

Minutes of the
EMPOWER NORTH DAKOTA COMMISSION

January 19, 2016
Basin Electric
1717 East Interstate Avenue
Bismarck, ND

Members present:

Al Anderson, Mike Rud, Jay Skabo, John Weeda, Jason Bohrer, Ron Day, Ron Ness, Dale Niezwaag, David Straley, Kathy Aas for Mark Nisbet

Ex Officio Members:

Julie Voeck, Sandi Tabor, Mark Bring, Wade Boeshans for Margaret Hodnik

Others present:

Justin Dever, Department of Commerce
Mike Fladeland, Department of Commerce
Sherri Frieze, Department of Commerce
Andrea Pfennig, Department of Commerce
Kevin Iverson, Department of Commerce
Emily McKay, BSC
Justin Kringstad, NDPA
Tyler Hamman, LEC/ND Transmission Auth.
Vicky Steiner, NDAOGPC
Brent Sandord, City of Watford City
Dave Glatt, Healthy Dept.
Andrea Boe, AE2S
Steve Burian, AE2S
Jean Schafer, Basin Electric
Deana Wiese, ND Ethanol Council
Karlene Fine, Industrial Commission
Carlee McLeod, Utility Shareholders of ND
Cory Fong, Odney Advertising
Lacey Anderson, Odney Advertising
Warren Enyart, M-Power
Rick Thompson, M-Power
Steve McNally, Hess Corp
Levi Andrist, GA Group
Todd Kranda, Kelsch Law Firm

CALL TO ORDER/WELCOME

Chairman Anderson called the meeting to order at 10:00 a.m. and welcomed Commission members and guests.

APPROVAL OF MINUTES

A motion was made by Weeda and seconded by Day to approve the minutes of December 14, 2015. Motion carried unanimously.

**Spotlight on Energy Document
Emily McKay**

Emily talked about timelines needed to get the "Spotlight on Energy" document updated and printed. Email notification will be sent to the industry folks and commission members in the next week, asking for updates to sections in the document regarding maps, statistics and projects. The rough draft to be completed the middle of March, sent to the printer the beginning of April and ready for distribution the end of April.

**Pipelines and Natural Gas Processing
Justin Kringstad**

Justin talked about the current modes of oil transportation, flaring, oil prices and increased costs for oil companies.

The majority of oil transportation by rail is to the East Coast, followed by the West coast, Pacific NW and the Gulf. ND will experience a decrease in oil transportation out of ND for the next two to four years. McKenzie and Mountrail counties have the most pipeline transportation vs. truck transportation.

There has been some reduction in flaring, but pipeline wells still do not have the capacity to move natural gas to the processing plant.

[Appendix A](#)

**Transmission Authority
Tyler Hamman**

Tyler talked about project updates such as the CapX 2020, Minnkota Power Cooperative., Basin Electric Power Cooperative Western ND, as well as 2015 legislative session bills, and the Clean Power Plan.

[Appendix B](#)

**North Dakota Census
Kevin Iverson**

Kevin talked about ND population changes from 1970 to current; noting the population of ND has steadily grown younger since 2010, with births outnumbering deaths.

Every county in ND from 2010 to 2014 has had increased population in the 20 to 34 age range.

The greatest population growth has been in the Fargo region; followed by Williston, Bismarck, Minot and Dickinson, with migration levels the greatest in the Williston region.

Appendix C

Western ND Core Cities Impacts Forecasting Analysis
Vicky Steiner

Vicky talked about significant demands for services and infrastructure in the coming years for the Western ND cities. Recently approved, was a \$125,000 analysis that will be used to perform a six year study for six cities; Dickinson, Watford City, Williston, Tioga, Stanley and Killdeer.

The analysis, being conducted by the ND Mineral Resources Department and ND State University, will forecast a roadmap of funding needs. The results will provide critical input to the development of the Governor's 2017-2019 biennium budget and the 2017 legislative session.

The analysis will include Comprehensive Growth Forecasts, Benchmarking Analyses, Staffing Needs Forecasts and Gap Assessments, Operating Expenses Projections, Facility/CIP Needs & Projections, Local Revenue Growth Forecasts and Comprehensive Financial GAP Analyses.

Results from the participating cities will be compiled into a report to the Governor by June 30th, 2016.

Appendix D

Building the New Watford City
Mayor Brent Sanford

Mayor Sanford talked about community planning since 2010 and what changes have taken place. A City Engineer and City Planner were hired in 2010 to conduct a five year Capital Improvements Plan to identify and prioritize the infrastructure needed to handle the potential growth

Infrastructure deficiency has been the central challenge. Funding to support infrastructure expansion is provided by the community, the State and developers.

Appendix E

Valley Prosperity Partnership
Steve Burian

Steve Burian talked about the background of the Valley Prosperity Partnership, identifying collaborative, actionable economic development initiatives that are to be implemented within five years in the Red River Valley region.

Goals were identified with 6 priorities; 1) Attract, develop and retain talent, 2) Ensure water security and management, 3) Expand research capacity & relevancy, 4) Accelerate entrepreneurial activity & output, 5) Invest in critical infrastructure development and capital improvement projects, 6) Define & improve the internal & external perceptions of the Valley.

Appendix F

Waters of the United States (WOTUS) and the Clean Power Plan (CPP)
Dave Glatt

Dave Glatt gave a background of the Clean Water Act also known as WOTUS. The act is designed to protect the quality of surface water throughout the U.S.

The WOTUS Final Rule was finalized in May 2015 with the intent of clarifying & providing regulatory consistency, defining "jurisdictional waters" more precisely and reducing a case by case analysis.

Glatt also talked about the Clean Power Plan; EPA's plan to reduce carbon dioxide (CO2) emissions from existing fossil fuel-fired power plants. Glatt mentioned that ND has the option to develop our own plan or comply with federal regulation by 2030.

Four public meetings have been held in Williston, Beulah, Bismarck & Fargo with 1,500 people attending the meetings.

Appendix G

FUTURE MEETINGS

The next meeting is planned for March 1st, on the Bismarck State College campus.

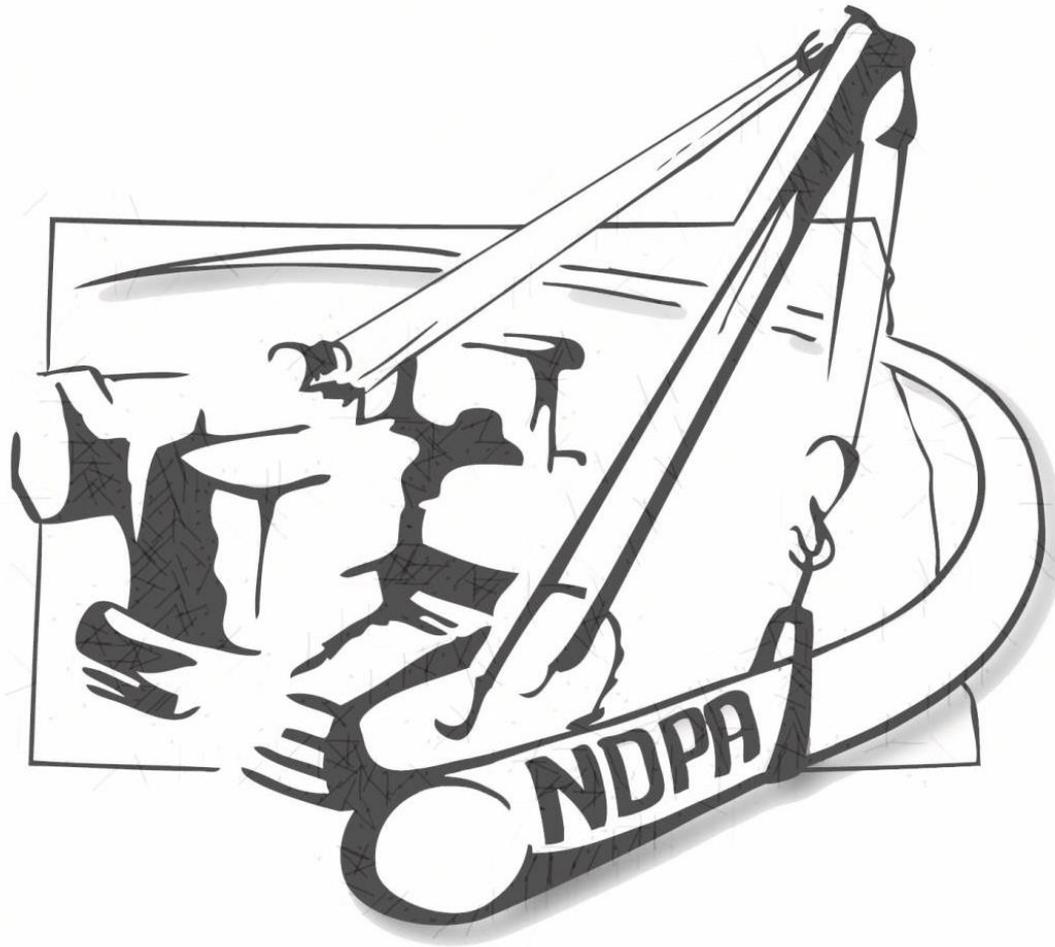
ADJOURNMENT

Al Anderson
Chairman

Date

Sherri Frieze
Recording Secretary

Date



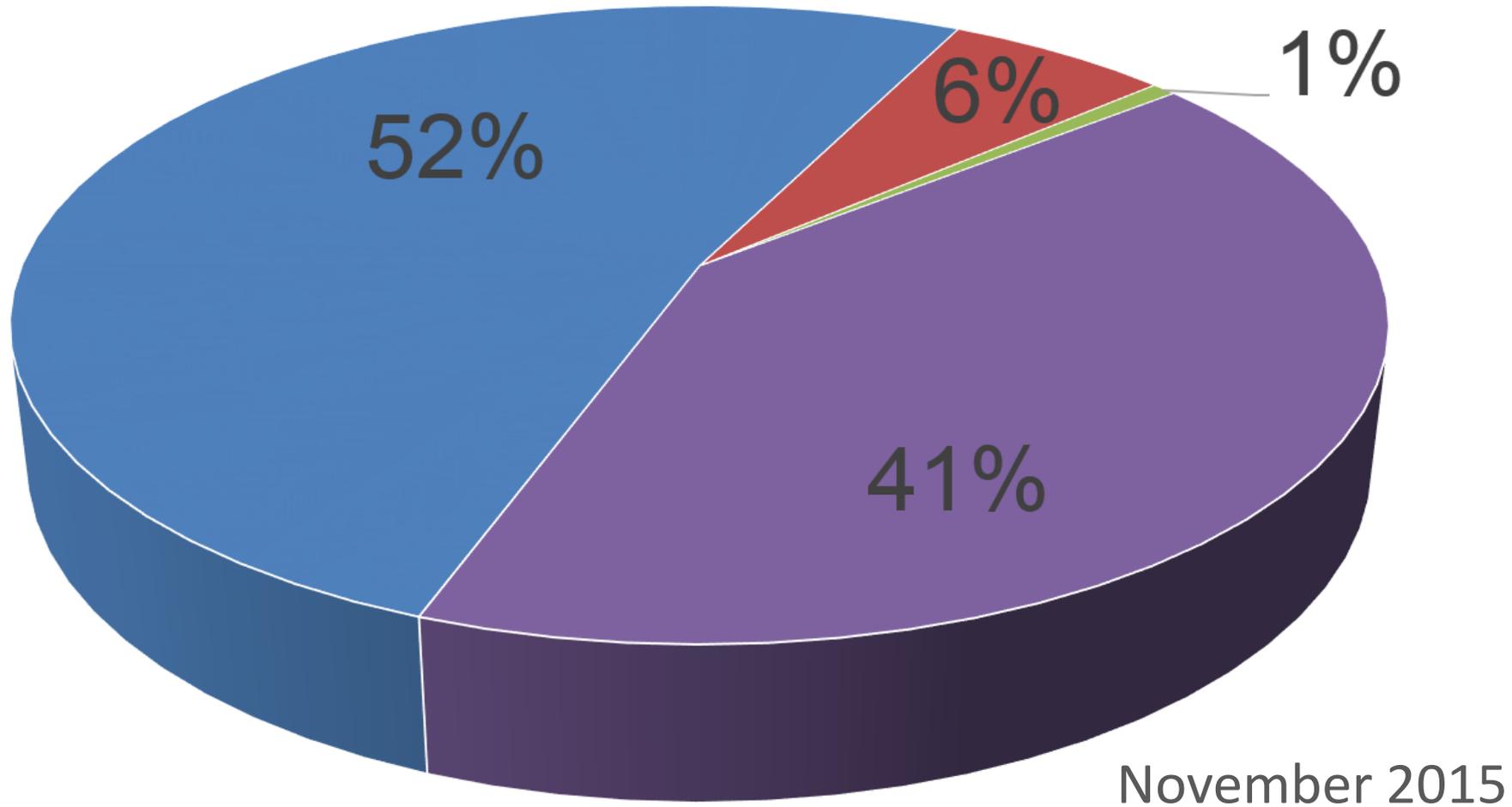
EmPower North Dakota Update

North Dakota Pipeline Authority

Justin J. Kringstad

January 19, 2016 - Bismarck, ND

Estimated Williston Basin Oil Transportation



■ Pipeline Export

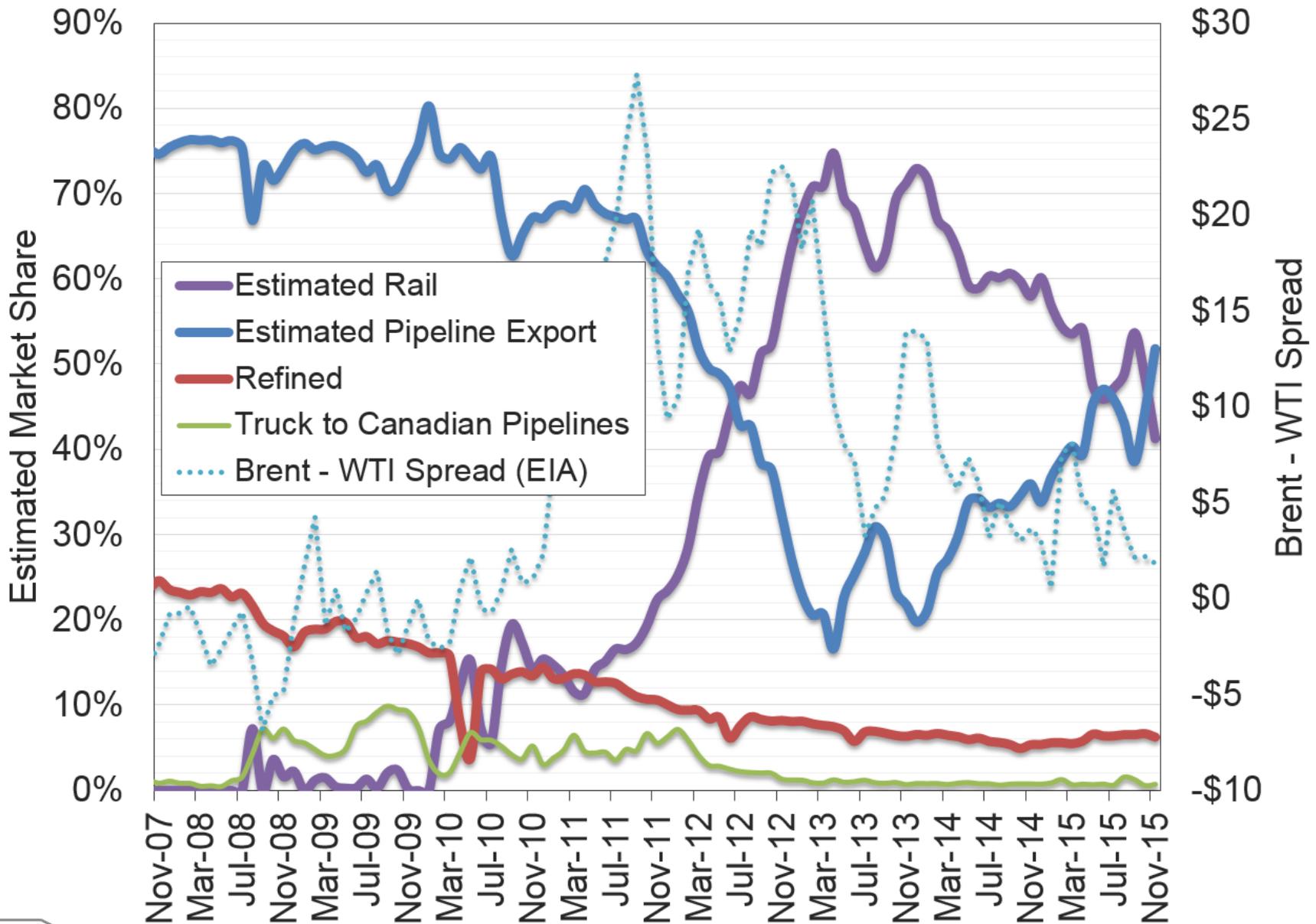
■ Refined

■ Truck to Canadian Pipelines

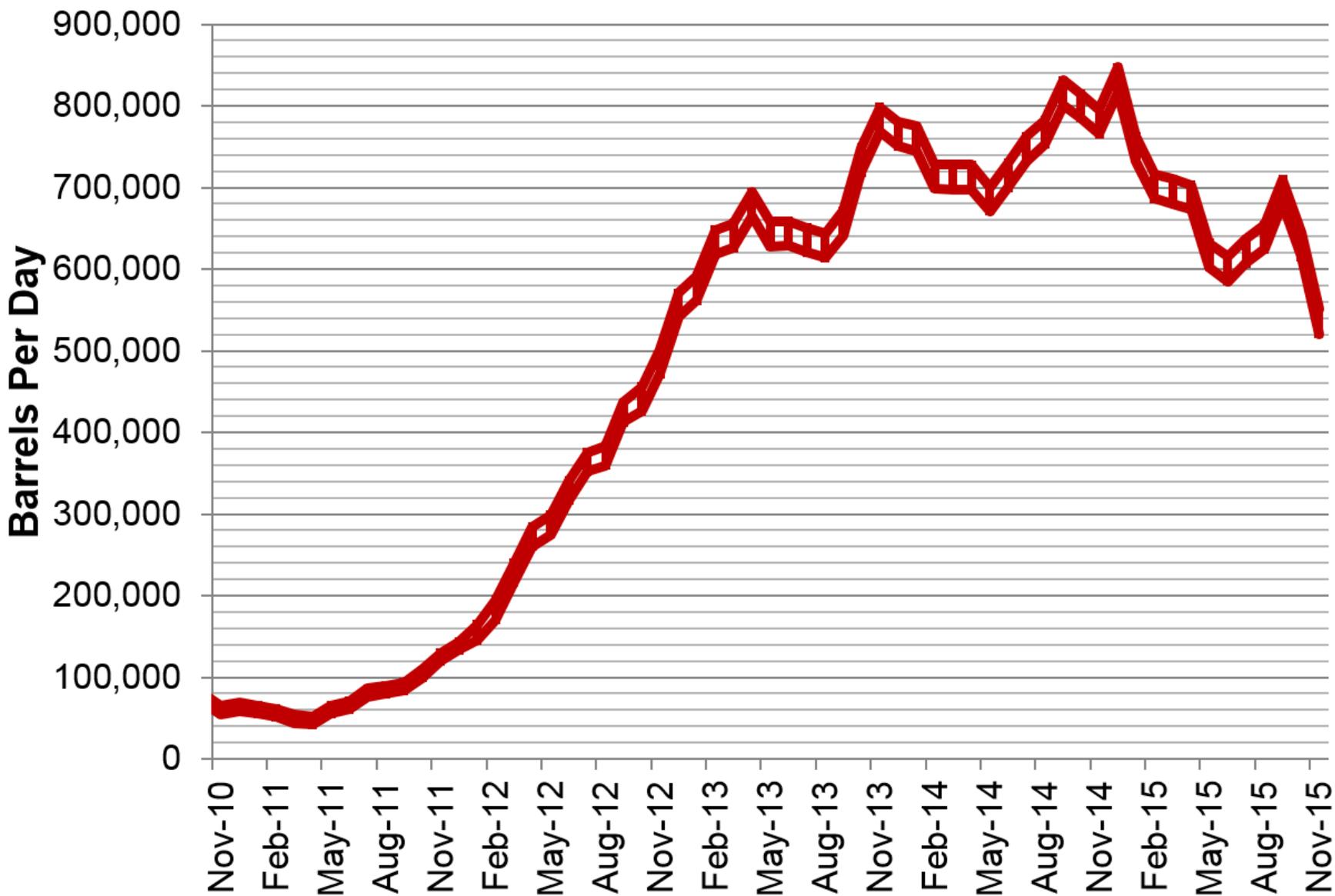
■ Estimated Rail



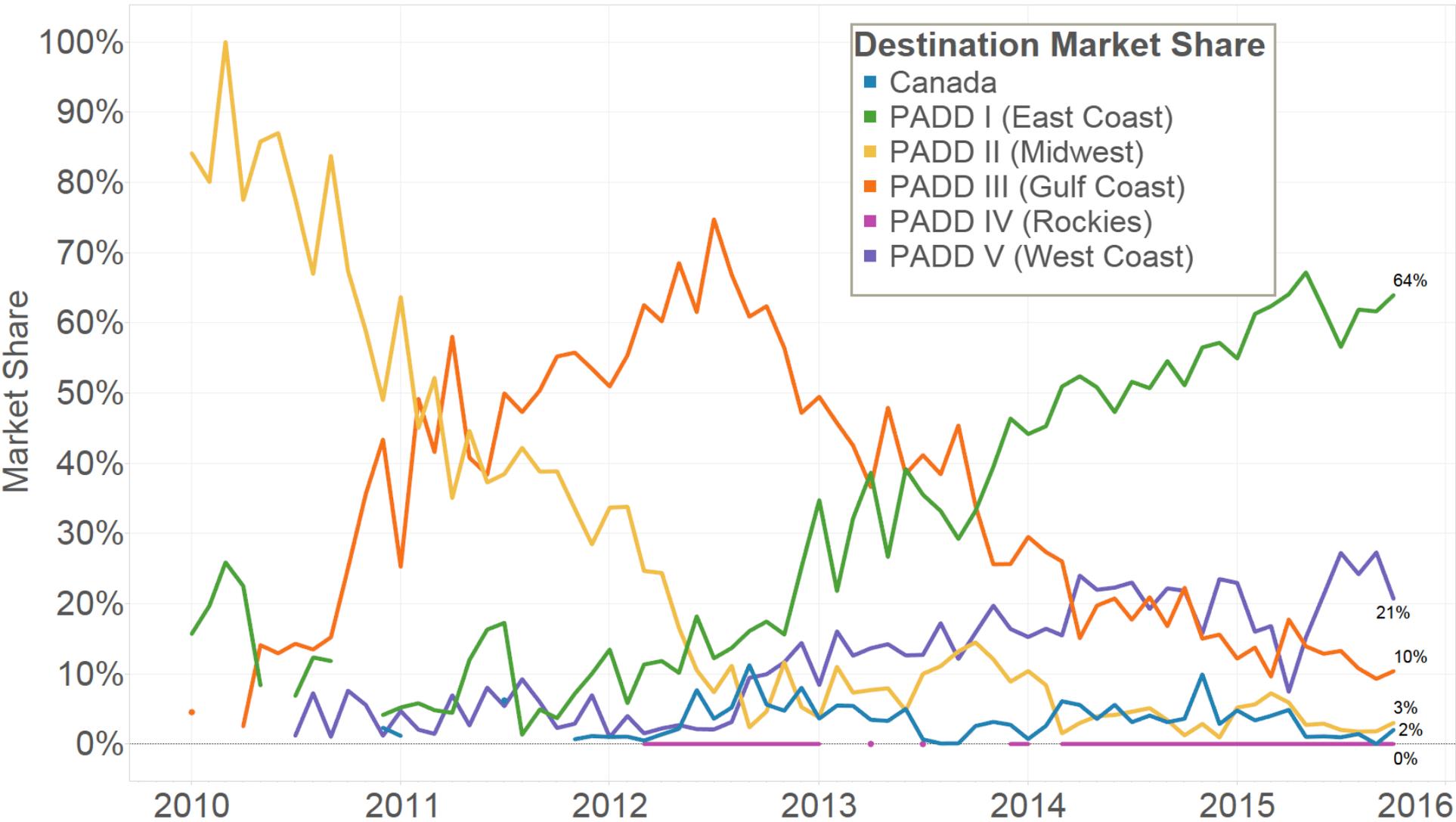
Estimated Williston Basin Oil Transportation



Estimated ND Rail Export Volumes



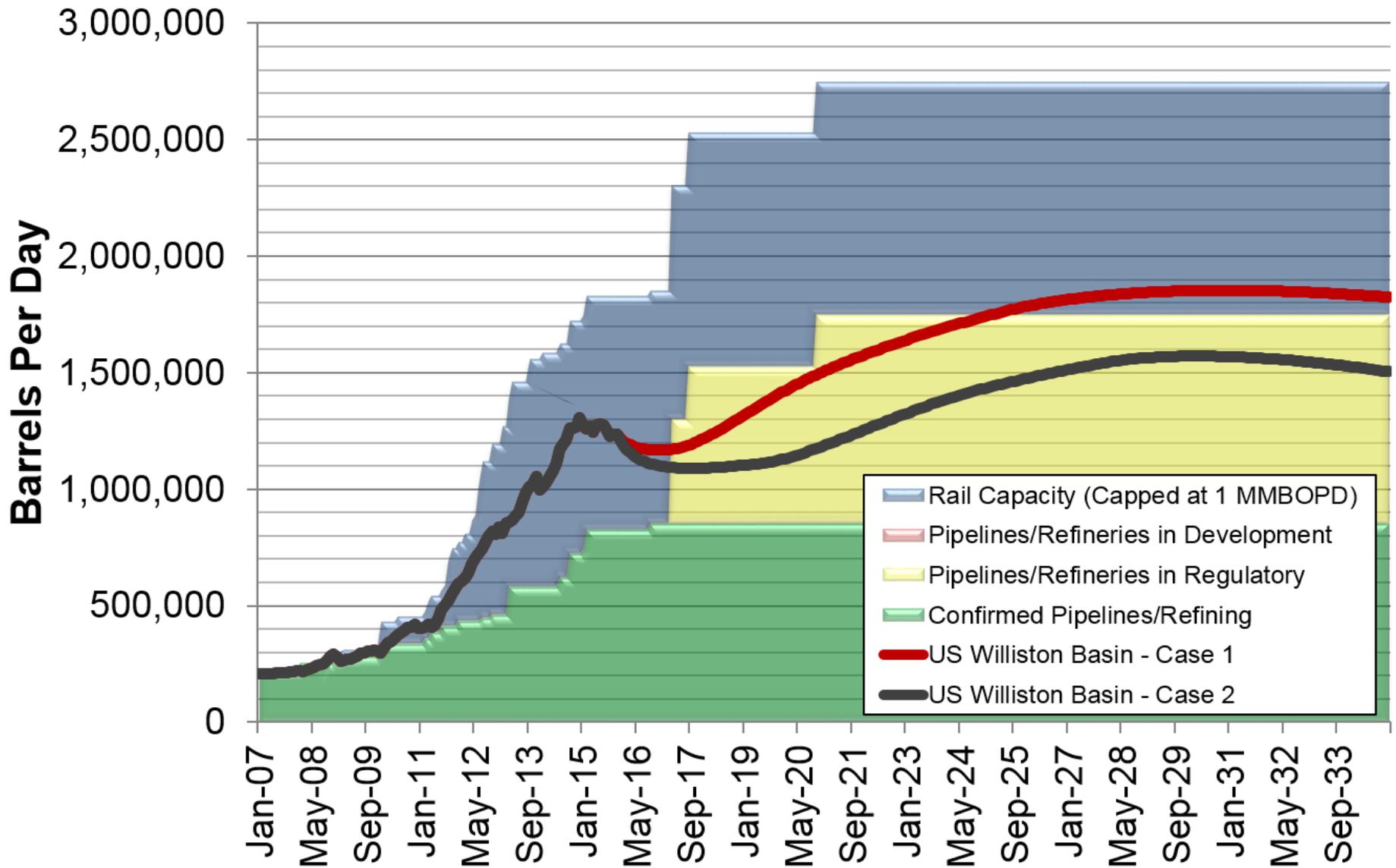
Rail Destinations Market Share (Oct 2015)



Data for Rail Destination Market Share Provided by the US Energy Information Administration



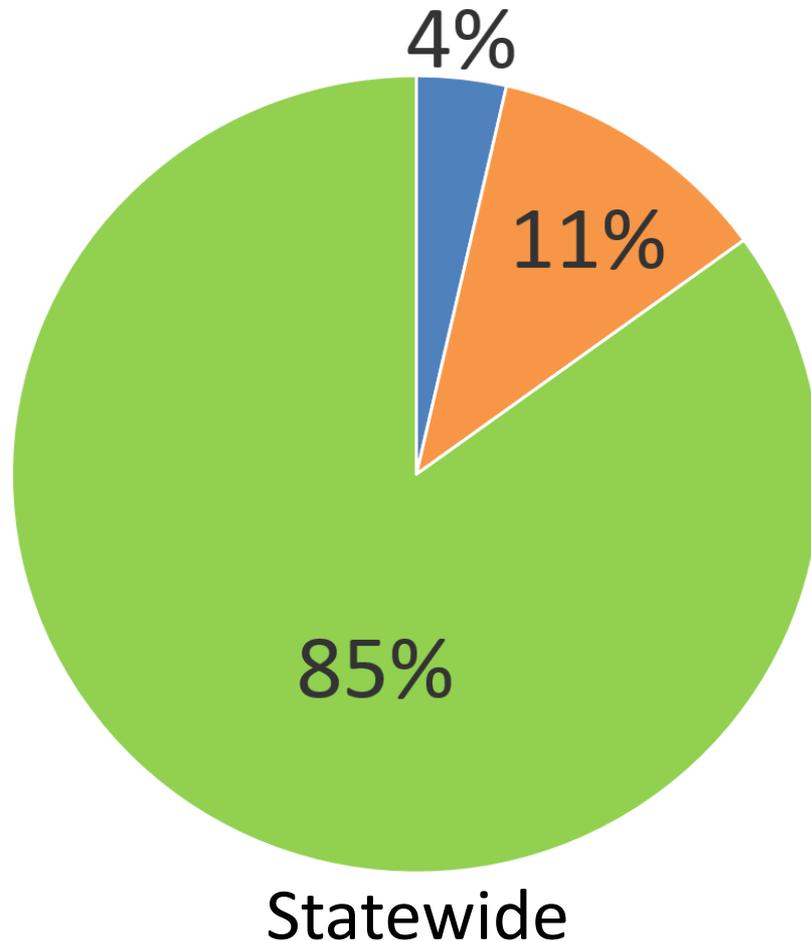
Williston Basin Oil Production & Export Capacity, BOPD



Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.



Solving the Flaring Challenge



GREEN – % of gas captured and sold
Blue – % flared from zero sales wells
Orange – % flared from wells with at least one mcf sold.

