

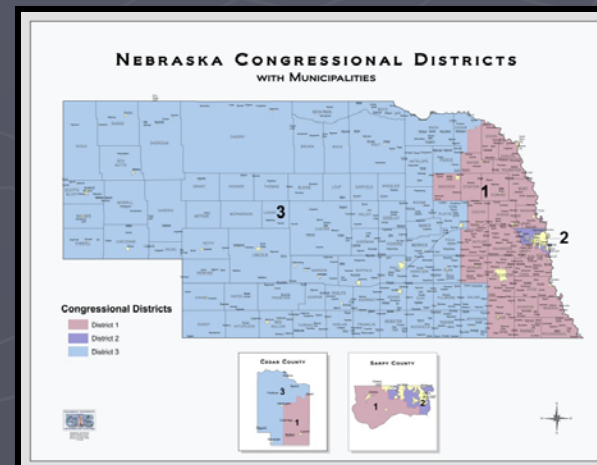
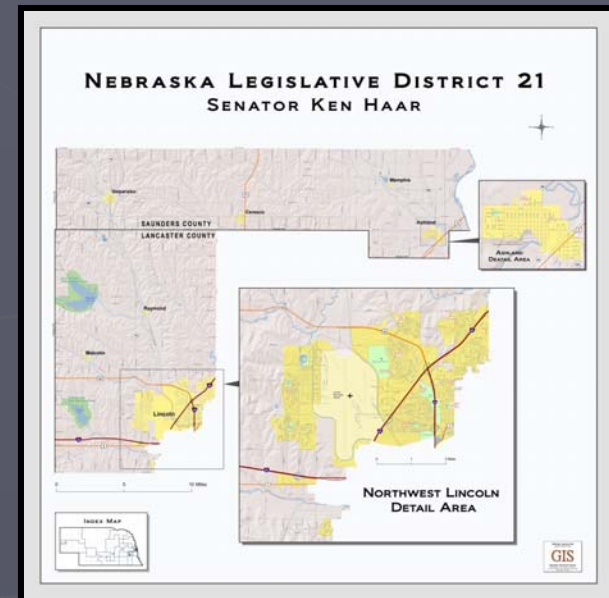
The background of the slide is a faded, light-colored photograph of the Nebraska State Capitol building. The building is a large, classical-style structure with a prominent central dome topped by a statue. The facade features numerous windows and columns. The image is semi-transparent, allowing the text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

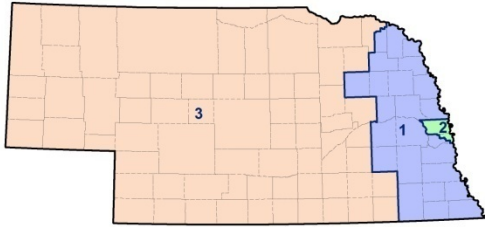
## What is redistricting?

- ❖ 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

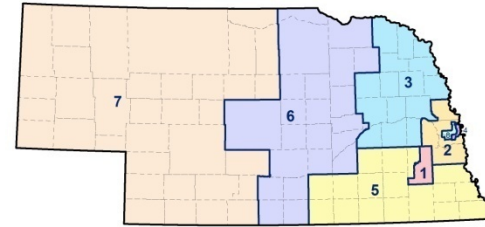


# Redistricting - Nebraska

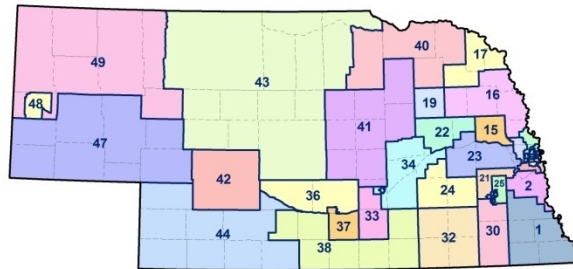
**U.S. HOUSE OF REPRESENTATIVES**



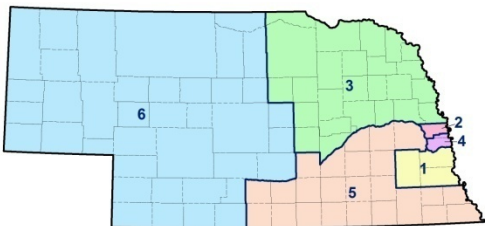
**UNIVERSITY OF NEBRASKA BOARD OF REGENTS/  
STATE BOARD OF EDUCATION**



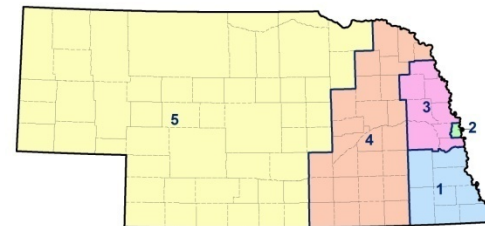
**NEBRASKA LEGISLATURE**



**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

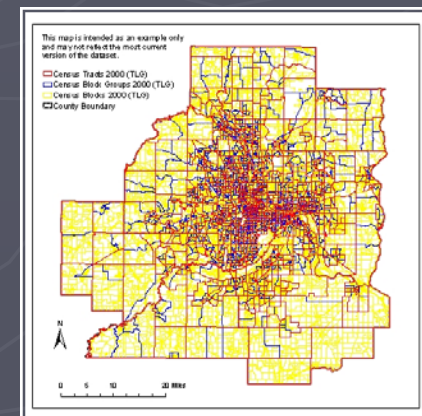
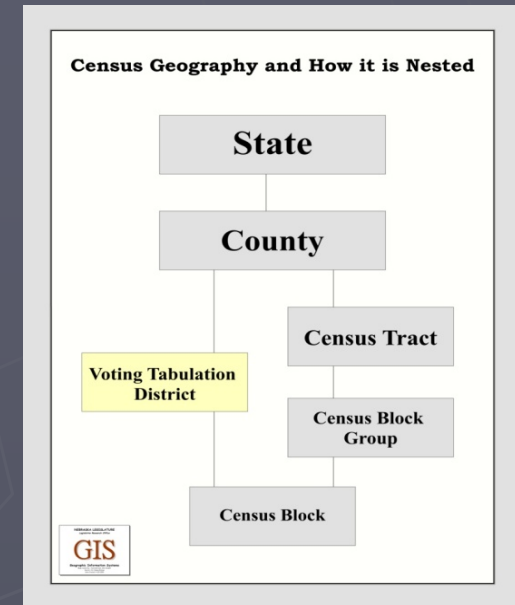
- ❖ **Phase 1** – State Legislative District Project, 2005 - 2007
- ❖ **Phase 2** – Voting District/Block Boundary Suggestion Project, 2008 - 2010
- ❖ **Phase 3** – 2010 Census Data Delivery, Spring 2011
- ❖ **Phase 4** – Collection of post-2010 Census Redistricting Plans, 2011 - 2013
- ❖ **Phase 5**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



