Curriculum Vitae
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PROFESSIONAL EXPERIENCE

Current Position

Associate Professor, Department of Political Science, *University of Connecticut*, 2009-present.

Previous Positions

- Assistant Professor, Department of Political Science, *University of Connecticut*, 2002-2009.
- Adjunct Professor, Department of Government, *University of Texas at Austin*, 2000-2002.
- Adjunct Professor, Department of Government, *Austin Community College*, 1998-1999.
- Teaching Assistant, Department of Government, *University of Texas at Austin*, 1997-2000.
- Research Assistant, Department of Government, *University of Texas at Austin*, 1998-1999.

Education

Ph.D., *University of Texas at Austin*, 2002, Department of Government
Dissertation*: Party Development and the Depoliticization of Interests*.
Committee: Brian Roberts (chair), Walter Dean Burnham, Tse-Min Lin, Robert Moser, Alan Kessler, Stephen Bronars

B.A., *University of Wisconsin at Madison*, 1993, Department of Political Science
University of Wisconsin at Madison, 1993, Department of Economics
· Emphasis in Mathematics

PROFESSIONAL PUBLICATIONS

Books

In Print or Forthcoming

Party Development and the Depoliticization of Interests. 2002. Ann Arbor, MI: ProQuest/UMI Dissertation Publishing.

Journal Articles

In Print or Forthcoming

"Ideological Polarization and the Vanishing of Marginals: Retrospective Roll-Call Voting in the U.S. Congress." Forthcoming. *The Journal of Politics*.

"The Global Political Economy of Trade: Neo-Classical Liberal Views on Impacts" Forthcoming. In Robert A. Denemark's (ed.) *The International Studies Compendium Project*. Oxford, England: Blackwell Publishing Ltd.

"Housing Starts and the Political Business Cycle." 2008. *American Politics Research* 36 (5): 776-98.

"On the Causes and Consequences of and Remedies for Interstate Malapportionment of the U.S. House of Representatives." 2008. *Perspective on Politics* 6 (1): 89-107 (with Mathew Jasinski)

"The Effect of Risk Perceptions on Online Political Participatory Decisions." 2007. *Journal of Information Technology and Politics* 4 (1): 5-17. (with Samuel Best and Brian Krueger)

"Democratization and Success in the Global Economy: Are they Compatible?" 2007. *The International Journal of Interdisciplinary Social Sciences* 2 (1): 321-28. (with Oksan Bayulgen)

"Examining the Different Types of Foreign Capital and their Political Effects." 2007. *The International Journal of Interdisciplinary Social Sciences* 2 (1): 161-68. (with Oksan Bayulgen)

"Parties, Institutional Control, and Trust in Government." 2006. *Social Science Quarterly* 87 (4): 882-902. (with Joseph Gershtenson and Dennis Plane)

"Domestic Influences on International Trade Policy: Factor Mobility in the United States, 1963 to 1992." 2006. *International Organization* 60 (1): 69-103.

"Privacy in the Information Age." 2006. *Public Opinion Quarterly* 70 (3): 375-401. (with Samuel Best and Brian Krueger)

"Conditional Party Government and the Homogeneity of Constituent Interests." 2005. *The Journal of Politics* 67 (4): 1006-29.

"The Influence of the Legislative Environment on Conference Committees during the 98th and 106th Congresses." 2005. *Extension of Remarks* 28 (1). (with James Bourbeau)

Invited to Revise and Resubmit

"Legislative Organization and Conference Committee Appointment." *Journal of Legislative Studies*. (with James Bourbeau)

"The Electoral and Partisan Politics of Housing." *Business and Politics*.

"The Effect of the Abramoff Lobbying Scandal on the 2006 Midterm Elections." *Party Politics*. (with Samuel Best)

Works in Progress

Book

Constituent Interests and Congressional Parties: The Political Effects of Trade Policy, Factor Mobility and Globalization. Book manuscript, in progress.

Changes and Continuity in American Elections: State Exit Polls from 1972 to 2008. Book manuscripts, in progress. (with Samuel Best and Brian Krueger)

Journal Articles

"African-American Representation and (Civil Rights) Ideology in the U.S. House from 1970 to 2004."

"A Hundred Years of Shirk-itude: Ideological Shirking by U.S. House Members from 1896 to 2004." (with Stephen Napier)

"Foreign Capital in Developing Countries: Curse or Blessing?" (with Oksan Bayulgen)

Conference Presentations

Invited Conferences

U Vote – 2008 Election symposium sponsored by The University of Connecticut. October 20, 2008.

Domestic Preferences and Foreign Economic Policy conference, Niehaus Center for Globalization and Government, Princeton University. April 18-19, 2008.

"The People's Branch: Current Issues in Congressional Representation of Constituent Interests." *The Association of Centers for the Study of Congress* annual meeting. May 10-11, 2006.

Election Polling: Lessons Learned symposium sponsored by the Roper Center for Social Inquiry and the University of Connecticut. November 19, 2002.

Other Conferences

"Income Inequality and Party Polarization in the U.S. House" American Political Science Association annual meeting, September 2009, Toronto, Canada. (with Samuel Best and Robert O'Brien).

"All Politics is Local (News): The Effect of Local News on Presidential Elections, *Midwest Political Science Association* annual meeting, April 2009, Chicago, IL. (with Elizabeth Donovan)

"All Politics is Local (News): The Effect of Local News on Presidential Elections, *American Political Science Association* annual meeting, September 2008, Boston, MA. (with Elizabeth Donovan)

"Retrospective Voting in the U.S. House and Ideological Polarization." *American Political Science Association* annual meeting, September 2007, Chicago, IL. (with Stephen Napier)

"Descriptive Characteristics and Representation: Civil Rights Ideology in the U.S. House" *American Political Science Association* annual meeting, September 2007, Chicago, IL. (with Michelle Dube)

"Equal Representation? Race and Legislators' Support for Civil Rights." *Midwest Political Science Association* annual meeting, April 2007, Chicago, IL. (with Michelle Dube)

"Ideological Polarization and the Vanishing of Electoral Margins." *Midwest Political Science Association* annual meeting, April 2007, Chicago, IL. (with Stephen Napier)

"Home Sweet Home: The Electoral Effects of Asset Construction and Acquisition." *American Political Science Association* annual meeting, September 2006, Philadelphia, PA. (with Chris Andrews and James Bourbeau).

"Political Business Cycle and Asset Construction" *Midwest Political Science Association* annual meeting, April 2006, Chicago, IL. (with Chris Andrews and James Bourbeau).

"Legislative Organization and Conference Committee Selection" *American Political Science Association* annual meeting, September 2005, Washington, D.C. (with James Bourbeau).

"Disaggregating Globalization: The Mixed Effects of Foreign Capital on Democratization." *International Studies Association* annual meeting, March 2005, Honolulu, Hawaii (with Oksan Bayulgen).

"The Nature of Conferee Selection in the U.S. House of Representatives." *Northeast Political Science Association* annual meeting, November 2004, Boston, MA. (with James Bourbeau)

"Socio-Pocketbook Partisan Voting: A Hybrid Model of Constituent Economic Interests and Congressional Vote Choice." *American Political Science Association* annual meeting, September 2004, Chicago, IL.

"PocketBook Voting Revisited: Partisanship, Economic Interests and Congressional Elections, 1963-1992." *Midwest Political Science Association* annual meeting, April 2004, Chicago, IL.

"Dictators and Democrats: Polarizing Effects of Political Institution on FDI Performance." *Midwest Political Science Association* annual meeting, April 2004, Chicago, IL. (with Oksan Bayulgen)

"Policies, Parties, and Trust in Government: Implications of the 2002 Elections." *Southern Political Science Association* annual meeting, January 8 – 10, 2004, New Orleans, LA. (with Joseph Gershtenson and Dennis Plane)

"Divergent Development: The Political Determinants of Foreign Direct Investment." *American Political Science Association* annual meeting, August 2003, Philadelphia, PA. (with Oksan Bayulgen)

"Party-in-Government: Economic Interests, Secular Trends and Voting in the U.S. Congress." *International Political Science Association* annual meeting, June 2003, Durban, South Africa.

"Divergent Development: The Political Determinants of Foreign Direct Investment." *International Political Science Association* annual meeting, June 2003, Durban, South Africa. (with Oksan Bayulgen).

"Party-in-the-Electorate: Economic Interests and Congressional Vote Choice." *Midwest Political Science Association* annual meeting, April 3 – 6, 2003, Chicago, IL.

"Party-in-Government: Economic Interests, Secular Trends and Partisan Voting in the U.S. Congress." *American Political Science Association* annual meeting, August 2002, Boston, MA.

"Decline of Parties and the Depoliticization of Interests." *Midwest Political Science Association* annual meeting, April 2002, Chicago, Il.

"Interests and Votes: A Class and Sectoral Analysis of House Voting Patterns." *American Political Science Association* annual meeting, Sept. 2001, San Francisco, CA.

"Economic Representation: The Connection Between Interests and Votes." *Midwest Political Science Association* annual meeting, April 2001, Chicago, IL.

"Foreign Economic Policy: Economic Incentives and Congressional Coalitions." *Midwest Political Science Association* annual meeting, April 2000, Chicago, IL.
"Between Politics and Economics: The Sectional Foundations of Monetary Politics." *American Political Science Association* annual meeting. September 1999, Atlanta, GA.
"Between Politics and Economics: The Sectional Foundations of Monetary Politics." *Midwest Political Science Association* annual meeting. April 1999, Chicago, IL.
"The Politics of the IMF." *Southwestern Political Science Association* annual meeting, April 1999, San Antonio, TX.
"International Monetary Fund: An Analysis of the Domestic Sources of Foreign Affairs." *Western Political Science Association* annual meeting, March 1999, Seattle, WA.
"Monetary Politics: A Sectional Analysis of Coalitions and Conflicts." *American Political Science Association* annual meeting. September 1998, Boston, MA.
"International Economics and Domestic Policies." *Midwest Political Science Association* annual meeting. April 1998, Chicago, IL.

PROFESSIONAL SERVICE

Awards, Grants and Fellowships

- *Alan Bennett Award for Outstanding Junior Faculty in the Department of Political Science*, University of Connecticut, 2008.
- *Small Faculty Grant*, University of Connecticut, Spring 2008.
- *Pilot Survey Grant*, Center for Survey Research and Analysis, Fall 2006
- *Small Faculty Grant*, University of Connecticut, Spring 2005.
- Research Funding, University of Connecticut, Spring 2005.
- Summer Research Funding, University of Connecticut, Summer 2003.

Professional Activities

Associate Editor

Polity, beginning five-year term on July 1, 2010.
The International Journal of Interdisciplinary Social Sciences, 2007.

Manuscript Reviewer

American Journal of Political Science; The Journal of Politics; *Legislative Studies Quarterly; American Politics Research; Political Research Quarterly; The International Journal of Interdisciplinary Social Sciences.*

Panel Chair

Political Geography, Institutions, Interests, and Trade Policy. *Midwest Political Science Association* annual meeting, April, 2006.
Legislative Behavior. *International Political Science Association* annual meeting Durban, South Africa July, 2003
The State and Capitalism. 1997. *Southwestern Political Science Association* annual meeting, New Orleans, LA March, 1997.

Discussant

The State and Capitalism. *Southwestern Political Science Association* annual meeting, New Orleans, LA March, 1997.

Administrative Experience

University of Connecticut, Department of Political Science

• Associate Director of Graduate Studies, 2009-present.
• *Graduate Committee*, 2009-present.
• *American Politics Field Committee*, 2002-present.
Chair, Spring 2009-present.
• *Quantitative Methods Committee*, 2002-present.
Chair, Fall 2004
• *UConn Washington DC Congressional Honors Internship Program* (Faculty Advisor), 2004-present.
• *Pi Sigma Alpha*, Faculty Advisor, 2004-2008.
• *Graduate Recruitment Working Group*, 2008-2009.
Chair, 2008-2009.
• *Executice Committee* (elected), 2008-2009.
• *Latino-American Politics Search Committee*, 2005-2006, 2006-2007.
• *U.S. Congress Search Committee*, 2006.
• *Undergraduate Courses and Curriculum Committee*, 2004-2005.
• *American Political Behavior Search Committee*. 2004.

University of Connecticut, College of Liberal Arts

• *Department Head Search Committee* (elected), 2007-2008.
• *CLAS Courses and Curriculum Committee*, 2003-2004.

University of Connecticut

• *Graduate Faculty Council*, Alternate Member (elected), 2009-2011.
• Restructured *UConn Honor's Washington D.C. Internship Program*, 2005-present
~ Established an internship relationship between the University of Connecticut and Connecticut's Governor Rell's Washington D.C. office.
~ Established an internship relationship between the University of Connecticut and the Democratic Caucus for the U.S. House of Representatives.
• Staffed multiple recruitment/informational meetings for the *UConn Honor's Washington D.C. Internship Program*, Fall 2002 – present.
• Led student forum on the *Vice-Presidential Debates*. October 5, 2004.

Political Consulting

Outside Expert

Peppers and Rogers Group, Istanbul, Turkey, 2009-present.
Apportionment.us, 2009-present.

Television Interviewee

"Banking Crisis." News@Ten, Fox 61 WTIC-TV. August, 2008.
"Chris Dodd's Strategy." *Beyond the Headlines*, Fox 61 WTIC-TV. February 25, 2007.
"Lieberman Running as Independent." *News@Ten*, Fox 61 WTIC-TV. August 9, 2006.
"Election Night Coverage." *News@Ten*, Fox 61 WTIC-TV. November 2, 2004.
"Candidate Comparison." *Beyond the Headlines*, Fox 61 WTIC-TV. October 17, 2004.
"Bush/Kerry Debates." *Beyond the Headlines*, Fox 61 WTIC-TV. September 26, 2004.
"Reagan Remembered: His Legacy". *Beyond the Headlines*, Fox 61 WTIC-TV. June 13, 2004.
"Election Polling: Lessons Learned." *Connecticut Public Television*. December 2, 2002.

Radio Interviewee
"Public Opinion and the Electorate" *Connecticut Public Radio*, October 20, 2008.
"Conversations with Kathleen Dunn" *Wisconsin Public Radio*, September 3, 2008.
"Congresswoman DeLauro" *Public Radio International*, April 5, 2007.

Newspaper Interviewee
Boston Globe; *Hartford Courant*; *Lawn & Landscaping Magazine*; *Public Radio International*; *Manchester Journal Inquirer*; *New London Day; Norwalk Hour*; *Norwich Bulletin*; *Stamford Advocate*; *UConn Advance; UConn Daily Campus*; *Washington Post*; and, *Waterbury Republican-American*.

Courses Taught

American Politics
Introduction to American Politics (U); Presidency and Congress (U,G); Congress in Theory and Practice (U); Presidency and the Media (U); State and Local Politics (U); American Political Parties (U,G); American Politics Pro-Seminar (G).

Political Economy
American Political Economy (U,G); Urban Politics (U); American Trade Politics (U); Congressional Trade Politics (U).

Academic Advising

2009-2010
- Jason Rich, *Political Science Dissertation* (reader): Currently tenure-track at George State University.
- Michael Mitchell, *Political Science Honors Thesis* (major advisor).
- Faculty Advisor to 33 undergraduates.
- Faculty Advisor to 5 *UConn Washington DC Honor Program* interns.

2008-2009
- Chris Paskewitz, *Political Science Dissertation* (reader): Currently tenure-track at Centre College.
- Robert O'Brien, *Political Science Honors Thesis* (major advisor): Currently at Quinnipiac School of Law.
  ~won the *Political Science Thesis* award.
- Chris Holcomb, *Political Science Master's Thesis* (associate advisor).
- Faculty Advisor to 33 undergraduates.
- Faculty Advisor to 8 *UConn Washington DC Honor Program* interns.

2007-2008
- Jeffrey Stephen Ferketic, Political Science, *University Scholar Honors Thesis* (major co-advisor).
  ~*Mitchell Scholarship Finalist*
- Elizabeth Donovan, *Political Science Honors Thesis* (major advisor)): Currently at U.S. House of Representatives, Office of Chris Murphy.
  ~won the *Political Science Thesis* award.
- Alpa Patel, *Political Science Honors Thesis* (major advisor).
- Faculty Advisor to 38 undergraduates.
- Faculty Advisor to about 85 undergraduate *Pi Sigma Alpha* members.
- Faculty Advisor to 6 *UConn Washington DC Honor Program* interns.

2006-2007

- Chris Pavasaris, *Political Science Honors Thesis* (major advisor): Currently at U.S. Senate, Office of Jay Rockefeller.
- Meghann LaFountain, Political Science, *University Scholar Honors Thesis* (co-advisor). ~won the *Best Political Science Thesis* award.
- Jeffrey Stephen Ferketic, Political Science, *University Scholar Honors Thesis* (major co-advisor).
- Andrew Pieper, *Political Science Dissertation*, Fall 2003 – Spring 2007 (associate advisor): Currently at Kennesaw State University.
- Jessica Papadolous, Political Science and International Relations, *Senior Thesis* (major adivisor): Currently at the District Attorney Office in Boston, MA.
- Faculty Advisor to 28 undergraduates.
- Faculty Advisor to about 70 undergraduate *Pi Sigma Alpha* members.
- Faculty Advisor to 7 *UConn Washington DC Honor Program* interns.

2005-2006

- Chase Harrison, *Political Science Dissertation* (reader): Currently at Harvard University.
- Peter Seilman, *Political Science Master's Thesis* (associate advisor).
- James Bourbeau, *Political Science Master's Thesis* (associate advisor).
- Stephen Napier, *Political Science Honors Thesis* (major advisor): Currently at University of Connecticut Law School. ~won the *Best Political Science Thesis* award.
- Meghann LaFountain, Political Science, *University Scholar Honors Thesis* (major co-advisor).
- Faculty Advisor to 37 undergraduates.
- Faculty Advisor to about 60 undergraduate *Pi Sigma Alpha* members.
- Faculty Advisor to 7 *UConn Washington DC Honor Program* interns.

2004-2005

- David Agrawal, Political Science, *University Scholar Honors Thesis* (major advisor): Currently at University of Michigan at Ann Arbor, Deparment of Economics.
- Joseph M. Reynolds, *Political Science Master's Thesis* (associate advisor).
- Silvia M. Adaes. *Individualized Major* (B.A.), Spring 2005 (co- advisor).
- Faculty Advisor to 33 undergraduates.
- Faculty Advisor to *1 UConn Washington DC Honor Program* intern.

2003-2004

- Thomas Noggle, *Political Science Master's Thesis*, (associate advisor).
- Faculty Advisor to 25 undergraduates.

2002-2003

- Mathew Jasinski, *Political Science Honors Thesis* (major advisor). Currently at Robinson & Cole, LLC, Hartford, CT
- Faculty Advisor to 20 undergraduates.

Current Membership in Professional Association

- American Political Science Association
  - ~ Legislative Studies Section
  - ~ Political Economy Section
  - ~ Political Methodology
  - ~ Political Organizations and Parties Section
- Midwest Political Science Association

REFERENCES

- Samuel Best, Associate Professor, Department of Political Science, *University of Connecticut*, Storrs, CT 06269.
- Walter Dean Burnham, Professor Emiritus, Department of Government, *University of Texas*, Austin, TX 78751.
- David Jones, Professor, Department of Political Science, *CUNY-Baruch*, New York, NY 10010.
- Brian Roberts, Professor, Department of Government, *University of Texas*, Austin, TX 78751.

On the Causes and Consequences of and Remedies for Interstate Malapportionment of the U.S. House of Representatives

Jeffrey W. Ladewig and Mathew P. Jasinski

Forty years ago, the Supreme Court drew attention to and made considerable efforts toward eliminating *intrastate* malapportionment among U.S. House districts with the one-person, one-vote rule. Today, this rule is significantly, and more severely, violated by a rarely discussed or analyzed form of malapportionment, *interstate* malapportionment. We identify and discuss its causes and consequences, as well as possible remedies. We argue that changing the fixed size of the U.S. House membership is the only solution that meets normative, constitutional, and practical standards. We demonstrate that the current fixed size of the chamber unreasonably corrupts the popular basis of the U.S. House, which is necessary for the proper functioning of American representative democracy.

More than forty years ago the Supreme Court took a profound step toward improving the equality of political representation in the United States. In a series of cases beginning in 1962, the Court established the "one-person, one-vote" rule.[1] Based on Article I and the equal protection clause of the Fourteenth Amendment of the U.S. Constitution, the Court ruled that the malapportionment of legislative districts—that is, the apportionment of voting districts with unequal populations—within states was unconstitutional. In *Wesberry v. Sanders,* the Court considered the malapportionment of U.S. congressional seats in Georgia. Justice Black, writing for the majority, cited Georgia's Fifth Congressional District (with 823,680 individuals) and Ninth Congressional District (with 272,154 individuals) as egregious examples.[2] The discrepancy was especially troublesome for the Court because the U.S. House is the federal institution meant to represent directly individuals and to be the most egalitarian.

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The Supreme Court spoke forcefully against malapportionment by stressing that it was "counter to our fundamental ideas of democratic government," and if permitted, "it would cast aside the principle of a House of Representatives elected 'by the People,' a principle tenaciously fought for and established at the constitutional Convention."[3] The Court interpreted "chosen . . . by the People" to mean that "as nearly as is practicable one man's vote in a congressional election is to be worth as much as another's."[4] In a series of subsequent decisions, the Court repeatedly enforced its ruling and reiterated its arguments against malapportionment. In *White v. Weiser* (1973), for instance, the Court concluded that Texas had not demonstrated a "good-faith effort to achieve absolute equality" among its congressional districts.[5] The Court, citing the intrastate population discrepancy of 19,275 individuals between two House districts, ordered Texas to reapportion its districts to be "as mathematically equal as reasonably possible."[6] In the 1980s, the Court further defined the "equal representation for equal numbers of people" requirement of *Wesberry.* In *Karcher v. Daggett,*[7] the Court held that only absolute population equality among districts reflects the principle of population equality found in Article I, Section 2, of the Constitution.

Over the past forty years, the Supreme Court vigorously has corrected the intrastate malapportionment of U.S. House districts.[8] One-person, one-vote has been established as constitutional doctrine and is now nearly universally held by Americans as the democratic standard of political equality and fairness. *Intrastate* malapportionment, however, is only one of the two types of malapportionment. *Interstate* malapportionment of representation

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in the U.S House is rarely discussed and is acutely problematic.

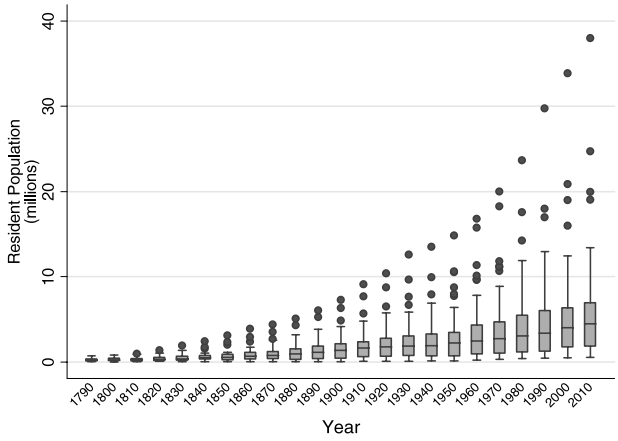
Interstate malapportionment is an unintended and understudied byproduct of four interrelated factors: (1) uneven population distribution among the states; (2) territorially defined congressional districts; (3) current apportionment method; and (4) the fixed and limited size of 435 members in the House of Representatives. Intentionally or not, the House has become systematically malapportioned and is likely to become only more so over time. The constitutional, normative, and practical implications of either form of malapportionment are similar. Intrastate malapportionment and interstate malapportionment, though, are quantitatively different; the latter is currently significantly more severe. Based on the 2000 reapportionment, the interstate population discrepancy between two House districts is as much as 410,012 individuals, which is over twenty-one times greater than the intrastate malapportionment ruled unconstitutional in *White*. Despite the Court's aggressive stance toward intrastate malapportionment, it declined its only opportunity to date to address interstate malapportionment.[9] The question, then, is whether the present practice of apportioning the U.S. House represents every individual within the population "as mathematically equal as *reasonably* possible."[10]

We argue that interstate malapportionment is all too often overlooked by democratic theorists, political analysts, and the public even though it unnecessarily undermines the procedural recognition of the electoral political equality and fairness embodied by the U.S. House. It also inhibits a fuller establishment of the one-person, one-vote principle. We intentionally say "fuller" instead of "full" because an analysis of the causes of interstate malapportionment also points toward a fundamental paradox between the Constitution's mandate, accepted standards of representative legitimacy, and the Court's current requirements for congressional constituencies. Nonetheless, we suggest that changing the fourth factor, namely, the fixed size of House membership, is the most reasonable and measured solution, albeit limited, to the problem of interstate malapportionment.

The Causes of Interstate Malapportionment

The first cause of interstate malapportionment is uneven population distribution among the states. We assume this requires little verification. Since the founding of the country, its population has grown and so have the average and median state populations. The populations of small and large states, however, have not grown at the same rate, and accordingly, the standard deviation of the mean has increased each year. Figure 1 plots some of the summary statistics for state populations from 1790 to 2010.[11] The

Figure 1
State population: Increasingly dispersed and skewed



shaded boxes define the 25th to the 75th percentile range of state populations; the dash in the middle of the box marks the state with the median population. The "whiskers" extending from the box mark the population of the states that rank one state below the 25th percentile and one state above the 75th percentile. The dots mark extreme values. The distribution in figure 1 demonstrates that the states' populations have become increasingly dispersed and positively skewed. To compare across each decade accurately, we can use the coefficient of variation: the quotient of the mean and its standard deviation. It, in essence, standardizes the mean; the higher the number the wider the distribution. The values increase from 76.9 percent in 1790, to 102.6 percent in 1950, and to 110.1 percent in 2000. When the coefficient is equal to or is greater than 100 percent, it indicates that a state with a population of zero is within one standard deviation of the mean. Although this is a statistical anomaly, the historical data demonstrate an increasingly wide and skewed distribution of state populations. That is, the populations of large states generally have grown at faster rates than those of small states.

By itself, however, the uneven distribution of state populations does not cause interstate malapportionment. The second factor, territorially bounded congressional districts, is a necessary condition. The territorially bounded districts in the U.S. Senate, for instance, are obvious. Each state, regardless of population, is represented by two senators. Senate apportionment is specifically designed to represent states equally, not individuals. To balance the Senate's definition of constituency, the Framers, in the Great Compromise, created the House with the intent that it represents individuals.[12] Nonetheless, the Constitution employs territorial distinctions to define House constituencies. The apportionment of House seats is distributed according to

state populations, each state is required to have at least one representative, and all districts must be contained within state boundaries.

Without these territorial constraints on the distribution and construction of House seats, every House district, less one, easily could have exactly as many constituents as the national average. The one remaining district would be *at most* within ± 218 individuals of the national district average. Given these territorial constraints, however, the only circumstance in which one-person, one-vote could be achieved and interstate malapportionment avoided would be if each and every state always had a population equal to a whole-number multiple of the national district average. This has never—not even remotely—occurred, and there is no reason to assume that it ever would. Hence, as long as House constituencies are geographically defined, House seats will never achieve political equality and will always be malapportioned among states. The Supreme Court has acknowledged as much:

> The constitutional guarantee of a minimum of one Representative for each State inexorably compels a significant departure from the ideal. In Alaska, Vermont, and Wyoming, where the statewide districts are less populous than the ideal district, every vote is more valuable than the national average. Moreover, the need to allocate a fixed number of indivisible Representatives among 50 States of varying populations makes it virtually impossible to have the same size district in any pair of States, let alone in all 50. Accordingly, although "common sense" supports a test requiring "a good faith effort to achieve precise mathematical equality" within each State, *Kirkpatrick v. Preisler,* 394 U.S., at 530-531, the constraints imposed by Article I, 2, itself make that goal illusory for the Nation as a whole.[13]

The third cause of interstate malapportionment is the current apportionment method. Given the presence of territorial House boundaries and the absence of state populations equal to a whole-number multiple of the national district average, true political equality calls for some fraction of a representative. As the Supreme Court aptly notes, representatives are indivisible: a state that deserves 1.5 representatives only can receive one or two representatives, not 1.5 representatives.[14] This seemingly simple fact is perplexingly complicated. "The difficulty is what to do about the fractions. This has vexed both mathematicians and politicians for hundreds of years."[15]

This may explain, in part, why since the country's founding, Congress has employed or proposed at least six main apportionment methods, plus variants. Each is known by its author's or proponent's name. They include the Adams, Hamilton, Jefferson, Webster, Dean, and Hill methods.[16] Congress formally adopted the Hill method in a 1941 statute, and it has been used since.[17] Each method posits a different manner by which to allocate the population fractions into an indivisible number of representatives among the states. Regardless of the method used, the presence of fractions makes some degree of interstate malapportionment inevitable.

The fourth cause of interstate malapportionment is that the size of the U.S. House has been fixed at 435 members since 1910.[18] Given the constitutional requirement that each state receive at least one representative, some states always have been apportioned only one representative, irrespective of that state's fraction of the U.S. population. The U.S. population has grown exponentially while, at the same time, state populations have become increasingly skewed. Small states are becoming smaller relative to large ones (see figure 1). Put another way, while the populations of small states have grown, their relative populations have decreased, which has increased the number of relatively small states. Similarly, as the national average district size has increased, the number of states afforded only their requisite single seat also has increased. Wyoming—the most overrepresented state—has one representative for 495,304 individuals, and Montana—the most underrepresented state—has one representative for 905,316 individuals. As noted above, this produces a population discrepancy (i.e., an interstate malapportionment) between the two of 410,012. Each person in Wyoming is politically equal to 1.82 persons in Montana. The increasing number of small states and the fixed size of House membership also limit the remainder of seats available for apportioning and, thereby, limit the relative political equality of large states. For example, based on figures from the 2000 Census, the apportionment population ratio of California to Wyoming is 69 to 1, but their House-seat ratio is 53 to 1. The underrepresented small states are not the only "victims" of a malapportioned House; the large states—those with districts approximating the national average—also are relatively underrepresented vis-à-vis the overrepresented small states.

Just as important, because House seats are constitutionally apportioned among territorial units (states), and not across the national constituency (individuals), small states are not able to distribute their district population remainders among multiple districts. A state's population remainder is produced by dividing the state's population by the number of its House seats. It is the number of *statewide* individuals who will be either over- or underrepresented based on the *national* average of individuals per district. Large states are able to distribute their population remainders among many districts and, thus, each district is more likely to approximate the national average district size. Even if every state constructed its House districts with a perfectly equal numbers of individuals, as required by the Supreme Court's intrastate malapportionment decisions and its one-person, one-vote rule, interstate malapportionment is unavoidable, and it is exacerbated by the fixed and limited size of the House.

The effects of the four causes of interstate malapportionment just discussed, although easily overlooked, have been predictable.[19] Most basically, the average number of constituents per representatives has increased threefold since

Table 1
Historic malapportionment of the U.S. House with 435 members

Year	Average District Size	U.S. Resident Population	Difference: Most Over- and Under-Represented States	Difference: Ten Most Over- and Under-Represented States	Difference: Ten Most and Least Populous States	Difference: Ten Greatest and Least States Discrepancy
1910	212,020	92,228,496	245,426	63,540	42,981	50,945
1920	243,728	106,021,537	282,943	98,199	41,056	69,576
1930	283,224	123,202,624	344,515	114,537	79,840	89,207
1940	303,827	132,164,569	248,984	79,335	53,765	58,456
1950	347,875	151,325,798	235,865	83,986	51,233	59,862
1960	412,237	179,323,175	258,466	135,987	84,910	96,168
1970	467,361	203,302,031	314,939	148,688	98,911	111,568
1980	520,787	226,542,199	297,423	135,330	85,055	96,538
1990	572,466	249,022,783	345,477	130,804	73,522	90,441
2000	646,952	281,424,177	410,012	147,659	82,088	108,765
2010	735,433	319,913,484	481,812	194,257	117,322	141,384

	Ten States with Smallest Population			Ten States with Largest Population		
Year	Average Population	Average Seats	Average Discrepancy	Average Population	Average Seats	Average Discrepancy
1910	282,334	1.5	46,471	4,586,090	21.6	3,490
1920	341,499	1.5	61,067	5,352,073	21.4	20,011
1930	372,128	1.4	82,651	6,476,138	23	2,811
1940	414,397	1.6	58,373	6,902,404	22.9	4,608
1950	481,291	1.6	55,882	8,024,396	23.1	4,649
1960	489,178	1.5	90,575	9,717,622	23.5	5,665
1970	554,600	1.4	103,839	11,151,312	23.9	4,929
1980	677,262	1.4	91,214	12,179,528	23.4	6,159
1990	748,487	1.3	81,936	13,548,839	23.7	8,413
2000	832,986	1.3	90,482	15,257,007	23.6	8,394
2010	906,543	1.3	126,925	17,278,882	23.3	9,603

	Ten States with Largest Representational Discrepancy			Ten States with Smallest Representational Discrepancy		
Year	Average Population	Average Number of Seats	Average Discrepancy	Average Population	Average Number of Seats	Average Discrepancy
1910	402,370	2.2	52,552	3,720,428	17.6	1,607
1920	1,116,706	4.2	72,286	4,147,380	17.2	2,710
1930	427,173	1.4	91,313	5,455,161	19.3	2,106
1940	483,723	1.8	61,521	6,470,149	21.4	3,065
1950	791,546	2.5	62,451	6,487,285	18.7	2,590
1960	570,539	1.7	99,371	8,010,644	19.4	3,204
1970	644,171	1.6	113,907	10,401,585	22.3	2,339
1980	890,670	1.8	99,124	6,688,383	12.9	2,586
1990	1,249,771	2.3	94,234	11,261,918	19.7	3,793
2000	1,718,798	2.6	112,561	11,025,139	17.1	3,796
2010	1,104,221	1.6	144,490	9,623,803	13.1	3,106

1910 (from 212,020 to 646,952 individuals); refer to table 1. Several further examples can illustrate the problem of the population remainder and the severity of interstate malapportionment.

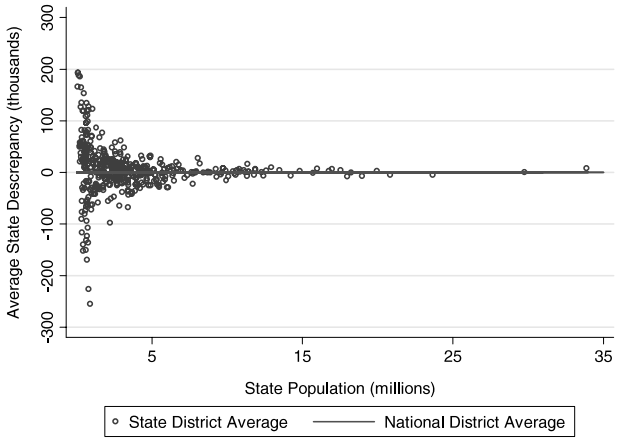
According to figures from the 2000 Census, California's apportionment population was 33,930,798 individuals. The reapportionment based on these data assigned California 53 congressional seats. If one multiplies the national average district size by California's 53 districts and subtracts its actual apportionment population, the equation produces a population remainder of 357,658 (overrepresented) individuals. California, though, was able, and in

fact was required, to distribute the remainder among its 53 districts as equally as possible. Thus, California's average district size, 640,204, was nearly the national average. The average discrepancy between California's and the nation's average district size was 6,748 individuals. Even so, California was not the best-apportioned state in 2000. Because of the combination of many districts among which Pennsylvania could distribute its population remainder and a population very near a whole-number multiple of the national district average population, the typical Pennsylvania district had an average discrepancy from the national average of only 452 individuals. Conversely, Utah's population of 2,236,714 individuals entitled it to three House seats, resulting in an average district of 745,571 (underrepresented) individuals. This is an average discrepancy between the state and national average district size of 98,619 individuals: more than 14 times that of California and more than 218 times that of Pennsylvania. The population remainder proves more troublesome for states with only one district. For instance, Montana was malapportioned from the national average by 258,364 (underrepresented) individuals—an average discrepancy more than 38 times that of California and more than 571 times that of Pennsylvania.

