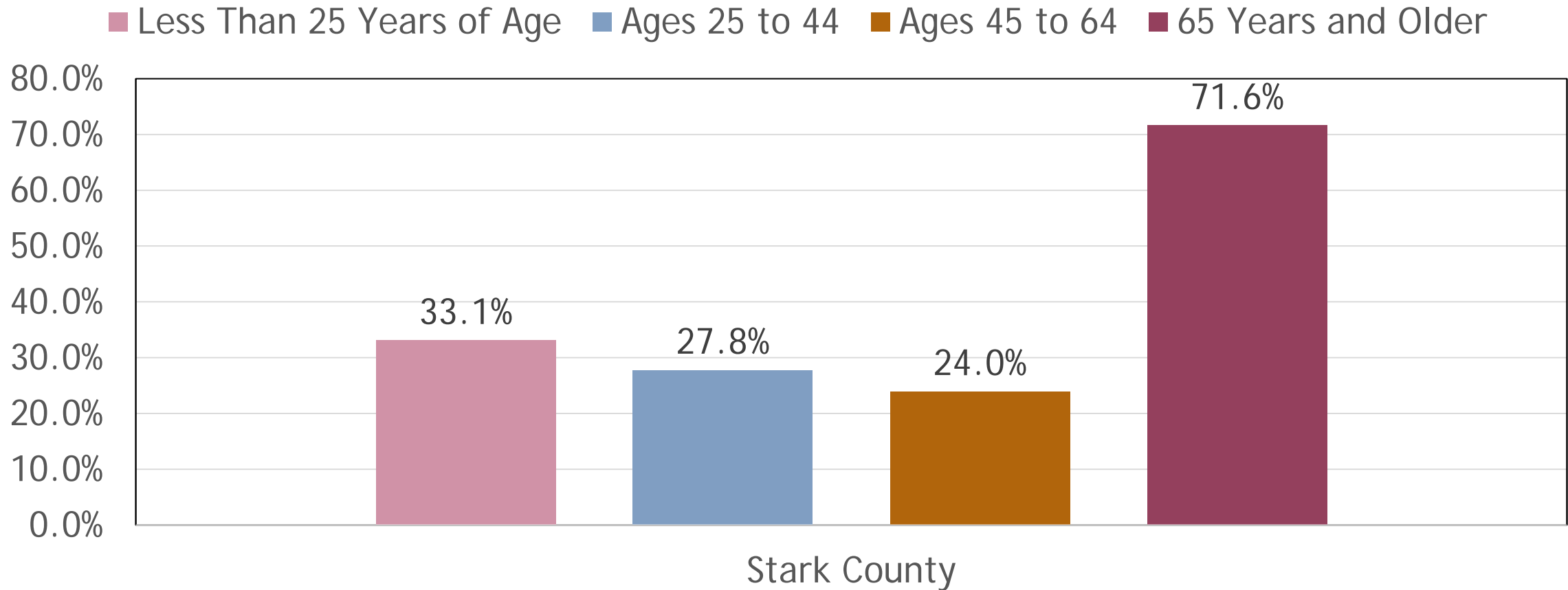19% YES

81% NO

Yes
No

Type of Housing

Type of Housing Used While Working in North Dakota, by Residency