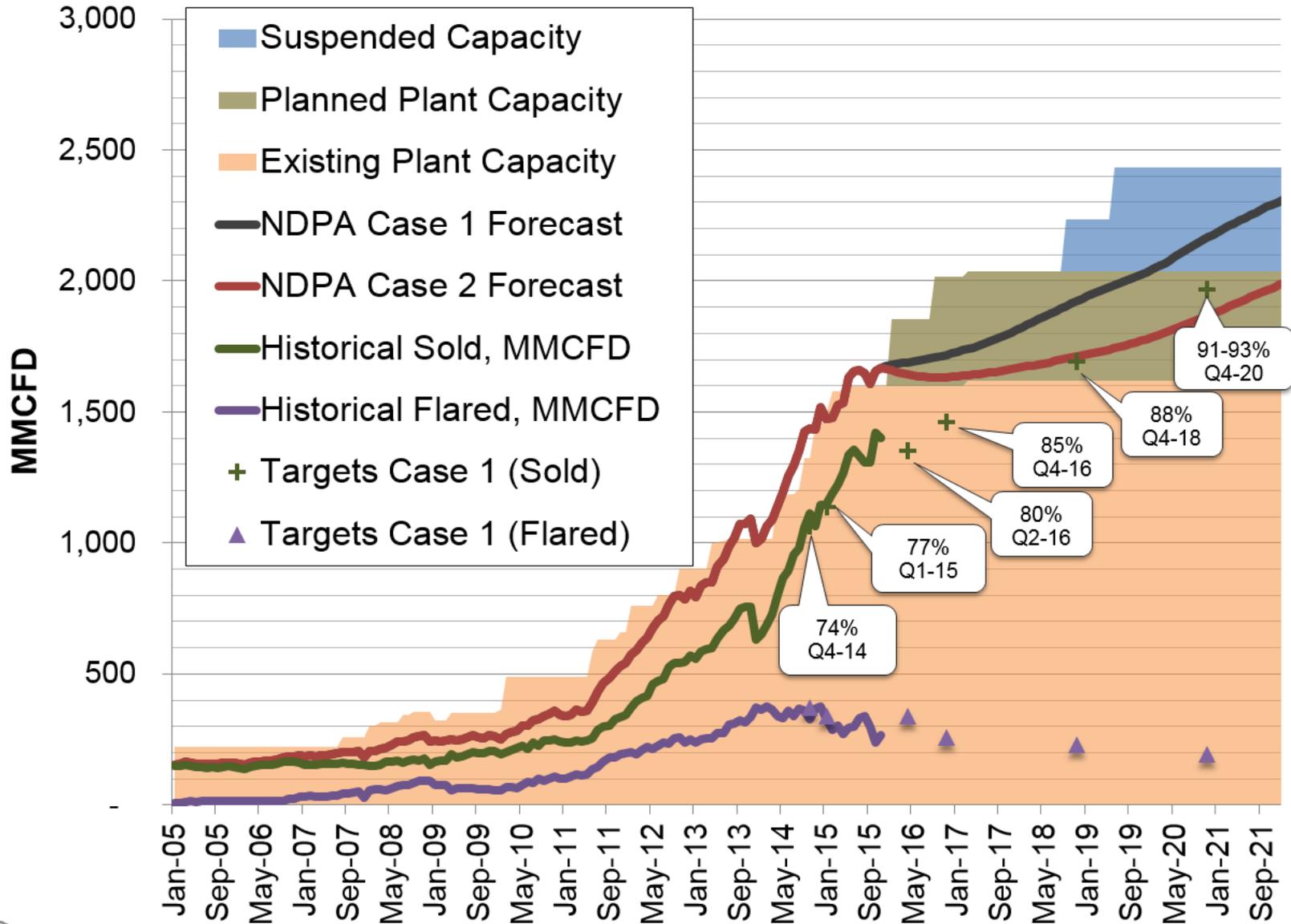
Simple Terms

Blue – Lack of pipelines
Orange – Challenges on existing infrastructure

November 2015 Data – Non-Confidential Wells

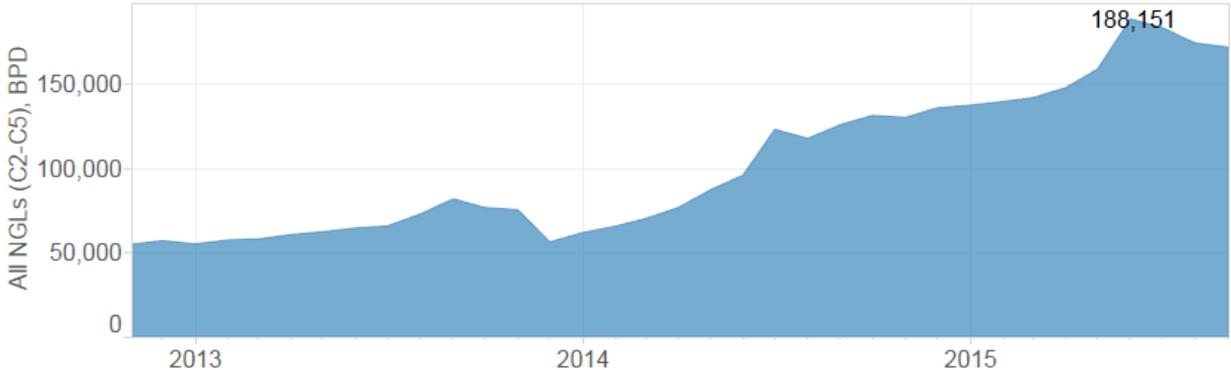


Solving the Flaring Challenge

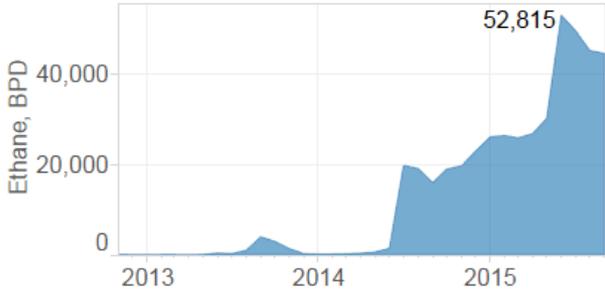


ND Gas Plant NGL Production, BPD Through Sep 2015 - Peak Values Shown

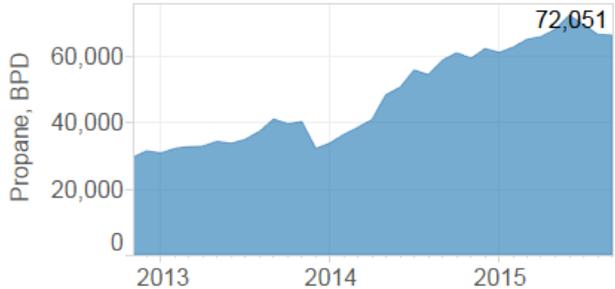
All NGLs



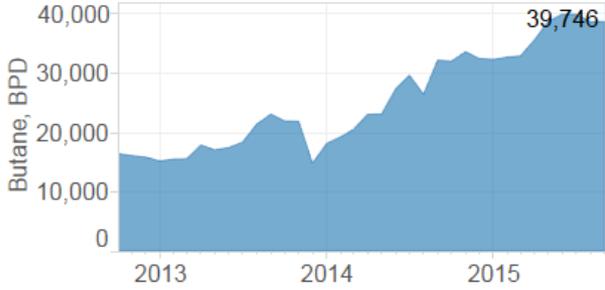
Ethane



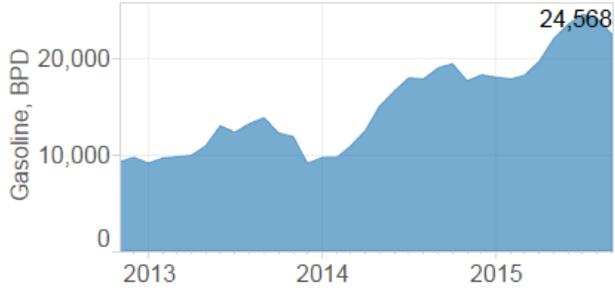
Propane



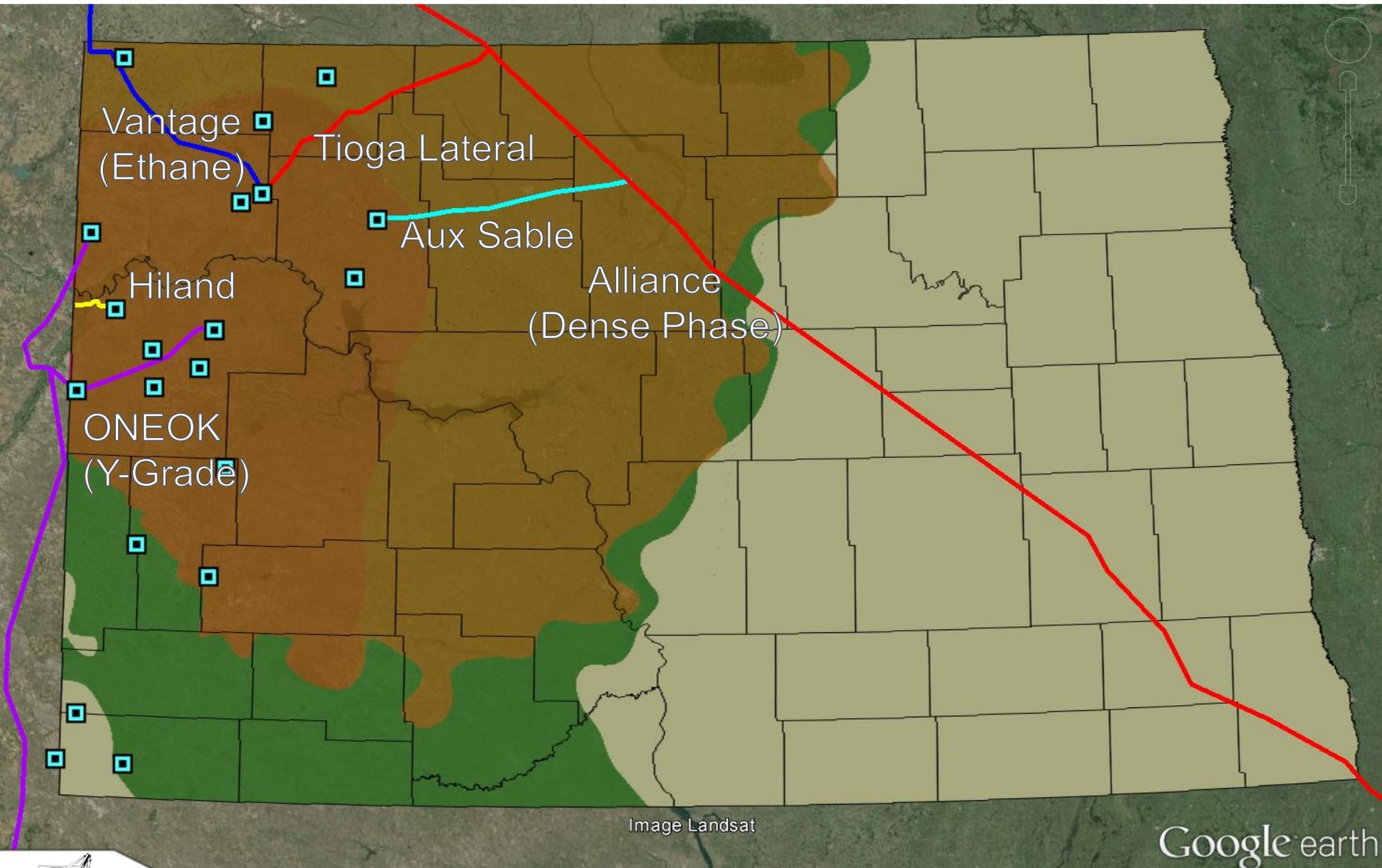
Butane



Natural Gasoline



NGL Pipeline Transportation



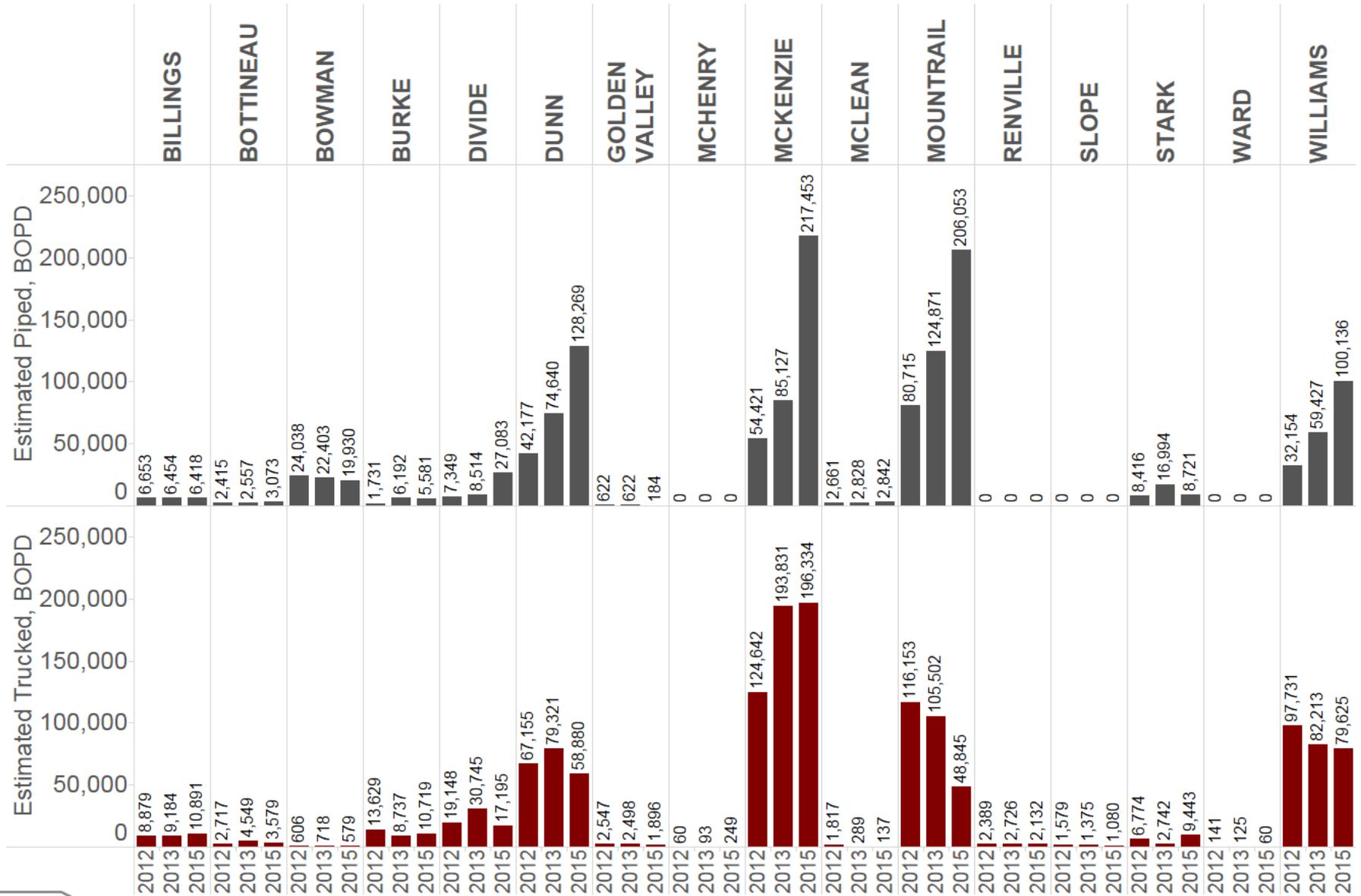
Recent Video Presentations

- Over 3,100 video downloads since Aug-15
- Major topics include:
 - Bakken economics
 - Production insight, trends, and expectations
 - Crude oil gathering

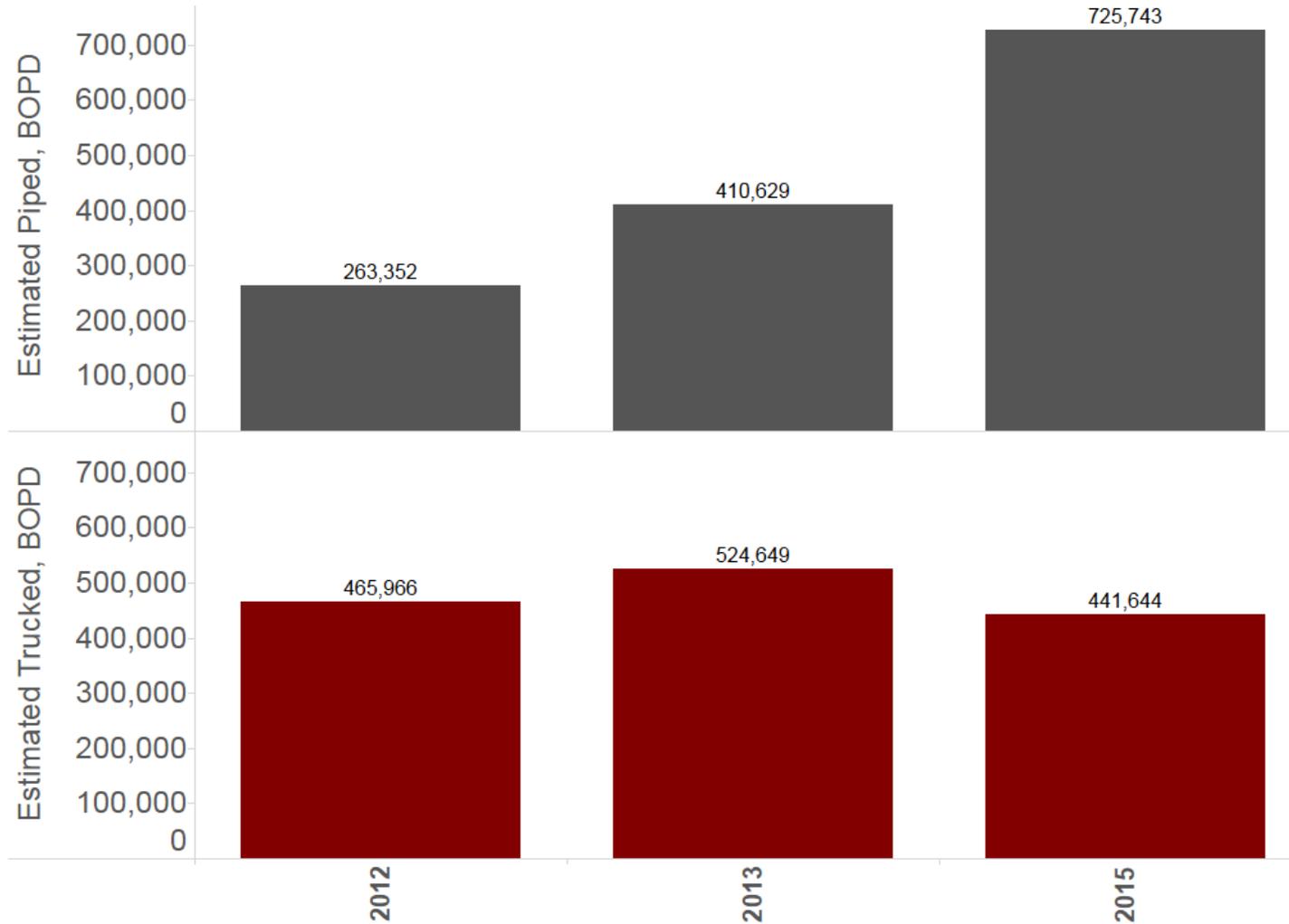
All videos available for replay online



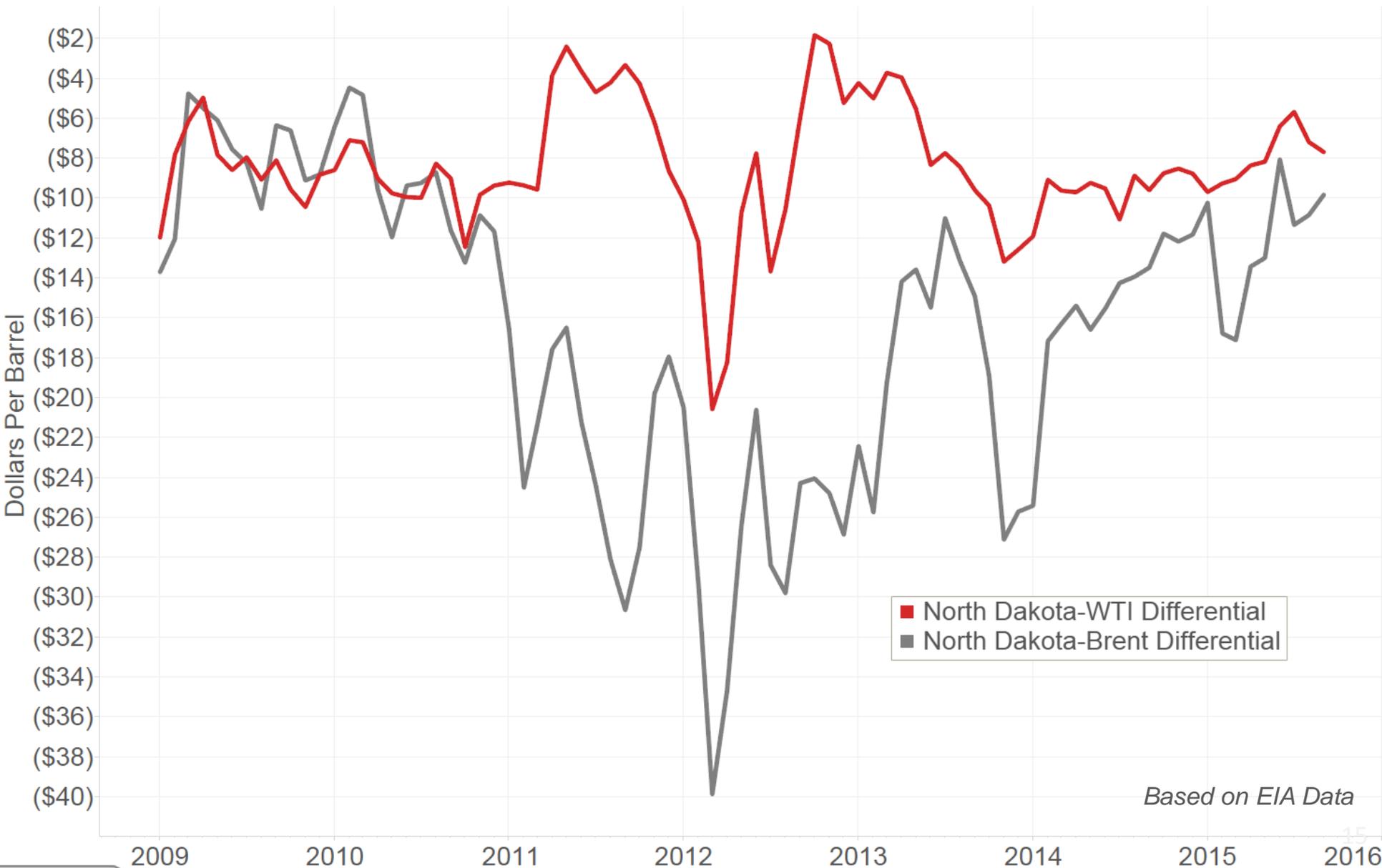
Evolution of Oil Gathering in ND



Evolution of Oil Gathering in ND Statewide Totals



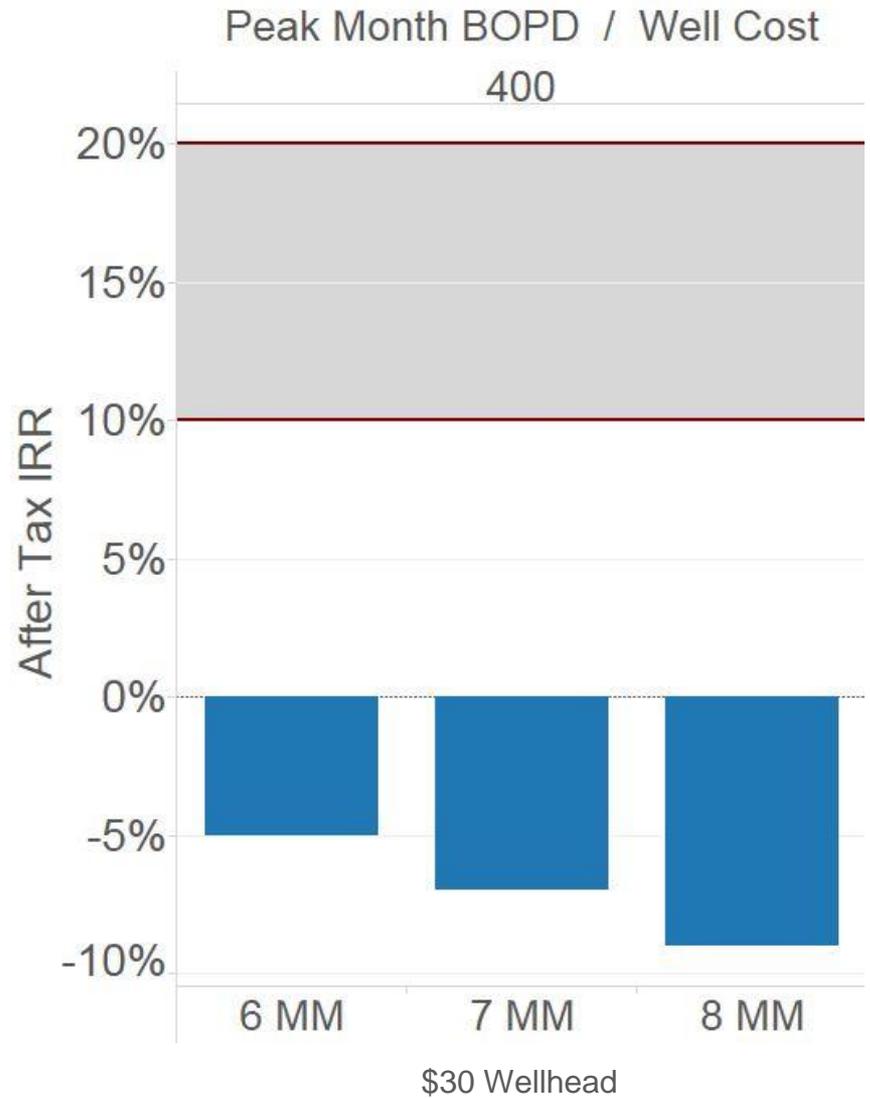
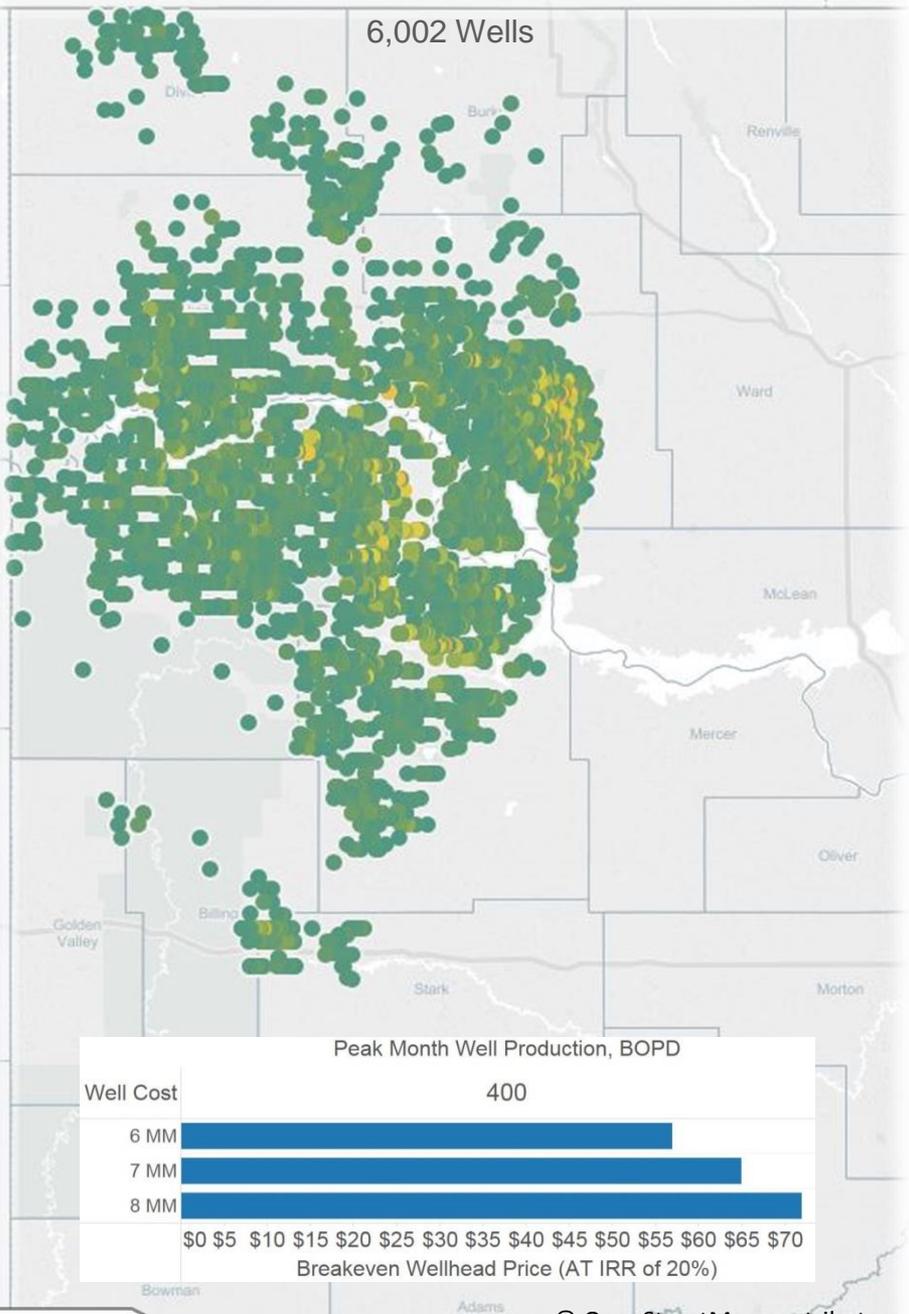
North Dakota Oil Differential



Based on EIA Data

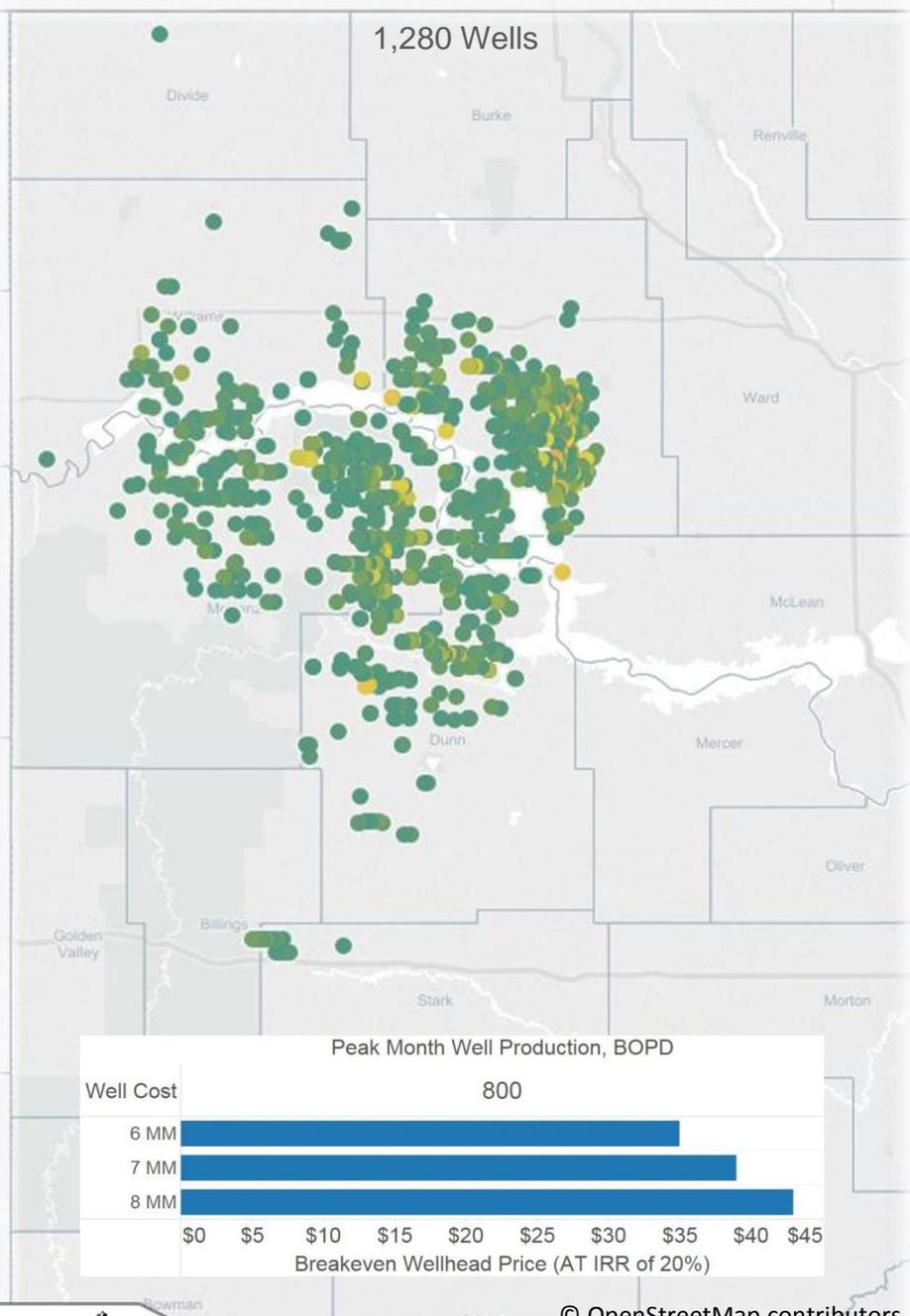
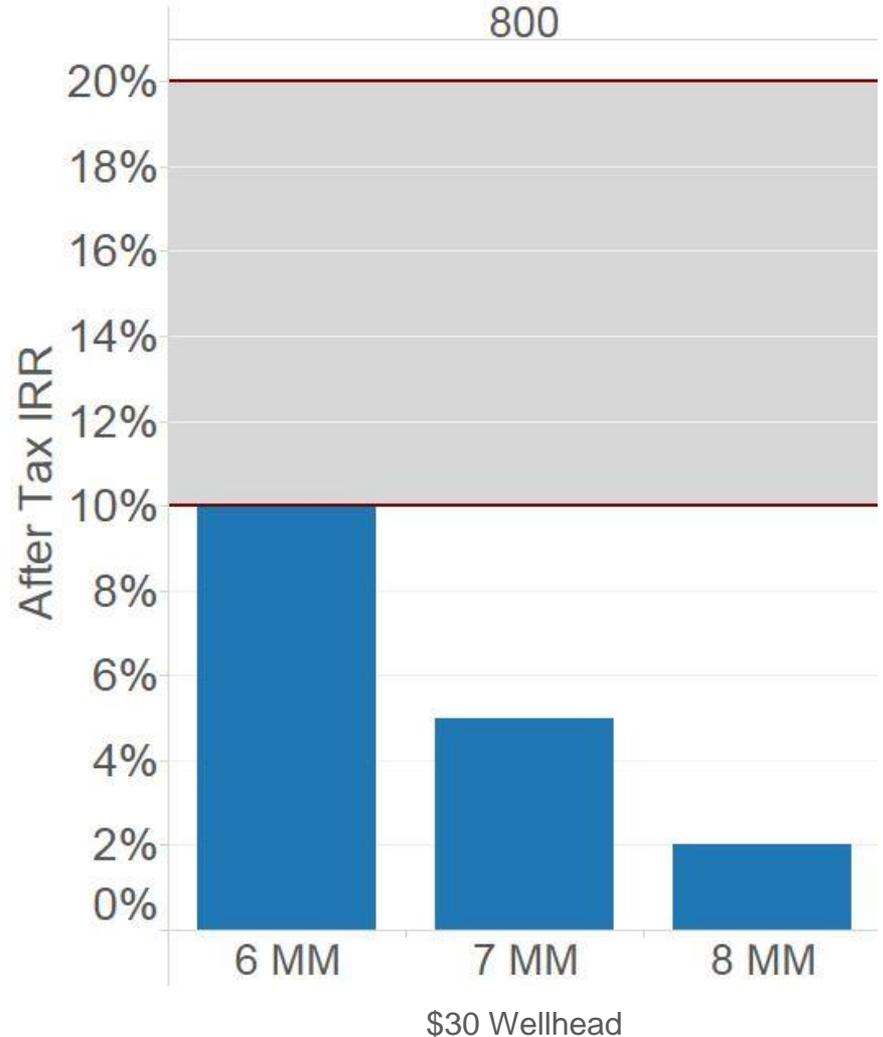


Peak Month Minimum 400 BOPD



Peak Month Minimum 800 BOPD

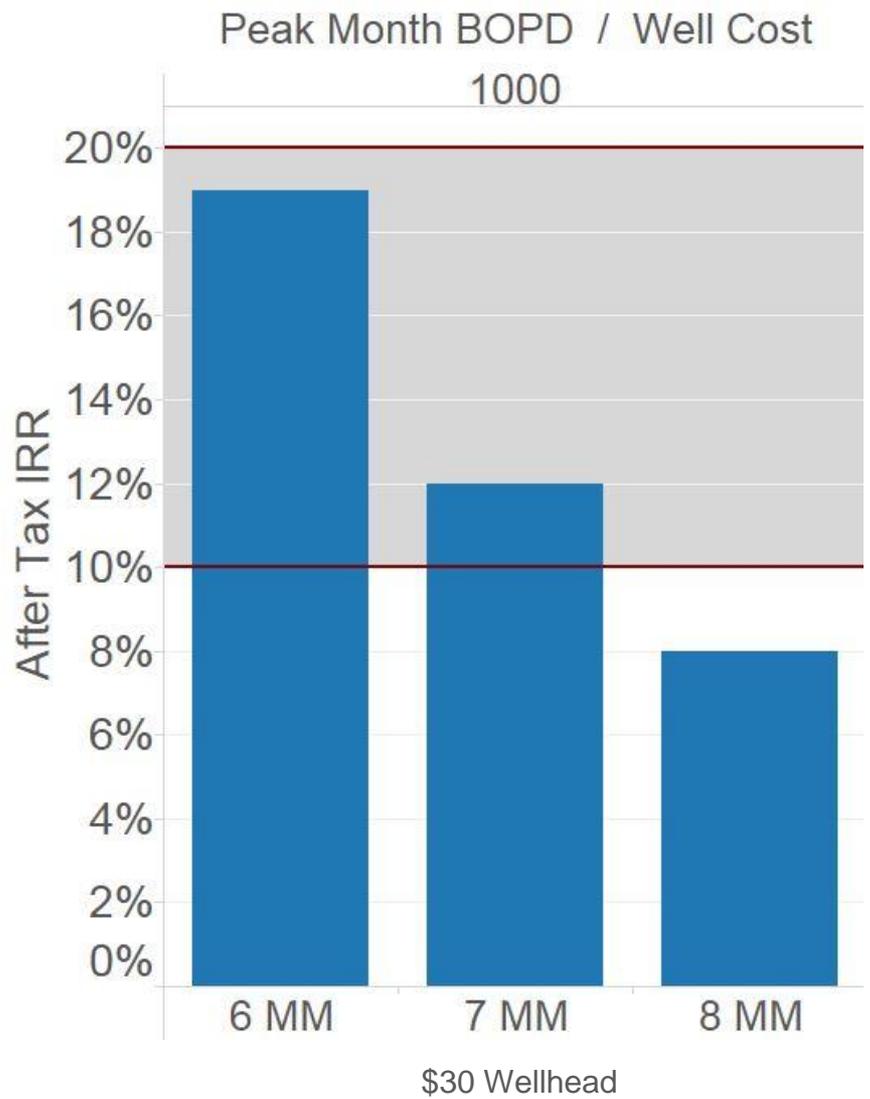
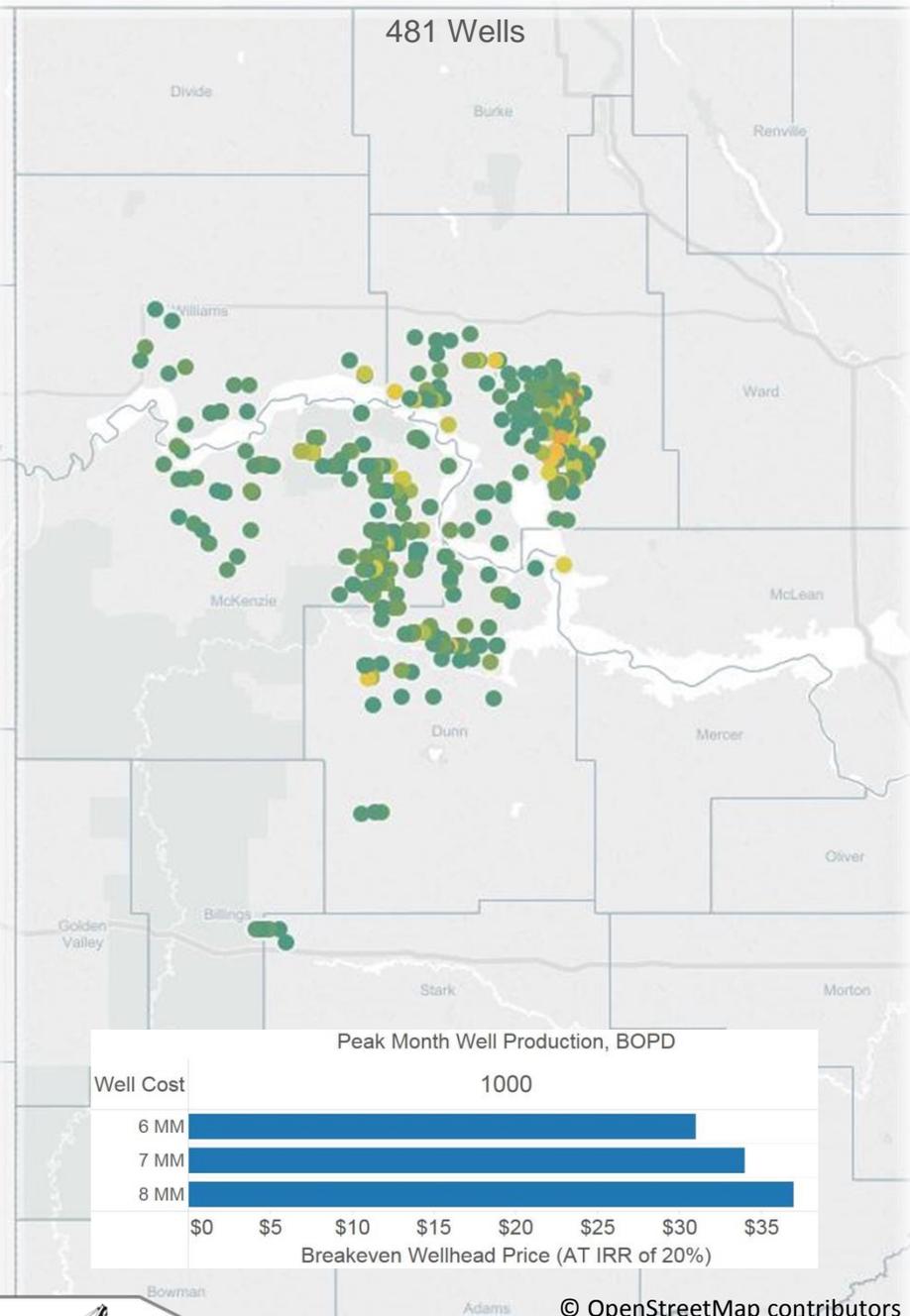
Peak Month BOPD / Well Cost
800



