Building a Redistricting Database

By Kimball Brace
Election Data Services, Inc.
NCSL Providence, RI 6/21/2019
Who is Kim Brace?

Involved in election related jobs & projects since 1972

• Federal, State and local clients & jurisdictions
• Last 4 decades done redistricting in more than half the nation
• Studied election results and Census data
• Multiple projects on election administration
Who is Election Data Services, Inc.?

Since 1986, we’ve been on your wall.

Since 2010 you’ve needed a larger wall
Who is Election Data Services, Inc.?

- Compiled extensive databases of election results and census demographics for redistricting in more than half the nation over past 4 apportionments
- Testified in more than 75 court cases, many concerning racial analysis of data

Since 1979, more than half the nation has been helped by Election Data Services in redistricting
Who is Election Data Services, Inc.?

Since 1980, kept track of what voting equipment is used in every county of the nation for each election.
Reapportionment Yearly Studies since 1990

Publishes annual reapportionment studies every December when Census Population Estimates are released.

Check www.electiondataservices.com for latest studies and historical table of congressional delegations since 1790

Last estimates to be released December, 2019
Who is Election Data Services, Inc.?  

If it concerns elections,  
And it deals with data …  

We’re probably involved
Today’s Discussion

1. Stepping Stones of Election Process

2. Data Cube for Redistricting

3. Different ways to review Census & Racial Data
The Election Process – 
From a data element prospective

- Total Population
- Voting Age Population
- Citizen Voting Age Population
- Registration
- Turnout
- Votes for President
- Other Statewide Offices
- Congressional
- State Legislature

Demographic Mix of Electorate
Changes with each Step
Changes by Different Geography
Changes Over Time

Stepping Stones of the Election Process
Play Important Part of Redistricting
Redistricting Data Cube

Source of data

Stepping Stones Need to be Reflected In your Database

© Election Data Services, Inc.
What Do you Need to Collect?

For Every County/Township in your State,
For Every Precinct in each Jurisdiction,
For Each Election:

1. Number of Registered Voters
   1. By party, if relevant
2. Number of people who Turned Out
3. Number of votes cast for each candidate in relevant elections
   1. All State-wide contests
   2. Any districted offices you’ll be redrawing
      1. Congressional
      2. State Senate
      3. State House
   3. Any relevant Referendum, particularly state-wide
   4. Any relevant local contests
   5. Any contest with a minority candidate
Election Data Considerations

1. Primary or General Election Only
2. How far back in time
   1. 2010 Tea Party election
      1. Different precinct configuration likely
3. Need Precinct Maps
   1. Precinct #4 moved across town between elections. Not always covering same voters
4. Absentee votes
   1. Allocated to/counted by precinct?
   2. Only tallied by ballot style (collection of precincts, do you know what they were)?
   3. Increased number over time
5. Vote Centers
   1. Data not delineated by precinct?
   2. Increased number over time

Don’t Assume Returns are All in One Place
Nor that they have been keypunched
Data Cube Considerations - Geography

Census -- TIGER files
   Need 2010 geography also
• Political -- Precinct boundaries: NEED MAPS BESIDE DATA
• Need at least 3 election years worth, maybe 6 years
    • Can't have data unless know where it goes/came from
• Many arguments for putting in whole decade
• Shifts from Republican to Democratic this decade
• Will be an issue, not matter what side of aisle you're on.
• Racial voting analysis – for court
• Other political boundaries
• Existing Congressional Districts
• Existing State Legislative Districts
• Cities -- as they have changed over decade
  • will impact on your precinct boundaries
  • Pull the place code layers or equivalencies out of different versions of TIGER
    over decade
Data Cube Considerations - Data

- Census
- ACS data
  - 1, 3, & 5 year estimates of different demographic data
- Cluster information – Communities of Interest
- Geocoding of Voter Registration data
  - We now have statewide VR files, courtesy of HAVA
  - Be able to put some political information into every census block
    - registration rates, turnout rates, primary voting, Party regis (if in file)
Databases have multiple purposes

First –

Plan Drawing

Redistricting software needs data down at the lowest geographic area, so that any group of areas can be added together for a district.

Means data needs to be disaggregated
Databases have multiple purposes

Second –

Analysis

   Racial Bloc Voting studies

   Mapping of results

   Proportionality studies
Understanding Census Racial Data

How it can be used in Redistricting
2010 Census Questions on Hispanic Origin and Race

NOTE: Please answer BOTH Question 5 about Hispanic origin and Question 6 about race. For this census, Hispanic origins are not races.