# U.S. Census Bureau Redistricting Program Phase 2

## Voting Tabulation Districts (VTD)

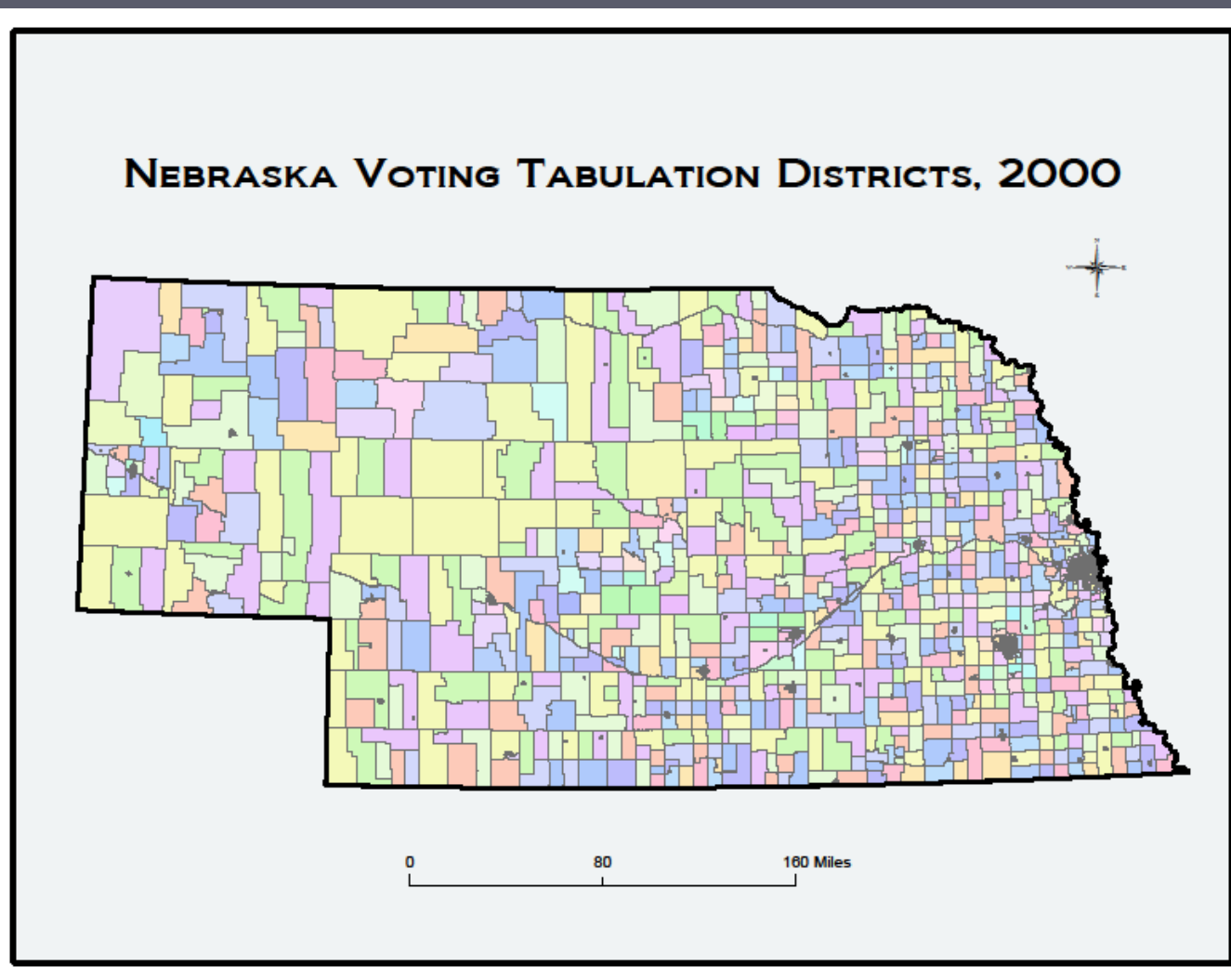
- ❖ “Building Blocks” for redistricting process
- ❖ Also known as “Voting Precincts” or “Wards”
- ❖ Boundaries for VTD determined by county officials
- ❖ Frequently changing boundaries
- ❖ Requested updated VTD information from all 93 counties 7-2008