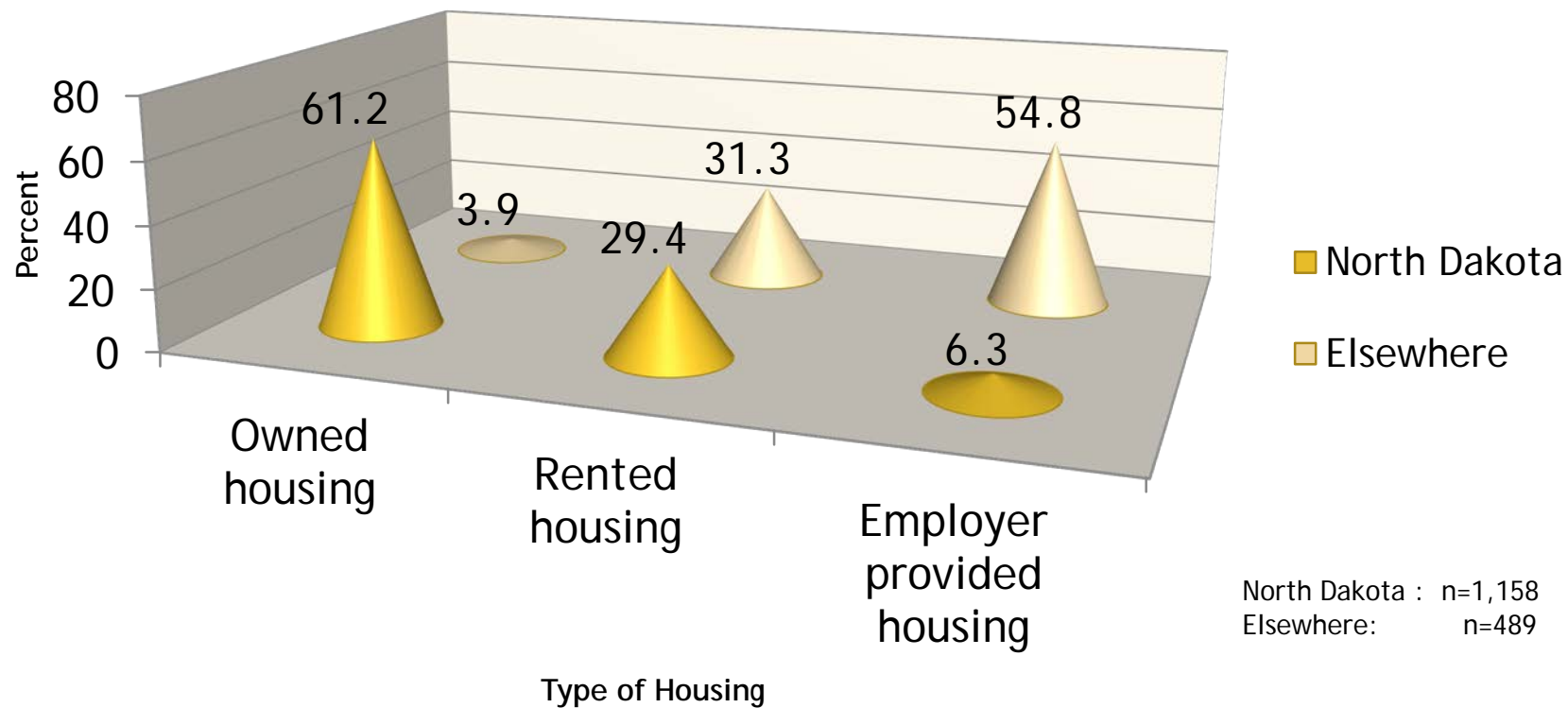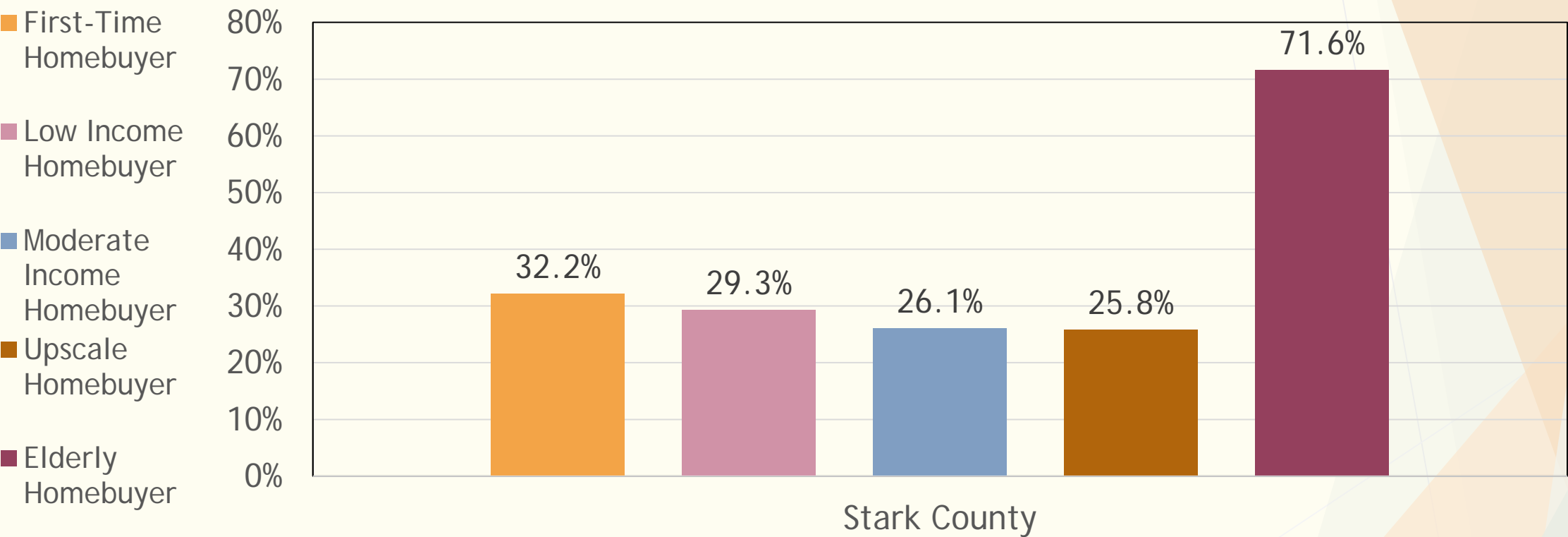
Projected Change in Population by Age Stark County