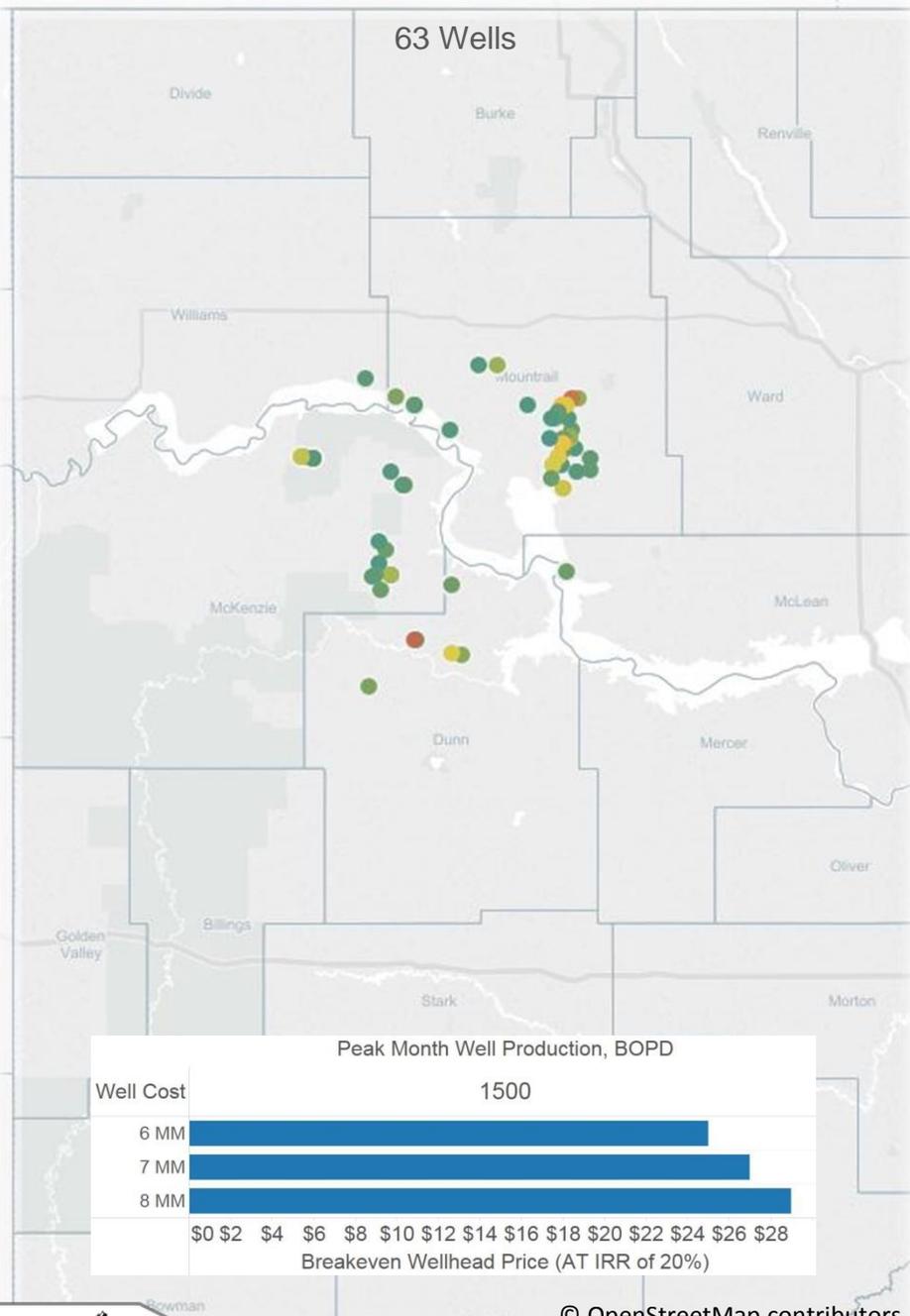
© OpenStreetMap contributors



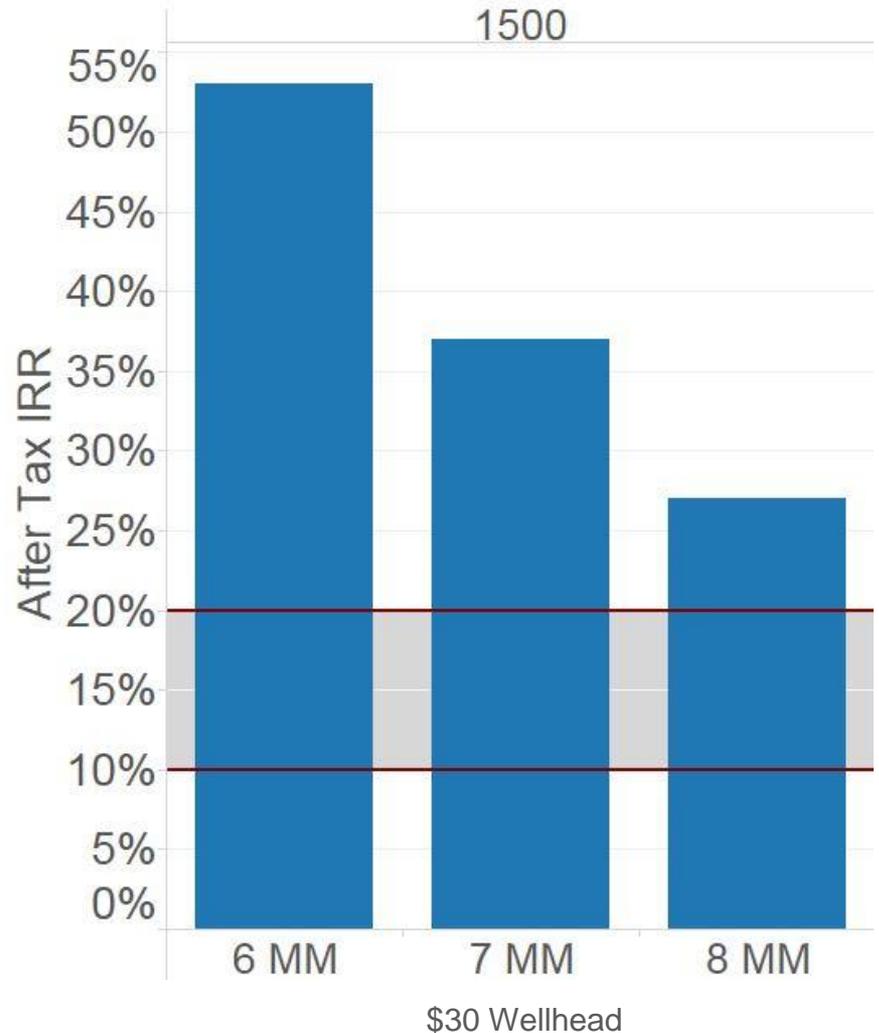
Peak Month Minimum 1,000 BOPD



Peak Month Minimum 1,500 BOPD

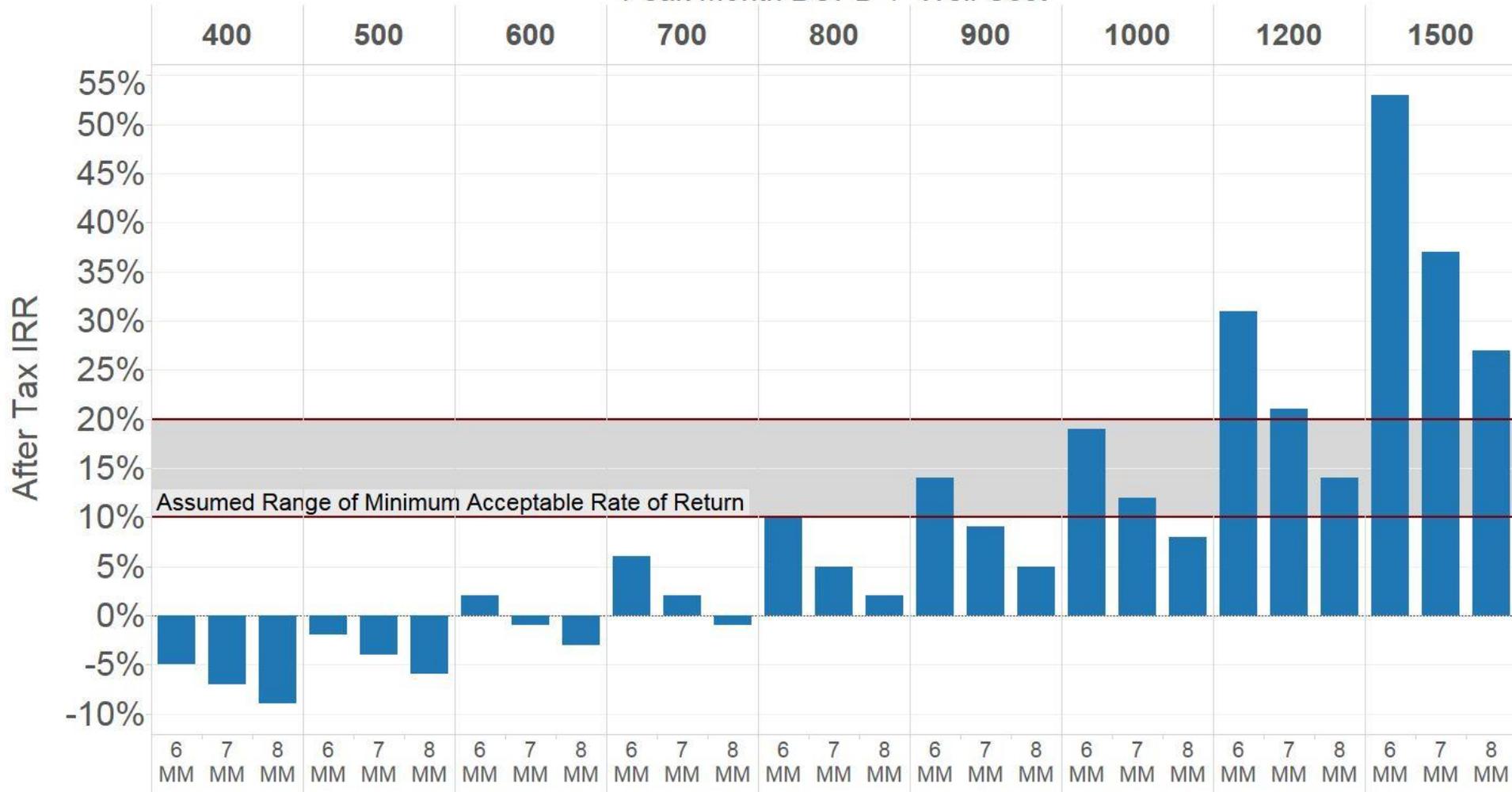


Peak Month BOPD / Well Cost



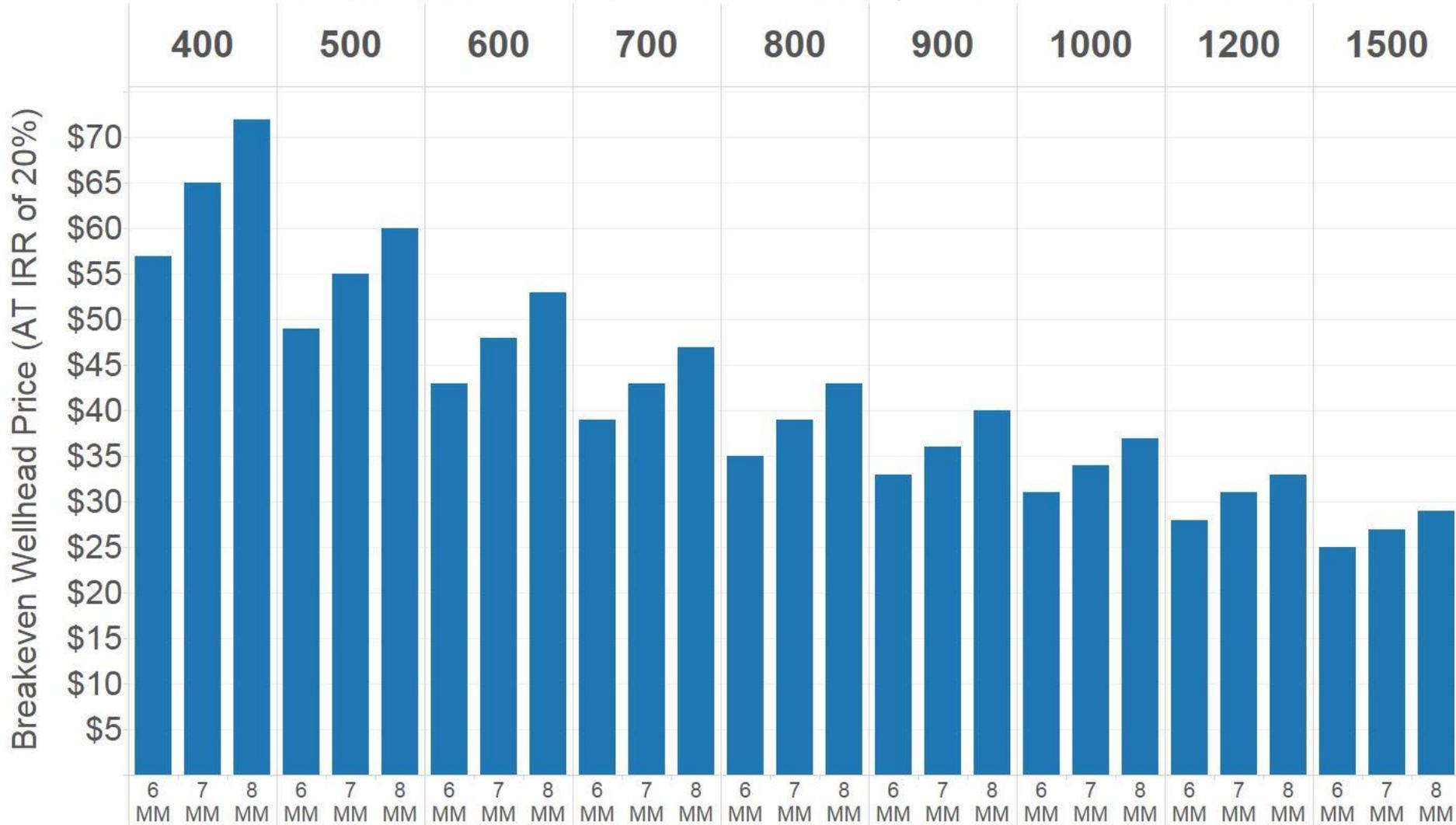
Summary of \$30 Wellhead Oil

Peak Month BOPD / Well Cost



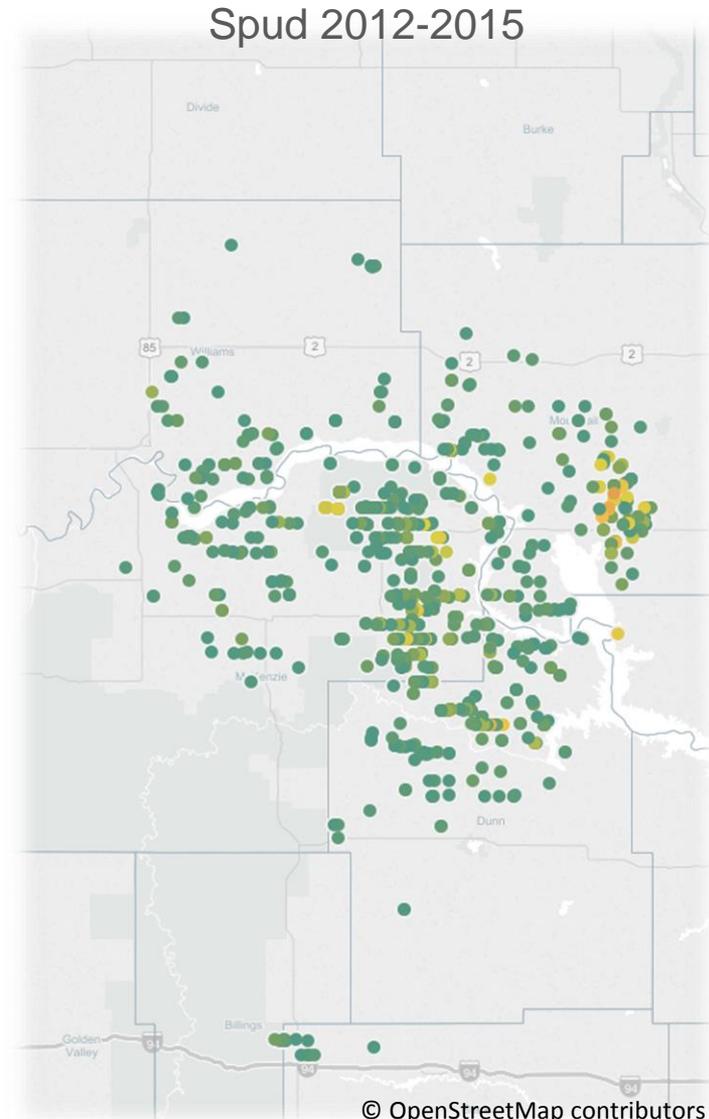
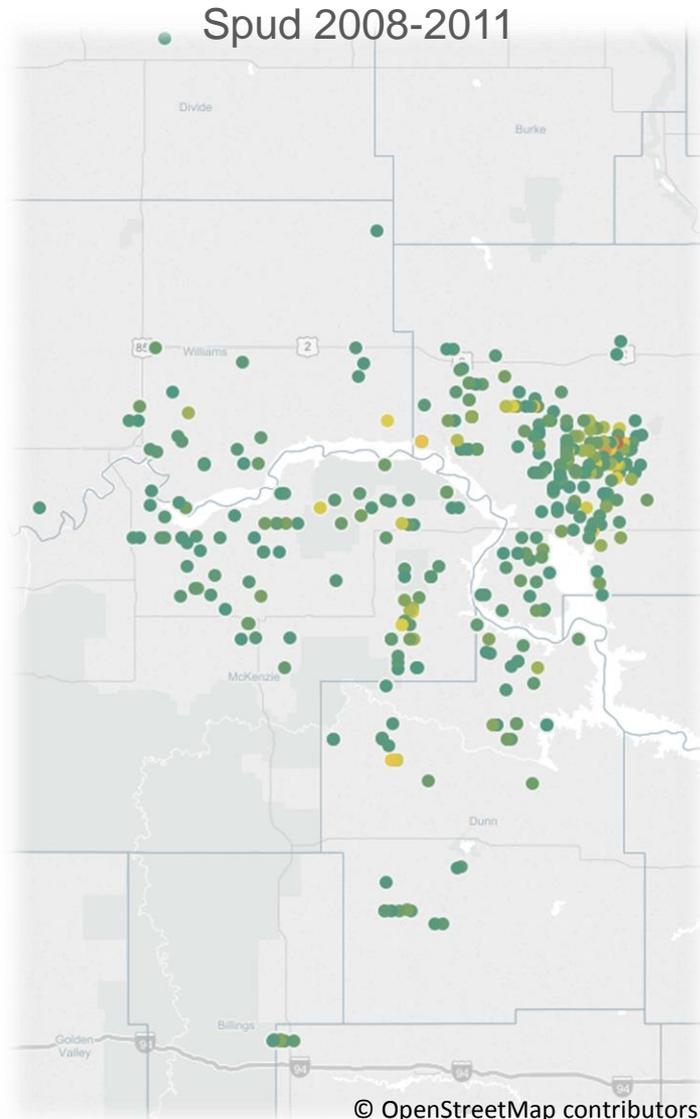
Breakeven Summary

Peak Month Well Production, BOPD / Well Cost



Understanding “The Core” Footprint

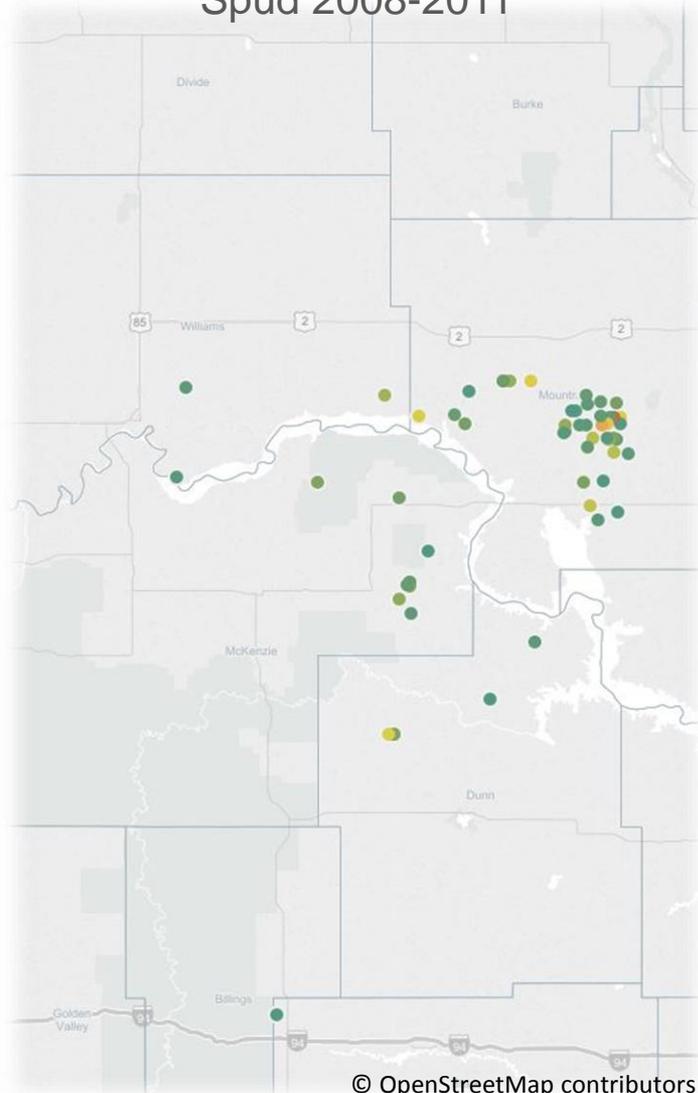
Peak Month Minimum: 800 BOPD



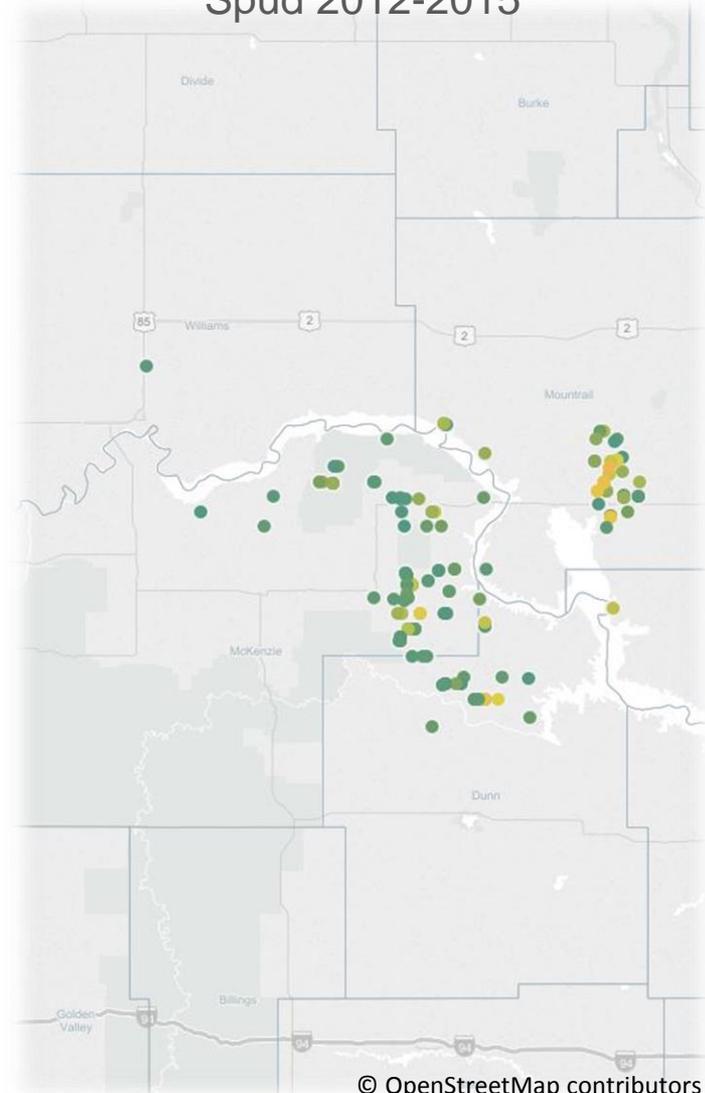
Understanding “The Core” Footprint

Peak Month Minimum: 1,200 BOPD

Spud 2008-2011



Spud 2012-2015



Contact Information

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North Dakota Pipeline Authority

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Fax: (701)328-2820

E-mail: jjkringstad@ndpipelines.com

Websites:

www.pipeline.nd.gov

www.northdakotapipelines.com



**Know what's below.
Call before you dig.**



North Dakota Transmission Authority Update

Presented to the EmPower Commission
January 19, 2016

2014-15 Summary

- Annual Report
 - New transmission brought into service in 2014-15
 - Southwest Power Pool integration brings virtually all of North Dakota under Regional Transmission Organizations
 - Environmental regulations changing the electric power landscape

Project Updates

- CapX 2020
 - Fargo-Monticello 345kV line, placed into service on April 2nd
 - Brookings County-Hampton line, placed into service on March 26th
 - Remaining projects expected to be complete by 2017

Project Updates

- Center to Grand Forks Line
 - Placed into service in August 2014
 - 250 miles, longest line in state history that begins and ends within the state
 - \$353 million, largest capital investment in Minnkota's history

Project Updates

- Basin Western North Dakota Project
 - Construction begun on 200 mile AVS-Neset line
 - 140 miles complete and energized as of December 2015
 - Remaining segments complete by 2017

2015 Legislative Session

- HB 1382 – Provided for a right of first refusal for the construction of transmission lines for cooperatives, and other utilities. Allows incumbent ND utilities the right to construct and operate transmission facilities that are deemed necessary by an RTO
- HB 1432 – Established Federal Environmental Law Impact Review Committee to review federal regulations – i.e., Waters of the U.S. – that will impact construction of transmission
- SB 2372 – Legislative study of Clean Power Plan

NDTA continues to explore and discuss potential issues for the 2017 legislative session to facilitate transmission construction, as well as operation and maintenance of existing lines

What's on the Horizon

Clean Power Plan

- If rule stands as-is, will require significant buildout of new, renewable generation, numerous issues remain to be seen with impacts on transmission grid
- NDTA will work with MISO and SPP in the process of analyzing impacts on regional transmission
- Near-term analysis estimates up to \$100 billion in compliance costs to replace more than half of coal-fired generation in MISO.

Other News...

- Upper Great Plains Wind Energy Final Programmatic EIS
 - Analyzed impacts and mitigation for construction and installation of wind turbines and infrastructure across six-state region (IA, MN, MT, NE, ND, SD)
- Mountrail Williams Electric Cooperative joins SPP
- Awaiting Supreme Court Decision on FERC Order 745 (Demand-Response)
- MTEP15
 - Recommends 345 projects totaling \$2.75 billion, \$922 million for MISO West

North Dakota[®]

LEGENDARY

North Dakota Demographics Presentation To EmPower ND

Kevin Iverson, Census Office Manager
328-5385

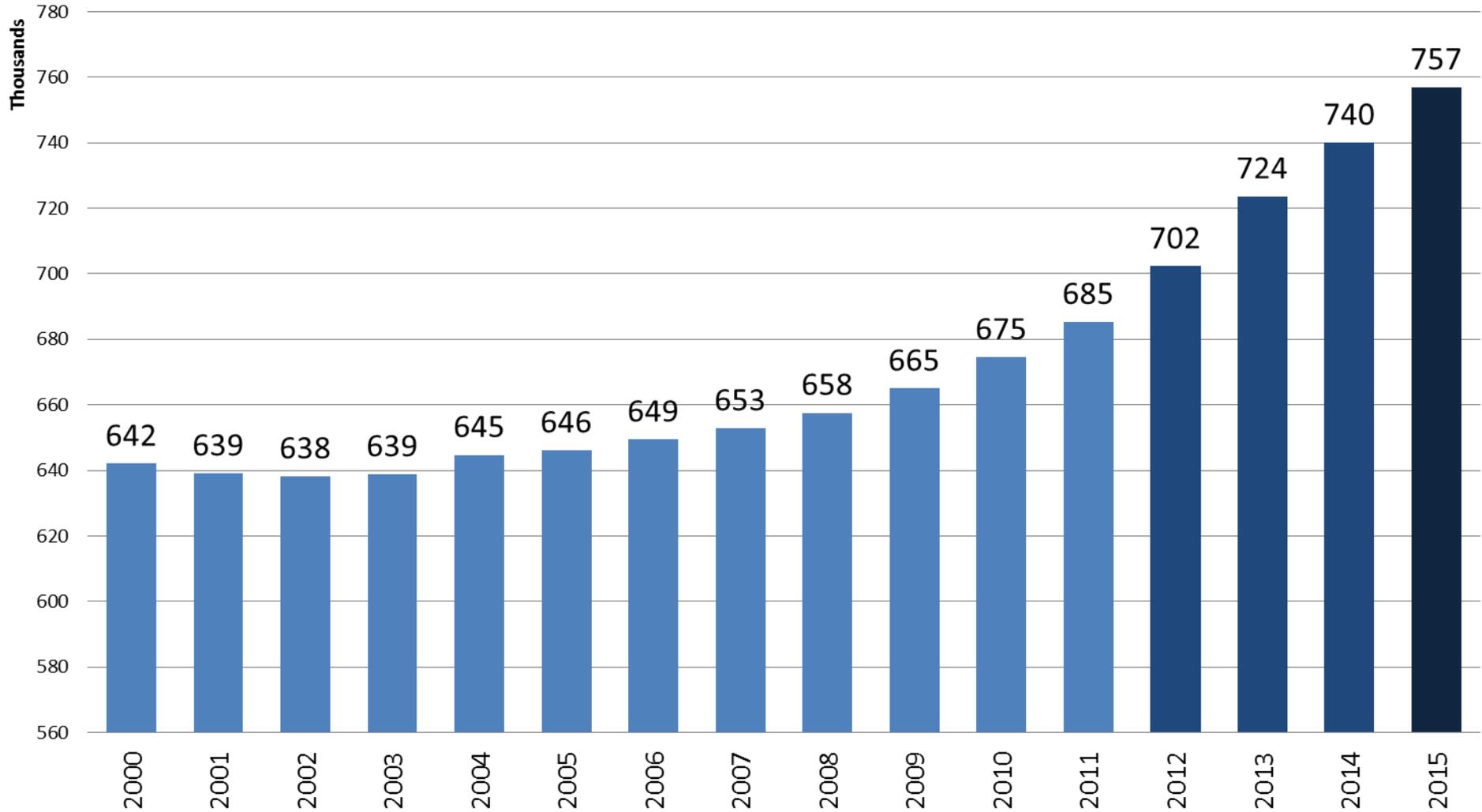


North Dakota

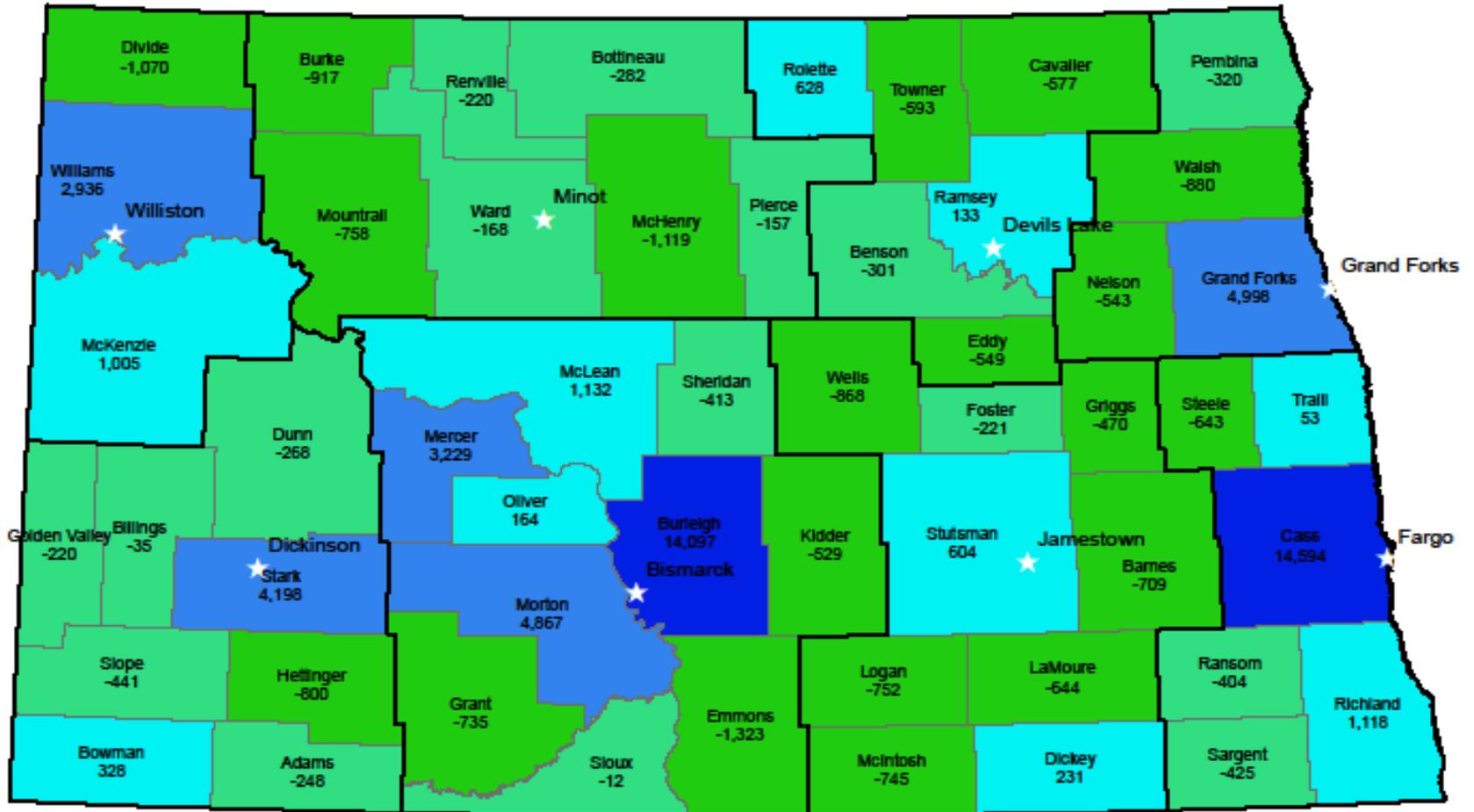
Estimate Annual Population

Since 2000

(In Thousands)



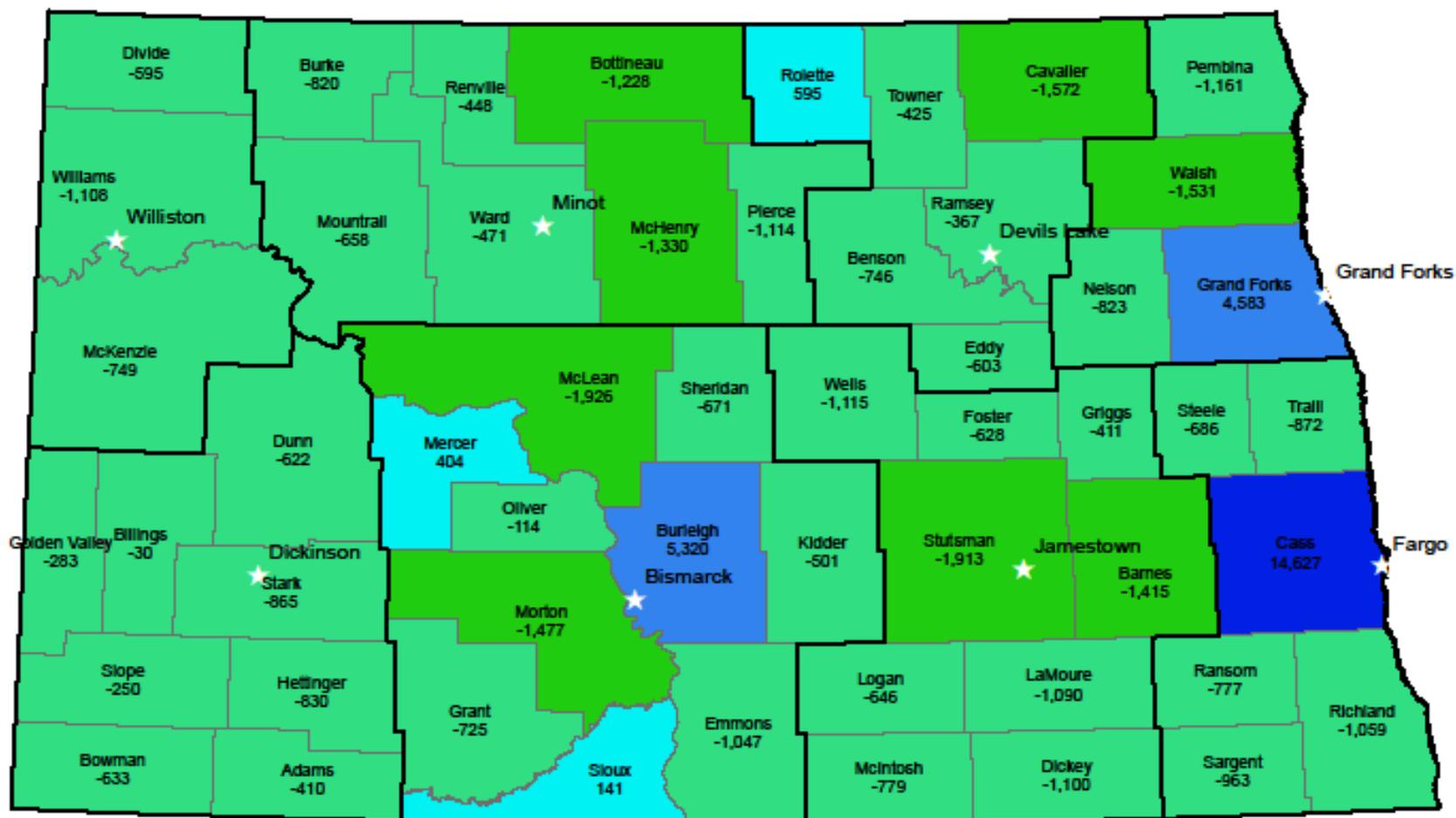
CHANGE IN POPULATION BY COUNTY 1970 to 1980



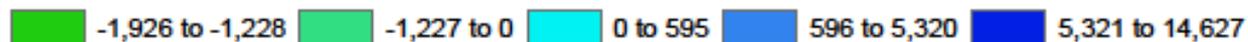
Change in Statewide Population: 34,956



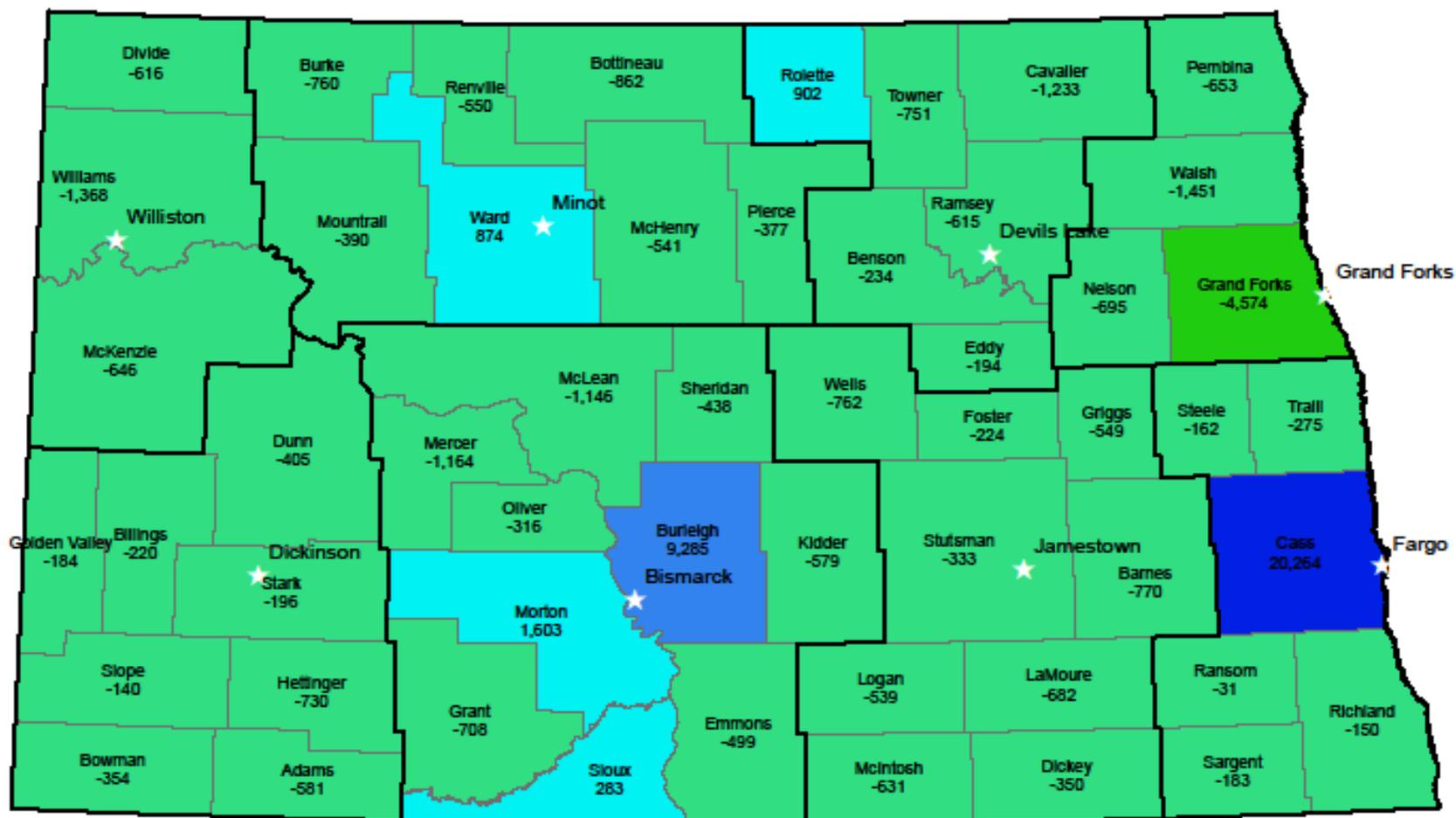
CHANGE IN POPULATION BY COUNTY 1980 to 1990