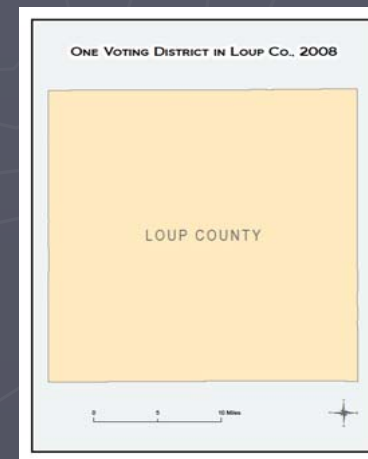
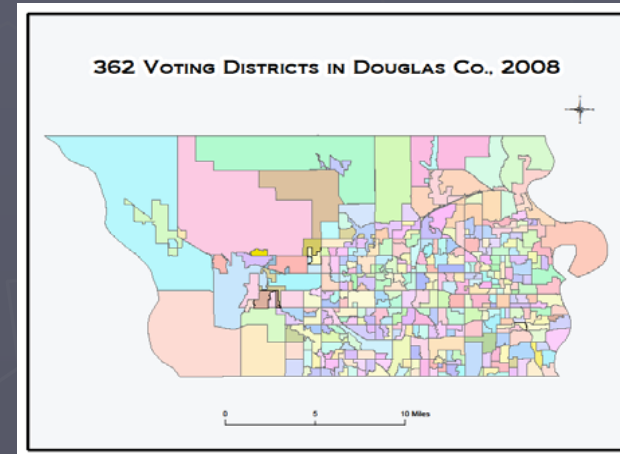
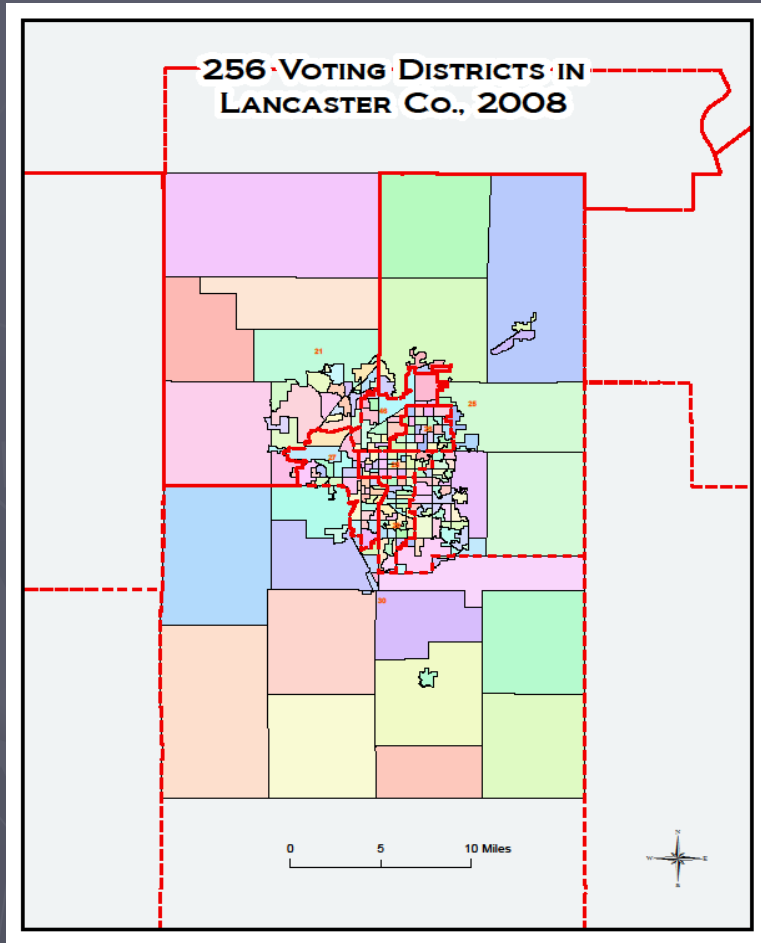


