

Census Overview:

Basics, Decennial, ACS, and Estimates

The Nebraska State Data Center 28th Annual Data Users Conference

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Census Basics

- Census data products
- Geography
- Questionnaires and subject items
- Data universes
- Data availability

Data from the Census Bureau

Part of the Department of Commerce--Serves as the leading source of quality information on the nation's people and economy.

- ✓ Decennial Census
- ✓ American Community Survey
- Other surveys/censuses
 - Current Population Survey (conducted monthly with special topics)
 - Census of Governments (for years ending in 2 and 7)
 - Economic Censuses (for years ending in 2 and 7)
 - County and Zip Code Business Patterns (annual)
 - Survey of Income and Program Participation (annual)
- ✓ Annual population estimates

Geography

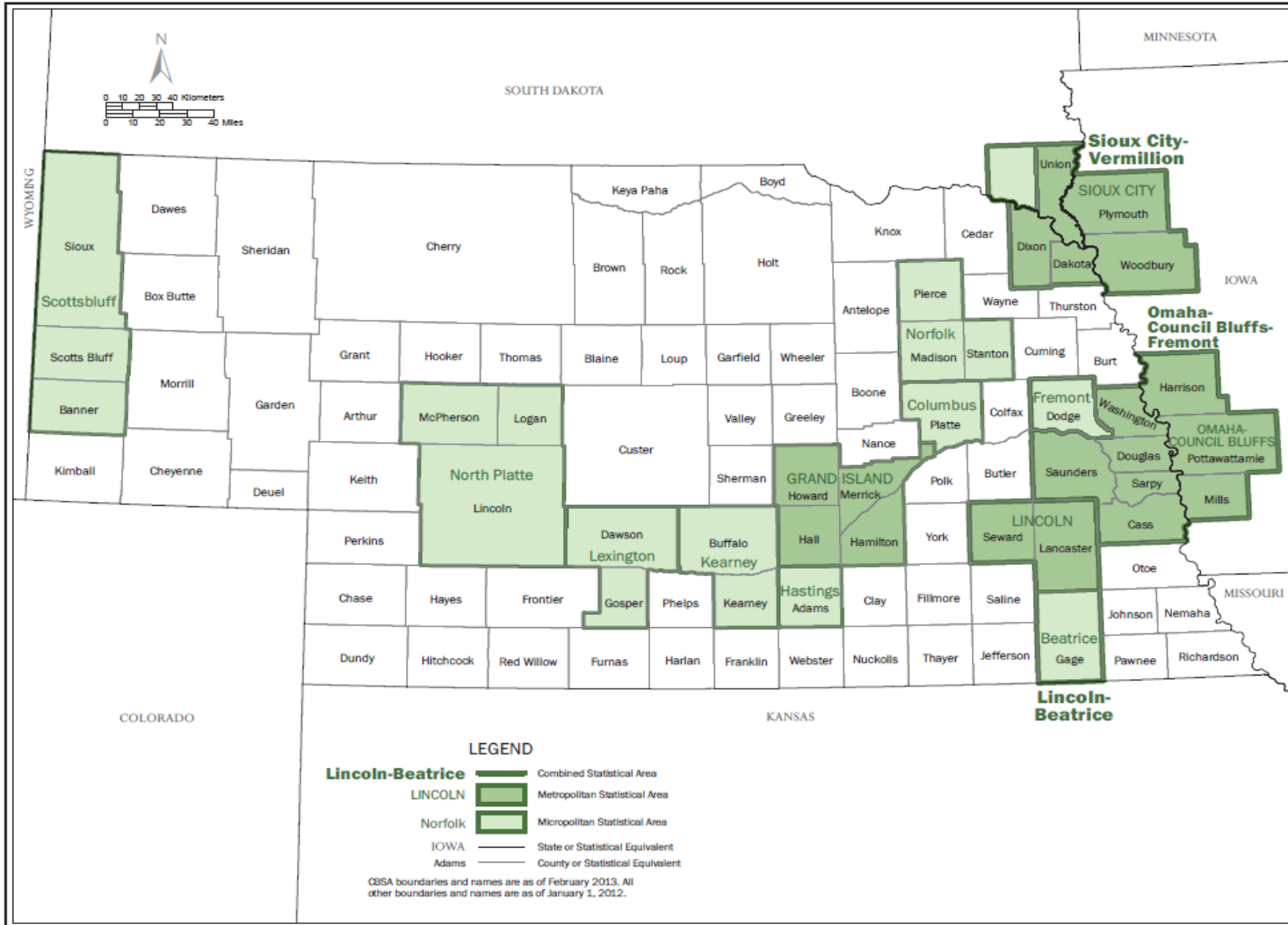
Census data are summarized for geographic areas. The most current and detailed information is available for the larger (most populous) geographic areas.

- Legal/Administrative
 - Nation, State, County, Place, Township
 - School District, Legislative District, Tribal area
- Statistical
 - Large area
 - Metropolitan/Micropolitan Area
 - Small area
 - Census Tract, Block Group, Block
 - Zip Code, Voting District, Public Use Microdata Area (PUMA)



Nebraska Metropolitan and Micropolitan Areas

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration U.S. Census Bureau



NEBRASKA - Core Based Statistical Areas (CBSAs) and Counties

CBSA boundaries and names are as of February 2013. All other boundaries and names are as of January 1, 2012.

