

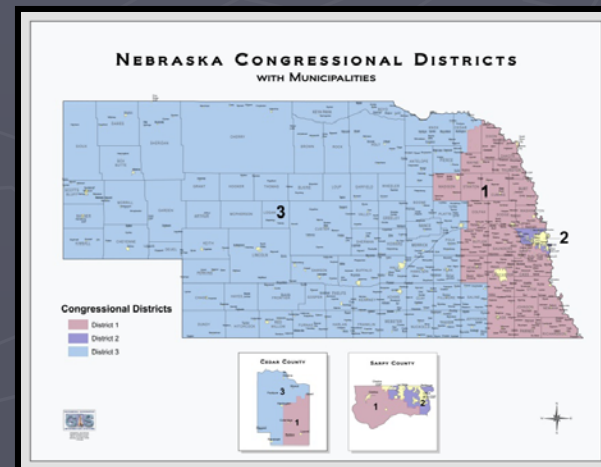
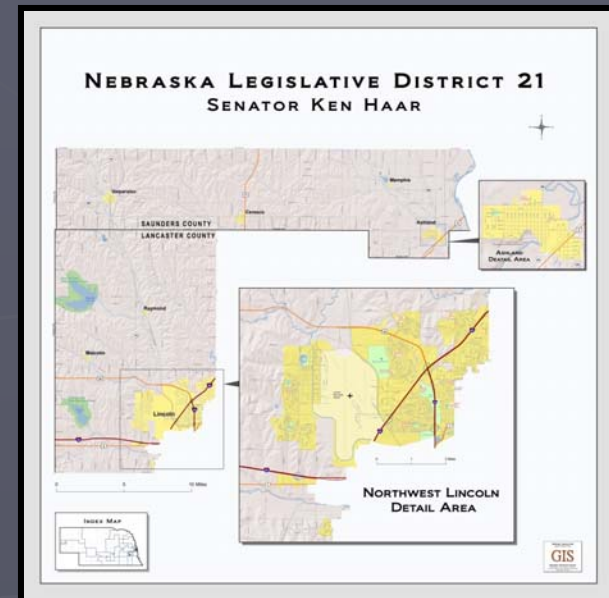
The background of the slide is a faded, light-colored photograph of the Nebraska State Capitol building. The building is a large, classical-style structure with a prominent central dome topped by a statue. The facade features numerous windows and columns. The image is semi-transparent, allowing the text to be clearly visible over it.

GIS in Redistricting

**Jack Dohrman, GIS Analyst
Nebraska Legislature
Legislative Research Office**

Redistricting

- ❖ What is redistricting?
- ❖ Census Bureau
- ❖ Population changes
- ❖ Technology/GIS
- ❖ Software demo



Redistricting - Nebraska

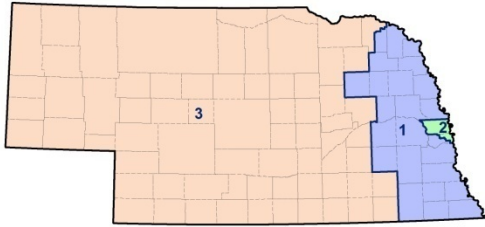
What is redistricting?

- ❖ Decennial Census
- ❖ The Legislature draws district boundaries
- ❖ Each district must be composed of substantially the same number of people
- ❖ People then vote by district
- ❖ The 2000 system:
 - ❖ Legislative task force
 - ❖ Non-partisan Research Office
- ❖ Public input is welcome

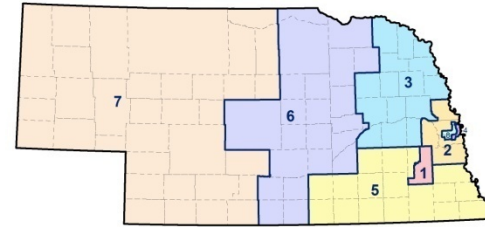


Redistricting - Nebraska

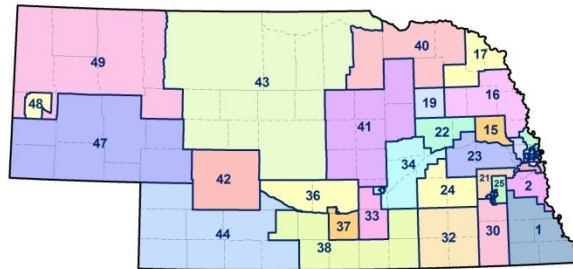
U.S. HOUSE OF REPRESENTATIVES



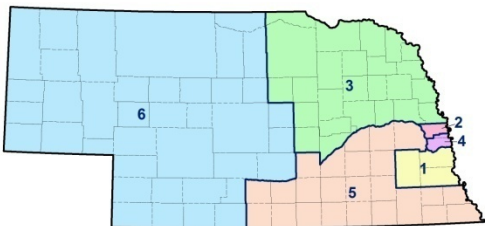
**UNIVERSITY OF NEBRASKA BOARD OF REGENTS/
STATE BOARD OF EDUCATION**



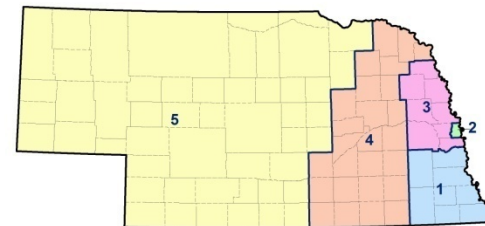
NEBRASKA LEGISLATURE



SUPREME COURT



PUBLIC SERVICE COMMISSION



Redistricting – Timeline

2008 – 2010

- ❖ Compile and verify boundary data to enable Census Bureau to attribute population data to boundary files



2010 – 2011

- ❖ Data returned from Census after 2010 count and.....