Source: 2015 North Dakota Housing Needs Assessment

Projected Change in Number of Households By Type of Homebuyer, Stark County

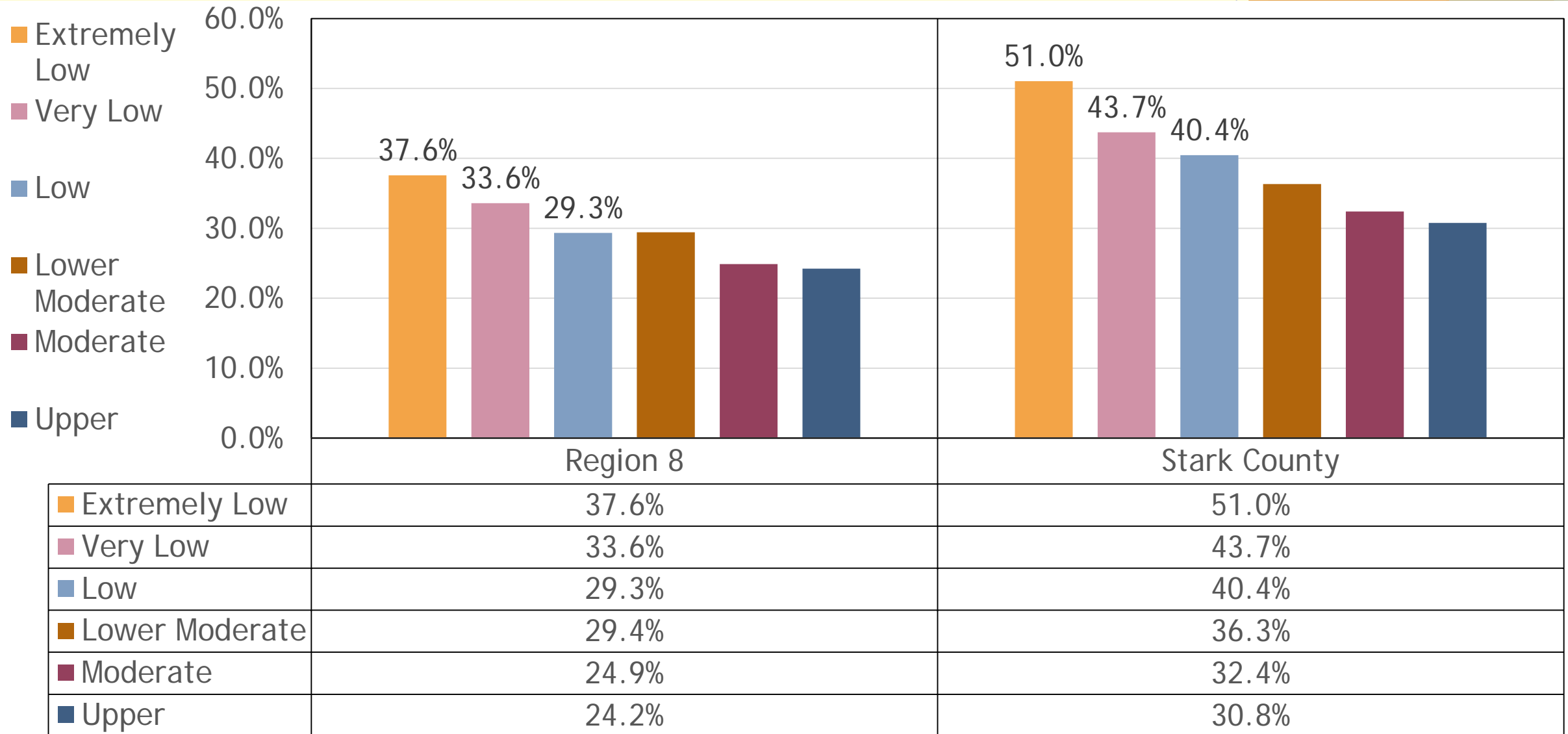Source: North Dakota Statewide Housing Needs Assessment

Cost-Burdened Seniors, Region VIII

North Dakota Householders Ages 65 and Older