FactFinder Address Search Page & Results

Your Selections

'Your Selections' is empty

Search using the options below:

- Topics
(age, income, year, dataset, ...)
- Geographies**
(states, counties, places, ...)
- Race and Ethnic Groups
(race, ancestry, tribe)
- Industry Codes
(NAICS industry, ...)

Search Results:

To search for tables and other files in American FactFinder:

Select Geographies CLOSE X

Enter a street address, city and state, or a street address and ZIP code. Click 'Go'. ?

Note: address search will use the latest available address data beginning with 2010 and working backwards, based on the contents of Your Selections.

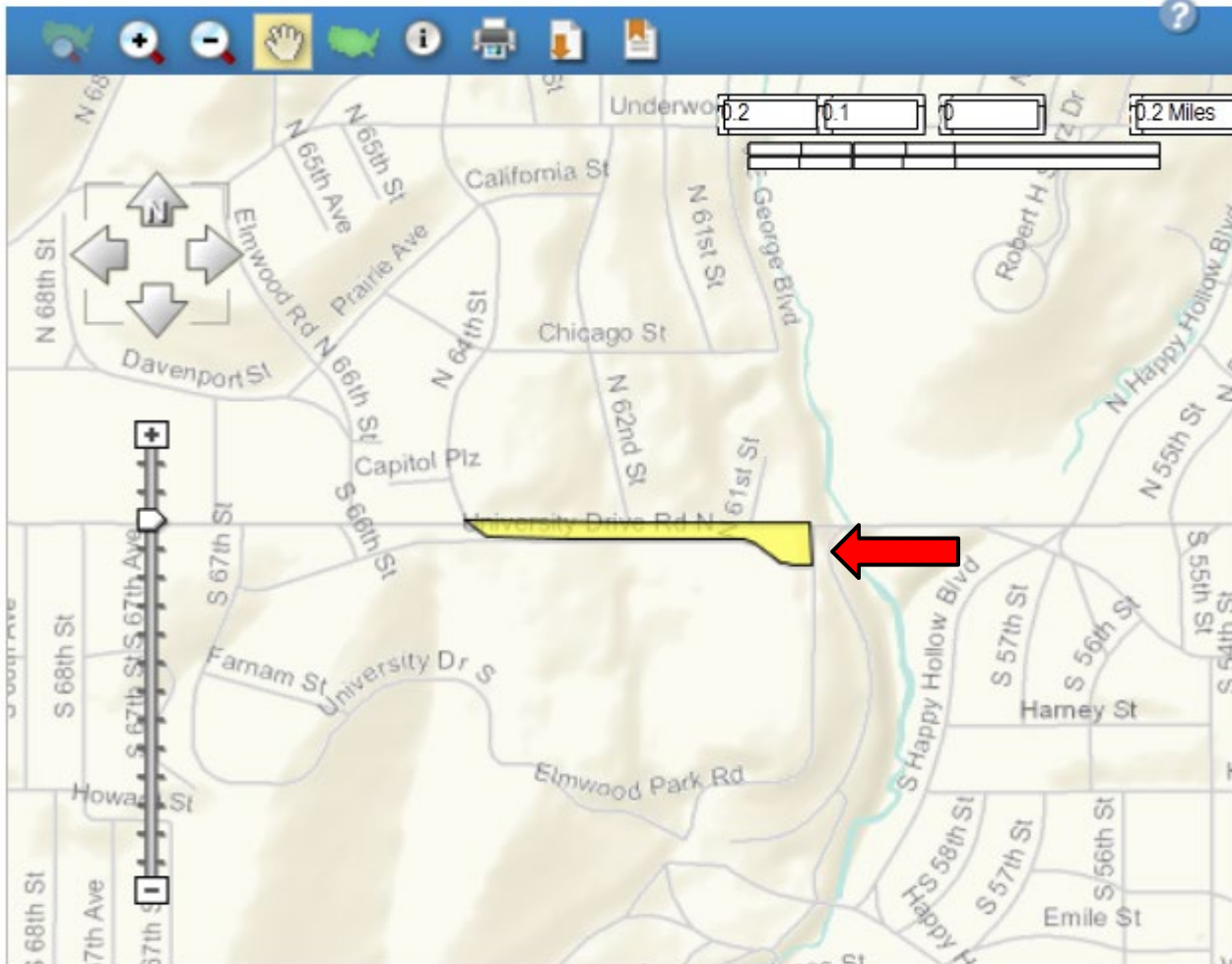
6001 Dodge St Omaha Nebraska

Geographies containing 6001 Dodge St, OMAHA, NE, 68132:
Select geographies to add to Your Selections

Geography Results:

Geography Name	Geography Type	Geography Code
PUMA5 00904, Nebraska	Public Use Microdata Area (PUMA)	795
Nebraska	State	040
Douglas County, Nebraska	County	050
Omaha city, Douglas County, Nebraska	County Subdivision	060
Block 2022, Block Group 2, Census Tract 47, Douglas County, Nebraska	Block	100
Census Tract 47, Douglas County, Nebraska	Census Tract	140
Block Group 2, Census Tract 47, Douglas County, Nebraska	Block Group within Census Tract	150
Omaha city, Nebraska	Place within State	160
Omaha-Council Bluffs, NE-IA Metro Area	Metro Statistical Area/Micro Statistical Area	310
Omaha, NE--IA MSA	MSA/CMSA	380
Omaha, NE--IA Urbanized Area	Urban Area	400
Congressional District 2 (111th Congress), Nebraska	Congressional District	500
State Senate District 9 (2010), Nebraska	State Legislative District (Upper)	610
No Lower Chamber Districts (2010), Nebraska	State Legislative District (Lower)	620
Precinct 3-12, Douglas County, Nebraska	Voting District/Remainder	700
ZCTA5 68132	5-Digit ZCTA	860
ZIP 68132 (Omaha, NE)	5-Digit ZIP Code	861
Omaha Public Schools, Nebraska	School District (Unified)/Remainder	970
Omaha city, Nebraska	Economic Place	E60