# Phase 2 - VTD

**1,888 Voting Districts in Nebraska in 2000**



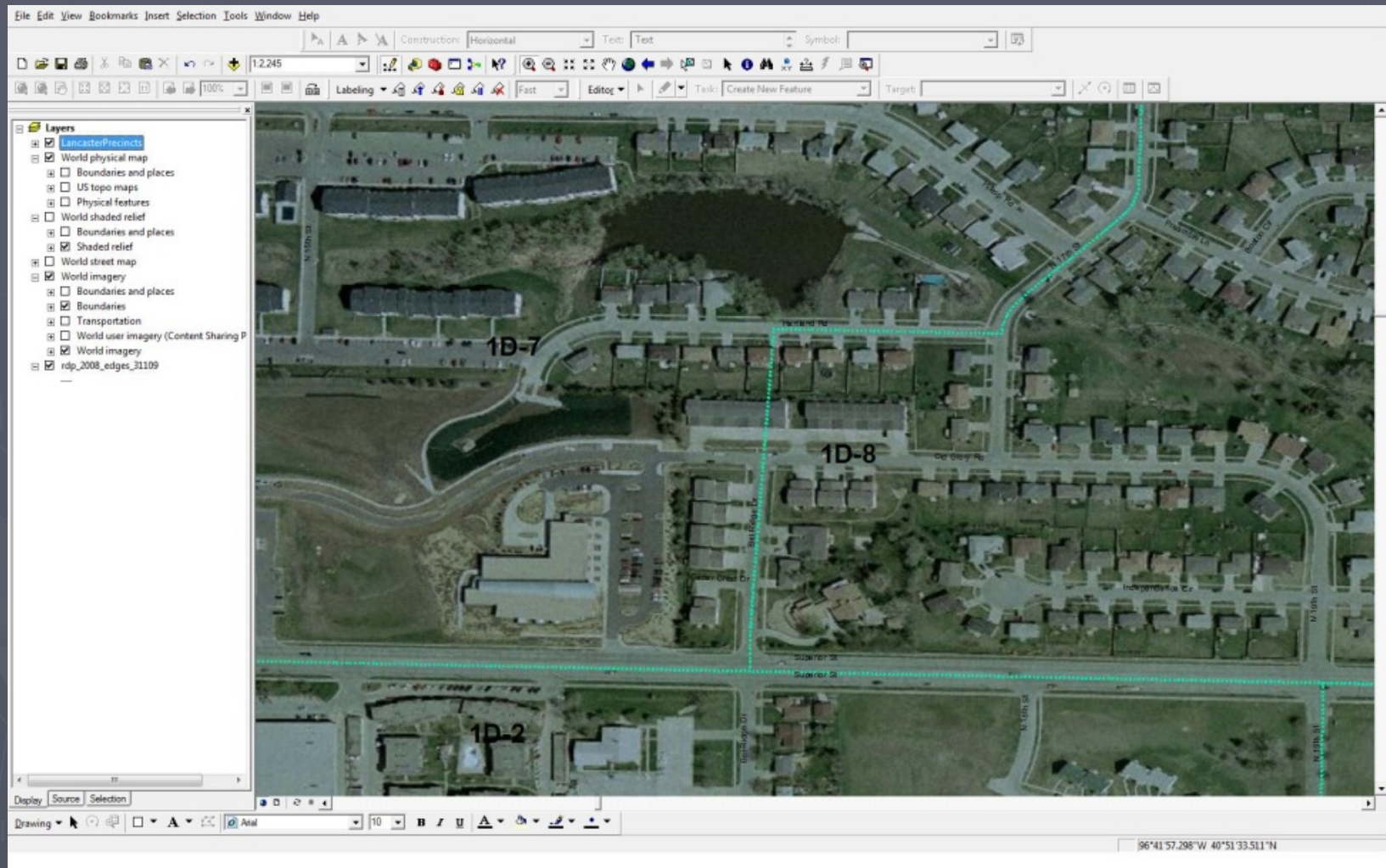
# Phase 2 – Voting Tabulation Districts



# Phase 2 – VTD



# Phase 2 – VTD

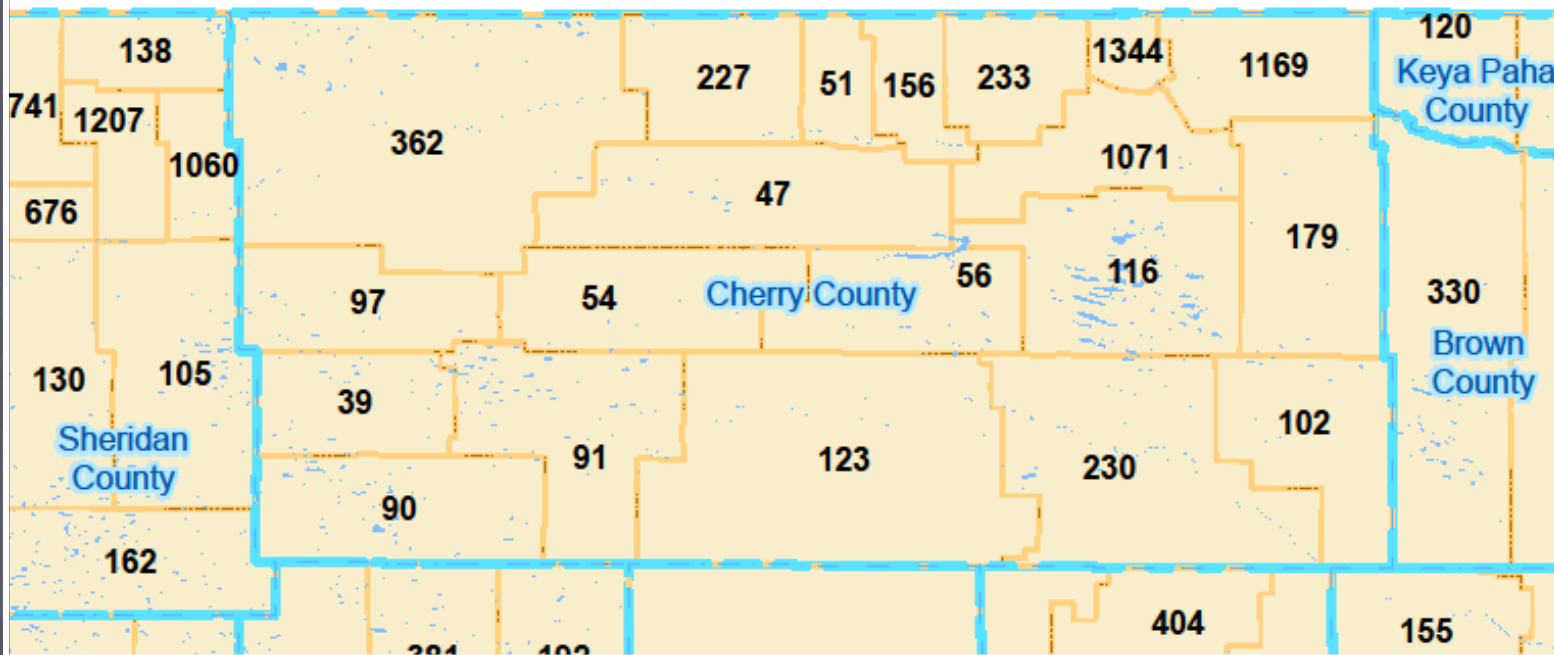


Jack Dohrman, Legislative Research Office

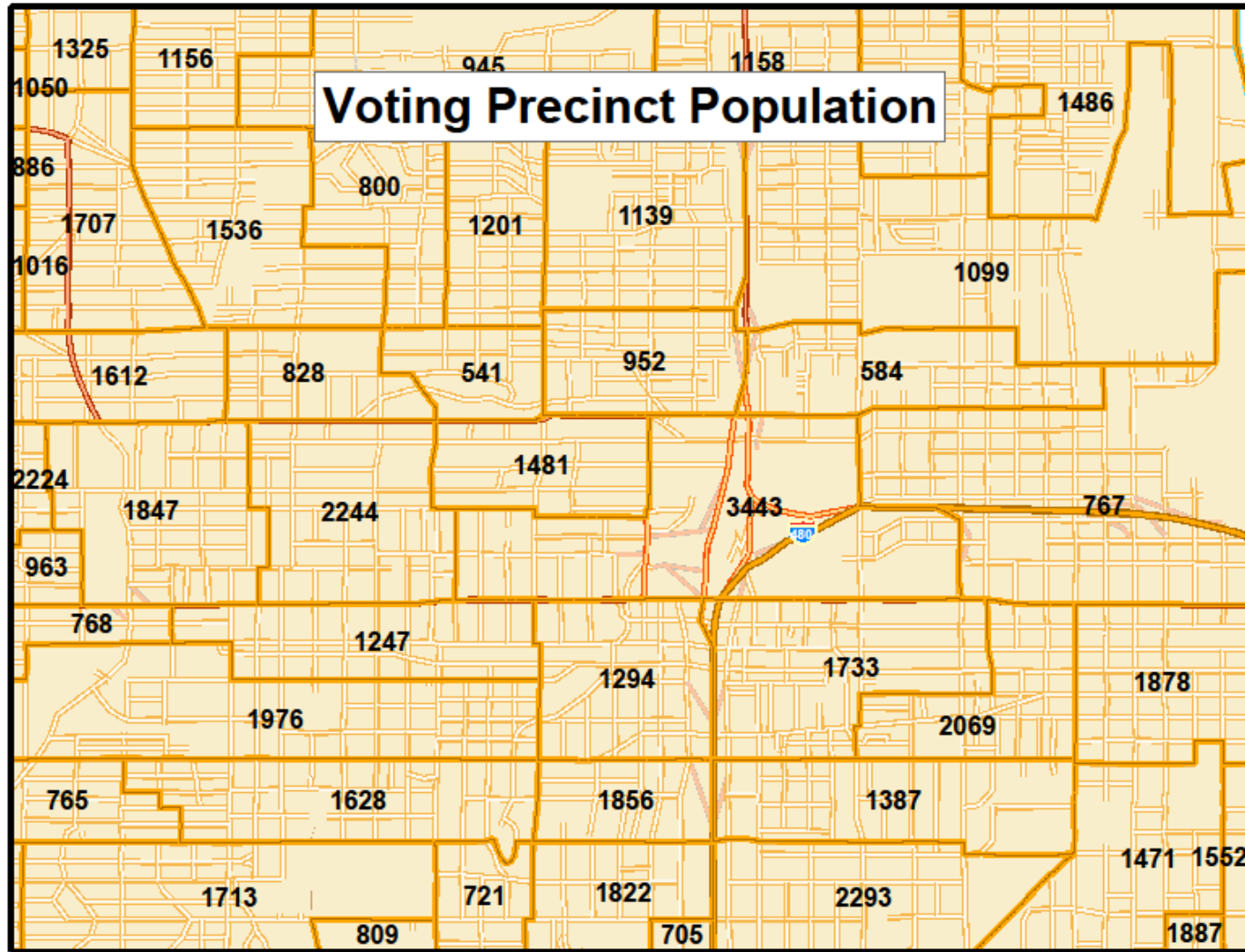