Spending 30% or more of Household Income Toward Housing Costs, by Tenure, Planning Region VIII, 2014

	Region VIII
Homeowners 65+	16.7%
Renters 65+	43.9%

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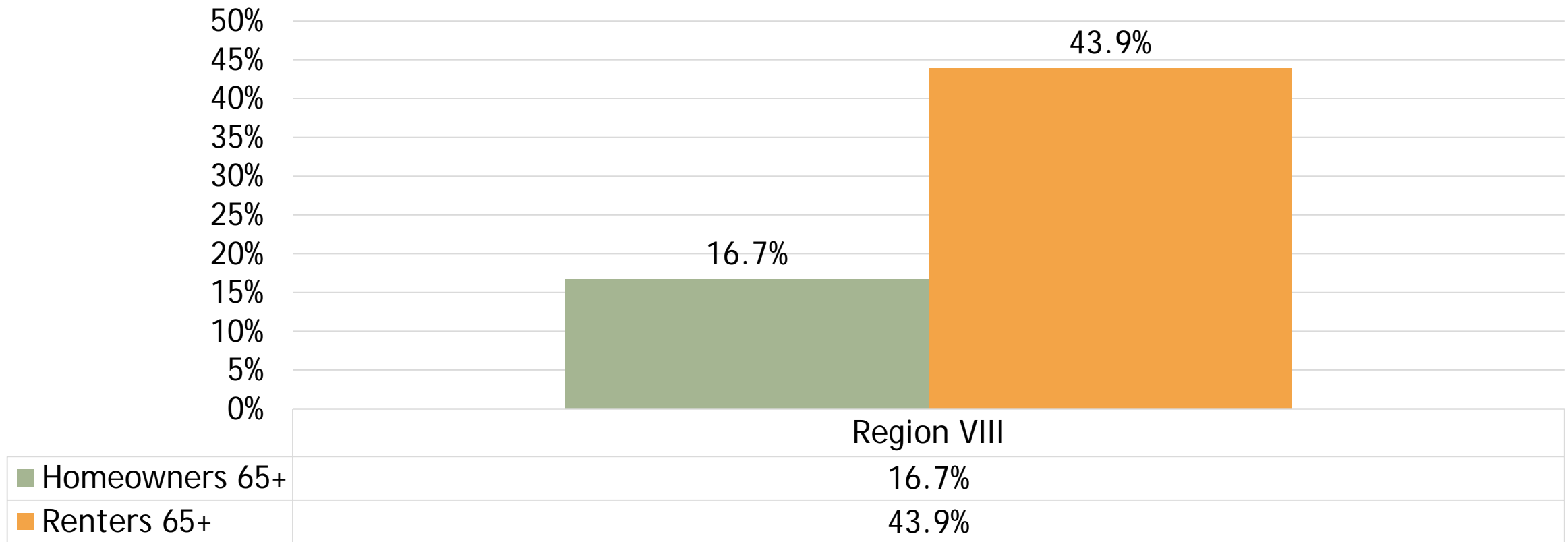
Projected population percent change by income level, 2014-2029