Change in Statewide Population: -13,917



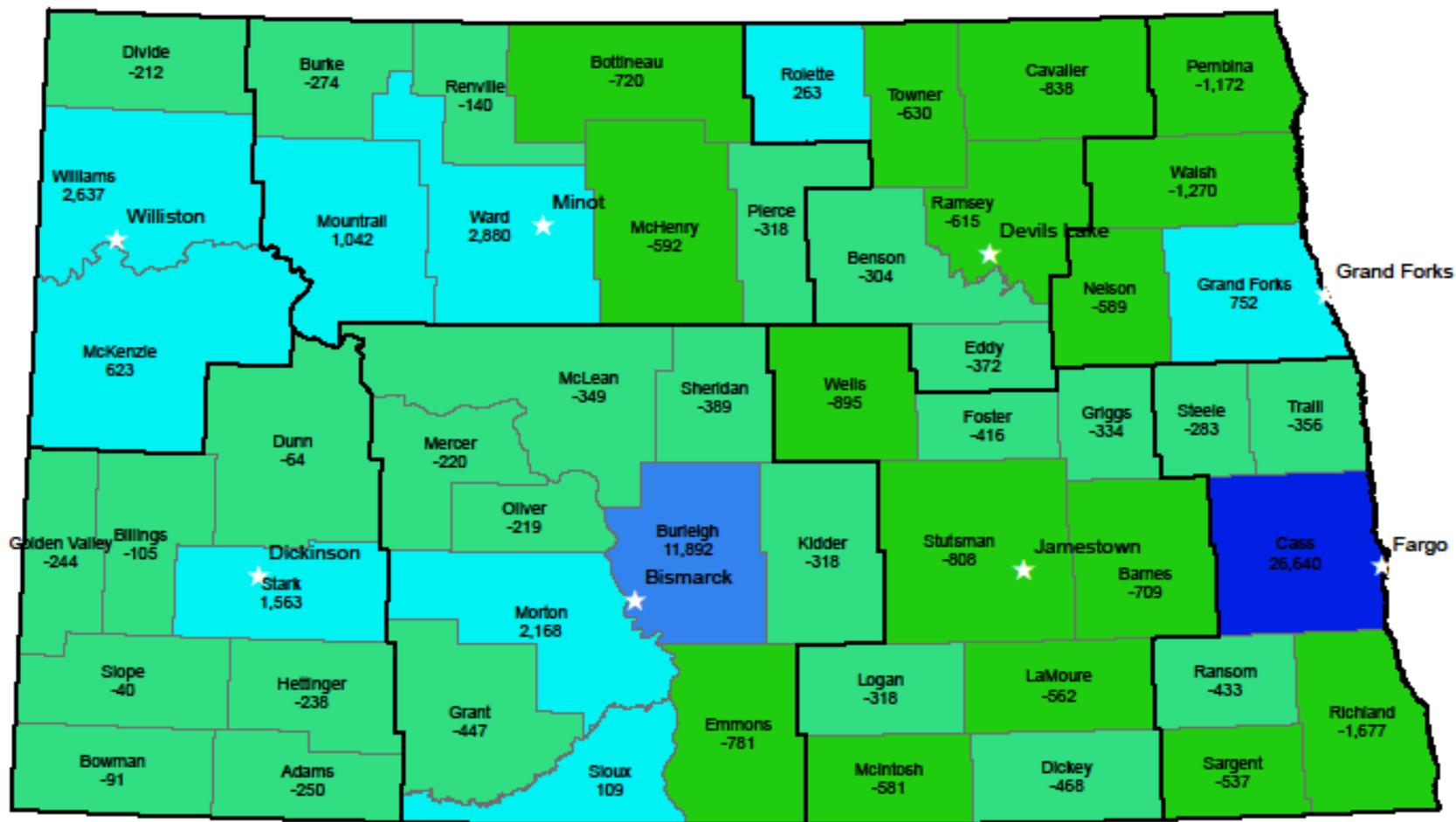
CHANGE IN POPULATION BY COUNTY 1990 to 2000



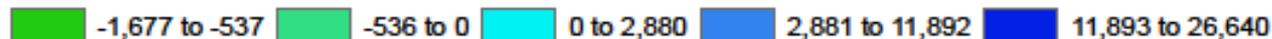
Change in Statewide Population: 3,400



CHANGE IN POPULATION BY COUNTY 2000 to 2010

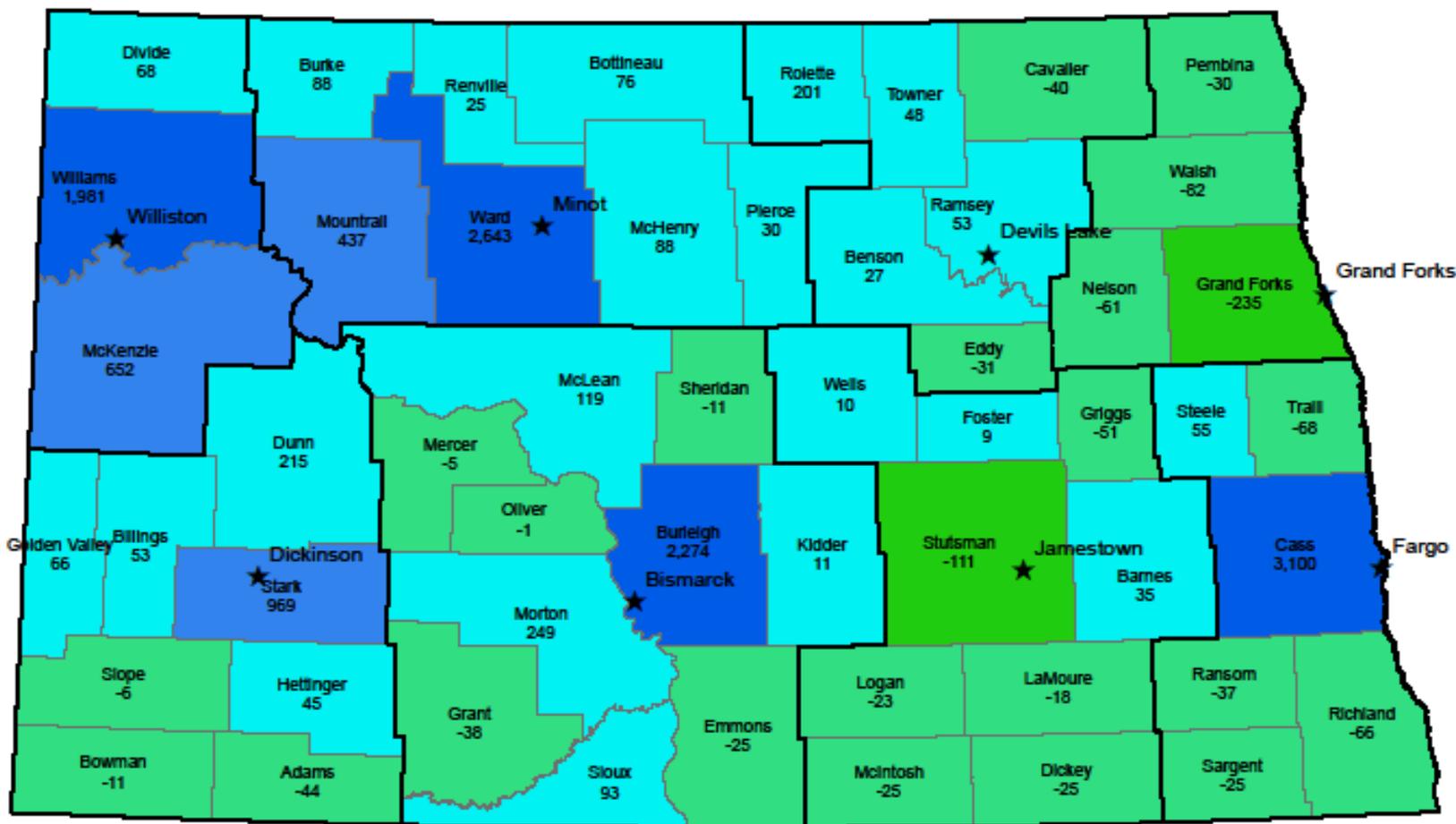


Statewide Population Change: 30,391

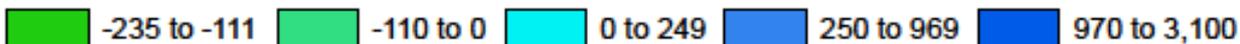


CUMULATIVE CHANGE BY COUNTY

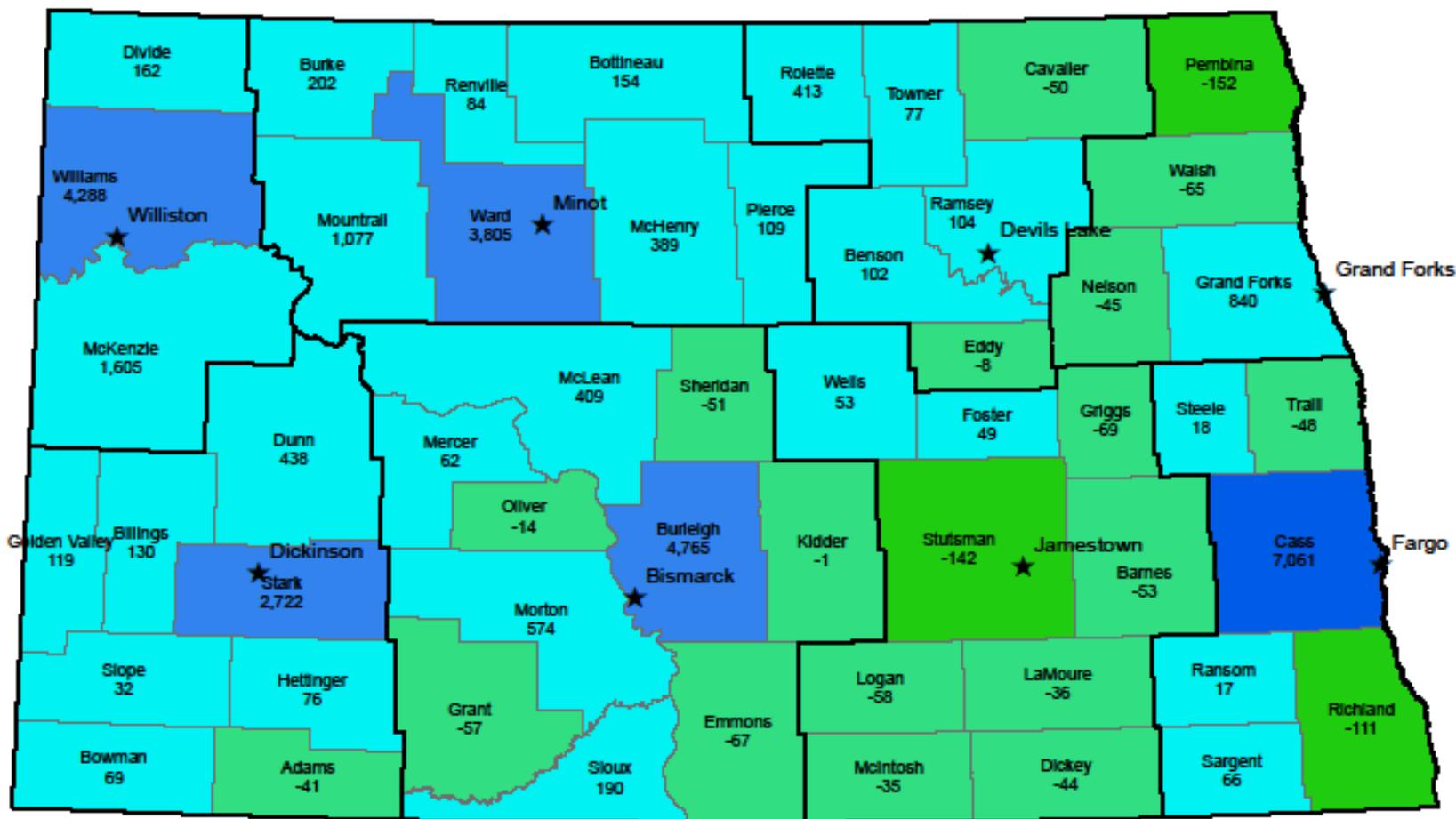
Census 2010 to Estimate 2011



Statewide Change: 12,651



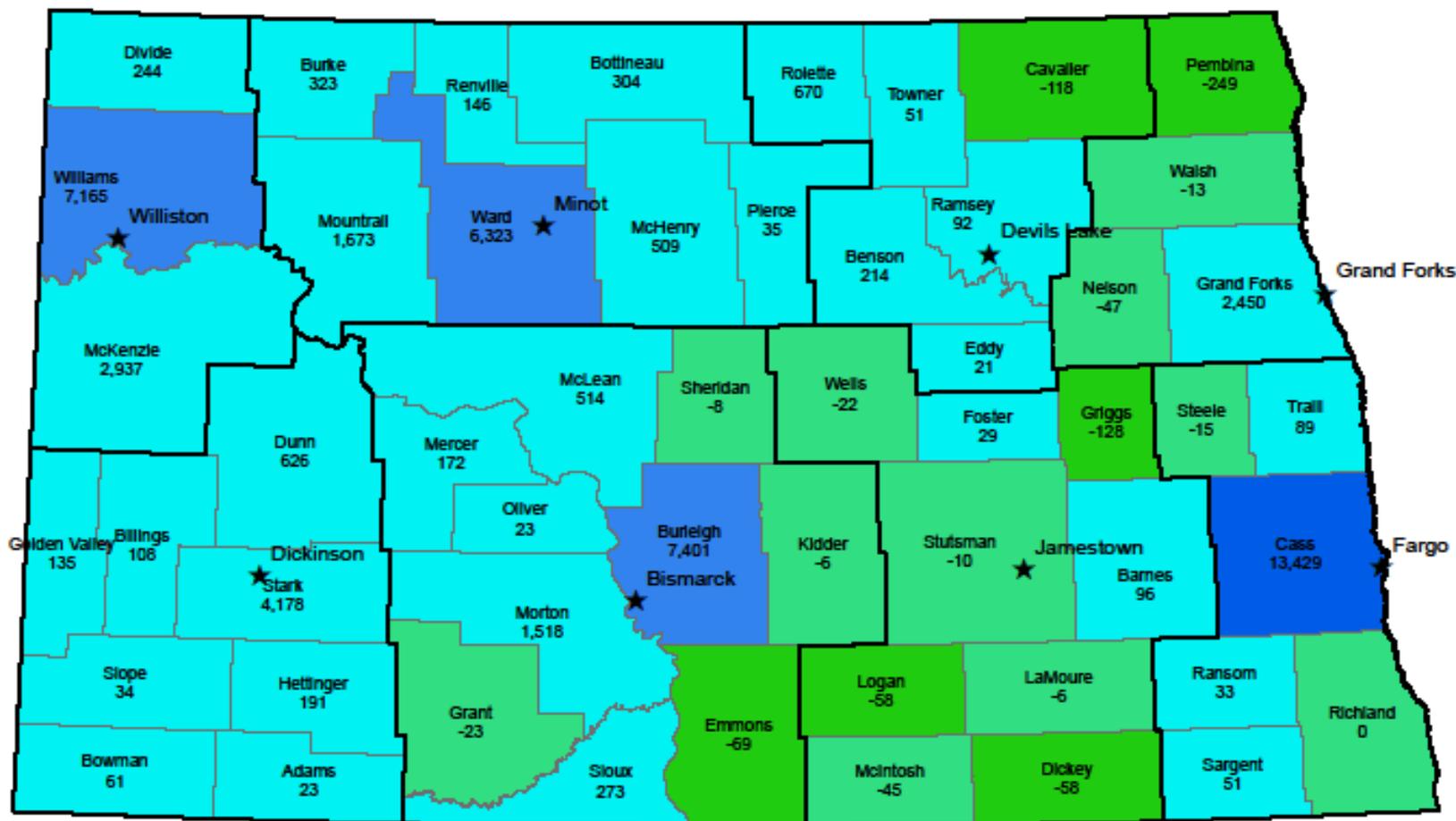
CUMULATIVE CHANGE BY COUNTY Census 2010 to Estimate 2012



Statewide Change: 29,114



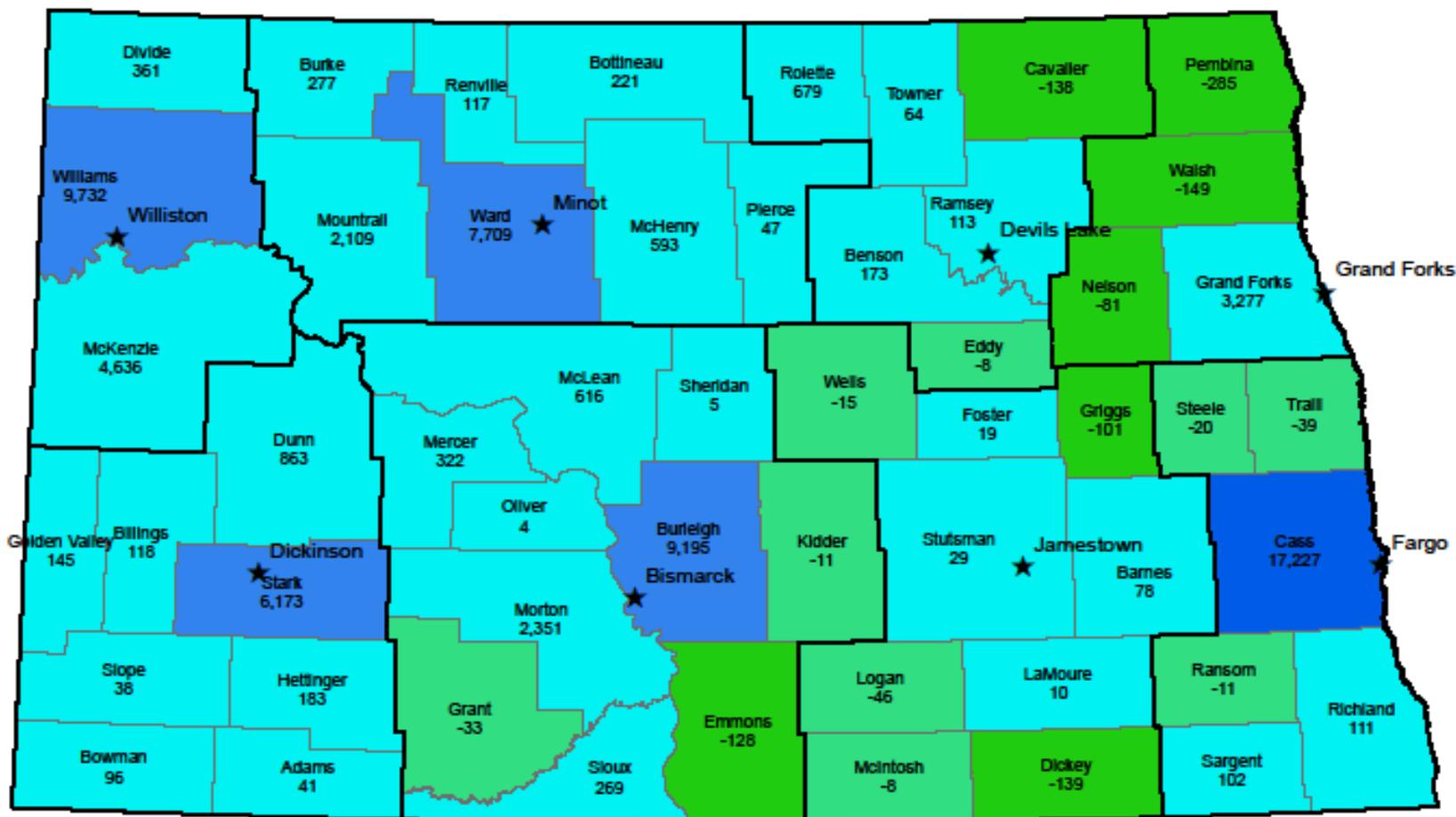
CUMULATIVE CHANGE BY COUNTY Census 2010 to Estimate 2013



Statewide Change: 51,266



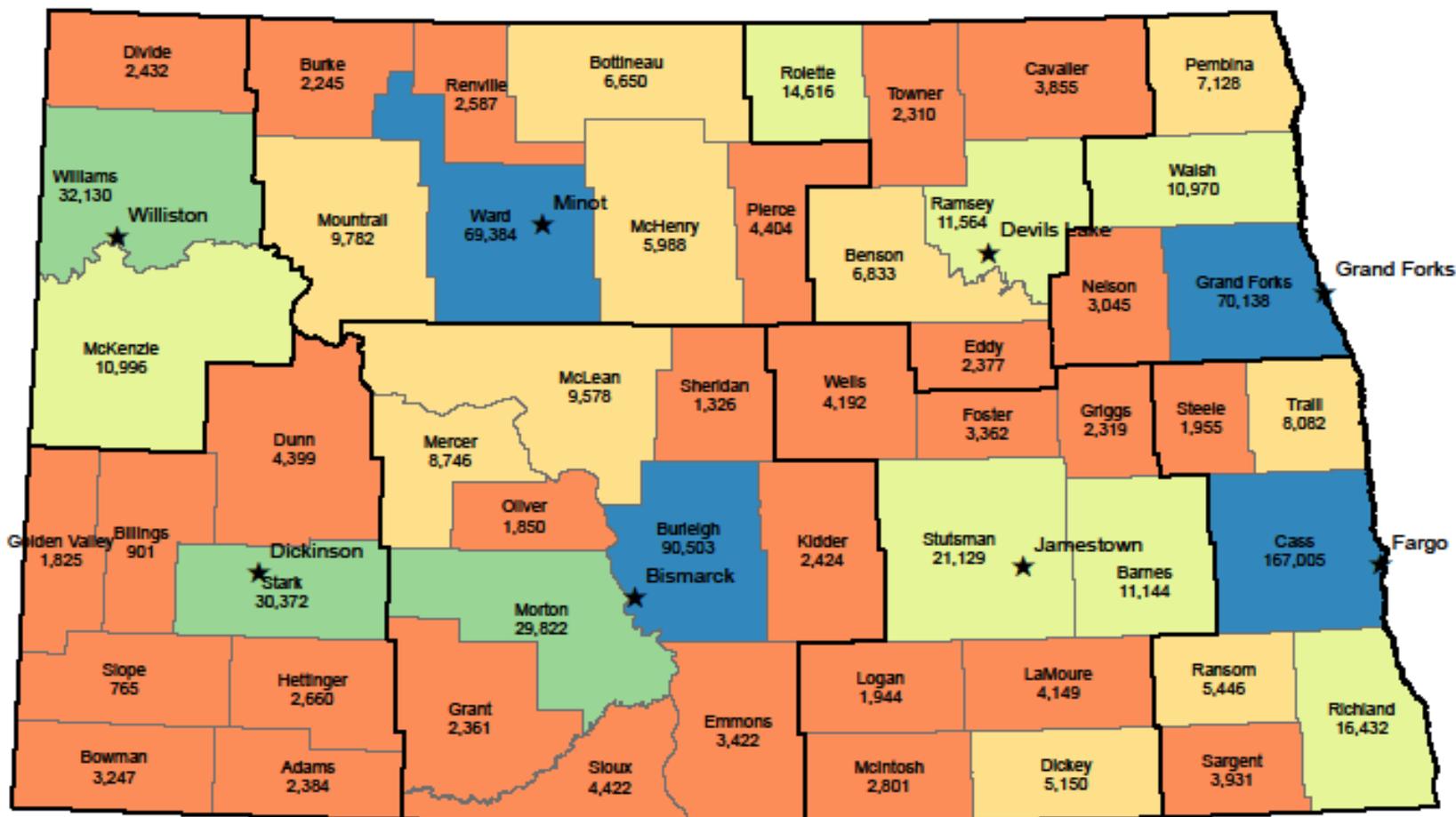
CUMULATIVE CHANGE BY COUNTY Census 2010 to Estimate 2014



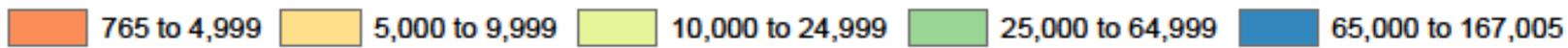
Statewide Change: 66,891



COUNTY POPULATION ESTIMATES 2014



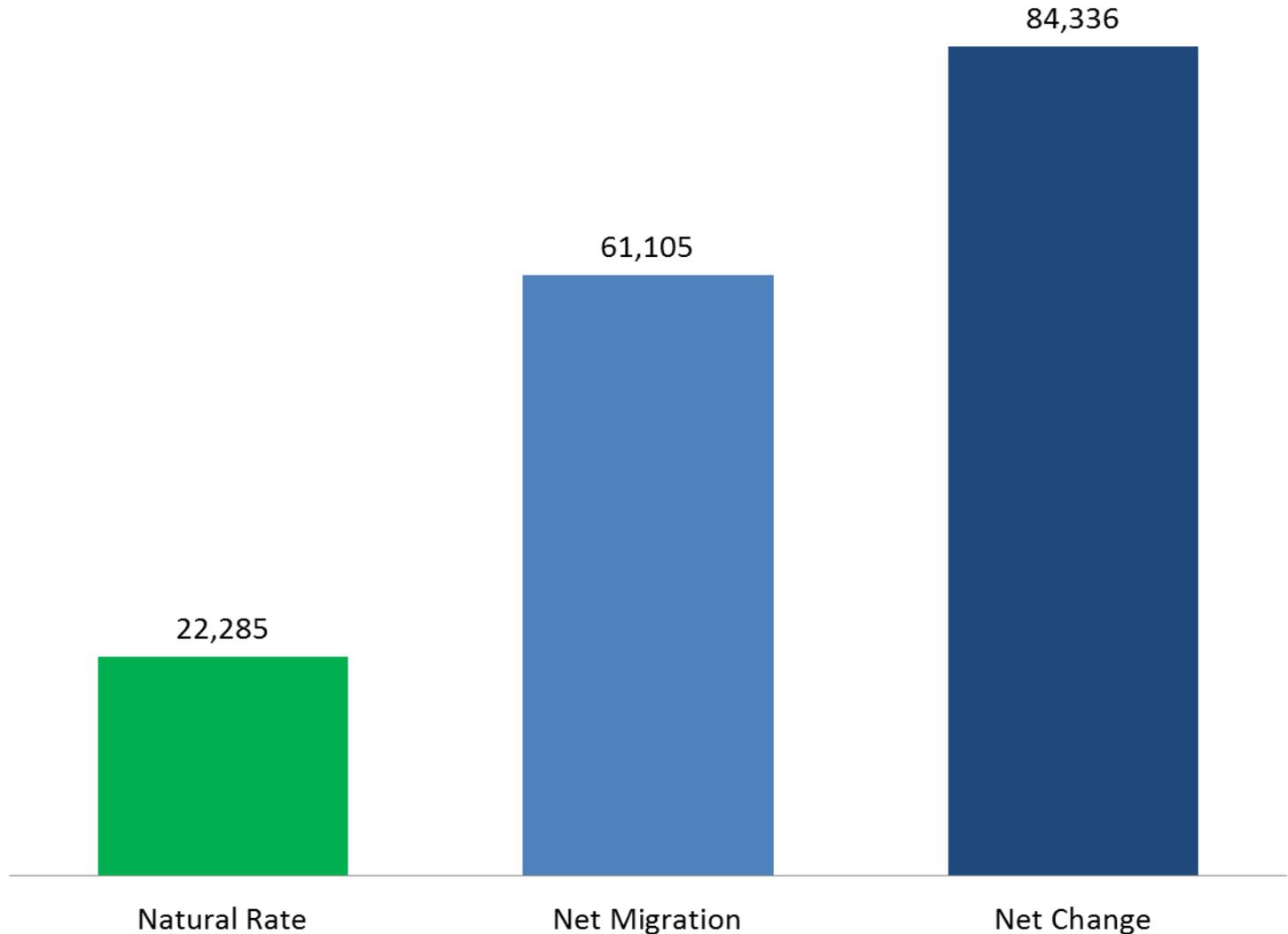
Statewide Population Estimate: 739,482



Between April 1st 2010 and July 1st 2015 North Dakota is *estimated* to have gained ~ 84,000 residents.

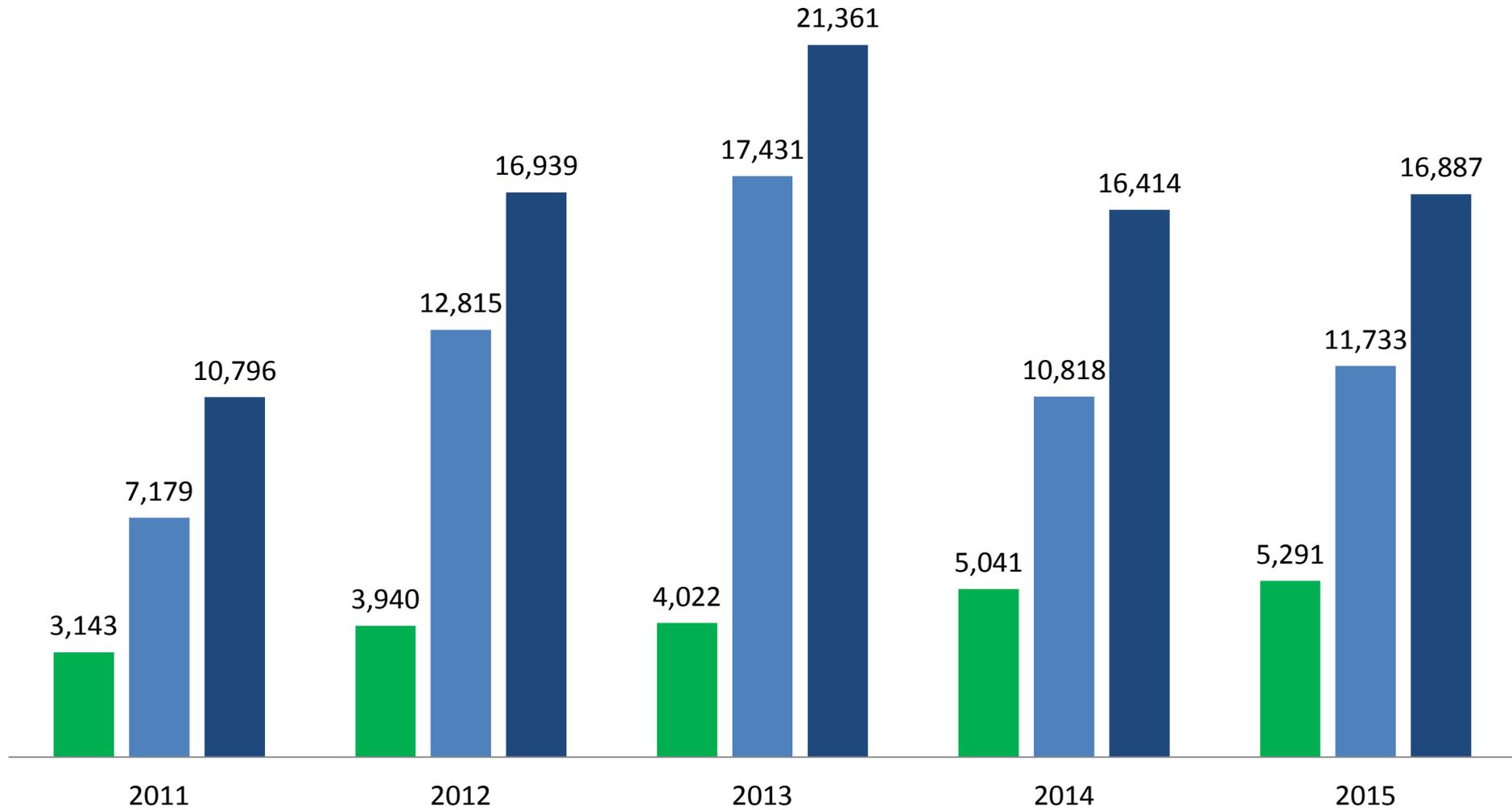
Equivalent to Cities of Bismarck & Mandan in 2010!

