

# REDRAWING THE MAP ON REDISTRICTING 2010

THE PHILADELPHIA STUDY



Using geospatial analysis to measure electoral district compactness and limit gerrymandering

An Azavea White Paper

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## Introduction

During his 2007 election campaign, Philadelphia Mayor Michael Nutter articulated a vision in which “Philadelphia is a place where people are inspired by city government, not embarrassed by it.”<sup>1</sup> One visible challenge to such a goal is the fact that Philadelphia is home to some of the most gerrymandered city council districts in the nation. Every ten years City Council has the opportunity to draw council districts to reflect Philadelphia’s changing population. In the past, these district boundaries have primarily been the result of back room dealing. Next year’s decennial Census and the redistricting that will follow in 2011 offer the opportunity to put an end this pattern.

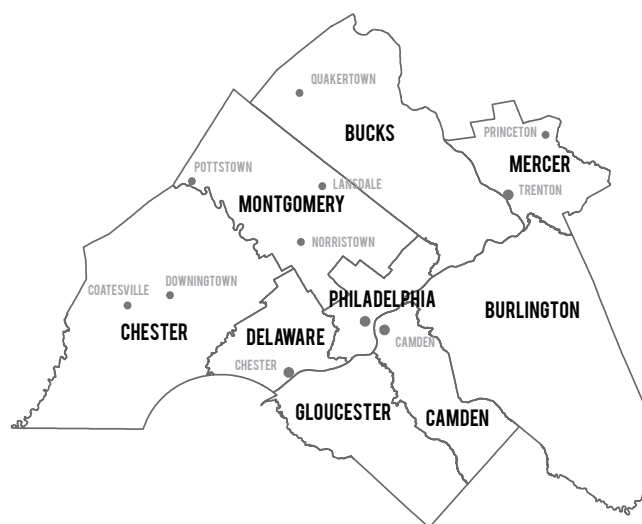
The most famous examples of gerrymandering are typically the product of dramatic partisan battles over seats in the U.S. Congress, but citizens often feel the effects of the practice most acutely at the local level. There is an appealing drama in tales of the entire Texas Democratic delegation to the House fleeing the state to stymie a mid-decade redistricting power grab by members of the GOP. In reality, however, most gerrymandering efforts are the product of deal-making by party power brokers, designed to protect the influence of incumbents and other insiders. The redistricting dramas that play out

in city councils and state legislatures across the country are often more about the interests of individuals than of parties. In our white paper *Redrawing the Map on Redistricting 2010: A National Study* we used the lens of compactness to examine the phenomenon of gerrymandering at the nationwide scale. This supplement is an opportunity to focus more narrowly on the Philadelphia region (Figure 1), supplementing our analysis of compactness with a more thorough consideration of the processes that lead to gerrymandering in our area and the impediments to equitable redistricting that we face. It also offers an opportunity to get behind the mathematical abstraction to talk about some of gerrymandering’s concrete effects.

This case study focuses on three questions:

- How extensive is the problem of gerrymandered districts in the Philadelphia region?
- What are the legislative processes that produce these districts?
- How might we change the system to produce fairer districting?

A crucial aspect of this study is geographical scale: the population shifts that make redistricting necessary and the political considerations that shape the process appear very different at the local, state and Congressional levels.



**Figure 1: Map of the Delaware Valley: the region of interest in this case study of gerrymandering**

## Gerrymandering in the Philadelphia Region

Although the practice of manipulating legislative district boundaries for electoral advantage is commonly known as gerrymandering—after an 1812 Massachusetts redistricting carried out by Democratic-Republicans that included a salamander-like district and which was signed into law by Governor Elbridge Gerry—it is in fact far older. In 1709, residents of the outlying counties of Bucks, Chester and Philadelphia (then distinct from the city proper) conspired to deprive the City of Philadelphia’s residents of the representation that would be due to them under a proportional system. Numerous sources cite this colonial era plan as the first case of electoral district manipulation in what was to become the United States.

Over the subsequent 300 years, the motivations and methods behind geographical electoral manipulation remained essentially the same, although the technologies that enable gerrymandering have become increasingly sophisticated. (See Avencia’s full white paper, *Redrawing the Map on Redistricting 2010: A National Study* for a more detailed discussion of recent history.)