Interstate malapportionment is not confined to just a few states. After the 2000 reapportionment, the average discrepancy between the average district size of the ten states with the largest populations and the national average district size was 8,424 individuals; for the ten states with the smallest populations, 90,888 individuals. The calculation of the apportionment discrepancy based solely on population, however, underestimates the extent of the interstate malapportionment. For example, North Dakota had only one district but, like Pennsylvania, had an apportionment population very near a whole-number multiple of the national district average population. As such, North Dakota, with 643,756 individuals, was malapportioned from the national average by only 3,196 individuals. The average discrepancy of the ten states with the smallest apportionment discrepancy was 3,796 individuals; of the ten states with greatest apportionment discrepancy, 112,561 individuals: a difference of nearly 30 times.

The problem of remainder distribution is a mathematical identity that systematically causes disproportionate interstate malapportionment. Figure 2 displays average state discrepancy and state population from 1920 through 2000—the period during which he House membership was fixed at 435. The average state discrepancy is the number of individuals that each state's average district is either overrepresented (negative numbers) or underrepresented (positive numbers) relative to the national average district size (the flat line at 0) for each decennial apportionment. The pattern is clear: the smaller the state, the greater the likelihood and the greater the extent to which that state is malapportioned. The fixed size of House membership,

Figure 2
Interstate malapportionment by state size: 1920–2000 with 435 members



which limits the ability of a small state to distribute its population remainder adequately, accentuates the problem. If the House were to increase its membership, small states would be apportioned a relatively small number of additional districts and large states would be apportioned a relatively larger number of additional districts. Together, the distribution problem of population remainders would be less acute, which, in turn, would also better approximate equal representation between the small and large states.

Although no system of representative democracy will ever be able to meet the one-person, one-vote rule perfectly, a nation with a heterogeneously distributed population, a federal system of representation with territorial constraints, and a legislature without size adjustments causes unusually severe interstate malapportionment—more severe than the malapportionment found in many intrastate cases. Again, after the 2000 reapportionment, one example of interstate malapportionment was more than 21 times greater than the intrastate malapportionment ruled unconstitutional in *White.*

Although the increase in interstate malapportionment since 1910 is not strictly linear (see table 1), the trend is positive and steep. There are few reasons to anticipate any significant changes in the trend, given the distribution and growth rates of state populations and the attendant constitutional and mathematical issues. Indeed, if each state's population increases at the same rate as it did from 1990 to 2000, the 2010 reapportionment will result in a national average district size of 735,433 and a maximum difference of 481,812 individuals between the most under- and overrepresented districts.[20] In this case, the malapportionment discrepancy increases to almost 25 times worse than that of the malapportionment ruled unconstitutional in *White.* Given that U.S. Supreme Court decisions

and modern democratic theory promote the significance and equality of every individual ("one-person, one-vote"), such variance in the equality of representation is difficult to justify or to ignore.

Assessing the Remedies for Interstate Malapportionment

Given the nature of the first cause of interstate malapportionment, namely, uneven population distribution among the states, there is little, if anything at all, that can be done about it. The uneven and skewed distribution of state populations is a function of interstate mobility and birth rates. These cannot, or at the very least ought not, be regulated. Reminiscent of Madison's argument in *Federalist* No.10 about the solutions for the causes of factions: the remedy for the dispersed and skewed state populations is "worse than the disease" because it would require "destroying the liberty which is essential to its existence."[21]

Assessing the remaining causes is more difficult. To do so, we first need to evaluate the standards by which we judge the adequacy of representative institutions in providing political equality and fairness. In other words, we ask whether interstate malapportionment is something that is normatively unacceptable. Normative acceptability can be assessed, Beitz argues, through a system of complex proceduralism. "Complex proceduralism does not embrace any single value (such as the conservation of power) as definitive of political fairness; it recognizes a plurality of reasons why a procedural regime might be judged to be unfair."[22] Beitz defines three paradigmatic cases of regulative interests of citizenship that "it would be reasonable to take into account in assessing the arrangement for participation": recognition, equitable treatment, and deliberative responsibility.[23] These three interests provide a guide based on citizen desires, beliefs, and expectations; that is, the theory does not impose an a priori ideal institutional arrangement.[24] Hence, evaluating each and negotiating among the regulative interests for "any particular issue of procedural design must be treated as a freestanding moral issue to be worked out more or less intuitively in a way that takes account of the historical circumstances in which the procedures are to operate."[25]

Nonetheless, within the context of each issue and institution, there are constraints. Parties are prevented from "seeking procedural advantages for themselves that conflict with [the regulative] interests which all are assumed to share."[26] In this way, the desirable procedural choice set is defined by all alternatives that meet these interests and that are objective and reasonable. Objectivity considers that "the weight of the harm should reflect the degree of importance or urgency one could expect others in society to accord to it"; reasonableness considers "the harm to other interests that might be anticipated under the feasible alternative arrangements, again taking into account their objective importance."[27] Overall, Beitz presents a powerful theory, in our view, because normative evaluations rest, in part, on the importance of history as well as practical implementations and implications.

To make specific assessments of the representative institutions of the United States, we begin with the theoretical conceptualizations and practical implications of congressional constituencies. We begin again in the Senate, which naturally begs the question why should we be concerned about interstate malapportionment in the House when the interstate malapportionment in the Senate is so much more severe? The assignment of two senators to every state regardless of population makes the Senate one of most malapportioned chambers in the world.[28]

The Senate's apportionment, however, is explicitly rooted in the Constitution and is specifically designed to represent states, not individuals, equally.[29] This difference derived, Zagarri argues, from the Framers' differing concepts and standards of democracy and representation.[30] In other words, the Framers from small states and from large states were not merely defending material self-interests or attempting to gain procedural advantages. Differently-sized states had different political histories and experiences, and these influenced their conceptualizations of democratic procedures. Rehfeld posits that some members of the Constitutional Convention held that smaller states, on the one hand, had relatively stronger local bonds through their small towns, and thus "place" defined their ideas about representation and democracy; larger states, on the other hand, did not have similar experiences, and thus favored the representation of individuals.[31] Thus, the Framers who advocated representation of states and those who advocated representation of individuals shared the ideals of democracy but simply defined constituency differently because of their experiences.

Since their country's founding, Americans generally have accepted the Senate's apportionment as a unique part of American democracy despite its obvious "undemocraticness." The Senate, then, seems to exemplify Beitz's argument that political equality and fairness must treat each institution in question as "a freestanding moral issue" and account for "the historical circumstances" that gave rise to the institution. In other words, if Americans generally recognize and accept the inequality inherent in the Senate, then the institution may not violate the normative requirements of political fairness.[32]

In many ways, evaluating the House is more difficult. The Framers agreed in the Great Compromise to split the difference among them by creating the Senate (to represent place) and the House (to represent individuals). After that, "population equality became the central rule of representation" for the lower chamber.[33] Although the Constitution defines House constituencies on the basis of individuals, it also instructs that the distribution and construction of the House districts be territorially bounded.

As we have shown, the constitutional principle of political equality, the constitutionally-mandated definition of House constituencies, and the current practice of apportionment are incompatible. Interstate malapportionment is the invariable result in the House. The Senate was not conceived on principles of individual equality; the House was. And therein is the difficulty.

As the foregoing discussion of the Senate and the House demonstrates, there are different yet legitimate definitions of constituencies and standards of democracy for representative institutions.[34] Rehfeld argues that American electoral constituencies "could be (and could have been) defined by descriptive or ascriptive characteristics: for example, by profession, religion, ideology, or identity. They could be defined by race or political party, as territorial districts most often are defined today."[35] Or, as in the case of the Senate, constituencies need not be defined in terms of individuals at all. Had the Constitution and its subsequent interpretations defined and assessed House constituencies on a basis other than individual equality, then interstate malapportionment might still be present but it may not be of constitutional or normative consequence. Currently, however, to change the primary definition of constituency in the House to one of these or another possibility would require constitutional amendment. A constitutional amendment, for instance, could alter the definition of the House constituency, could eliminate the territorial boundaries of House districts, or could switch the House from single-member districts to proportional representation. Each of these could go a long way in reducing or eliminating malapportionment and is deserving of greater debate.[36] If we open the discussion to constitutional change, though, we open a Pandora's Box of uncertainties and endless options.

The infinite number and types of extraconstitutional options and their consequences make analyses infeasible for the discreet scope of this study. Thus, in our context, we view amending the Constitution, for instance, to eliminate the territorial boundaries of House districts as "unreasonable." Our significantly more modest and pragmatic goal is to assess the constitutional procedures and their interpretations as they now stand. This approach also is normatively appealing because it respects Beitz's theory of accepting the unique "historical circumstances" that have surrounded institutional design and development. In accepting the uneven distribution of state populations and the constitutional requirements of territorially defined House districts, we also have accepted the inevitability of interstate malapportionment. But, to invoke the language of the intrastate malapportionment cases, we ask whether the current institutional arrangements make individuals "as mathematically equal as reasonably possible." This consideration also limits us to statutory changes, and it brings us to the final two causes of interstate malapportionment and their practical consequences.

Because none of the different apportionment methods can eliminate interstate malapportionment entirely, the issue is which method objectively embodies current American standards of democracy with the least bias. This may seem like a straightforward empirical question, but it is not. Leading up to the 1930 Census and reapportionment, debate raged among politicians and mathematicians about the value and bias of each method.[37] The debate was pushed forward by Edward V. Huntington, a Harvard professor of mechanics and mathematics who refined a method developed by Joseph A. Hill, the chief statistician of the Division of Revision and Results at the U.S. Bureau of the Census. Huntington and Hill argued that the relative population discrepancies among states, not the absolute discrepancies (i.e., the Webster method, which was advocated by Walter Willcox, a Cornell professor of philosophy) is the most democratic because it was unbiased between small and large states. The other methods, they argued, already have been shown to be overly biased or prone to undesirable anomalies, such as the Alabama paradox, the population paradox, and the new-state paradox.[38]

Despite a 1929 National Academy of Sciences report commissioned by House speaker Nicholas Longworth endorsing the Hill method, the issue remained unresolved for the 1930 reapportionment. Because of a coincidental distribution of state populations in 1930, the Hill and Webster methods produced the same apportionment and, thus, Congress balked. According to the 1940 Census, however, the state populations were not similarly aligned. The Hill method, as opposed to the Webster method, would provide one more seat to Arkansas and one less to Michigan. The majority party of Congress, the Democrats, with their base of support in the solidly Democratic South, passed and the president, Democrat Franklin D. Roosevelt, signed legislation designating use of the Hill method. It has been used since, but that has not ended the debate. Reexaminations have questioned Huntington's work.[39] Furthermore, Balinski and Young prove that "Webster's method is the one and only unbiased divisor method"[40] and that the Hill method is actually biased in favor of small states. Darcy, though, argues that one-person, one-vote is best approximated by minimizing the absolute differences in constituency size and, thus, the Dean method most fully embodies the principles of the Constitution.[41]

After the 1990 Census, the Supreme Court had the opportunity to judge the constitutionality and fairness of the different apportionment methods. In *U.S. Commerce v. Montana* (1992), Montana asserted that the Hill method was unconstitutional and that the Dean method was closer to democratic standards. If the Dean method were to be used instead of the Hill method, Montana, not Washington, would have received the last apportioned House seat (number 435).[42] Montana argued that if it were to receive

the additional seat, it would increase its number of seats from one to two, which would decrease its average district discrepancy from 231,189 to 170,638. Meanwhile, the state of Washington would lose one seat (from nine to eight), which would increase its average district discrepancy from 29,361 to only 38,527. Furthermore, Montana argued that the sum of absolute differences in the two states would be 260,550 under the 1990 apportionment but would be lower, 209,165, under the alternative apportionment. Fundamentally, this argument invoked the question of which apportionment method and fairness measurement best approximated "one-person, one-vote." Did minimizing the sum of squared differences (the Hill method) better approximate the democratic standard or the sum of absolute differences (the Dean method)?

The Court concluded that it did not possess the capacity to validate one mathematical method over another, and left resolution of this important constitutional question up to Congress and the public. Writing for the majority, Justice Stevens explained:

> What is the better measure of inequality—absolute difference in district size, absolute difference in share of a Representative, or relative difference in district size or share? Neither mathematical analysis nor constitutional interpretation provides a conclusive answer. In none of these alternative measures of inequality do we find a substantive principle of commanding constitutional significance. The polestar of equal representation does not provide sufficient guidance to allow us to discern a single constitutionally permissible course.[43]

After nearly eighty years of silence since the enactment of the 1929 act, it is important that there be an open and public discussion to assess the apportionment methods and which method best approximates the democratic standards of representation commonly accepted for the House. In addition, there are certainly some noteworthy consequences for the states that would gain or lose seats. Had Montana prevailed in *U.S. Commerce v. Montana,* it would have doubled its representation in the House. Overall, however, changing apportionment methods would do little to diminish interstate malapportionment. If we compare a switch in methods among the three most-promoted (the Dean, the Hill, and the Webster), only a few of the states and districts would be affected. For the ten apportionments from 1910 to 2000 (the period of the 435-member House), 4,350 seats were apportioned. The *cumulative* number of seats that would change (i.e., counting, as in *U.S. Commerce v. Montana,* the switch of one seat from Washington to Montana as a change of two seats), comparing the Dean method to the Hill method, is 14 (0.32 percent), comparing the Hill method to the Webster method, is 20 (0.46 percent), and, comparing the Dean method to the Webster method, is 32 (0.74 percent).[44] In addition to being quite small, such change actually might worsen interstate malapportionment. As the Court noted, any change from the Hill method would heighten interstate malapportionment as measured by the sum of squared differences. Without "objective" harm and a "reasonable" alternative measure, it is difficult to argue that a change in the apportionment method is a significant or appropriate remedy for interstate malapportionment.

The fourth cause of interstate malapportionment is the fixed and limited size of House membership. The apportionment of representatives and the size of their chamber were hotly debated by the Framers. James Madison, in *Federalist N*os. 55, 56, and 58, argues in favor of a system of decennial augmentations to the number of House seats and their allotment among the states in accordance with changes in the national and state populations. He asserts repeatedly that the Constitution would ensure such changes. "The foresight of the [constitutional] convention has accordingly taken care that the progress of population may be accompanied with a proper increase of the representative branch of government."[45] And, "The unequivocal objects of these regulations [in the U.S. Constitution] are, first, to readjust, from time to time, the apportionment of representatives to the number of inhabitants, under the single exception that each State shall have one representative at least."[46]

Madison's insistence on periodic apportionment augmentations rests on at least two premises. The first is the normative standard of equal representation of individuals that the Framers agreed to in the Great Compromise. Periodic enumerations and reapportionments would ensure that the standard is met, given the constantly changing populations of the states. The delegates to the 1787 Convention were keenly aware that the failure to do so would jeopardize House members' communication and contacts with their local constituencies—a point to which we shall return. The second premise is that the state-based definition of constituency and apportionment of the Senate makes accurate individual-based apportionment of the House imperative. It follows that decennial adjustments to the size of the House membership are of paramount concern for the constitutional balance of power and the proper functioning of American democracy.[47] The framers intended the House to be the most egalitarian federal institution and the legislative partner of the Senate. Thus, for individuals to be well represented in the overall legislative process, the House requires periodic enumerations and responsive adjustments to its apportionment of representation.

This concern was so paramount to the first Congress that it passed a constitutional amendment to guarantee apportionment augmentations. The amendment was included in the original *twelve* amendments sent to the states for ratification. The ten that were ratified were to become known, of course, as the Bill of Rights. The first of the original twelve amendments passed by Congress on September 25, 1789, stated the following:

> *Article the first.* . . After the first enumeration required by the first Article of the Constitution, there shall be one Representative for every thirty thousand, until the number shall amount to one hundred, after which, the proportion shall be so regulated by Congress, that there shall be not less than one hundred Representatives, nor less than one Representative for every forty thousand persons, until the number of Representatives shall amount to two hundred, after which the proportion shall be so regulated by Congress, that there shall not be less than two hundred Representatives, nor more than one Representative for every fifty thousand persons.[48]

The amendment was ratified by one state less than required to add it to the Constitution. In a strange twist of history, the other amendment that failed, which concerned congressional pay raises and was originally passed by six states and rejected by five, became the 27th Amendment to the Constitution in 1992.[49] If a sufficient number of states had ratified the apportionment amendment, it would have mandated that in 2000 the House have between 200 and 5,619 members. Clearly, with or without the apportionment amendment, the appropriate number of representatives in the House remains unresolved.

Although not constitutionally mandated, the House adjusted the number of seats in the chamber after every decennial Census from 1790 through 1910. The 1910 reapportionment increased the chamber to 435 members. Congress, however, failed to pass reapportionment legislation after the 1920 Census.[50] That failure occurred primarily for political reasons, not the functional one of legislative efficiency, which often is cited today in support of maintaining 435 members.[51] Between 1910 and 1920 the U.S. population grew by nearly 15 percent, but unevenly. The population grew fastest in the Northeast; overall it became younger, majority urban, and more ethnically diverse. This was in part due to the then-unprecedented volume of immigration. Congressional opposition to increasing the number of House members arose among legislators from states that did not experience large population increases and who had nativist and big-city fears.[52] The legislative stalemate kept the House, by default and not statutory design, at the then-existing size of 435 members.

Congress remained deadlocked on a new House apportionment over the next decade, failing to legislate a new apportionment. Under increased pressure due to the pending 1930 Census, President Hoover called a special session of Congress, which passed the 1929 Apportionment Act. The act established a mechanism for future automatic reapportionments of the existing number of members if Congress failed again to act in accord with its decennial constitutional responsibility. Because Congress abdicated its once-active and decennial role relative to the House's representativeness, House membership has remained at 435 despite the fact that the 1929 act and its minor 1941 amendment do not explicitly specify a numerical size.[53]

After 1910, the U.S. population grew tremendously but, as discussed, unevenly, creating an increasingly skewed population distribution among the states. The distribution combined with territorially defined districts, the apportionment method, and the fixed size of House membership are all elements that combine to create significant interstate malapportionment. The remedy for the first element would do more harm than good; the remedy for the second element would require extreme constitutional amendments; and the remedy for the third element would result in minimal changes in House seats and might even increase interstate malapportionment. None of these elements meets both objective and reasonable requirements of a feasible alternative. To remedy the fixed size of the House would require only a statutory change. That begs the questions: Ought Congress increase its size? If so, to what? And, what effects would returning to the tradition of reapportioning the House to the growing U.S. population have on interstate malapportionment?

To answer the first question we reexamine the standards of House representation and the House definition of constituency. The intrastate malapportionment cases have established the one-person, one-vote rule as the constitutional standard by which to measure the democratic legitimacy of the House. It makes the equality of individuals the definition of the House constituency. This, however, is a relatively modern constitutional interpretation; it first was stated in *Reynolds v. Sims* (1964).[54] Neither the Framers nor the Constitution says that each district must consist of an equal number of individuals. For instance, the apportionment amendment passed by the First Congress indicates that its primary concern was the absolute size of electoral districts, not necessarily the equality of district size. In language similar to that in *U.S. Commerce v. Montana,* the Supreme Court in *Colegrove v. Green* (1946) ruled that equal apportionment among districts was a political, not a constitutional, matter.[55] Justice Felix Frankfurter, writing for the majority in *Colegrove,* wrote:

> The short of it is that the Constitution has conferred upon Congress exclusive authority to secure fair representation by the States in the popular House and left to that House determination whether States have fulfilled their responsibility. If Congress failed in exercising its powers, whereby standards of fairness are offended, the remedy ultimately lies with the people. Whether Congress faithfully discharges its duty or not, the subject has been committed to the exclusive control of Congress.[56]

Later, in *Baker v. Carr* (1962), the court overruled *Colegrove v. Green,* opening the door for a subsequent wave of Court cases that established the modern one-person, one-vote rule. The cases arose mainly from disputes in southern states, among them Tennessee, Georgia, and Texas, and in the historical circumstances of southern racial segregation and disenfranchisement, the civil rights movement, and the Voting Rights Act (1965). In essence, it constructed this "quantitative" rule to mitigate the qualitative problems of

geography, class, ethnic, and racial bias.[57] In so doing, the Court established the ideal of one-person, one-vote as a constitutional rule, thereby imposing a particular standard by which to evaluate the democratic legitimacy of the "representativeness" of House districts.

The Court has since reaffirmed the rule's centrality by repeated advertence to it. Beitz argues that the rule has become so widely accepted in the United States as the standard of democratic legitimacy that it "has become a settled matter,"[58] that "it is hard to discern much contemporary disagreement about it."[59] As such, quantitative issues of political equality and fairness have practically been relegated to history.[60] In the contemporary United States, issues of equality and fairness, per Beitz, are principally only ones of qualitative, not quantitative, representation.

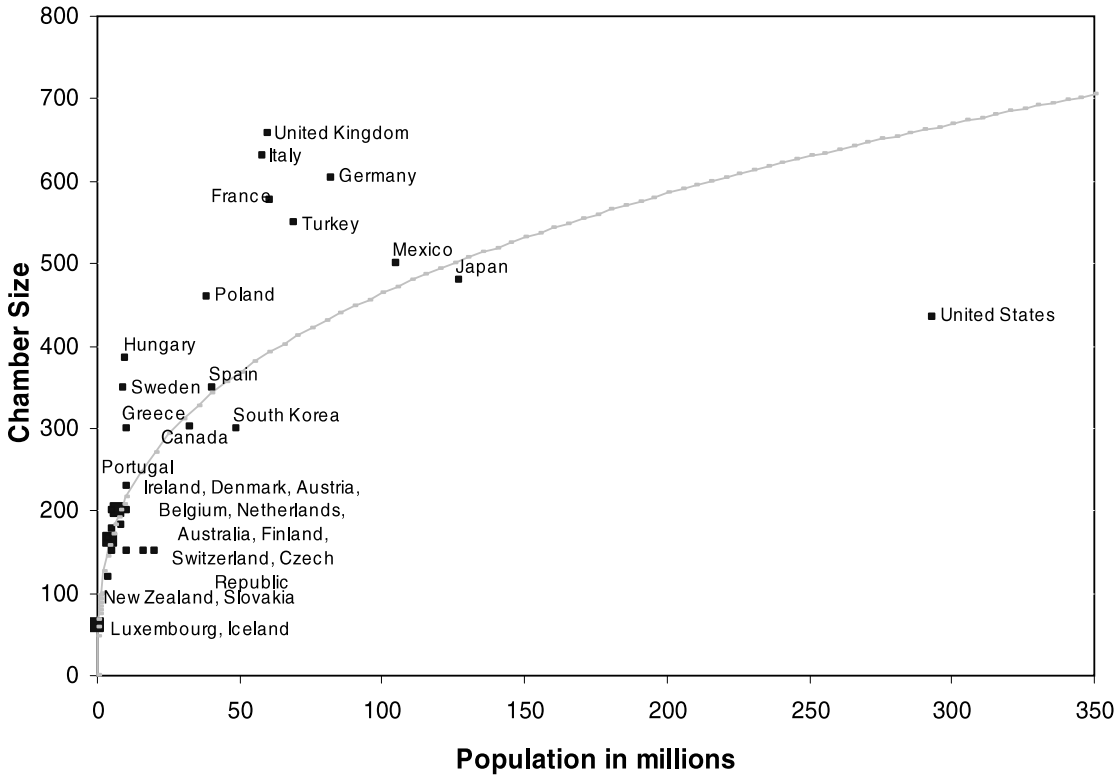
Still, as we have shown, the malapportionment that "has become a settled matter," namely, intrastate malapportionment, is only one of two types of malapportionment problems. Beitz and others have overlooked interstate malapportionment. If the normative precept of one-person, one-vote is currently the judicially and publicly accepted basis of political equality and fairness in the House, there is no normative, logical, or constitutional reason to prejudice one type of malapportionment over another. The same reasoning and enforcement ought to be applied to interstate malapportionment that is applied to intrastate malapportionment. If increasing the size of House membership would considerably mitigate malapportionment and more fully meet the accepted standards of democratic legitimacy and definitions of constituency, then an alternative procedural arrangement (e.g., size of the chamber) may be both objective and reasonable. Thus, under present conditions, at least two of Beitz's regulatory interests—recognition and equitable treatment—would be unduly violated. According to complex proceduralism, the inequality of interstate malapportionment in the House and thus, possibly, the fixed size of House membership can be deemed politically unfair and normatively suspect. In that vein, a number of social scientists have also argued that the fixed size of House membership undermines the original constitutional intent and is too small to meet the present needs of representation adequately.[61]

The determination of the normative claim, though, rests on the feasibility and impact of alternative procedural arrangements. We have argued that the full implementation of one-person, one-vote is impossible under current constitutional arrangements. Given the first three causes of interstate malapportionment, the only remaining means of fully implementing the constitutional rule mandated by the Court is increasing House membership to that of the size of the apportionment population: everyone is a representative. De facto direct democracy, though, is wholly infeasible, impractical and unwise.[62] In this way, "unfixing" the size of the House membership is admittedly a strategy limited by the capacity of the chamber. Nonetheless, it is the one remedy best able to achieve the goal of minimizing interstate malapportionment. But, if de facto direct democracy is not a viable option, how does one determine the best size of a legislature? The standards of democracy discussed thus far have not yielded an answer. Additional standards of legitimacy that are also democratically important and consistent with one-person, one-vote may be useful.[63] There are many such possible standards: stability; the ease with which consensus can be achieved; the need to reduce the level of conflict within the institution; and among others, the desire to increase the racial, ethnic, or gender diversity of the chamber. None of these, however, provides much purchase on defining the appropriate size of the House. As mentioned above, Madison, in *Federalist* No. 55, adds another standard: communication demands. He argues that the size of the House membership should be increased in relation to the population so the representatives will "possess a proper knowledge of the local circumstances of their numerous constituents."[64] At the same time, he worries that the number of representatives "ought at most to be kept within a certain limit, in order to avoid the confusion and intemperance of a multitude."[65]

The two communication demands have competing logics. More members would decrease constituency size and thereby ease communications demands between representative and constituency. More members, however, also increase the membership size of the legisture and thereby increase the internal difficulties of communicating, organizing, and legislating. Rein Taagepera, in his seminal article "The Size of National Assemblies," embraces these competing dimensions.[66] He demonstrates that the optimal membership size of legislature is the one that minimizes the cumulative communication demands. He argues that the cumulative demands are minimized when the size of the chamber is the cube root of the nation's population. In other words, the cube root metric best approximates cross-national democratic commitments intended to maximize the ability of legislators to communicate with their constituencies as well as among themselves. He calls his finding the "cube root law of assembly size." The "cube-root law" has, since the early 1970s, been widely examined, used, and accepted among comparative political scientists.[67]

We invoke communication demands as an *additional* standard for three reasons. First, it is consistent with the standards of democratic legitimacy as stated by the Framers and the Constitution. Second, it is not contradictory but in fact complementary to the Court's constitutionally interpreted standard of "one-person, one-vote." Third, it provides a discrete upper threshold to the size of the House and, thus, avoids the otherwise intractable problems of objectively determining the appropriate, yet limited, size of the chamber. The "cube-root law" furnishes what we view as an objective and reasonable answer to the question: if

Figure 3
Populations and sizes of lower chamber, OECD countries



Congress were to increase the membership size of the House, how many members should it have?

The U.S. apportionment population in 2000 was 281,424,177, and the cube root of that number is approximately 655. This suggests that the House is undersized by 220 members and that the communication demands of House members with their constituents have not been reasonably minimized. Contemporary journalistic and anecdotal accounts lend credence to this conclusion. More systematic interview accounts from a number of decades ago by Dexter (1968) and Fenno (1978) document the difficulties that House members already were having in communicating with their constituents.[68]

Taagepera's cube-root equation has been accurate in estimating the legislature size-to-population ratio for most advanced democracies. Figure 3 plots the population of all of the countries from the Organization of Economic Co-operation and Development (OECD), the size of their lower chambers, and a cube-root trend line.[69] The sizes of most countries' lower chamber hew closely to the cube-root trend line or err on the side of more representatives. The U.S. House stands alone in the degree to which its lower chamber is malapportioned relative to the national population. When compared to all countries for which there are data (n = 228), the U.S. House is still an outlier. Among those countries, only India has a larger negative discrepancy (i.e., too few representatives) between its chamber size and the cube root of the population.[70] Other scholars have also called for the U.S. House to be apportioned in line with the cube-root law.[71]

The history of House membership demonstrates that when Congress adjusted the apportionment size of the House, its size coincidently conformed to the cube-root law. Figure 4 plots the size of the House and the U.S. population after each decennial reapportionment since 1790. Because the U.S. population increased each decade, the plotted points are also in chronological order. Every decade from 1790 to 1910, the House apportionment changed, including a decrease in the House membership size in 1840. These decennial adjustments map closely with the cube root of the U.S. population. In some ways, this endorses the logic inherent in Madison's arguments and in the "cube-root law." After 1910, the flat line in figure 4 indicates the fixed size of the House membership at 435. The growing discrepancy from the cube root of the U.S. population is apparent: from 1790 to 1910, the House membership size and reapportionment closely followed what today would be consistent with the cube root of the population. Only after 1910 does the apportionment of the U.S. House increasingly diverge from its

Figure 4
U.S. House apportionment, 1790–2000

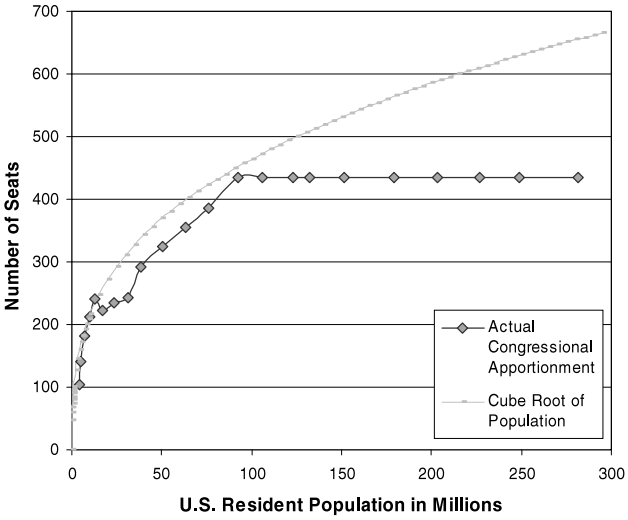
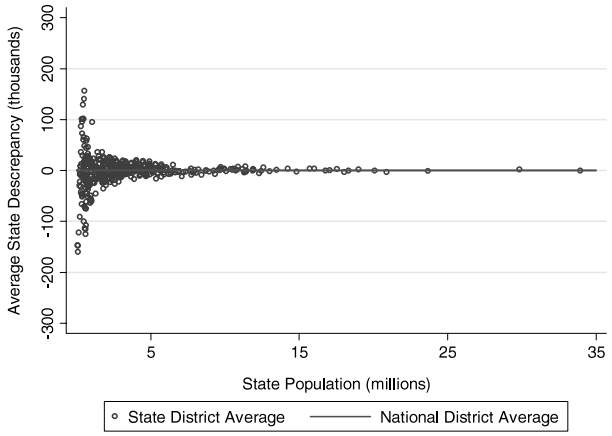


Figure 5
Interstate malapportionment by state size: 1920–2000 apportioned by cube-root



historical tradition and the present practice of most advanced democracies.

Given the uneven distribution of state populations, the territorial basis of congressional representation, and the vexations attendant upon apportioning population remainders, interstate malapportionment will never be absolutely eliminated. A U.S. House apportioned to the cube root of the population, however, would significantly diminish its extent. Figure 5 plots the average state discrepancy (the difference between a state's average district size and the nation's average district size) of all states from 1920 (the first failure to reapportion) through 2000. Negative values indicate overrepresented states; positive values, underrepresented states; and the flat line (at 0) is the national average for each decade. Similar to figure 2, some interstate malapportionment remains. Unlike figure 2, the average district discrepancies for most of the states hew closely to the national district average. The chart, however, may visually underrepresent the change. The current constitutionally accepted measurement standard of one-person, one-vote set by *U.S. Commerce v. Montana* is the sum of squared difference of each state's average district size from the national average. The cumulative sum of squares from 1920 to 2000 for the 435-members chamber is 1.06 E+12, and the sum of squares for the cube root chamber is 4.32 E+11, a decrease in interstate malapportionment of almost 60 percent.

Focusing on the current apportionment, table 2 displays the apportionment population, the average district size, and the average discrepancy between the state and national average district size for all states in a 435-member chamber and a 655-member chamber. The average interstate malapportionment among the states with the greatest discrepancies between each state's average congressional size and the national average in the hypothetical 655-member House (the average would be 67,650 individuals) is reduced by 40 percent compared to the 435-member House. Among the ten states with the smallest discrepancies (the average would be 1,443 individuals), interstate malapportionment is reduced by 65 percent. Among the ten smallest states (the average discrepancy would be 66,080 individuals), it is reduced by 27 percent; and, among the ten largest states (the average discrepancy would be 3,701 individuals), it is reduced by 56 percent.[72] Measuring interstate malapportionment with the sum of squared differences also shows a substantial decrease (53 percent) between a 655-member House and the current 435-member House.[73]

The decline in interstate malapportionment with a 655-member chamber is in part due to the fact that only one state, Wyoming, would have the minimum of one House member. Although not every state would decrease the discrepancy between its average district population and the national average, the representation of every individual regardless of state residence would become more equal (as measured by the sum of squared differences); the average national district population would decrease from 646,952 to 429,655 individuals; and, most important, one-person, one-vote would be more fully realized. Hence, increasing the membership of the U.S. House of Representatives to the cube root of the U.S. apportionment population in order to aid in remedying interstate malapportionment is a practical and normatively feasible alternative.