North Dakota Components of Change 2010 - 2015



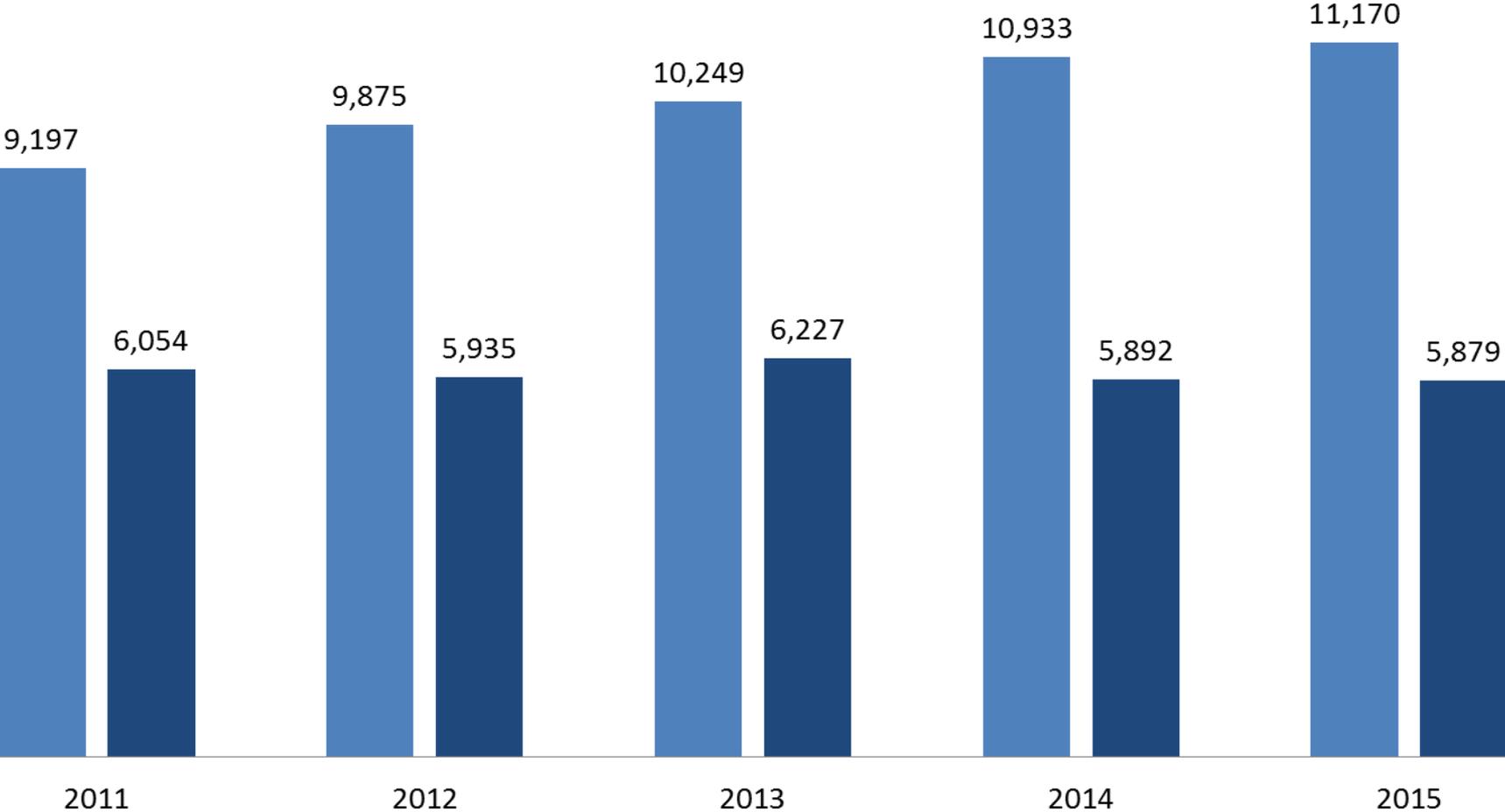
North Dakota Components of Change

■ Natural Rate ■ Migration ■ Total Growth

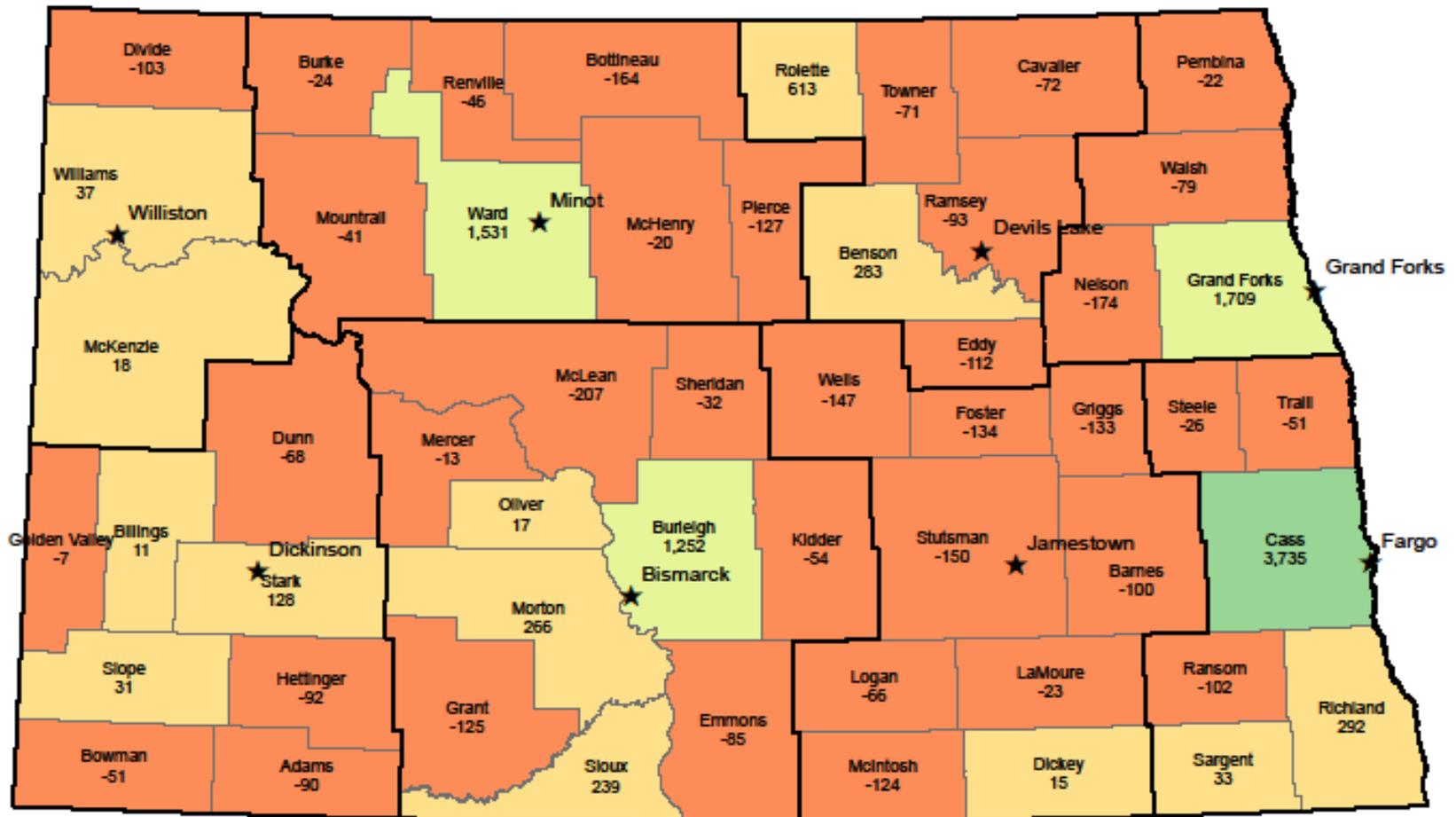


North Dakota Components of Change

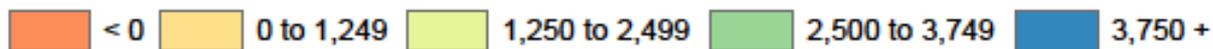
■ Births ■ Deaths



NATURAL INCREASE BY COUNTY 2000 to 2004

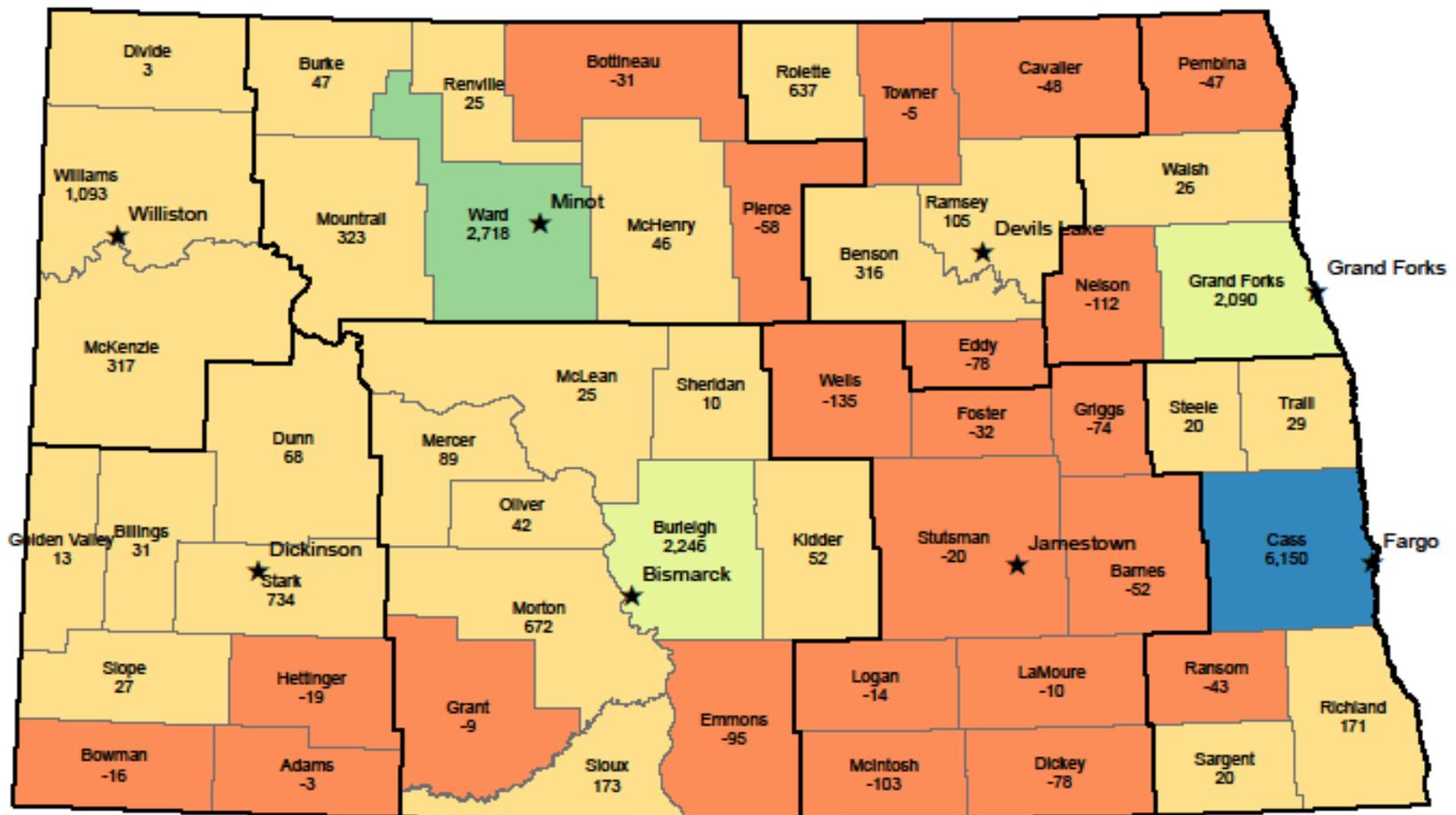


Statewide Natural Increase: 7,182

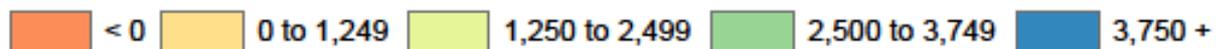


NATURAL INCREASE BY COUNTY

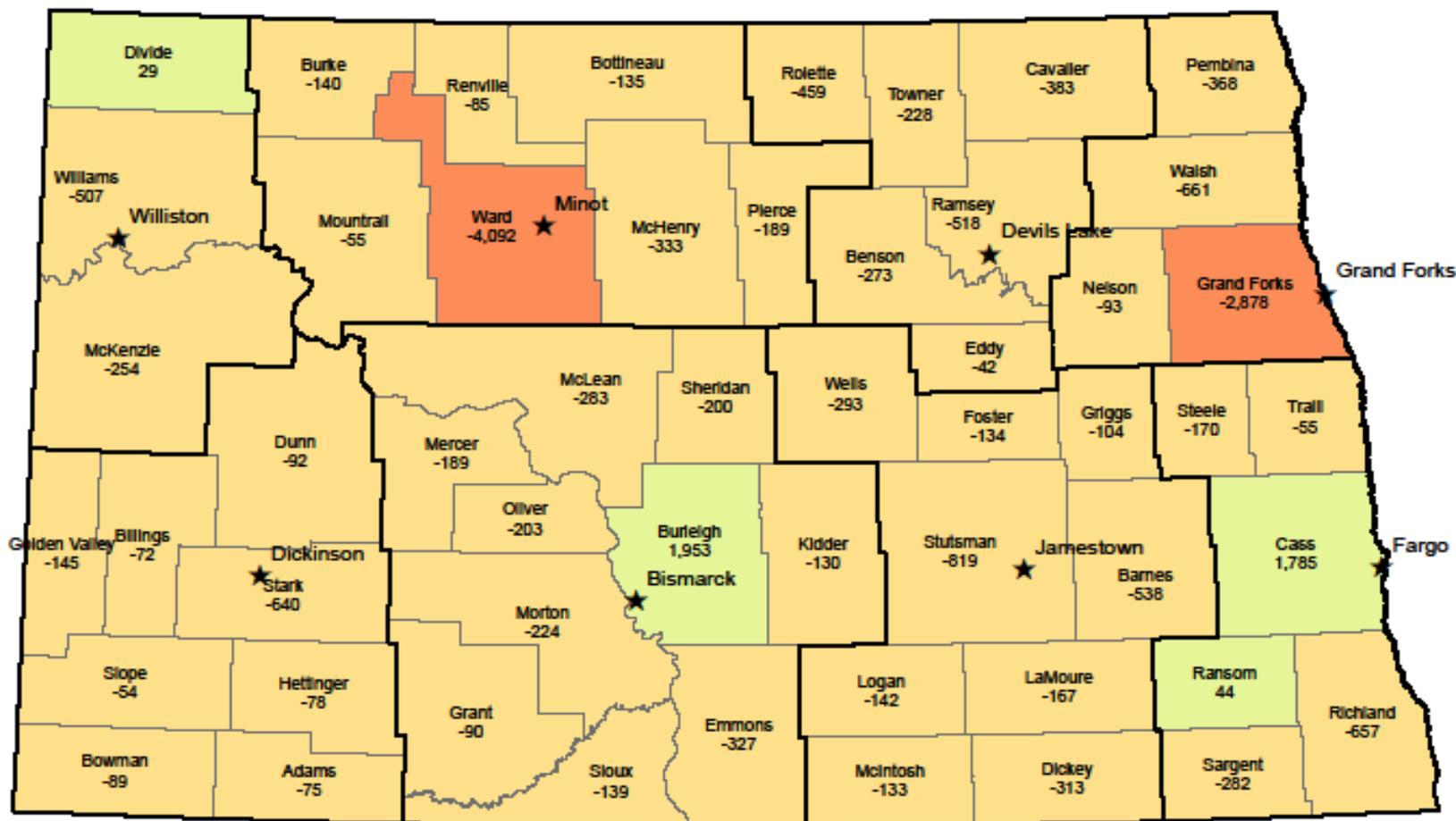
2010 to 2014



Statewide Natural Increase: 17,236



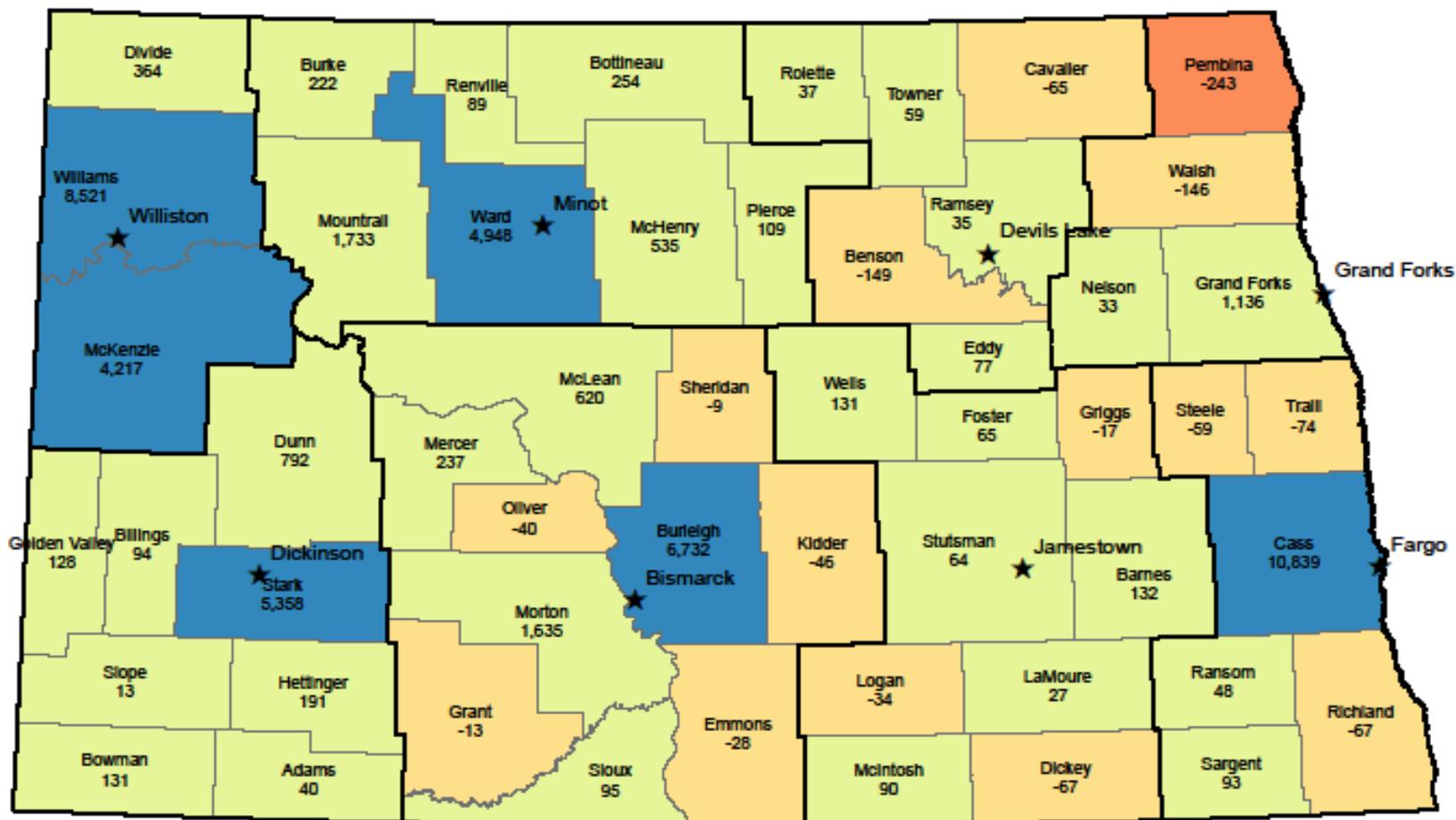
NET MIGRATION BY COUNTY 2000 to 2004



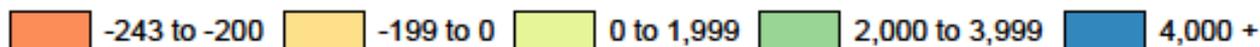
Statewide Net Migration: -14,719



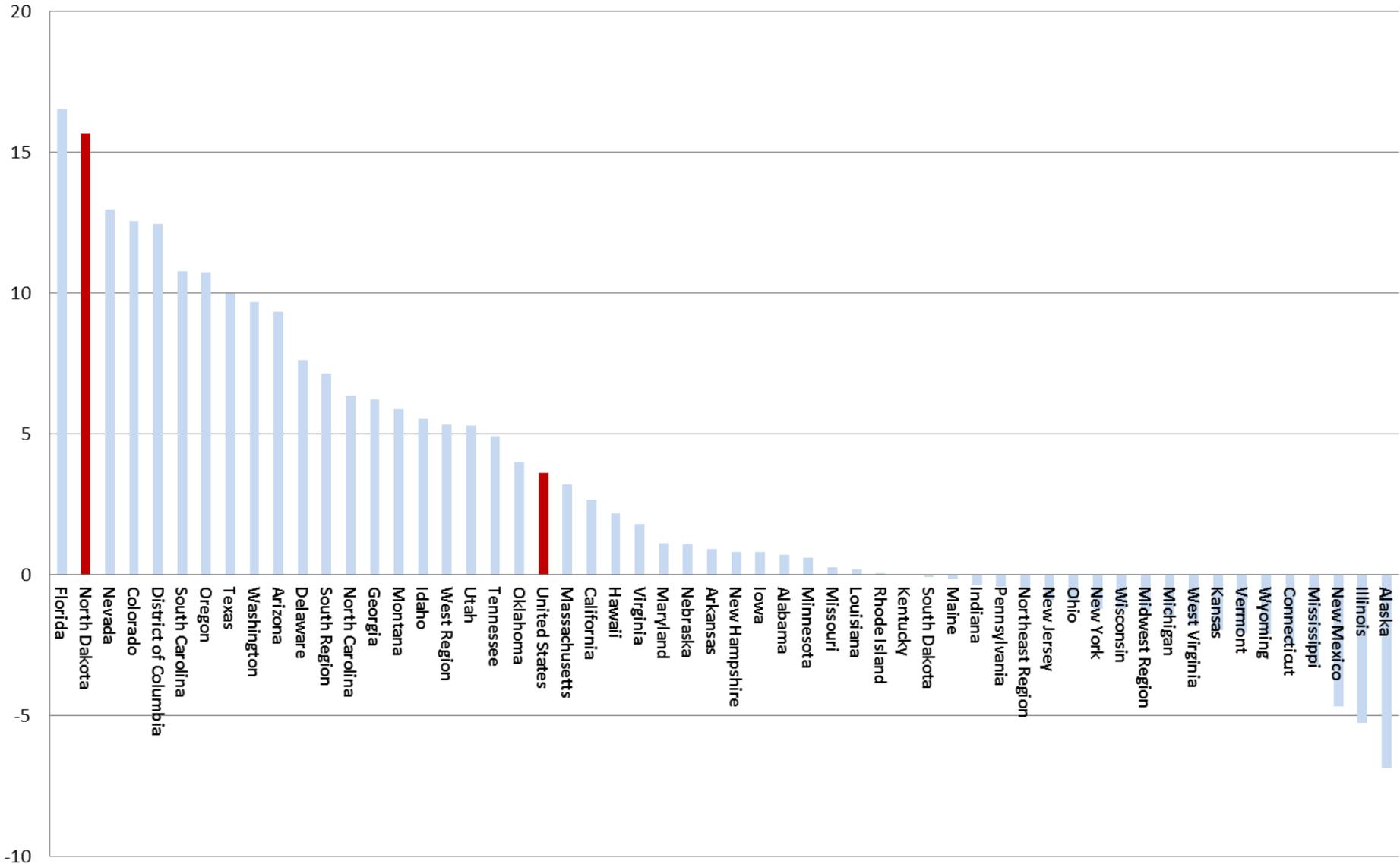
NET MIGRATION BY COUNTY 2010 to 2014



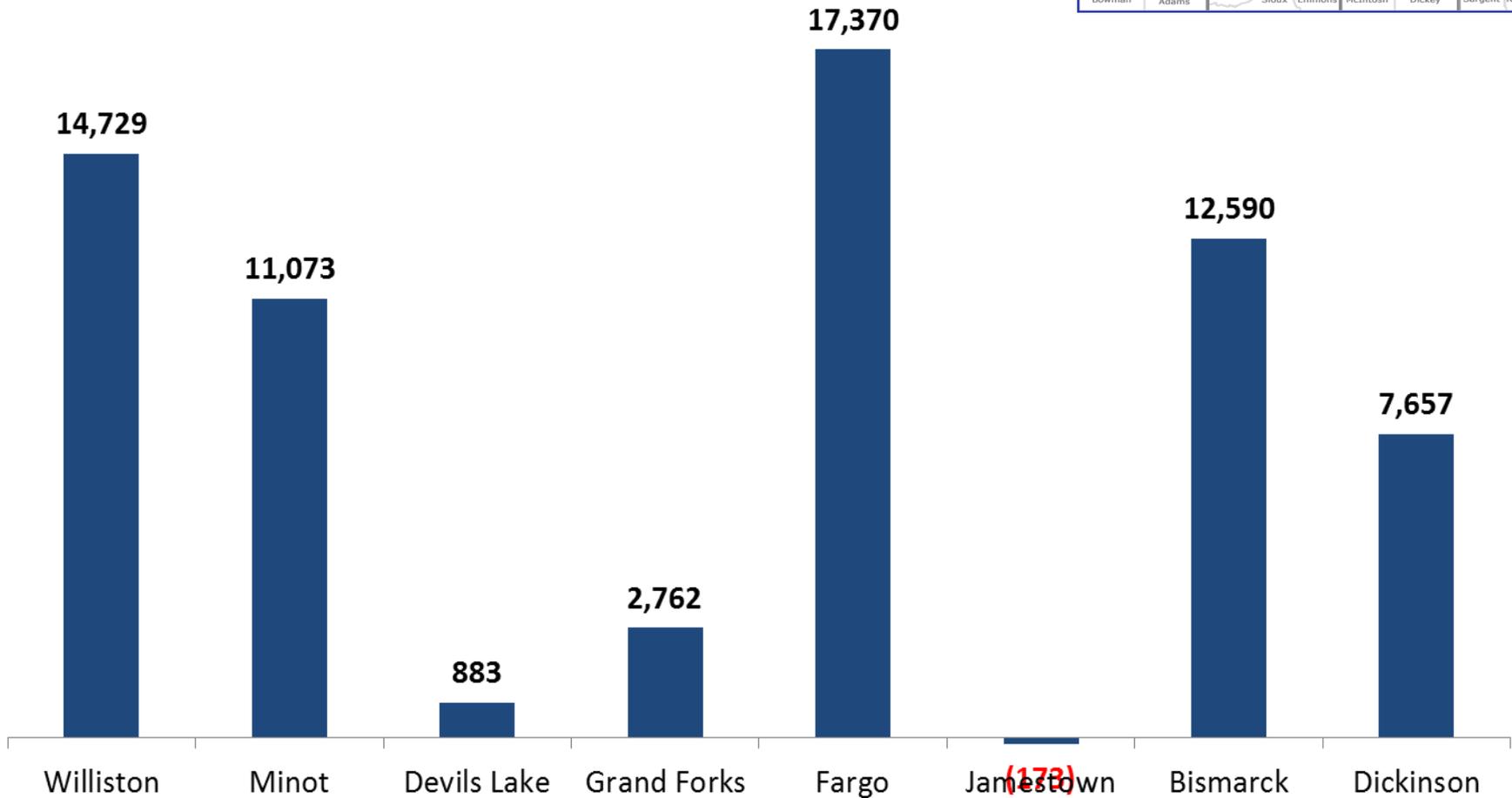
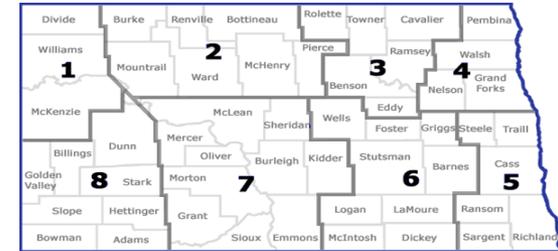
Statewide Net Migration: 48,867



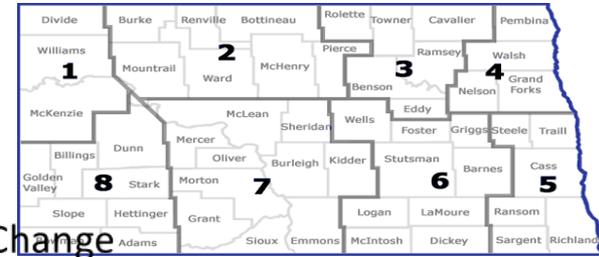
Rate of Migration U.S. & States 2015



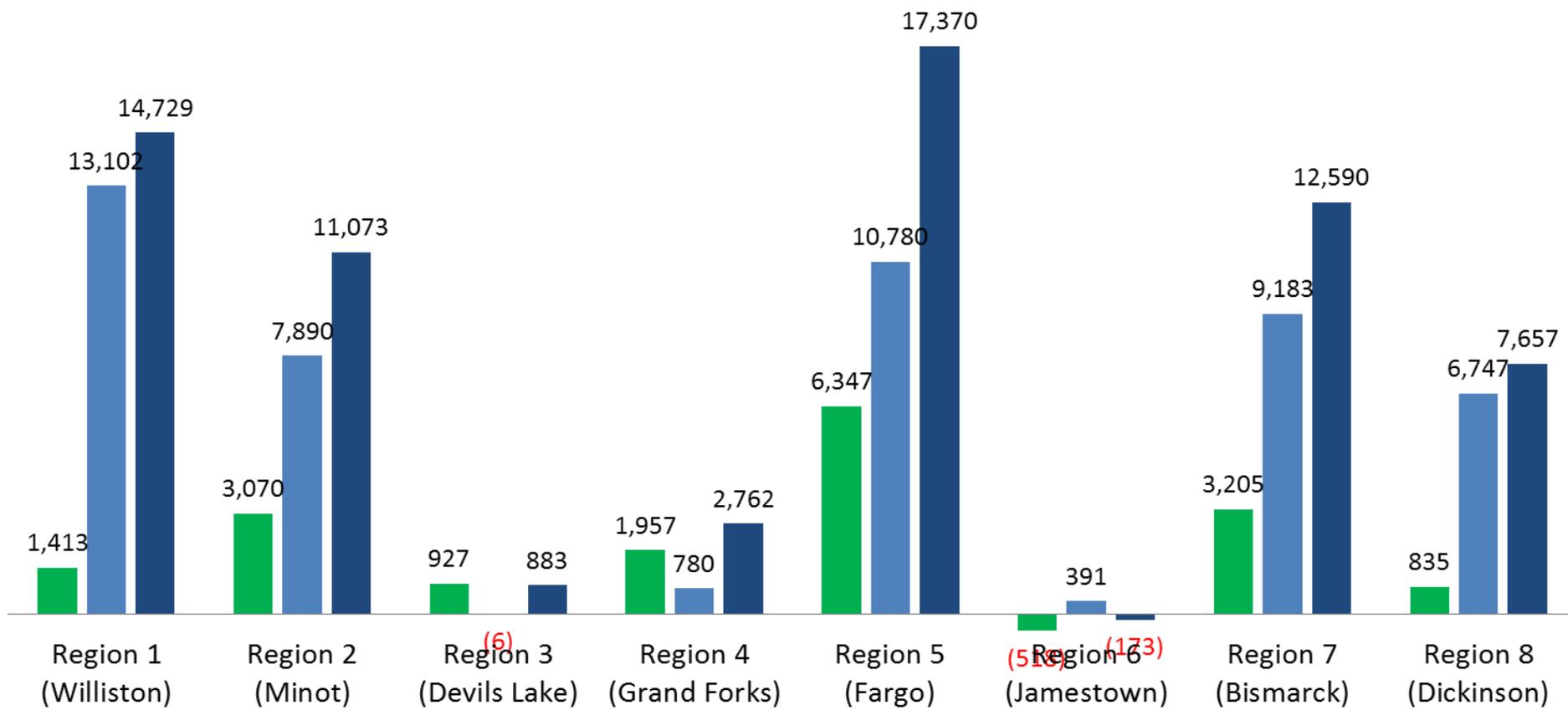
North Dakota Region's Population Change April 1 2010 - July 1 2014



ND Population Estimate April 1st 2010 - July 1st 2014

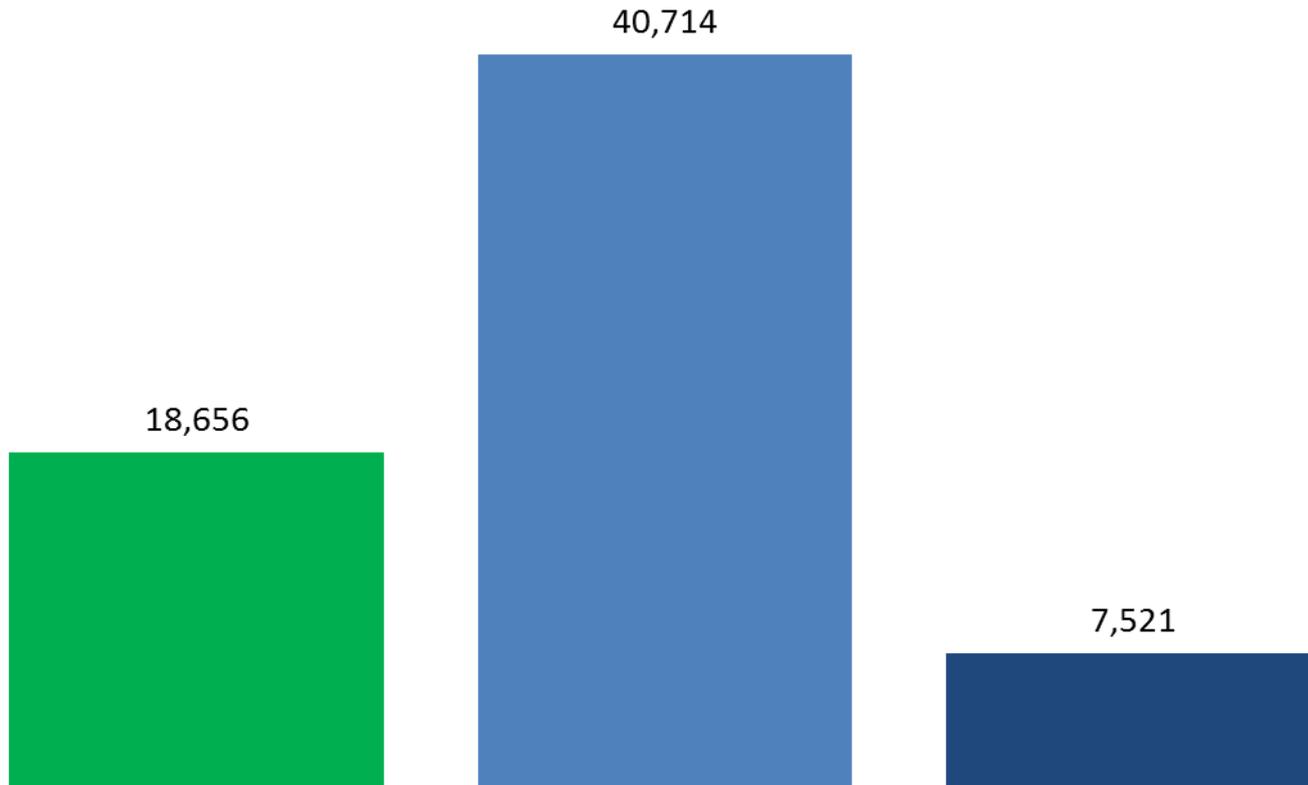


■ Natural Increase ■ Migration ■ Net Change

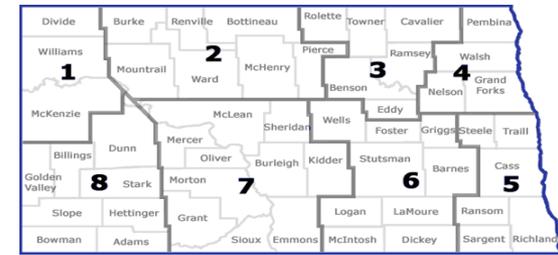


North Dakota Population Change by Age Groups April 1st, 2010 - July 1st 2014:

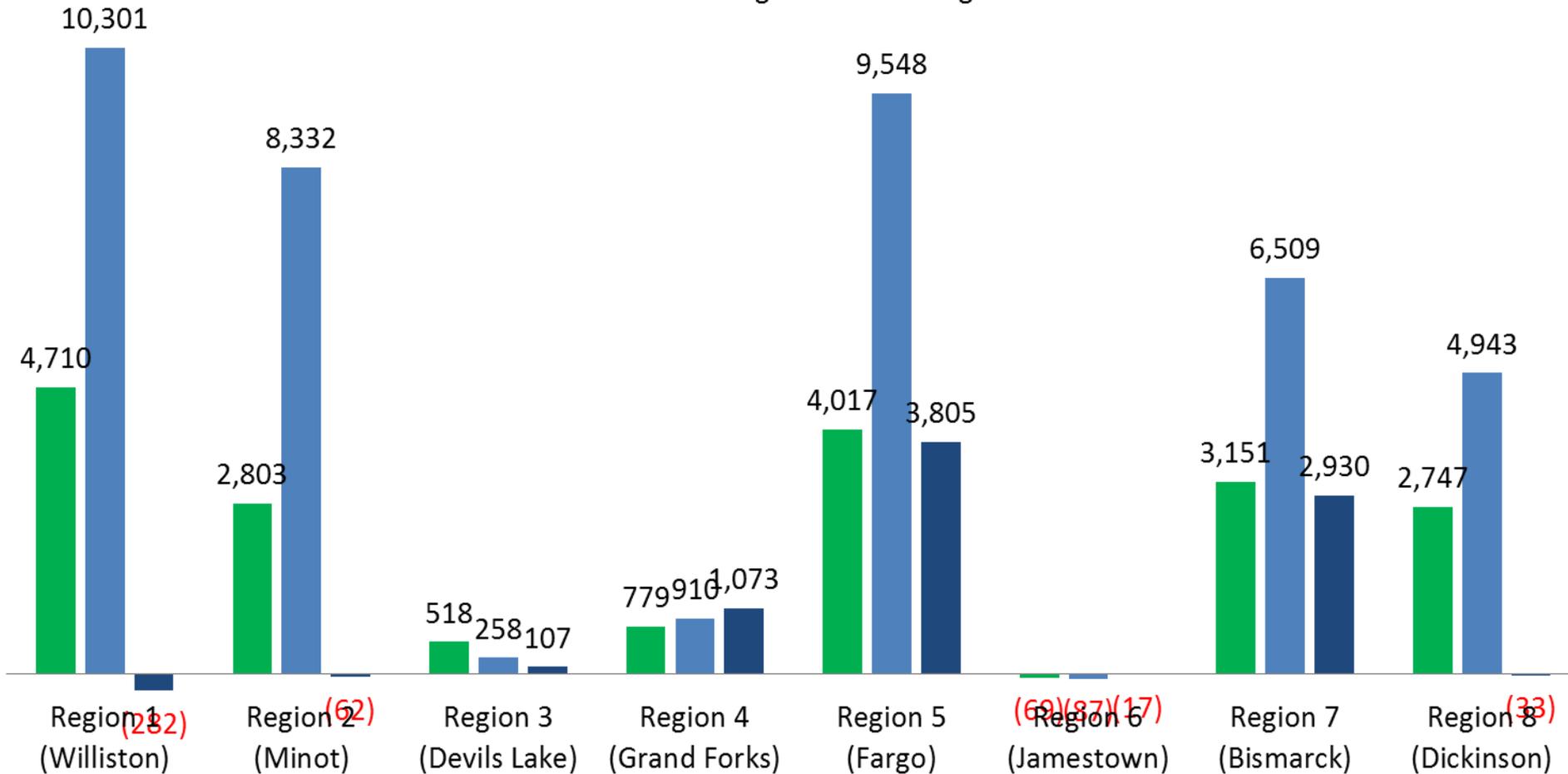
■ Under 18 ■ Age 18 - 64 ■ Age 65 Plus



North Dakota Population Change by Age Group and Region April 1st, 2010 - July 1st 2014:

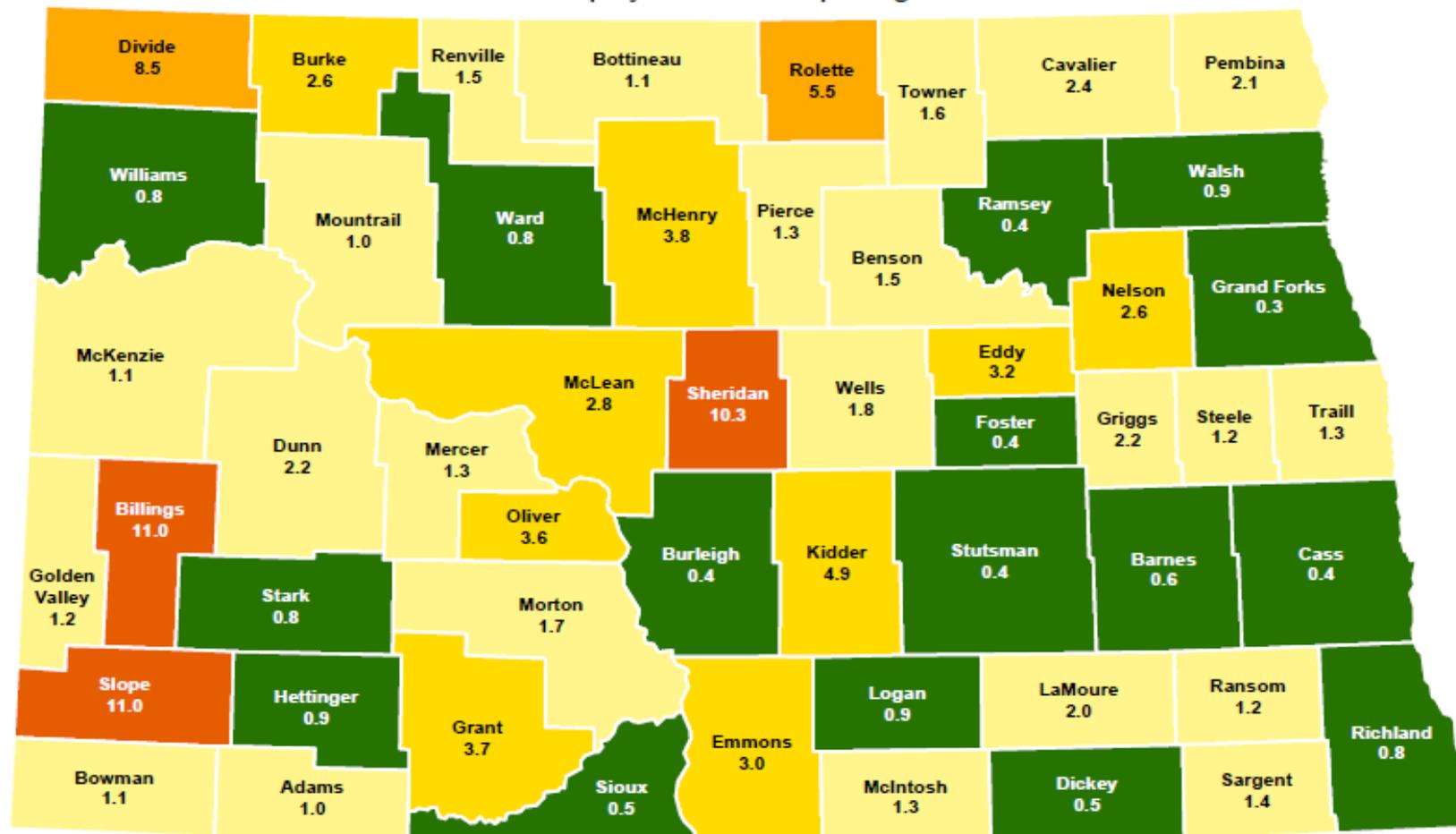


■ Under 18 ■ Age 18 - 64 ■ Age 65 Plus



NORTH DAKOTA COUNTY SUPPLY/DEMAND RATES

Unemployed Per Job Opening



North Dakota Supply/Demand Rate (Not Seasonally Adjusted): 0.6

COUNTY SUPPLY/DEMAND RATES (NOVEMBER 2015)

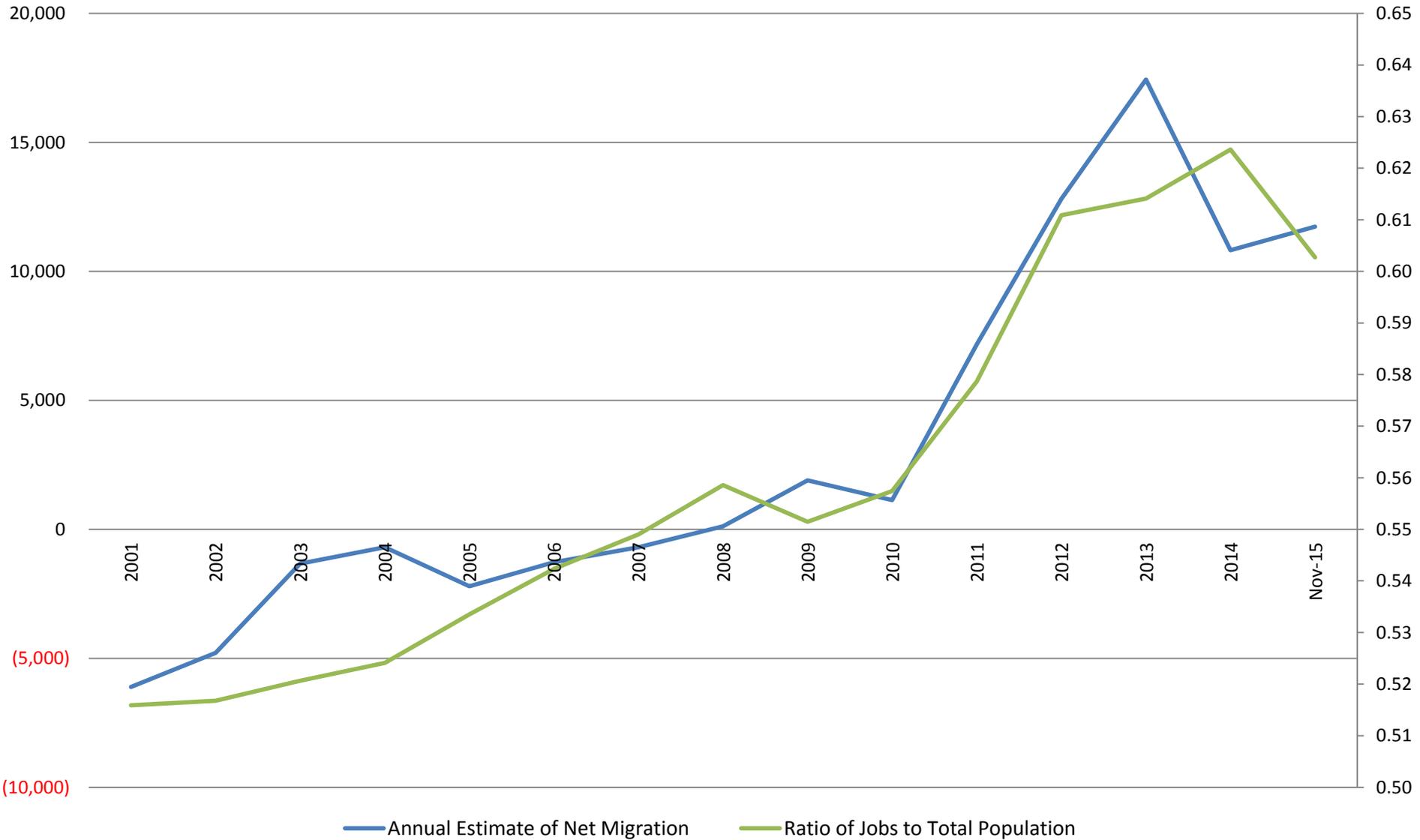
■ < 1.0
 ■ 1.0 - 2.4
 ■ 2.5 - 4.9
 ■ 5.0 - 9.9
 ■ > 9.9