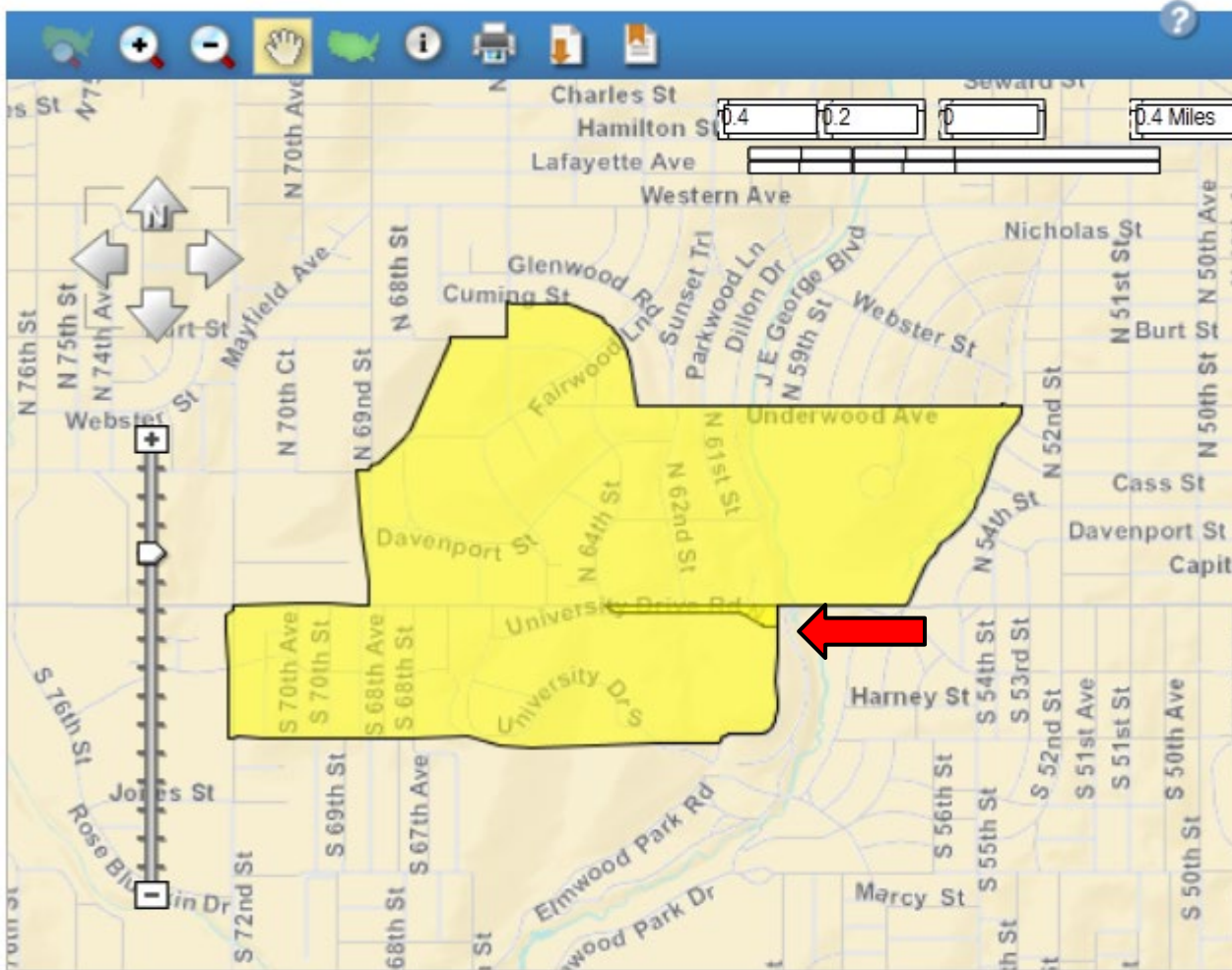
Block 2022 in Block Group 2, Census Tract 47 Douglas County, NE



This is a single block – they are “building blocks” for larger geographies. The first number indicates the block group.