# Phase 2 – VTD

## 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

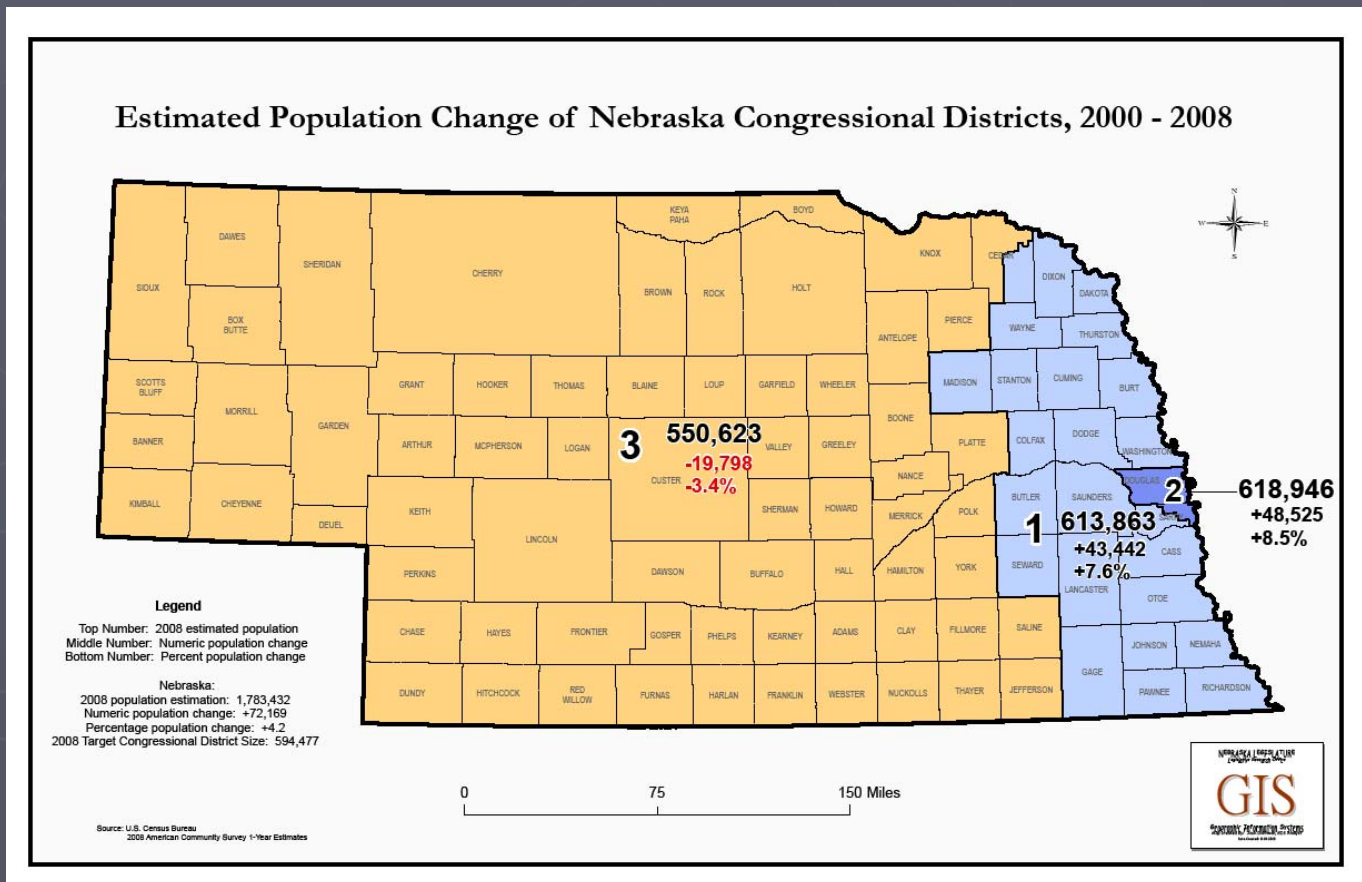




# Congressional Districts

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

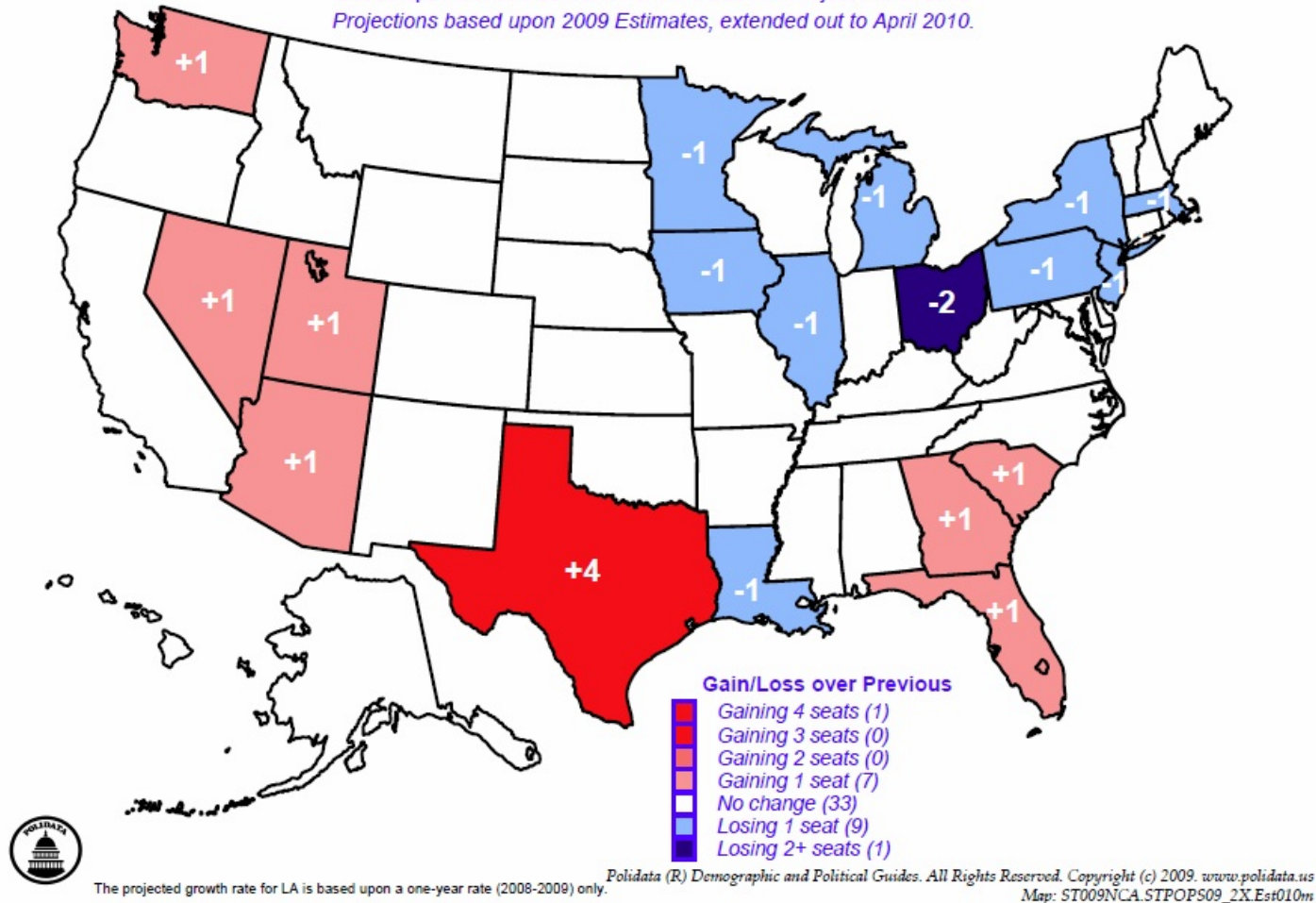
❖ **0%**  
deviation  
goal