A supply/demand rate could not be calculated for counties shaded in gray because zero job openings were reported in the reference period

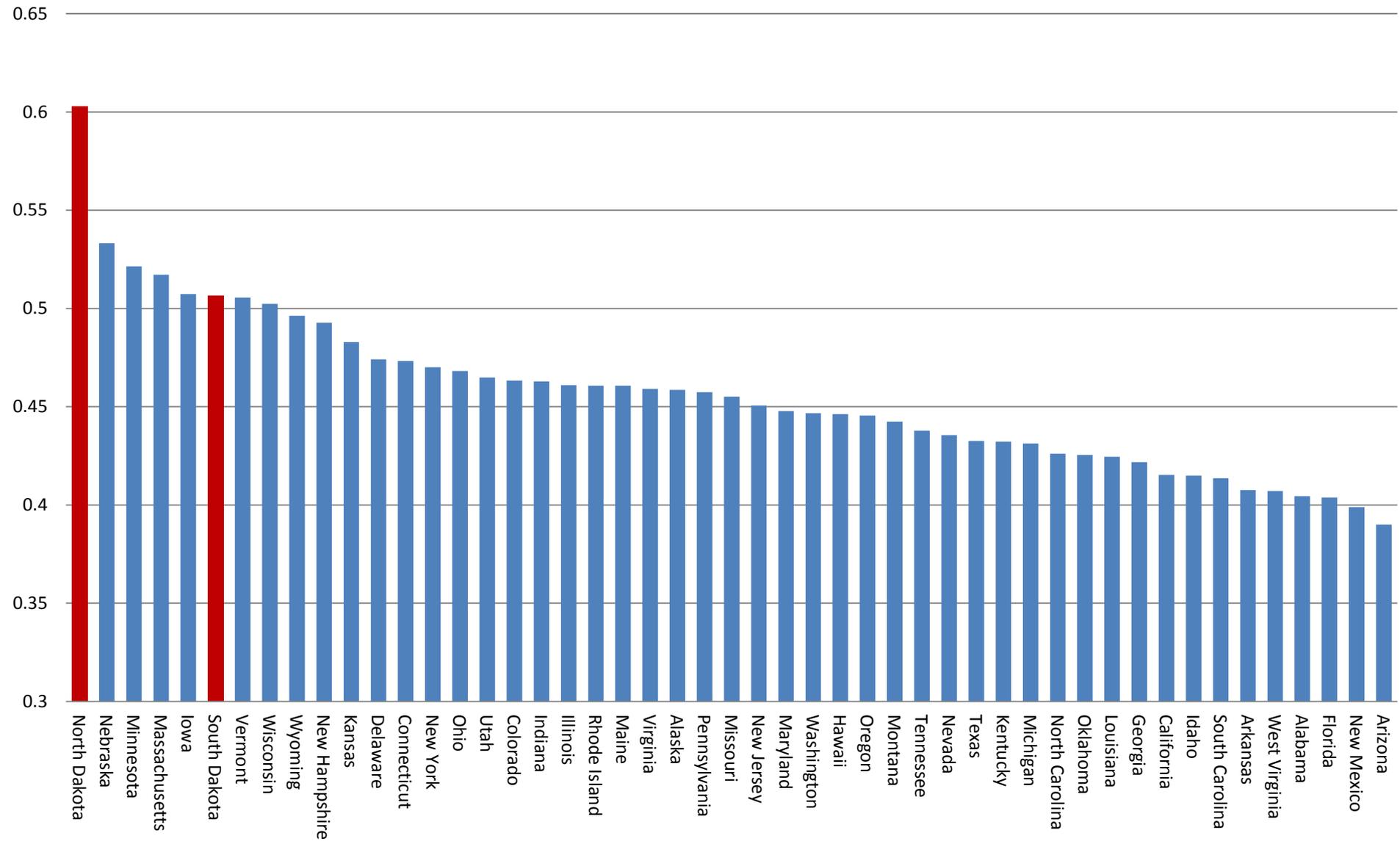
Source: Labor Market Information Center, Job Service North Dakota, Online Job Openings Report

[Map Creation Date: December 21, 2015 Author: Labor Market Information Center, Job Service North Dakota]

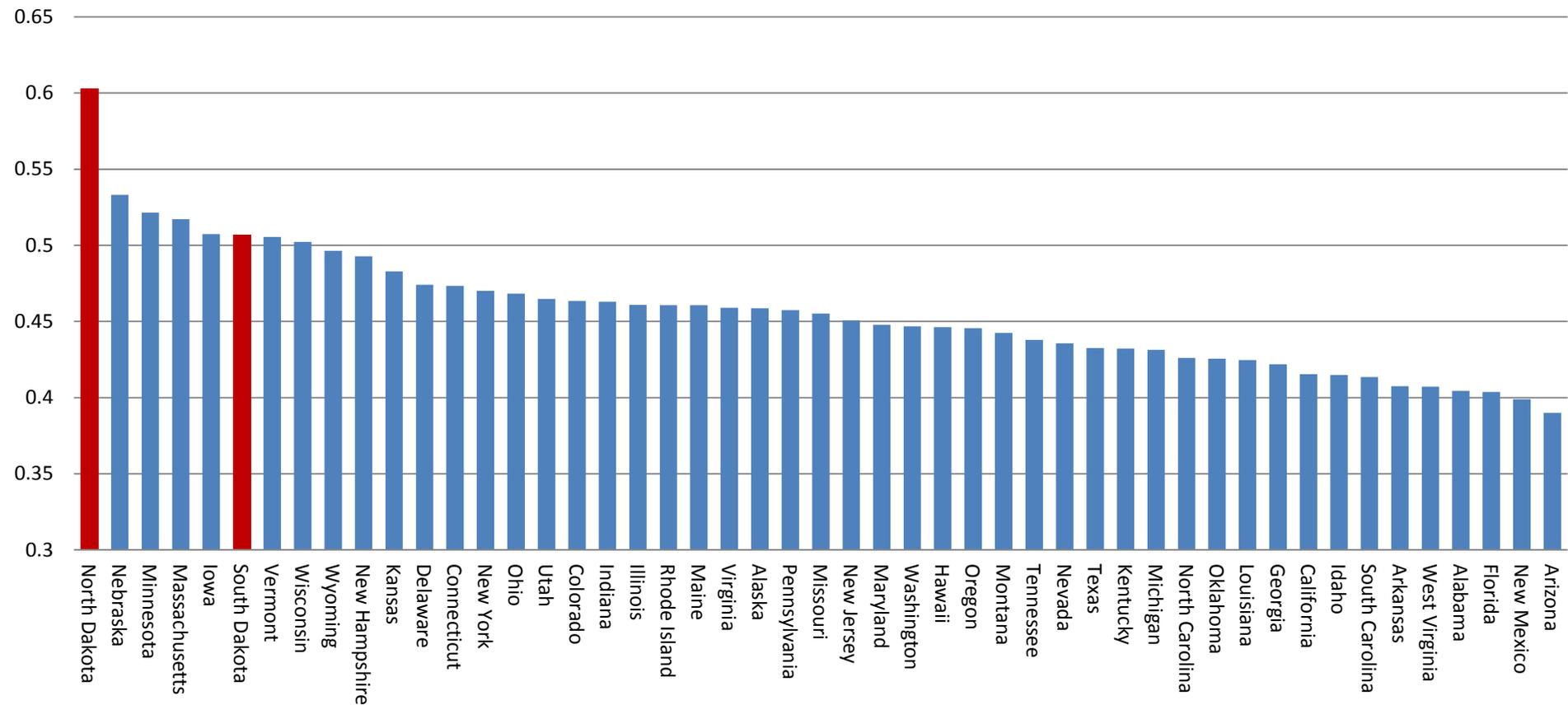
North Dakota Relationship Between Job Density (CES) and Net Migration 2001 - 2015



Ratio of Non-Farm Jobs to Estimated Population Nov 15 Jobs / Pop Est 2015

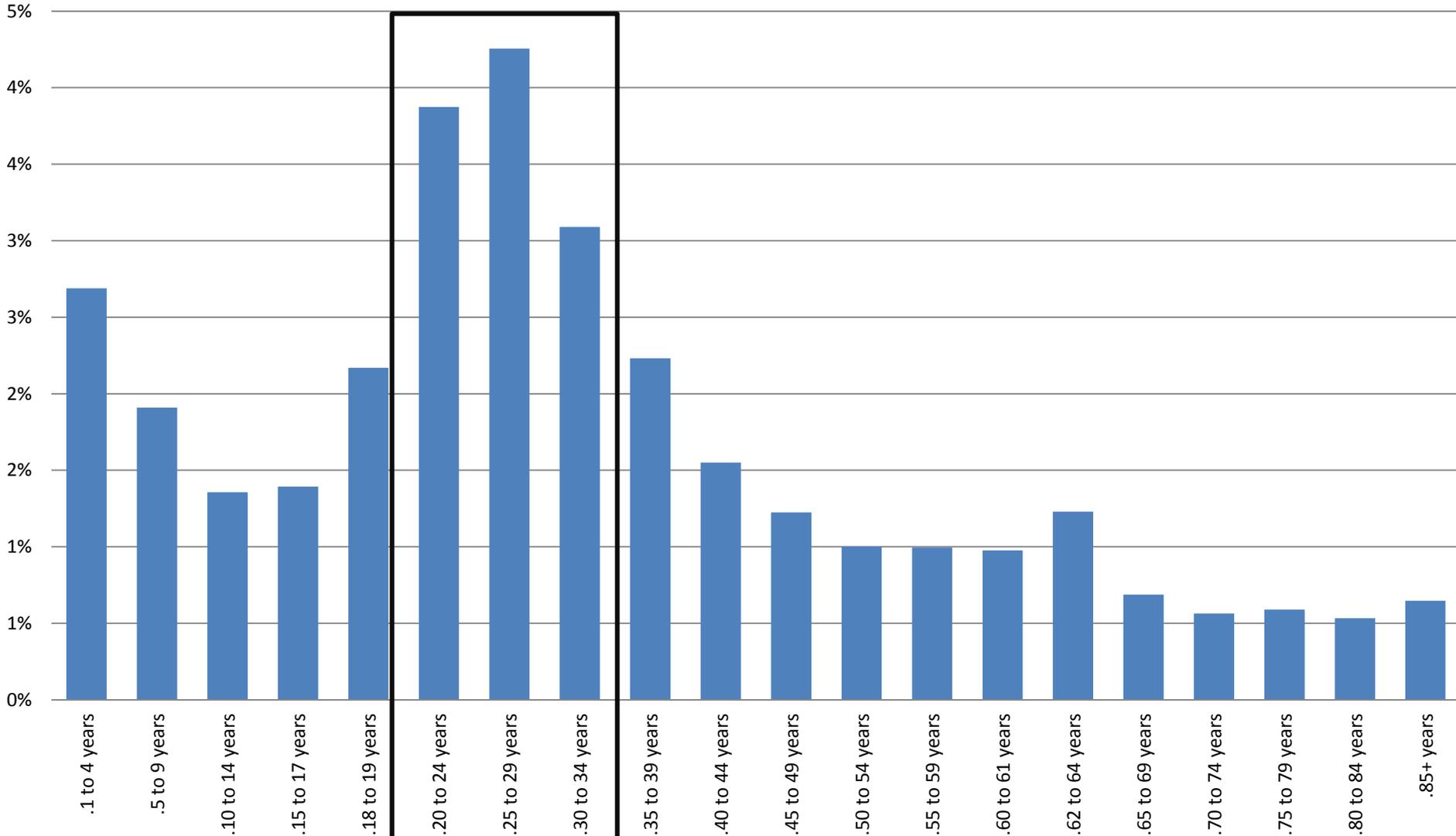


Ratio of Non-Farm Jobs to Estimated Population Nov 15 Jobs / Pop Est 2015

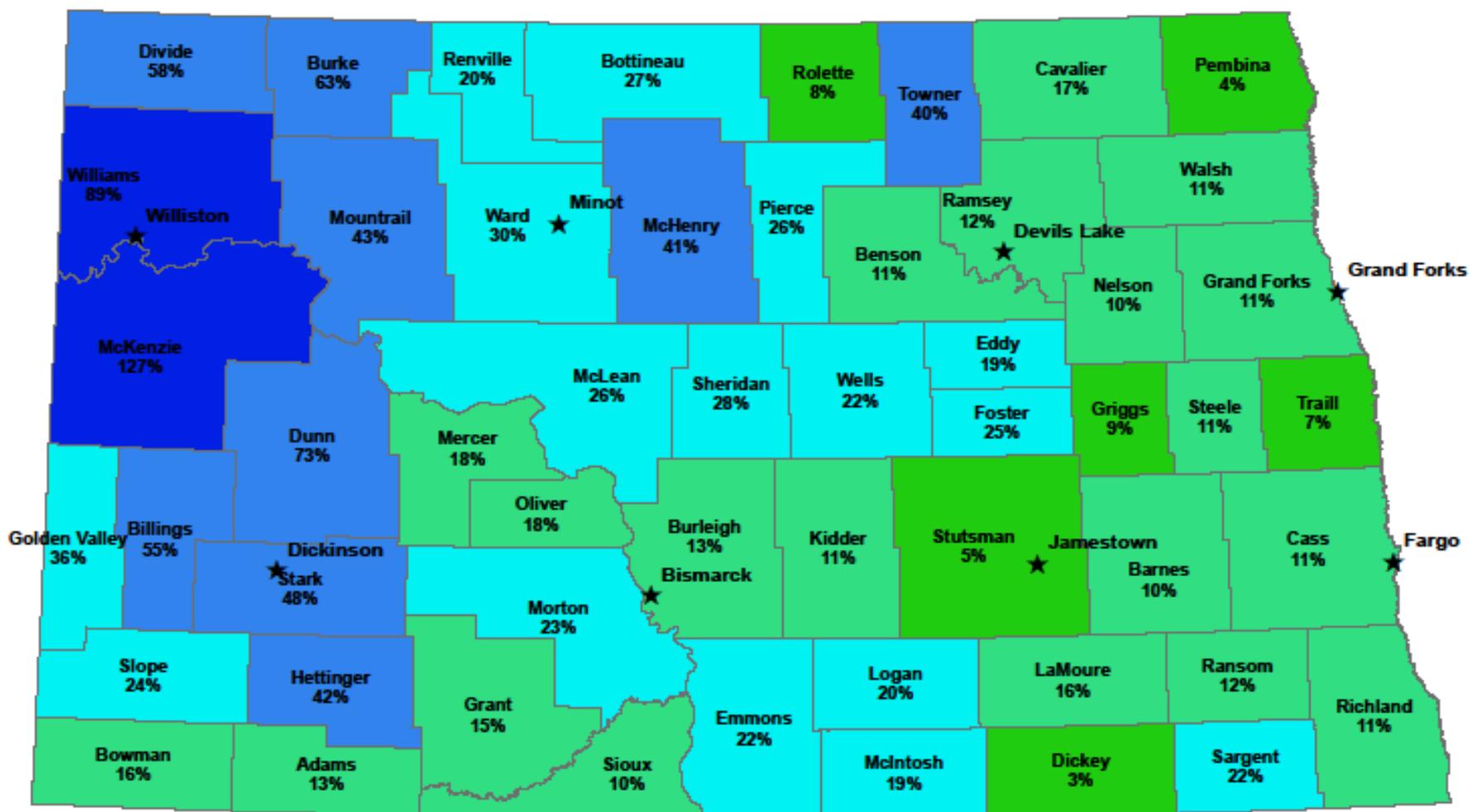


In order to match South Dakota's ratio of
 "Jobs to Population"
 North Dakota would need to shed about 16 percent
 or about 72,000 jobs.

State to State Movers in the United States By Percentage in 2014

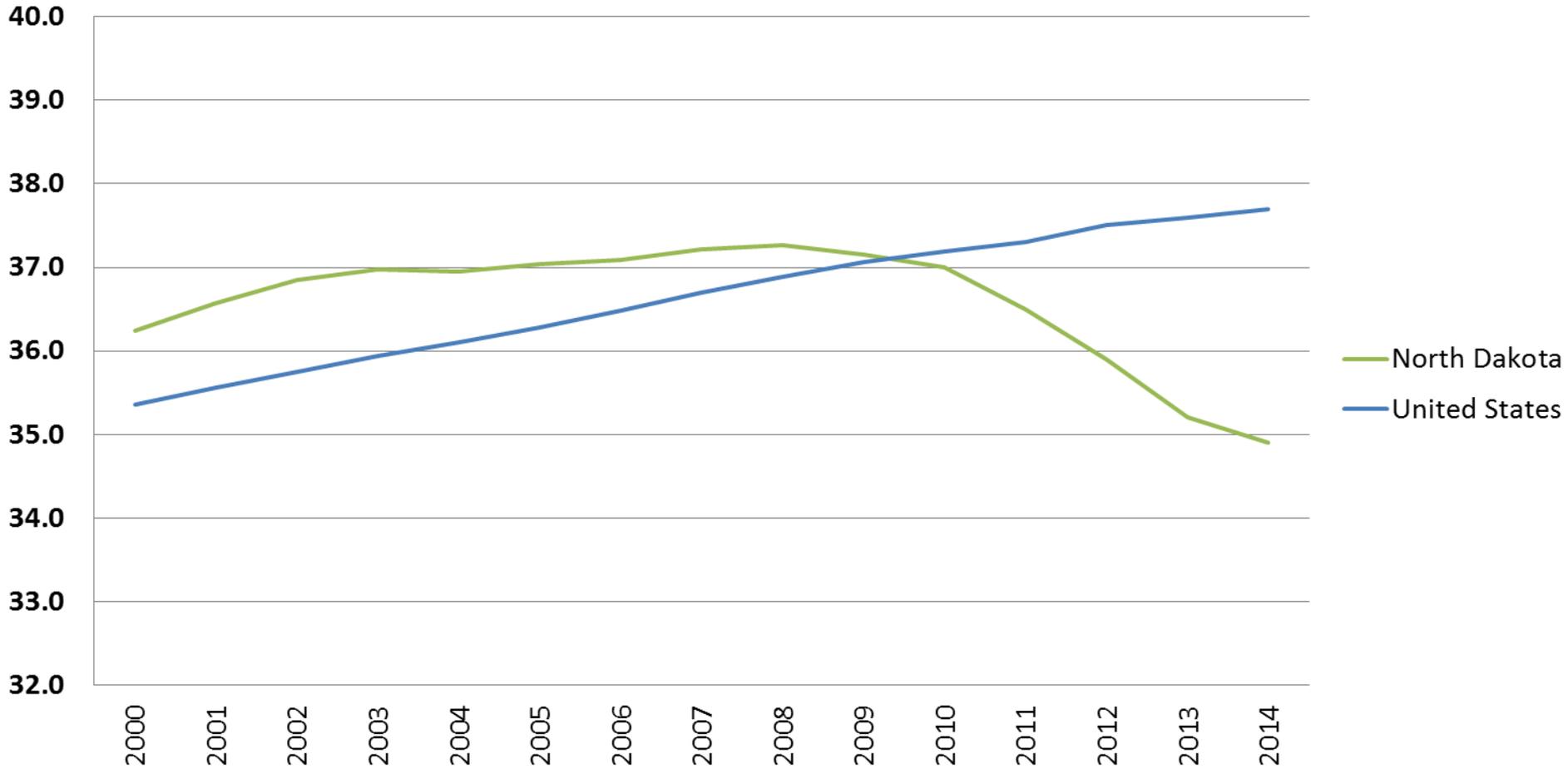


PERCENT POPULATION GAIN AGE 20 TO 34 2010 to 2014



3% to 9%
 10% to 18%
 19% to 36%
 37% to 73%
 74% to 127%

Median Age United States and North Dakota



North Dakota is growing younger, the country grows older.

Which were the Younger States in 2014?

Utah	30.5
Alaska	33.3
Texas	34.2
North Dakota	34.9
Idaho	35.7
California	36.0
Kansas	36.1
Georgia	36.1
Oklahoma	36.2
Nebraska	36.2

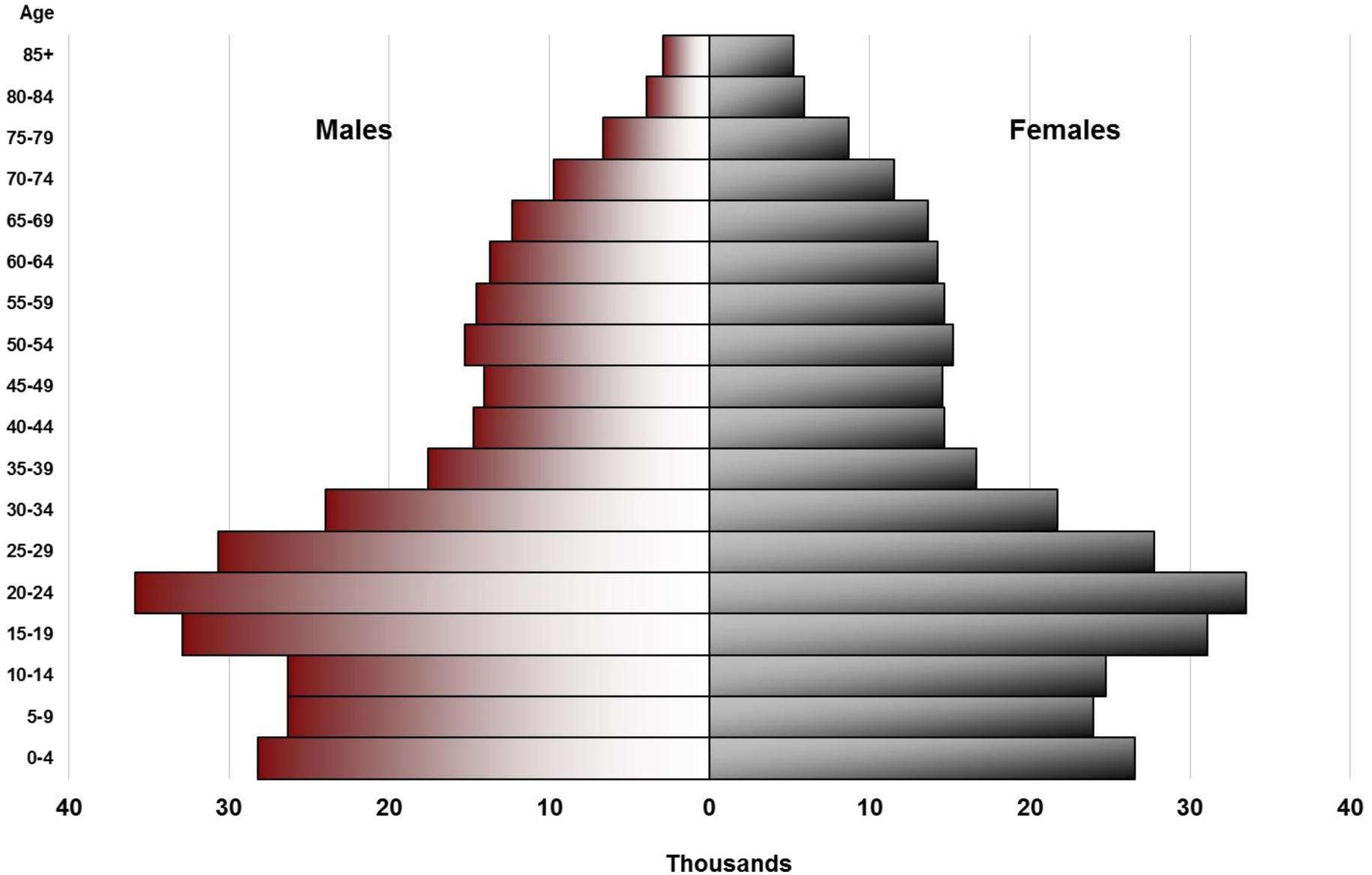
Which States Are Growing Younger or Not Getting Older?

State	2010	2014	Change
North Dakota	37.0	34.9	-2.1
Hawaii	38.6	37.9	-0.7
Alaska	33.8	33.3	-0.5
South Dakota	36.9	36.8	-0.1
			
Oklahoma	36.2	36.2	0
Nebraska	36.2	36.2	0
Wyoming	36.8	36.8	0
Iowa	38.1	38.1	0
Montana	39.8	39.8	0

Not on this list? - Getting older!