In the annals of redistricting case law, Pennsylvania recently made another important appearance with the 2004 case of *Vieth v. Jubelirer*, which illustrates the difficulty of regulating gerrymandering. Following the 2000 Census and a reapportionment in which Pennsylvania was stripped of two U.S. House seats, Republicans controlled both chambers of the Pennsylvania General Assembly. They enacted a redistricting plan that shifted the partisan makeup of the state’s Congressional delegation from 11 Democrats and 10 Republicans to 7 Democrats and 12 Republicans—this in a state where Democrats held a partisan registration advantage of about half a million voters.

Three registered Pennsylvania Democrats challenged the legality of the plan on the grounds that such geographical manipulations of the electorate violated the Constitutional principle of “one person, one vote” and denied Democrats equal protection under the Fourteenth Amendment by rendering the ballots of some voters essentially irrelevant. In a 5-4 decision with no majority opinion, the Supreme Court Justices upheld



**Figure 2: 1812 political cartoon run in the Boston Weekly Messenger depicting the salamander-like district that inspired the term gerrymandering**

the constitutionality of the partisan district plan on the grounds that there are no judicial standards by which to resolve claims of gerrymandering. While this verdict essentially permits partisan gerrymandering for the time being, it opens the door to future challenges should such standards be developed.

Like many of the best-known gerrymandering cases, *Vieth v. Jubelirer* was prominent largely because it dealt with the electoral machinations of major political parties. The motivation behind many gerrymandering efforts at the state and local level is the protection of incumbents and the punishment of dissenters within party ranks. These forms of gerrymandering produce the same kinds of contorted districts and ill-effects as partisan gerrymandering, but often escape public notice because their victims are usually political upstarts rather than rivals backed by substantial party resources. Whatever the motivation behind such political gamesmanship, citizens who live in the communities carved up by gerrymandering are the real losers, often finding themselves without an advocate when redistricting has split communities among several representative districts and services are provided in a piecemeal fashion.

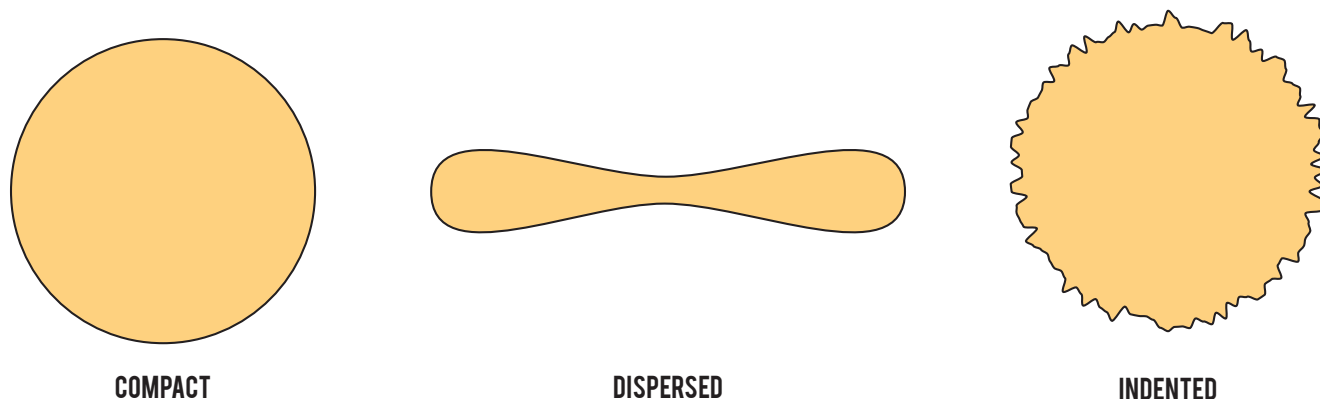
## Compactness

### Background

Academic articles, state laws and Supreme Court rulings have all cited compactness, along with contiguity, as a traditional districting principle, and low compactness is considered a sign of a potential gerrymander. Indeed, the Pennsylvania Constitution (Article II, Section 16) provides fairly typical districting criteria, both in what it specifies and, more importantly, in what it does not: districts “shall be composed of compact and contiguous territory as nearly equal in population as practicable.” The New Jersey Constitution is similarly vague, stipulating that “The Assembly districts shall be composed of contiguous territory, as nearly compact and equal in the number of their inhabitants as possible” (Article IV, Section II, paragraph 4).<sup>2</sup>