# Reapportionment

## States Gaining/Losing Seats based upon 2010 Projections

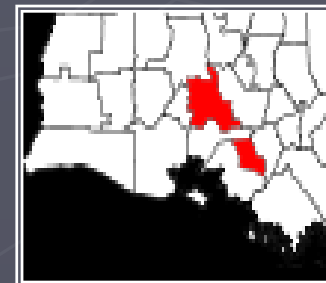
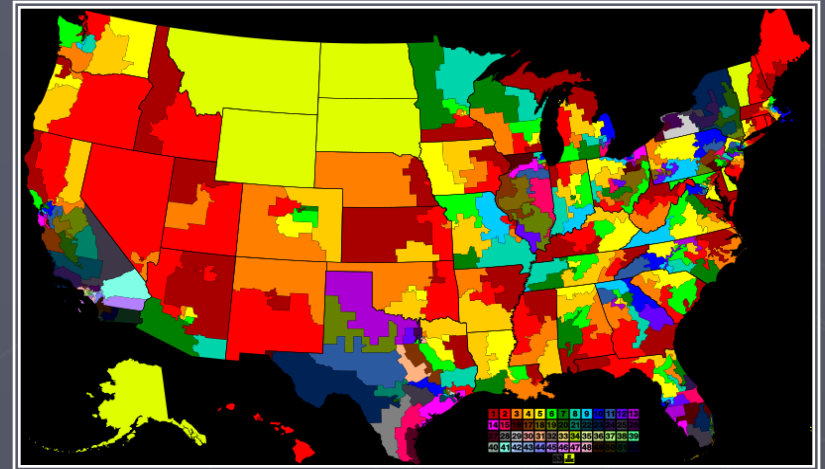
Based upon Census Estimates and POLIDATA Projections to 2010  
Projections based upon 2009 Estimates, extended out to April 2010.