North Dakota's Population by Age and Sex, 1980 Census

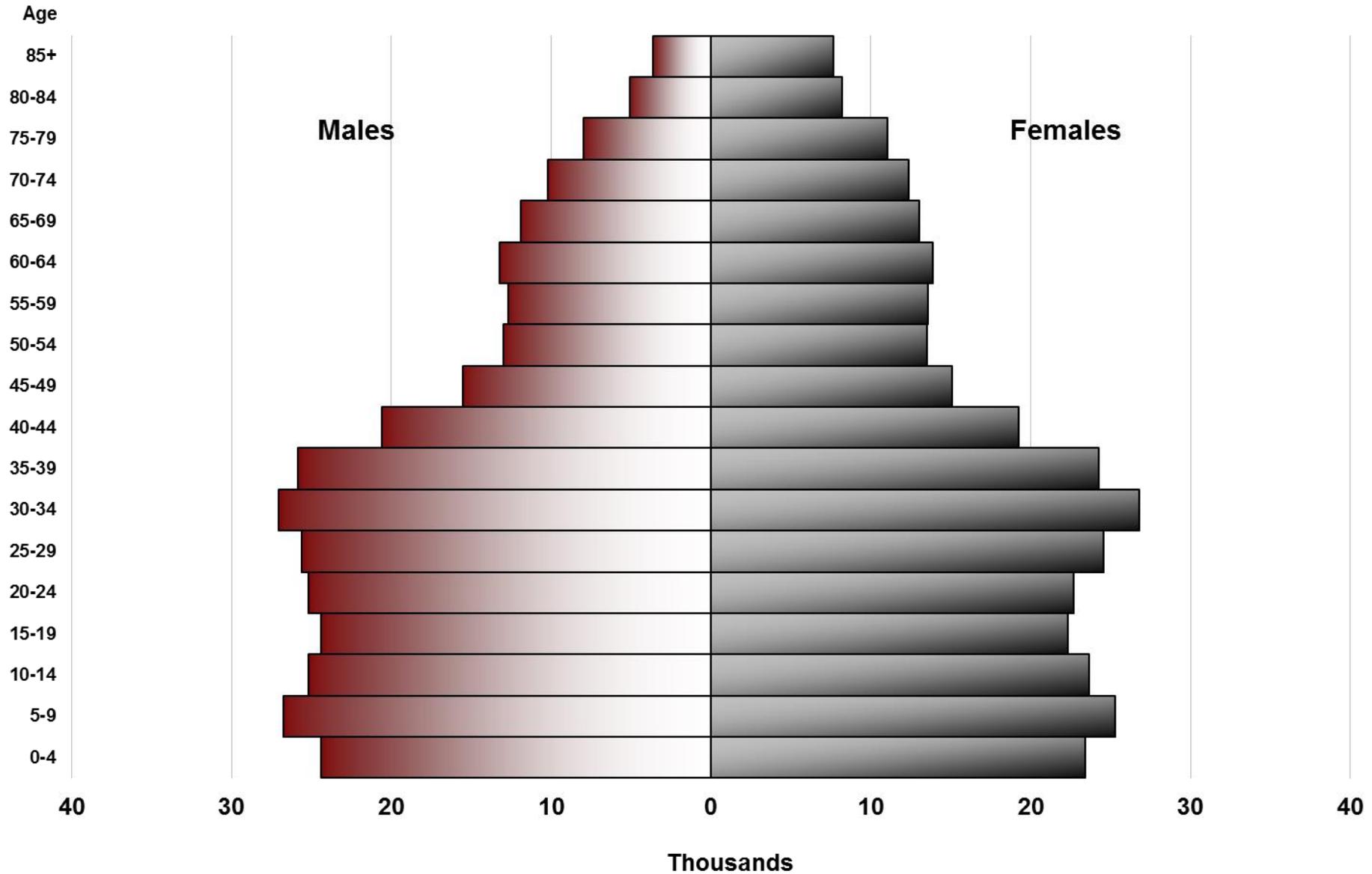
653,966



Source: United States Census Bureau Decennial Census 1980

North Dakota's Population by Age and Sex, 1990 Census

638,591



Source: United States Census Bureau Decennial Census 1990

Population North Dakota by Age and Sex, 2000 Census

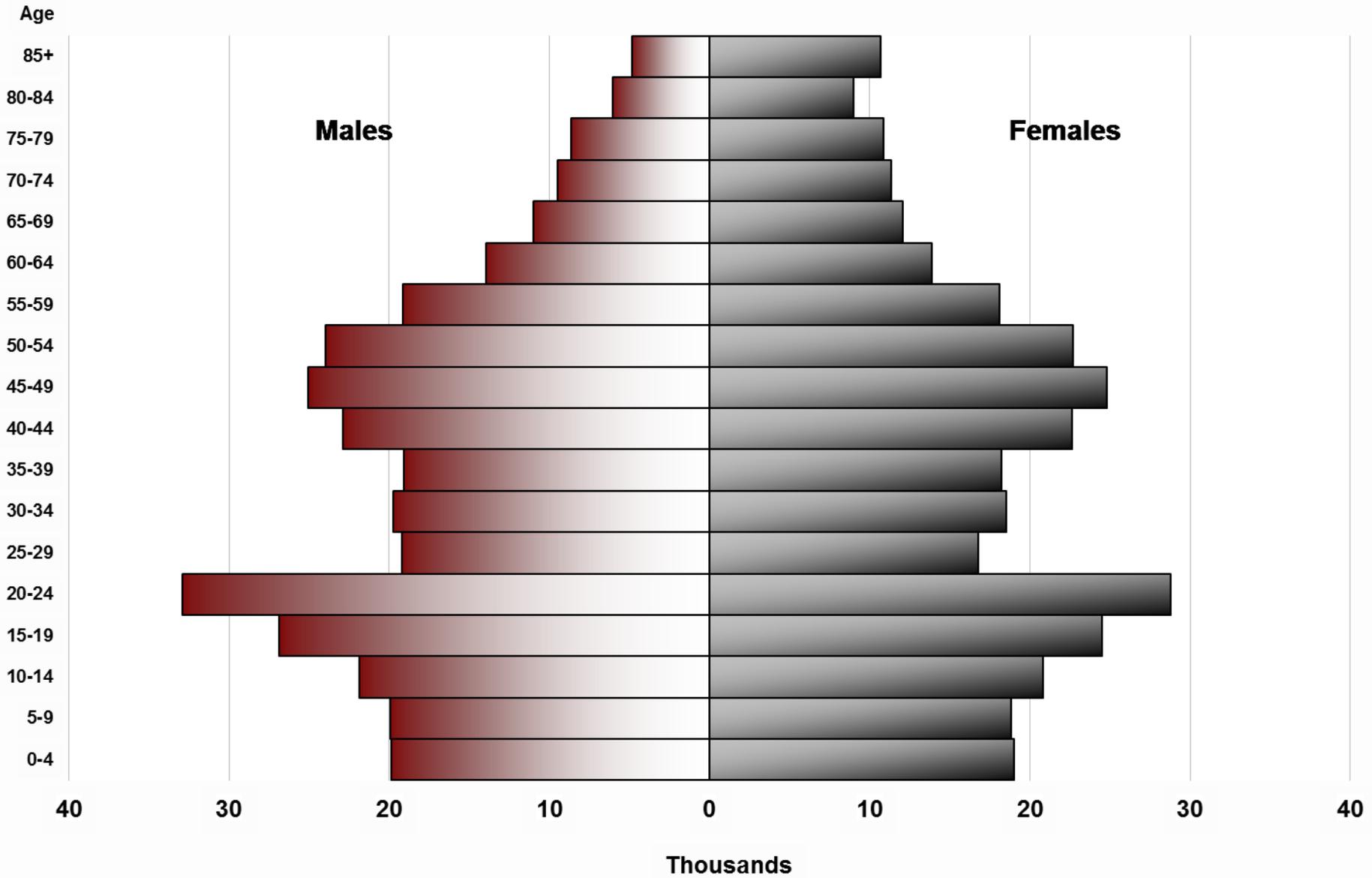
642,237



Source: United States Census Bureau 2000 Decennial Census

Population Estimate North Dakota by Age and Sex, 2005

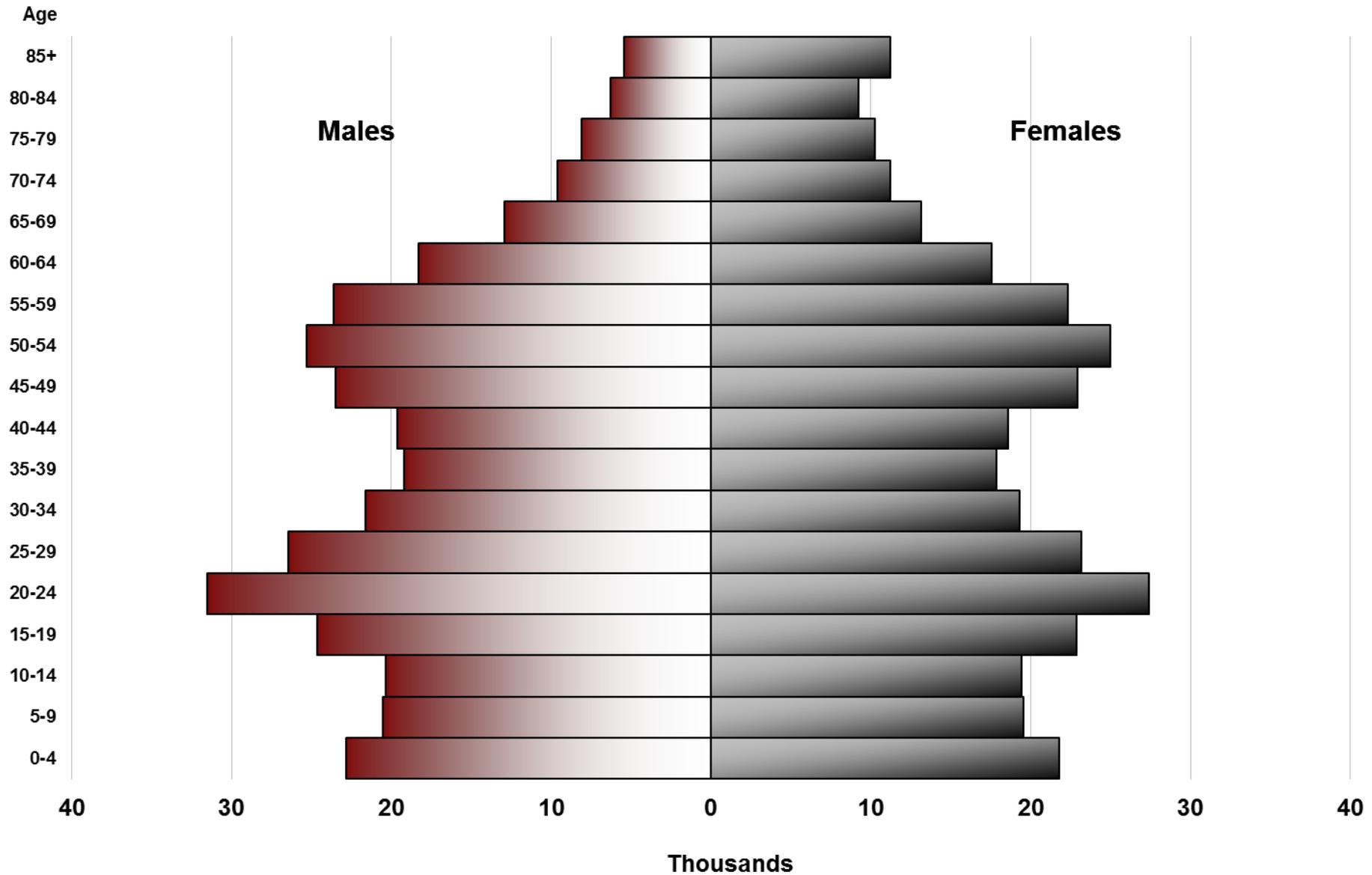
646,089



Source: United States Census Bureau Intercensal Estimate

North Dakota's by Age and Sex, Census 2010

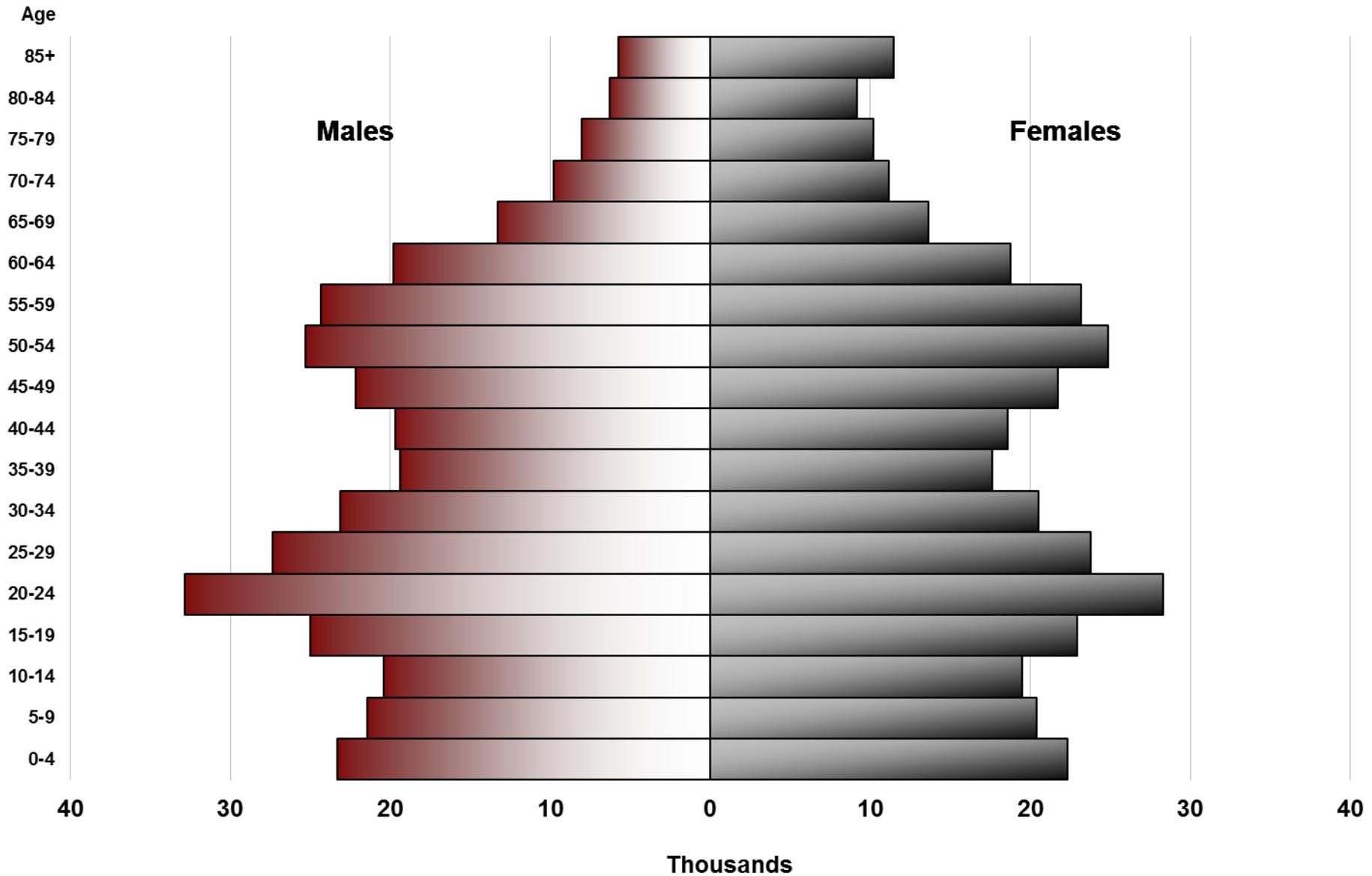
672,591



Source: United States Census Bureau Decennial Census 2010

Population Estimate North Dakota by Age and Sex, 2011

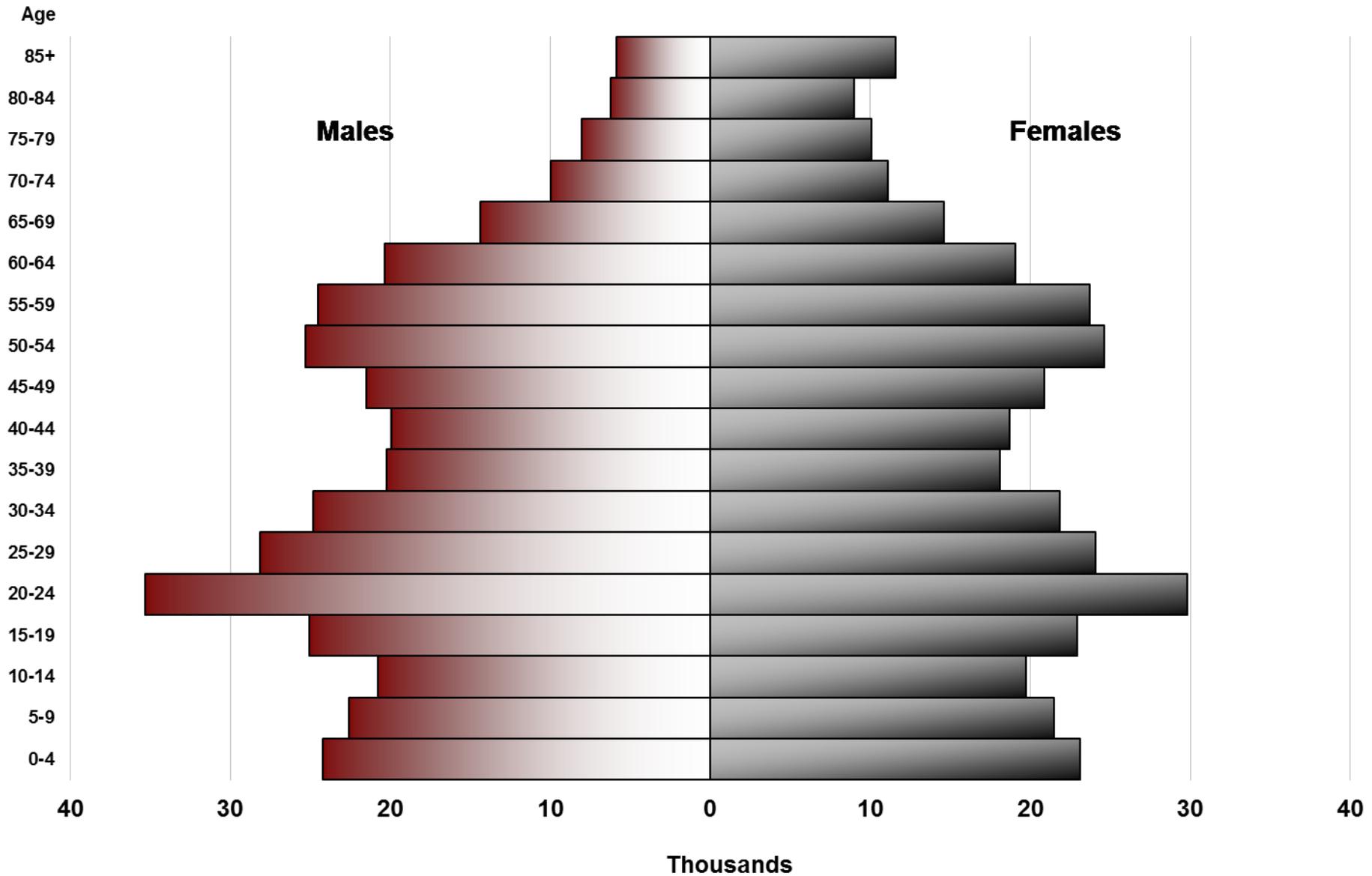
685,242



Source: United States Census Bureau Pop Est 2011, V2014

Population Estimate North Dakota by Age and Sex, 2012

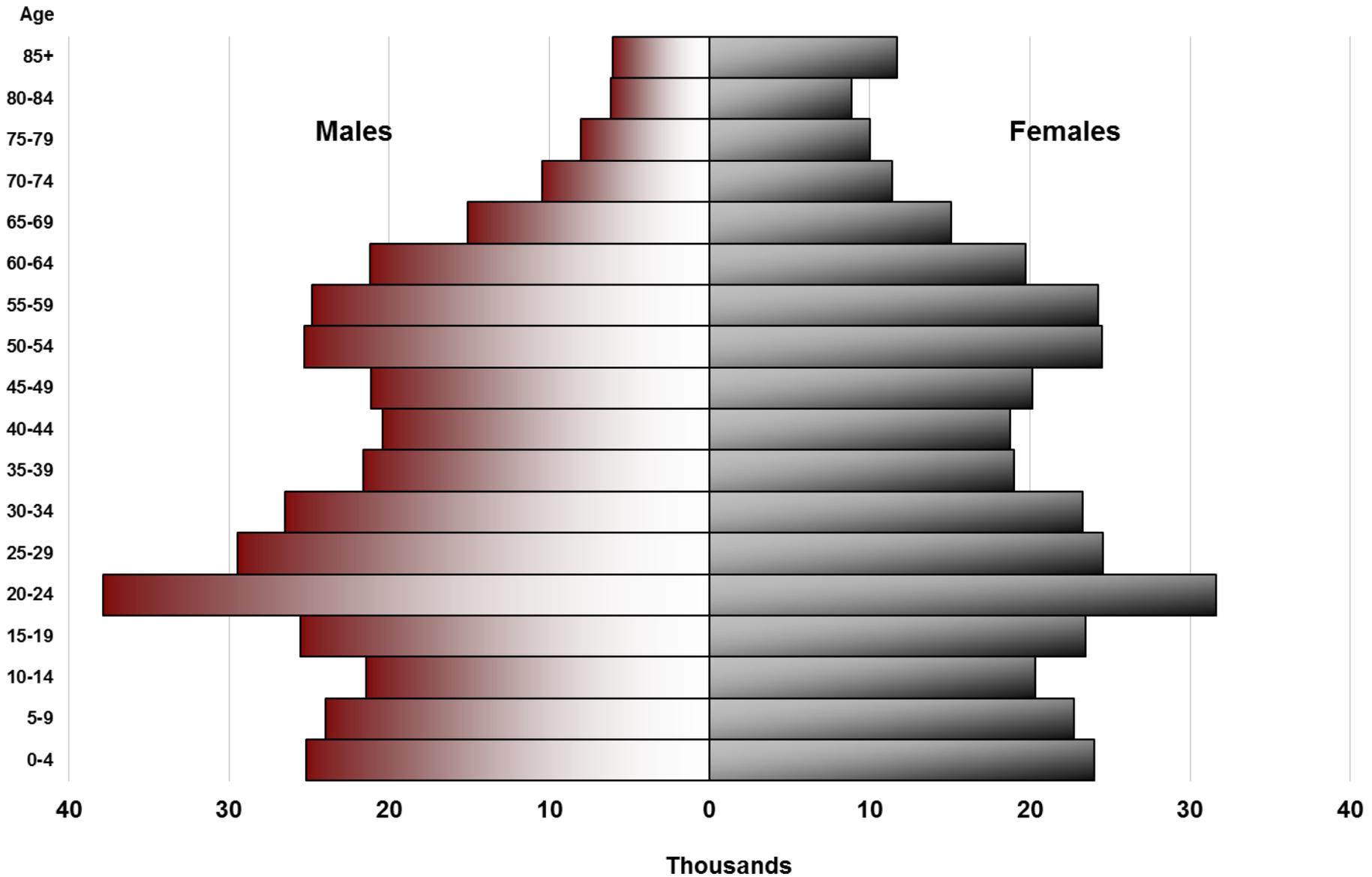
701,705



Source: United States Census Bureau Pop Est 2012, V2014

Population Estimate North Dakota by Age and Sex, 2013

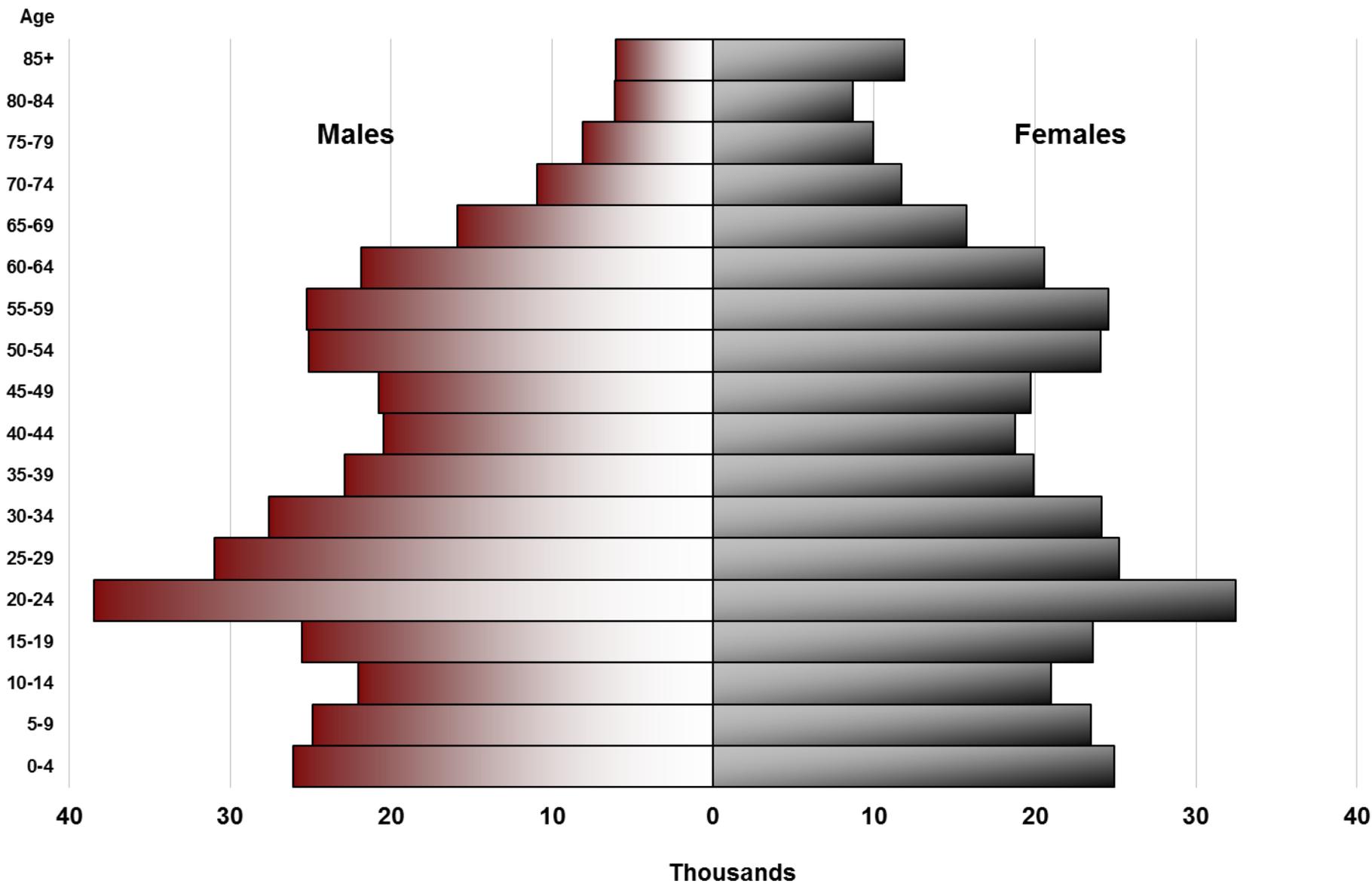
723,857



Source: United States Census Bureau Pop Est 2013, V2014

Population Estimate North Dakota by Age and Sex, 2014

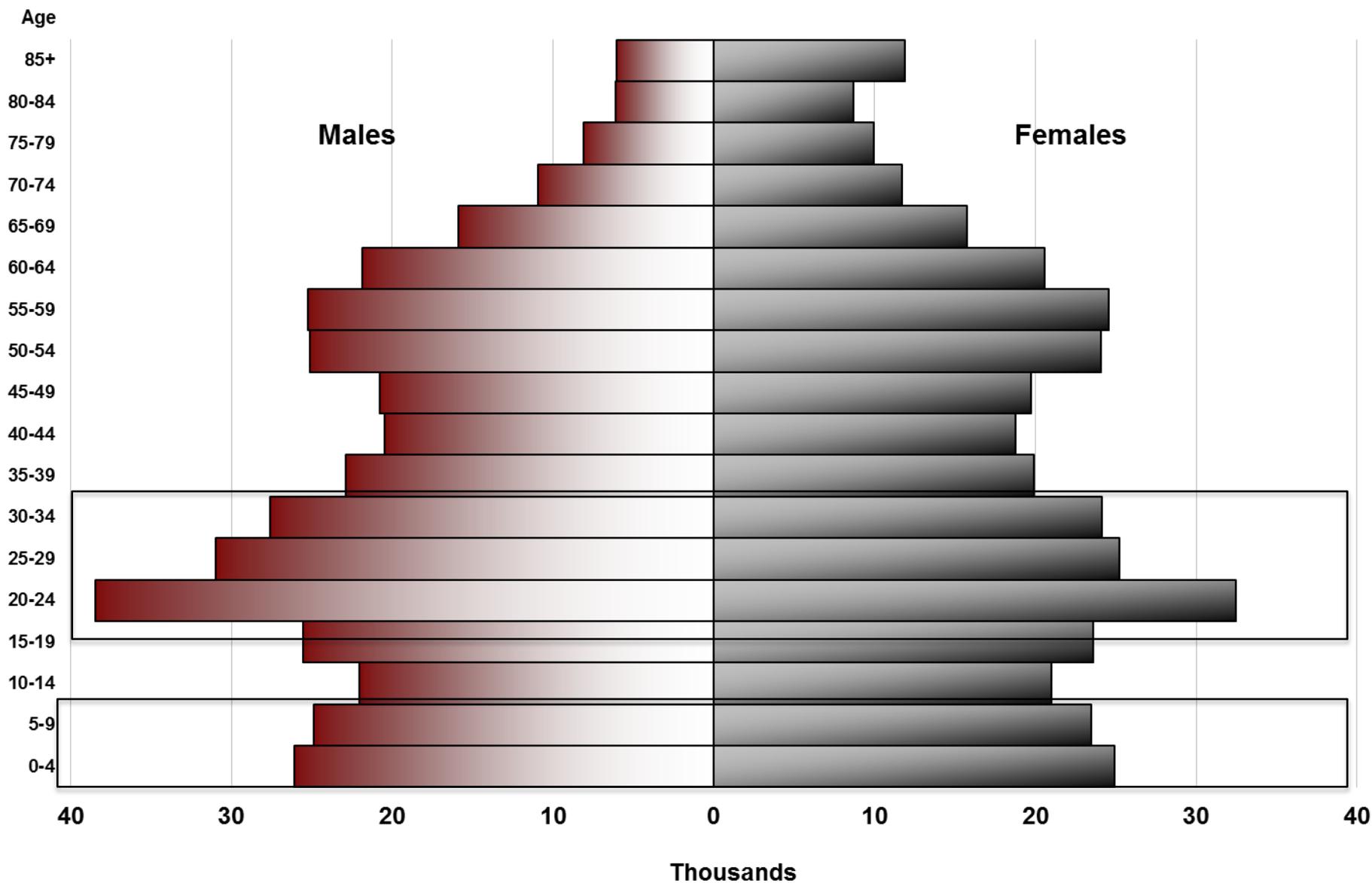
739,482



Source: United States Census Bureau Pop Est 2014, V2014

Population Estimate North Dakota by Age and Sex, 2014

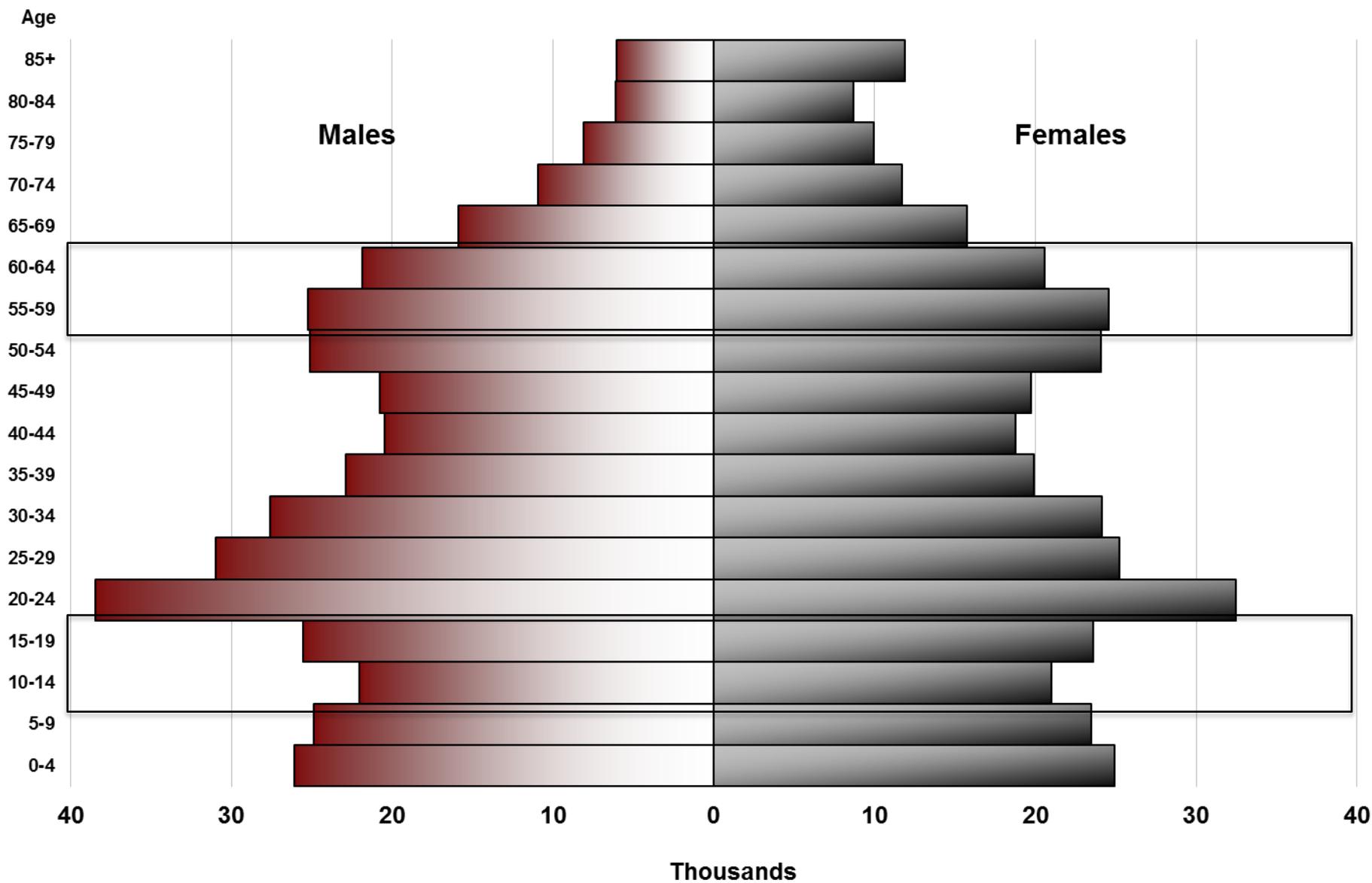
739,482



Source: United States Census Bureau Pop Est 2014, V2014

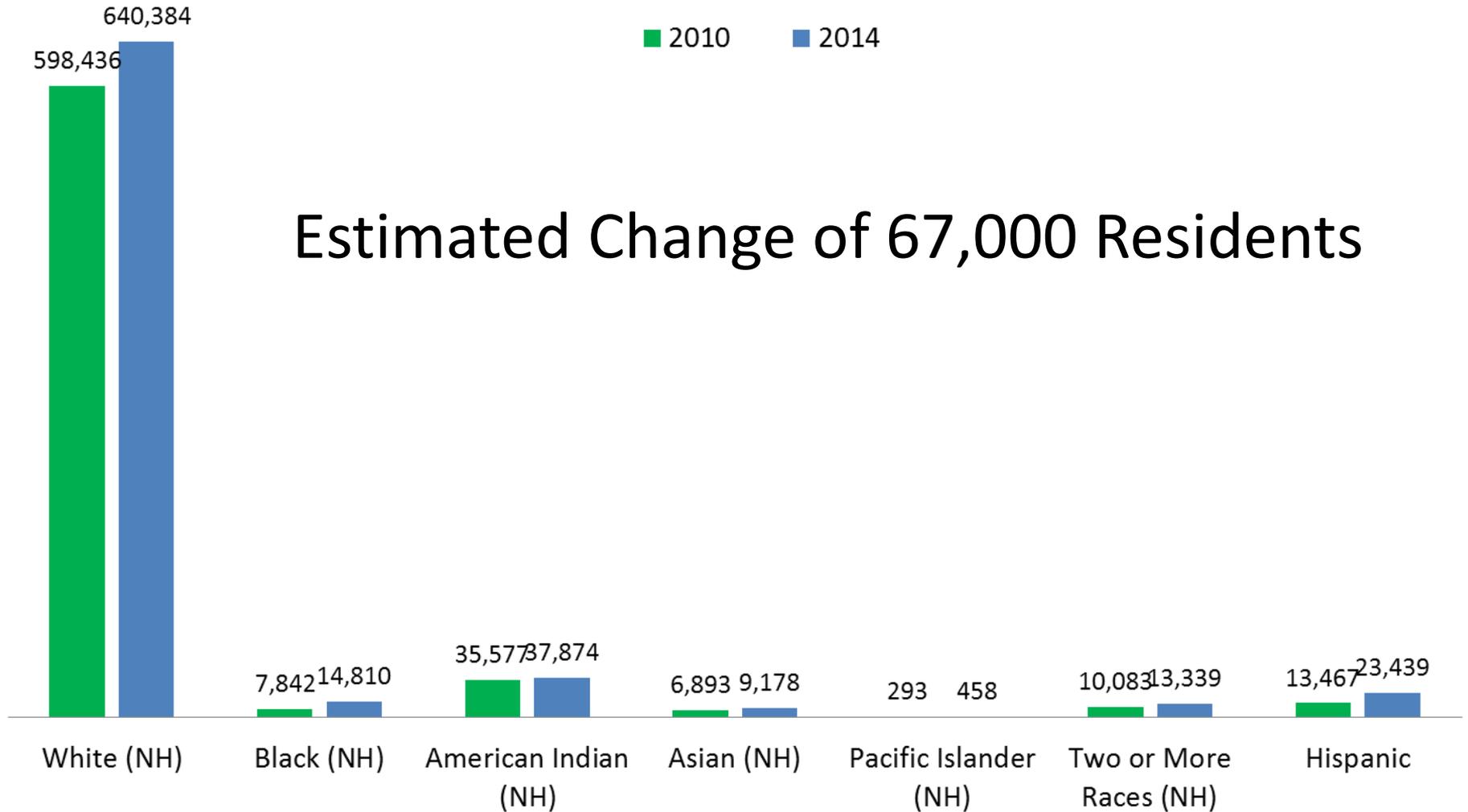
Population Estimate North Dakota by Age and Sex, 2014

739,482



Source: United States Census Bureau Pop Est 2014, V2014

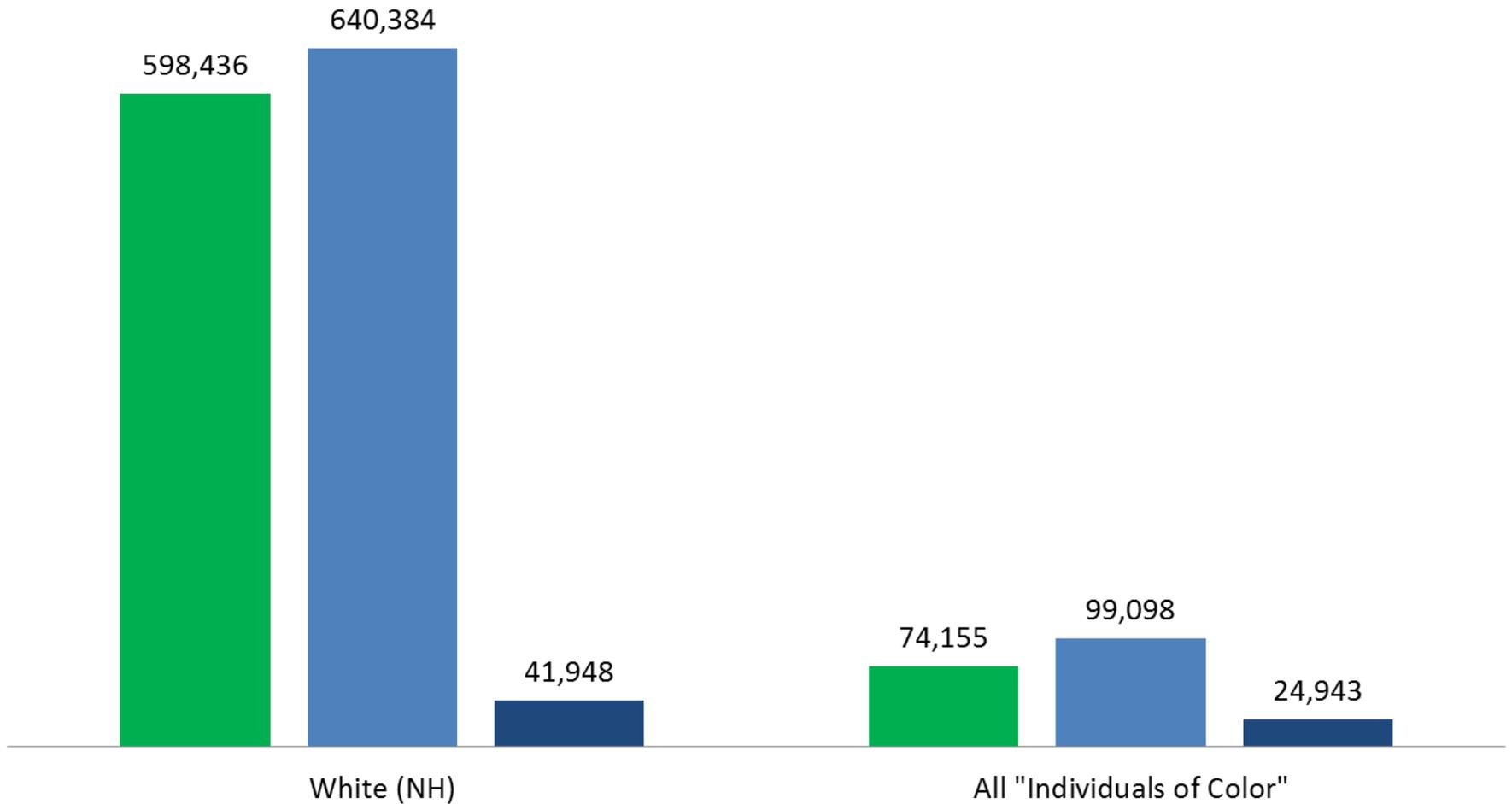
North Dakota
Estimated Change in Population by Race and Ethnicity
from April 1st 2010 to July 1st 2014



North Dakota

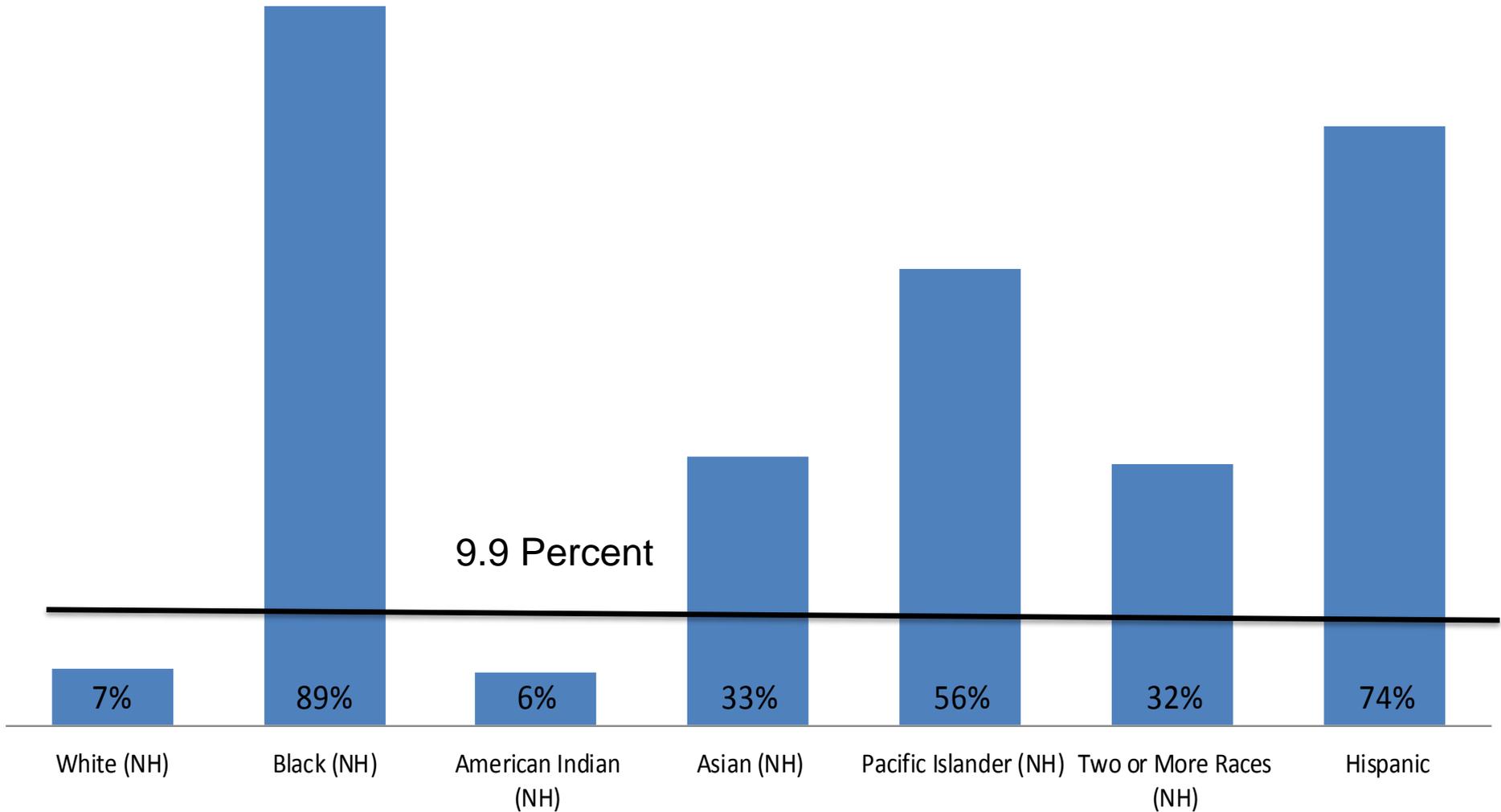
Estimated Change in Population by Race and Ethnicity from April 1st 2010 to July 1st 2014

■ 2010 ■ 2014 ■ Net Change



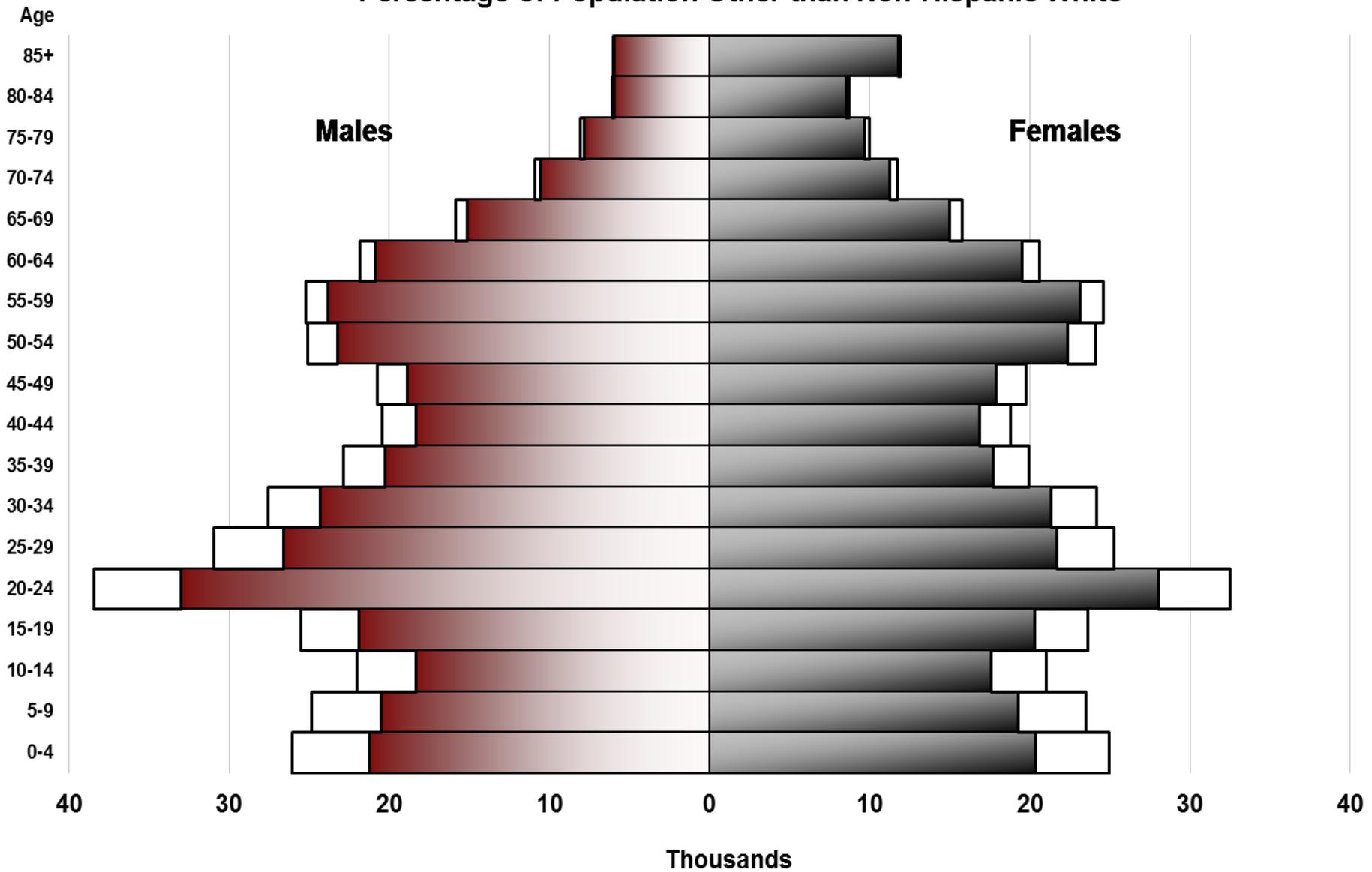
North Dakota

Estimated Percentage Change in Population by Race and Ethnicity from April 1st 2010 to July 1st 2014



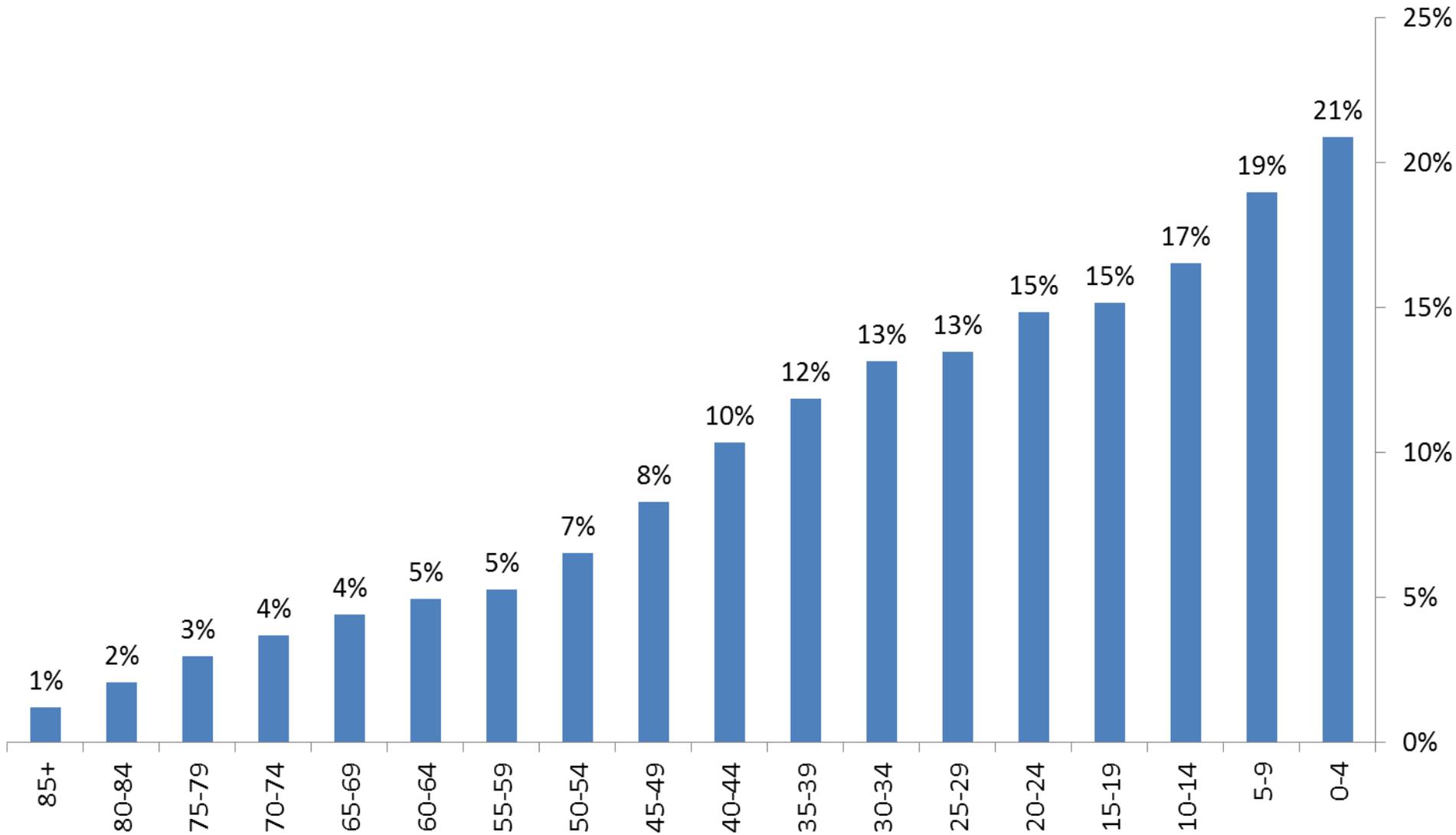
Population Estimate North Dakota by Age and Sex, 2014

Percentage of Population Other than Non-Hispanic White



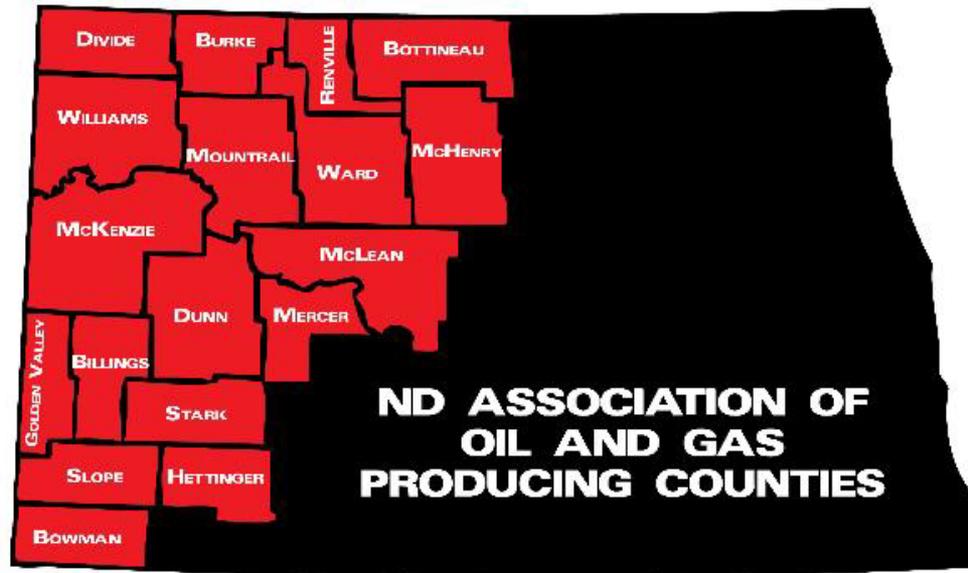
Source: United States Census Bureau Pop Est 2014, V2014

North Dakota's 2014 Population Estimate Percentage of Population Other than Non-Hispanic White By Age Group



**“We lead North
Dakota’s efforts to
attract, retain and
expand wealth.”**

- Vestibulum imperdiet, Tirpis Ante



PROPOSED STUDY FOR :

Western ND Core Cities Impacts Forecasting Analysis

1-19-2016

What Work is the Association Proposing to Perform this Biennium?