2011 - 2012

- ❖ Legislature draws boundaries
- ❖ New district plans finalized before elections



Redistricting – Timeline

- ❖ Plans introduced as bills
- ❖ Public Hearings
- ❖ Legislative Floor debate
 - ❖ Amendments?
- ❖ Vote
- ❖ Governor's Signature



Redistricting – U.S. Census Bureau

Public Law 94-171

- ❖ Mandates the provision of small area data required for legislative redistricting no later than 1 year following Census Day
- ❖ Requires the Census Bureau to work with the states to identify those small areas
- ❖ Examples: voting districts, census blocks

Census Bureau Redistricting Program Phases

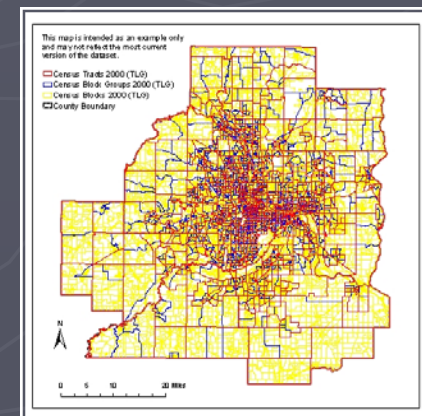
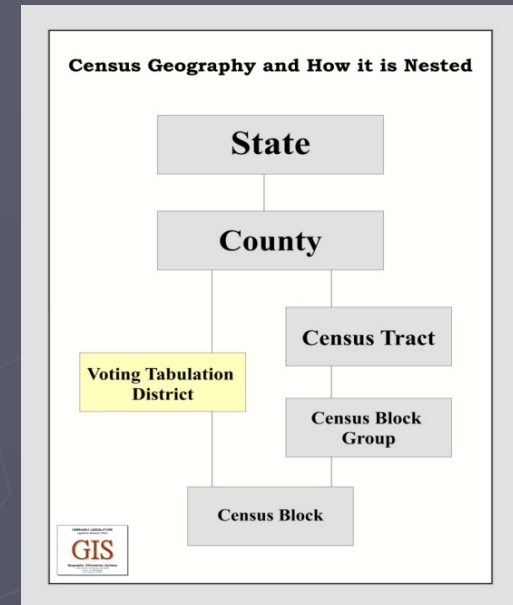
- ❖ **Phase 1** – State Legislative District Project, 2005 - 2007
- ❖ **Phase 2** – Voting District/Block Boundary Suggestion Project, 2008 - 2010
- ❖ **Phase 3** – 2010 Census Data Delivery, Spring 2011
- ❖ **Phase 4** – Collection of post-2010 Census Redistricting Plans, 2011 - 2013
- ❖ **Phase 5** – Evaluation and Recommendations



U.S. Census Bureau Redistricting Program Phase 2

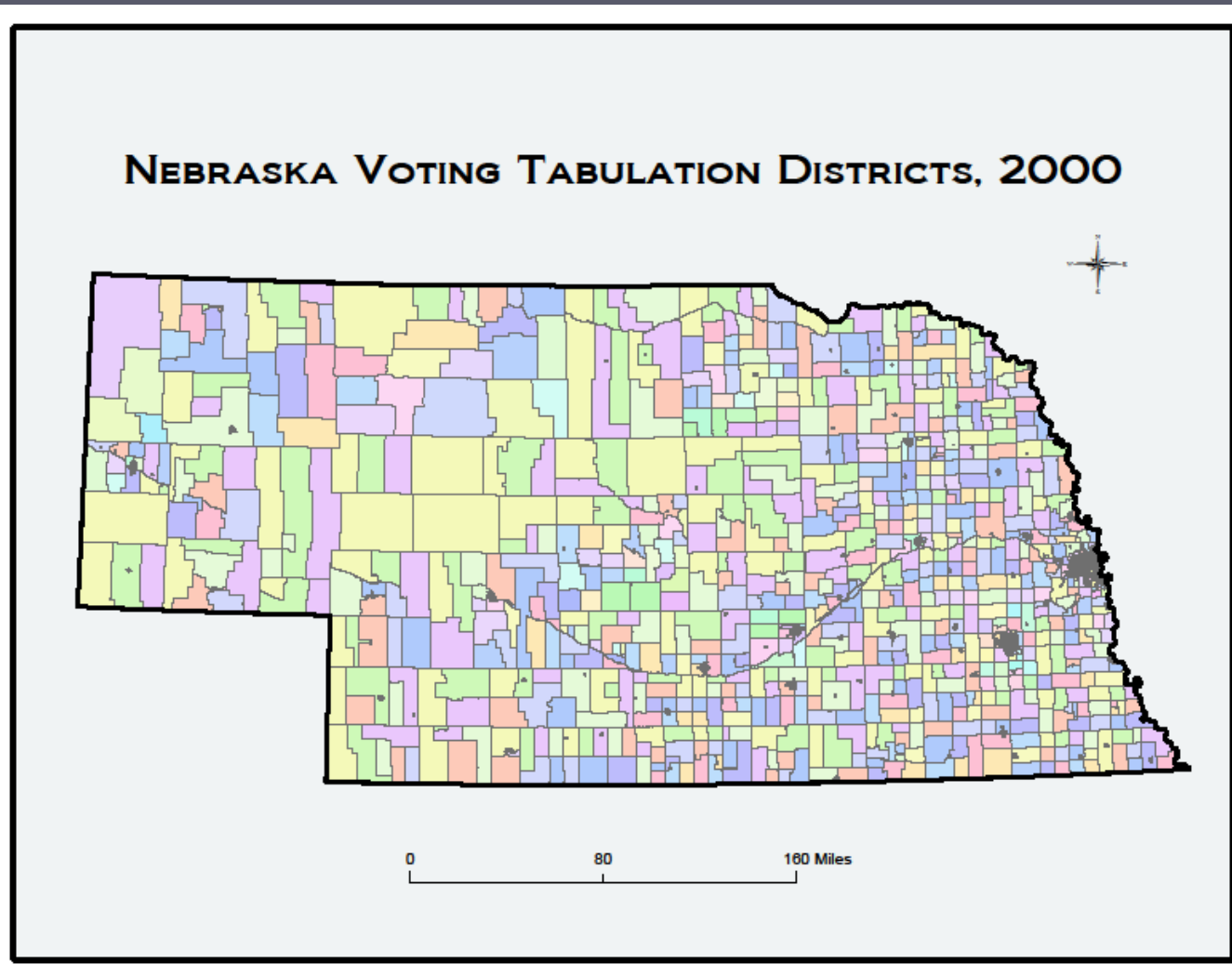
Voting Tabulation Districts (VTD)

- ❖ “Building Blocks” for redistricting process
- ❖ Also known as “Voting Precincts” or “Wards”
- ❖ Boundaries for VTD determined by county officials
- ❖ Frequently changing boundaries
- ❖ Requested updated VTD information from all 93 counties 7-2008