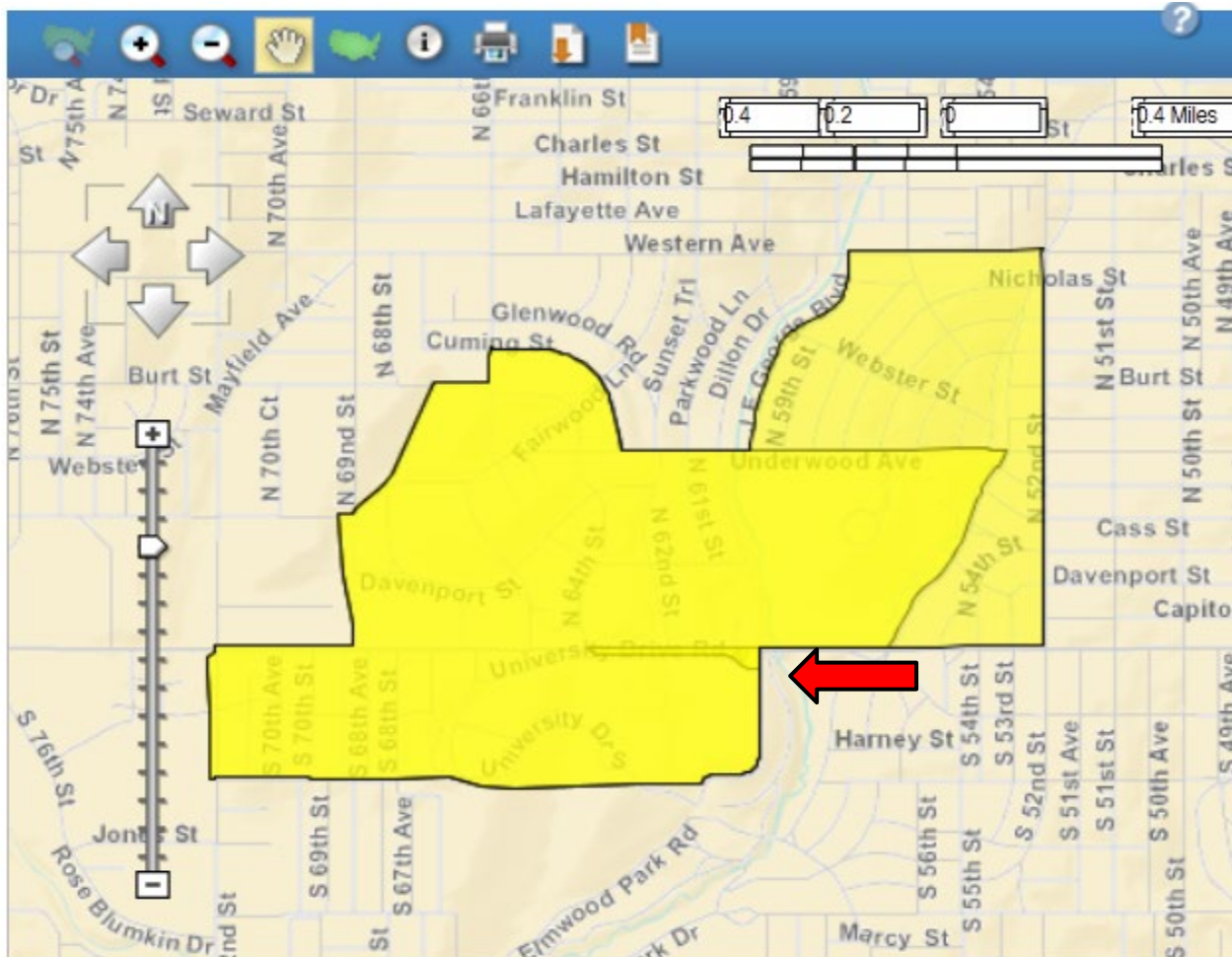
Blocks are bounded by physical features like roads or streams.

Block 2022 in **Block Group 2**, Census Tract 47 Douglas County, NE



A group of usually about 15-30 blocks comprise a “block group”.

Block 2022 in Block Group 2, **Census Tract 47** Douglas County, NE



Two or more block groups comprise a “census tract”, a key unit for small-area analysis.

Census tracts typically have ~4,000 people and nest within counties.

What is the Decennial Census?

- National Population and Housing Count
 - Taken once every 10 years in years ending with 0
 - Mandated by Constitution for reapportioning and redistricting Congress
- Linked to geographic areas
- Complete headcount—involves entire population
- Numbers of people along with selected characteristics

Decennial Census Data Collection

- Short form
 - Basic decennial census questionnaire sent to most households in 2000 and prior censuses and all households in 2010 and 2020
 - Recorded simple demographics like age, sex, race, Hispanic/Latino origin, relationship, housing tenure (own/rent)
- Long form
 - Detailed decennial census questionnaire sent to a sample of about 1 in 6 households in the 2000 Census (also included basic questions from short form)
 - Measured socio-economic and detailed housing data
 - Not used in the 2010 Census and will not be used in the 2020 Census (replaced by ACS)

Primary Decennial Census Datafiles

- Summary File 1 (SF 1)
 - Used for both 2000 and 2010 basic demographic data from the short form: age, gender, race/ethnicity, housing tenure (own vs. rent), etc.
 - Available for all geographic areas down to the block level
- Summary File 2 (SF 2)
 - Similar to SF 1 but iterated for many detailed race and Hispanic or Latino categories, and American Indian and Alaska Native tribes
 - Available for geographic areas down to the census tract level
- Summary File 3 (SF 3)
 - Not part of 2010 Census, replaced by ACS datasets
 - Has detailed socio-economic and housing data from the 2000 long form
 - Also has figures for SF 1 items (age) but they are based on a “weighted” sample, not the official counts

American Community Survey (ACS)

- American Community Survey (ACS)
 - Continuous sample survey (forms sent every month) compiled to provide **current annual data**
 - Nearly identical to the 2000 long form – 2010 and 2020 Censuses are short form only (simply a headcount)
 - The ACS continues monthly surveying during the Decennial Censuses and after they are finished

BE CAREFUL – You must go to the right source to get correct data!