This might well have been an advantageous argument for Montana. Perhaps foreseeing the conservative line of reasoning of the Court in *U.S. Commerce v. Montana* (foreshadowed in *Colegrove v. Green* in 1946), Montana may have been wise not to argue against the constitutionality

Table 2
2000 apportionment of the U.S. House

State	Resident Population	With 435 House Seats: Number of Seats	With 435 House Seats: State Average District Size	With 435 House Seats: Discrepancy from National Average[1]	With 655 House Seats: Number of Seats	With 655 House Seats: State Average District Size	With 655 House Seats: Discrepancy from National Average[1]
Alabama	4,461,130	7	637,304	–9,648	10	446,113	16,458
Alaska	628,933	1	628,933	–18,019	2	314,467	–115,189
Arizona	5,140,683	8	642,585	–4,367	12	428,390	–1,265
Arkansas	2,679,733	4	669,933	22,981	6	446,622	16,967
California	33,930,798	53	640,204	–6,748	79	429,504	–151
Colorado	4,311,882	7	615,983	–30,969	10	431,188	1,533
Connecticut	3,409,535	5	681,907	34,955	8	426,192	–3,463
Delaware	785,068	1	785,068	138,116	2	392,534	–37,121
Florida	16,028,890	25	641,156	–5,797	37	433,213	3,558
Georgia	8,206,975	13	631,306	–15,646	19	431,946	2,291
Hawaii	1,216,642	2	608,321	–38,631	3	405,547	–24,108
Idaho	1,297,274	2	648,637	1,685	3	432,425	2,769
Illinois	12,439,042	19	654,686	7,734	29	428,932	–723
Indiana	6,090,782	9	676,754	29,801	14	435,056	5,401
Iowa	2,931,923	5	586,385	–60,568	7	418,846	–10,809
Kansas	2,693,824	4	673,456	26,504	6	448,971	19,315
Kentucky	4,049,431	6	674,905	27,953	9	449,937	20,282
Louisiana	4,480,271	7	640,039	–6,913	10	448,027	18,372
Maine	1,277,731	2	638,866	–8,087	3	425,910	–3,745
Maryland	5,307,886	8	663,486	16,534	12	442,324	12,669
Massachusetts	6,355,568	10	635,557	–11,395	15	423,705	–5,951
Michigan	9,955,829	15	663,722	16,770	23	432,862	3,207
Minnesota	4,925,670	8	615,709	–31,243	11	447,788	18,133
Mississippi	2,852,927	4	713,232	66,280	7	407,561	–22,094
Missouri	5,606,260	9	622,918	–24,034	13	431,251	1,596
Montana	905,316	1	905,316	258,364	2	452,658	23,003
Nebraska	1,715,369	3	571,790	–75,162	4	428,842	–813
Nevada	2,002,032	3	667,344	20,392	5	400,406	–29,249
New Hampshire	1,238,415	2	619,208	–27,745	3	412,805	–16,850
New Jersey	8,424,354	13	648,027	1,075	20	421,218	–8,438
New Mexico	1,823,821	3	607,940	–39,012	4	455,955	26,300
New York	19,004,973	29	655,344	8,392	44	431,931	2,276
North Carolina	8,067,673	13	620,590	–26,362	19	424,614	–5,041
North Dakota	643,756	1	643,756	–3,196	2	321,878	–107,777
Ohio	11,374,540	18	631,919	–15,033	26	437,482	7,827
Oklahoma	3,458,819	5	691,764	44,812	8	432,352	2,697
Oregon	3,428,543	5	685,709	38,756	8	428,568	–1,087
Pennsylvania	12,300,670	19	647,404	452	29	424,161	–5,494
Rhode Island	1,049,662	2	524,831	–122,121	2	524,831	95,176
South Carolina	4,025,061	6	670,844	23,891	9	447,229	17,574
South Dakota	756,874	1	756,874	109,922	2	378,437	–51,218
Tennessee	5,700,037	9	633,337	–13,615	13	438,464	8,809
Texas	20,903,994	32	653,250	6,298	49	426,612	–3,043
Utah	2,236,714	3	745,571	98,619	5	447,343	17,688
Vermont	609,890	1	609,890	–37,062	2	304,945	–124,710
Virginia	7,100,702	11	645,518	–1,434	17	417,688	–11,967
Washington	5,908,684	9	656,520	9,568	14	422,049	–7,606
West Virginia	1,813,077	3	604,359	–42,593	4	453,269	23,614
Wisconsin	5,371,210	8	671,401	24,449	13	413,170	–16,485
Wyoming	495,304	1	495,304	–151,648	1	495,304	65,649
US	281,424,177						
National Average District Size:			646,952			429,655	
Sum of Squared Differences:				3.55E+11			1.67E+11

[1]Positive values indicate the average number of overrepresented individuals per district. Negative value indicate the amount by which the average district is underrepresentative.

of the apportionment method, but rather against the constitutionality of the 1929 Automatic Apportionment Act and the fixed size of House membership.[74] The Framers and the Constitution were silent on the method of apportionment and, mathematically, there is no single best method of apportionment. The Court, therefore, had little basis from which to rule that the legislatively designated Hill method did not most closely approximate the constitutional standard of "one-person, one-vote." There is a considerably stronger foundation, however, for concluding that the 1929 Appropriations Act is unconstitutional. As noted, the Framers were not silent on the regular need for fulfillment of Article I's legislative procedures, or on their expectations for House membership increases relative to population growth. In addition, as the Court recognized in its reapportionment decisions, the Constitution acknowledges the lineage of House's legitimacy to the representation of "persons." Furthermore, Montana could have argued that one-person, one-vote would be more fully realized because the sum of squared differences used in the Hill method would have been reduced from 2.87 E+11 to 1.48 E+11. Moreover, Montana's practical concerns also would have been met, as the number of its House seats still would double (from one to two) and its average district discrepancy would decrease considerably (from 231,189 to 5,925 individuals). For the time being, however, the Court has relegated interstate malapportionment to the political realm, in which the consequences of increasing the size of House membership seem all the more considerable.

Consequences of Increasing the Size of the House

We have identified a significant and serious concern that has received little attention in the popular press and academic literature: interstate malapportionment among U.S. House districts. We have also suggested one possible reform to ameliorate the problem: increasing the size of the House membership to the cube root of the U.S. resident population. Nonetheless, there are naturally more than a few critiques of enlarging the House that are, at the very least, viscerally appealing.[75] For instance, do we really want *more* politicians? Increasing the number of members would also create practical challenges, such as accommodating them within the physical dimensions of the chamber and its offices. A larger House membership might mitigate malapportionment at the expense of greater political acrimony.[76] Or, because a larger membership would diminish the relative strength of each individual member, would it not make such a reform unlikely to pass? There is no way conclusively to rebut these and other critiques.[77] Such concerns are real.

Notwithstanding that interstate malapportionment presents serious constitutional, normative, and practical concerns, which undermine the political equality and fairness that define the standards of American democracy and representation, increasing the size of House membership is the only feasible alternative reform that would have a significant impact on the population discrepancies without amending the Constitution. Furthermore, minimizing interstate malapportionment by increasing the size of House membership could have additional positive effects throughout the federal system.

Apportionment can have considerable distribution consequences.[78] Generally, malapportionment benefits the smaller rural states, a fact most evident in the malapportionment of the Senate and its effects on the distribution of federal funds. The small, rural, and overrepresented states tend to receive a greater share of federal largess.[79] Although the malapportionment of the Senate is more severe than the malapportionment of the House, the logic holds there, too. It was for political and distributional reasons that the rural states initially blocked the legislation to increase the size of House membership in 1920. The rural benefits of malapportionment still persist. For instance, Cho demonstrates significant distributional effects in financial expenditures among state legislatures, which also have small population discrepancies compared to those in the U.S. Senate. Interestingly, Cho also finds that malapportioned districts particularly favor rural areas.[80]

If the rural/urban divide corresponds with partisan preferences—as Lang and Sanchez argue—the effects of malapportionment are not limited to Congress and the distribution of federal funds.[81] They also extend to the election of the president. Each state is assigned Electors to the Electoral College equal to the total number of its senators and representatives. Like the Senate, the College is biased in favor of the small states. As the House becomes increasingly malapportioned, the Electoral College becomes further skewed in favor of the small rural states, accentuating the difference between the popular vote and the Electoral College vote. A better-apportioned House might make such outcomes less likely. The 2000 presidential election is a case in point. In 1990, the apportionment population was estimated at 249,022,783. Had the House been reapportioned in accordance with the cube-root rule, it would have had 629 seats with an average national district size of 380,187 individuals. Every state except Alaska and Wyoming would have had at least two representatives. The Electoral College then would have had 732 members for the 2000 election. And, if all of the states voted the same way, Al Gore would have won 368 Electoral College votes, beating George W. Bush's 364.[82] Neubauer and Zeitlin compare the effects of a range of House sizes on the 2000 Electoral College vote.[83] They demonstrate that—although not strictly linear—the larger the size of the House, the more the Electoral College would approximate the popular vote, and, thus, the more likely Gore would have been elected president.

An increase in the membership of the House could have other positive externalities as well, such as increasing the likelihood that more African-Americans, Hispanics, and women would be elected.[84] Leib and Webster argue for a larger House in the wake of the Court's rulings that found unconstitutional the practice of gerrymandering majority-minority districts.[85] Furthermore, Canon argues that black legislators better represent both black and white constituents.[86] By increasing group representation and reducing communication demands, a larger House might have the effect of improving descriptive and substantive representation.[87] Kromkowski and Kromkowski suggest that increasing House membership could open the political space necessary to consider formal House representation for Washington, D.C., and Puerto Rico.[88]

Further, the relationship between the number of votes a political party receives and the number of seats that it wins varies with the size of the legislative chamber.[89] The smaller the chamber, the more the majority party will be disproportionally overrepresented. For example, in a chamber of one seat, the candidate receiving the plurality of votes wins all of the seats while the candidate(s) receiving less than a plurality of votes wins no seats. Lucas and McDonald argue that because single-member districts have been assumed to produce a votes-to-seats ratio close to the cube-root law, the House should be reapportioned to the cube root of the U.S. population.[90] They show that in the context of strong partisanship—as many argue currently describes the congressional parties[91]—the current underapportioned House may increase the number of seats won by the majority by 33 percent.[92] When the House majority party also tends to represent the rural areas and smaller states, the overrepresentation of the majority further biases the House in favor of these areas and states, and against urban areas and larger states.

Conclusion

During the 1960s, the Supreme Court took aim at a highly undemocratic form of disenfranchisement: intrastate malapportionment. It did so with a doctrine that underscores the recognition of the essential equality of every individual required by the U.S. Constitution and, more generally, representative democracy. Today, however, the problematic effects of another type of malapportionment, interstate malapportionment, rarely are discussed. Unlike the sets of undemocratic intentions and conditions that triggered the Court's original intervention, the causes of contemporary interstate malapportionment are more difficult to attribute to nefarious intentions. Instead, the causes are the uneven distribution of state populations; the territorially-based House districts; the apportionment method; and the fixed and limited House membership. Nonetheless, interstate malapportionment should be considered no less significant than intrastate malapportionment. The presence of systematic and disproportional interstate malapportionment poses serious constitutional, normative, and practical problems, which warrant appreciably greater consideration. We suggest that increasing House membership from its current size of 435 to the cube root of the nation's resident population is the only feasible alternative procedural remedy that more fully achieves the current principles, interpretations, and standards of the Constitution.

Our suggestion is made with due caution and the recognition that "no political problem is less susceptible of a precise solution than that which relates to the number most convenient for a representative legislature."[93] No doubt, there would be many difficulties associated with enlarging House membership, not least of which would be securing passage of the necessary statutory legislation. In so doing, however, Congress would return to the decennial tradition of public debate and legislative action that existed until 1910. In addition, Congress regularly has proven to be capable of reforming its institutions, passing measures that have been commonly viewed as orthogonal to the interests of many individual legislators. The Bipartisan Campaign Reform Act of 2002[94] is one recent example. Any debate on interstate malapportionment and House membership size should address both current and long-term problems associated with inaction, as well as the likely direct and derivative benefits of this arguably long-overdue reform. This study draws attention to these issues because interstate malapportionment undermines fundamental constitutional principles and democratic standards of representation. Furthermore, in that the Court has left the debate to the public sphere, and because the uneven population growth among the states seems destined to continue, the concerns raised here are likely to become more acute.

Notes

1 See *Baker v. Carr,* 369 U.S. 186 (1962); *Gray v. Sanders,* 372 U.S. 368 (1963); *Wesberry v. Sanders,* 376 U.S. 1 (1964); *Reynolds v. Sims,* 377 U.S. 533 (1964).
2 *Wesberry,* 376 U.S. at 8.
3 Ibid. at 8.
4 Ibid.
5 *White v. Weiser* 412 U.S. 783, 790 (1973). The original wording is drawn from *Kirkpatrick v. Preisler,* 394 U.S. 526, 531 (1969). In the latter case, the Court found that the population discrepancy of 25,802 individuals between Missouri's largest and a smallest congressional district was unconstitutional.
6 *White,* 412 U.S. at 790.
7 *Karcher v. Daggett,* 462 U.S. 725 (1983).

8 See Rogowski 1981 for a theoretical discussion of representation and the case history of intrastate malapportionment.
9 *U.S. Commerce v. Montana,* 503 U.S. 442 (1992).
10 *White,* 412 U.S. at 790, emphasis added.
11 The state population figures for 2010 are, of course, estimates. They are calculated by extrapolating from the population growth rates between 1990 and 2000 for each state. Only resident populations were readily available for the entire time series. Resident and apportionment populations differ in that the latter also includes overseas residents. The difference is relatively insignificant. In 2000, there was a total of 574,330 residents officially registered overseas; the state with the largest number (California) had 59,150 overseas residents (0.175 percent); the state with the largest percentage (Hawaii) had 5,105 overseas residents (0.421 percent).
12 Madison, *Federalist* No. 58, in Kesler and Rossiter, eds., 1999, 325.
13 *U.S. Commerce v. Montana,* 503 U.S. at 464.
14 Ibid.
15 Balinski and Young 1982, 1.
16 For a discussion of the methods, the historical use, and the value of each, see Balinski and Young 1982; Darcy 2004; Huckabee 2000, 2001; *U.S. Commerce v. Montana,* 503 U.S. 442 (1992).
17 Act of November 15, 1941, 1, 55 Stat. 761–762, 2 U.S.C. 2a.
18 The House was briefly increased to 437 members in 1959 to accommodate the statehood of Alaska and Hawaii. It returned to 435 members after the 1960 reapportionment.
19 See Celler 1951.
20 Population growth rates are calculated using the 1990 and 2000 U.S. Census, and apportionment was assigned using the Equal Portions (Hill) Method as described by the U.S. Census.
21 Madison, *Federalist* No. 10, in Kesler and Rossiter, eds., 1999, 72–73.
22 Beitz 1989, 100.
23 Ibid.
24 Ibid., 107.
25 Ibid., 106.
26 Ibid., 105.
27 Ibid., 109. "Reasonableness" is our label of Beitz's concept.
28 Samuels and Snyder 2001.
29 Dahl 2002 argues that the apportionment of the Senate is a fundamental flaw of the Constitution.
30 Zagarri 1987.
31 Rehfeld 2001, 2005.
32 Beitz 1989, 94.
33 Rehfeld 2001, 76. The principle of population equality, though, was certainly not broadly defined. See, for instance, the Three-Fifths Clause of the Constitution.
34 Beitz 1989; Rehfeld 2001, 2005.
35 Rehfeld 2001, 54.
36 See, for instance, Guinier 1994 and Lijphart 1998.
37 Balinski and Young 1982, 46–59.
38 Ibid., 70. The Alabama paradox arises when an apportionment formula assigns a state fewer representatives when the size of the chamber increases. The population paradox arises when a state with a faster growth rate loses a seat to a state with a slower growth rate. The new-state paradox occurs when a new state is provided its "fair" representation and the chamber's size is accordingly increased, but the apportionment for other states is nonetheless affected.
39 Balinski and Young 1982 (51) state that Huntington omitted tables from his work that would have supported the Webster method.
40 Ibid., 76. Also see Young 2001.
41 Darcy 2004. Balinski and Young 1982 (53) concur that the Dean method minimizes the absolute difference in constituency size but argue that it does not minimize each state's distance from the quota, or its fair representation.
42 This is the only seat that would have changed after the 1990 Census if the Dean method had been adopted.
43 *U.S. Commerce v. Montana,* 503 at 464. It may be significant to note that Justice Stevens writes about measuring "inequality" instead of invoking the intrastate standard of political equality.
44 Because each state is constitutionally guaranteed at least one seat, it could be argued that counting all 435 seats overestimates the number of seats eligible to change and thus underestimates the effects of changing apportionment methods. If we assume, then, that only 385 seats are actually eligible to change, then the percentages of seats that change are 0.36 percent, 0.52 percent, and 0.83 percent, respectively.
45 Madison, *Federalist* No. 56, in Kesler and Rossiter, eds., 1999, 317.
46 Madison, *Federalist* No. 58, in Kesler and Rossiter, eds., 1999, 324.
47 Ibid., 325.
48 Mount 2004.
49 Gregory Watson, a University of Texas undergraduate, rediscovered this 'sleeping amendment' in 1982. In a paper for an Introduction to American Politics course, he argued that because no time limit had been placed on the amendment (similar to the apportionment amendment) it could still be ratified. Despite receiving a grade of C on the paper, he pursued the issue with each state. With some later assistance by Ralph Nader and others, he eventually

persuaded enough states to pass the amendment. The Archivist of the United States ruled on May 18, 1992, that the original Second Amendment was finally ratified as the Twenty-seventh Amendment (Dean 2002).

50 Eagles 1990. The 66th Congress's House Census Committee proposed increasing House membership to 483 and the 67th Congress's House Census Committee proposed increasing the House membership to 460 (Lucas and McDonald 2000, 373). Neither proposal succeeded.

51 Evans and Oleszek 1998; Overby 1992.

52 Ibid. These are basically the same alignments in the concomitant debate over apportionment methods discussed above.

53 Kromkowski and Kromkowski 1991.

54 Rehfeld 2001, n5.

55 *Colegrove v. Green,* 328 U.S. 549 (1946).

56 Ibid. at 554.

57 Tribe 1978.

58 Beitz 1989, 141.

59 Beitz 1989, xv.

60 Beitz 1989, 8, 141–142.

61 Anderson 2000; Kromkowski 2002; Kromkowski and Kromkowski 1991, 1992; Lijphart 1998; Lucas and McDonald 2000; Zimmerman and Rule 1998.

62 Madison, *Federalist* No. 10, in Kesler and Rossiter, eds., 1999, 73–74.

63 Beitz 1989.

64 Madison, *Federalist* No. 55, in Kesler and Rossiter, eds., 1999, 339–340.

65 Ibid.

66 Taagepera 1972.

67 Lijphart 1994; Shugart and Carey 1992; Taagepera and Shugart 1989.

68 Dexter 1968 and Fenno 1978.

69 The data are from the 2004 U.S. Central Intelligence Agency's Factbook. See https://www.cia.gov/cia/publications/factbook/.

70 The ten worse negatively apportioned lower chambers belong, in descending order, to: India, United States, Bangladesh, Pakistan, Philippines, Columbia, Peru, Saudi Arabia, Kazakhstan, and Nigeria. The lower chamber's membership size is not the most important issue determining the quality of representation in many of these countries.

71 Kromkowski and Kromkowski 1991; Lijphart 1998; Lucas and McDonald 2000.

72 The percentages are simply the difference between the 2000 average aggregate discrepancy for each category for the 435-member chamber and the 2000 average aggregate discrepancy for each category for the 655-members chamber, divided by the former.

73 The sum of squares for the 435-member House is 3.55 E+11; the sum of squares for the 655-member House is 1.67 E+11. The sum of absolute differences (the Dean method) is also reduced (by 30 percent) from 7.56 E+6 to 5.31 E+6.

74 Kromkowski and Kromkowski 1991, 135.

75 Huckabee 1995; Evans and Oleszek 1998; Overby 1992; Rush 1998.

76 Buchanan and Tullock 1962; Dahl and Tufte 1973, 91–96.

77 Kromkowski and Kromkowski 1991 list twenty-five possible benefits that, for the most part, add to the benefits discussed here.

78 Kromkowski 2002, xvii.

79 Lee 1998, 2000.

80 Cho 1976, 71.

81 Lang and Sanchez 2006.

82 This result is based on the assumption that Bush won Florida; all of the districts of Maine and Nebraska still voted for Gore and Bush, respectively; and that Washington, D.C. only has three electoral votes. Washington, D.C. had a population of 606,900 in the 1990 U.S. Census. This amount is large enough to have earned two "ghost" members in the U.S. House and thus four Electoral College votes. However, the Twenty-Third Amendment to the Constitution states that the number of electors assigned to Washington, D.C. should "in no event [be] more than the least populous State." Because Alaska and Wyoming still would have had three electoral votes, so would the District.

83 Neubauer and Zeitlin 2003.

84 Darcy and Choike 1986.

85 Leib and Webster 1997.

86 Canon 1999.

87 Mansbridge 1999.

88 Kromkowski and Kromkowski 1991, 143.

89 Lee and Oppenheimer 1997; Lucas and McDonald 2000; Taagepera and Shugart 1989.

90 Lucas and McDonald 2000, 377.

91 Bond and Fleisher 2000.

92 Lucas and McDonald 2000, 377–78.

93 Madison, *Federalist* No. 55, in Kesler and Rossiter, eds., 1999, 309.

94 Moscardelli and Haspel 2007.

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Exhibit 3

Apportionment with 435 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	7	637,304	9,648	9,648	1.49%
Alaska	628,933	1	628,933	18,019	18,019	2.79%
Arizona	5,140,683	8	642,585	4,367	4,367	0.67%
Arkansas	2,679,733	4	669,933	-22,981	22,981	-3.55%
California	33,930,798	53	640,204	6,748	6,748	1.04%
Colorado	4,311,882	7	615,983	30,969	30,969	4.79%
Connecticut	3,409,535	5	681,907	-34,955	34,955	-5.40%
Delaware	785,068	1	785,068	-138,116	138,116	-21.35%
Florida	16,028,890	25	641,156	5,797	5,797	0.90%
Georgia	8,206,975	13	631,306	15,646	15,646	2.42%
Hawaii	1,216,642	2	608,321	38,631	38,631	5.97%
Idaho	1,297,274	2	648,637	-1,685	1,685	-0.26%
Illinois	12,439,042	19	654,686	-7,734	7,734	-1.20%
Indiana	6,090,782	9	676,754	-29,801	29,801	-4.61%
Iowa	2,931,923	5	586,385	60,568	60,568	9.36%
Kansas	2,693,824	4	673,456	-26,504	26,504	-4.10%
Kentucky	4,049,431	6	674,905	-27,953	27,953	-4.32%
Louisiana	4,480,271	7	640,039	6,913	6,913	1.07%
Maine	1,277,731	2	638,866	8,087	8,087	1.25%
Maryland	5,307,886	8	663,486	-16,534	16,534	-2.56%
Massachusetts	6,355,568	10	635,557	11,395	11,395	1.76%
Michigan	9,955,829	15	663,722	-16,770	16,770	-2.59%
Minnesota	4,925,670	8	615,709	31,243	31,243	4.83%
Mississippi	2,852,927	4	713,232	-66,280	66,280	-10.24%
Missouri	5,606,260	9	622,918	24,034	24,034	3.72%
Montana	905,316	1	905,316	-258,364	258,364	-39.94%
Nebraska	1,715,369	3	571,790	75,162	75,162	11.62%
Nevada	2,002,032	3	667,344	-20,392	20,392	-3.15%
New Hampshire	1,238,415	2	619,208	27,745	27,745	4.29%
New Jersey	8,424,354	13	648,027	-1,075	1,075	-0.17%
New Mexico	1,823,821	3	607,940	39,012	39,012	6.03%
New York	19,004,973	29	655,344	-8,392	8,392	-1.30%
North Carolina	8,067,673	13	620,590	26,362	26,362	4.07%
North Dakota	643,756	1	643,756	3,196	3,196	0.49%
Ohio	11,374,540	18	631,919	15,033	15,033	2.32%
Oklahoma	3,458,819	5	691,764	-44,812	44,812	-6.93%
Oregon	3,428,543	5	685,709	-38,756	38,756	-5.99%
Pennsylvania	12,300,670	19	647,404	-452	452	-0.07%
Rhode Island	1,049,662	2	524,831	122,121	122,121	18.88%
South Carolina	4,025,061	6	670,844	-23,891	23,891	-3.69%
South Dakota	756,874	1	756,874	-109,922	109,922	-16.99%
Tennessee	5,700,037	9	633,337	13,615	13,615	2.10%
Texas	20,903,994	32	653,250	-6,298	6,298	-0.97%
Utah	2,236,714	3	745,571	-98,619	98,619	-15.24%
Vermont	609,890	1	609,890	37,062	37,062	5.73%
Virginia	7,100,702	11	645,518	1,434	1,434	0.22%
Washington	5,908,684	9	656,520	-9,568	9,568	-1.48%
West Virginia	1,813,077	3	604,359	42,593	42,593	6.58%
Wisconsin	5,371,210	8	671,401	-24,449	24,449	-3.78%
Wyoming	495,304	1	495,304	151,648	151,648	23.44%
Totals	281,424,177	435	646,952			
Voter Equivalency Ratio			1.83			
Most Underrepresented				-258,364		-39.94%
Most Overrepresented				151,648		23.44%
Maximum Deviation				410,012		
% Max Deviation						63.38%
Mean Absolute Deviation					37,227	
% Mean Abs Deviation						5.75%

Exhibit 4

Constitutional Determinations of Congressional Apportionment

	Kirkpatrick v. Preisler	*Wells v. Rockefeller*	*White v. Weiser*	*Karcher v. Daggett*	*Clemens v. U.S. Dep't of Commerce*
Ideal District Size	431,981	409,324	466,530	526,059	646,952
Most Over-Represented Size	419,721	382,277	458,581	523,798	495,304
Deviation (#)	12,260	27,047	7,949	2,261	151,648
Deviation (%)	2.84%	6.61%	1.70%	0.43%	23.44%
Most Under-Represented Size	445,523	435,880	477,856	527,472	905,316
Deviation (#)	13,542	26,556	11,326	1,413	258,364
Deviation (%)	3.13%	6.49%	2.43%	0.27%	39.94%
Maximum Deviation (#)	25,802	53,603	19,275	3,674	410,012
Maximum Deviation (%)	5.97%	13.10%	4.13%	0.70%	63.38%
Population Variance Raitio	1.06	1.14	1.04	1.01	1.83
Average Deviation (#)	6,912	n.a.	3,421	726	37,227
Average Deviation (%)	1.60%	n.a.	0.75%	0.14%	5.75%
Supreme Court's Decision	*Unconstitutional*	*Unconstitutional*	*Unconstitutional*	*Unconstitutional*	

Exhibit 5: Plan A

Apportionment with 932 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	15	297,409	4,549	4,549	1.51%
Alaska	628,933	2	314,467	-12,509	12,509	-4.14%
Arizona	5,140,683	17	302,393	-436	436	-0.14%
Arkansas	2,679,733	9	297,748	4,209	4,209	1.39%
California	33,930,798	112	302,954	-996	996	-0.33%
Colorado	4,311,882	14	307,992	-6,034	6,034	-2.00%
Connecticut	3,409,535	11	309,958	-8,000	8,000	-2.65%
Delaware	785,068	3	261,689	40,268	40,268	13.34%
Florida	16,028,890	53	302,432	-475	475	-0.16%
Georgia	8,206,975	27	303,962	-2,005	2,005	-0.66%
Hawaii	1,216,642	4	304,161	-2,203	2,203	-0.73%
Idaho	1,297,274	4	324,319	-22,361	22,361	-7.41%
Illinois	12,439,042	41	303,391	-1,434	1,434	-0.47%
Indiana	6,090,782	20	304,539	-2,582	2,582	-0.86%
Iowa	2,931,923	10	293,192	8,765	8,765	2.90%
Kansas	2,693,824	9	299,314	2,643	2,643	0.88%
Kentucky	4,049,431	13	311,495	-9,537	9,537	-3.16%
Louisiana	4,480,271	15	298,685	3,273	3,273	1.08%
Maine	1,277,731	4	319,433	-17,475	17,475	-5.79%
Maryland	5,307,886	18	294,883	7,075	7,075	2.34%
Massachusetts	6,355,568	21	302,646	-689	689	-0.23%
Michigan	9,955,829	33	301,692	265	265	0.09%
Minnesota	4,925,670	16	307,854	-5,897	5,897	-1.95%
Mississippi	2,852,927	9	316,992	-15,035	15,035	-4.98%
Missouri	5,606,260	19	295,066	6,891	6,891	2.28%
Montana	905,316	3	301,772	185	185	0.06%
Nebraska	1,715,369	6	285,895	16,062	16,062	5.32%
Nevada	2,002,032	7	286,005	15,953	15,953	5.28%
New Hampshire	1,238,415	4	309,604	-7,646	7,646	-2.53%
New Jersey	8,424,354	28	300,870	1,087	1,087	0.36%
New Mexico	1,823,821	6	303,970	-2,013	2,013	-0.67%
New York	19,004,973	63	301,666	291	291	0.10%
North Carolina	8,067,673	27	298,803	3,155	3,155	1.04%
North Dakota	643,756	2	321,878	-19,921	19,921	-6.60%
Ohio	11,374,540	38	299,330	2,627	2,627	0.87%
Oklahoma	3,458,819	11	314,438	-12,481	12,481	-4.13%
Oregon	3,428,543	11	311,686	-9,728	9,728	-3.22%
Pennsylvania	12,300,670	41	300,016	1,941	1,941	0.64%
Rhode Island	1,049,662	4	262,416	39,542	39,542	13.10%
South Carolina	4,025,061	13	309,620	-7,663	7,663	-2.54%
South Dakota	756,874	3	252,291	49,666	49,666	16.45%
Tennessee	5,700,037	19	300,002	1,955	1,955	0.65%
Texas	20,903,994	69	302,956	-999	999	-0.33%
Utah	2,236,714	7	319,531	-17,573	17,573	-5.82%
Vermont	609,890	2	304,945	-2,988	2,988	-0.99%
Virginia	7,100,702	23	308,726	-6,769	6,769	-2.24%
Washington	5,908,684	20	295,434	6,523	6,523	2.16%
West Virginia	1,813,077	6	302,180	-222	222	-0.07%
Wisconsin	5,371,210	18	298,401	3,557	3,557	1.18%
Wyoming	495,304	2	247,652	54,305	54,305	17.98%
Totals	281,424,177	932	301,957			
Voter Equivalency Ratio			1.31			
Most Underrepresented				-22,361		-7.41%
Most Overrepresented				54,305		17.98%
Maximum Deviation				76,667		
% Max Deviation						25.39%
Mean Absolute Deviation					9,409	
% Mean Abs Deviation						3.12%

Exhibit 6: Plan B

Apportionment with 1,760 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	28	159,326	574	574	0.36%
Alaska	628,933	4	157,233	2,667	2,667	1.67%
Arizona	5,140,683	32	160,646	-746	746	-0.47%
Arkansas	2,679,733	17	157,631	2,269	2,269	1.42%
California	33,930,798	212	160,051	-151	151	-0.09%
Colorado	4,311,882	27	159,699	201	201	0.13%
Connecticut	3,409,535	21	162,359	-2,459	2,459	-1.54%
Delaware	785,068	5	157,014	2,887	2,887	1.81%
Florida	16,028,890	100	160,289	-389	389	-0.24%
Georgia	8,206,975	51	160,921	-1,021	1,021	-0.64%
Hawaii	1,216,642	8	152,080	7,820	7,820	4.89%
Idaho	1,297,274	8	162,159	-2,259	2,259	-1.41%
Illinois	12,439,042	78	159,475	425	425	0.27%
Indiana	6,090,782	38	160,284	-384	384	-0.24%
Iowa	2,931,923	18	162,885	-2,985	2,985	-1.87%
Kansas	2,693,824	17	158,460	1,440	1,440	0.90%
Kentucky	4,049,431	25	161,977	-2,077	2,077	-1.30%
Louisiana	4,480,271	28	160,010	-110	110	-0.07%
Maine	1,277,731	8	159,716	184	184	0.11%
Maryland	5,307,886	33	160,845	-945	945	-0.59%
Massachusetts	6,355,568	40	158,889	1,011	1,011	0.63%
Michigan	9,955,829	62	160,578	-678	678	-0.42%
Minnesota	4,925,670	31	158,893	1,008	1,008	0.63%
Mississippi	2,852,927	18	158,496	1,404	1,404	0.88%
Missouri	5,606,260	35	160,179	-279	279	-0.17%
Montana	905,316	6	150,886	9,014	9,014	5.64%
Nebraska	1,715,369	11	155,943	3,957	3,957	2.47%
Nevada	2,002,032	13	154,002	5,898	5,898	3.69%
New Hampshire	1,238,415	8	154,802	5,098	5,098	3.19%
New Jersey	8,424,354	53	158,950	950	950	0.59%
New Mexico	1,823,821	11	165,802	-5,902	5,902	-3.69%
New York	19,004,973	119	159,706	194	194	0.12%
North Carolina	8,067,673	50	161,353	-1,453	1,453	-0.91%
North Dakota	643,756	4	160,939	-1,039	1,039	-0.65%
Ohio	11,374,540	71	160,205	-305	305	-0.19%
Oklahoma	3,458,819	22	157,219	2,681	2,681	1.68%
Oregon	3,428,543	21	163,264	-3,364	3,364	-2.10%
Pennsylvania	12,300,670	77	159,749	151	151	0.09%
Rhode Island	1,049,662	7	149,952	9,948	9,948	6.22%
South Carolina	4,025,061	25	161,002	-1,102	1,102	-0.69%
South Dakota	756,874	5	151,375	8,525	8,525	5.33%
Tennessee	5,700,037	36	158,334	1,566	1,566	0.98%
Texas	20,903,994	130	160,800	-900	900	-0.56%
Utah	2,236,714	14	159,765	135	135	0.08%
Vermont	609,890	4	152,473	7,428	7,428	4.65%
Virginia	7,100,702	44	161,380	-1,479	1,479	-0.93%
Washington	5,908,684	37	159,694	206	206	0.13%
West Virginia	1,813,077	11	164,825	-4,925	4,925	-3.08%
Wisconsin	5,371,210	34	157,977	1,923	1,923	1.20%
Wyoming	495,304	3	165,101	-5,201	5,201	-3.25%
Totals	281,424,177	1,760	159,900			
Voter Equivalency Ratio			1.11			
Most Underrepresented				-5,902		-3.69%
Most Overrepresented				9,948		6.22%
Maximum Deviation				15,850		
% Max Deviation						9.91%
Mean Absolute Deviation					2,394	
% Mean Abs Deviation						1.50%