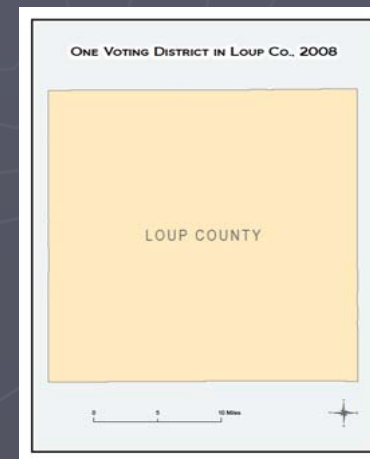
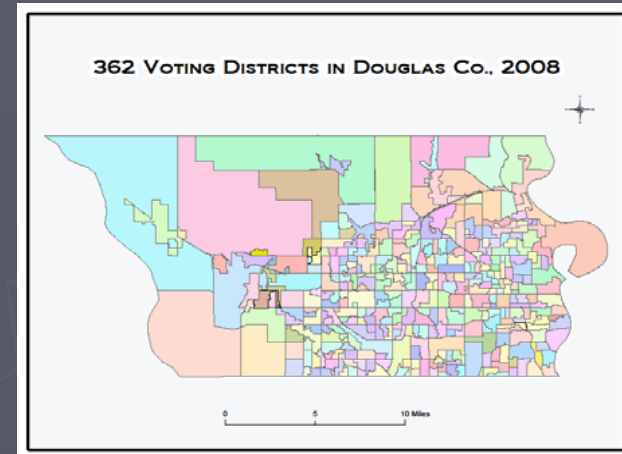
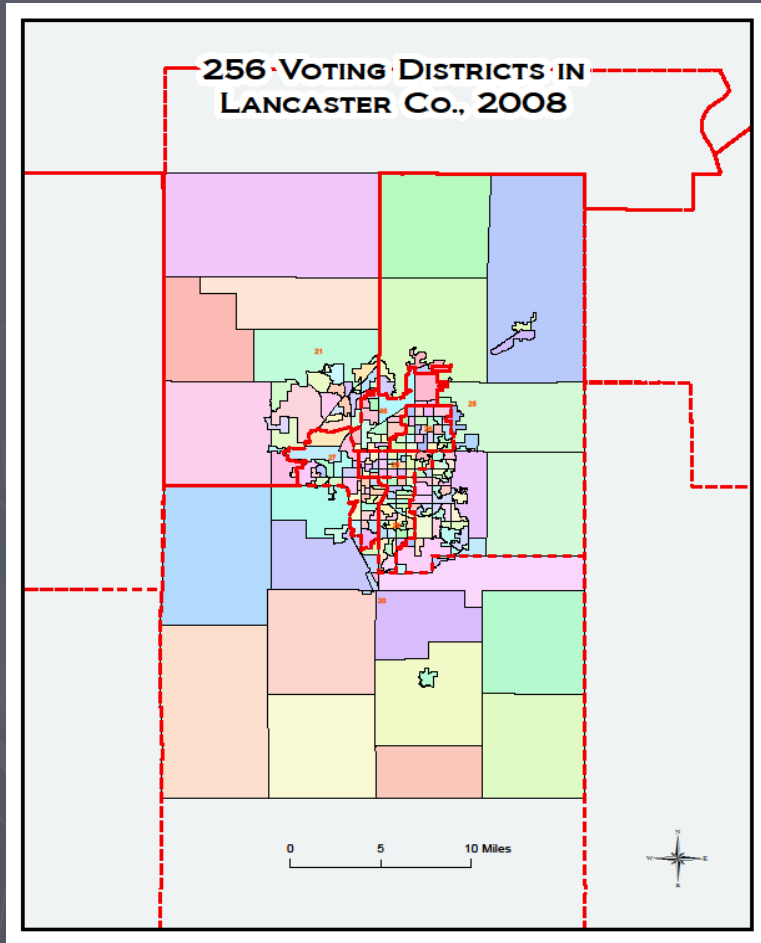


Phase 2 - VTD

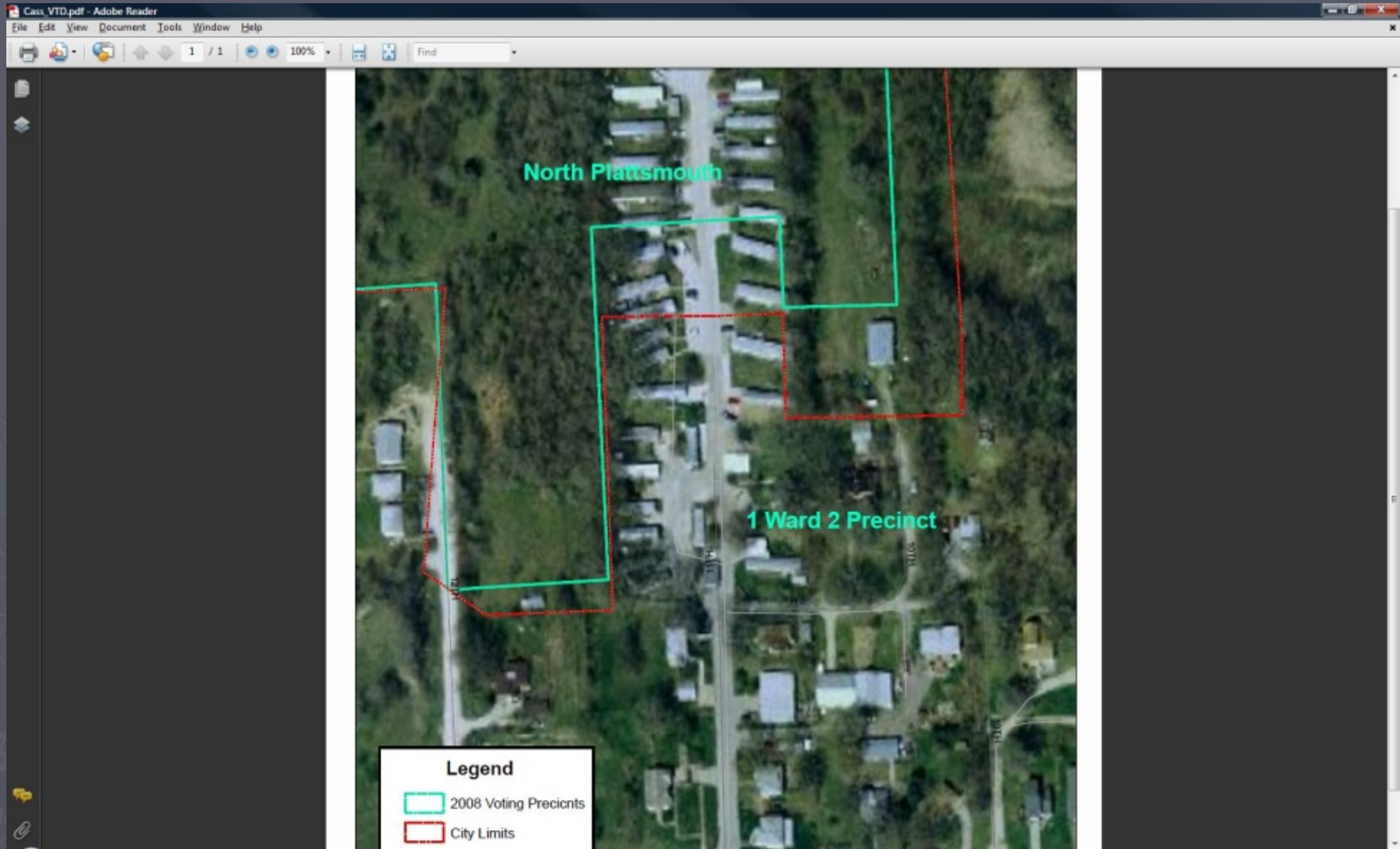
1,888 Voting Districts in Nebraska in 2000