- ACS Datasets:
 - Contain data for ACS variables;
 - Are based upon the timeframe over which the data were collected
 - 1-year: 2015 5-year: 2011-2015
 - **Use caution when comparing ACS datasets to SF 1 from the decennial census**

ACS Data are Released Based Upon the Population of the Geographic Unit

Time Period of Data	Population Threshold for Data Release	Nebraska Areas with Data
Annual Estimates (2005, 2006,...2015)	65,000 or more	State; Omaha and Lincoln; Douglas, Lancaster, Sarpy Counties; Omaha, Lincoln, Millard Schools
3-Year Aggregates (2005-2007...2011-2013)	20,000 or more	All of the above plus regional centers like Kearney, Norfolk, etc.
1-year supplemental estimates (2014, 2015)	20,000 or more	All of the above plus regional centers like Kearney, Norfolk, etc.
5-Year Aggregates (2005-2009...2011-2015)	No threshold	All areas--counties, cities, townships, census tracts, zip codes, school districts, legislative districts, etc.

Hint: when citing sources, be specific (use table #s):

U.S. Census Bureau, 2015 American Community Survey 1-Year Estimates (S1701)

U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (S1701)

Important Concepts--Residence

- For the Decennial Census, it is based on *usual residence* – where people are most of the year (their permanent residence). It is also based upon an April 1 reference date.
 - Snowbirds spending 3 months in Texas 9 months in Nebraska should be a resident of NE
 - College students are counted where they are on April 1 (usually their college city)
- Since the ACS forms are sent out and mailed back monthly, residence for the ACS is based upon who is living in the household for “the next 2 months”
 - Provides a more accurate picture of the population: e.g. some snowbirds are counted in the South & college students in parent’s house if home for summer

Important Concepts—Race/Ethnicity

- Race and Ethnicity are asked in 2 questions—Each person is either Hispanic/Latino or not, AND then they also are one or more races (option for 2+ races first utilized in 2000)
- The 2020 census likely will use a combined race/ethnicity question!
 - It will get similar results, “other” race category will be selected less frequently
 - There likely will be areas to write in ancestry/origin (so we’d get data on African and European countries/origins in addition to Asian and Hispanic/Latino and Native American tribes)

How does CPAR typically analyze race/ethnicity?

- We usually list totals for Hispanic/Latino, and then all races ALONE non-Hispanic (NH): White NH; Black NH; etc.
 - These are mutually exclusive categories that sum to the total population
 - Race ALONE means that only one race was selected on the form
- When we use 2 groups
 - White non-Hispanic
 - Population of color = Total pop – White, non-Hispanic
- Also can evaluate race for those ALONE or IN COMBINATION
 - This includes those who selected that race specifically (alone) as well as those who selected that race and another one (2 or more races)
 - Double counts the people selecting 2 or more races (doesn't sum to total population or 100%)

Important Concepts—Income and Dollars

- Census 2000, being a point-in-time survey as of 4-1-00, had items like income for 1999 (the previous year)—Dollar values were for that year.
- Many other Census surveys also are point-in-time surveys and use similar methodology
- ACS, sending surveys monthly, asks items like income for the “past 12 months”
 - 2015 Example: If interviewed in May 2015, the reference period is from 5/14 to 4/15
 - Since the final released data are from a combination of months, the monthly data are adjusted using the Consumer Price Index (CPI) and expressed in calendar year 2015 dollars
 - For multiple year periods, data measured in dollars are adjusted to the latest year. Income data for the 2011-2015 period are expressed in 2015 dollars.

Important Concepts—Householder and Relationship

- Householder—simply the first person on the census form
 - Is NOT necessarily the “head of the household” (that’s old terminology)
 - Supposed to be the person “in whose name the residence is owned or rented”; that’s usually but not always the person who fills out the form
 - Can be male or female; householder is somewhat arbitrary but makes a big difference for how families and by extension items like poverty are defined
- Relationship—how other persons living in the household are related or connected to the householder
 - Spouse, biological/adopted/step child, parent-in-law, roommate, unmarried partner, foster child, etc.
 - A household with 2 or more related individuals is a “family” household
 - One person households are not a family by definition, and thus are excluded from variables like median family income (but are included in median household income)
 - Unmarried partners are not a family by definition

Householder Example

Assume we have a three person household. Susan and her daughter Emily live with Paul.

Note: Susan and Paul are not married; Paul is not the father of Emily

If Susan
is the
householder...

Emily is related to Susan as biological child, and this is a family household; Paul is unmarried partner & not part of the 'family'

If Paul
is the
householder...

Emily is an "other nonrelative," and Susan is unmarried partner; this is NOT a family household

In both cases Paul's income is NOT included in Susan and Emily's poverty calculation; if they were married it would be.

Tradeoff between Geography, Timeliness, & Detail

- There is usually a tradeoff between available information and the geography for which it is available
 - Can be due to sampling or confidentiality constraints
 - More specific or detailed information may require expanding to a larger geography (or a longer timeframe)
 - Even if the data are provided, you must ask whether the data are “reliable” for that geography?
 - Are the figures based on a small number of cases where the sampling error could be large?