	Region 8	Stark County
■ Extremely Low	37.6%	51.0%
■ Very Low	33.6%	43.7%
■ Low	29.3%	40.4%
■ Lower Moderate	29.4%	36.3%
■ Moderate	24.9%	32.4%
■ Upper	24.2%	30.8%

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Age of Housing Inventory, Stark County

Total Occupied Housing by Year Built
Stark County

13,441 total units

53.8%

24.5%

21.7%

Stark County

- Built 1990 to Present
- Built 1960 to 1989
- Built Prior to 1960

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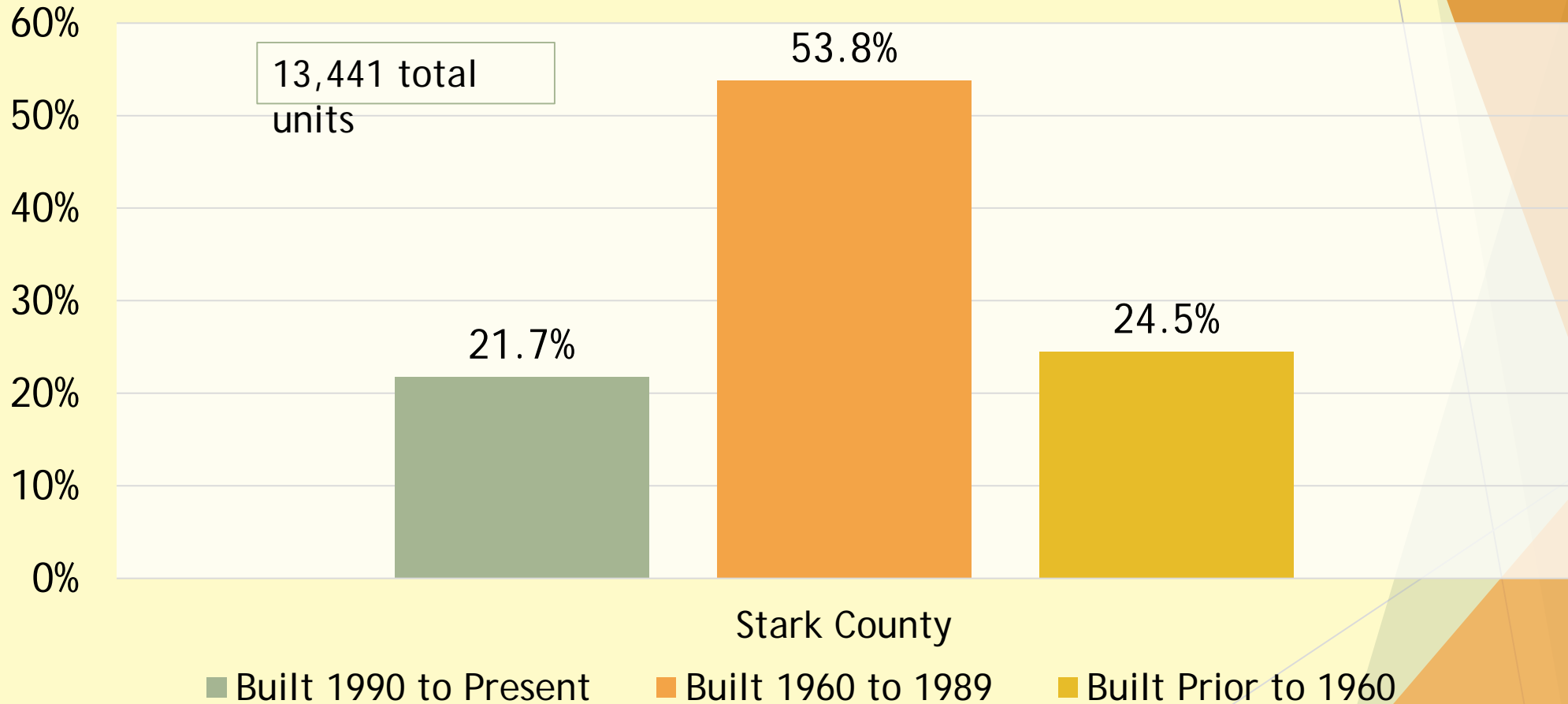
Total Occupied Housing Units, by Year Built
Dunn County