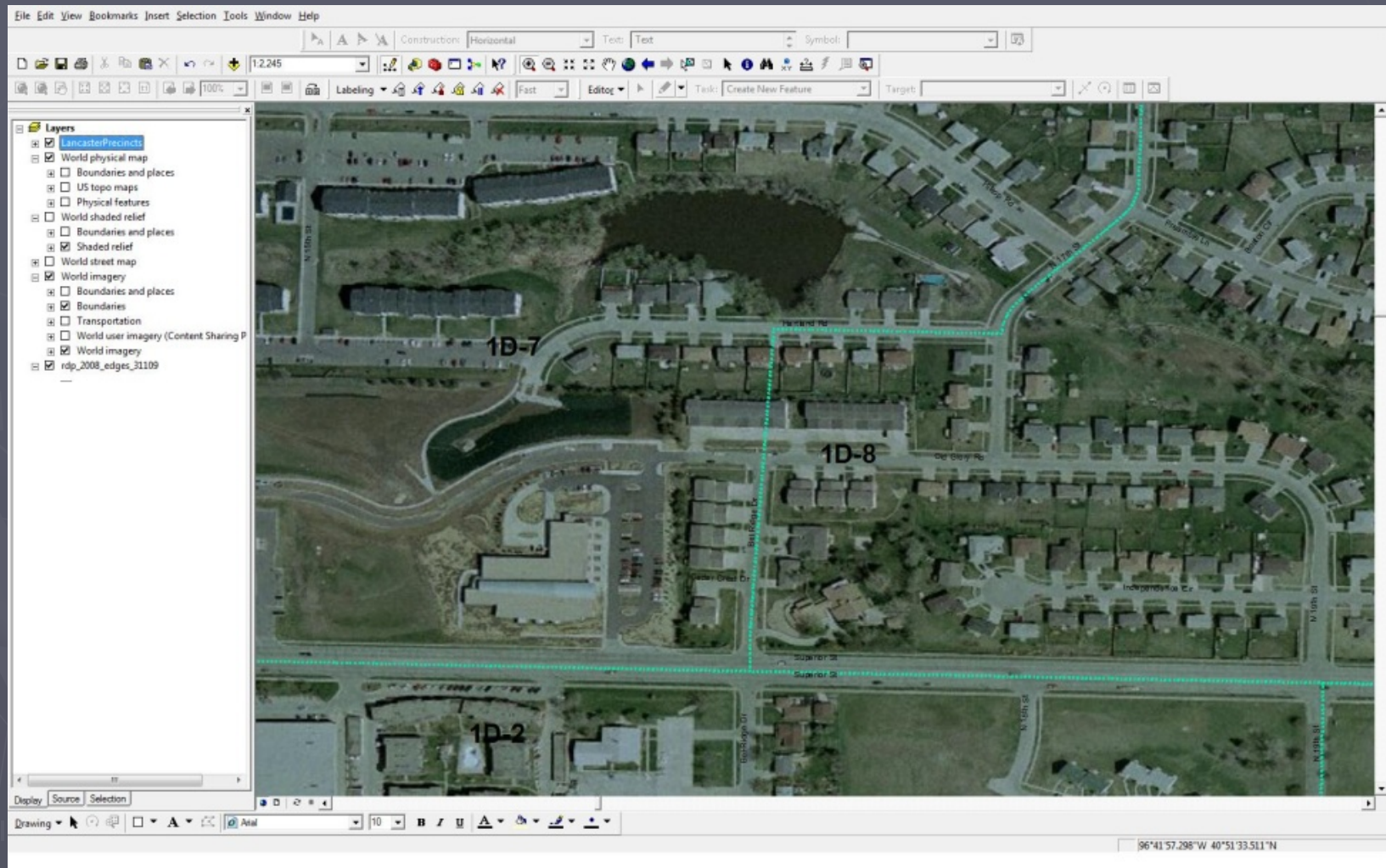
Phase 2 – Voting Tabulation Districts



Phase 2 – VTD



Phase 2 – VTD

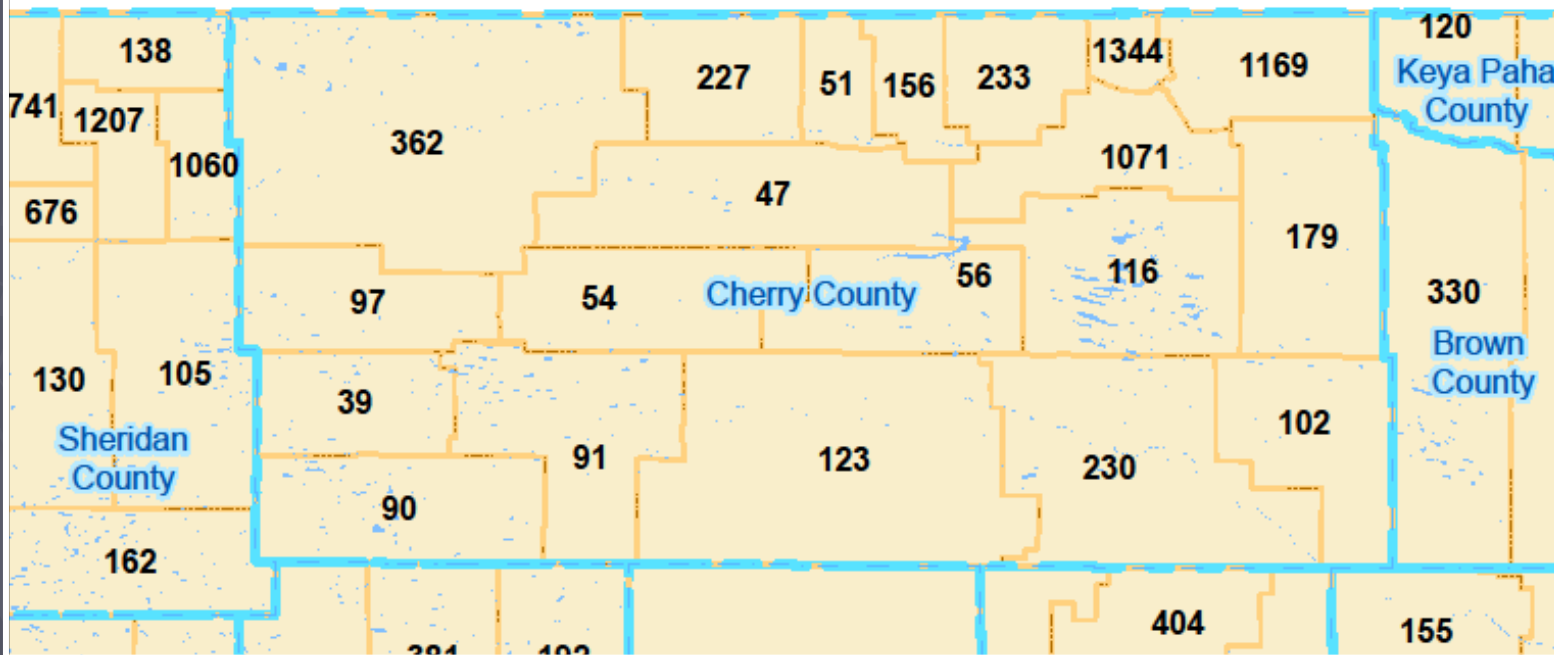


Jack Dohrman, Legislative Research Office

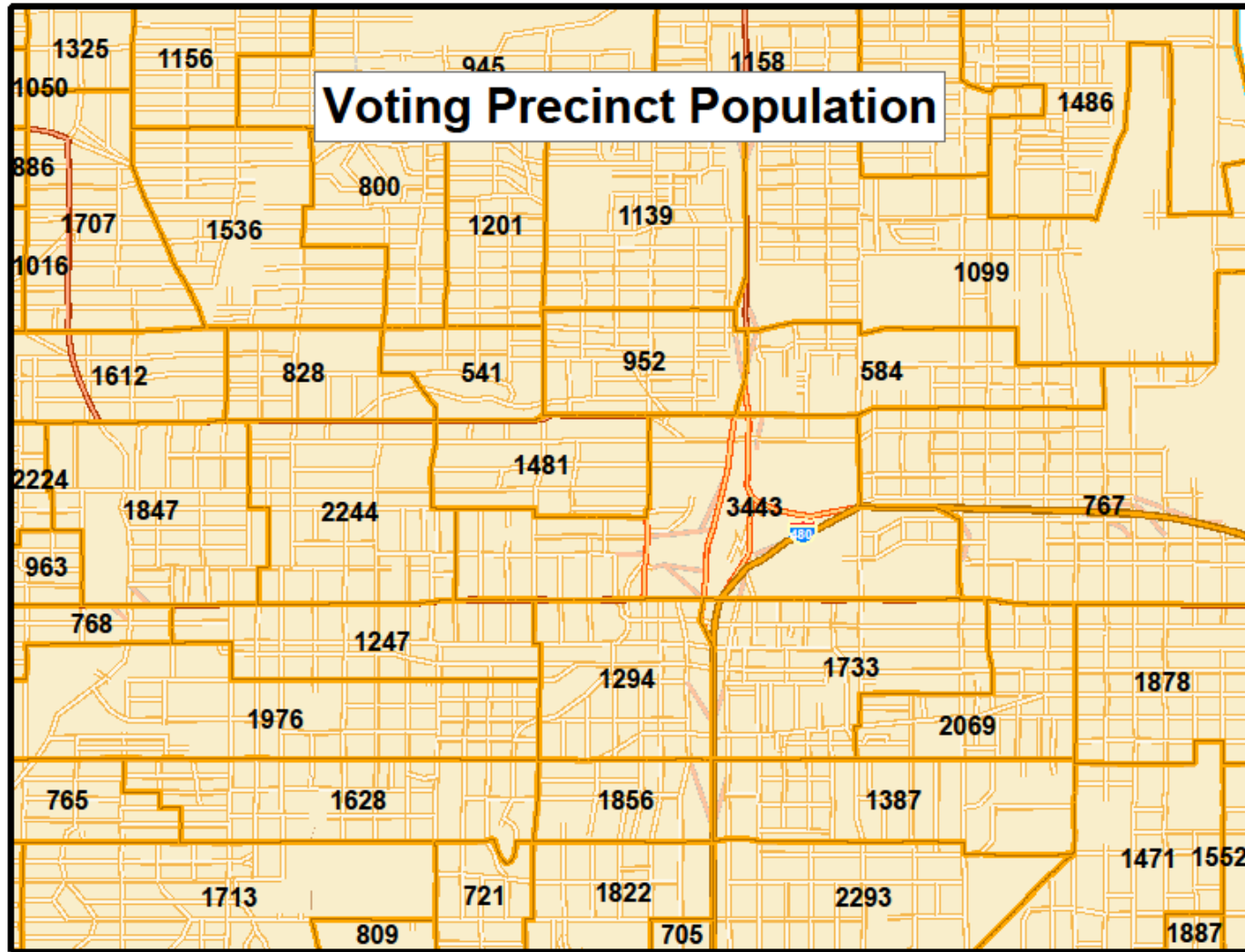
Phase 2 – VTD

North Central Nebraska

Voting Precinct Population



Phase 2 – VTD Omaha Precincts



Redistricting - Data

Demographics

- ❖ Total population reported by 63 potential race categories and Hispanic origin
- ❖ Voting age population reported by 63 potential race categories and Hispanic origin
- ❖ All data reported at the state, county, municipality, VTD (precinct), tract, block group, and block level