to the area of an ideal form. Other measures evaluate district compactness based on indentation: how smooth (better) or contorted (worse) the boundaries of a district are. Indentation can be measured by simply summing the total length of the district boundaries or by using the perimeter of a district as part of a perimeter-area ratio.

To identify the least compact—and thus potentially most gerrymandered—districts in the Philadelphia region we evaluated them using four different measures of compactness. We then standardized the scores from the various measures and averaged them to generate a single, regional Top Ten list at each legislative level. Because cities are themselves frequently irregularly shaped in ways that states generally are not, for the



**Figure 3: Compactness: dispersion and indentation**

Unfortunately, the legal standard for compactness has been similar to Justice Stewart’s famous definition of obscenity: I know it when I see it. Indeed, while the state Constitution asserts the desirability of district compactness it offers no standard by which redistricting plans can be judged. Most compactness measures attempt to quantify the geometric shape of a district relative to a perfectly compact shape, often a circle.

The compactness measures we have selected can be divided into two categories: those that measure dispersion and those that measure indentation (Figure 3). Dispersion-based measures evaluate the extent to which the shape of a district is dispersed, or spread out, from its center. Geometrically, these are area-based measures, comparing the area of the district

Philadelphia City Council districts we have calculated an index score rather than a raw score.

We must also bear in mind that compactness is a mathematical proxy for gerrymandering, not an absolute assessment of the phenomenon. District boundaries may deviate from an ideal shape because they follow a natural boundary like a shoreline or a mountain ridgeline. In urban areas, high population densities mean that districts are often formed by aggregating very small geographical areas, such as census block groups, which typically leads to far more contorted boundaries than the aggregation of large areas, such as counties, in more rural areas. No mathematical formula is likely to adequately correct for all of the geographical and social variability that can result in irregular district shapes.



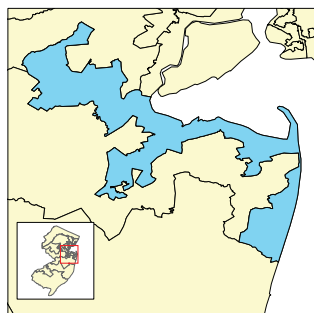
## U.S. Congress

Although Pennsylvania currently holds just 19 of the 435 seats in Congress, many of the state's Congressional districts are among the least compact in the nation. No Pennsylvania district ranked among the Top Ten, but PA-1, which covers much of Philadelphia and Delaware Counties, narrowly missed, coming in 11th. A total of four Pennsylvania districts ranked in the Top 50, meaning that while the state holds just 4% of the seats in Congress, it has double this proportion among the most gerrymandered. A similar pattern holds in New Jersey, where three of the state's thirteen Congressional districts are among the Top 50 least compact, and two of these (NJ-6 and NJ-13) are among the Top Ten. Table 1 displays the ten least compact Pennsylvania and New Jersey districts, along with

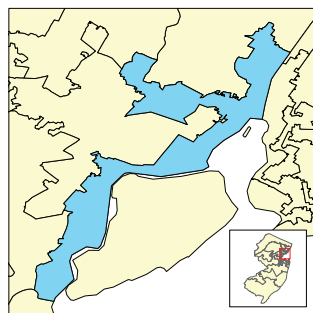
their national rank. Several of these districts—PA-1, PA-13, and PA-6—are in the Philadelphia region.

In addition to having a handful of extremely gerrymandered districts, the overall pattern of district drawing in New Jersey and Pennsylvania tends toward non-compactness and, potentially, gerrymandering. To make statewide comparisons, we determined the average district compactness in each of the 43 states with more than one Congressional delegate. According to this measure, New Jersey's districts are the 5th least compact (potentially most gerrymandered) and Pennsylvania's are 10th.