Legend:
- Built 1990 to Present
- Built 1960 to 1989
- Built Prior to 1960

Total: 1,359

- 13.6%
- 49.6%
- 36.8%

Dunn County

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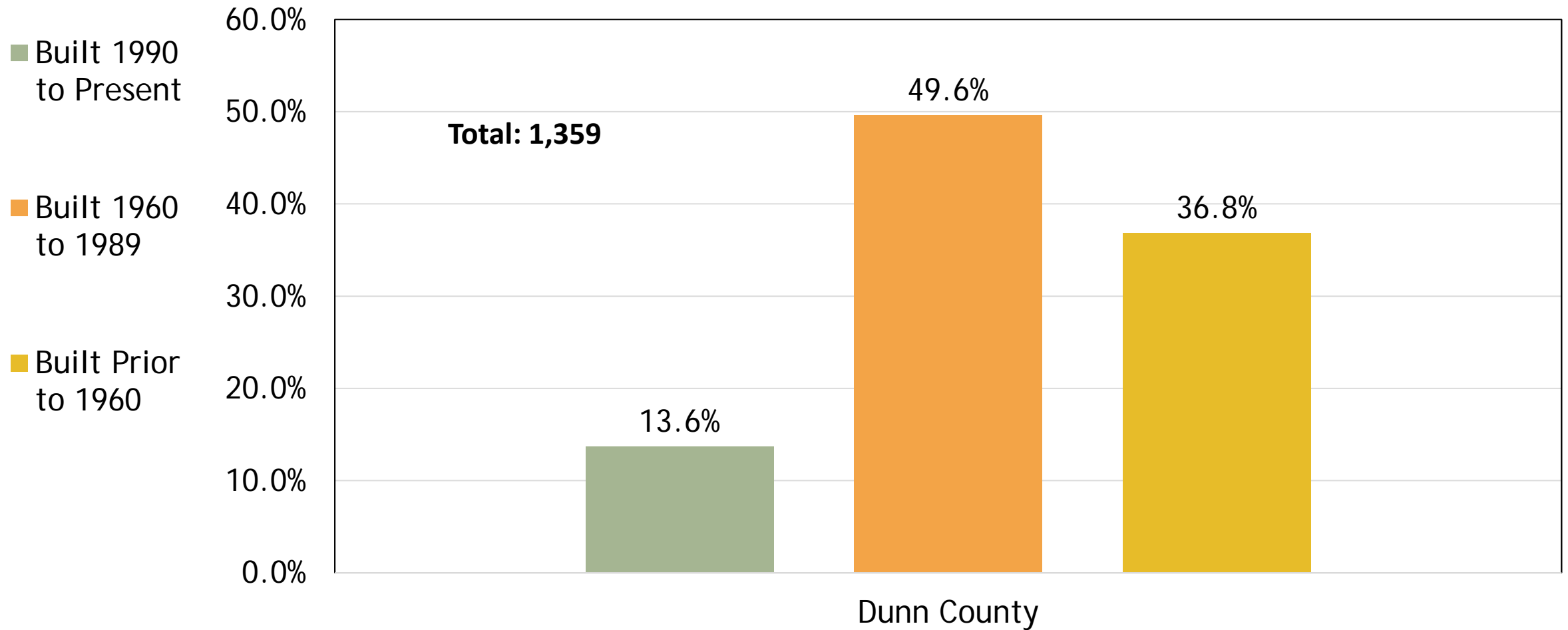
Study Strengths and Limitations