Nebraska Population Trends

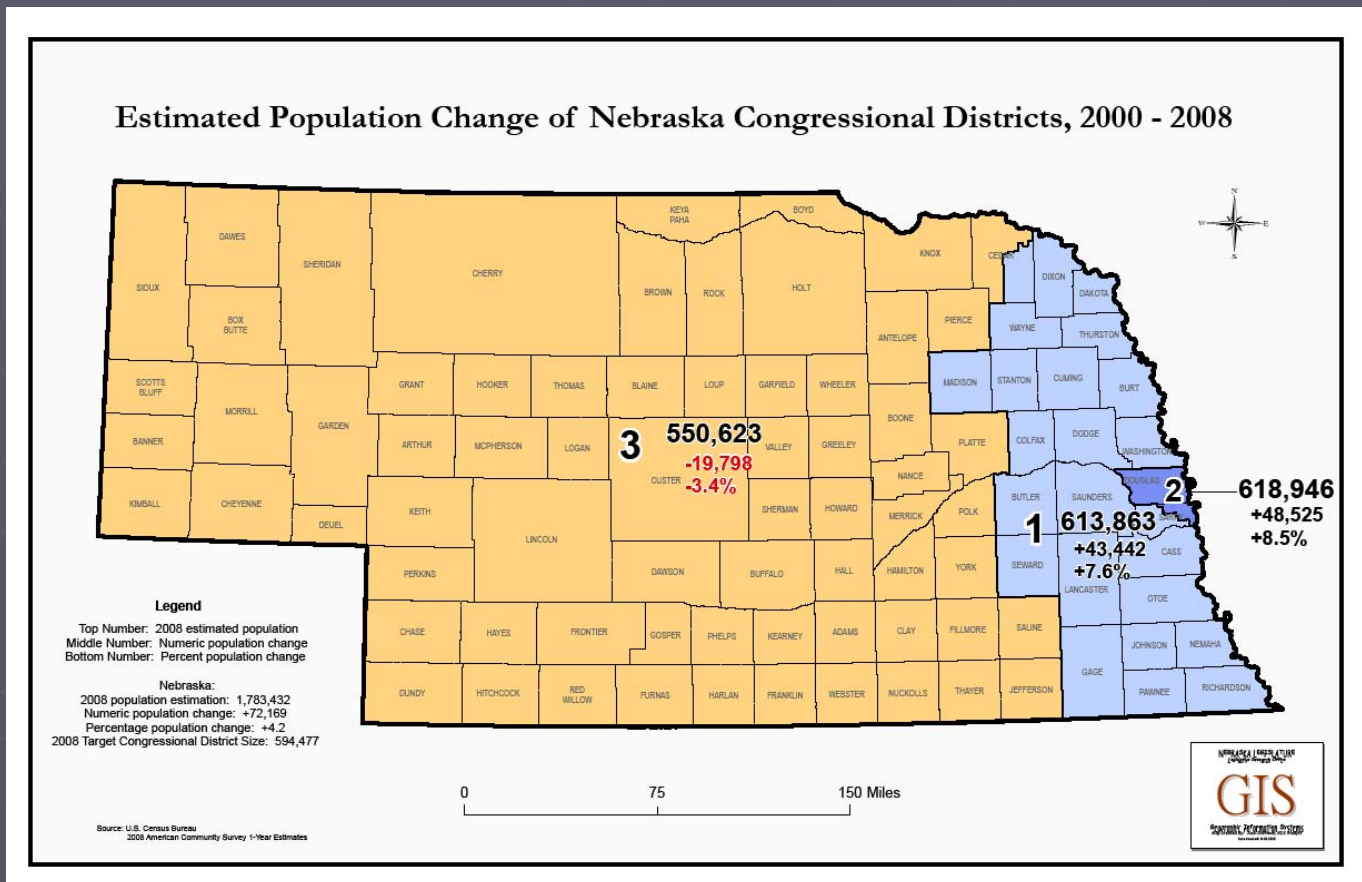
2000 to 2009

- ❖ Population increased by 85,354 people (about 5% increase)
- ❖ Only **16** of 93 counties increased population
- ❖ Douglas, Lancaster, and Sarpy accounted for 52.6 percent of Nebraska's population in 2009