Exhibit 7: Plan C

Apportionment with 927 Seats (2009 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,708,708	14	336,336	-5,800	5,800	-1.75%
Alaska	698,473	2	349,237	-18,701	18,701	-5.66%
Arizona	6,595,778	20	329,789	747	747	0.23%
Arkansas	2,889,450	9	321,050	9,486	9,486	2.87%
California	36,961,664	111	332,988	-2,452	2,452	-0.74%
Colorado	5,024,748	15	334,983	-4,447	4,447	-1.35%
Connecticut	3,518,288	11	319,844	10,692	10,692	3.23%
Delaware	885,122	3	295,041	35,495	35,495	10.74%
Florida	18,537,969	56	331,035	-499	499	-0.15%
Georgia	9,829,211	30	327,640	2,896	2,896	0.88%
Hawaii	1,295,178	4	323,795	6,741	6,741	2.04%
Idaho	1,545,801	5	309,160	21,376	21,376	6.47%
Illinois	12,910,409	39	331,036	-500	500	-0.15%
Indiana	6,423,113	19	338,059	-7,523	7,523	-2.28%
Iowa	3,007,856	9	334,206	-3,670	3,670	-1.11%
Kansas	2,818,747	9	313,194	17,342	17,342	5.25%
Kentucky	4,314,113	13	331,855	-1,319	1,319	-0.40%
Louisiana	4,492,076	14	320,863	9,673	9,673	2.93%
Maine	1,318,301	4	329,575	961	961	0.29%
Maryland	5,699,478	17	335,263	-4,727	4,727	-1.43%
Massachusetts	6,593,587	20	329,679	857	857	0.26%
Michigan	9,969,727	30	332,324	-1,788	1,788	-0.54%
Minnesota	5,266,214	16	329,138	1,398	1,398	0.42%
Mississippi	2,951,996	9	328,000	2,536	2,536	0.77%
Missouri	5,987,580	18	332,643	-2,107	2,107	-0.64%
Montana	974,989	3	324,996	5,540	5,540	1.68%
Nebraska	1,796,619	5	359,324	-28,788	28,788	-8.71%
Nevada	2,643,085	8	330,386	150	150	0.05%
New Hampshire	1,324,575	4	331,144	-608	608	-0.18%
New Jersey	8,707,739	26	334,913	-4,377	4,377	-1.32%
New Mexico	2,009,671	6	334,945	-4,409	4,409	-1.33%
New York	19,541,453	59	331,211	-675	675	-0.20%
North Carolina	9,380,884	28	335,032	-4,496	4,496	-1.36%
North Dakota	646,844	2	323,422	7,114	7,114	2.15%
Ohio	11,542,645	35	329,790	746	746	0.23%
Oklahoma	3,687,050	11	335,186	-4,650	4,650	-1.41%
Oregon	3,825,657	12	318,805	11,731	11,731	3.55%
Pennsylvania	12,604,767	38	331,704	-1,168	1,168	-0.35%
Rhode Island	1,053,209	3	351,070	-20,534	20,534	-6.21%
South Carolina	4,561,242	14	325,803	4,733	4,733	1.43%
South Dakota	812,383	3	270,794	59,742	59,742	18.07%
Tennessee	6,296,254	19	331,382	-846	846	-0.26%
Texas	24,782,302	75	330,431	105	105	0.03%
Utah	2,784,572	8	348,072	-17,536	17,536	-5.31%
Vermont	621,760	2	310,880	19,656	19,656	5.95%
Virginia	7,882,590	24	328,441	2,095	2,095	0.63%
Washington	6,664,195	20	333,210	-2,674	2,674	-0.81%
West Virginia	1,819,777	6	303,296	27,240	27,240	8.24%
Wisconsin	5,654,774	17	332,634	-2,098	2,098	-0.63%
Wyoming	544,270	2	272,135	58,401	58,401	17.67%
Totals	306,406,893	927	330,536			
Voter Equivalency Ratio			1.33			
Most Underrepresented				-28,788		-8.71%
Most Overrepresented				59,742		18.07%
Maximum Deviation				88,530		
% Max Deviation						26.78%
Mean Absolute Deviation					9,277	
% Mean Abs Deviation						2.81%

Exhibit 8: Apportionment History from 1790-2030

1790

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama						
Alaska						
Arizona						
Arkansas						
California						
Colorado						
Connecticut	236,840	7	33,834	603	603	1.75%
Delaware	55,539	1	55,539	-21,102	21,102	-61.28%
Florida						
Georgia	70,842	2	35,421	-984	984	-2.86%
Hawaii						
Idaho						
Illinois						
Indiana						
Iowa						
Kansas						
Kentucky	68,705	2	34,353	85	85	0.25%
Louisiana						
Maine						
Maryland	278,514	8	34,814	-377	377	-1.09%
Massachusetts	475,327	14	33,952	485	485	1.41%
Michigan						
Minnesota						
Mississippi						
Missouri						
Montana						
Nebraska						
Nevada						
New Hampshire	141,822	4	35,456	-1,018	1,018	-2.96%
New Jersey	179,570	5	35,914	-1,477	1,477	-4.29%
New Mexico						
New York	331,590	10	33,159	1,278	1,278	3.71%
North Carolina	353,522	10	35,352	-915	915	-2.66%
North Dakota						
Ohio						
Oklahoma						
Oregon						
Pennsylvania	432,878	13	33,298	1,139	1,139	3.31%
Rhode Island	68,446	2	34,223	214	214	0.62%
South Carolina	206,235	6	34,373	65	65	0.19%
South Dakota						
Tennessee						
Texas						
Utah						
Vermont	85,533	2	42,767	-8,329	8,329	-24.19%
Virginia	630,559	19	33,187	1,250	1,250	3.63%
Washington						
West Virginia						
Wisconsin						
Wyoming						
Totals	3,615,922	105	34,437			
Voter Equivalency Ratio			1.67			
Most Underrepresented				-21,102		-61.28%
Most Overrepresented				1,278		3.71%
Maximum Deviation				22,380		
% Max Deviation						64.99%
Mean Absolute Deviation					2,621	
% Mean Abs Deviation						7.61%

1800

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama						
Alaska						
Arizona						
Arkansas						
California						
Colorado						
Connecticut	250,622	7	35,803	-1,162	1,162	-3.36%
Delaware	61,812	1	61,812	-27,171	27,171	-78.44%
Florida						
Georgia	138,806	4	34,702	-61	61	-0.18%
Hawaii						
Idaho						
Illinois						
Indiana						
Iowa						
Kansas						
Kentucky	204,822	6	34,137	504	504	1.45%
Louisiana						
Maine						
Maryland	306,609	9	34,068	573	573	1.65%
Massachusetts	574,564	17	33,798	843	843	2.43%
Michigan						
Minnesota						
Mississippi						
Missouri						
Montana						
Nebraska						
Nevada						
New Hampshire	183,855	5	36,771	-2,130	2,130	-6.15%
New Jersey	206,180	6	34,363	277	277	0.80%
New Mexico						
New York	577,805	17	33,989	652	652	1.88%
North Carolina	424,785	12	35,399	-758	758	-2.19%
North Dakota						
Ohio						
Oklahoma						
Oregon						
Pennsylvania	601,863	18	33,437	1,204	1,204	3.48%
Rhode Island	68,970	2	34,485	156	156	0.45%
South Carolina	287,131	8	35,891	-1,251	1,251	-3.61%
South Dakota						
Tennessee	100,168	3	33,389	1,251	1,251	3.61%
Texas						
Utah						
Vermont	154,465	4	38,616	-3,976	3,976	-11.48%
Virginia	741,882	22	33,722	919	919	2.65%
Washington						
West Virginia						
Wisconsin						
Wyoming						
Totals	4,884,339	141	34,641			
Voter Equivalency Ratio			1.85			
Most Underrepresented				-27,171		-78.44%
Most Overrepresented				1,251		3.61%
Maximum Deviation				28,423		
% Max Deviation						82.05%
Mean Absolute Deviation					2,680	
% Mean Abs Deviation						7.74%

1810

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama						
Alaska						
Arizona						
Arkansas						
California						
Colorado						
Connecticut	261,818	7	37,403	-1,025	1,025	-2.82%
Delaware	71,003	2	35,502	876	876	2.41%
Florida						
Georgia	210,346	6	35,058	1,319	1,319	3.63%
Hawaii						
Idaho						
Illinois						
Indiana						
Iowa						
Kansas						
Kentucky	374,287	10	37,429	-1,052	1,052	-2.89%
Louisiana						
Maine						
Maryland	335,945	9	37,327	-950	950	-2.61%
Massachusetts	700,745	20	35,037	1,340	1,340	3.68%
Michigan						
Minnesota						
Mississippi						
Missouri						
Montana						
Nebraska						
Nevada						
New Hampshire	214,460	6	35,743	634	634	1.74%
New Jersey	241,222	6	40,204	-3,827	3,827	-10.52%
New Mexico						
New York	953,042	27	35,298	1,079	1,079	2.97%
North Carolina	487,970	13	37,536	-1,159	1,159	-3.19%
North Dakota						
Ohio	230,760	6	38,460	-2,083	2,083	-5.73%
Oklahoma						
Oregon						
Pennsylvania	809,773	23	35,208	1,170	1,170	3.22%
Rhode Island	76,888	2	38,444	-2,067	2,067	-5.68%
South Carolina	336,569	9	37,397	-1,019	1,019	-2.80%
South Dakota						
Tennessee	243,913	6	40,652	-4,275	4,275	-11.75%
Texas						
Utah						
Vermont	217,895	6	36,316	61	61	0.17%
Virginia	817,615	23	35,548	829	829	2.28%
Washington						
West Virginia						
Wisconsin						
Wyoming						
Totals	6,584,251	181	36,377			
Voter Equivalency Ratio			1.16			
Most Underrepresented				-4,275		-11.75%
Most Overrepresented				1,340		3.68%
Maximum Deviation				5,615		
% Max Deviation						15.44%
Mean Absolute Deviation					1,457	
% Mean Abs Deviation						4.00%

1820

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	110,339	3	36,780	5,283	5,283	12.56%
Alaska						
Arizona						
Arkansas						
California						
Colorado						
Connecticut	275,208	6	45,868	-3,805	3,805	-9.05%
Delaware	70,943	1	70,943	-28,880	28,880	-68.66%
Florida						
Georgia	281,126	7	40,161	1,902	1,902	4.52%
Hawaii						
Idaho						
Illinois	54,843	1	54,843	-12,780	12,780	-30.38%
Indiana	147,102	3	49,034	-6,971	6,971	-16.57%
Iowa						
Kansas						
Kentucky	513,623	12	42,802	-739	739	-1.76%
Louisiana	125,779	3	41,926	136	136	0.32%
Maine	298,335	7	42,619	-557	557	-1.32%
Maryland	364,389	9	40,488	1,575	1,575	3.74%
Massachusetts	523,287	13	40,253	1,810	1,810	4.30%
Michigan						
Minnesota						
Mississippi	62,320	1	62,320	-20,257	20,257	-48.16%
Missouri	62,496	1	62,496	-20,433	20,433	-48.58%
Montana						
Nebraska						
Nevada						
New Hampshire	244,161	6	40,694	1,369	1,369	3.25%
New Jersey	274,551	6	45,759	-3,696	3,696	-8.79%
New Mexico						
New York	1,368,775	34	40,258	1,804	1,804	4.29%
North Carolina	556,821	13	42,832	-770	770	-1.83%
North Dakota						
Ohio	581,434	14	41,531	532	532	1.26%
Oklahoma						
Oregon						
Pennsylvania	1,049,313	26	40,358	1,704	1,704	4.05%
Rhode Island	83,038	2	41,519	544	544	1.29%
South Carolina	389,594	9	43,288	-1,226	1,226	-2.91%
South Dakota						
Tennessee	390,769	9	43,419	-1,356	1,356	-3.22%
Texas						
Utah						
Vermont	235,764	5	47,153	-5,090	5,090	-12.10%
Virginia	895,303	22	40,696	1,367	1,367	3.25%
Washington						
West Virginia						
Wisconsin						
Wyoming						
Totals	8,959,313	213	42,063			
Voter Equivalency Ratio			1.93			
Most Underrepresented				-28,880		-68.66%
Most Overrepresented				5,283		12.56%
Maximum Deviation				34,163		
% Max Deviation						81.22%
Mean Absolute Deviation					5,191	
% Mean Abs Deviation						12.34%

1830

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	262,507	5	52,501	-2,789	2,789	-5.61%
Alaska						
Arizona						
Arkansas						
California						
Colorado						
Connecticut	297,665	6	49,611	102	102	0.20%
Delaware	75,431	1	75,431	-25,719	25,719	-51.73%
Florida						
Georgia	429,811	9	47,757	1,956	1,956	3.93%
Hawaii						
Idaho						
Illinois	157,146	3	52,382	-2,670	2,670	-5.37%
Indiana	343,030	7	49,004	708	708	1.42%
Iowa						
Kansas						
Kentucky	621,832	13	47,833	1,879	1,879	3.78%
Louisiana	171,904	3	57,301	-7,589	7,589	-15.27%
Maine	399,454	8	49,932	-219	219	-0.44%
Maryland	405,842	8	50,730	-1,018	1,018	-2.05%
Massachusetts	610,408	12	50,867	-1,155	1,155	-2.32%
Michigan						
Minnesota						
Mississippi	110,357	2	55,179	-5,466	5,466	-11.00%
Missouri	130,419	2	65,210	-15,497	15,497	-31.17%
Montana						
Nebraska						
Nevada						
New Hampshire	269,327	5	53,865	-4,153	4,153	-8.35%
New Jersey	319,921	6	53,320	-3,608	3,608	-7.26%
New Mexico						
New York	1,918,578	40	47,964	1,748	1,748	3.52%
North Carolina	639,747	13	49,211	501	501	1.01%
North Dakota						
Ohio	937,901	19	49,363	349	349	0.70%
Oklahoma						
Oregon						
Pennsylvania	1,348,072	28	48,145	1,567	1,567	3.15%
Rhode Island	97,192	2	48,596	1,116	1,116	2.25%
South Carolina	455,025	9	50,558	-846	846	-1.70%
South Dakota						
Tennessee	625,263	13	48,097	1,615	1,615	3.25%
Texas						
Utah						
Vermont	280,652	5	56,130	-6,418	6,418	-12.91%
Virginia	1,023,502	21	48,738	974	974	1.96%
Washington						
West Virginia						
Wisconsin						
Wyoming						
Totals	11,930,986	240	49,712			
Voter Equivalency Ratio			1.58			
Most Underrepresented				-25,719		-51.73%
Most Overrepresented				1,956		3.93%
Maximum Deviation				27,674		
% Max Deviation						55.67%
Mean Absolute Deviation					3,736	
% Mean Abs Deviation						7.52%

1840

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	489,343	7	69,906	1,432	1,432	2.01%
Alaska						
Arizona						
Arkansas	89,600	1	89,600	-18,262	18,262	-25.60%
California						
Colorado						
Connecticut	309,971	4	77,493	-6,155	6,155	-8.63%
Delaware	77,043	1	77,043	-5,705	5,705	-8.00%
Florida						
Georgia	579,014	8	72,377	-1,039	1,039	-1.46%
Hawaii						
Idaho						
Illinois	476,050	7	68,007	3,331	3,331	4.67%
Indiana	685,864	10	68,586	2,751	2,751	3.86%
Iowa						
Kansas						
Kentucky	706,924	10	70,692	645	645	0.90%
Louisiana	285,030	4	71,258	80	80	0.11%
Maine	501,793	7	71,685	-347	347	-0.49%
Maryland	434,124	6	72,354	-1,016	1,016	-1.42%
Massachusetts	737,699	10	73,770	-2,432	2,432	-3.41%
Michigan	212,267	3	70,756	582	582	0.82%
Minnesota						
Mississippi	297,566	4	74,392	-3,054	3,054	-4.28%
Missouri	360,406	5	72,081	-743	743	-1.04%
Montana						
Nebraska						
Nevada						
New Hampshire	284,573	4	71,143	195	195	0.27%
New Jersey	373,036	5	74,607	-3,269	3,269	-4.58%
New Mexico						
New York	2,428,919	34	71,439	-101	101	-0.14%
North Carolina	655,092	9	72,788	-1,450	1,450	-2.03%
North Dakota						
Ohio	1,519,465	21	72,355	-1,018	1,018	-1.43%
Oklahoma						
Oregon						
Pennsylvania	1,724,007	24	71,834	-496	496	-0.70%
Rhode Island	108,828	2	54,414	16,924	16,924	23.72%
South Carolina	463,582	7	66,226	5,112	5,112	7.17%
South Dakota						
Tennessee	755,986	11	68,726	2,612	2,612	3.66%
Texas						
Utah						
Vermont	291,948	4	72,987	-1,649	1,649	-2.31%
Virginia	1,060,202	15	70,680	658	658	0.92%
Washington						
West Virginia						
Wisconsin						
Wyoming						
Totals	15,908,332	223	71,338			
Voter Equivalency Ratio			1.65			
Most Underrepresented				-18,262		-25.60%
Most Overrepresented				16,924		23.72%
Maximum Deviation				35,186		
% Max Deviation						49.32%
Mean Absolute Deviation					3,118	
% Mean Abs Deviation						4.37%

1850

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	634,485	7	90,641	2,383	2,383	2.56%
Alaska						
Arizona						
Arkansas	191,057	2	95,529	-2,504	2,504	-2.69%
California	92,597	2	46,299	46,726	46,726	50.23%
Colorado						
Connecticut	370,792	4	92,698	326	326	0.35%
Delaware	90,616	1	90,616	2,408	2,408	2.59%
Florida	71,721	1	71,721	21,303	21,303	22.90%
Georgia	753,512	8	94,189	-1,165	1,165	-1.25%
Hawaii						
Idaho						
Illinois	851,470	9	94,608	-1,584	1,584	-1.70%
Indiana	988,416	11	89,856	3,168	3,168	3.41%
Iowa	192,214	2	96,107	-3,083	3,083	-3.31%
Kansas						
Kentucky	898,013	10	89,801	3,223	3,223	3.46%
Louisiana	419,838	4	104,960	-11,935	11,935	-12.83%
Maine	583,169	6	97,195	-4,171	4,171	-4.48%
Maryland	546,887	6	91,148	1,876	1,876	2.02%
Massachusetts	994,514	11	90,410	2,614	2,614	2.81%
Michigan	397,654	4	99,414	-6,389	6,389	-6.87%
Minnesota						
Mississippi	482,575	5	96,515	-3,491	3,491	-3.75%
Missouri	647,075	7	92,439	585	585	0.63%
Montana						
Nebraska						
Nevada						
New Hampshire	317,976	3	105,992	-12,968	12,968	-13.94%
New Jersey	489,461	5	97,892	-4,868	4,868	-5.23%
New Mexico						
New York	3,097,394	33	93,860	-836	836	-0.90%
North Carolina	753,620	8	94,203	-1,178	1,178	-1.27%
North Dakota						
Ohio	1,980,329	21	94,301	-1,277	1,277	-1.37%
Oklahoma						
Oregon						
Pennsylvania	2,311,786	25	92,471	553	553	0.59%
Rhode Island	147,545	2	73,773	19,252	19,252	20.70%
South Carolina	514,513	6	85,752	7,272	7,272	7.82%
South Dakota						
Tennessee	906,933	10	90,693	2,331	2,331	2.51%
Texas	189,328	2				
Utah						
Vermont	314,120	3	104,707	-11,683	11,683	-12.56%
Virginia	1,232,650	13	94,819	-1,795	1,795	-1.93%
Washington						
West Virginia						
Wisconsin	305,391	3	101,797	-8,773	8,773	-9.43%
Wyoming						
Totals	21,767,651	234	93,024			
Voter Equivalency Ratio			2.29			
Most Underrepresented				-12,968		-13.94%
Most Overrepresented				46,726		50.23%
Maximum Deviation				59,694		
% Max Deviation						64.17%
Mean Absolute Deviation					6,391	
% Mean Abs Deviation						6.87%

1860

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	790,169	6	131,695	-9,081	9,081	-7.41%
Alaska						
Arizona						
Arkansas	391,004	3	130,335	-7,720	7,720	-6.30%
California	362,196	3	120,732	1,882	1,882	1.54%
Colorado						
Connecticut	460,147	4	115,037	7,577	7,577	6.18%
Delaware	111,496	1	111,496	11,118	11,118	9.07%
Florida	115,726	1	115,726	6,888	6,888	5.62%
Georgia	872,406	7	124,629	-2,015	2,015	-1.64%
Hawaii						
Idaho						
Illinois	1,711,951	14	122,282	332	332	0.27%
Indiana	1,350,428	11	122,766	-152	152	-0.12%
Iowa	674,913	6	112,486	10,129	10,129	8.26%
Kansas	107,206	1	107,206	15,408	15,408	12.57%
Kentucky	1,065,490	9	118,388	4,226	4,226	3.45%
Louisiana	575,311	5	115,062	7,552	7,552	6.16%
Maine	628,279	5	125,656	-3,042	3,042	-2.48%
Maryland	652,173	5	130,435	-7,820	7,820	-6.38%
Massachusetts	1,231,066	10	123,107	-492	492	-0.40%
Michigan	749,113	6	124,852	-2,238	2,238	-1.83%
Minnesota	172,023	2	86,012	36,603	36,603	29.85%
Mississippi	616,652	5	123,330	-716	716	-0.58%
Missouri	1,136,039	9	126,227	-3,612	3,612	-2.95%
Montana						
Nebraska						
Nevada						
New Hampshire	326,073	3	108,691	13,923	13,923	11.36%
New Jersey	672,027	5	134,405	-11,791	11,791	-9.62%
New Mexico						
New York	3,880,735	31	125,185	-2,571	2,571	-2.10%
North Carolina	860,197	7	122,885	-271	271	-0.22%
North Dakota						
Ohio	2,339,511	19	123,132	-518	518	-0.42%
Oklahoma						
Oregon	52,465	1	52,465	70,149	70,149	57.21%
Pennsylvania	2,906,215	24	121,092	1,522	1,522	1.24%
Rhode Island	174,620	2	87,310	35,304	35,304	28.79%
South Carolina	542,745	4	135,686	-13,072	13,072	-10.66%
South Dakota						
Tennessee	999,513	8	124,939	-2,325	2,325	-1.90%
Texas	531,188	4	132,797	-10,183	10,183	-8.30%
Utah						
Vermont	315,098	3	105,033	17,582	17,582	14.34%
Virginia	1,399,972	11	127,270	-4,656	4,656	-3.80%
Washington						
West Virginia						
Wisconsin	775,881	6	129,314	-6,699	6,699	-5.46%
Wyoming						
Totals	29,550,028	241	122,614			
Voter Equivalency Ratio			2.59			
Most Underrepresented				-13,072		-10.66%
Most Overrepresented				70,149		57.21%
Maximum Deviation				83,221		
% Max Deviation						67.87%
Mean Absolute Deviation					9,682	
% Mean Abs Deviation						7.90%

1870

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	996,992	8	124,624	5,909	5,909	4.53%
Alaska						
Arizona						
Arkansas	484,471	4	121,118	9,415	9,415	7.21%
California	560,247	4	140,062	-9,529	9,529	-7.30%
Colorado						
Connecticut	537,454	4	134,364	-3,830	3,830	-2.93%
Delaware	125,015	1	125,015	5,518	5,518	4.23%
Florida	187,748	2	93,874	36,659	36,659	28.08%
Georgia	1,184,109	9	131,568	-1,035	1,035	-0.79%
Hawaii						
Idaho						
Illinois	2,539,891	19	133,678	-3,145	3,145	-2.41%
Indiana	1,680,637	13	129,280	1,253	1,253	0.96%
Iowa	1,194,020	9	132,669	-2,136	2,136	-1.64%
Kansas	364,399	3	121,466	9,067	9,067	6.95%
Kentucky	1,321,011	10	132,101	-1,568	1,568	-1.20%
Louisiana	726,915	6	121,153	9,381	9,381	7.19%
Maine	626,915	5	125,383	5,150	5,150	3.95%
Maryland	780,894	6	130,149	384	384	0.29%
Massachusetts	1,457,351	11	132,486	-1,953	1,953	-1.50%
Michigan	1,184,059	9	131,562	-1,029	1,029	-0.79%
Minnesota	439,706	3	146,569	-16,036	16,036	-12.28%
Mississippi	827,922	6	137,987	-7,454	7,454	-5.71%
Missouri	1,721,295	13	132,407	-1,874	1,874	-1.44%
Montana						
Nebraska	122,993	1	122,993	7,540	7,540	5.78%
Nevada	42,491	1	42,491	88,042	88,042	67.45%
New Hampshire	318,300	3	106,100	24,433	24,433	18.72%
New Jersey	906,096	7	129,442	1,091	1,091	0.84%
New Mexico						
New York	4,382,759	33	132,811	-2,278	2,278	-1.75%
North Carolina	1,071,361	8	133,920	-3,387	3,387	-2.59%
North Dakota						
Ohio	2,665,260	20	133,263	-2,730	2,730	-2.09%
Oklahoma						
Oregon	90,923	1	90,923	39,610	39,610	30.34%
Pennsylvania	3,521,951	27	130,443	90	90	0.07%
Rhode Island	217,353	2	108,677	21,857	21,857	16.74%
South Carolina	705,606	5	141,121	-10,588	10,588	-8.11%
South Dakota						
Tennessee	1,258,520	10	125,852	4,681	4,681	3.59%
Texas	818,579	6	136,430	-5,897	5,897	-4.52%
Utah						
Vermont	330,551	3	110,184	20,349	20,349	15.59%
Virginia	1,225,163	9	136,129	-5,596	5,596	-4.29%
Washington						
West Virginia	442,014	3	147,338	-16,805	16,805	-12.87%
Wisconsin	1,054,670	8	131,834	-1,301	1,301	-1.00%
Wyoming						
Totals	38,115,641	292	130,533			
Voter Equivalency Ratio			3.47			
Most Underrepresented				-16,805		-12.87%
Most Overrepresented				88,042		67.45%
Maximum Deviation				104,847		
% Max Deviation						80.32%
Mean Absolute Deviation					10,503	
% Mean Abs Deviation						8.05%

1880

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	1,262,505	8	157,813	-5,901	5,901	-3.88%
Alaska						
Arizona						
Arkansas	802,525	5	160,505	-8,593	8,593	-5.66%
California	864,694	6	144,116	7,796	7,796	5.13%
Colorado	194,327	1	194,327	-42,415	42,415	-27.92%
Connecticut	622,700	4	155,675	-3,763	3,763	-2.48%
Delaware	146,608	1	146,608	5,304	5,304	3.49%
Florida	269,493	2	134,747	17,165	17,165	11.30%
Georgia	1,542,180	10	154,218	-2,306	2,306	-1.52%
Hawaii						
Idaho						
Illinois	3,077,871	20	153,894	-1,982	1,982	-1.30%
Indiana	1,978,301	13	152,177	-265	265	-0.17%
Iowa	1,624,615	11	147,692	4,220	4,220	2.78%
Kansas	996,096	7	142,299	9,612	9,612	6.33%
Kentucky	1,648,690	11	149,881	2,031	2,031	1.34%
Louisiana	939,946	6	156,658	-4,746	4,746	-3.12%
Maine	648,936	4	162,234	-10,322	10,322	-6.79%
Maryland	934,943	6	155,824	-3,912	3,912	-2.58%
Massachusetts	1,783,085	12	148,590	3,321	3,321	2.19%
Michigan	1,636,937	11	148,812	3,099	3,099	2.04%
Minnesota	780,773	5	156,155	-4,243	4,243	-2.79%
Mississippi	1,131,597	7	161,657	-9,745	9,745	-6.41%
Missouri	2,168,380	14	154,884	-2,972	2,972	-1.96%
Montana						
Nebraska	452,402	3	150,801	1,111	1,111	0.73%
Nevada	62,266	1	62,266	89,646	89,646	59.01%
New Hampshire	346,991	2	173,496	-21,584	21,584	-14.21%
New Jersey	1,131,116	7	161,588	-9,676	9,676	-6.37%
New Mexico						
New York	5,082,871	34	149,496	2,416	2,416	1.59%
North Carolina	1,399,750	9	155,528	-3,616	3,616	-2.38%
North Dakota						
Ohio	3,198,062	21	152,289	-377	377	-0.25%
Oklahoma						
Oregon	174,768	1	174,768	-22,856	22,856	-15.05%
Pennsylvania	4,282,891	28	152,960	-1,049	1,049	-0.69%
Rhode Island	276,531	2	138,266	13,646	13,646	8.98%
South Carolina	995,577	7	142,225	9,687	9,687	6.38%
South Dakota						
Tennessee	1,542,359	10	154,236	-2,324	2,324	-1.53%
Texas	1,591,749	11	144,704	7,207	7,207	4.74%
Utah						
Vermont	332,286	2	166,143	-14,231	14,231	-9.37%
Virginia	1,512,565	10	151,257	655	655	0.43%
Washington						
West Virginia	618,457	4	154,614	-2,702	2,702	-1.78%
Wisconsin	1,315,497	9	146,166	5,745	5,745	3.78%
Wyoming						
Totals	49,371,340	325	151,912			
Voter Equivalency Ratio			3.12			
Most Underrepresented				-42,415		-27.92%
Most Overrepresented				89,646		59.01%
Maximum Deviation				132,061		
% Max Deviation						86.93%
Mean Absolute Deviation					9,533	
% Mean Abs Deviation						6.28%

1890

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	1,513,017	9	168,113	5,788	5,788	3.33%
Alaska						
Arizona						
Arkansas	1,128,179	6	188,030	-14,128	14,128	-8.12%
California	1,208,130	7	172,590	1,311	1,311	0.75%
Colorado	412,198	2	206,099	-32,198	32,198	-18.51%
Connecticut	746,258	4	186,565	-12,663	12,663	-7.28%
Delaware	168,493	1	168,493	5,408	5,408	3.11%
Florida	391,422	2	195,711	-21,810	21,810	-12.54%
Georgia	1,837,353	11	167,032	6,869	6,869	3.95%
Hawaii						
Idaho	84,385	1	84,385	89,516	89,516	51.48%
Illinois	3,826,351	22	173,925	-24	24	-0.01%
Indiana	2,192,404	13	168,646	5,255	5,255	3.02%
Iowa	1,911,896	11	173,809	93	93	0.05%
Kansas	1,427,096	8	178,387	-4,486	4,486	-2.58%
Kentucky	1,858,635	11	168,967	4,935	4,935	2.84%
Louisiana	1,118,587	6	186,431	-12,530	12,530	-7.21%
Maine	661,086	4	165,272	8,630	8,630	4.96%
Maryland	1,042,390	6	173,732	170	170	0.10%
Massachusetts	2,238,943	13	172,226	1,675	1,675	0.96%
Michigan	2,093,889	12	174,491	-589	589	-0.34%
Minnesota	1,301,826	7	185,975	-12,074	12,074	-6.94%
Mississippi	1,289,600	7	184,229	-10,327	10,327	-5.94%
Missouri	2,679,184	15	178,612	-4,711	4,711	-2.71%
Montana	132,159	1	132,159	41,742	41,742	24.00%
Nebraska	1,058,910	6	176,485	-2,584	2,584	-1.49%
Nevada	45,761	1	45,761	128,140	128,140	73.69%
New Hampshire	376,530	2	188,265	-14,364	14,364	-8.26%
New Jersey	1,444,933	8	180,617	-6,715	6,715	-3.86%
New Mexico						
New York	5,997,853	34	176,407	-2,506	2,506	-1.44%
North Carolina	1,617,947	9	179,772	-5,870	5,870	-3.38%
North Dakota	182,719	1	182,719	-8,818	8,818	-5.07%
Ohio	3,672,316	21	174,872	-971	971	-0.56%
Oklahoma						
Oregon	313,767	2	156,884	17,018	17,018	9.79%
Pennsylvania	5,258,014	30	175,267	-1,366	1,366	-0.79%
Rhode Island	345,506	2	172,753	1,148	1,148	0.66%
South Carolina	1,151,149	7	164,450	9,452	9,452	5.44%
South Dakota	328,808	2	164,404	9,497	9,497	5.46%
Tennessee	1,767,518	10	176,752	-2,850	2,850	-1.64%
Texas	2,235,523	13	171,963	1,938	1,938	1.11%
Utah						
Vermont	332,422	2	166,211	7,690	7,690	4.42%
Virginia	1,655,980	10	165,598	8,303	8,303	4.77%
Washington	349,390	2	174,695	-794	794	-0.46%
West Virginia	762,794	4	190,699	-16,797	16,797	-9.66%
Wisconsin	1,686,880	10	168,688	5,213	5,213	3.00%
Wyoming	60,705	1	60,705	113,196	113,196	65.09%
Totals	61,908,906	356	173,901			
Voter Equivalency Ratio			4.50			
Most Underrepresented				-32,198		-18.51%
Most Overrepresented				128,140		73.69%
Maximum Deviation				160,338		
% Max Deviation						92.20%
Mean Absolute Deviation					15,049	
% Mean Abs Deviation						8.65%

1900

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	1,828,697	9	203,189	-10,021	10,021	-5.19%
Alaska						
Arizona						
Arkansas	1,311,564	7	187,366	5,801	5,801	3.00%
California	1,483,504	8	185,438	7,729	7,729	4.00%
Colorado	539,103	3	179,701	13,466	13,466	6.97%
Connecticut	908,420	5	181,684	11,483	11,483	5.94%
Delaware	184,735	1	184,735	8,432	8,432	4.37%
Florida	528,542	3	176,181	16,987	16,987	8.79%
Georgia	2,216,331	11	201,485	-8,317	8,317	-4.31%
Hawaii						
Idaho	159,475	1	159,475	33,692	33,692	17.44%
Illinois	4,821,550	25	192,862	305	305	0.16%
Indiana	2,516,462	13	193,574	-407	407	-0.21%
Iowa	2,231,853	11	202,896	-9,728	9,728	-5.04%
Kansas	1,470,495	8	183,812	9,356	9,356	4.84%
Kentucky	2,147,174	11	195,198	-2,030	2,030	-1.05%
Louisiana	1,381,625	7	197,375	-4,208	4,208	-2.18%
Maine	694,466	4	173,617	19,551	19,551	10.12%
Maryland	1,188,044	6	198,007	-4,840	4,840	-2.51%
Massachusetts	2,805,346	14	200,382	-7,214	7,214	-3.73%
Michigan	2,420,982	12	201,749	-8,581	8,581	-4.44%
Minnesota	1,749,626	9	194,403	-1,236	1,236	-0.64%
Mississippi	1,551,270	8	193,909	-741	741	-0.38%
Missouri	3,106,665	16	194,167	-999	999	-0.52%
Montana	232,583	1	232,583	-39,416	39,416	-20.40%
Nebraska	1,066,300	6	177,717	15,451	15,451	8.00%
Nevada	40,670	1	40,670	152,497	152,497	78.95%
New Hampshire	411,588	2	205,794	-12,627	12,627	-6.54%
New Jersey	1,883,669	10	188,367	4,800	4,800	2.49%
New Mexico						
New York	7,264,183	37	196,329	-3,162	3,162	-1.64%
North Carolina	1,893,810	10	189,381	3,786	3,786	1.96%
North Dakota	314,454	2	157,227	35,940	35,940	18.61%
Ohio	4,157,545	21	197,978	-4,811	4,811	-2.49%
Oklahoma						
Oregon	413,536	2	206,768	-13,601	13,601	-7.04%
Pennsylvania	6,302,115	32	196,941	-3,774	3,774	-1.95%
Rhode Island	428,556	2	214,278	-21,111	21,111	-10.93%
South Carolina	1,340,316	7	191,474	1,694	1,694	0.88%
South Dakota	390,638	2	195,319	-2,152	2,152	-1.11%
Tennessee	2,020,616	10	202,062	-8,894	8,894	-4.60%
Texas	3,048,710	16	190,544	2,623	2,623	1.36%
Utah	275,277	1	275,277	-82,110	82,110	-42.51%
Vermont	343,641	2	171,821	21,347	21,347	11.05%
Virginia	1,854,184	10	185,418	7,749	7,749	4.01%
Washington	515,572	3	171,857	21,310	21,310	11.03%
West Virginia	958,800	5	191,760	1,407	1,407	0.73%
Wisconsin	2,067,385	11	187,944	5,223	5,223	2.70%
Wyoming	92,531	1	92,531	100,636	100,636	52.10%
Totals	74,562,608	386	193,167			
Voter Equivalency Ratio			6.77			
Most Underrepresented				-82,110		-42.51%
Most Overrepresented				152,497		78.95%
Maximum Deviation				234,607		
% Max Deviation						121.45%
Mean Absolute Deviation					16,694	
% Mean Abs Deviation						8.64%