1. NJ-6 (1)

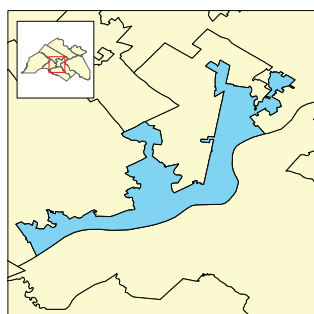


2. NJ-13 (10)

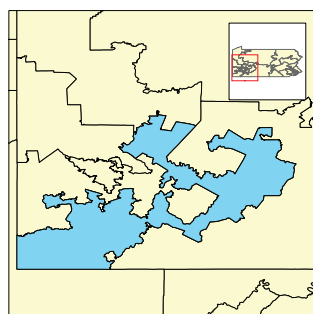


**Table 1. Top Ten least compact congressional districts in Pennsylvania and New Jersey, national rank in parentheses**

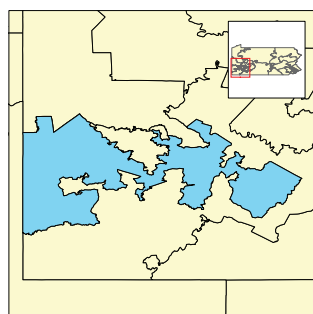
3. PA-1 (11)



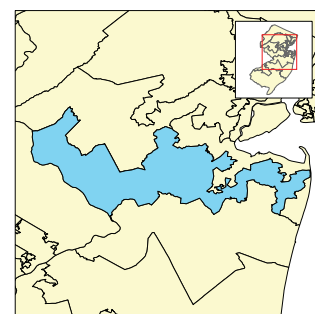
4. PA-12 (24)



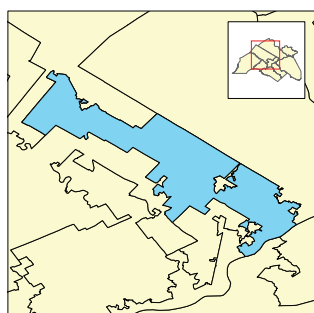
5. PA-18 (37)



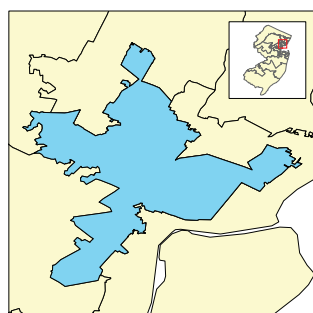
6. NJ-12 (44)



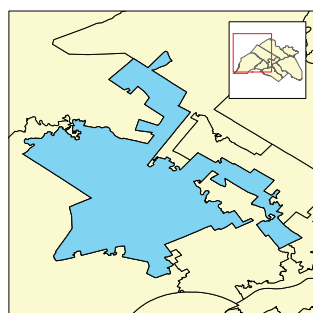
7. PA-13 (45)



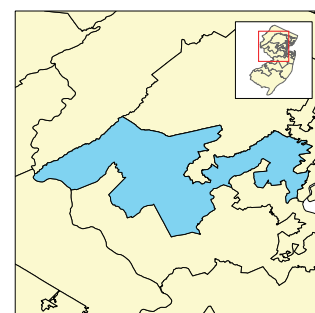
8. NJ-10 (53)



9. PA-6 (58)



10. NJ-7 (105)

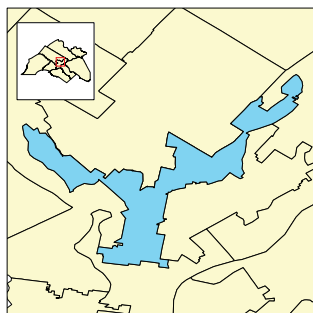


## State Legislature

Pennsylvania is a particularly egregious offender in its state senate districting, with the average district compactness being the 4th worst among the nation's 50 states. New Jersey is marginally better, ranking 12th. Table 2 displays the ten least compact state senate districts in Pennsylvania and New Jersey. Only two state senate districts from New Jersey land in the Top Ten, both of them in northern New Jersey. The rest of the senate districts displayed in Table 2 are in the Pennsylvania, five of them in the Philadelphia region.