Congressional Districts

❖ **598,873**
target
district size,
up from
570,422 in
2000

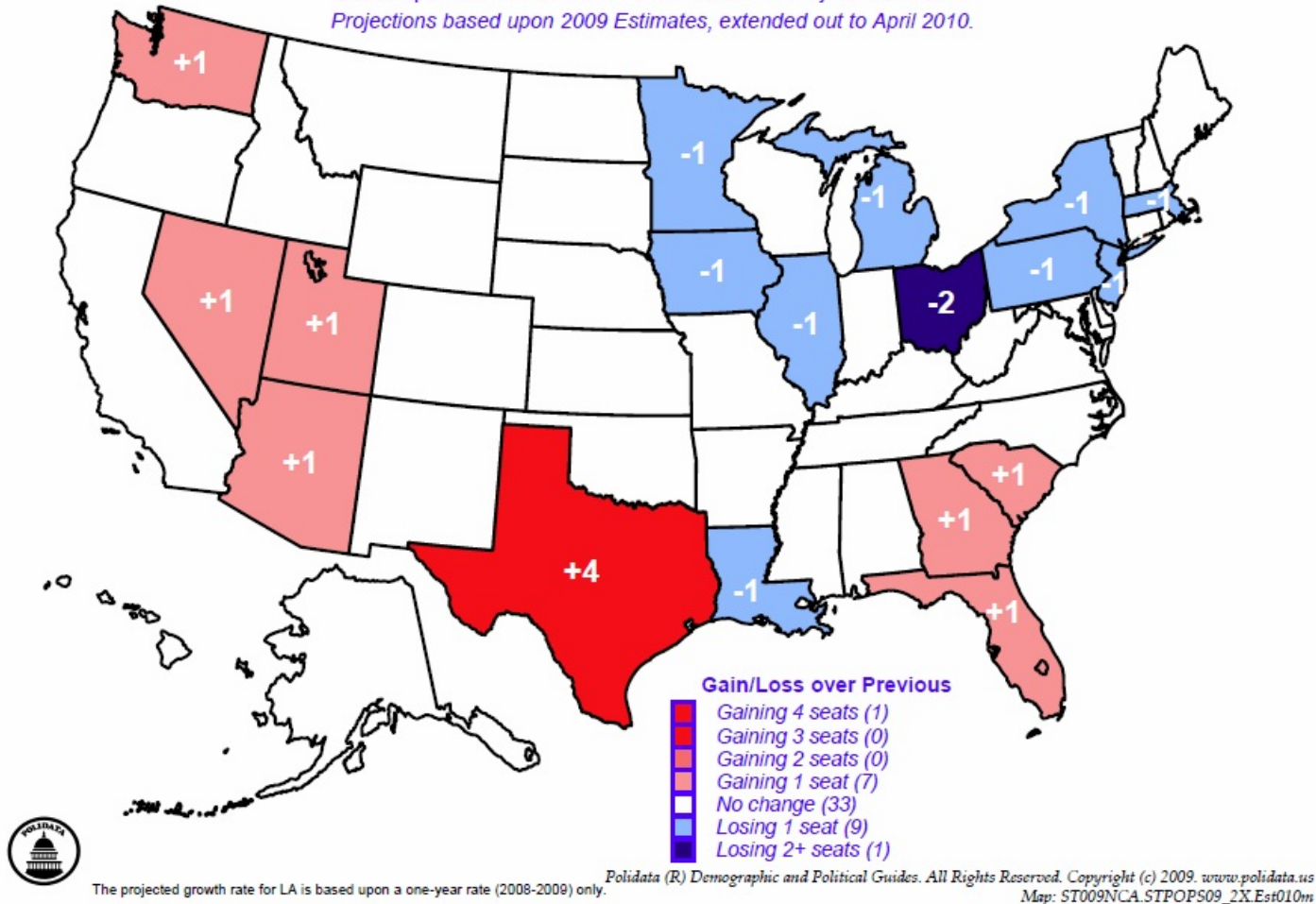
❖ **0%**
deviation
goal



Reapportionment

States Gaining/Losing Seats based upon 2010 Projections

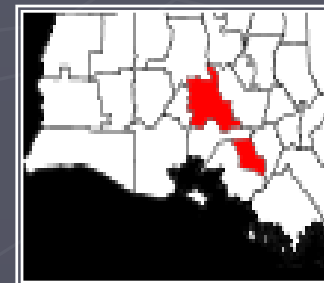
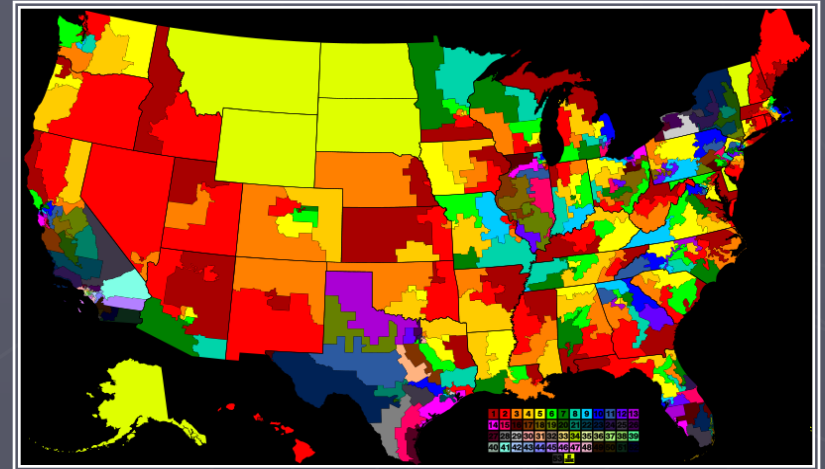
Based upon Census Estimates and POLIDATA Projections to 2010
Projections based upon 2009 Estimates, extended out to April 2010.



Redistricting

Traditional Redistricting Principles

- ❖ **Deviations**
 - ❖ 10% State Legislative Districts
 - ❖ 0 for Congressional Districts
- ❖ **Compact and Contiguous Territory**
- ❖ **Preserve Political Subdivisions**
- ❖ **Preserve Communities of Interest**
- ❖ **Protect Incumbents**
 - ❖ Preserve Cores of Prior Districts
 - ❖ Avoid Contests Between Incumbents
- ❖ **Must not be a “racial gerrymander”**



Gerrymandering



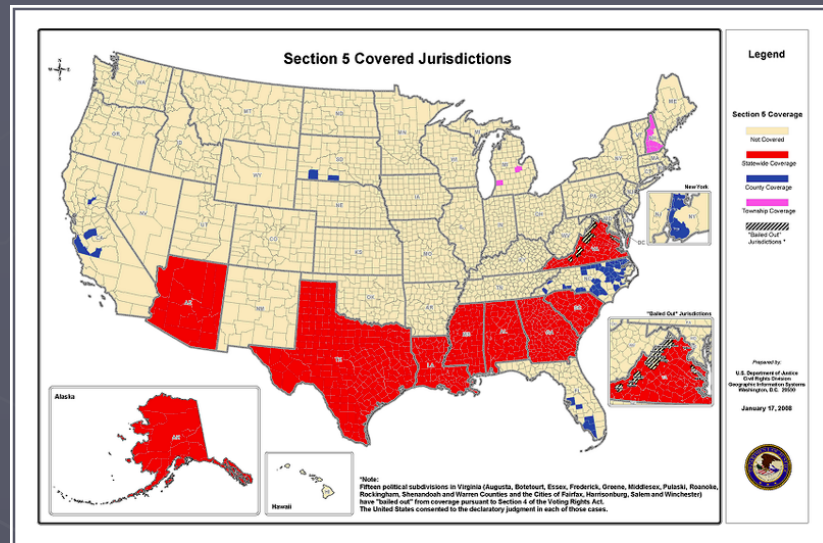
Jack Dohrman, Legislative Research Office

<http://www.redistrictingthenation.com/top10.aspx>

There is no place like Nebraska...

Voting Rights Act

- ❖ Section 5
 - ❖ Pre-clearance for certain jurisdictions
- ❖ Section 2
 - ❖ Minority Majority Districts

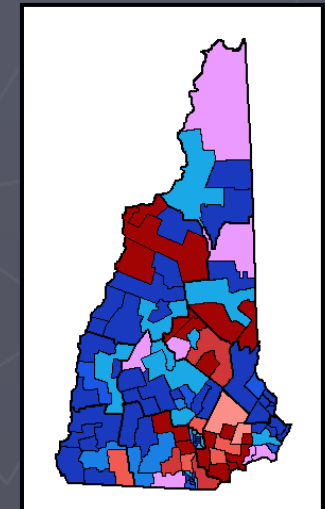
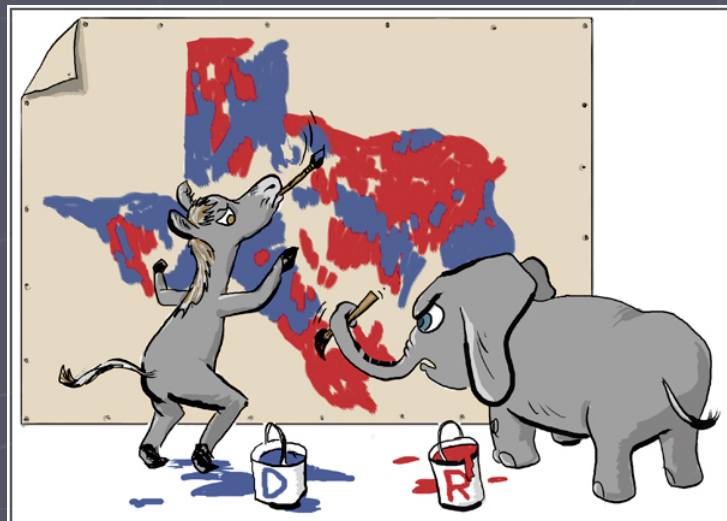


Odd year elections

- ❖ LA, MS, NJ and VA have only a few months to draw plans

Political Data

- ❖ Not used in Nebraska



Evolving Redistricting Technology

1980 and before (Pre-Redistricting GIS)

- ❖ Mainframe and paper maps
- ❖ Limited number of plans created



1990

- ❖ PC's first used
- ❖ First TIGER files used
- ❖ First time there was block level data for entire nation
- ❖ Early redistricting GIS systems used