1910

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation form Ideal
Alabama	2,138,093	10	213,809	-3,481	3,481	-1.66%
Alaska						
Arizona						
Arkansas	1,574,449	7	224,921	-14,593	14,593	-6.94%
California	2,376,561	11	216,051	-5,723	5,723	-2.72%
Colorado	798,572	4	199,643	10,685	10,685	5.08%
Connecticut	1,114,756	5	222,951	-12,623	12,623	-6.00%
Delaware	202,322	1	202,322	8,006	8,006	3.81%
Florida	752,619	4	188,155	22,173	22,173	10.54%
Georgia	2,609,121	12	217,427	-7,099	7,099	-3.37%
Hawaii						
Idaho	323,440	2	161,720	48,608	48,608	23.11%
Illinois	5,638,591	27	208,837	1,492	1,492	0.71%
Indiana	2,700,876	13	207,760	2,569	2,569	1.22%
Iowa	2,224,771	11	202,252	8,076	8,076	3.84%
Kansas	1,690,949	8	211,369	-1,040	1,040	-0.49%
Kentucky	2,289,905	11	208,173	2,155	2,155	1.02%
Louisiana	1,656,388	8	207,049	3,280	3,280	1.56%
Maine	742,371	4	185,593	24,735	24,735	11.76%
Maryland	1,295,346	6	215,891	-5,563	5,563	-2.64%
Massachusetts	3,366,416	16	210,401	-73	73	-0.03%
Michigan	2,810,173	13	216,167	-5,839	5,839	-2.78%
Minnesota	2,074,376	10	207,438	2,891	2,891	1.37%
Mississippi	1,797,114	8	224,639	-14,311	14,311	-6.80%
Missouri	3,293,335	16	205,833	4,495	4,495	2.14%
Montana	366,338	2	183,169	27,159	27,159	12.91%
Nebraska	1,192,214	6	198,702	11,626	11,626	5.53%
Nevada	80,293	1	80,293	130,035	130,035	61.82%
New Hampshire	430,572	2	215,286	-4,958	4,958	-2.36%
New Jersey	2,537,167	12	211,431	-1,102	1,102	-0.52%
New Mexico						
New York	9,108,934	43	211,836	-1,507	1,507	-0.72%
North Carolina	2,206,287	10	220,629	-10,300	10,300	-4.90%
North Dakota	574,403	3	191,468	18,861	18,861	8.97%
Ohio	4,767,121	22	216,687	-6,359	6,359	-3.02%
Oklahoma	1,657,155	8	207,144	3,184	3,184	1.51%
Oregon	672,765	3	224,255	-13,927	13,927	-6.62%
Pennsylvania	7,665,111	36	212,920	-2,592	2,592	-1.23%
Rhode Island	542,610	3	180,870	29,458	29,458	14.01%
South Carolina	1,515,400	7	216,486	-6,157	6,157	-2.93%
South Dakota	575,676	3	191,892	18,436	18,436	8.77%
Tennessee	2,184,789	10	218,479	-8,151	8,151	-3.88%
Texas	3,896,542	18	216,475	-6,146	6,146	-2.92%
Utah	371,864	2	185,932	24,396	24,396	11.60%
Vermont	355,956	2	177,978	32,350	32,350	15.38%
Virginia	2,061,612	10	206,161	4,167	4,167	1.98%
Washington	1,140,134	5	228,027	-17,699	17,699	-8.41%
West Virginia	1,221,119	6	203,520	6,808	6,808	3.24%
Wisconsin	2,332,853	11	212,078	-1,749	1,749	-0.83%
Wyoming	144,658	1	144,658	65,670	65,670	31.22%
Totals	91,072,117	433	210,328			
Voter Equivalency Ratio			2.84			
Most Underrepresented				-17,699		-8.41%
Most Overrepresented				130,035		61.82%
Maximum Deviation				147,734		
% Max Deviation						70.24%
Mean Absolute Deviation					14,398	
% Mean Abs Deviation						6.85%

1920

% Deviation from Ideal	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	2,348,174	10	234,817	7,950	7,950	3.27%
Alaska						
Arizona	334,162	1	334,162	-91,394	91,394	-37.65%
Arkansas	1,752,204	7	250,315	-7,547	7,547	-3.11%
California	3,426,861	11	311,533	-68,765	68,765	-28.33%
Colorado	939,629	4	234,907	7,860	7,860	3.24%
Connecticut	1,380,631	5	276,126	-33,358	33,358	-13.74%
Delaware	223,003	1	223,003	19,765	19,765	8.14%
Florida	968,470	4	242,118	650	650	0.27%
Georgia	2,895,832	12	241,319	1,448	1,448	0.60%
Hawaii						
Idaho	431,866	2	215,933	26,835	26,835	11.05%
Illinois	6,485,280	27	240,196	2,572	2,572	1.06%
Indiana	2,930,390	13	225,415	17,353	17,353	7.15%
Iowa	2,404,021	11	218,547	24,220	24,220	9.98%
Kansas	1,769,257	8	221,157	21,611	21,611	8.90%
Kentucky	2,416,630	11	219,694	23,074	23,074	9.50%
Louisiana	1,798,509	8	224,814	17,954	17,954	7.40%
Maine	768,014	4	192,004	50,764	50,764	20.91%
Maryland	1,499,661	6	249,944	-7,176	7,176	-2.96%
Massachusetts	3,852,356	16	240,772	1,995	1,995	0.82%
Michigan	3,668,412	13	282,186	-39,418	39,418	-16.24%
Minnesota	2,387,125	10	238,713	4,055	4,055	1.67%
Mississippi	1,790,618	8	223,827	18,940	18,940	7.80%
Missouri	3,404,055	16	212,753	30,014	30,014	12.36%
Montana	548,889	2	274,445	-31,677	31,677	-13.05%
Nebraska	1,296,372	6	216,062	26,706	26,706	11.00%
Nevada	77,407	1	77,407	165,361	165,361	68.11%
New Hampshire	443,083	2	221,542	21,226	21,226	8.74%
New Jersey	3,155,900	12	262,992	-20,224	20,224	-8.33%
New Mexico	360,350	1	360,350	-117,582	117,582	-48.43%
New York	10,385,227	43	241,517	1,251	1,251	0.52%
North Carolina	2,559,123	10	255,912	-13,145	13,145	-5.41%
North Dakota	646,872	3	215,624	27,144	27,144	11.18%
Ohio	5,759,394	22	261,791	-19,023	19,023	-7.84%
Oklahoma	2,028,283	8	253,535	-10,768	10,768	-4.44%
Oregon	783,389	3	261,130	-18,362	18,362	-7.56%
Pennsylvania	8,720,017	36	242,223	545	545	0.22%
Rhode Island	604,397	3	201,466	41,302	41,302	17.01%
South Carolina	1,683,724	7	240,532	2,236	2,236	0.92%
South Dakota	636,547	3	212,182	30,585	30,585	12.60%
Tennessee	2,337,885	10	233,789	8,979	8,979	3.70%
Texas	4,663,228	18	259,068	-16,300	16,300	-6.71%
Utah	449,396	2	224,698	18,070	18,070	7.44%
Vermont	352,428	2	176,214	66,554	66,554	27.41%
Virginia	2,309,187	10	230,919	11,849	11,849	4.88%
Washington	1,356,621	5	271,324	-28,556	28,556	-11.76%
West Virginia	1,463,701	6	243,950	-1,182	1,182	-0.49%
Wisconsin	2,632,067	11	239,279	3,489	3,489	1.44%
Wyoming	194,402	1	194,402	48,366	48,366	19.92%
Totals	105,323,049	435	242,122			
Voter Equivalency Ratio			4.66			
Most Underrepresented				-117,582		-48.43%
Most Overrepresented				165,361		68.11%
Maximum Deviation				282,943		
% Max Deviation						116.86%
Mean Absolute Deviation					26,567	
% Mean Abs Deviation						10.97%

1930

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	2,646,242	9	294,027	-13,352	13,352	-4.76%
Alaska						
Arizona	389,375	1	389,375	-108,700	108,700	-38.73%
Arkansas	1,854,444	7	264,921	15,754	15,754	5.61%
California	5,668,241	20	283,412	-2,737	2,737	-0.98%
Colorado	1,034,849	4	258,712	21,962	21,962	7.82%
Connecticut	1,606,897	6	267,816	12,858	12,858	4.58%
Delaware	238,380	1	238,380	42,295	42,295	15.07%
Florida	1,468,191	5	293,638	-12,964	12,964	-4.62%
Georgia	2,908,446	10	290,845	-10,170	10,170	-3.62%
Hawaii						
Idaho	441,536	2	220,768	59,907	59,907	21.34%
Illinois	7,630,388	27	282,607	-1,932	1,932	-0.69%
Indiana	3,238,480	12	269,873	10,801	10,801	3.85%
Iowa	2,470,420	9	274,491	6,183	6,183	2.20%
Kansas	1,879,498	7	268,500	12,175	12,175	4.34%
Kentucky	2,614,575	9	290,508	-9,834	9,834	-3.50%
Louisiana	2,101,593	8	262,699	17,975	17,975	6.40%
Maine	797,418	3	265,806	14,869	14,869	5.30%
Maryland	1,631,522	6	271,920	8,754	8,754	3.12%
Massachusetts	4,249,598	15	283,307	-2,632	2,632	-0.94%
Michigan	4,842,052	17	284,827	-4,152	4,152	-1.48%
Minnesota	2,551,583	9	283,509	-2,835	2,835	-1.01%
Mississippi	2,008,154	7	286,879	-6,205	6,205	-2.21%
Missouri	3,629,110	13	279,162	1,512	1,512	0.54%
Montana	524,729	2	262,365	18,310	18,310	6.52%
Nebraska	1,375,123	5	275,025	5,650	5,650	2.01%
Nevada	86,390	1	86,390	194,285	194,285	69.22%
New Hampshire	465,292	2	232,646	48,029	48,029	17.11%
New Jersey	4,041,319	14	288,666	-7,991	7,991	-2.85%
New Mexico	395,982	1	395,982	-115,307	115,307	-41.08%
New York	12,587,967	45	279,733	942	942	0.34%
North Carolina	3,167,274	11	287,934	-7,259	7,259	-2.59%
North Dakota	673,340	2	336,670	-55,995	55,995	-19.95%
Ohio	6,646,633	24	276,943	3,732	3,732	1.33%
Oklahoma	2,382,222	9	264,691	15,983	15,983	5.69%
Oregon	950,379	3	316,793	-36,118	36,118	-12.87%
Pennsylvania	9,631,299	34	283,274	-2,599	2,599	-0.93%
Rhode Island	687,497	2	343,749	-63,074	63,074	-22.47%
South Carolina	1,738,760	6	289,793	-9,119	9,119	-3.25%
South Dakota	673,005	2	336,503	-55,828	55,828	-19.89%
Tennessee	2,616,497	9	290,722	-10,047	10,047	-3.58%
Texas	5,824,601	21	277,362	3,313	3,313	1.18%
Utah	505,741	2	252,871	27,804	27,804	9.91%
Vermont	359,611	1	359,611	-78,936	78,936	-28.12%
Virginia	2,421,829	9	269,092	11,582	11,582	4.13%
Washington	1,552,423	6	258,737	21,937	21,937	7.82%
West Virginia	1,729,199	6	288,200	-7,525	7,525	-2.68%
Wisconsin	2,931,721	10	293,172	-12,497	12,497	-4.45%
Wyoming	223,630	1	223,630	57,045	57,045	20.32%
Totals	122,093,455	435	280,675			
Voter Equivalency Ratio			4.58			
Most Underrepresented				-115,307		-41.08%
Most Overrepresented				194,285		69.22%
Maximum Deviation				309,592		
% Max Deviation						110.30%
Mean Absolute Deviation					26,489	
% Mean Abs Deviation						9.44%

1940

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	2,832,961	9	314,773	-13,610	13,610	-4.52%
Alaska						
Arizona	499,261	2	249,631	51,533	51,533	17.11%
Arkansas	1,949,387	7	278,484	22,680	22,680	7.53%
California	6,907,387	23	300,321	842	842	0.28%
Colorado	1,123,296	4	280,824	20,340	20,340	6.75%
Connecticut	1,709,242	6	284,874	16,290	16,290	5.41%
Delaware	266,505	1	266,505	34,659	34,659	11.51%
Florida	1,897,414	6	316,236	-15,072	15,072	-5.00%
Georgia	3,123,723	10	312,372	-11,209	11,209	-3.72%
Hawaii						
Idaho	524,873	2	262,437	38,727	38,727	12.86%
Illinois	7,897,241	26	303,740	-2,576	2,576	-0.86%
Indiana	3,427,796	11	311,618	-10,454	10,454	-3.47%
Iowa	2,538,268	8	317,284	-16,120	16,120	-5.35%
Kansas	1,801,028	6	300,171	992	992	0.33%
Kentucky	2,845,627	9	316,181	-15,017	15,017	-4.99%
Louisiana	2,363,880	8	295,485	5,679	5,679	1.89%
Maine	847,226	3	282,409	18,755	18,755	6.23%
Maryland	1,821,244	6	303,541	-2,377	2,377	-0.79%
Massachusetts	4,316,721	14	308,337	-7,174	7,174	-2.38%
Michigan	5,256,106	17	309,183	-8,019	8,019	-2.66%
Minnesota	2,792,300	9	310,256	-9,092	9,092	-3.02%
Mississippi	2,183,796	7	311,971	-10,807	10,807	-3.59%
Missouri	3,784,664	13	291,128	10,036	10,036	3.33%
Montana	559,456	2	279,728	21,436	21,436	7.12%
Nebraska	1,315,834	4	328,959	-27,795	27,795	-9.23%
Nevada	110,247	1	110,247	190,917	190,917	63.39%
New Hampshire	491,524	2	245,762	55,402	55,402	18.40%
New Jersey	4,160,165	14	297,155	4,009	4,009	1.33%
New Mexico	531,818	2	265,909	35,255	35,255	11.71%
New York	13,479,142	45	299,536	1,627	1,627	0.54%
North Carolina	3,571,623	12	297,635	3,528	3,528	1.17%
North Dakota	641,935	2	320,968	-19,804	19,804	-6.58%
Ohio	6,907,612	23	300,331	833	833	0.28%
Oklahoma	2,336,434	8	292,054	9,109	9,109	3.02%
Oregon	1,089,684	4	272,421	28,743	28,743	9.54%
Pennsylvania	9,900,180	33	300,005	1,158	1,158	0.38%
Rhode Island	713,346	2	356,673	-55,509	55,509	-18.43%
South Carolina	1,899,804	6	316,634	-15,470	15,470	-5.14%
South Dakota	642,961	2	321,481	-20,317	20,317	-6.75%
Tennessee	2,915,841	10	291,584	9,580	9,580	3.18%
Texas	6,414,824	21	305,468	-4,304	4,304	-1.43%
Utah	550,310	2	275,155	26,009	26,009	8.64%
Vermont	359,231	1	359,231	-58,067	58,067	-19.28%
Virginia	2,677,773	9	297,530	3,633	3,633	1.21%
Washington	1,736,191	6	289,365	11,798	11,798	3.92%
West Virginia	1,901,974	6	316,996	-15,832	15,832	-5.26%
Wisconsin	3,137,587	10	313,759	-12,595	12,595	-4.18%
Wyoming	250,742	1	250,742	50,422	50,422	16.74%
Totals	131,006,184	435	301,164			
Voter Equivalency Ratio			3.26			
Most Underrepresented				-58,067		-19.28%
Most Overrepresented				190,917		63.39%
Maximum Deviation				248,984		
% Max Deviation						82.67%
Mean Absolute Deviation					21,359	
% Mean Abs Deviation						7.09%

1950

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	3,061,743	9	340,194	4,393	4,393	1.27%
Alaska						
Arizona	749,587	2	374,794	-30,207	30,207	-8.77%
Arkansas	1,909,511	6	318,252	26,335	26,335	7.64%
California	10,586,223	30	352,874	-8,287	8,287	-2.41%
Colorado	1,325,089	4	331,272	13,314	13,314	3.86%
Connecticut	2,007,280	6	334,547	10,040	10,040	2.91%
Delaware	318,085	1	318,085	26,502	26,502	7.69%
Florida	2,771,305	8	346,413	-1,826	1,826	-0.53%
Georgia	3,444,578	10	344,458	129	129	0.04%
Hawaii						
Idaho	588,637	2	294,319	50,268	50,268	14.59%
Illinois	8,712,176	25	348,487	-3,900	3,900	-1.13%
Indiana	3,934,224	11	357,657	-13,070	13,070	-3.79%
Iowa	2,621,073	8	327,634	16,953	16,953	4.92%
Kansas	1,905,299	6	317,550	27,037	27,037	7.85%
Kentucky	2,944,806	8	368,101	-23,514	23,514	-6.82%
Louisiana	2,683,516	8	335,440	9,147	9,147	2.65%
Maine	913,774	3	304,591	39,995	39,995	11.61%
Maryland	2,343,001	7	334,714	9,872	9,872	2.86%
Massachusetts	4,690,514	14	335,037	9,550	9,550	2.77%
Michigan	6,371,766	18	353,987	-9,400	9,400	-2.73%
Minnesota	2,982,483	9	331,387	13,200	13,200	3.83%
Mississippi	2,178,914	6	363,152	-18,566	18,566	-5.39%
Missouri	3,954,653	11	359,514	-14,927	14,927	-4.33%
Montana	591,024	2	295,512	49,075	49,075	14.24%
Nebraska	1,325,510	4	331,378	13,209	13,209	3.83%
Nevada	160,083	1	160,083	184,504	184,504	53.54%
New Hampshire	533,242	2	266,621	77,966	77,966	22.63%
New Jersey	4,835,329	14	345,381	-794	794	-0.23%
New Mexico	681,187	2	340,594	3,993	3,993	1.16%
New York	14,830,192	43	344,888	-302	302	-0.09%
North Carolina	4,061,929	12	338,494	6,093	6,093	1.77%
North Dakota	619,636	2	309,818	34,769	34,769	10.09%
Ohio	7,946,627	23	345,506	-919	919	-0.27%
Oklahoma	2,233,351	6	372,225	-27,639	27,639	-8.02%
Oregon	1,521,341	4	380,335	-35,749	35,749	-10.37%
Pennsylvania	10,498,012	30	349,934	-5,347	5,347	-1.55%
Rhode Island	791,896	2	395,948	-51,361	51,361	-14.91%
South Carolina	2,117,027	6	352,838	-8,251	8,251	-2.39%
South Dakota	652,740	2	326,370	18,217	18,217	5.29%
Tennessee	3,291,718	9	365,746	-21,160	21,160	-6.14%
Texas	7,711,194	22	350,509	-5,922	5,922	-1.72%
Utah	688,862	2	344,431	156	156	0.05%
Vermont	377,747	1	377,747	-33,160	33,160	-9.62%
Virginia	3,318,680	10	331,868	12,719	12,719	3.69%
Washington	2,378,963	7	339,852	4,735	4,735	1.37%
West Virginia	2,005,552	6	334,259	10,328	10,328	3.00%
Wisconsin	3,434,575	10	343,458	1,129	1,129	0.33%
Wyoming	290,529	1	290,529	54,058	54,058	15.69%
Totals	149,895,183	435	344,587			
Voter Equivalency Ratio			2.47			
Most Underrepresented				-51,361		-14.91%
Most Overrepresented				184,504		53.54%
Maximum Deviation				235,865		
% Max Deviation						68.45%
Mean Absolute Deviation					21,708	
% Mean Abs Deviation						6.30%

1960

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	3,266,740	8	408,343	2,138	2,138	0.52%
Alaska	226,167	1	226,167	184,314	184,314	44.90%
Arizona	1,302,161	3	434,054	-23,573	23,573	-5.74%
Arkansas	1,786,272	4	446,568	-36,087	36,087	-8.79%
California	15,717,204	38	413,611	-3,130	3,130	-0.76%
Colorado	1,753,947	4	438,487	-28,006	28,006	-6.82%
Connecticut	2,535,234	6	422,539	-12,058	12,058	-2.94%
Delaware	446,292	1	446,292	-35,811	35,811	-8.72%
Florida	4,951,560	12	412,630	-2,149	2,149	-0.52%
Georgia	3,943,116	10	394,312	16,169	16,169	3.94%
Hawaii	632,772	2	316,386	94,095	94,095	22.92%
Idaho	667,191	2	333,596	76,885	76,885	18.73%
Illinois	10,081,158	24	420,048	-9,567	9,567	-2.33%
Indiana	4,662,498	11	423,863	-13,382	13,382	-3.26%
Iowa	2,757,537	7	393,934	16,547	16,547	4.03%
Kansas	2,178,611	5	435,722	-25,241	25,241	-6.15%
Kentucky	3,038,156	7	434,022	-23,541	23,541	-5.74%
Louisiana	3,257,022	8	407,128	3,353	3,353	0.82%
Maine	969,265	2	484,633	-74,152	74,152	-18.06%
Maryland	3,100,689	8	387,586	22,895	22,895	5.58%
Massachusetts	5,148,578	12	429,048	-18,567	18,567	-4.52%
Michigan	7,823,194	19	411,747	-1,266	1,266	-0.31%
Minnesota	3,413,864	8	426,733	-16,252	16,252	-3.96%
Mississippi	2,178,141	5	435,628	-25,147	25,147	-6.13%
Missouri	4,319,813	10	431,981	-21,500	21,500	-5.24%
Montana	674,767	2	337,384	73,097	73,097	17.81%
Nebraska	1,411,330	3	470,443	-59,962	59,962	-14.61%
Nevada	285,278	1	285,278	125,203	125,203	30.50%
New Hampshire	606,921	2	303,461	107,020	107,020	26.07%
New Jersey	6,066,782	15	404,452	6,029	6,029	1.47%
New Mexico	951,023	2	475,512	-65,031	65,031	-15.84%
New York	16,782,304	41	409,324	1,156	1,156	0.28%
North Carolina	4,556,155	11	414,196	-3,715	3,715	-0.91%
North Dakota	632,446	2	316,223	94,258	94,258	22.96%
Ohio	9,706,397	24	404,433	6,048	6,048	1.47%
Oklahoma	2,328,284	6	388,047	22,434	22,434	5.47%
Oregon	1,768,687	4	442,172	-31,691	31,691	-7.72%
Pennsylvania	11,319,366	27	419,236	-8,755	8,755	-2.13%
Rhode Island	859,488	2	429,744	-19,263	19,263	-4.69%
South Carolina	2,382,594	6	397,099	13,382	13,382	3.26%
South Dakota	680,514	2	340,257	70,224	70,224	17.11%
Tennessee	3,567,089	9	396,343	14,138	14,138	3.44%
Texas	9,579,677	23	416,508	-6,027	6,027	-1.47%
Utah	890,627	2	445,314	-34,833	34,833	-8.49%
Vermont	389,881	1	389,881	20,600	20,600	5.02%
Virginia	3,966,949	10	396,695	13,786	13,786	3.36%
Washington	2,853,214	7	407,602	2,879	2,879	0.70%
West Virginia	1,860,421	5	372,084	38,397	38,397	9.35%
Wisconsin	3,951,777	10	395,178	15,303	15,303	3.73%
Wyoming	330,066	1	330,066	80,415	80,415	19.59%
Totals	178,559,219	435	410,481			
Voter Equivalency Ratio			2.14			
Most Underrepresented				-74,152		-18.06%
Most Overrepresented				184,314		44.90%
Maximum Deviation				258,466		
% Max Deviation						62.97%
Mean Absolute Deviation					34,389	
% Mean Abs Deviation						8.38%

1970

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	3,475,885	7	496,555	-27,467	27,467	-5.86%
Alaska	304,067	1	304,067	165,021	165,021	35.18%
Arizona	1,787,620	4	446,905	22,183	22,183	4.73%
Arkansas	1,942,303	4	485,576	-16,488	16,488	-3.51%
California	20,098,863	43	467,415	1,673	1,673	0.36%
Colorado	2,226,771	5	445,354	23,734	23,734	5.06%
Connecticut	3,050,693	6	508,449	-39,361	39,361	-8.39%
Delaware	551,928	1	551,928	-82,840	82,840	-17.66%
Florida	6,855,702	15	457,047	12,041	12,041	2.57%
Georgia	4,627,306	10	462,731	6,358	6,358	1.36%
Hawaii	784,901	2	392,451	76,638	76,638	16.34%
Idaho	719,921	2	359,961	109,128	109,128	23.26%
Illinois	11,184,320	24	466,013	3,075	3,075	0.66%
Indiana	5,228,156	11	475,287	-6,199	6,199	-1.32%
Iowa	2,846,920	6	474,487	-5,399	5,399	-1.15%
Kansas	2,265,846	5	453,169	15,919	15,919	3.39%
Kentucky	3,246,481	7	463,783	5,305	5,305	1.13%
Louisiana	3,672,008	8	459,001	10,087	10,087	2.15%
Maine	1,006,320	2	503,160	-34,072	34,072	-7.26%
Maryland	3,953,698	8	494,212	-25,124	25,124	-5.36%
Massachusetts	5,726,676	12	477,223	-8,135	8,135	-1.73%
Michigan	8,937,196	19	470,379	-1,291	1,291	-0.28%
Minnesota	3,833,173	8	479,147	-10,059	10,059	-2.14%
Mississippi	2,233,848	5	446,770	22,319	22,319	4.76%
Missouri	4,718,034	10	471,803	-2,715	2,715	-0.58%
Montana	701,573	2	350,787	118,302	118,302	25.22%
Nebraska	1,496,820	3	498,940	-29,852	29,852	-6.36%
Nevada	492,396	1	492,396	-23,308	23,308	-4.97%
New Hampshire	746,284	2	373,142	95,946	95,946	20.45%
New Jersey	7,208,035	15	480,536	-11,448	11,448	-2.44%
New Mexico	1,026,664	2	513,332	-44,244	44,244	-9.43%
New York	18,338,055	39	470,207	-1,118	1,118	-0.24%
North Carolina	5,125,230	11	465,930	3,158	3,158	0.67%
North Dakota	624,181	1	624,181	-155,093	155,093	-33.06%
Ohio	10,730,200	23	466,530	2,558	2,558	0.55%
Oklahoma	2,585,486	6	430,914	38,174	38,174	8.14%
Oregon	2,110,810	4	527,703	-58,614	58,614	-12.50%
Pennsylvania	11,884,314	25	475,373	-6,284	6,284	-1.34%
Rhode Island	957,798	2	478,899	-9,811	9,811	-2.09%
South Carolina	2,617,320	6	436,220	32,868	32,868	7.01%
South Dakota	673,247	2	336,624	132,465	132,465	28.24%
Tennessee	3,961,060	8	495,133	-26,044	26,044	-5.55%
Texas	11,298,787	24	470,783	-1,695	1,695	-0.36%
Utah	1,067,810	2	533,905	-64,817	64,817	-13.82%
Vermont	448,327	1	448,327	20,761	20,761	4.43%
Virginia	4,690,742	10	469,074	14	14	0.00%
Washington	3,443,487	7	491,927	-22,839	22,839	-4.87%
West Virginia	1,763,331	4	440,833	28,255	28,255	6.02%
Wisconsin	4,447,013	9	494,113	-25,024	25,024	-5.33%
Wyoming	335,719	1	335,719	133,369	133,369	28.43%
Totals	204,053,325	435	469,088			
Voter Equivalency Ratio			2.05			
Most Underrepresented				-155,093		-33.06%
Most Overrepresented				165,021		35.18%
Maximum Deviation				320,114		
% Max Deviation						68.24%
Mean Absolute Deviation					36,374	
% Mean Abs Deviation						7.75%

1980

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	3,890,061	7	555,723	-36,488	36,488	-7.03%
Alaska	400,481	1	400,481	118,754	118,754	22.87%
Arizona	2,717,866	5	543,573	-24,338	24,338	-4.69%
Arkansas	2,285,513	4	571,378	-52,143	52,143	-10.04%
California	23,668,562	45	525,968	-6,733	6,733	-1.30%
Colorado	2,888,834	6	481,472	37,763	37,763	7.27%
Connecticut	3,107,576	6	517,929	1,306	1,306	0.25%
Delaware	595,225	1	595,225	-75,990	75,990	-14.64%
Florida	9,739,992	19	512,631	6,604	6,604	1.27%
Georgia	5,464,265	10	546,427	-27,192	27,192	-5.24%
Hawaii	965,000	2	482,500	36,735	36,735	7.07%
Idaho	943,935	2	471,968	47,267	47,267	9.10%
Illinois	11,418,461	22	519,021	214	214	0.04%
Indiana	5,490,179	10	549,018	-29,783	29,783	-5.74%
Iowa	2,913,387	6	485,565	33,670	33,670	6.48%
Kansas	2,363,208	5	472,642	46,593	46,593	8.97%
Kentucky	3,661,433	7	523,062	-3,827	3,827	-0.74%
Louisiana	4,203,972	8	525,497	-6,262	6,262	-1.21%
Maine	1,124,660	2	562,330	-43,095	43,095	-8.30%
Maryland	4,216,446	8	527,056	-7,821	7,821	-1.51%
Massachusetts	5,737,037	11	521,549	-2,314	2,314	-0.45%
Michigan	9,258,344	18	514,352	4,882	4,882	0.94%
Minnesota	4,077,148	8	509,644	9,591	9,591	1.85%
Mississippi	2,520,638	5	504,128	15,107	15,107	2.91%
Missouri	4,917,444	9	546,383	-27,148	27,148	-5.23%
Montana	786,690	2	393,345	125,890	125,890	24.25%
Nebraska	1,570,006	3	523,335	-4,100	4,100	-0.79%
Nevada	799,184	2	399,592	119,643	119,643	23.04%
New Hampshire	920,610	2	460,305	58,930	58,930	11.35%
New Jersey	7,364,158	14	526,011	-6,776	6,776	-1.31%
New Mexico	1,299,968	3	433,323	85,912	85,912	16.55%
New York	17,557,288	34	516,391	2,844	2,844	0.55%
North Carolina	5,874,429	11	534,039	-14,804	14,804	-2.85%
North Dakota	652,695	1	652,695	-133,460	133,460	-25.70%
Ohio	10,797,419	21	514,163	5,072	5,072	0.98%
Oklahoma	3,025,266	6	504,211	15,024	15,024	2.89%
Oregon	2,632,663	5	526,533	-7,298	7,298	-1.41%
Pennsylvania	11,866,728	23	515,945	3,290	3,290	0.63%
Rhode Island	947,154	2	473,577	45,658	45,658	8.79%
South Carolina	3,119,208	6	519,868	-633	633	-0.12%
South Dakota	690,178	1	690,178	-170,943	170,943	-32.92%
Tennessee	4,590,750	9	510,083	9,152	9,152	1.76%
Texas	14,228,383	27	526,977	-7,742	7,742	-1.49%
Utah	1,461,037	3	487,012	32,223	32,223	6.21%
Vermont	511,456	1	511,456	7,779	7,779	1.50%
Virginia	5,346,279	10	534,628	-15,393	15,393	-2.96%
Washington	4,130,163	8	516,270	2,965	2,965	0.57%
West Virginia	1,949,644	4	487,411	31,824	31,824	6.13%
Wisconsin	4,705,335	9	522,815	-3,580	3,580	-0.69%
Wyoming	470,816	1	470,816	48,419	48,419	9.33%
Totals	225,867,174	435	519,235			
Voter Equivalency Ratio			1.75			
Most Underrepresented				-170,943		-32.92%
Most Overrepresented				125,890		24.25%
Maximum Deviation				296,833		
% Max Deviation						57.17%
Mean Absolute Deviation					33,219	
% Mean Abs Deviation						6.40%

1990

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,062,608	7	580,373	-7,906	7,906	-1.38%
Alaska	551,947	1	551,947	20,519	20,519	3.58%
Arizona	3,677,985	6	612,998	-40,531	40,531	-7.08%
Arkansas	2,362,239	4	590,560	-18,094	18,094	-3.16%
California	29,839,250	52	573,832	-1,366	1,366	-0.24%
Colorado	3,307,912	6	551,319	21,148	21,148	3.69%
Connecticut	3,295,669	6	549,278	23,188	23,188	4.05%
Delaware	668,696	1	668,696	-96,230	96,230	-16.81%
Florida	13,003,362	23	565,364	7,103	7,103	1.24%
Georgia	6,508,419	11	591,674	-19,208	19,208	-3.36%
Hawaii	1,115,274	2	557,637	14,829	14,829	2.59%
Idaho	1,011,986	2	505,993	66,473	66,473	11.61%
Illinois	11,466,682	20	573,334	-868	868	-0.15%
Indiana	5,564,228	10	556,423	16,043	16,043	2.80%
Iowa	2,787,424	5	557,485	14,981	14,981	2.62%
Kansas	2,485,600	4	621,400	-48,934	48,934	-8.55%
Kentucky	3,698,969	6	616,495	-44,029	44,029	-7.69%
Louisiana	4,238,216	7	605,459	-32,993	32,993	-5.76%
Maine	1,233,223	2	616,612	-44,145	44,145	-7.71%
Maryland	4,798,622	8	599,828	-27,362	27,362	-4.78%
Massachusetts	6,029,051	10	602,905	-30,439	30,439	-5.32%
Michigan	9,328,784	16	583,049	-10,583	10,583	-1.85%
Minnesota	4,387,029	8	548,379	24,088	24,088	4.21%
Mississippi	2,586,443	5	517,289	55,178	55,178	9.64%
Missouri	5,137,804	9	570,867	1,599	1,599	0.28%
Montana	803,655	1	803,655	-231,189	231,189	-40.38%
Nebraska	1,584,617	3	528,206	44,261	44,261	7.73%
Nevada	1,206,152	2	603,076	-30,610	30,610	-5.35%
New Hampshire	1,113,915	2	556,958	15,509	15,509	2.71%
New Jersey	7,748,634	13	596,049	-23,583	23,583	-4.12%
New Mexico	1,521,779	3	507,260	65,207	65,207	11.39%
New York	18,044,505	31	582,081	-9,615	9,615	-1.68%
North Carolina	6,657,630	12	554,803	17,664	17,664	3.09%
North Dakota	641,364	1	641,364	-68,898	68,898	-12.04%
Ohio	10,887,325	19	573,017	-551	551	-0.10%
Oklahoma	3,157,604	6	526,267	46,199	46,199	8.07%
Oregon	2,853,733	5	570,747	1,720	1,720	0.30%
Pennsylvania	11,924,710	21	567,843	4,623	4,623	0.81%
Rhode Island	1,005,984	2	502,992	69,474	69,474	12.14%
South Carolina	3,505,707	6	584,285	-11,818	11,818	-2.06%
South Dakota	699,999	1	699,999	-127,533	127,533	-22.28%
Tennessee	4,896,641	9	544,071	28,395	28,395	4.96%
Texas	17,059,805	30	568,660	3,806	3,806	0.66%
Utah	1,727,784	3	575,928	-3,462	3,462	-0.60%
Vermont	564,964	1	564,964	7,502	7,502	1.31%
Virginia	6,216,568	11	565,143	7,324	7,324	1.28%
Washington	4,887,941	9	543,105	29,362	29,362	5.13%
West Virginia	1,801,625	3	600,542	-28,075	28,075	-4.90%
Wisconsin	4,906,745	9	545,194	27,272	27,272	4.76%
Wyoming	455,975	1	455,975	116,491	116,491	20.35%
Totals	249,022,783	435	572,466			
Voter Equivalency Ratio			1.76			
Most Underrepresented				-231,189		-40.38%
Most Overrepresented				116,491		20.35%
Maximum Deviation				347,680		
% Max Deviation						60.73%
Mean Absolute Deviation					34,160	
% Mean Abs Deviation						5.97%