# 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



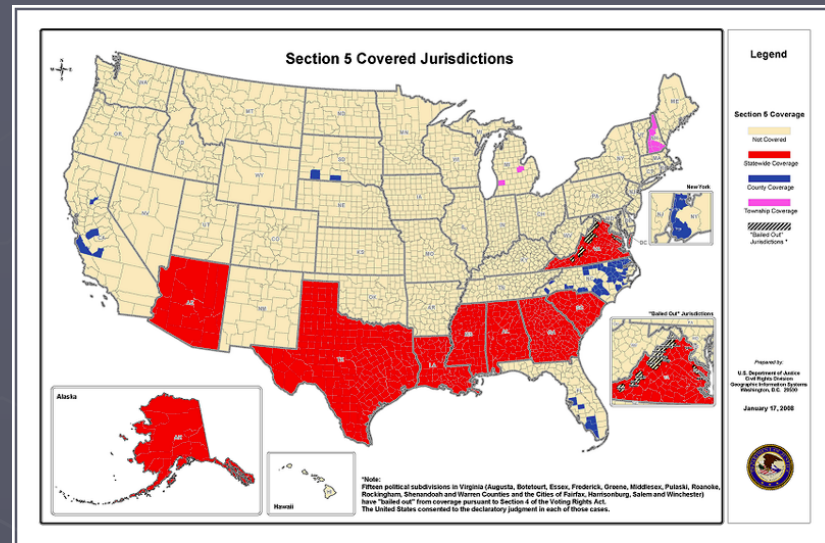
Jack Dohrman, Legislative Research Office

<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

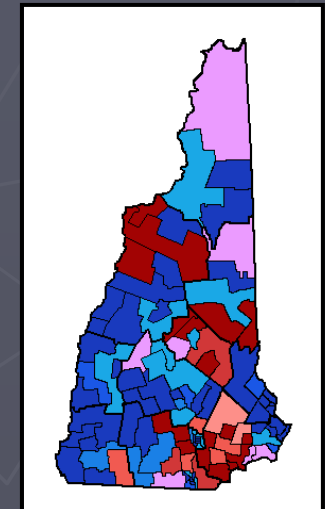
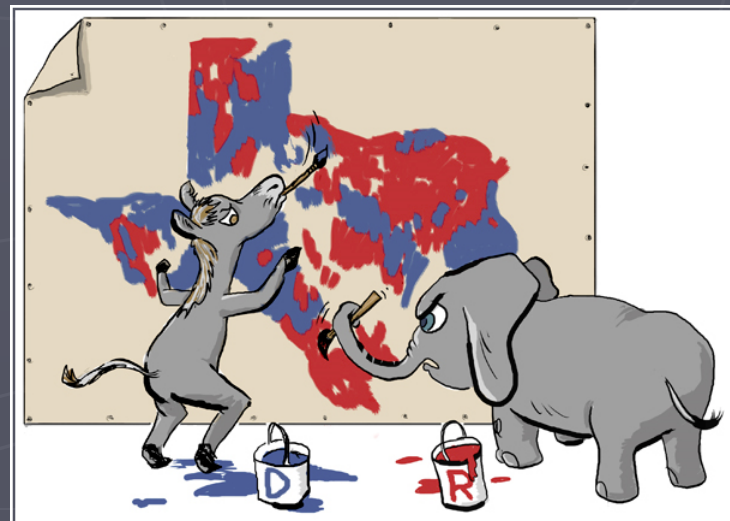


## Odd year elections

- ❖ 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

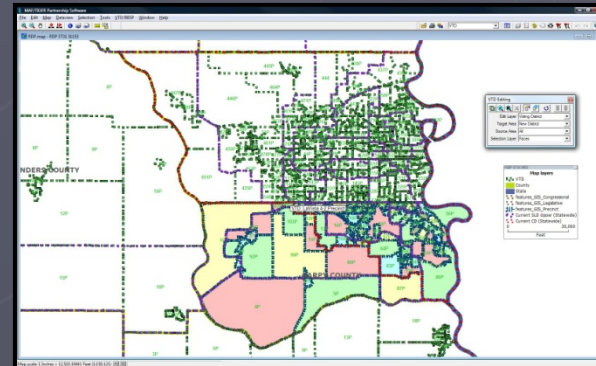
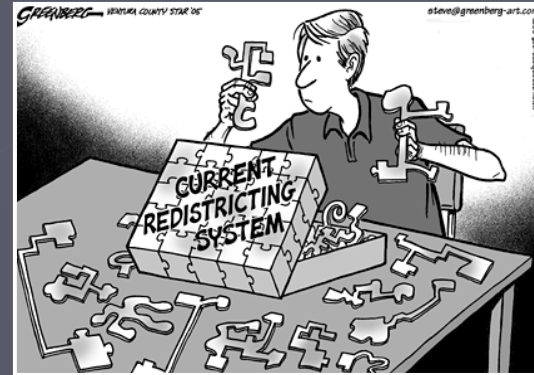
- ❖ Redistricting-specific GIS
- ❖ Bigger, faster and cheaper
  - Led to the ability of 1000's plans to be created