Relationship between Data/Datafiles and Geography

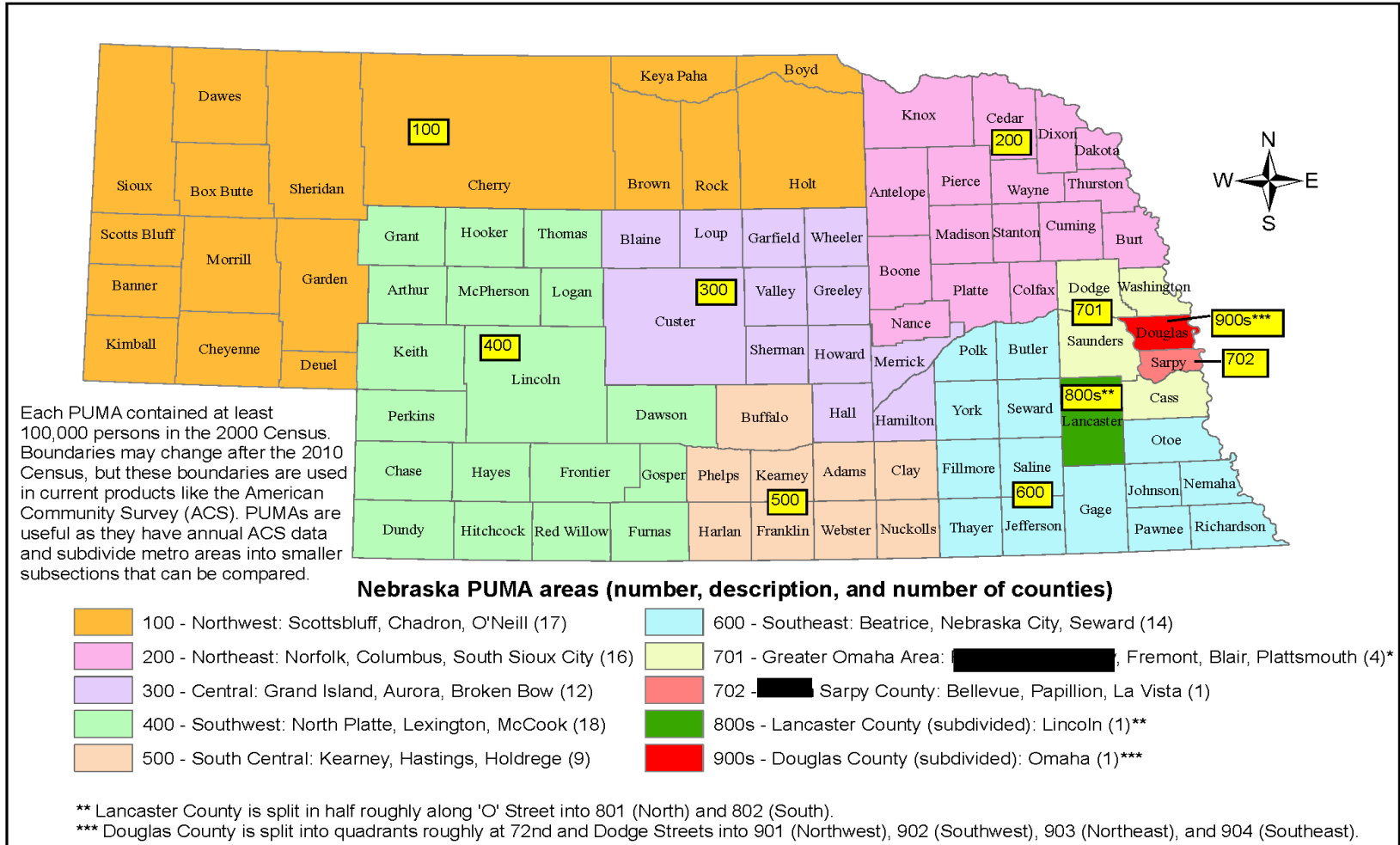
- For blocks, only Redistricting or SF 1 data (2000 and 2010 Censuses)
 - Confidentiality reasons: you'd know certain incomes on your block (also sampling/error issues)
- Block groups have most SF 3 data (2000 Census); only meant as building blocks for larger custom geographies in the ACS
 - No ancestry or unmarried partner data
- Census tracts are a key geography as they are one of the smallest geographies to have most all data compiled
- Zip codes like tracts they are a good unit of analysis for “neighborhoods” but typically larger than tracts so more accurate/less variability

Public Use Microdata (PUMS)

PUMS data files are a set of untabulated records about individual people or housing units. The Census Bureau produces the PUMS files so that data users can create custom tables that are not available through tabulated (or summary) ACS data products.

- 1-year file is 1% of Nebraska's records, 5-year file is 5% of Nebraska's records
- Nebraska has 14 PUMA areas (4 in Douglas Co., 2 in Lancaster)
- Made up of county or census tract areas that total at least 100,000 persons
- ACS data used 2000 based PUMAs from 2005-2011; 2012 and future years use updated 2010 based PUMA boundaries
 - The 2010 PUMAs are nearly identical: a couple tracts changed in Douglas and Lancaster counties; Sarpy Co. is now its own PUMA
- Data are released annually since PUMAs exceed the annual ACS population threshold of 65,000
 - Breaks core metro counties into smaller areas and gives proxies for smaller geographies that are similar to the larger PUMA area
- State Maps for PUMA boundaries can be viewed on the internet
 - <http://www.census.gov/geo/maps-data/maps/reference.html>

Geographic Boundaries of Nebraska Public Use Microdata Areas (PUMAs)



The American Community Survey: What is it?