5. Is this person of Hispanic, Latino, or Spanish origin?
   - [ ] No, not of Hispanic, Latino, or Spanish origin
   - [ ] Yes, Mexican, Mexican Am., Chicano
   - [ ] Yes, Puerto Rican
   - [ ] Yes, Cuban
   - [ ] Yes, another Hispanic, Latino, or Spanish origin — Print origin, for example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.

6. What is this person’s race? Mark [x] one or more boxes.
   - [ ] White
   - [ ] Black, African Am., or Negro
   - [ ] American Indian or Alaska Native — Print name of enrolled or principal tribe.
   - [ ] Asian Indian
   - [ ] Japanese
   - [ ] Korean
   - [ ] Vietnamese
   - [ ] Native Hawaiian
   - [ ] Guamanian or Chamorro
   - [ ] Samoan
   - [ ] Other Pacific Islander — Print race, for example, Fijian, Tongan, and so on.
   - [ ] Other Asian — Print race, for example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on.
   - [ ] Some other race — Print race.

Source: 2010 Census
2020 Census Questions on Hispanic Origin and Race

Is this person of Hispanic, Latino, or Spanish origin?

- [ ] No, not of Hispanic, Latino, or Spanish origin
- [ ] Yes, Mexican, Mexican Am., Chicano
- [ ] Yes, Puerto Rican
- [ ] Yes, Cuban
- [ ] Yes, another Hispanic, Latino, or Spanish origin – Print, for example, Salvadoran, Dominican, Colombian, Guatemalan, Spaniard, Ecuadorian, etc.

What is this person’s race?
Mark 'x' one or more boxes AND print origins.

- [ ] White – Print, for example, German, Irish, English, Italian, Lebanese, Egyptian, etc.
- [ ] Black or African Am. – Print, for example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somali, etc.
- [ ] American Indian or Alaska Native – Print name of enrolled or principal tribe(s), for example, Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.
- [ ] Chinese
- [ ] Filipino
- [ ] Asian Indian
- [ ] Other Asian – Print, for example, Pakistani, Cambodian, Hmong, etc.
- [ ] Some other race – Print race or origin

Can check off up to 6 choices
## Race Data -- Decision on use

<table>
<thead>
<tr>
<th>Total Population</th>
<th>White</th>
<th>Black</th>
<th>American Indian &amp; Alaska Native</th>
<th>Asian</th>
<th>Hawaiian &amp; Pacific Islander</th>
<th>Some Other Race</th>
<th>Two or More Races</th>
<th>TOTAL</th>
<th>Hispanic</th>
<th>TOTAL PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race Alone</td>
<td>41.97%</td>
<td>36.77%</td>
<td>0.36%</td>
<td>4.35%</td>
<td>0.06%</td>
<td>13.58%</td>
<td>2.92%</td>
<td>100.00%</td>
<td>100.00%</td>
<td></td>
</tr>
<tr>
<td>Non Hispanic Race Alone</td>
<td>31.32%</td>
<td>36.39%</td>
<td>0.15%</td>
<td>4.30%</td>
<td>0.03%</td>
<td>0.15%</td>
<td>1.64%</td>
<td>26.02%</td>
<td>100.00%</td>
<td></td>
</tr>
<tr>
<td>Race Combined (Max)</td>
<td>44.28%</td>
<td>37.44%</td>
<td>0.72%</td>
<td>4.85%</td>
<td>0.16%</td>
<td>15.62%</td>
<td>0.00%</td>
<td>103.07%</td>
<td>100.00%</td>
<td></td>
</tr>
<tr>
<td>Non Hispanic Race Combined (Max)</td>
<td>32.57%</td>
<td>36.88%</td>
<td>0.40%</td>
<td>4.73%</td>
<td>0.09%</td>
<td>1.05%</td>
<td>0.00%</td>
<td>26.02%</td>
<td>101.74%</td>
<td></td>
</tr>
<tr>
<td>Race Combined (OMB)</td>
<td>41.97%</td>
<td>37.00%</td>
<td>0.47%</td>
<td>4.60%</td>
<td>0.08%</td>
<td>15.16%</td>
<td>0.00%</td>
<td>99.28%</td>
<td>100.00%</td>
<td></td>
</tr>
<tr>
<td>Non Hispanic Race Combined (OMB)</td>
<td>31.32%</td>
<td>36.57%</td>
<td>0.23%</td>
<td>4.53%</td>
<td>0.05%</td>
<td>0.81%</td>
<td>0.00%</td>
<td>26.02%</td>
<td>99.53%</td>
<td></td>
</tr>
</tbody>
</table>