2000

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	7	637,304	9,648	9,648	1.49%
Alaska	628,933	1	628,933	18,019	18,019	2.79%
Arizona	5,140,683	8	642,585	4,367	4,367	0.67%
Arkansas	2,679,733	4	669,933	-22,981	22,981	-3.55%
California	33,930,798	53	640,204	6,748	6,748	1.04%
Colorado	4,311,882	7	615,983	30,969	30,969	4.79%
Connecticut	3,409,535	5	681,907	-34,955	34,955	-5.40%
Delaware	785,068	1	785,068	-138,116	138,116	-21.35%
Florida	16,028,890	25	641,156	5,797	5,797	0.90%
Georgia	8,206,975	13	631,306	15,646	15,646	2.42%
Hawaii	1,216,642	2	608,321	38,631	38,631	5.97%
Idaho	1,297,274	2	648,637	-1,685	1,685	-0.26%
Illinois	12,439,042	19	654,686	-7,734	7,734	-1.20%
Indiana	6,090,782	9	676,754	-29,801	29,801	-4.61%
Iowa	2,931,923	5	586,385	60,568	60,568	9.36%
Kansas	2,693,824	4	673,456	-26,504	26,504	-4.10%
Kentucky	4,049,431	6	674,905	-27,953	27,953	-4.32%
Louisiana	4,480,271	7	640,039	6,913	6,913	1.07%
Maine	1,277,731	2	638,866	8,087	8,087	1.25%
Maryland	5,307,886	8	663,486	-16,534	16,534	-2.56%
Massachusetts	6,355,568	10	635,557	11,395	11,395	1.76%
Michigan	9,955,829	15	663,722	-16,770	16,770	-2.59%
Minnesota	4,925,670	8	615,709	31,243	31,243	4.83%
Mississippi	2,852,927	4	713,232	-66,280	66,280	-10.24%
Missouri	5,606,260	9	622,918	24,034	24,034	3.72%
Montana	905,316	1	905,316	-258,364	258,364	-39.94%
Nebraska	1,715,369	3	571,790	75,162	75,162	11.62%
Nevada	2,002,032	3	667,344	-20,392	20,392	-3.15%
New Hampshire	1,238,415	2	619,208	27,745	27,745	4.29%
New Jersey	8,424,354	13	648,027	-1,075	1,075	-0.17%
New Mexico	1,823,821	3	607,940	39,012	39,012	6.03%
New York	19,004,973	29	655,344	-8,392	8,392	-1.30%
North Carolina	8,067,673	13	620,590	26,362	26,362	4.07%
North Dakota	643,756	1	643,756	3,196	3,196	0.49%
Ohio	11,374,540	18	631,919	15,033	15,033	2.32%
Oklahoma	3,458,819	5	691,764	-44,812	44,812	-6.93%
Oregon	3,428,543	5	685,709	-38,756	38,756	-5.99%
Pennsylvania	12,300,670	19	647,404	-452	452	-0.07%
Rhode Island	1,049,662	2	524,831	122,121	122,121	18.88%
South Carolina	4,025,061	6	670,844	-23,891	23,891	-3.69%
South Dakota	756,874	1	756,874	-109,922	109,922	-16.99%
Tennessee	5,700,037	9	633,337	13,615	13,615	2.10%
Texas	20,903,994	32	653,250	-6,298	6,298	-0.97%
Utah	2,236,714	3	745,571	-98,619	98,619	-15.24%
Vermont	609,890	1	609,890	37,062	37,062	5.73%
Virginia	7,100,702	11	645,518	1,434	1,434	0.22%
Washington	5,908,684	9	656,520	-9,568	9,568	-1.48%
West Virginia	1,813,077	3	604,359	42,593	42,593	6.58%
Wisconsin	5,371,210	8	671,401	-24,449	24,449	-3.78%
Wyoming	495,304	1	495,304	151,648	151,648	23.44%
Totals	281,424,177	435	646,952			
Voter Equivalency Ratio			1.83			
Most Underrepresented				-258,364		-39.94%
Most Overrepresented				151,648		23.44%
Maximum Deviation				410,012		
% Max Deviation						63.38%
Mean Absolute Deviation					37,227	
% Mean Abs Deviation						5.75%

2010

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
.Alabama	4,596,330	6	766,055	-57,076	57,076	-8.05%
.Alaska	694,109	1	694,109	14,870	14,870	2.10%
.Arizona	6,637,381	9	737,487	-28,508	28,508	-4.02%
.Arkansas	2,875,039	4	718,760	-9,781	9,781	-1.38%
.California	38,067,134	54	704,947	4,032	4,032	0.57%
.Colorado	4,831,554	7	690,222	18,757	18,757	2.65%
.Connecticut	3,577,490	5	715,498	-6,519	6,519	-0.92%
.Delaware	884,342	1	884,342	-175,363	175,363	-24.73%
.Florida	19,251,691	27	713,026	-4,047	4,047	-0.57%
.Georgia	9,589,080	14	684,934	24,045	24,045	3.39%
.Hawaii	1,340,674	2	670,337	38,642	38,642	5.45%
.Idaho	1,517,291	2	758,646	-49,667	49,667	-7.01%
.Illinois	12,916,894	18	717,605	-8,626	8,626	-1.22%
.Indiana	6,392,139	9	710,238	-1,259	1,259	-0.18%
.Iowa	3,009,907	4	752,477	-43,498	43,498	-6.14%
.Kansas	2,805,470	4	701,368	7,611	7,611	1.07%
.Kentucky	4,265,117	6	710,853	-1,874	1,874	-0.26%
.Louisiana	4,612,679	7	658,954	50,025	50,025	7.06%
.Maine	1,357,134	2	678,567	30,412	30,412	4.29%
.Maryland	5,904,970	8	738,121	-29,142	29,142	-4.11%
.Massachusetts	6,649,441	9	738,827	-29,848	29,848	-4.21%
.Michigan	10,428,683	15	695,246	13,733	13,733	1.94%
.Minnesota	5,420,636	8	677,580	31,399	31,399	4.43%
.Mississippi	2,971,412	4	742,853	-33,874	33,874	-4.78%
.Missouri	5,922,078	8	740,260	-31,281	31,281	-4.41%
.Montana	968,598	1	968,598	-259,619	259,619	-36.62%
.Nebraska	1,768,997	3	589,666	119,313	119,313	16.83%
.Nevada	2,690,531	4	672,633	36,346	36,346	5.13%
.New Hampshire	1,385,560	2	692,780	16,199	16,199	2.28%
.New Jersey	9,018,231	13	693,710	15,269	15,269	2.15%
.New Mexico	1,980,225	3	660,075	48,904	48,904	6.90%
.New York	19,443,672	27	720,136	-11,157	11,157	-1.57%
.North Carolina	9,345,823	13	718,909	-9,931	9,931	-1.40%
.North Dakota	636,623	1	636,623	72,356	72,356	10.21%
.Ohio	11,576,181	16	723,511	-14,532	14,532	-2.05%
.Oklahoma	3,591,516	5	718,303	-9,324	9,324	-1.32%
.Oregon	3,790,996	5	758,199	-49,220	49,220	-6.94%
.Pennsylvania	12,584,487	18	699,138	9,841	9,841	1.39%
.Rhode Island	1,116,652	2	558,326	150,653	150,653	21.25%
.South Carolina	4,446,704	6	741,117	-32,138	32,138	-4.53%
.South Dakota	786,399	1	786,399	-77,420	77,420	-10.92%
.Tennessee	6,230,852	9	692,317	16,662	16,662	2.35%
.Texas	24,648,888	35	704,254	4,725	4,725	0.67%
.Utah	2,595,013	4	648,753	60,226	60,226	8.49%
.Vermont	652,512	1	652,512	56,467	56,467	7.96%
.Virginia	8,010,245	11	728,204	-19,225	19,225	-2.71%
.Washington	6,541,963	9	726,885	-17,906	17,906	-2.53%
.West Virginia	1,829,141	3	609,714	99,265	99,265	14.00%
.Wisconsin	5,727,426	8	715,928	-6,949	6,949	-0.98%
.Wyoming	519,886	1	519,886	189,093	189,093	26.67%
Totals	308,405,796	435	708,979			
Voter Equivalency Ratio			1.86			
Most Underrepresented				-259,619		-36.62%
Most Overrepresented				189,093		26.67%
Maximum Deviation				448,712		
% Max Deviation						63.29%
Mean Absolute Deviation					42,933	
% Mean Abs Deviation						6.06%

2020

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
.Alabama	4,728,915	6	788,153	-17,293	17,293	-2.24%
.Alaska	774,421	1	774,421	-3,561	3,561	-0.46%
.Arizona	8,456,448	11	768,768	2,092	2,092	0.27%
.Arkansas	3,060,219	4	765,055	5,805	5,805	0.75%
.California	42,206,743	54	781,606	-10,747	10,747	-1.39%
.Colorado	5,278,867	7	754,124	16,736	16,736	2.17%
.Connecticut	3,675,650	5	735,130	35,730	35,730	4.64%
.Delaware	963,209	1	963,209	-192,349	192,349	-24.95%
.Florida	23,406,525	30	780,218	-9,358	9,358	-1.21%
.Georgia	10,843,753	14	774,554	-3,694	3,694	-0.48%
.Hawaii	1,412,373	2	706,187	64,673	64,673	8.39%
.Idaho	1,741,333	2	870,667	-99,807	99,807	-12.95%
.Illinois	13,236,720	17	778,631	-7,771	7,771	-1.01%
.Indiana	6,627,008	9	736,334	34,526	34,526	4.48%
.Iowa	3,020,496	4	755,124	15,736	15,736	2.04%
.Kansas	2,890,566	4	722,642	48,218	48,218	6.26%
.Kentucky	4,424,431	6	737,405	33,455	33,455	4.34%
.Louisiana	4,719,160	6	786,527	-15,667	15,667	-2.03%
.Maine	1,408,665	2	704,333	66,527	66,527	8.63%
.Maryland	6,497,626	8	812,203	-41,343	41,343	-5.36%
.Massachusetts	6,855,546	9	761,727	9,132	9,132	1.18%
.Michigan	10,695,993	14	764,000	6,860	6,860	0.89%
.Minnesota	5,900,769	8	737,596	33,264	33,264	4.32%
.Mississippi	3,044,812	4	761,203	9,657	9,657	1.25%
.Missouri	6,199,882	8	774,985	-4,125	4,125	-0.54%
.Montana	1,022,735	1	1,022,735	-251,875	251,875	-32.67%
.Nebraska	1,802,678	2	901,339	-130,479	130,479	-16.93%
.Nevada	3,452,283	4	863,071	-92,211	92,211	-11.96%
.New Hampshire	1,524,751	2	762,376	8,484	8,484	1.10%
.New Jersey	9,461,635	12	788,470	-17,610	17,610	-2.28%
.New Mexico	2,084,341	3	694,780	76,079	76,079	9.87%
.New York	19,576,920	25	783,077	-12,217	12,217	-1.58%
.North Carolina	10,709,289	14	764,949	5,911	5,911	0.77%
.North Dakota	630,112	1	630,112	140,748	140,748	18.26%
.Ohio	11,644,058	15	776,271	-5,411	5,411	-0.70%
.Oklahoma	3,735,690	5	747,138	23,722	23,722	3.08%
.Oregon	4,260,393	6	710,066	60,794	60,794	7.89%
.Pennsylvania	12,787,354	16	799,210	-28,350	28,350	-3.68%
.Rhode Island	1,154,230	2	577,115	193,745	193,745	25.13%
.South Carolina	4,822,577	6	803,763	-32,903	32,903	-4.27%
.South Dakota	801,939	1	801,939	-31,079	31,079	-4.03%
.Tennessee	6,780,670	9	753,408	17,452	17,452	2.26%
.Texas	28,634,896	37	773,916	-3,056	3,056	-0.40%
.Utah	2,990,094	4	747,524	23,336	23,336	3.03%
.Vermont	690,686	1	690,686	80,174	80,174	10.40%
.Virginia	8,917,395	12	743,116	27,744	27,744	3.60%
.Washington	7,432,136	10	743,214	27,646	27,646	3.59%
.West Virginia	1,801,112	2	900,556	-129,696	129,696	-16.82%
.Wisconsin	6,004,954	8	750,619	20,241	20,241	2.63%
.Wyoming	530,948	1	530,948	239,912	239,912	31.12%
Totals	335,324,006	435	770,860			
Voter Equivalency Ratio			1.93			
Most Underrepresented				-251,875		-32.67%
Most Overrepresented				239,912		31.12%
Maximum Deviation				491,787		
% Max Deviation						63.80%
Mean Absolute Deviation					49,380	
% Mean Abs Deviation						6.41%

2030

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
.Alabama	4,874,243	6	812,374	22,456	22,456	2.69%
.Alaska	867,674	1	867,674	-32,844	32,844	-3.93%
.Arizona	10,712,397	13	824,031	10,799	10,799	1.29%
.Arkansas	3,240,208	4	810,052	24,778	24,778	2.97%
.California	46,444,861	55	844,452	-9,622	9,622	-1.15%
.Colorado	5,792,357	7	827,480	7,350	7,350	0.88%
.Connecticut	3,688,630	4	922,158	-87,328	87,328	-10.46%
.Delaware	1,012,658	1	1,012,658	-177,828	177,828	-21.30%
.Florida	28,685,769	34	843,699	-8,869	8,869	-1.06%
.Georgia	12,017,838	14	858,417	-23,587	23,587	-2.83%
.Hawaii	1,466,046	2	733,023	101,807	101,807	12.19%
.Idaho	1,969,624	2	984,812	-149,982	149,982	-17.97%
.Illinois	13,432,892	16	839,556	-4,726	4,726	-0.57%
.Indiana	6,810,108	8	851,264	-16,434	16,434	-1.97%
.Iowa	2,955,172	4	738,793	96,037	96,037	11.50%
.Kansas	2,940,084	4	735,021	99,809	99,809	11.96%
.Kentucky	4,554,998	5	911,000	-76,170	76,170	-9.12%
.Louisiana	4,802,633	6	800,439	34,391	34,391	4.12%
.Maine	1,411,097	2	705,549	129,281	129,281	15.49%
.Maryland	7,022,251	8	877,781	-42,951	42,951	-5.14%
.Massachusetts	7,012,009	8	876,501	-41,671	41,671	-4.99%
.Michigan	10,694,172	13	822,629	12,201	12,201	1.46%
.Minnesota	6,306,130	8	788,266	46,564	46,564	5.58%
.Mississippi	3,092,410	4	773,103	61,727	61,727	7.39%
.Missouri	6,430,173	8	803,772	31,058	31,058	3.72%
.Montana	1,044,898	1	1,044,898	-210,068	210,068	-25.16%
.Nebraska	1,820,247	2	910,124	-75,294	75,294	-9.02%
.Nevada	4,282,102	5	856,420	-21,590	21,590	-2.59%
.New Hampshire	1,646,471	2	823,236	11,594	11,594	1.39%
.New Jersey	9,802,440	12	816,870	17,960	17,960	2.15%
.New Mexico	2,099,708	3	699,903	134,927	134,927	16.16%
.New York	19,477,429	23	846,845	-12,015	12,015	-1.44%
.North Carolina	12,227,739	15	815,183	19,647	19,647	2.35%
.North Dakota	606,566	1	606,566	228,264	228,264	27.34%
.Ohio	11,550,528	14	825,038	9,792	9,792	1.17%
.Oklahoma	3,913,251	5	782,650	52,180	52,180	6.25%
.Oregon	4,833,918	6	805,653	29,177	29,177	3.49%
.Pennsylvania	12,768,184	15	851,212	-16,382	16,382	-1.96%
.Rhode Island	1,152,941	1	1,152,941	-318,111	318,111	-38.10%
.South Carolina	5,148,569	6	858,095	-23,265	23,265	-2.79%
.South Dakota	800,462	1	800,462	34,368	34,368	4.12%
.Tennessee	7,380,634	9	820,070	14,759	14,759	1.77%
.Texas	33,317,744	40	832,944	1,886	1,886	0.23%
.Utah	3,485,367	4	871,342	-36,512	36,512	-4.37%
.Vermont	711,867	1	711,867	122,963	122,963	14.73%
.Virginia	9,825,019	12	818,752	16,078	16,078	1.93%
.Washington	8,624,801	10	862,480	-27,650	27,650	-3.31%
.West Virginia	1,719,959	2	859,980	-25,150	25,150	-3.01%
.Wisconsin	6,150,764	7	878,681	-43,851	43,851	-5.25%
.Wyoming	522,979	1	522,979	311,851	311,851	37.36%
Totals	363,151,021	435	834,830			
Voter Equivalency Ratio			2.20			
Most Underrepresented				-318,111		-38.10%
Most Overrepresented				311,851		37.36%
Maximum Deviation				629,962		
% Max Deviation						75.46%
Mean Absolute Deviation					63,312	
% Mean Abs Deviation						7.58%

Exhibit 9

Apportionment with 300 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	5	892,226	45,855	45,855	4.89%
Alaska	628,933	1	628,933	309,148	309,148	32.96%
Arizona	5,140,683	5	1,028,137	-90,056	90,056	-9.60%
Arkansas	2,679,733	3	893,244	44,836	44,836	4.78%
California	33,930,798	36	942,522	-4,442	4,442	-0.47%
Colorado	4,311,882	5	862,376	75,704	75,704	8.07%
Connecticut	3,409,535	4	852,384	85,697	85,697	9.14%
Delaware	785,068	1	785,068	153,013	153,013	16.31%
Florida	16,028,890	17	942,876	-4,795	4,795	-0.51%
Georgia	8,206,975	9	911,886	26,194	26,194	2.79%
Hawaii	1,216,642	1	1,216,642	-278,561	278,561	-29.69%
Idaho	1,297,274	1	1,297,274	-359,193	359,193	-38.29%
Illinois	12,439,042	13	956,849	-18,769	18,769	-2.00%
Indiana	6,090,782	6	1,015,130	-77,050	77,050	-8.21%
Iowa	2,931,923	3	977,308	-39,227	39,227	-4.18%
Kansas	2,693,824	3	897,941	40,139	40,139	4.28%
Kentucky	4,049,431	4	1,012,358	-74,277	74,277	-7.92%
Louisiana	4,480,271	5	896,054	42,026	42,026	4.48%
Maine	1,277,731	1	1,277,731	-339,650	339,650	-36.21%
Maryland	5,307,886	6	884,648	53,433	53,433	5.70%
Massachusetts	6,355,568	7	907,938	30,142	30,142	3.21%
Michigan	9,955,829	11	905,075	33,005	33,005	3.52%
Minnesota	4,925,670	5	985,134	-47,053	47,053	-5.02%
Mississippi	2,852,927	3	950,976	-12,895	12,895	-1.37%
Missouri	5,606,260	6	934,377	3,704	3,704	0.39%
Montana	905,316	1	905,316	32,765	32,765	3.49%
Nebraska	1,715,369	2	857,685	80,396	80,396	8.57%
Nevada	2,002,032	2	1,001,016	-62,935	62,935	-6.71%
New Hampshire	1,238,415	1	1,238,415	-300,334	300,334	-32.02%
New Jersey	8,424,354	9	936,039	2,041	2,041	0.22%
New Mexico	1,823,821	2	911,911	26,170	26,170	2.79%
New York	19,004,973	20	950,249	-12,168	12,168	-1.30%
North Carolina	8,067,673	9	896,408	41,672	41,672	4.44%
North Dakota	643,756	1	643,756	294,325	294,325	31.38%
Ohio	11,374,540	12	947,878	-9,798	9,798	-1.04%
Oklahoma	3,458,819	4	864,705	73,376	73,376	7.82%
Oregon	3,428,543	4	857,136	80,945	80,945	8.63%
Pennsylvania	12,300,670	13	946,205	-8,125	8,125	-0.87%
Rhode Island	1,049,662	1	1,049,662	-111,581	111,581	-11.89%
South Carolina	4,025,061	4	1,006,265	-68,185	68,185	-7.27%
South Dakota	756,874	1	756,874	181,207	181,207	19.32%
Tennessee	5,700,037	6	950,006	-11,926	11,926	-1.27%
Texas	20,903,994	22	950,182	-12,101	12,101	-1.29%
Utah	2,236,714	2	1,118,357	-180,276	180,276	-19.22%
Vermont	609,890	1	609,890	328,191	328,191	34.99%
Virginia	7,100,702	7	1,014,386	-76,305	76,305	-8.13%
Washington	5,908,684	6	984,781	-46,700	46,700	-4.98%
West Virginia	1,813,077	2	906,539	31,542	31,542	3.36%
Wisconsin	5,371,210	6	895,202	42,879	42,879	4.57%
Wyoming	495,304	1	495,304	442,777	442,777	47.20%
Totals	281,424,177	300	938,081			
Voter Equivalency Ratio			2.62			
Most Underrepresented				-359,193		-38.29%
Most Overrepresented				442,777		47.20%
Maximum Deviation				801,970		
% Max Deviation						85.49%
Mean Absolute Deviation					96,952	
% Mean Abs Deviation						10.34%

Exhibit 10: International Legislatures

OECD Countries	National Population (2009 Estimate)	Lower Chamber Size (LCS)		Ideal District Size (IDS)	Ratio of U.S. IDS to other IDSs	IDS Rank	LCS Rank
LUXEMBOURG	491,775	60	*	8,196	86.17	2	1
ICELAND	306,694	63	*	4,868	145.07	1	2
NEW ZEALAND	4,213,418	120	*	35,112	20.11	9	3
SLOVAK REPUBLIC	5,463,046	150	*	36,420	19.39	11	7
BELGIUM	10,414,336	150		69,429	10.17	16	5
NETHERLANDS	16,715,999	150		111,440	6.34	22	6
AUSTRALIA	21,262,641	150		141,751	4.98	26	4
IRELAND	4,203,200	166		25,320	27.89	3	8
NORWAY	4,660,539	169	*	27,577	25.61	7	9
DENMARK	5,500,510	179	*	30,729	22.98	8	10
AUSTRIA	8,210,281	183		44,865	15.74	13	11
FINLAND	5,250,275	200	*	26,251	26.90	6	14
SWITZERLAND	7,604,467	200		38,022	18.57	12	13
CZECH REPUBLIC	10,211,904	200		51,060	13.83	15	12
PORTUGAL	10,707,924	230	*	46,556	15.17	14	15
KOREA	48,508,972	299	*	162,237	4.35	27	16
GREECE	10,737,428	300	*	35,791	19.73	10	17
CANADA	33,487,208	308		108,725	6.50	20	18
SWEDEN	9,059,651	349	*	25,959	27.21	5	19
SPAIN	40,525,002	350		115,786	6.10	23	20
HUNGARY	9,905,596	386	*	25,662	27.52	4	21
UNITED STATES	307,212,123	435		706,235	1.00	30	22
POLAND	38,482,919	460		83,659	8.44	17	23
JAPAN	127,078,679	480		264,747	2.67	29	24
MEXICO	111,211,789	500		222,424	3.18	28	25
TURKEY	76,805,524	550	*	139,646	5.06	25	26
FRANCE	64,057,792	577		111,019	6.36	21	27
GERMANY	82,329,758	622		132,363	5.34	24	28
ITALY	58,126,212	630		92,264	7.65	18	29
UNITED KINGDOM	61,113,205	646		94,602	7.47	19	30

Notes:

* Denotes unicameral legislatures.

All data is from the CIA World Factbook (see: https://www.cia.gov/library/publications/the-world-factbook/index.html, accessed January 12, 2010).

Exhibit 11

Representational Equivalency Ratios

State	Average Population of District	Montana	Delaware	South Dakota	Utah	Mississippi
Wyoming	495,304	0.55	0.63	0.65	0.66	0.69
Rhode Island	524,831	0.58	0.67	0.69	0.70	0.74
Nebraska	571,790	0.63	0.73	0.76	0.77	0.80
Iowa	586,385	0.65	0.75	0.77	0.79	0.82
West Virginia	604,359	0.67	0.77	0.80	0.81	0.85
New Mexico	607,940	0.67	0.77	0.80	0.82	0.85
Hawaii	608,321	0.67	0.77	0.80	0.82	0.85
Vermont	609,890	0.67	0.78	0.81	0.82	0.86
Minnesota	615,709	0.68	0.78	0.81	0.83	0.86
Colorado	615,983	0.68	0.78	0.81	0.83	0.86
New Hampshire	619,208	0.68	0.79	0.82	0.83	0.87
North Carolina	620,590	0.69	0.79	0.82	0.83	0.87
Missouri	622,918	0.69	0.79	0.82	0.84	0.87
Alaska	628,933	0.69	0.80	0.83	0.84	0.88
Georgia	631,306	0.70	0.80	0.83	0.85	0.89
Ohio	631,919	0.70	0.80	0.83	0.85	0.89
Tennessee	633,337	0.70	0.81	0.84	0.85	0.89
Massachusetts	635,557	0.70	0.81	0.84	0.85	0.89
Alabama	637,304	0.70	0.81	0.84	0.85	0.89
Maine	638,866	0.71	0.81	0.84	0.86	0.90
Louisiana	640,039	0.71	0.82	0.85	0.86	0.90
California	640,204	0.71	0.82	0.85	0.86	0.90
Florida	641,156	0.71	0.82	0.85	0.86	0.90
Arizona	642,585	0.71	0.82	0.85	0.86	0.90
North Dakota	643,756	0.71	0.82	0.85	0.86	0.90
Virginia	645,518	0.71	0.82	0.85	0.87	0.91
Pennsylvania	647,404	0.72	0.82	0.86	0.87	0.91
New Jersey	648,027	0.72	0.83	0.86	0.87	0.91
Idaho	648,637	0.72	0.83	0.86	0.87	0.91
Texas	653,250	0.72	0.83	0.86	0.88	0.92
Illinois	654,686	0.72	0.83	0.86	0.88	0.92
New York	655,344	0.72	0.83	0.87	0.88	0.92
Washington	656,520	0.73	0.84	0.87	0.88	0.92
Maryland	663,486	0.73	0.85	0.88	0.89	0.93
Michigan	663,722	0.73	0.85	0.88	0.89	0.93
Nevada	667,344	0.74	0.85	0.88	0.90	0.94
Arkansas	669,933	0.74	0.85	0.89	0.90	0.94
South Carolina	670,844	0.74	0.85	0.89	0.90	0.94
Wisconsin	671,401	0.74	0.86	0.89	0.90	0.94
Kansas	673,456	0.74	0.86	0.89	0.90	0.94
Kentucky	674,905	0.75	0.86	0.89	0.91	0.95
Indiana	676,754	0.75	0.86	0.89	0.91	0.95
Connecticut	681,907	0.75	0.87	0.90	0.91	0.96
Oregon	685,709	0.76	0.87	0.91	0.92	0.96
Oklahoma	691,764	0.76	0.88	0.91	0.93	0.97
Mississippi	713,232	0.79	0.91	0.94	0.96	1.00
Utah	745,571	0.82	0.95	0.99	1.00	1.05
South Dakota	756,874	0.84	0.96	1.00	1.02	1.06
Delaware	785,068	0.87	1.00	1.04	1.05	1.10
Montana	905,316	1.00	1.15	1.20	1.21	1.27

Exhibit 12: Apportionment with Varying Numbers of Seats

Apportionment with 300 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	5	892,226	45,855	45,855	4.89%
Alaska	628,933	1	628,933	309,148	309,148	32.96%
Arizona	5,140,683	5	1,028,137	-90,056	90,056	-9.60%
Arkansas	2,679,733	3	893,244	44,836	44,836	4.78%
California	33,930,798	36	942,522	-4,442	4,442	-0.47%
Colorado	4,311,882	5	862,376	75,704	75,704	8.07%
Connecticut	3,409,535	4	852,384	85,697	85,697	9.14%
Delaware	785,068	1	785,068	153,013	153,013	16.31%
Florida	16,028,890	17	942,876	-4,795	4,795	-0.51%
Georgia	8,206,975	9	911,886	26,194	26,194	2.79%
Hawaii	1,216,642	1	1,216,642	-278,561	278,561	-29.69%
Idaho	1,297,274	1	1,297,274	-359,193	359,193	-38.29%
Illinois	12,439,042	13	956,849	-18,769	18,769	-2.00%
Indiana	6,090,782	6	1,015,130	-77,050	77,050	-8.21%
Iowa	2,931,923	3	977,308	-39,227	39,227	-4.18%
Kansas	2,693,824	3	897,941	40,139	40,139	4.28%
Kentucky	4,049,431	4	1,012,358	-74,277	74,277	-7.92%
Louisiana	4,480,271	5	896,054	42,026	42,026	4.48%
Maine	1,277,731	1	1,277,731	-339,650	339,650	-36.21%
Maryland	5,307,886	6	884,648	53,433	53,433	5.70%
Massachusetts	6,355,568	7	907,938	30,142	30,142	3.21%
Michigan	9,955,829	11	905,075	33,005	33,005	3.52%
Minnesota	4,925,670	5	985,134	-47,053	47,053	-5.02%
Mississippi	2,852,927	3	950,976	-12,895	12,895	-1.37%
Missouri	5,606,260	6	934,377	3,704	3,704	0.39%
Montana	905,316	1	905,316	32,765	32,765	3.49%
Nebraska	1,715,369	2	857,685	80,396	80,396	8.57%
Nevada	2,002,032	2	1,001,016	-62,935	62,935	-6.71%
New Hampshire	1,238,415	1	1,238,415	-300,334	300,334	-32.02%
New Jersey	8,424,354	9	936,039	2,041	2,041	0.22%
New Mexico	1,823,821	2	911,911	26,170	26,170	2.79%
New York	19,004,973	20	950,249	-12,168	12,168	-1.30%
North Carolina	8,067,673	9	896,408	41,672	41,672	4.44%
North Dakota	643,756	1	643,756	294,325	294,325	31.38%
Ohio	11,374,540	12	947,878	-9,798	9,798	-1.04%
Oklahoma	3,458,819	4	864,705	73,376	73,376	7.82%
Oregon	3,428,543	4	857,136	80,945	80,945	8.63%
Pennsylvania	12,300,670	13	946,205	-8,125	8,125	-0.87%
Rhode Island	1,049,662	1	1,049,662	-111,581	111,581	-11.89%
South Carolina	4,025,061	4	1,006,265	-68,185	68,185	-7.27%
South Dakota	756,874	1	756,874	181,207	181,207	19.32%
Tennessee	5,700,037	6	950,006	-11,926	11,926	-1.27%
Texas	20,903,994	22	950,182	-12,101	12,101	-1.29%
Utah	2,236,714	2	1,118,357	-180,276	180,276	-19.22%
Vermont	609,890	1	609,890	328,191	328,191	34.99%
Virginia	7,100,702	7	1,014,386	-76,305	76,305	-8.13%
Washington	5,908,684	6	984,781	-46,700	46,700	-4.98%
West Virginia	1,813,077	2	906,539	31,542	31,542	3.36%
Wisconsin	5,371,210	6	895,202	42,879	42,879	4.57%
Wyoming	495,304	1	495,304	442,777	442,777	47.20%
Totals	281,424,177	300	938,081			
Voter Equivalency Ratio			2.62			
Most Underrepresented				-359,193		-38.29%
Most Overrepresented				442,777		47.20%
Maximum Deviation				801,970		
% Max Deviation						85.49%
Mean Absolute Deviation					96,952	
% Mean Abs Deviation						10.34%

Apportionment with 435 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	7	637,304	9,648	9,648	1.49%
Alaska	628,933	1	628,933	18,019	18,019	2.79%
Arizona	5,140,683	8	642,585	4,367	4,367	0.67%
Arkansas	2,679,733	4	669,933	-22,981	22,981	-3.55%
California	33,930,798	53	640,204	6,748	6,748	1.04%
Colorado	4,311,882	7	615,983	30,969	30,969	4.79%
Connecticut	3,409,535	5	681,907	-34,955	34,955	-5.40%
Delaware	785,068	1	785,068	-138,116	138,116	-21.35%
Florida	16,028,890	25	641,156	5,797	5,797	0.90%
Georgia	8,206,975	13	631,306	15,646	15,646	2.42%
Hawaii	1,216,642	2	608,321	38,631	38,631	5.97%
Idaho	1,297,274	2	648,637	-1,685	1,685	-0.26%
Illinois	12,439,042	19	654,686	-7,734	7,734	-1.20%
Indiana	6,090,782	9	676,754	-29,801	29,801	-4.61%
Iowa	2,931,923	5	586,385	60,568	60,568	9.36%
Kansas	2,693,824	4	673,456	-26,504	26,504	-4.10%
Kentucky	4,049,431	6	674,905	-27,953	27,953	-4.32%
Louisiana	4,480,271	7	640,039	6,913	6,913	1.07%
Maine	1,277,731	2	638,866	8,087	8,087	1.25%
Maryland	5,307,886	8	663,486	-16,534	16,534	-2.56%
Massachusetts	6,355,568	10	635,557	11,395	11,395	1.76%
Michigan	9,955,829	15	663,722	-16,770	16,770	-2.59%
Minnesota	4,925,670	8	615,709	31,243	31,243	4.83%
Mississippi	2,852,927	4	713,232	-66,280	66,280	-10.24%
Missouri	5,606,260	9	622,918	24,034	24,034	3.72%
Montana	905,316	1	905,316	-258,364	258,364	-39.94%
Nebraska	1,715,369	3	571,790	75,162	75,162	11.62%
Nevada	2,002,032	3	667,344	-20,392	20,392	-3.15%
New Hampshire	1,238,415	2	619,208	27,745	27,745	4.29%
New Jersey	8,424,354	13	648,027	-1,075	1,075	-0.17%
New Mexico	1,823,821	3	607,940	39,012	39,012	6.03%
New York	19,004,973	29	655,344	-8,392	8,392	-1.30%
North Carolina	8,067,673	13	620,590	26,362	26,362	4.07%
North Dakota	643,756	1	643,756	3,196	3,196	0.49%
Ohio	11,374,540	18	631,919	15,033	15,033	2.32%
Oklahoma	3,458,819	5	691,764	-44,812	44,812	-6.93%
Oregon	3,428,543	5	685,709	-38,756	38,756	-5.99%
Pennsylvania	12,300,670	19	647,404	-452	452	-0.07%
Rhode Island	1,049,662	2	524,831	122,121	122,121	18.88%
South Carolina	4,025,061	6	670,844	-23,891	23,891	-3.69%
South Dakota	756,874	1	756,874	-109,922	109,922	-16.99%
Tennessee	5,700,037	9	633,337	13,615	13,615	2.10%
Texas	20,903,994	32	653,250	-6,298	6,298	-0.97%
Utah	2,236,714	3	745,571	-98,619	98,619	-15.24%
Vermont	609,890	1	609,890	37,062	37,062	5.73%
Virginia	7,100,702	11	645,518	1,434	1,434	0.22%
Washington	5,908,684	9	656,520	-9,568	9,568	-1.48%
West Virginia	1,813,077	3	604,359	42,593	42,593	6.58%
Wisconsin	5,371,210	8	671,401	-24,449	24,449	-3.78%
Wyoming	495,304	1	495,304	151,648	151,648	23.44%
Totals	281,424,177	435	646,952			
Voter Equivalency Ratio			1.83			
Most Underrepresented				-258,364		-39.94%
Most Overrepresented				151,648		23.44%
Maximum Deviation				410,012		
% Max Deviation						63.38%
Mean Absolute Deviation					37,227	
% Mean Abs Deviation						5.75%