- Even with the oil price dip, our membership is still anticipating significant demands for services and infrastructure in the coming years
- The Association Board recently approved **\$125,000** in cost-share to perform Western ND Core Cities Impact Forecasting
 - Dickinson | Watford City | Williston | Tioga | Stanley | Killdeer**
- Up to **\$25,000** of this funding is available to each core city to cost-share in compiling an **Impacts Forecasting Analysis** and **Financial Gap Analysis**
- **Results will be a critical tool to assist in demonstrating the anticipated on-going needs of Western ND in the coming years!**



What Work is the Association Proposing to Perform this Biennium?

- In combination with and building upon other related analyses being performed by the ***Department of Mineral Resources*** and ***North Dakota State University***, the Forecast will provide a roadmap of funding needs for our membership
- This analysis will demonstrate that the current funding combination of State and Local revenues is likely not sufficient
- Results are expected to provide critical input to the Governor's 2017-2019 Biennium Budget development and for the 2017 Legislative Session
- **O&G Resources are still here and critical planning to demonstrate on-going impacts is necessary!**

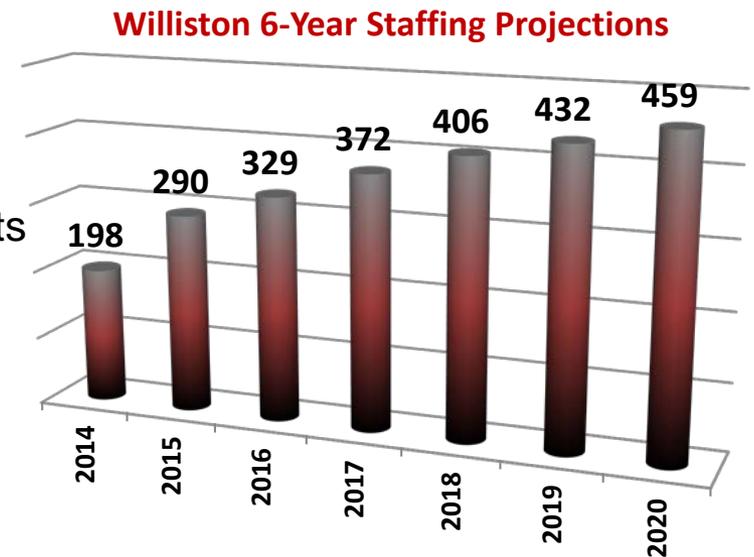


What will the Study Include?



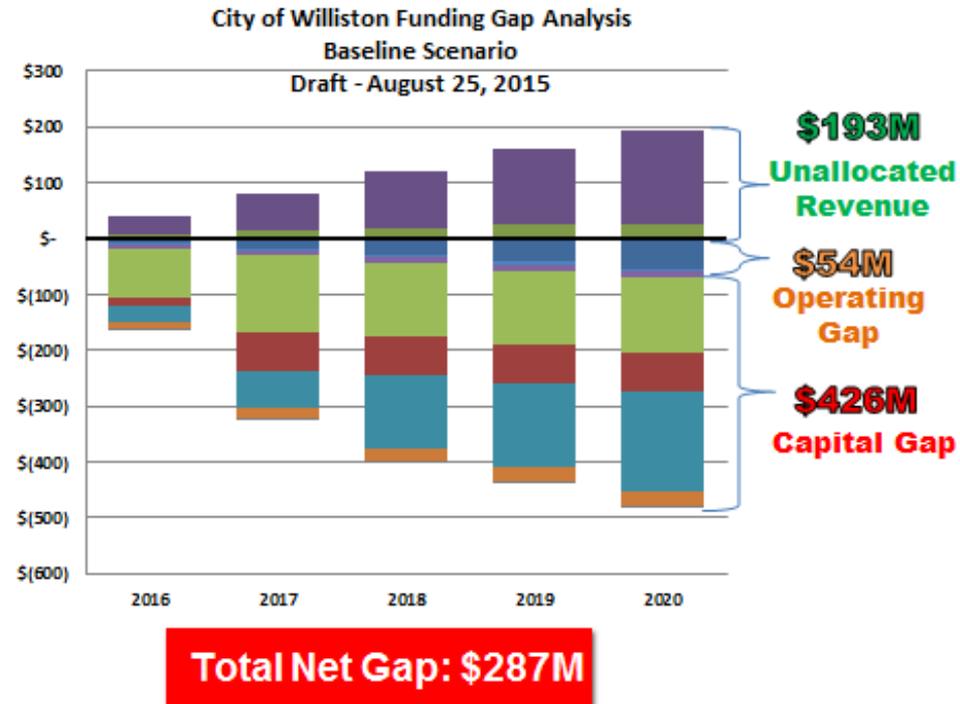
What will the Study Include?

- Demonstrate core city needs beyond the traditional capital infrastructure needs (water, sewer, roads, etc.)
- Identifying how operations and City services provided will need to grow to keep pace
- Long-term financial planning to identify the “how” the City will utilize local revenues
- Specifically, analysis will include:
 - Comprehensive Growth Forecasts
 - Benchmarking Analyses
 - Staffing Needs Forecasts and Gap Assessments
 - Operating Expense Projections
 - Facility/CIP Needs & Projections
 - Local Revenue Growth Forecasts
 - Comprehensive Financial Gap Analyses



How will this information be useful?

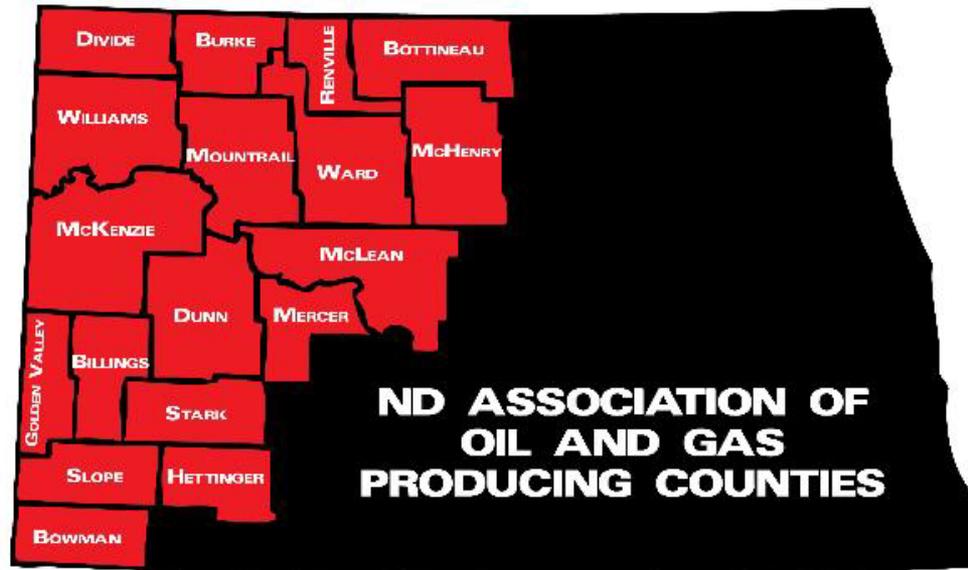
- **Participating Cities:** will have a robust quantification of the local funding and operational challenges
- **The Association:** will receive in-depth and consistent information across the board to assist in demonstrating the needs of our membership
- **The State:** will have an in-depth understanding of what is beyond the ability of local governments to fund and operate in a volatile growth environment



To be Effective, the Study Must be Broadly Supported

- The Association is seeking a commitment from each core city to participate in the analysis
- Each core city analysis is expected to cost approximately **\$50,000** with a detailed scope of services to be further developed for each city based on available information
- Association would like to **cost-share** on average **50/50** with each participating core city
- Results of all of participating cities will be compiled into a common report to present anticipated needs of the region
- Proposed timeline for completion of June, 2016





Questions?

PROPOSED STUDY FOR :

Western ND Core Cities

Impacts Forecasting Analysis

1-19-2016

Building the New Watford City

Oil Patch Communities Infrastructure Discussion

EmpowerND Commission Meeting

Brent Sanford, Watford City Mayor
January 19, 2016

Watford City

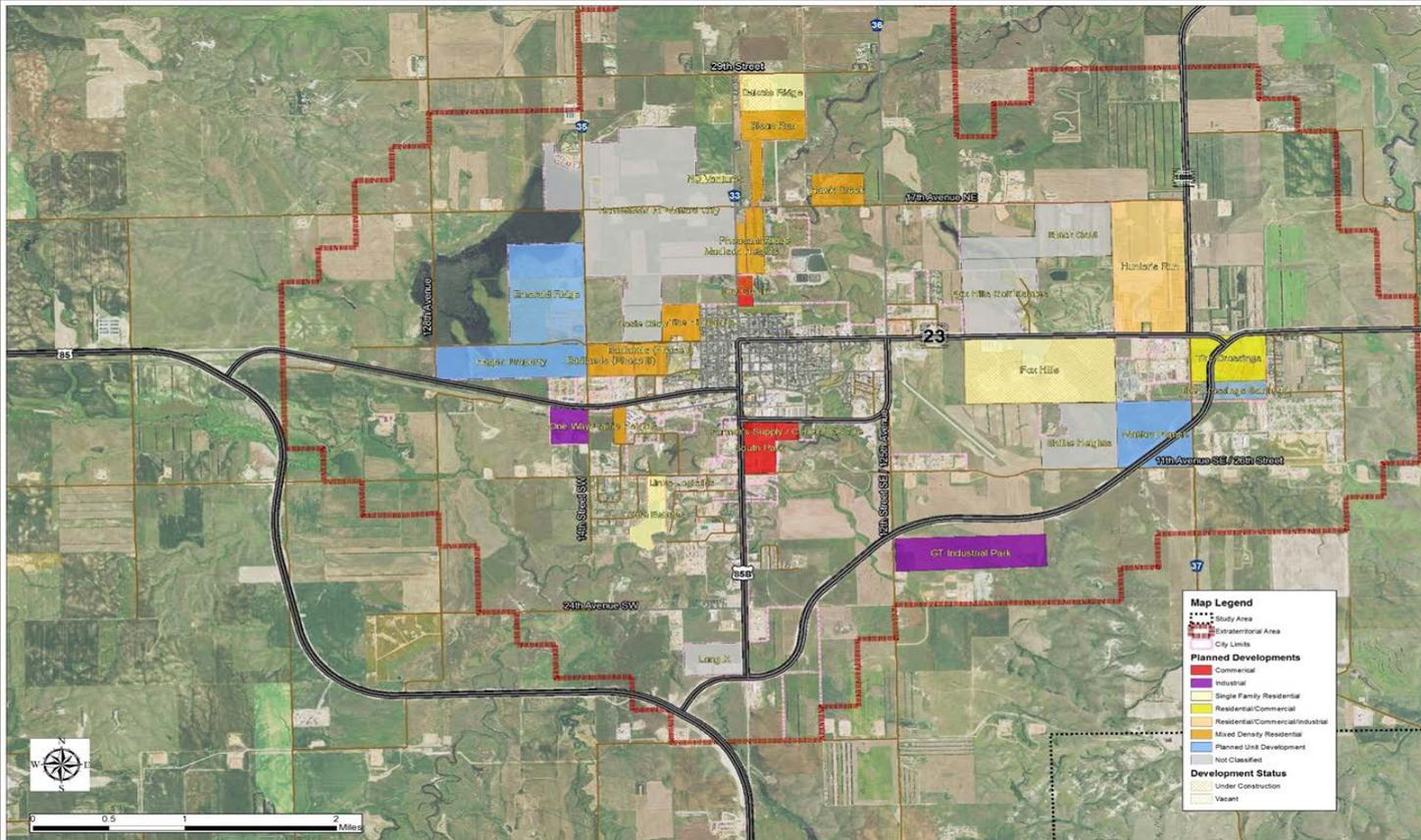
Bakken 2010-2011: Planning

- **Community Planning – 2010 era – Employment Boom**
 - Drilling rigs began moving in at higher levels in 2010
 - Skid shacks and RV's began showing up in Watford City by the dozens for the drilling industry employees
 - City Engineer devised a system of Temporary Conditional Use Permits with annual reviews to allow zoning variances for property owners providing parking spots for the inflow of temporary housing units
 - US Census counted 1,744 people in 2010. (This sets a lot of fed and state funding.)
 - **Community leaders began strategy formulation**
 - Do we want to handle the influx of people with mobile homes and campers and food trucks, then simply watch them drive away when drilling tapers off?
 - And be left with nothing like the 80's?
 - Or...Do we want to meet the opportunity presented by the Bakken drilling plans head on?
 - And only allow permanent building projects so we are left with a better city?
 - We chose the latter. The City began our Capital Improvement Plan in 2010.

Watford City

Bakken 2010-2013: Planning (2)

- **Community Infrastructure Planning– 2010-2013**
 - **City Council Hired AE2S as City Engineer**
 - Formulated a 5 year Capital Improvements Plan to identify and prioritize the infrastructure needed to handle the potential growth in identified growth areas
 - State funded sewer and water trunklines in 2011 legislative session
 - Developers swarmed into town
 - **City Council Hired Curt Moen as City Planner**
 - WCHS graduate in 1985 with community planning and developing experience in the Las Vegas area
 - He is the catalyst behind what you see for new building around the former city limits
 - **City Council moratorium on Temporary Housing - 2011**
 - **NDSU / KLJ Industry Impacts Study**
 - Projects the need for housing 17,000-21,000 permanent population based on the long term jobs resulting from Bakken well projections
 - Available housing units needed to grow from less than 1,000 to 10,000 units, based on the Study



**Planned Developments as Provided by City
As of December 2014
Watford City Area, 2040 Future Land Use and LRTP**



Planned Developments – Watford City

Future Land Use Planning Study
2040 Future Land Use and LRTP

-Economic Effects of Oil and Gas In in Western North Dakota 2014 to 2019

North Dakota Legislative Management
North Dakota Oil and Gas Impacts Study

July, 2014

Dean A. Bangsund
Dr. Nancy M. Hodur

Department of Agribusiness and Applied Economics
North Dakota State University
Fargo, ND, 58108

NDSU NORTH DAKOTA
STATE UNIVERSITY

Year	Divide County	McKenzie County	Williams County
2014	6,678	19,726	70,402
2015	7,247	21,419	76,831
2016	7,874	23,274	83,485
2017	8,359	24,706	88,623
2018	8,691	25,688	92,146
2019	9,021	26,663	95,641
Average Annual Change	6.2%	6.2%	6.3%

NDSU Study

Population Potential, by County,
Medium Scenario, Williston Region,
2014-2019

Housing Needs by County, in Total Units,
 Scenario, Williston Region, North Dakota,
 9

	Divide County	McKenzie County	Williams County
2014	3,446	8,178	30,728
2015	3,793	9,003	33,826
2016	4,122	9,782	36,756
2017	4,376	10,385	40,569
2018	4,550	10,797	42,108
2019	4,722	11,207	43,415

NDSU Study

Housing Needs by County, in Total Units,
 Medium Scenario, Williston Region,
 2014-2019

Watford City

Bakken 2015-2016 (1)

- Current Status – 2015-2016

- 11,000 permanent units needed according to KLJ/NDSU study by 2019
- Estimated current City ETA population of 10-12,000 with over 5,000 estimated to be living in temporary accommodations

TOTAL HOUSING TYPES IN McKENZIE Co. (These unit numbers include Watford City)				
	<u>WC</u>	<u>WC ETA</u>	<u>County</u>	<u>Total</u>
RV's	282	1087	1368	2737
Trailers/Cabins/ Mobile Homes	285	539	1468	2292
Homes	717	411	1079	2207
Apartments	1560			1560
4-Plex	156			156
Duplex	<u>322</u>			<u>322</u>
	<u>3322</u>	<u>2037</u>	<u>3915</u>	<u>9274</u>

- New Sewer Plant with 7,500 pop. capacity full before opening of \$20mm Phase I, so on to \$10mm Phase II to handle 15,000 population.
- Rents are still \$1,500-2,000 for 2 bedroom apartments, but 60-70% occupied
- House rents went from \$250 up to \$5,000/month, back to \$2,000/mo, low inventory
- House sales from \$40,000 to \$350,000 for same house 5 years later, back to \$250,000, low inventory
- Projections for 5,000+ single family homes, only 50 single family homes per year for the last 3 years... Why so few?

Watford City

Bakken 2015-2016 (2)

- Infrastructure Deficiency has been THE central challenge
 - As our growth needs became apparent, the reality of the infrastructure deficiency set in.
 - Highways, Streets, Sewer and Water for a 1,500 population footprint
 - All were 1950-1980 vintage in need of replacement
 - Infrastructure Needed:
 - New Sewer/Water Systems, New Streets – latest City plan is over \$340 million, before the southwest area along the new bypass planning and \$\$ budget
 - Water Source – WAWS (completed)
 - New Hospital – Road work done, Vertical construction Spring 2016, completion in '17
 - New Schools – High School completion Feb 2016, Elem School – '16 or '17 start date?
 - New Jail and LEC – under construction, completion in 2017
 - New Park and Rec facilities – Events Center completion September 2016
 - Highway Bypass – completed in Fall 2014
 - A NEW COMMUNITY FOR 10,000+ BEING CONSTRUCTED AROUND THE OLD 1,500 POPULATION CITY
- ****QUESTION**** -- How do you fund infrastructure to expand a City from 1,500 to 15,000?
- ****ANSWER**** – Community borrowing, State support, Developers self funding

Watford City Bakken 2015 (3)

○ Community Borrowing - \$350+ million

- High School \$54 million*
- Community Events Center \$92 million*
- City Wastewater Plant \$30 million*
- City Special Improvement Dist. \$27 million
- Hospital/Clinic/Longterm Care \$80 million
- County Law Enforcement Center \$58 million*
- Wolf Run Village Apartments \$ 7 million
- Wolf Pup Daycare \$ 4 million

- * 50-100% of debt service from Gross Production Tax

- WE HAVE STORIES OF COLLABORATION IN ALL OF THE ABOVE! EACH ONE IS A "LIFETIME" TYPE PROJECT.

Watford City

Bakken 2015 (4)

- State Funding -- \$250+ million in the Area
 - Community Leadership continued its collaboration with the ND Oil and Gas Producing Counties organization and engaged State Executive Branch and Legislative Leadership to communicate the growth needs
 - Oil Impact Funding – legislative action the last 3 sessions
 - Sewer and Water Mains – 2011 and 2013 Oil Impact funding
 - Arterial Streets and Sewer Lift Stations – 2015 Surge funding of \$32 million, NDDOT
 - Water infrastructure –SWC 2014 and SWC 2016
 - Law Enforcement/First Responders – Equipment, Vehicles, Training – 2011, 2013, 2015 Impact funding
 - Schools – Housing grants
 - Hospitals – bad debt and housing grants
 - Gross Production Tax / Oil Formula increases – legislative action last 3 sessions – Now 30/70
 - HIF – affordable housing grants (multiple local projects)
 - NDDOT -- Highway Bypasses, Business Routes, Highway 85 and 23
 - BND -- Direct Borrowing for Western Area Water Supply Project
 - BND -- Direct Borrowing from our Gross Production Tax for Critical Infrastructure Projects
 - BND/NDPFA -- Direct Borrowing for SRF eligible public utility projects

Watford City Bakken 2015 (5)

◉ Developer Funding - Ongoing

- Curb and gutter, utilities and streets -- on their own, not SID
- Offsite improvements
 - Extending streets and utilities to their developments
 - Lift Station participation
 - Repayment is possible, but a large unplanned upfront cost
- Community assessments
 - \$2,500 per unit for Fire, Ambulance, School, Police, Parks support
 - Higher than usual Sewer hookup fees
- High Land costs -- \$2-\$10/foot
- Tighter Credit terms when borrowing for projects
- High labor and material costs
- “Not as easy to do here as Fargo”

Watford City

Bakken 2015 (6)

● Where do we go from here?

- \$30 oil has dampened the community's enthusiasm and developer confidence
- School enrollment still increasing – from 500 up to 1,300 students since 2010. Even increased from last year to this year. Headed to 2,000 students within 5 years at current patterns.
- Excessive camper population – 30-40% of students
- Housing unit needs gap – we need up to 11,000 permanent units per NDSU/KLJ long term impact study. Only 3,300 so far. 5,000 plus temporary housing units.
- Retail developments still coming, following new rooftops
- Housing developers still here but losing steam fast. No housing construction expected for 2016 summer construction season
- No oil companies are saying they won't drill their 60,000 wells in the area... So the jobs aren't going away. Long term employers still hiring.
 - WE HAVE NO CHOICE BUT TO KEEP GOING
 - WE ARE KEEPING OUR EYE ON THE HORIZON, STILL PLANNING, REINVESTING AND COLLABORATING
- LEGISLATIVE PRIORITY #1 -- OIL IMPACTED COMMUNITIES NEED CONTINUED INCREASES IN GROSS PRODUCTION TAX DISTRIBUTION SHARE TO KEEP UP WITH CONTINUED INFRASTRUCTURE GROWTH DEMANDS.



Infrastructure Priorities

January 19, 2016



GOALS

- ▶ An Exceptionally Stable & Growing Economy
- ▶ Extraordinary Business Health
- ▶ An Unparalleled Workforce
- ▶ Unrivaled Education & Research
- ▶ World-Class Communities



PRIORITIES

- Attract, Develop and Retain Talent
- Ensure **Water** Security and Management
- Expand Research Capacity and Relevancy
- Accelerate Entrepreneurial Activity & Output
- Invest in Critical **Infrastructure** Development and Capital Improvement Projects
- Define & Improve the Internal & External Perceptions of the Valley

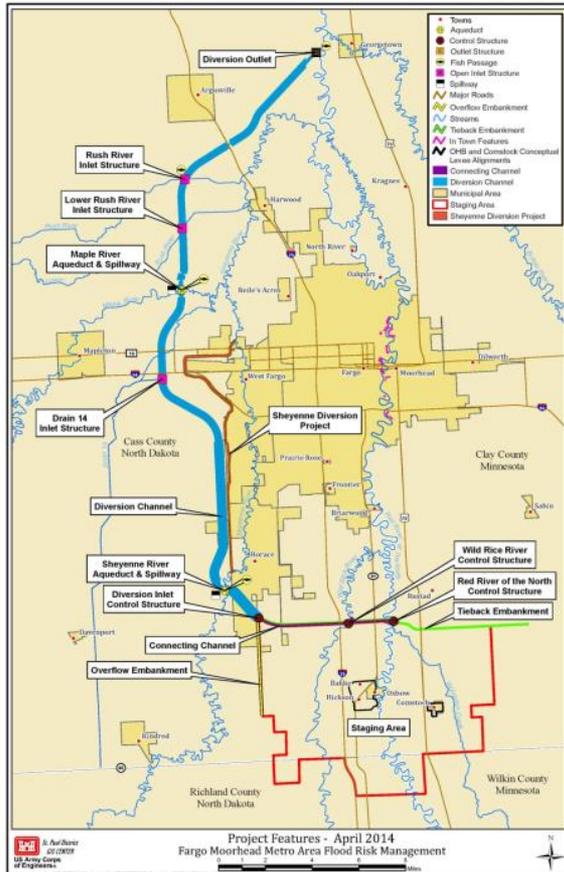


WATER PRIORITIES

-  FM Diversion
-  Red River Valley Water Supply Project
-  Others:
 -  Basin-Wide Retention
 -  Water Quality
 -  General Flood Protection



FM Diversion



- Federally Authorized Project
- 1,600 ft wide Diversion Channel in ND with 150,000 acre-feet of Upstream Staging
- Inlet North of Oxbow, ND
- Outlet near Georgetown, MN
- Provides 1-percent (100-year) Risk Reduction
- Extreme Events are “Flood-Fightable”



FM Diversion

Provides Risk Reduction:

- ▶ To the Greatest Amount of Infrastructure
- ▶ For the Greatest Number of People
- ▶ From Multiple River Systems:

- ▲ Red River
- ▲ Wild Rice River
- ▲ Sheyenne River
- ▲ Maple River
- ▲ Rush River
- ▲ Lower Rush River





Red River Valley Water Supply Project





Red River Valley Water Supply Project

PURPOSE: Provide a Solution to the Water Supply and Quality Problems in the Red River Basin

PROJECT NEED:

- ▶ Industrial Demand Exceeds Current Supply
- ▶ Existing Water Supplies will be Inadequate During Drought
- ▶ In 1934, Five Months of Zero flow in Red River at Fargo
- ▶ Project 41% Maximum Annual Water Shortage During 1930's-Type Drought
- ▶ Expected Economic Impact ~\$2 Billion Each Year



Other Water Priorities

- ▶ Basin-Wide Retention
- ▶ Water Quality
- ▶ General Flood Protection





Infrastructure Priorities

- ▶ Freight Infrastructure
- ▶ UAS Infrastructure
- ▶ Advanced Broadband and Wireless Communication Services
- ▶ Community Infrastructure



Infrastructure: Transportation

- ▶ Not a Focus of VPP
- ▶ On-Going Study by Upper Great Plains Transportation Institute (NDSU) and ND DOT
- ▶ Existing Federal and State Funding Programs
- ▶ Priority Needs are Local -- Not Shared Priorities

Thank You

On behalf of the Valley Prosperity Partnership

Co-Chairs

-  Tammy Miller
 - ▲ CEO, Border States Electric
-  Steve Burian
 - ▲ CEO, AE2S

For More information

-  Jim Gartin
 - ▲ President, GFMEDC
 - ▲ 701.364.1900
-  Klaus Thiessen
 - ▲ President & CEO, GFREDC
 - ▲ 701.746.2720

valleyprosperitypartnership.com

Waters of the United States
(WOTUS)
and
The Clean Power Plan (CPP)

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WOTUS

- Clean Water Act designed to protect the quality of surface water throughout the U.S.
- Navigable Waters – Waters of the United States
- Protection determination based upon case by case evaluations
- Uncertainty generated from 2001 and 2006 Supreme Court decisions –(i.e Significant Nexus)

WOTUS Final Rule

- Technical Paper (Draft when rules were finalized)
- Rule finalized May 2015
- Intent:
 - Clarify and Provide Regulatory Consistency
 - Jurisdictional Waters are “more precisely defined and predictable”
 - Reduce Case by Case analysis

WOTUS Final Rule

- Includes definition of tributaries and head waters that impact health of downstream waters
- Includes regulation of Adjacent or Nearby Waters:
 - Minimum of 100 ft. to maximum of 1,500 ft
 - Ordinary High Water Mark in 100 year flood plain
- Significant Nexus Waters within 100 year floodplain of traditional navigable waters
 - Inside 100 year floodplain with significant nexus up to 4,000 feet

WOTUS Final Rule

- Include regulation of Isolated or “Other Waters”
 - Waters of Regional significance or impact
 - Prairie Potholes

WOTUS State Concerns

- Jurisdictional Waters as defined expands federal authority limits case by case review
- Drainage systems jurisdictional if flow into navigable waters
- Prairie Pothole regulation –
 - System of Prairie Potholes?
 - Impact on Agriculture
- Bright lines of jurisdiction when conditions in the environment are not a bright line
- When does “near surface water” become ground water?

WOTUS Final Rule

- Positive:
 - ACOE will provide determinations made nationwide available for public review

WOTUS Final Rule

- Initial Stay of rule sought and granted to 13 states from ND Federal Court
- Nationwide Stay of rule provided by 6th Circuit
 - Determine where cases can be initially heard

The Clean Power Plan (CPP)



What is a 111(d) Plan?

- **A 111(d) plan must detail how reductions of carbon dioxide (CO₂) emissions from existing fossil fuel-fired power plants will be achieved.**
- **The plan is required by EPA's final Clean Power Plan rule (40 CFR 60, Subpart UUUU).**
- **It includes both state and federally enforceable requirements on the power plant operators to reduce CO₂ emissions.**

Proposed Rule vs. Final Rule

<u>ITEM</u>	<u>PROPOSAL</u>	<u>FINAL</u>
Start of Compliance	2020	2022
Compliance with Final Goal	2030	2030
Final Goal		
Rate	1,783 lb/MWh	1,305 lb/MWh
Mass	29,843,573 tons	20,883,232 tons
Interim Goal Period	2020-2029	2022-2029
Avg. Interim Goal		
Rate	1,817 lb/MWe-Hr	1,534 lb/MWe-Hr
Mass	30,403,643 tons	23,632,821 tons
Reduction Required		
Rate	24.7%	44.9%
Mass	10.5%	37.4%

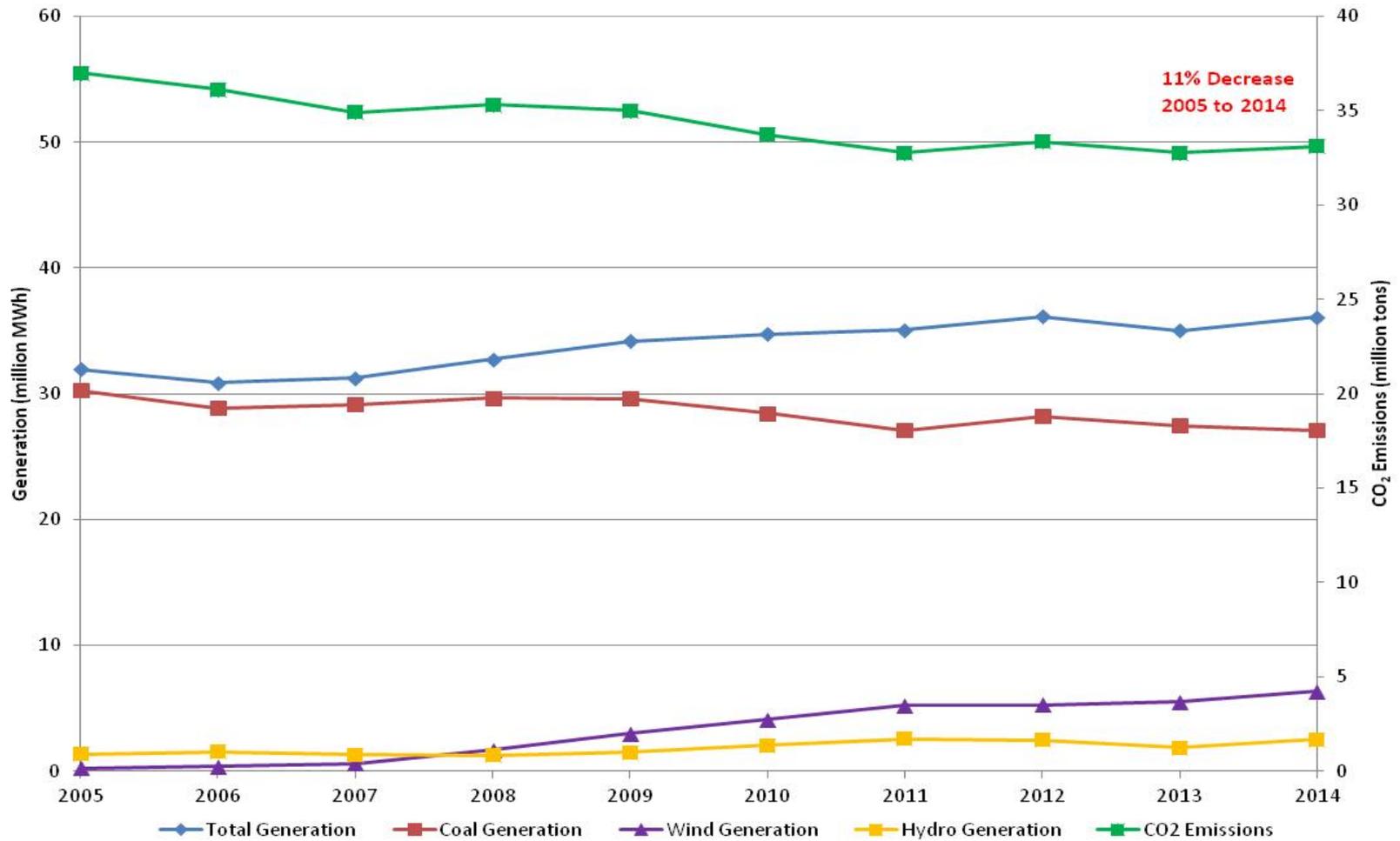
Proposed Rule vs. Final Rule

Nationwide Reduction from 2005 (mass)	30%	32%
Glide path	Single final number	Steps defined
Compliance	<p>Any existing wind generation could be used for demonstrating compliance</p> <p>Interstate trading allowed but up-front agreements between the states required</p>	<p>Only renewable energy (including wind) constructed after December 31, 2012 may be used for demonstrating compliance.</p> <p>Up-front agreements not required if trading ready rules in plan</p>
Incentives	None	Clean Energy Incentives Program
Reliability	No Safety Valve	Safety Valve included

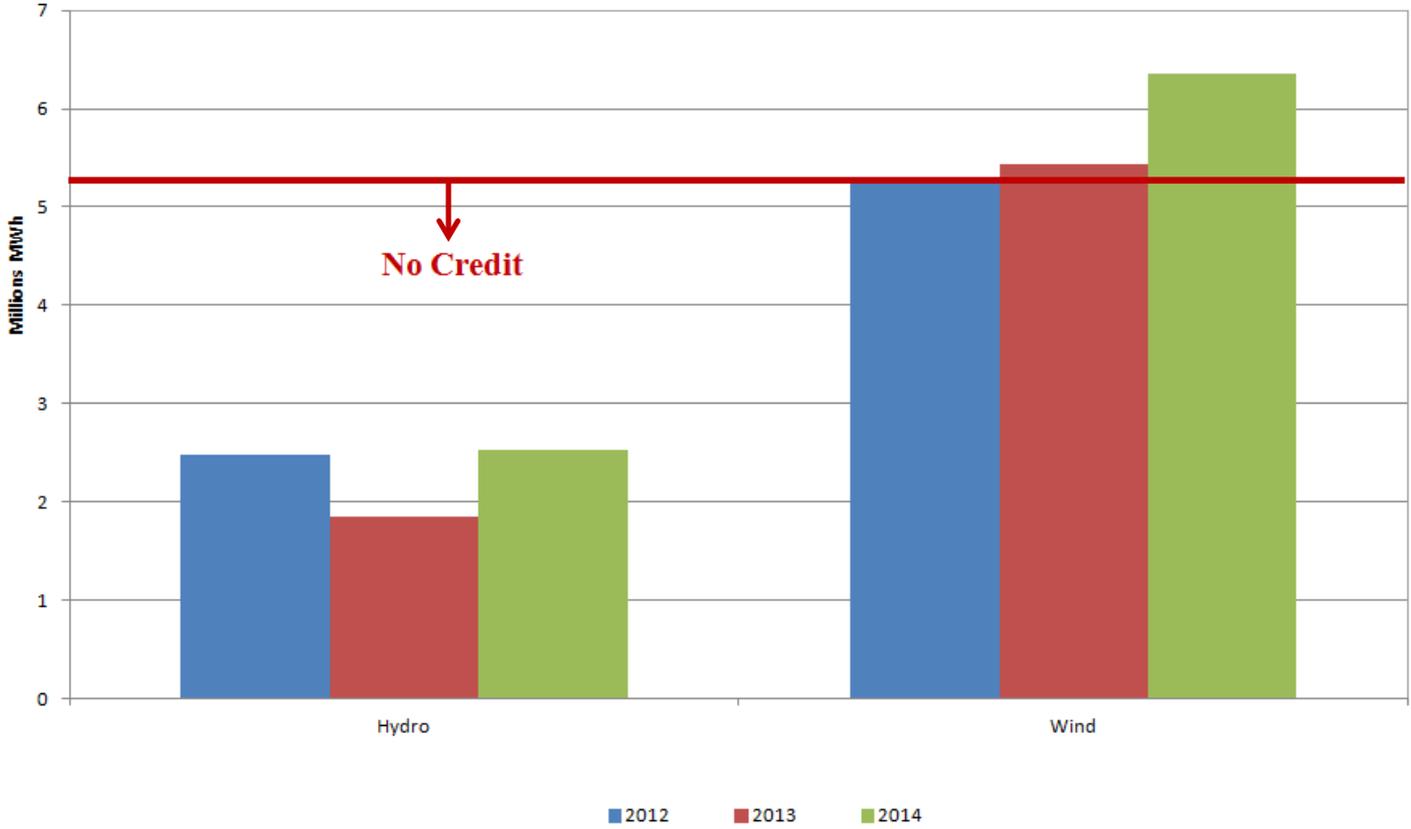
Federal (EPA) 111(d) Plan

- **State and industry have no control**
- **EPA plan to reduce CO₂ emissions in North Dakota**
 - EPA will dictate rate or mass
 - EPA will define what sources or measures can create ERCs or allowances – fewer than a state may define
 - EPA will oversee and enforce the plan

North Dakota Electricity Generation



North Dakota Renewable Generation



Public Outreach

- Four Public Input Meetings:
 - Williston
 - Beulah
 - Bismarck
 - Fargo
- Estimated 1,500 people attended the meetings.

General Public Input

- General Issues presented:
 1. Regional and statewide economic impacts
 2. Reliability and Cost of implementation
 3. Remaining Useful Life of Facilities
 4. Renewable Electric Generation Credit
 5. Trading Ready Plan
 6. State Plan not a Federal Plan
 7. Pursue Legal Remedy
 8. Request 2 year plan development time extension
 9. Time lines for compliance unrealistic
 10. PSC involvement needed
 11. Keep all Plants and coal mines operational
 12. Low Income

Clean Power Plan (111d)

- Develop Initial State Plan Submittal – (9/2016)
- Request 2 year extension
- Develop potential scenarios
- Economic Impact – positive and negative
- Social Determinant Impacts – positive and negative
- Meetings with regional states to determine cooperation opportunities
- Continue Legal Challenge