Modeling	Strengths	Limitations
Employment	-) Broad range of future employment -) All employment is included (not just Oil and Gas) -) Captures dynamics with labor and industry efficiencies	-) Future price uncertainty -) Petroleum Industry behavior in the future
Population	-) Capture dynamics with cohort modeling -) Includes commuting activity	-) Future commuting behavior unknown -) Linking commuters to economic sectors?
Housing	-) Uses updated and verified housing inventories -) Housing inventory changes with size and composition of population	-) Key relationships remain unchanged over projection period -) Not a marketing study, does not address housing preferences -) Did not address specific needs to accommodate service population

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What Did We Learn – Workforce and Commuters

▶ Substantial change from historical patterns, new changes driven by recent economic expansion

▶ Employment at a specific location may/may not translate to residents of that location

▶ Employment in one location can affect population in another location

▶ Workforce is not limited to those residing in the immediate area

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What Did We Learn -- Employment

▶ Do not expect a repeat of employment explosion 2010 to 2014

▶ Petroleum industry is in different economic position than few years ago, exact behavior difficult to forecast, efficiencies (both labor and $) will affect North Dakota

▶ Total employment in low price environment continues to slowly expand (expect little further contraction)

▶ Total employment growth in high price environment will bring about substantial challenges for local governments

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What Did We Learn -- Population

▶ Population has become younger

▶ In low price environments, slow population growth

▶ In high price environments, growth rates will challenge ability of communities to keep up, especially over longer periods

▶ Substantial service populations will be present during moderate and high price environments

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What Did We Learn -- Housing

▶ Housing inventories will need to continue to grow, and important that housing supply includes service population

▶ Rate of growth will be less than experienced from 2010 to 2014, but will present challenges in moderate and high price growth environments

▶ Probably of equal consideration is making sure the correct mix of housing is supplied!!
  ▶ Affordability
  ▶ Rent / own
  ▶ Permanent and temporary
  ▶ <u>What do local residents and new residents want</u>?

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Additional Resources Available

- North Dakota Housing Finance Agency Statewide Housing Needs Assessment
  https://www.ndhfa.org/Publications/HousingNeeds.html

- NDSU Department of Agribusiness and Applied Economics
  http://ageconsearch.umn.edu/
  https://www.ag.ndsu.edu/agecon/

- NDSU Center for Social Research
  https://www.ndsu.edu/csr/
  https://www.ag.ndsu.edu/agecon/research-extension-centers
  http://ageconsearch.umn.edu/

- North Dakota Compass
  http://www.ndcompass.org/

- North Dakota Kids Count
  http://www.ndkidscount.org/

- Vision West
  http://www.visionwestnd.com/

- North Dakota Job Service: North Dakota's Oil and Gas Economy
  https://www.ndworkforceintelligence.com/gsipub/index.asp?docid=578

- Census on the Map
  http://onthemap.ces.census.gov/

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