Apportionment with 440 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	7	637,304	2,296	2,296	0.36%
Alaska	628,933	1	628,933	10,667	10,667	1.67%
Arizona	5,140,683	8	642,585	-2,985	2,985	-0.47%
Arkansas	2,679,733	4	669,933	-30,333	30,333	-4.74%
California	33,930,798	53	640,204	-603	603	-0.09%
Colorado	4,311,882	7	615,983	23,617	23,617	3.69%
Connecticut	3,409,535	5	681,907	-42,307	42,307	-6.61%
Delaware	785,068	1	785,068	-145,468	145,468	-22.74%
Florida	16,028,890	25	641,156	-1,555	1,555	-0.24%
Georgia	8,206,975	13	631,306	8,295	8,295	1.30%
Hawaii	1,216,642	2	608,321	31,279	31,279	4.89%
Idaho	1,297,274	2	648,637	-9,037	9,037	-1.41%
Illinois	12,439,042	19	654,686	-15,086	15,086	-2.36%
Indiana	6,090,782	10	609,078	30,522	30,522	4.77%
Iowa	2,931,923	5	586,385	53,216	53,216	8.32%
Kansas	2,693,824	4	673,456	-33,856	33,856	-5.29%
Kentucky	4,049,431	6	674,905	-35,305	35,305	-5.52%
Louisiana	4,480,271	7	640,039	-438	438	-0.07%
Maine	1,277,731	2	638,866	735	735	0.11%
Maryland	5,307,886	8	663,486	-23,885	23,885	-3.73%
Massachusetts	6,355,568	10	635,557	4,044	4,044	0.63%
Michigan	9,955,829	16	622,239	17,361	17,361	2.71%
Minnesota	4,925,670	8	615,709	23,892	23,892	3.74%
Mississippi	2,852,927	4	713,232	-73,631	73,631	-11.51%
Missouri	5,606,260	9	622,918	16,683	16,683	2.61%
Montana	905,316	1	905,316	-265,716	265,716	-41.54%
Nebraska	1,715,369	3	571,790	67,811	67,811	10.60%
Nevada	2,002,032	3	667,344	-27,744	27,744	-4.34%
New Hampshire	1,238,415	2	619,208	20,393	20,393	3.19%
New Jersey	8,424,354	13	648,027	-8,427	8,427	-1.32%
New Mexico	1,823,821	3	607,940	31,660	31,660	4.95%
New York	19,004,973	30	633,499	6,101	6,101	0.95%
North Carolina	8,067,673	13	620,590	19,010	19,010	2.97%
North Dakota	643,756	1	643,756	-4,156	4,156	-0.65%
Ohio	11,374,540	18	631,919	7,682	7,682	1.20%
Oklahoma	3,458,819	5	691,764	-52,163	52,163	-8.16%
Oregon	3,428,543	5	685,709	-46,108	46,108	-7.21%
Pennsylvania	12,300,670	19	647,404	-7,803	7,803	-1.22%
Rhode Island	1,049,662	2	524,831	114,769	114,769	17.94%
South Carolina	4,025,061	6	670,844	-31,243	31,243	-4.88%
South Dakota	756,874	1	756,874	-117,274	117,274	-18.34%
Tennessee	5,700,037	9	633,337	6,263	6,263	0.98%
Texas	20,903,994	33	633,454	6,146	6,146	0.96%
Utah	2,236,714	4	559,179	80,422	80,422	12.57%
Vermont	609,890	1	609,890	29,710	29,710	4.65%
Virginia	7,100,702	11	645,518	-5,918	5,918	-0.93%
Washington	5,908,684	9	656,520	-16,920	16,920	-2.65%
West Virginia	1,813,077	3	604,359	35,241	35,241	5.51%
Wisconsin	5,371,210	8	671,401	-31,801	31,801	-4.97%
Wyoming	495,304	1	495,304	144,296	144,296	22.56%
Totals	281,424,177	440	639,600			
Voter Equivalency Ratio			1.83			
Most Underrepresented				-265,716		-41.54%
Most Overrepresented				144,296		22.56%
Maximum Deviation				410,012		
% Max Deviation						64.10%
Mean Absolute Deviation					36,437	
% Mean Abs Deviation						5.70%

Apportionment with 441 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	7	637,304	846	846	0.13%
Alaska	628,933	1	628,933	9,217	9,217	1.44%
Arizona	5,140,683	8	642,585	-4,435	4,435	-0.70%
Arkansas	2,679,733	4	669,933	-31,783	31,783	-4.98%
California	33,930,798	53	640,204	-2,054	2,054	-0.32%
Colorado	4,311,882	7	615,983	22,167	22,167	3.47%
Connecticut	3,409,535	5	681,907	-43,757	43,757	-6.86%
Delaware	785,068	1	785,068	-146,918	146,918	-23.02%
Florida	16,028,890	25	641,156	-3,006	3,006	-0.47%
Georgia	8,206,975	13	631,306	6,844	6,844	1.07%
Hawaii	1,216,642	2	608,321	29,829	29,829	4.67%
Idaho	1,297,274	2	648,637	-10,487	10,487	-1.64%
Illinois	12,439,042	19	654,686	-16,536	16,536	-2.59%
Indiana	6,090,782	10	609,078	29,072	29,072	4.56%
Iowa	2,931,923	5	586,385	51,765	51,765	8.11%
Kansas	2,693,824	4	673,456	-35,306	35,306	-5.53%
Kentucky	4,049,431	6	674,905	-36,755	36,755	-5.76%
Louisiana	4,480,271	7	640,039	-1,889	1,889	-0.30%
Maine	1,277,731	2	638,866	-715	715	-0.11%
Maryland	5,307,886	8	663,486	-25,336	25,336	-3.97%
Massachusetts	6,355,568	10	635,557	2,593	2,593	0.41%
Michigan	9,955,829	16	622,239	15,911	15,911	2.49%
Minnesota	4,925,670	8	615,709	22,441	22,441	3.52%
Mississippi	2,852,927	4	713,232	-75,082	75,082	-11.77%
Missouri	5,606,260	9	622,918	15,232	15,232	2.39%
Montana	905,316	2	452,658	185,492	185,492	29.07%
Nebraska	1,715,369	3	571,790	66,360	66,360	10.40%
Nevada	2,002,032	3	667,344	-29,194	29,194	-4.57%
New Hampshire	1,238,415	2	619,208	18,943	18,943	2.97%
New Jersey	8,424,354	13	648,027	-9,877	9,877	-1.55%
New Mexico	1,823,821	3	607,940	30,210	30,210	4.73%
New York	19,004,973	30	633,499	4,651	4,651	0.73%
North Carolina	8,067,673	13	620,590	17,560	17,560	2.75%
North Dakota	643,756	1	643,756	-5,606	5,606	-0.88%
Ohio	11,374,540	18	631,919	6,231	6,231	0.98%
Oklahoma	3,458,819	5	691,764	-53,614	53,614	-8.40%
Oregon	3,428,543	5	685,709	-47,559	47,559	-7.45%
Pennsylvania	12,300,670	19	647,404	-9,254	9,254	-1.45%
Rhode Island	1,049,662	2	524,831	113,319	113,319	17.76%
South Carolina	4,025,061	6	670,844	-32,693	32,693	-5.12%
South Dakota	756,874	1	756,874	-118,724	118,724	-18.60%
Tennessee	5,700,037	9	633,337	4,813	4,813	0.75%
Texas	20,903,994	33	633,454	4,696	4,696	0.74%
Utah	2,236,714	4	559,179	78,972	78,972	12.38%
Vermont	609,890	1	609,890	28,260	28,260	4.43%
Virginia	7,100,702	11	645,518	-7,368	7,368	-1.15%
Washington	5,908,684	9	656,520	-18,370	18,370	-2.88%
West Virginia	1,813,077	3	604,359	33,791	33,791	5.30%
Wisconsin	5,371,210	8	671,401	-33,251	33,251	-5.21%
Wyoming	495,304	1	495,304	142,846	142,846	22.38%
Totals	281,424,177	441	638,150			
Voter Equivalency Ratio			1.73			
Most Underrepresented				-146,918		-23.02%
Most Overrepresented				185,492		29.07%
Maximum Deviation				332,410		
% Max Deviation						52.09%
Mean Absolute Deviation					34,833	
% Mean Abs Deviation						5.46%

Apportionment with 523 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	8	557,641	-19,545	19,545	-3.63%
Alaska	628,933	1	628,933	-90,837	90,837	-16.88%
Arizona	5,140,683	10	514,068	24,028	24,028	4.47%
Arkansas	2,679,733	5	535,947	2,149	2,149	0.40%
California	33,930,798	63	538,584	-488	488	-0.09%
Colorado	4,311,882	8	538,985	-889	889	-0.17%
Connecticut	3,409,535	6	568,256	-30,160	30,160	-5.60%
Delaware	785,068	2	392,534	145,562	145,562	27.05%
Florida	16,028,890	30	534,296	3,800	3,800	0.71%
Georgia	8,206,975	15	547,132	-9,036	9,036	-1.68%
Hawaii	1,216,642	2	608,321	-70,225	70,225	-13.05%
Idaho	1,297,274	2	648,637	-110,541	110,541	-20.54%
Illinois	12,439,042	23	540,828	-2,732	2,732	-0.51%
Indiana	6,090,782	11	553,707	-15,612	15,612	-2.90%
Iowa	2,931,923	6	488,654	49,442	49,442	9.19%
Kansas	2,693,824	5	538,765	-669	669	-0.12%
Kentucky	4,049,431	8	506,179	31,917	31,917	5.93%
Louisiana	4,480,271	8	560,034	-21,938	21,938	-4.08%
Maine	1,277,731	2	638,866	-100,770	100,770	-18.73%
Maryland	5,307,886	10	530,789	7,307	7,307	1.36%
Massachusetts	6,355,568	12	529,631	8,465	8,465	1.57%
Michigan	9,955,829	19	523,991	14,105	14,105	2.62%
Minnesota	4,925,670	9	547,297	-9,201	9,201	-1.71%
Mississippi	2,852,927	5	570,585	-32,489	32,489	-6.04%
Missouri	5,606,260	10	560,626	-22,530	22,530	-4.19%
Montana	905,316	2	452,658	85,438	85,438	15.88%
Nebraska	1,715,369	3	571,790	-33,694	33,694	-6.26%
Nevada	2,002,032	4	500,508	37,588	37,588	6.99%
New Hampshire	1,238,415	2	619,208	-81,112	81,112	-15.07%
New Jersey	8,424,354	16	526,522	11,574	11,574	2.15%
New Mexico	1,823,821	3	607,940	-69,844	69,844	-12.98%
New York	19,004,973	36	527,916	10,180	10,180	1.89%
North Carolina	8,067,673	15	537,845	251	251	0.05%
North Dakota	643,756	1	643,756	-105,660	105,660	-19.64%
Ohio	11,374,540	21	541,645	-3,549	3,549	-0.66%
Oklahoma	3,458,819	6	576,470	-38,374	38,374	-7.13%
Oregon	3,428,543	6	571,424	-33,328	33,328	-6.19%
Pennsylvania	12,300,670	23	534,812	3,284	3,284	0.61%
Rhode Island	1,049,662	2	524,831	13,265	13,265	2.47%
South Carolina	4,025,061	8	503,133	34,963	34,963	6.50%
South Dakota	756,874	2	378,437	159,659	159,659	29.67%
Tennessee	5,700,037	11	518,185	19,911	19,911	3.70%
Texas	20,903,994	39	536,000	2,096	2,096	0.39%
Utah	2,236,714	4	559,179	-21,083	21,083	-3.92%
Vermont	609,890	1	609,890	-71,794	71,794	-13.34%
Virginia	7,100,702	13	546,208	-8,112	8,112	-1.51%
Washington	5,908,684	11	537,153	943	943	0.18%
West Virginia	1,813,077	3	604,359	-66,263	66,263	-12.31%
Wisconsin	5,371,210	10	537,121	975	975	0.18%
Wyoming	495,304	1	495,304	42,792	42,792	7.95%
Totals	281,424,177	523	538,096			
Voter Equivalency Ratio			1.71			
Most Underrepresented				-110,541		-20.54%
Most Overrepresented				159,659		29.67%
Maximum Deviation				270,200		
% Max Deviation						50.21%
Mean Absolute Deviation					35,603	
% Mean Abs Deviation						6.62%

Apportionment with 529 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	8	557,641	-25,648	25,648	-4.82%
Alaska	628,933	1	628,933	-96,940	96,940	-18.22%
Arizona	5,140,683	10	514,068	17,924	17,924	3.37%
Arkansas	2,679,733	5	535,947	-3,954	3,954	-0.74%
California	33,930,798	64	530,169	1,824	1,824	0.34%
Colorado	4,311,882	8	538,985	-6,992	6,992	-1.31%
Connecticut	3,409,535	6	568,256	-36,263	36,263	-6.82%
Delaware	785,068	2	392,534	139,459	139,459	26.21%
Florida	16,028,890	30	534,296	-2,304	2,304	-0.43%
Georgia	8,206,975	16	512,936	19,057	19,057	3.58%
Hawaii	1,216,642	2	608,321	-76,328	76,328	-14.35%
Idaho	1,297,274	3	432,425	99,568	99,568	18.72%
Illinois	12,439,042	23	540,828	-8,835	8,835	-1.66%
Indiana	6,090,782	12	507,565	24,428	24,428	4.59%
Iowa	2,931,923	6	488,654	43,339	43,339	8.15%
Kansas	2,693,824	5	538,765	-6,772	6,772	-1.27%
Kentucky	4,049,431	8	506,179	25,814	25,814	4.85%
Louisiana	4,480,271	8	560,034	-28,041	28,041	-5.27%
Maine	1,277,731	2	638,866	-106,873	106,873	-20.09%
Maryland	5,307,886	10	530,789	1,204	1,204	0.23%
Massachusetts	6,355,568	12	529,631	2,362	2,362	0.44%
Michigan	9,955,829	19	523,991	8,002	8,002	1.50%
Minnesota	4,925,670	9	547,297	-15,304	15,304	-2.88%
Mississippi	2,852,927	5	570,585	-38,593	38,593	-7.25%
Missouri	5,606,260	11	509,660	22,333	22,333	4.20%
Montana	905,316	2	452,658	79,335	79,335	14.91%
Nebraska	1,715,369	3	571,790	-39,797	39,797	-7.48%
Nevada	2,002,032	4	500,508	31,485	31,485	5.92%
New Hampshire	1,238,415	2	619,208	-87,215	87,215	-16.39%
New Jersey	8,424,354	16	526,522	5,471	5,471	1.03%
New Mexico	1,823,821	3	607,940	-75,948	75,948	-14.28%
New York	19,004,973	36	527,916	4,077	4,077	0.77%
North Carolina	8,067,673	15	537,845	-5,852	5,852	-1.10%
North Dakota	643,756	1	643,756	-111,763	111,763	-21.01%
Ohio	11,374,540	21	541,645	-9,652	9,652	-1.81%
Oklahoma	3,458,819	7	494,117	37,876	37,876	7.12%
Oregon	3,428,543	6	571,424	-39,431	39,431	-7.41%
Pennsylvania	12,300,670	23	534,812	-2,819	2,819	-0.53%
Rhode Island	1,049,662	2	524,831	7,162	7,162	1.35%
South Carolina	4,025,061	8	503,133	28,860	28,860	5.42%
South Dakota	756,874	2	378,437	153,556	153,556	28.86%
Tennessee	5,700,037	11	518,185	13,808	13,808	2.60%
Texas	20,903,994	39	536,000	-4,007	4,007	-0.75%
Utah	2,236,714	4	559,179	-27,186	27,186	-5.11%
Vermont	609,890	1	609,890	-77,897	77,897	-14.64%
Virginia	7,100,702	13	546,208	-14,215	14,215	-2.67%
Washington	5,908,684	11	537,153	-5,160	5,160	-0.97%
West Virginia	1,813,077	3	604,359	-72,366	72,366	-13.60%
Wisconsin	5,371,210	10	537,121	-5,128	5,128	-0.96%
Wyoming	495,304	1	495,304	36,689	36,689	6.90%
Totals	281,424,177	529	531,993			
Voter Equivalency Ratio			1.70			
Most Underrepresented				-111,763		-21.01%
Most Overrepresented				153,556		28.86%
Maximum Deviation				265,319		
% Max Deviation						49.87%
Mean Absolute Deviation					36,698	
% Mean Abs Deviation						6.90%

Apportionment with 651 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	10	446,113	-13,818	13,818	-3.20%
Alaska	628,933	2	314,467	117,829	117,829	27.26%
Arizona	5,140,683	12	428,390	3,905	3,905	0.90%
Arkansas	2,679,733	6	446,622	-14,327	14,327	-3.31%
California	33,930,798	79	429,504	2,791	2,791	0.65%
Colorado	4,311,882	10	431,188	1,107	1,107	0.26%
Connecticut	3,409,535	8	426,192	6,103	6,103	1.41%
Delaware	785,068	2	392,534	39,761	39,761	9.20%
Florida	16,028,890	37	433,213	-918	918	-0.21%
Georgia	8,206,975	19	431,946	349	349	0.08%
Hawaii	1,216,642	3	405,547	26,748	26,748	6.19%
Idaho	1,297,274	3	432,425	-129	129	-0.03%
Illinois	12,439,042	29	428,932	3,363	3,363	0.78%
Indiana	6,090,782	14	435,056	-2,761	2,761	-0.64%
Iowa	2,931,923	7	418,846	13,449	13,449	3.11%
Kansas	2,693,824	6	448,971	-16,675	16,675	-3.86%
Kentucky	4,049,431	9	449,937	-17,642	17,642	-4.08%
Louisiana	4,480,271	10	448,027	-15,732	15,732	-3.64%
Maine	1,277,731	3	425,910	6,385	6,385	1.48%
Maryland	5,307,886	12	442,324	-10,029	10,029	-2.32%
Massachusetts	6,355,568	15	423,705	8,591	8,591	1.99%
Michigan	9,955,829	23	432,862	-567	567	-0.13%
Minnesota	4,925,670	11	447,788	-15,493	15,493	-3.58%
Mississippi	2,852,927	7	407,561	24,734	24,734	5.72%
Missouri	5,606,260	13	431,251	1,044	1,044	0.24%
Montana	905,316	2	452,658	-20,363	20,363	-4.71%
Nebraska	1,715,369	4	428,842	3,453	3,453	0.80%
Nevada	2,002,032	5	400,406	31,889	31,889	7.38%
New Hampshire	1,238,415	3	412,805	19,490	19,490	4.51%
New Jersey	8,424,354	20	421,218	11,078	11,078	2.56%
New Mexico	1,823,821	4	455,955	-23,660	23,660	-5.47%
New York	19,004,973	44	431,931	364	364	0.08%
North Carolina	8,067,673	19	424,614	7,681	7,681	1.78%
North Dakota	643,756	2	321,878	110,417	110,417	25.54%
Ohio	11,374,540	26	437,482	-5,187	5,187	-1.20%
Oklahoma	3,458,819	8	432,352	-57	57	-0.01%
Oregon	3,428,543	8	428,568	3,727	3,727	0.86%
Pennsylvania	12,300,670	29	424,161	8,134	8,134	1.88%
Rhode Island	1,049,662	2	524,831	-92,536	92,536	-21.41%
South Carolina	4,025,061	9	447,229	-14,934	14,934	-3.45%
South Dakota	756,874	2	378,437	53,858	53,858	12.46%
Tennessee	5,700,037	13	438,464	-6,169	6,169	-1.43%
Texas	20,903,994	48	435,500	-3,205	3,205	-0.74%
Utah	2,236,714	5	447,343	-15,048	15,048	-3.48%
Vermont	609,890	1	609,890	-177,595	177,595	-41.08%
Virginia	7,100,702	16	443,794	-11,499	11,499	-2.66%
Washington	5,908,684	14	422,049	10,246	10,246	2.37%
West Virginia	1,813,077	4	453,269	-20,974	20,974	-4.85%
Wisconsin	5,371,210	12	447,601	-15,306	15,306	-3.54%
Wyoming	495,304	1	495,304	-63,009	63,009	-14.58%
Totals	281,424,177	651	432,295			
Voter Equivalency Ratio			1.94			
Most Underrepresented				-177,595		-41.08%
Most Overrepresented				117,829		27.26%
Maximum Deviation				295,424		
% Max Deviation						68.34%
Mean Absolute Deviation					21,883	
% Mean Abs Deviation						5.06%

Apportionment with 652 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	10	446,113	-14,481	14,481	-3.35%
Alaska	628,933	2	314,467	117,166	117,166	27.14%
Arizona	5,140,683	12	428,390	3,242	3,242	0.75%
Arkansas	2,679,733	6	446,622	-14,990	14,990	-3.47%
California	33,930,798	79	429,504	2,128	2,128	0.49%
Colorado	4,311,882	10	431,188	444	444	0.10%
Connecticut	3,409,535	8	426,192	5,440	5,440	1.26%
Delaware	785,068	2	392,534	39,098	39,098	9.06%
Florida	16,028,890	37	433,213	-1,581	1,581	-0.37%
Georgia	8,206,975	19	431,946	-314	314	-0.07%
Hawaii	1,216,642	3	405,547	26,085	26,085	6.04%
Idaho	1,297,274	3	432,425	-792	792	-0.18%
Illinois	12,439,042	29	428,932	2,700	2,700	0.63%
Indiana	6,090,782	14	435,056	-3,424	3,424	-0.79%
Iowa	2,931,923	7	418,846	12,786	12,786	2.96%
Kansas	2,693,824	6	448,971	-17,338	17,338	-4.02%
Kentucky	4,049,431	9	449,937	-18,305	18,305	-4.24%
Louisiana	4,480,271	10	448,027	-16,395	16,395	-3.80%
Maine	1,277,731	3	425,910	5,722	5,722	1.33%
Maryland	5,307,886	12	442,324	-10,692	10,692	-2.48%
Massachusetts	6,355,568	15	423,705	7,928	7,928	1.84%
Michigan	9,955,829	23	432,862	-1,230	1,230	-0.28%
Minnesota	4,925,670	11	447,788	-16,156	16,156	-3.74%
Mississippi	2,852,927	7	407,561	24,071	24,071	5.58%
Missouri	5,606,260	13	431,251	381	381	0.09%
Montana	905,316	2	452,658	-21,026	21,026	-4.87%
Nebraska	1,715,369	4	428,842	2,790	2,790	0.65%
Nevada	2,002,032	5	400,406	31,226	31,226	7.23%
New Hampshire	1,238,415	3	412,805	18,827	18,827	4.36%
New Jersey	8,424,354	20	421,218	10,414	10,414	2.41%
New Mexico	1,823,821	4	455,955	-24,323	24,323	-5.64%
New York	19,004,973	44	431,931	-299	299	-0.07%
North Carolina	8,067,673	19	424,614	7,018	7,018	1.63%
North Dakota	643,756	2	321,878	109,754	109,754	25.43%
Ohio	11,374,540	26	437,482	-5,850	5,850	-1.36%
Oklahoma	3,458,819	8	432,352	-720	720	-0.17%
Oregon	3,428,543	8	428,568	3,064	3,064	0.71%
Pennsylvania	12,300,670	29	424,161	7,471	7,471	1.73%
Rhode Island	1,049,662	2	524,831	-93,199	93,199	-21.59%
South Carolina	4,025,061	9	447,229	-15,597	15,597	-3.61%
South Dakota	756,874	2	378,437	53,195	53,195	12.32%
Tennessee	5,700,037	13	438,464	-6,832	6,832	-1.58%
Texas	20,903,994	48	435,500	-3,868	3,868	-0.90%
Utah	2,236,714	5	447,343	-15,711	15,711	-3.64%
Vermont	609,890	2	304,945	126,687	126,687	29.35%
Virginia	7,100,702	16	443,794	-12,162	12,162	-2.82%
Washington	5,908,684	14	422,049	9,583	9,583	2.22%
West Virginia	1,813,077	4	453,269	-21,637	21,637	-5.01%
Wisconsin	5,371,210	12	447,601	-15,969	15,969	-3.70%
Wyoming	495,304	1	495,304	-63,672	63,672	-14.75%
Totals	281,424,177	652	431,632			
Voter Equivalency Ratio			1.72			
Most Underrepresented				-93,199		-21.59%
Most Overrepresented				126,687		29.35%
Maximum Deviation				219,886		
% Max Deviation						50.94%
Mean Absolute Deviation					20,876	
% Mean Abs Deviation						4.84%

Apportionment with 658 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	10	446,113	-18,417	18,417	-4.31%
Alaska	628,933	2	314,467	113,230	113,230	26.47%
Arizona	5,140,683	12	428,390	-694	694	-0.16%
Arkansas	2,679,733	6	446,622	-18,926	18,926	-4.43%
California	33,930,798	79	429,504	-1,807	1,807	-0.42%
Colorado	4,311,882	10	431,188	-3,492	3,492	-0.82%
Connecticut	3,409,535	8	426,192	1,504	1,504	0.35%
Delaware	785,068	2	392,534	35,162	35,162	8.22%
Florida	16,028,890	37	433,213	-5,517	5,517	-1.29%
Georgia	8,206,975	19	431,946	-4,250	4,250	-0.99%
Hawaii	1,216,642	3	405,547	22,149	22,149	5.18%
Idaho	1,297,274	3	432,425	-4,728	4,728	-1.11%
Illinois	12,439,042	29	428,932	-1,236	1,236	-0.29%
Indiana	6,090,782	14	435,056	-7,360	7,360	-1.72%
Iowa	2,931,923	7	418,846	8,850	8,850	2.07%
Kansas	2,693,824	6	448,971	-21,274	21,274	-4.97%
Kentucky	4,049,431	9	449,937	-22,240	22,240	-5.20%
Louisiana	4,480,271	10	448,027	-20,331	20,331	-4.75%
Maine	1,277,731	3	425,910	1,786	1,786	0.42%
Maryland	5,307,886	12	442,324	-14,628	14,628	-3.42%
Massachusetts	6,355,568	15	423,705	3,992	3,992	0.93%
Michigan	9,955,829	23	432,862	-5,166	5,166	-1.21%
Minnesota	4,925,670	12	410,473	17,224	17,224	4.03%
Mississippi	2,852,927	7	407,561	20,135	20,135	4.71%
Missouri	5,606,260	13	431,251	-3,554	3,554	-0.83%
Montana	905,316	2	452,658	-24,962	24,962	-5.84%
Nebraska	1,715,369	4	428,842	-1,146	1,146	-0.27%
Nevada	2,002,032	5	400,406	27,290	27,290	6.38%
New Hampshire	1,238,415	3	412,805	14,891	14,891	3.48%
New Jersey	8,424,354	20	421,218	6,479	6,479	1.51%
New Mexico	1,823,821	4	455,955	-28,259	28,259	-6.61%
New York	19,004,973	44	431,931	-4,235	4,235	-0.99%
North Carolina	8,067,673	19	424,614	3,082	3,082	0.72%
North Dakota	643,756	2	321,878	105,818	105,818	24.74%
Ohio	11,374,540	27	421,279	6,417	6,417	1.50%
Oklahoma	3,458,819	8	432,352	-4,656	4,656	-1.09%
Oregon	3,428,543	8	428,568	-872	872	-0.20%
Pennsylvania	12,300,670	29	424,161	3,535	3,535	0.83%
Rhode Island	1,049,662	3	349,887	77,809	77,809	18.19%
South Carolina	4,025,061	9	447,229	-19,533	19,533	-4.57%
South Dakota	756,874	2	378,437	49,259	49,259	11.52%
Tennessee	5,700,037	13	438,464	-10,768	10,768	-2.52%
Texas	20,903,994	49	426,612	1,084	1,084	0.25%
Utah	2,236,714	5	447,343	-19,646	19,646	-4.59%
Vermont	609,890	2	304,945	122,751	122,751	28.70%
Virginia	7,100,702	17	417,688	10,008	10,008	2.34%
Washington	5,908,684	14	422,049	5,647	5,647	1.32%
West Virginia	1,813,077	4	453,269	-25,573	25,573	-5.98%
Wisconsin	5,371,210	13	413,170	14,526	14,526	3.40%
Wyoming	495,304	1	495,304	-67,608	67,608	-15.81%
Totals	281,424,177	658	427,696			
Voter Equivalency Ratio			1.62			
Most Underrepresented				-67,608		-15.81%
Most Overrepresented				122,751		28.70%
Maximum Deviation				190,359		
% Max Deviation						44.51%
Mean Absolute Deviation					20,670	
% Mean Abs Deviation						4.83%

Apportionment with 805 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	13	343,164	6,431	6,431	1.84%
Alaska	628,933	2	314,467	35,129	35,129	10.05%
Arizona	5,140,683	15	342,712	6,883	6,883	1.97%
Arkansas	2,679,733	8	334,967	14,629	14,629	4.18%
California	33,930,798	97	349,802	-207	207	-0.06%
Colorado	4,311,882	12	359,324	-9,728	9,728	-2.78%
Connecticut	3,409,535	10	340,954	8,642	8,642	2.47%
Delaware	785,068	2	392,534	-42,939	42,939	-12.28%
Florida	16,028,890	46	348,454	1,141	1,141	0.33%
Georgia	8,206,975	23	356,825	-7,230	7,230	-2.07%
Hawaii	1,216,642	4	304,161	45,435	45,435	13.00%
Idaho	1,297,274	4	324,319	25,277	25,277	7.23%
Illinois	12,439,042	36	345,529	4,066	4,066	1.16%
Indiana	6,090,782	17	358,281	-8,686	8,686	-2.48%
Iowa	2,931,923	8	366,490	-16,895	16,895	-4.83%
Kansas	2,693,824	8	336,728	12,867	12,867	3.68%
Kentucky	4,049,431	12	337,453	12,143	12,143	3.47%
Louisiana	4,480,271	13	344,636	4,959	4,959	1.42%
Maine	1,277,731	4	319,433	30,163	30,163	8.63%
Maryland	5,307,886	15	353,859	-4,264	4,264	-1.22%
Massachusetts	6,355,568	18	353,087	-3,492	3,492	-1.00%
Michigan	9,955,829	28	355,565	-5,970	5,970	-1.71%
Minnesota	4,925,670	14	351,834	-2,238	2,238	-0.64%
Mississippi	2,852,927	8	356,616	-7,021	7,021	-2.01%
Missouri	5,606,260	16	350,391	-796	796	-0.23%
Montana	905,316	3	301,772	47,823	47,823	13.68%
Nebraska	1,715,369	5	343,074	6,521	6,521	1.87%
Nevada	2,002,032	6	333,672	15,923	15,923	4.55%
New Hampshire	1,238,415	4	309,604	39,992	39,992	11.44%
New Jersey	8,424,354	24	351,015	-1,419	1,419	-0.41%
New Mexico	1,823,821	5	364,764	-15,169	15,169	-4.34%
New York	19,004,973	54	351,944	-2,349	2,349	-0.67%
North Carolina	8,067,673	23	350,768	-1,173	1,173	-0.34%
North Dakota	643,756	2	321,878	27,717	27,717	7.93%
Ohio	11,374,540	32	355,454	-5,859	5,859	-1.68%
Oklahoma	3,458,819	10	345,882	3,713	3,713	1.06%
Oregon	3,428,543	10	342,854	6,741	6,741	1.93%
Pennsylvania	12,300,670	35	351,448	-1,852	1,852	-0.53%
Rhode Island	1,049,662	3	349,887	-292	292	-0.08%
South Carolina	4,025,061	12	335,422	14,174	14,174	4.05%
South Dakota	756,874	2	378,437	-28,842	28,842	-8.25%
Tennessee	5,700,037	16	356,252	-6,657	6,657	-1.90%
Texas	20,903,994	60	348,400	1,195	1,195	0.34%
Utah	2,236,714	6	372,786	-23,190	23,190	-6.63%
Vermont	609,890	2	304,945	44,650	44,650	12.77%
Virginia	7,100,702	20	355,035	-5,440	5,440	-1.56%
Washington	5,908,684	17	347,570	2,026	2,026	0.58%
West Virginia	1,813,077	5	362,615	-13,020	13,020	-3.72%
Wisconsin	5,371,210	15	358,081	-8,485	8,485	-2.43%
Wyoming	495,304	1	495,304	-145,709	145,709	-41.68%
Totals	281,424,177	805	349,595			
Voter Equivalency Ratio			1.64			
Most Underrepresented				-145,709		-41.68%
Most Overrepresented				47,823		13.68%
Maximum Deviation				193,532		
% Max Deviation						55.36%
Mean Absolute Deviation					15,743	
% Mean Abs Deviation						4.50%