### Voting Age Population

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>Black</th>
<th>American Indian &amp; Alaska Native</th>
<th>Asian</th>
<th>Hawaiian &amp; Pacific Islander</th>
<th>Some Other Race</th>
<th>Two or More Races</th>
<th>TOTAL</th>
<th>Hispanic</th>
<th>TOTAL PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race Alone</td>
<td>46.22%</td>
<td>34.09%</td>
<td>0.33%</td>
<td>4.79%</td>
<td>0.06%</td>
<td>11.86%</td>
<td>2.65%</td>
<td>100.00%</td>
<td>100.00%</td>
<td></td>
</tr>
<tr>
<td>Non Hispanic Race Alone</td>
<td>36.72%</td>
<td>33.77%</td>
<td>0.15%</td>
<td>4.75%</td>
<td>0.03%</td>
<td>0.14%</td>
<td>1.60%</td>
<td>22.83%</td>
<td>100.00%</td>
<td></td>
</tr>
<tr>
<td>Race Combined (Max)</td>
<td>48.32%</td>
<td>34.62%</td>
<td>0.68%</td>
<td>5.24%</td>
<td>0.16%</td>
<td>13.76%</td>
<td>0.00%</td>
<td>102.78%</td>
<td>100.00%</td>
<td></td>
</tr>
<tr>
<td>Non Hispanic Race Combined (Max)</td>
<td>37.93%</td>
<td>34.19%</td>
<td>0.41%</td>
<td>5.15%</td>
<td>0.09%</td>
<td>1.09%</td>
<td>0.00%</td>
<td>22.83%</td>
<td>101.69%</td>
<td></td>
</tr>
<tr>
<td>Race Combined (OMB)</td>
<td>46.22%</td>
<td>34.24%</td>
<td>0.44%</td>
<td>5.01%</td>
<td>0.08%</td>
<td>13.36%</td>
<td>0.00%</td>
<td>99.35%</td>
<td>100.00%</td>
<td></td>
</tr>
<tr>
<td>Non Hispanic Race Combined (OMB)</td>
<td>36.72%</td>
<td>33.88%</td>
<td>0.23%</td>
<td>4.95%</td>
<td>0.05%</td>
<td>0.86%</td>
<td>0.00%</td>
<td>22.83%</td>
<td>99.53%</td>
<td></td>
</tr>
</tbody>
</table>
## Practical impact