- Nationwide written/mail survey conducted by the U.S. Census Bureau
 - Sent to a **sample** of households, not all households
 - Online completion option began January 2013
- Similar to the sample portion of the 2000 and earlier decennial censuses but is compiled every year
 - Gives us more current information: annual data rather than 10 year intervals between releases
 - Provides data on the same Census topic areas
 - Replaced “long form” of decennial census; 2010 Census primarily a population count
 - The “future” of socio-economic Census data, **IF funded into the future**

ACS Methodology in Brief

- Surveys mailed out & received back each month
 - 3.5 million surveys annually nationwide
 - Sample about 1 in 40 housing units (1 in 8 over five years of survey collection – Census 2000 long form was 1 in 6)
 - Census assigns both household and person weights. Summing these weights produces the estimates. Base weight for households is about 40 given 1 in 40 sample.
 - Monthly surveys are combined to estimate figures for the calendar year as a whole.
 - Nebraska response rate is in the top 5 (but has been slipping—help promote participation)
 - 1 in 3 non-respondents are personally interviewed to get info. (very important—improves its data over others—but Census 2000 had full non-response follow up)

ACS Subject Areas

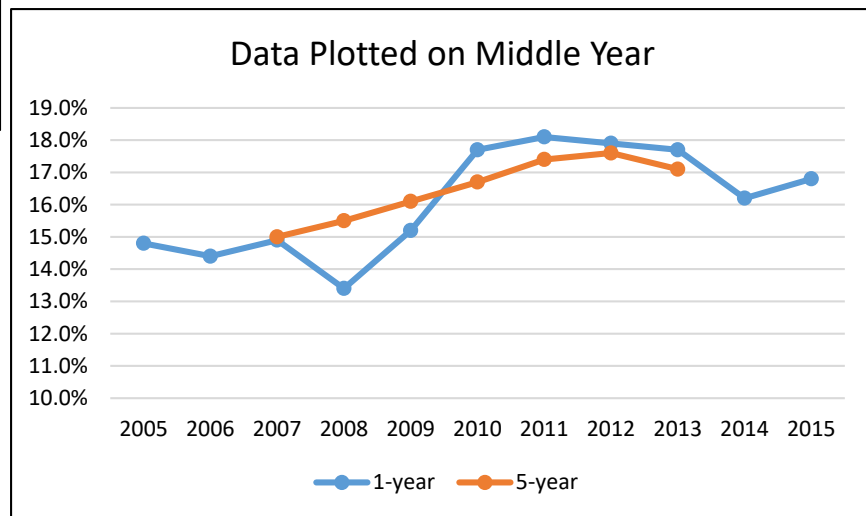
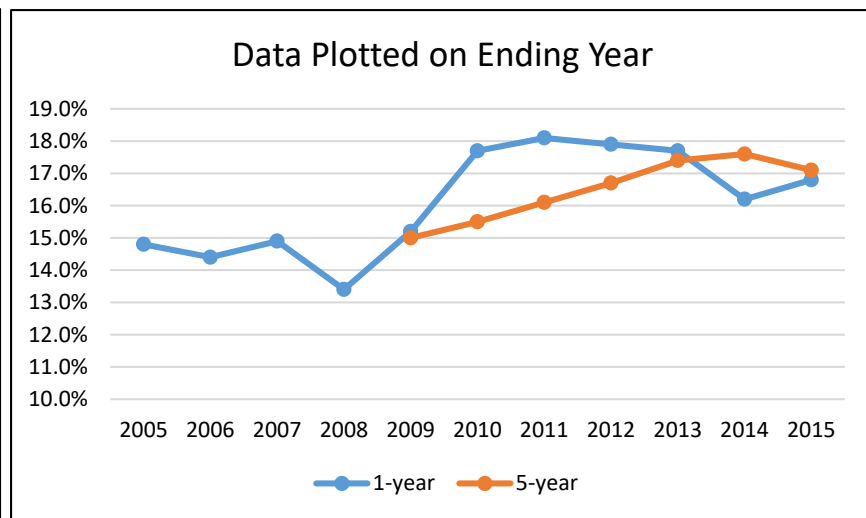
- To understand the ACS subject areas, review the ACS questionnaire
 - <https://www.census.gov/programs-surveys/acs/methodology/questionnaire-archive.html>
- Be sure to use the questionnaire for the period the data were collected because questions are added and revised.
 - Health insurance coverage, changes in marital status, and veteran service connected disabilities added in 2008
 - Field of Bachelor's Degree added in 2009
 - Disability question was revamped in 2008
 - Questions on computer/internet access (and type like cable, dial up, etc.) started in 2013

Point Estimates, MOE and Confidence Intervals

- The ACS data provide point estimates for various characteristics. ACS data also include a margin of error (MOE) for finding a lower and upper bound.
 - Why?
 - The ACS is a sample and subject to sampling error.
 - Are the ACS data representative of the entire population?
 - Census 2000 long form also a sample—1 in 6 sampling rate made sampling error small and MOE was not released.
- Adding and subtracting the MOE to/from the point estimate creates a range called a confidence interval.
 - Example: 2015 NE poverty rate for persons aged 18 years was 16.8% +/- 1.2%; so the range or interval is 15.6% to 18.0%
 - ACS displays the MOE for a 90% confidence interval.

