NCSL REDISTRICTING SEMINAR

REDISTRICTING DECISIONS AND DESIGN :
WHAT TO LOOK FOR WHEN LOOKING FOR SOFTWARE

Glenn Koepp, Secretary of the LA Senate
Fundamental Decisions To Make

1. Leadership Decisions
2. Staff Composition
3. Technology Choices
Leadership Decisions
Leadership Decisions

- How Much Public Participation and Outreach
  - Public Meetings and Public Participation in Process
  - Public Hearing?
    - At the Capitol?
    - Around Your State?
    - Accessible Online to the Public?
  - Public Redistricting Submissions?
    - Provide Software Access To the Public?
      - At Home?
      - At the Capitol?
Leadership Decisions

- Who Will Draw The Plans
  - Staff?
  - Legislators?
  - Partisan Staff?
  - Outside Consultants?
Leadership Decisions

- What Will Be The Committee Assignments and Rules
  - Will There be Explicit Procedures and Practices?
    - Use Of Traditional Redistricting Criteria
    - Written and Adopted Rules
    - Address Partisan Gerrymandering?
    - Public Hearing Dates and Procedures
    - Acceptable Plan Deviations?

- How Much Transparency In The Process?
  - How Much Public Accessibility to Decision Making?
Staff Composition
Staff Decisions

- Try To Get An Early Start On Staff Selection
  - Training and Familiarity with Procedures and Software
  - Expertise and Comfort when Approaching Deadlines
  - Attend NCSL Seminars!

- Design of Software and Hardware Support Services
  - Quick and Effective Internal or External Support
  - Available 24/7
Technology Choices
Technology Decisions

- Cloud Based or Internal Servers or Both?
  - Do You Trust Your Internet When It Matters?

- What Sort of System Will You Employ?
  - Stand Alone Laptops?
  - Workstations?
  - Web Based Systems Dependent on the Internet?
Technology Decisions

- **Printers, Plotters, Servers and Laptops**
  - Breadth and Depth of Equipment Needs

- **Controlling The Environment**
  - Who has Access to Plans?
    - Certain Legislators?
    - What Staff?
    - Partisan Staff?
    - The Public?

- **Software**
  - The Tool to Accomplish Your Redistricting Goals
Software Feature Requirements
Software Feature Requirements

1. Database Development
2. Plan Drawing
3. Reporting
4. Mapping
## Database Development

<table>
<thead>
<tr>
<th>Jurisdictions</th>
<th>Plans Per Jurisdiction</th>
<th>Categories</th>
<th>Database Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>House</td>
<td>Unlimited?</td>
<td>PL 94-171</td>
<td>As Large As Needed</td>
</tr>
<tr>
<td>Senate</td>
<td></td>
<td>Voter Registration</td>
<td></td>
</tr>
<tr>
<td>Congress</td>
<td></td>
<td>Election Returns</td>
<td></td>
</tr>
<tr>
<td>Public Service</td>
<td></td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Database Development Requirements

- **Must Do Census Data Verification**
  - Verify Accuracy of PL 94-171 Census Data

- **Can Modify Census Data For State Requirements**
  - In 2010, There Were 63 Possible Combinations of Race and Ethnicity
  - How Does Your State Need to Combine This Data Into a Usable Format?
Database Development Requirements

- **Must Allow Integration of External State Databases**
  - Import and Integrate Your Registered Voter Data
  - Import and Integrate Your Election Return Data

- **Formulate Process Of Multi-level Disaggregation**
  - Ability to Apply External State Databases to Census Blocks By Formal Calculations
  - How Are You Parsing Out Your VTD Level Data to Smaller Census Blocks?
Database Development Requirements

- **Real Time Backups of Plans**
  - While Being Drawn
  - Fail Proof Backups

- **Define Public Submission Requirements**
  - Census Block Equivalency Files?
  - Accepting Only A Shape File Will Require You To Build The Plan Yourself
Plan Drawing
Plan Drawing Requirements

- Unlimited Number of Plans and Types of Plans
  - House/Senate/Congress/Other

- Have Multiple Save Points
  - Auto Save While Building Plans
  - Ability to Save Versions of Plans While Building Plan

- Allow Multiple Assignment Levels
  - Build Plans at Any Geography Level
  - Block, Block Group, Tract, VTD, County
Plan Drawing Requirements

- **View District Statistical Assignment Updates**
  - See Changes As They Happen
  - See Changes Before They Are Applied To A Plan

- **Don’t Use An Automatic Plan Creation Utility**
  - This is Probably a Bad Idea.

- **Ability To Inquire on Geographic Features**
  - To Identify and Preview Data and Geography Before Assignment
Plan Drawing Requirements

- Be Able To Lock Districts and Geography
  - So There is No Accidental Assignment To Another District
  - To Protect Your Finished Areas

- Ability To Undo Your Geographic Assignments
  - Multi-Step Reversal
Plan Drawing Requirements

- **The Ability to Share Plans**
  - Full Access or Read-Only?
    - To Other Staff
    - To The Public

- **A Variety of Tools For Selecting Geography**
  - Lasso? Anything Contained? Or Touching?