### Seat Distribution, 50 member legislature

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>Black</th>
<th>American</th>
<th>Asian</th>
<th>Hawaiian &amp; Pacific Islander</th>
<th>Some Other Race</th>
<th>Two or More Races</th>
<th>TOTAL</th>
<th>Hispanic</th>
<th>TOTAL PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Population</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race Alone</td>
<td>20.98</td>
<td>18.39</td>
<td>0.18</td>
<td>2.17</td>
<td>0.03</td>
<td>6.79</td>
<td>1.46</td>
<td>50.00</td>
<td>13.01</td>
<td>50.00</td>
</tr>
<tr>
<td>Non Hispanic Race Alone</td>
<td>15.66</td>
<td>18.19</td>
<td>0.07</td>
<td>2.15</td>
<td>0.02</td>
<td>0.07</td>
<td>0.82</td>
<td>50.00</td>
<td>13.01</td>
<td>50.00</td>
</tr>
<tr>
<td>Race Combined (Max)</td>
<td>22.14</td>
<td>18.72</td>
<td>0.36</td>
<td>2.43</td>
<td>0.08</td>
<td>7.81</td>
<td>0.00</td>
<td>50.00</td>
<td>13.01</td>
<td>50.00</td>
</tr>
<tr>
<td>Non Hispanic Race Combined (Max)</td>
<td>16.29</td>
<td>18.44</td>
<td>0.20</td>
<td>2.37</td>
<td>0.04</td>
<td>0.52</td>
<td>0.00</td>
<td>50.00</td>
<td>13.01</td>
<td>50.00</td>
</tr>
<tr>
<td>Race Combined (OMB)</td>
<td>20.98</td>
<td>18.50</td>
<td>0.24</td>
<td>2.30</td>
<td>0.04</td>
<td>7.58</td>
<td>0.00</td>
<td>50.00</td>
<td>13.01</td>
<td>50.00</td>
</tr>
<tr>
<td>Non Hispanic Race Combined (OMB)</td>
<td>15.66</td>
<td>18.28</td>
<td>0.11</td>
<td>2.26</td>
<td>0.02</td>
<td>0.41</td>
<td>0.00</td>
<td>50.00</td>
<td>13.01</td>
<td>50.00</td>
</tr>
<tr>
<td><strong>Voting Age Population</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race Alone</td>
<td>23.11</td>
<td>17.04</td>
<td>0.16</td>
<td>2.40</td>
<td>0.03</td>
<td>5.93</td>
<td>1.32</td>
<td>50.00</td>
<td>11.42</td>
<td>50.00</td>
</tr>
<tr>
<td>Non Hispanic Race Alone</td>
<td>18.36</td>
<td>16.89</td>
<td>0.07</td>
<td>2.37</td>
<td>0.02</td>
<td>0.07</td>
<td>0.80</td>
<td>50.00</td>
<td>11.42</td>
<td>50.00</td>
</tr>
<tr>
<td>Race Combined (Max)</td>
<td>24.16</td>
<td>17.31</td>
<td>0.34</td>
<td>2.62</td>
<td>0.08</td>
<td>6.88</td>
<td>0.00</td>
<td>50.00</td>
<td>11.42</td>
<td>50.00</td>
</tr>
<tr>
<td>Non Hispanic Race Combined (Max)</td>
<td>18.96</td>
<td>17.09</td>
<td>0.20</td>
<td>2.58</td>
<td>0.05</td>
<td>0.55</td>
<td>0.00</td>
<td>50.00</td>
<td>11.42</td>
<td>50.00</td>
</tr>
<tr>
<td>Race Combined (OMB)</td>
<td>23.11</td>
<td>17.12</td>
<td>0.22</td>
<td>2.50</td>
<td>0.04</td>
<td>6.68</td>
<td>0.00</td>
<td>50.00</td>
<td>11.42</td>
<td>50.00</td>
</tr>
<tr>
<td>Non Hispanic Race Combined (OMB)</td>
<td>18.36</td>
<td>16.94</td>
<td>0.12</td>
<td>2.48</td>
<td>0.02</td>
<td>0.43</td>
<td>0.00</td>
<td>50.00</td>
<td>11.42</td>
<td>50.00</td>
</tr>
</tbody>
</table>
Citizenship:
- Supreme Court decision this month?
- Use of administrative records as an alternative to Question?
- How will data be tabulated & incorporated into PL file?
- What cross-tabulations with race & Hispanic Origin?
- Will Margins of Error be shown if admin. records used?
- How will it impact our analysis and reports?
Other outstanding questions

Disclosure Avoidance:
• How will data be presented?
• Able to show which numbers are real vs adjusted?
• Is Total Pop changeable or just racial characteristics?
• Will we need to show polling like results? “49% +/- 2.3%”?
• How tally data if larger geography used in plan?
Lessons Learned the Hard Way

• Have to plan your process as if you’ll ultimately be in court.
  − Are you prepared to turn over your data to other side?
  − Will it withstand scrutiny?
  − Does everything add up to what was certified?
    • Document discrepancies

Database building –

The most important activity of the whole process

• An error here, can sink your whole ship
For 2020

• Make sure you have fast computer connections
• Make sure you have lots of disk space
• Make sure your relationships with your family are OK
• Destroy all hard drives & e-mails
• Start now, don’t wait.
I see that state lawmakers are re-drawing districts again.
Olympic Command for Redistricting Season:

Let the Games Begin.

This will be ________’s sixth political Olympiad since the Warren Court forced America into the ideological straightjacket of one-person, one-vote 44 years ago.

Like the first five, it will feature outstanding legislative warfare, after which the combatants will go to court and ask a judge who won.
Thank you

Kimball Brace
President
*Election Data Services, Inc.*
6171 Emerywood Court
Manassas, VA 20112
(703-580-7267 or 202-789-2004)

KBrace@electiondataservices.com or KBrace@aol.com
www.electiondataservices.com
The Election Process – From a data prospective

Total Population: 293.6 Million
Voting Age Population: 221.3 Million
Citizen Voting Age Population: 204.3 Million
Registration: 177.3 Million
Turnout: 121.8 Million
Votes for Highest Office: 113.9 Million
Other Statewide Offices: 44.1 Million
Congressional: 25.8 Million
State Legislature: 15.1 Million
CAN'T YOU GET THE INFORMATION FROM MY FACEBOOK PAGE?