# 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

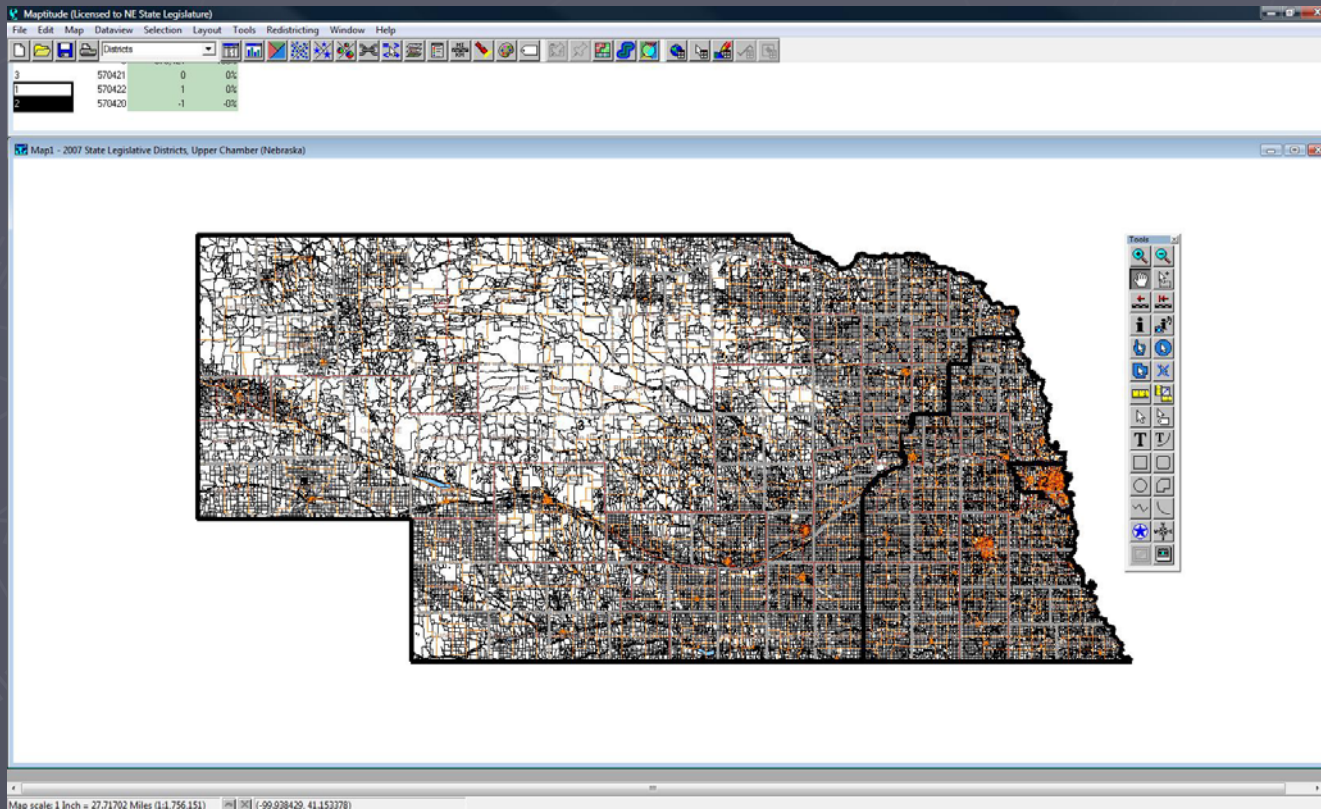




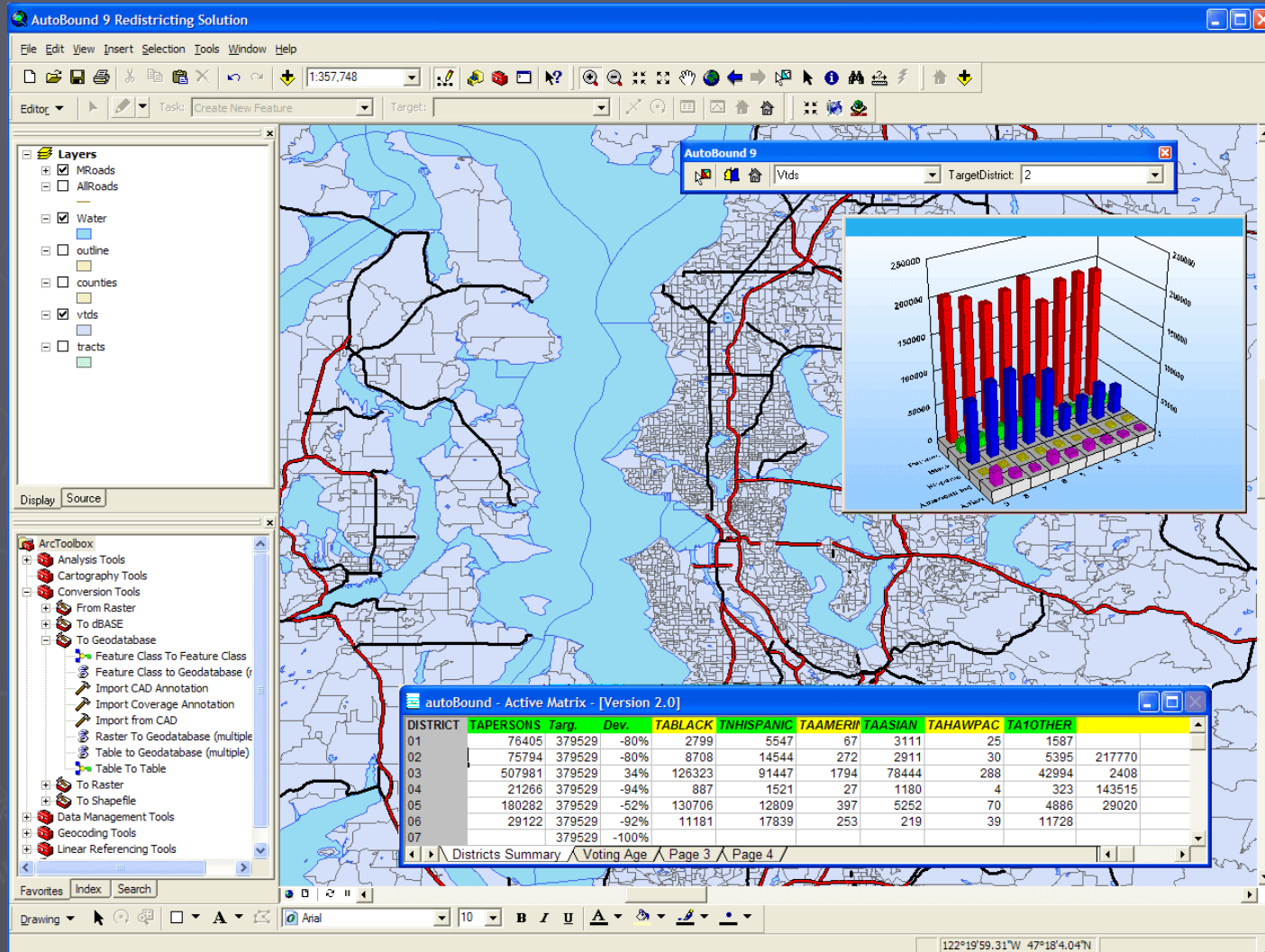
# Redistricting - Software

## ❖ 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 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 text is overlaid on this background.

# **GIS in Redistricting**

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Legislative Research Office**

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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>