- **Ability To Import and Export Plans**
  - Capability To Accept Submissions From Other Software Packages Used by the Public or Other Interested Parties
  - To ESRI Shape Files or Census Block Equivalency Files
Plan Drawing Requirements

- **Show Data By Percentage or Raw Numbers or Both**
  - You Want Different Data Display Options

- **Export Boundaries or Geography For Legislation**
  - Bill Text of Boundaries of Districts For Bill Drafting
  - Census Data Identification Reports For Bill Drafting

- **Overlay Other Plans or Geography As a Layer**
  - Counties Boundaries/Municipal Boundaries
  - To Compare Past Plans To Your Working Plan
  - Ability To Color Code and Alter Size of An Overlay
Plan Drawing Requirements

- **Longevity of Software For the Decade**
  - For Updating Geography and VTDs
  - For Inter-Decade Redistricting
  - For Other Legislative Needs

- **Some Granular Desires**
  - A Full Featured GIS
  - Swap or Renumbe Your Districts
  - Copy Plans
  - Limiting Geography (For Sub-State Redistricting)
<table>
<thead>
<tr>
<th>District</th>
<th>Total Population</th>
<th>Total White</th>
<th>Total Black</th>
<th>Total Asian</th>
<th>Total Other</th>
<th>Total Hispanic</th>
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</thead>
<tbody>
<tr>
<td>District 1</td>
<td>930,075</td>
<td>717,577</td>
<td>155,788</td>
<td>23,625</td>
<td>25,069</td>
<td>68,116</td>
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<td></td>
<td>100.00%</td>
<td>77.16%</td>
<td>16.85%</td>
<td>2.53%</td>
<td>2.69%</td>
<td>7.32%</td>
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<tr>
<td>District 2</td>
<td>927,139</td>
<td>673,260</td>
<td>206,185</td>
<td>15,756</td>
<td>15,950</td>
<td>33,474</td>
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<td>72.61%</td>
<td>22.23%</td>
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<td>1.72%</td>
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<tr>
<td>District 3</td>
<td>864,269</td>
<td>262,469</td>
<td>536,791</td>
<td>21,788</td>
<td>20,174</td>
<td>44,261</td>
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<td>30.65%</td>
<td>61.99%</td>
<td>2.52%</td>
<td>2.33%</td>
<td>5.12%</td>
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<tr>
<td>District 4</td>
<td>888,023</td>
<td>625,475</td>
<td>230,506</td>
<td>10,880</td>
<td>10,674</td>
<td>23,388</td>
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<td>69.93%</td>
<td>25.95%</td>
<td>1.23%</td>
<td>1.19%</td>
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<tr>
<td>District 5</td>
<td>923,866</td>
<td>537,411</td>
<td>358,615</td>
<td>9,602</td>
<td>10,424</td>
<td>23,321</td>
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<td>58.17%</td>
<td>38.81%</td>
<td>1.04%</td>
<td>1.13%</td>
<td>2.52%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>4,533,372</td>
<td>2,836,192</td>
<td>1,486,885</td>
<td>81,551</td>
<td>82,191</td>
<td>192,560</td>
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<td>100.00%</td>
<td>62.56%</td>
<td>32.79%</td>
<td>1.79%</td>
<td>1.81%</td>
<td>4.24%</td>
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</table>
# Plan Statistics

<table>
<thead>
<tr>
<th>District</th>
<th># of Members</th>
<th>Actual Population</th>
<th>Ideal Population</th>
<th>Absolute Deviation</th>
<th>Relative Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>District 1</td>
<td>1</td>
<td>930,075</td>
<td>906,674</td>
<td>23,401</td>
<td>2.581%</td>
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<tr>
<td>District 2</td>
<td>1</td>
<td>927,139</td>
<td>906,674</td>
<td>20,465</td>
<td>2.257%</td>
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<tr>
<td>District 3</td>
<td>1</td>
<td>864,269</td>
<td>906,674</td>
<td>-42,405</td>
<td>-4.677%</td>
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<tr>
<td>District 4</td>
<td>1</td>
<td>888,023</td>
<td>906,674</td>
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<tr>
<td>District 5</td>
<td>1</td>
<td>923,866</td>
<td>906,674</td>
<td>17,192</td>
<td>1.896%</td>
</tr>
</tbody>
</table>

**Grand Total:** 5  4,533,372  4,533,370

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Ideal Population Per Member</td>
<td>906,674</td>
</tr>
<tr>
<td>Number of Districts for Plan Type</td>
<td>5</td>
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<tr>
<td>Range of District Populations</td>
<td>864,269 to 930,075</td>
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<tr>
<td>Absolute Mean Deviation</td>
<td>13,161</td>
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<tr>
<td>Absolute Range</td>
<td>-42,405 to 23,401</td>
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<tr>
<td>Absolute Overall Range</td>
<td>65,806</td>
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<tr>
<td>Relative Mean Deviation</td>
<td>2.69%</td>
</tr>
<tr>
<td>Relative Range</td>
<td>-4.68% to 2.58%</td>
</tr>
</tbody>
</table>
Reporting Requirements

- **Contiguity and Unassigned Unit Checks**
  - To Confirm Your Districts Connect
  - To Help You Find Small Unassigned Areas of Your Geography

- **Population Equality Reporting**
  - Population Deviation Reports To Meet State and Federal Requirements
Reporting Requirements

- **Ability To Report on All Dataset Attributes**
  - Must Be Able to Pick and Choose The Data You Want to Report
  - Registered Voters/Election Returns/Racial Combinations

- **District Reports**
  - Reports That Summarize The Relevant Statistics and Summaries Of Pertinent Data For Plans and Individual Districts
Mapping
Mapping Requirements

- **Must Have A Robust Labeling Technique**
  - For Accurate Maps
  - For Providing As Much Information As Possible

- **Needs Quick District Layout Prints**
  - For Fast Map Creation
  - Consistent Format and Representation of Information
Mapping Requirements

- **Have Standard Templates**
  - Themes That Reflect Consistency
    - Colors
    - Labels
    - Legends
  - This Will Limit Confusion
  - This Will Promote Consistency When Displaying Multiple Plans or Comparing Plans

- **Display Any Data in Database**
  - The Ability To Label Districts with Anything in Your Database
Questions!