Apportionment with 806 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	13	343,164	5,998	5,998	1.72%
Alaska	628,933	2	314,467	34,695	34,695	9.94%
Arizona	5,140,683	15	342,712	6,449	6,449	1.85%
Arkansas	2,679,733	8	334,967	14,195	14,195	4.07%
California	33,930,798	97	349,802	-641	641	-0.18%
Colorado	4,311,882	12	359,324	-10,162	10,162	-2.91%
Connecticut	3,409,535	10	340,954	8,208	8,208	2.35%
Delaware	785,068	2	392,534	-43,372	43,372	-12.42%
Florida	16,028,890	46	348,454	707	707	0.20%
Georgia	8,206,975	23	356,825	-7,663	7,663	-2.19%
Hawaii	1,216,642	4	304,161	45,001	45,001	12.89%
Idaho	1,297,274	4	324,319	24,843	24,843	7.12%
Illinois	12,439,042	36	345,529	3,633	3,633	1.04%
Indiana	6,090,782	17	358,281	-9,120	9,120	-2.61%
Iowa	2,931,923	8	366,490	-17,329	17,329	-4.96%
Kansas	2,693,824	8	336,728	12,434	12,434	3.56%
Kentucky	4,049,431	12	337,453	11,709	11,709	3.35%
Louisiana	4,480,271	13	344,636	4,525	4,525	1.30%
Maine	1,277,731	4	319,433	29,729	29,729	8.51%
Maryland	5,307,886	15	353,859	-4,698	4,698	-1.35%
Massachusetts	6,355,568	18	353,087	-3,926	3,926	-1.12%
Michigan	9,955,829	28	355,565	-6,404	6,404	-1.83%
Minnesota	4,925,670	14	351,834	-2,672	2,672	-0.77%
Mississippi	2,852,927	8	356,616	-7,454	7,454	-2.13%
Missouri	5,606,260	16	350,391	-1,230	1,230	-0.35%
Montana	905,316	3	301,772	47,390	47,390	13.57%
Nebraska	1,715,369	5	343,074	6,088	6,088	1.74%
Nevada	2,002,032	6	333,672	15,490	15,490	4.44%
New Hampshire	1,238,415	4	309,604	39,558	39,558	11.33%
New Jersey	8,424,354	24	351,015	-1,853	1,853	-0.53%
New Mexico	1,823,821	5	364,764	-15,603	15,603	-4.47%
New York	19,004,973	54	351,944	-2,782	2,782	-0.80%
North Carolina	8,067,673	23	350,768	-1,607	1,607	-0.46%
North Dakota	643,756	2	321,878	27,284	27,284	7.81%
Ohio	11,374,540	32	355,454	-6,293	6,293	-1.80%
Oklahoma	3,458,819	10	345,882	3,280	3,280	0.94%
Oregon	3,428,543	10	342,854	6,307	6,307	1.81%
Pennsylvania	12,300,670	35	351,448	-2,286	2,286	-0.65%
Rhode Island	1,049,662	3	349,887	-726	726	-0.21%
South Carolina	4,025,061	12	335,422	13,740	13,740	3.94%
South Dakota	756,874	2	378,437	-29,275	29,275	-8.38%
Tennessee	5,700,037	16	356,252	-7,091	7,091	-2.03%
Texas	20,903,994	60	348,400	762	762	0.22%
Utah	2,236,714	6	372,786	-23,624	23,624	-6.77%
Vermont	609,890	2	304,945	44,217	44,217	12.66%
Virginia	7,100,702	20	355,035	-5,874	5,874	-1.68%
Washington	5,908,684	17	347,570	1,592	1,592	0.46%
West Virginia	1,813,077	5	362,615	-13,454	13,454	-3.85%
Wisconsin	5,371,210	15	358,081	-8,919	8,919	-2.55%
Wyoming	495,304	2	247,652	101,510	101,510	29.07%
Totals	281,424,177	806	349,162			
Voter Equivalency Ratio			1.59			
Most Underrepresented				-43,372		-12.42%
Most Overrepresented				101,510		29.07%
Maximum Deviation				144,882		
% Max Deviation						41.49%
Mean Absolute Deviation					14,868	
% Mean Abs Deviation						4.26%

Apportionment with 913 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	14	318,652	-10,411	10,411	-3.38%
Alaska	628,933	2	314,467	-6,225	6,225	-2.02%
Arizona	5,140,683	17	302,393	5,848	5,848	1.90%
Arkansas	2,679,733	9	297,748	10,493	10,493	3.40%
California	33,930,798	110	308,462	-221	221	-0.07%
Colorado	4,311,882	14	307,992	250	250	0.08%
Connecticut	3,409,535	11	309,958	-1,717	1,717	-0.56%
Delaware	785,068	3	261,689	46,552	46,552	15.10%
Florida	16,028,890	52	308,248	-7	7	0.00%
Georgia	8,206,975	27	303,962	4,279	4,279	1.39%
Hawaii	1,216,642	4	304,161	4,081	4,081	1.32%
Idaho	1,297,274	4	324,319	-16,077	16,077	-5.22%
Illinois	12,439,042	40	310,976	-2,735	2,735	-0.89%
Indiana	6,090,782	20	304,539	3,702	3,702	1.20%
Iowa	2,931,923	10	293,192	15,049	15,049	4.88%
Kansas	2,693,824	9	299,314	8,927	8,927	2.90%
Kentucky	4,049,431	13	311,495	-3,254	3,254	-1.06%
Louisiana	4,480,271	15	298,685	9,556	9,556	3.10%
Maine	1,277,731	4	319,433	-11,192	11,192	-3.63%
Maryland	5,307,886	17	312,229	-3,987	3,987	-1.29%
Massachusetts	6,355,568	21	302,646	5,595	5,595	1.82%
Michigan	9,955,829	32	311,120	-2,878	2,878	-0.93%
Minnesota	4,925,670	16	307,854	387	387	0.13%
Mississippi	2,852,927	9	316,992	-8,751	8,751	-2.84%
Missouri	5,606,260	18	311,459	-3,218	3,218	-1.04%
Montana	905,316	3	301,772	6,469	6,469	2.10%
Nebraska	1,715,369	6	285,895	22,346	22,346	7.25%
Nevada	2,002,032	6	333,672	-25,431	25,431	-8.25%
New Hampshire	1,238,415	4	309,604	-1,363	1,363	-0.44%
New Jersey	8,424,354	27	312,013	-3,772	3,772	-1.22%
New Mexico	1,823,821	6	303,970	4,271	4,271	1.39%
New York	19,004,973	62	306,532	1,709	1,709	0.55%
North Carolina	8,067,673	26	310,295	-2,054	2,054	-0.67%
North Dakota	643,756	2	321,878	-13,637	13,637	-4.42%
Ohio	11,374,540	37	307,420	821	821	0.27%
Oklahoma	3,458,819	11	314,438	-6,197	6,197	-2.01%
Oregon	3,428,543	11	311,686	-3,445	3,445	-1.12%
Pennsylvania	12,300,670	40	307,517	724	724	0.24%
Rhode Island	1,049,662	3	349,887	-41,646	41,646	-13.51%
South Carolina	4,025,061	13	309,620	-1,379	1,379	-0.45%
South Dakota	756,874	3	252,291	55,950	55,950	18.15%
Tennessee	5,700,037	18	316,669	-8,428	8,428	-2.73%
Texas	20,903,994	68	307,412	829	829	0.27%
Utah	2,236,714	7	319,531	-11,289	11,289	-3.66%
Vermont	609,890	2	304,945	3,296	3,296	1.07%
Virginia	7,100,702	23	308,726	-485	485	-0.16%
Washington	5,908,684	19	310,983	-2,742	2,742	-0.89%
West Virginia	1,813,077	6	302,180	6,062	6,062	1.97%
Wisconsin	5,371,210	17	315,954	-7,712	7,712	-2.50%
Wyoming	495,304	2	247,652	60,589	60,589	19.66%
Totals	281,424,177	913	308,241			
Voter Equivalency Ratio			1.41			
Most Underrepresented				-41,646		-13.51%
Most Overrepresented				60,589		19.66%
Maximum Deviation				102,235		
% Max Deviation						33.17%
Mean Absolute Deviation					9,561	
% Mean Abs Deviation						3.10%

Apportionment with 931 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	15	297,409	4,873	4,873	1.61%
Alaska	628,933	2	314,467	-12,185	12,185	-4.03%
Arizona	5,140,683	17	302,393	-112	112	-0.04%
Arkansas	2,679,733	9	297,748	4,533	4,533	1.50%
California	33,930,798	112	302,954	-672	672	-0.22%
Colorado	4,311,882	14	307,992	-5,710	5,710	-1.89%
Connecticut	3,409,535	11	309,958	-7,676	7,676	-2.54%
Delaware	785,068	3	261,689	40,592	40,592	13.43%
Florida	16,028,890	53	302,432	-150	150	-0.05%
Georgia	8,206,975	27	303,962	-1,680	1,680	-0.56%
Hawaii	1,216,642	4	304,161	-1,879	1,879	-0.62%
Idaho	1,297,274	4	324,319	-22,037	22,037	-7.29%
Illinois	12,439,042	41	303,391	-1,110	1,110	-0.37%
Indiana	6,090,782	20	304,539	-2,257	2,257	-0.75%
Iowa	2,931,923	10	293,192	9,089	9,089	3.01%
Kansas	2,693,824	9	299,314	2,968	2,968	0.98%
Kentucky	4,049,431	13	311,495	-9,213	9,213	-3.05%
Louisiana	4,480,271	15	298,685	3,597	3,597	1.19%
Maine	1,277,731	4	319,433	-17,151	17,151	-5.67%
Maryland	5,307,886	18	294,883	7,399	7,399	2.45%
Massachusetts	6,355,568	21	302,646	-364	364	-0.12%
Michigan	9,955,829	33	301,692	590	590	0.20%
Minnesota	4,925,670	16	307,854	-5,573	5,573	-1.84%
Mississippi	2,852,927	9	316,992	-14,710	14,710	-4.87%
Missouri	5,606,260	19	295,066	7,215	7,215	2.39%
Montana	905,316	3	301,772	510	510	0.17%
Nebraska	1,715,369	6	285,895	16,387	16,387	5.42%
Nevada	2,002,032	7	286,005	16,277	16,277	5.38%
New Hampshire	1,238,415	4	309,604	-7,322	7,322	-2.42%
New Jersey	8,424,354	28	300,870	1,412	1,412	0.47%
New Mexico	1,823,821	6	303,970	-1,689	1,689	-0.56%
New York	19,004,973	63	301,666	615	615	0.20%
North Carolina	8,067,673	27	298,803	3,479	3,479	1.15%
North Dakota	643,756	2	321,878	-19,596	19,596	-6.48%
Ohio	11,374,540	38	299,330	2,952	2,952	0.98%
Oklahoma	3,458,819	11	314,438	-12,156	12,156	-4.02%
Oregon	3,428,543	11	311,686	-9,404	9,404	-3.11%
Pennsylvania	12,300,670	41	300,016	2,265	2,265	0.75%
Rhode Island	1,049,662	3	349,887	-47,606	47,606	-15.75%
South Carolina	4,025,061	13	309,620	-7,338	7,338	-2.43%
South Dakota	756,874	3	252,291	49,990	49,990	16.54%
Tennessee	5,700,037	19	300,002	2,280	2,280	0.75%
Texas	20,903,994	69	302,956	-675	675	-0.22%
Utah	2,236,714	7	319,531	-17,249	17,249	-5.71%
Vermont	609,890	2	304,945	-2,663	2,663	-0.88%
Virginia	7,100,702	23	308,726	-6,445	6,445	-2.13%
Washington	5,908,684	20	295,434	6,847	6,847	2.27%
West Virginia	1,813,077	6	302,180	102	102	0.03%
Wisconsin	5,371,210	18	298,401	3,881	3,881	1.28%
Wyoming	495,304	2	247,652	54,630	54,630	18.07%
Totals	281,424,177	931	302,282			
Voter Equivalency Ratio			1.41			
Most Underrepresented				-47,606		-15.75%
Most Overrepresented				54,630		18.07%
Maximum Deviation				102,235		
% Max Deviation						33.82%
Mean Absolute Deviation					9,542	
% Mean Abs Deviation						3.16%

Apportionment with 932 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	15	297,409	4,549	4,549	1.51%
Alaska	628,933	2	314,467	-12,509	12,509	-4.14%
Arizona	5,140,683	17	302,393	-436	436	-0.14%
Arkansas	2,679,733	9	297,748	4,209	4,209	1.39%
California	33,930,798	112	302,954	-996	996	-0.33%
Colorado	4,311,882	14	307,992	-6,034	6,034	-2.00%
Connecticut	3,409,535	11	309,958	-8,000	8,000	-2.65%
Delaware	785,068	3	261,689	40,268	40,268	13.34%
Florida	16,028,890	53	302,432	-475	475	-0.16%
Georgia	8,206,975	27	303,962	-2,005	2,005	-0.66%
Hawaii	1,216,642	4	304,161	-2,203	2,203	-0.73%
Idaho	1,297,274	4	324,319	-22,361	22,361	-7.41%
Illinois	12,439,042	41	303,391	-1,434	1,434	-0.47%
Indiana	6,090,782	20	304,539	-2,582	2,582	-0.86%
Iowa	2,931,923	10	293,192	8,765	8,765	2.90%
Kansas	2,693,824	9	299,314	2,643	2,643	0.88%
Kentucky	4,049,431	13	311,495	-9,537	9,537	-3.16%
Louisiana	4,480,271	15	298,685	3,273	3,273	1.08%
Maine	1,277,731	4	319,433	-17,475	17,475	-5.79%
Maryland	5,307,886	18	294,883	7,075	7,075	2.34%
Massachusetts	6,355,568	21	302,646	-689	689	-0.23%
Michigan	9,955,829	33	301,692	265	265	0.09%
Minnesota	4,925,670	16	307,854	-5,897	5,897	-1.95%
Mississippi	2,852,927	9	316,992	-15,035	15,035	-4.98%
Missouri	5,606,260	19	295,066	6,891	6,891	2.28%
Montana	905,316	3	301,772	185	185	0.06%
Nebraska	1,715,369	6	285,895	16,062	16,062	5.32%
Nevada	2,002,032	7	286,005	15,953	15,953	5.28%
New Hampshire	1,238,415	4	309,604	-7,646	7,646	-2.53%
New Jersey	8,424,354	28	300,870	1,087	1,087	0.36%
New Mexico	1,823,821	6	303,970	-2,013	2,013	-0.67%
New York	19,004,973	63	301,666	291	291	0.10%
North Carolina	8,067,673	27	298,803	3,155	3,155	1.04%
North Dakota	643,756	2	321,878	-19,921	19,921	-6.60%
Ohio	11,374,540	38	299,330	2,627	2,627	0.87%
Oklahoma	3,458,819	11	314,438	-12,481	12,481	-4.13%
Oregon	3,428,543	11	311,686	-9,728	9,728	-3.22%
Pennsylvania	12,300,670	41	300,016	1,941	1,941	0.64%
Rhode Island	1,049,662	4	262,416	39,542	39,542	13.10%
South Carolina	4,025,061	13	309,620	-7,663	7,663	-2.54%
South Dakota	756,874	3	252,291	49,666	49,666	16.45%
Tennessee	5,700,037	19	300,002	1,955	1,955	0.65%
Texas	20,903,994	69	302,956	-999	999	-0.33%
Utah	2,236,714	7	319,531	-17,573	17,573	-5.82%
Vermont	609,890	2	304,945	-2,988	2,988	-0.99%
Virginia	7,100,702	23	308,726	-6,769	6,769	-2.24%
Washington	5,908,684	20	295,434	6,523	6,523	2.16%
West Virginia	1,813,077	6	302,180	-222	222	-0.07%
Wisconsin	5,371,210	18	298,401	3,557	3,557	1.18%
Wyoming	495,304	2	247,652	54,305	54,305	17.98%
Totals	281,424,177	932	301,957			
Voter Equivalency Ratio			1.31			
Most Underrepresented				-22,361		-7.41%
Most Overrepresented				54,305		17.98%
Maximum Deviation				76,667		
% Max Deviation						25.39%
Mean Absolute Deviation					9,409	
% Mean Abs Deviation						3.12%

Apportionment with 1,405 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	22	202,779	-2,477	2,477	-1.24%
Alaska	628,933	3	209,644	-9,342	9,342	-4.66%
Arizona	5,140,683	26	197,719	2,583	2,583	1.29%
Arkansas	2,679,733	13	206,133	-5,831	5,831	-2.91%
California	33,930,798	170	199,593	709	709	0.35%
Colorado	4,311,882	22	195,995	4,307	4,307	2.15%
Connecticut	3,409,535	17	200,561	-259	259	-0.13%
Delaware	785,068	4	196,267	4,035	4,035	2.01%
Florida	16,028,890	80	200,361	-59	59	-0.03%
Georgia	8,206,975	41	200,170	132	132	0.07%
Hawaii	1,216,642	6	202,774	-2,472	2,472	-1.23%
Idaho	1,297,274	7	185,325	14,977	14,977	7.48%
Illinois	12,439,042	62	200,630	-328	328	-0.16%
Indiana	6,090,782	30	203,026	-2,724	2,724	-1.36%
Iowa	2,931,923	15	195,462	4,840	4,840	2.42%
Kansas	2,693,824	13	207,217	-6,915	6,915	-3.45%
Kentucky	4,049,431	20	202,472	-2,170	2,170	-1.08%
Louisiana	4,480,271	22	203,649	-3,347	3,347	-1.67%
Maine	1,277,731	6	212,955	-12,653	12,653	-6.32%
Maryland	5,307,886	27	196,588	3,714	3,714	1.85%
Massachusetts	6,355,568	32	198,612	1,690	1,690	0.84%
Michigan	9,955,829	50	199,117	1,185	1,185	0.59%
Minnesota	4,925,670	25	197,027	3,275	3,275	1.64%
Mississippi	2,852,927	14	203,781	-3,479	3,479	-1.74%
Missouri	5,606,260	28	200,224	78	78	0.04%
Montana	905,316	5	181,063	19,239	19,239	9.60%
Nebraska	1,715,369	9	190,597	9,705	9,705	4.85%
Nevada	2,002,032	10	200,203	99	99	0.05%
New Hampshire	1,238,415	6	206,403	-6,101	6,101	-3.05%
New Jersey	8,424,354	42	200,580	-278	278	-0.14%
New Mexico	1,823,821	9	202,647	-2,345	2,345	-1.17%
New York	19,004,973	95	200,052	250	250	0.12%
North Carolina	8,067,673	40	201,692	-1,390	1,390	-0.69%
North Dakota	643,756	3	214,585	-14,283	14,283	-7.13%
Ohio	11,374,540	57	199,553	749	749	0.37%
Oklahoma	3,458,819	17	203,460	-3,158	3,158	-1.58%
Oregon	3,428,543	17	201,679	-1,377	1,377	-0.69%
Pennsylvania	12,300,670	61	201,650	-1,348	1,348	-0.67%
Rhode Island	1,049,662	5	209,932	-9,630	9,630	-4.81%
South Carolina	4,025,061	20	201,253	-951	951	-0.47%
South Dakota	756,874	4	189,219	11,083	11,083	5.53%
Tennessee	5,700,037	28	203,573	-3,271	3,271	-1.63%
Texas	20,903,994	104	201,000	-698	698	-0.35%
Utah	2,236,714	11	203,338	-3,036	3,036	-1.52%
Vermont	609,890	3	203,297	-2,995	2,995	-1.50%
Virginia	7,100,702	35	202,877	-2,575	2,575	-1.29%
Washington	5,908,684	30	196,956	3,346	3,346	1.67%
West Virginia	1,813,077	9	201,453	-1,151	1,151	-0.57%
Wisconsin	5,371,210	27	198,934	1,368	1,368	0.68%
Wyoming	495,304	3	165,101	35,201	35,201	17.57%
Totals	281,424,177	1,405	200,302			
Voter Equivalency Ratio			1.30			
Most Underrepresented				-14,283		-7.13%
Most Overrepresented				35,201		17.57%
Maximum Deviation				49,484		
% Max Deviation						24.70%
Mean Absolute Deviation					4,584	
% Mean Abs Deviation						2.29%

Apportionment with 1,664 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	26	171,582	-2,457	2,457	-1.45%
Alaska	628,933	4	157,233	11,892	11,892	7.03%
Arizona	5,140,683	30	171,356	-2,231	2,231	-1.32%
Arkansas	2,679,733	16	167,483	1,642	1,642	0.97%
California	33,930,798	200	169,654	-529	529	-0.31%
Colorado	4,311,882	25	172,475	-3,350	3,350	-1.98%
Connecticut	3,409,535	20	170,477	-1,352	1,352	-0.80%
Delaware	785,068	5	157,014	12,112	12,112	7.16%
Florida	16,028,890	95	168,725	400	400	0.24%
Georgia	8,206,975	48	170,979	-1,854	1,854	-1.10%
Hawaii	1,216,642	7	173,806	-4,681	4,681	-2.77%
Idaho	1,297,274	8	162,159	6,966	6,966	4.12%
Illinois	12,439,042	74	168,095	1,030	1,030	0.61%
Indiana	6,090,782	36	169,188	-63	63	-0.04%
Iowa	2,931,923	17	172,466	-3,341	3,341	-1.98%
Kansas	2,693,824	16	168,364	761	761	0.45%
Kentucky	4,049,431	24	168,726	399	399	0.24%
Louisiana	4,480,271	26	172,318	-3,193	3,193	-1.89%
Maine	1,277,731	8	159,716	9,409	9,409	5.56%
Maryland	5,307,886	31	171,222	-2,097	2,097	-1.24%
Massachusetts	6,355,568	38	167,252	1,873	1,873	1.11%
Michigan	9,955,829	59	168,743	382	382	0.23%
Minnesota	4,925,670	29	169,851	-726	726	-0.43%
Mississippi	2,852,927	17	167,819	1,306	1,306	0.77%
Missouri	5,606,260	33	169,887	-762	762	-0.45%
Montana	905,316	5	181,063	-11,938	11,938	-7.06%
Nebraska	1,715,369	10	171,537	-2,412	2,412	-1.43%
Nevada	2,002,032	12	166,836	2,289	2,289	1.35%
New Hampshire	1,238,415	7	176,916	-7,791	7,791	-4.61%
New Jersey	8,424,354	50	168,487	638	638	0.38%
New Mexico	1,823,821	11	165,802	3,323	3,323	1.96%
New York	19,004,973	112	169,687	-562	562	-0.33%
North Carolina	8,067,673	48	168,077	1,049	1,049	0.62%
North Dakota	643,756	4	160,939	8,186	8,186	4.84%
Ohio	11,374,540	67	169,769	-644	644	-0.38%
Oklahoma	3,458,819	20	172,941	-3,816	3,816	-2.26%
Oregon	3,428,543	20	171,427	-2,302	2,302	-1.36%
Pennsylvania	12,300,670	73	168,502	623	623	0.37%
Rhode Island	1,049,662	6	174,944	-5,819	5,819	-3.44%
South Carolina	4,025,061	24	167,711	1,414	1,414	0.84%
South Dakota	756,874	5	151,375	17,750	17,750	10.50%
Tennessee	5,700,037	34	167,648	1,477	1,477	0.87%
Texas	20,903,994	124	168,581	545	545	0.32%
Utah	2,236,714	13	172,055	-2,930	2,930	-1.73%
Vermont	609,890	4	152,473	16,653	16,653	9.85%
Virginia	7,100,702	42	169,064	61	61	0.04%
Washington	5,908,684	35	168,820	306	306	0.18%
West Virginia	1,813,077	11	164,825	4,300	4,300	2.54%
Wisconsin	5,371,210	32	167,850	1,275	1,275	0.75%
Wyoming	495,304	3	165,101	4,024	4,024	2.38%
Totals	281,424,177	1,664	169,125			
Voter Equivalency Ratio			1.20			
Most Underrepresented				-11,938		-7.06%
Most Overrepresented				17,750		10.50%
Maximum Deviation				29,688		
% Max Deviation						17.55%
Mean Absolute Deviation					3,539	
% Mean Abs Deviation						2.09%

Apportionment with 1,704 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	27	165,227	-72	72	-0.04%
Alaska	628,933	4	157,233	7,922	7,922	4.80%
Arizona	5,140,683	31	165,828	-673	673	-0.41%
Arkansas	2,679,733	16	167,483	-2,328	2,328	-1.41%
California	33,930,798	205	165,516	-361	361	-0.22%
Colorado	4,311,882	26	165,842	-687	687	-0.42%
Connecticut	3,409,535	21	162,359	2,796	2,796	1.69%
Delaware	785,068	5	157,014	8,141	8,141	4.93%
Florida	16,028,890	97	165,246	-91	91	-0.06%
Georgia	8,206,975	50	164,140	1,016	1,016	0.61%
Hawaii	1,216,642	7	173,806	-8,651	8,651	-5.24%
Idaho	1,297,274	8	162,159	2,996	2,996	1.81%
Illinois	12,439,042	75	165,854	-699	699	-0.42%
Indiana	6,090,782	37	164,616	539	539	0.33%
Iowa	2,931,923	18	162,885	2,270	2,270	1.37%
Kansas	2,693,824	16	168,364	-3,209	3,209	-1.94%
Kentucky	4,049,431	25	161,977	3,178	3,178	1.92%
Louisiana	4,480,271	27	165,936	-781	781	-0.47%
Maine	1,277,731	8	159,716	5,439	5,439	3.29%
Maryland	5,307,886	32	165,871	-716	716	-0.43%
Massachusetts	6,355,568	38	167,252	-2,097	2,097	-1.27%
Michigan	9,955,829	60	165,930	-775	775	-0.47%
Minnesota	4,925,670	30	164,189	966	966	0.58%
Mississippi	2,852,927	17	167,819	-2,664	2,664	-1.61%
Missouri	5,606,260	34	164,890	265	265	0.16%
Montana	905,316	6	150,886	14,269	14,269	8.64%
Nebraska	1,715,369	10	171,537	-6,382	6,382	-3.86%
Nevada	2,002,032	12	166,836	-1,681	1,681	-1.02%
New Hampshire	1,238,415	8	154,802	10,353	10,353	6.27%
New Jersey	8,424,354	51	165,183	-28	28	-0.02%
New Mexico	1,823,821	11	165,802	-647	647	-0.39%
New York	19,004,973	115	165,261	-106	106	-0.06%
North Carolina	8,067,673	49	164,646	509	509	0.31%
North Dakota	643,756	4	160,939	4,216	4,216	2.55%
Ohio	11,374,540	69	164,848	307	307	0.19%
Oklahoma	3,458,819	21	164,706	449	449	0.27%
Oregon	3,428,543	21	163,264	1,891	1,891	1.15%
Pennsylvania	12,300,670	74	166,225	-1,070	1,070	-0.65%
Rhode Island	1,049,662	6	174,944	-9,789	9,789	-5.93%
South Carolina	4,025,061	24	167,711	-2,556	2,556	-1.55%
South Dakota	756,874	5	151,375	13,780	13,780	8.34%
Tennessee	5,700,037	34	167,648	-2,493	2,493	-1.51%
Texas	20,903,994	126	165,905	-750	750	-0.45%
Utah	2,236,714	14	159,765	5,390	5,390	3.26%
Vermont	609,890	4	152,473	12,683	12,683	7.68%
Virginia	7,100,702	43	165,133	22	22	0.01%
Washington	5,908,684	36	164,130	1,025	1,025	0.62%
West Virginia	1,813,077	11	164,825	330	330	0.20%
Wisconsin	5,371,210	33	162,764	2,391	2,391	1.45%
Wyoming	495,304	3	165,101	54	54	0.03%
Totals	281,424,177	1,704	165,155			
Voter Equivalency Ratio			1.16			
Most Underrepresented				-9,789		-5.93%
Most Overrepresented				14,269		8.64%
Maximum Deviation				24,058		
% Max Deviation						14.57%
Mean Absolute Deviation					3,050	
% Mean Abs Deviation						1.85%

Apportionment with 1,741 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	28	159,326	2,319	2,319	1.43%
Alaska	628,933	4	157,233	4,412	4,412	2.73%
Arizona	5,140,683	32	160,646	999	999	0.62%
Arkansas	2,679,733	17	157,631	4,014	4,014	2.48%
California	33,930,798	209	162,348	-703	703	-0.44%
Colorado	4,311,882	27	159,699	1,946	1,946	1.20%
Connecticut	3,409,535	21	162,359	-714	714	-0.44%
Delaware	785,068	5	157,014	4,632	4,632	2.87%
Florida	16,028,890	99	161,908	-263	263	-0.16%
Georgia	8,206,975	51	160,921	724	724	0.45%
Hawaii	1,216,642	8	152,080	9,565	9,565	5.92%
Idaho	1,297,274	8	162,159	-514	514	-0.32%
Illinois	12,439,042	77	161,546	99	99	0.06%
Indiana	6,090,782	38	160,284	1,361	1,361	0.84%
Iowa	2,931,923	18	162,885	-1,239	1,239	-0.77%
Kansas	2,693,824	17	158,460	3,185	3,185	1.97%
Kentucky	4,049,431	25	161,977	-332	332	-0.21%
Louisiana	4,480,271	28	160,010	1,635	1,635	1.01%
Maine	1,277,731	8	159,716	1,929	1,929	1.19%
Maryland	5,307,886	33	160,845	800	800	0.49%
Massachusetts	6,355,568	39	162,963	-1,318	1,318	-0.82%
Michigan	9,955,829	61	163,210	-1,565	1,565	-0.97%
Minnesota	4,925,670	30	164,189	-2,544	2,544	-1.57%
Mississippi	2,852,927	18	158,496	3,149	3,149	1.95%
Missouri	5,606,260	35	160,179	1,466	1,466	0.91%
Montana	905,316	6	150,886	10,759	10,759	6.66%
Nebraska	1,715,369	11	155,943	5,702	5,702	3.53%
Nevada	2,002,032	12	166,836	-5,191	5,191	-3.21%
New Hampshire	1,238,415	8	154,802	6,843	6,843	4.23%
New Jersey	8,424,354	52	162,007	-362	362	-0.22%
New Mexico	1,823,821	11	165,802	-4,157	4,157	-2.57%
New York	19,004,973	117	162,436	-791	791	-0.49%
North Carolina	8,067,673	50	161,353	292	292	0.18%
North Dakota	643,756	4	160,939	706	706	0.44%
Ohio	11,374,540	70	162,493	-848	848	-0.52%
Oklahoma	3,458,819	21	164,706	-3,061	3,061	-1.89%
Oregon	3,428,543	21	163,264	-1,619	1,619	-1.00%
Pennsylvania	12,300,670	76	161,851	-206	206	-0.13%
Rhode Island	1,049,662	7	149,952	11,693	11,693	7.23%
South Carolina	4,025,061	25	161,002	643	643	0.40%
South Dakota	756,874	5	151,375	10,270	10,270	6.35%
Tennessee	5,700,037	35	162,858	-1,213	1,213	-0.75%
Texas	20,903,994	129	162,046	-401	401	-0.25%
Utah	2,236,714	14	159,765	1,880	1,880	1.16%
Vermont	609,890	4	152,473	9,173	9,173	5.67%
Virginia	7,100,702	44	161,380	266	266	0.16%
Washington	5,908,684	36	164,130	-2,485	2,485	-1.54%
West Virginia	1,813,077	11	164,825	-3,180	3,180	-1.97%
Wisconsin	5,371,210	33	162,764	-1,119	1,119	-0.69%
Wyoming	495,304	3	165,101	-3,456	3,456	-2.14%
Totals	281,424,177	1,741	161,645			
Voter Equivalency Ratio			1.11			
Most Underrepresented				-5,191		-3.21%
Most Overrepresented				11,693		7.23%
Maximum Deviation				16,884		
% Max Deviation						10.45%
Mean Absolute Deviation					2,755	
% Mean Abs Deviation						1.70%

Apportionment with 1,760 Seats (2000 U.S. Census Data)

State	Apportionment Population	Number of Representatives	Average Population of District	Deviation from Ideal	Absolute Deviation from Ideal	% Deviation from Ideal
Alabama	4,461,130	28	159,326	574	574	0.36%
Alaska	628,933	4	157,233	2,667	2,667	1.67%
Arizona	5,140,683	32	160,646	-746	746	-0.47%
Arkansas	2,679,733	17	157,631	2,269	2,269	1.42%
California	33,930,798	212	160,051	-151	151	-0.09%
Colorado	4,311,882	27	159,699	201	201	0.13%
Connecticut	3,409,535	21	162,359	-2,459	2,459	-1.54%
Delaware	785,068	5	157,014	2,887	2,887	1.81%
Florida	16,028,890	100	160,289	-389	389	-0.24%
Georgia	8,206,975	51	160,921	-1,021	1,021	-0.64%
Hawaii	1,216,642	8	152,080	7,820	7,820	4.89%
Idaho	1,297,274	8	162,159	-2,259	2,259	-1.41%
Illinois	12,439,042	78	159,475	425	425	0.27%
Indiana	6,090,782	38	160,284	-384	384	-0.24%
Iowa	2,931,923	18	162,885	-2,985	2,985	-1.87%
Kansas	2,693,824	17	158,460	1,440	1,440	0.90%
Kentucky	4,049,431	25	161,977	-2,077	2,077	-1.30%
Louisiana	4,480,271	28	160,010	-110	110	-0.07%
Maine	1,277,731	8	159,716	184	184	0.11%
Maryland	5,307,886	33	160,845	-945	945	-0.59%
Massachusetts	6,355,568	40	158,889	1,011	1,011	0.63%
Michigan	9,955,829	62	160,578	-678	678	-0.42%
Minnesota	4,925,670	31	158,893	1,008	1,008	0.63%
Mississippi	2,852,927	18	158,496	1,404	1,404	0.88%
Missouri	5,606,260	35	160,179	-279	279	-0.17%
Montana	905,316	6	150,886	9,014	9,014	5.64%
Nebraska	1,715,369	11	155,943	3,957	3,957	2.47%
Nevada	2,002,032	13	154,002	5,898	5,898	3.69%
New Hampshire	1,238,415	8	154,802	5,098	5,098	3.19%
New Jersey	8,424,354	53	158,950	950	950	0.59%
New Mexico	1,823,821	11	165,802	-5,902	5,902	-3.69%
New York	19,004,973	119	159,706	194	194	0.12%
North Carolina	8,067,673	50	161,353	-1,453	1,453	-0.91%
North Dakota	643,756	4	160,939	-1,039	1,039	-0.65%
Ohio	11,374,540	71	160,205	-305	305	-0.19%
Oklahoma	3,458,819	22	157,219	2,681	2,681	1.68%
Oregon	3,428,543	21	163,264	-3,364	3,364	-2.10%
Pennsylvania	12,300,670	77	159,749	151	151	0.09%
Rhode Island	1,049,662	7	149,952	9,948	9,948	6.22%
South Carolina	4,025,061	25	161,002	-1,102	1,102	-0.69%
South Dakota	756,874	5	151,375	8,525	8,525	5.33%
Tennessee	5,700,037	36	158,334	1,566	1,566	0.98%
Texas	20,903,994	130	160,800	-900	900	-0.56%
Utah	2,236,714	14	159,765	135	135	0.08%
Vermont	609,890	4	152,473	7,428	7,428	4.65%
Virginia	7,100,702	44	161,380	-1,479	1,479	-0.93%
Washington	5,908,684	37	159,694	206	206	0.13%
West Virginia	1,813,077	11	164,825	-4,925	4,925	-3.08%
Wisconsin	5,371,210	34	157,977	1,923	1,923	1.20%
Wyoming	495,304	3	165,101	-5,201	5,201	-3.25%
Totals	281,424,177	1,760	159,900			
Voter Equivalency Ratio			1.11			
Most Underrepresented				-5,902		-3.69%
Most Overrepresented				9,948		6.22%
Maximum Deviation				15,850		
% Max Deviation						9.91%
Mean Absolute Deviation					2,394	
% Mean Abs Deviation						1.50%