The Percentage of Nebraska Children under Age 18 Years below Poverty

	1-year		5-year	
	Estimate	MOE	Estimate	MOE
2015	16.8%	+/-1.2	17.1%	+/-0.6
2014	16.2%	+/-1.3	17.6%	+/-0.6
2013	17.7%	+/-1.6	17.4%	+/-0.7
2012	17.9%	+/-1.2	16.7%	+/-0.7
2011	18.1%	+/-1.3	16.1%	+/-0.6
2010	17.7%	+/-1.5	15.5%	+/-0.5
2009	15.2%	+/-1.2	15.0%	+/-0.5
2008	13.4%	+/-1.1		
2007	14.9%	+/-1.0		
2006	14.4%	+/-1.2		
2005	14.8%	+/-1.0		
2015 Population	1,896,190			
2015 Sample	47,837			
2011-2015 Sample	239,676			
Under 18 Years	470,630	24.8%		



The Percentage of Omaha City Children under Age 18 Years below Poverty

	1-year		5-year	
	Estimate	MOE	Estimate	MOE
2015	25.7%	+/-3.3	24.0%	+/-1.5
2014	22.3%	+/-3.3	24.1%	+/-1.3
2013	25.5%	+/-3.0	23.9%	+/-1.4
2012	26.0%	+/-3.1	23.3%	+/-1.7
2011	24.7%	+/-3.3	22.0%	+/-1.6
2010	26.4%	+/-3.4	21.3%	+/-1.2
2009	19.5%	+/-3.2	19.6%	+/-1.2
2008	19.5%	+/-3.3		
2007	22.3%	+/-3.5		
2006	19.8%	+/-3.3		
2005	23.3%	+/-3.2		

2015 Population 440,034
 2015 Sample 8,426
 2011-2015 Sample 41,273

Under 18 Years 110,292 25.1%

The Percentage of Holdrege Children under Age 18 Years below Poverty

	5-year	
	Estimate	MOE
2015	7.4%	+/-4.1
2014	5.4%	+/-4.0
2013	9.0%	+/-6.6
2012	11.1%	+/-5.6
2011	12.6%	+/-7.9
2010	13.5%	+/-7.7
2009	13.6%	+/-7.1
2008		
2007		
2006		
2005		

2015 Population 5,528
 2015 Sample n.a.
 2011-2015 Sample 522

Under 18 Years 1,343 24.3%

Multi-year Aggregate Estimates: Advantages

- The aggregates provide data for more geographies
- For areas that get annual data, the aggregates based on more completed surveys will be more accurate and have smaller margins of error
 - Especially important for sub-groups—data for specific age groups or racial/ethnic groups
 - Will help reduce variability in year-to-year figures
 - Some FactFinder tables are prepared but not released annually because of inaccuracy concerns—some of those tables will now have data released
- When comparing areas, do not compare a multi-year estimate with a single year estimate

2016 ACS Data to be released later in 2017

- Basically all the annual (one-year) data for 2016 will be released at one time (for areas with 65,000+ persons)
 - **Thursday Sept 14, 2017** (media embargo on Tuesday the 12th)
 - Annual CPS data on income/poverty and health insurance also released Sept 12 along with state ACS health insurance. (no embargo)
 - 2014 ACS response rates and data could be impacted by the new internet response option
- 1-year supplemental data for governmental areas with 20,000+ persons will be released on **Thursday Oct. 19, 2017**.
- New 5-year aggregate estimates for 2012-2016 will be released on **Thursday Dec 7, 2017** (all geographies; embargo on Tuesday the 5th)
- Increased sampling rate is important, especially for small areas

Population Estimates Program: Basics

- The population estimates program provides the official head and housing unit counts as well as counts by age, sex, and race in non-census years
 - Shows how the population has changed since the most recent Decennial Census
- As of July 1 of the specific year
- Staggered releases throughout the year
 - Large geographies first, most detailed data last
- The most recent release/vintage always supersedes prior
 - Can create confusion for why one 7-1-11 estimate will differ from another—cite the source and release date
 - You always should get and use the most currently released data
 - Source the name of the file and the release date

Population Estimates Program: Tips

- Note that racial categories may not exactly match with Census 2010 tables
 - Estimates program doesn't use a "some other race" category – they "force" people into a category
 - Be consistent – the estimates program data usually will list totals for each year since 2010 and the appropriate Census 2010 count, so that you compare apples to apples
- Can get 5-year age data (0-4, 5-9, etc.) and most major categories (14-17, under 18, 18-24, others)
 - Can't always get exactly what you want, say 16-21 at the county level
- Estimates differ from projections

Population Estimates Program: Census Methodology in Brief

- Start with the Census 2010 headcount (4-1-10)
- Adjust for headcount revisions, boundary changes (annexations) so that everything is consistent over time
 - This is called the Estimates Base (refers to 4-1-10)
 - **With recent annexations, Omaha's estimates base will be revised**
- Add births, subtract deaths from vital records
- Make estimates of domestic and international migration
 - Partner with IRS to show changes in where people file returns
 - Limited to people/families who filed tax returns in both years, doesn't account for people leaving the U.S. very well
 - Use Medicare records to be more precise in 65+ population
- Various methods estimate changes in group quarters and military populations (deployment affects)
- For cities use building permit data and recorded demolitions
 - Tornados don't file demolition permits!! (Hallam, Pilger)
 - Permit allocation has some issues (Omaha ETJ vs. city limits – Omaha city estimates have been/continue to be overstated)

Estimates Program Data

- Our office has a lot of the data compiled and will make an annual Nebraska Population Report (check our web site)
 - Is a good reference document as data changes year to year
 - If you need something specific, contact us to see if we have compiled what you're looking for
- Realize that you may just want to use 2010 data rather than the estimates—the estimates have more value as we move further away from 2010
- Pop. estimates website is: www.census.gov/popest/
- Next big release will be for data as of July 1, 2017
 - Data for states coming in December 2017
 - Data for counties/metro areas released March 2018