2000

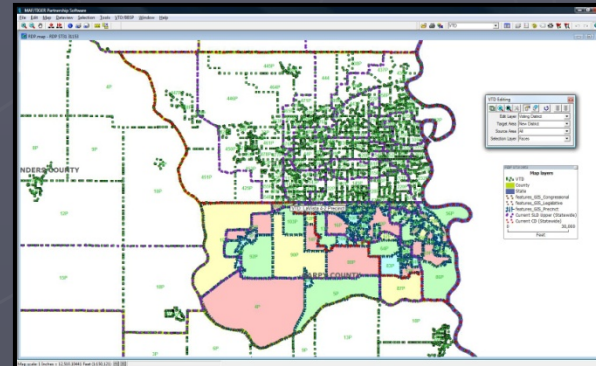
- ❖ Redistricting-specific GIS
- ❖ Bigger, faster and cheaper
 - Led to the ability of 1000's plans to be created



Redistricting – Technology Today

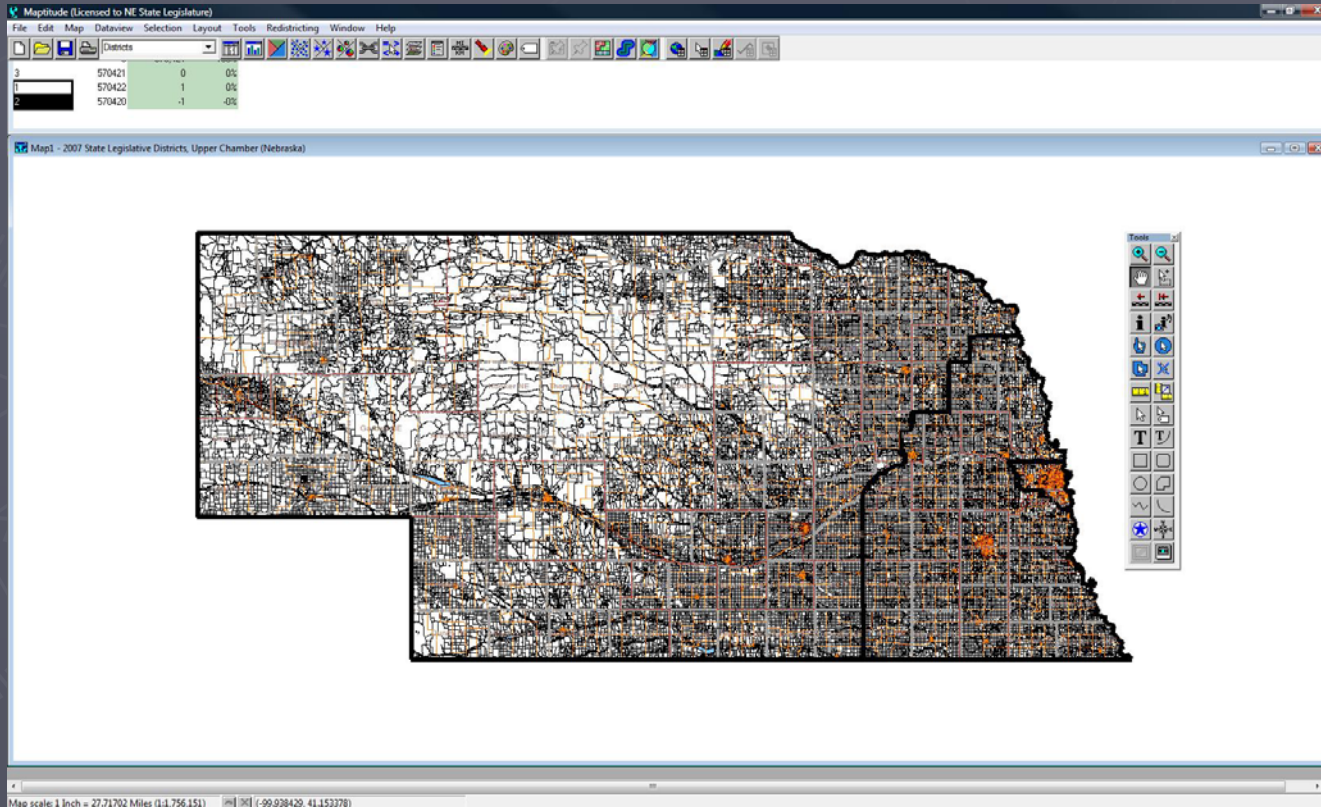
Software

- ❖ ESRI's ArcINFO 10 for everyday GIS tasks
- ❖ MTPS (MAF/TIGER Partnership Software) Census Bureau redistricting program specific software
- ❖ Redistricting Software: AutoBound or Maptitude



Redistricting - Software

- ❖ Two major redistricting-specific software companies
 - Data returned from 2010 Census count will be plugged into this software and used for drawing new boundaries



Redistricting - Software

The screenshot displays the AutoBound 9 Redistricting Solution software interface. The main window shows a map of a city with various district boundaries. A 'Layers' panel on the left lists map elements like MRoads, Water, and vtlds. An 'ArcToolbox' panel is visible on the bottom left. A '3D Bar Chart' window is overlaid on the map, showing data for different districts. A 'Table' window at the bottom displays an 'Active Matrix' with columns for DISTRICT, TAPERSONS, TABLACK, TNHISPANIC, TAAMERI, TAASIAN, TAHAWPAC, and TATOHER.

DISTRICT	TAPERSONS	Targ.	Dev.	TABLACK	TNHISPANIC	TAAMERI	TAASIAN	TAHAWPAC	TATOHER
01	76405	379529	-80%	2799	5547	67	3111	25	1587
02	75794	379529	-80%	8708	14544	272	2911	30	5395
03	507981	379529	34%	126323	91447	1794	78444	288	42994
04	21266	379529	-94%	887	1521	27	1180	4	323
05	180282	379529	-52%	130706	12809	397	5252	70	4886
06	29122	379529	-92%	11181	17839	253	219	39	11728
07		379529	-100%						

The background of the slide is a faded, grayscale image of the Nebraska State Capitol building. The building is a large, classical-style structure with a prominent central dome topped by a statue. The building has many windows and columns. The sky is overcast with some clouds. The overall tone is professional and official.

GIS in Redistricting

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402-471-0042

Websites

<http://www.census.gov/rdo/>

<http://www.redistrictingthenation.com/>

<http://www.ncsl.org/>

<http://www.redistrictinggame.org/>

<http://nebraskalegislature.gov/about/maps.php>

<http://www.census.gov/popest/gallery/maps/maps.html#counties>