At the state assembly level this pattern is roughly reversed, with New Jersey having the nation's 6th worst districts, on average, and Pennsylvania ranking 15th.<sup>3</sup> However, all of the assembly districts displayed in Table 3 are in Pennsylvania, three of them in the Philadelphia region.

1. PA-3 (4)



2. PA-44 (46)

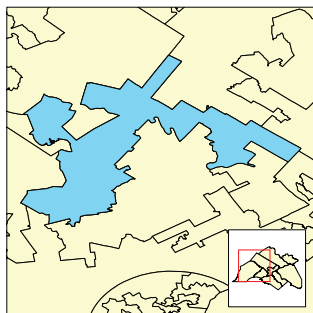
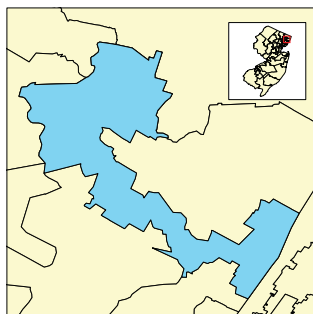
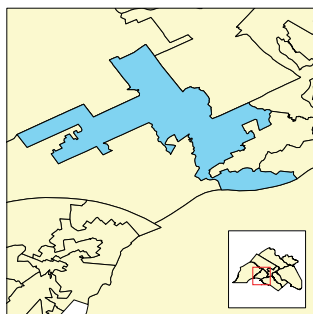


Table 2. Top Ten least compact state senate districts in Pennsylvania and New Jersey, national rank in parentheses

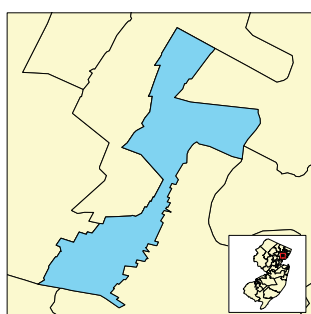
3. NJ-38 (48)



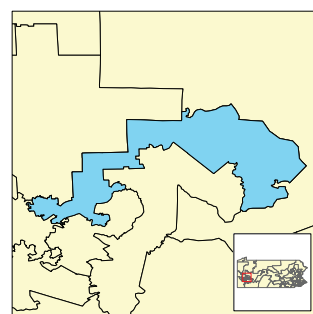
4. PA-26 (49)



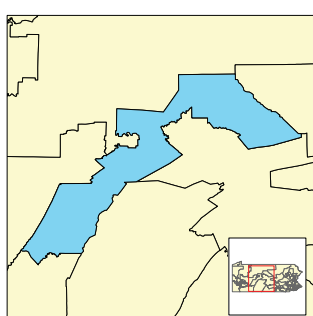
5. NJ-28 (57)



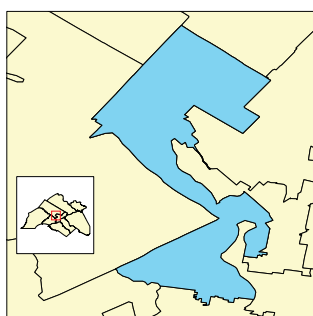
6. PA-38 (66)



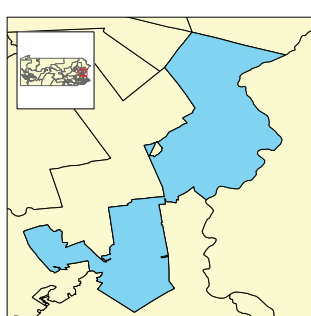
7. PA-35 (82)



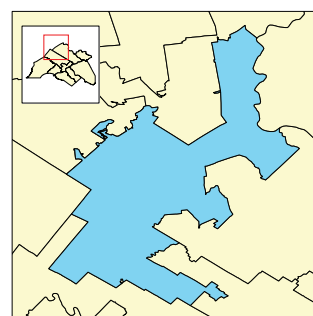
8. PA-7 (84)



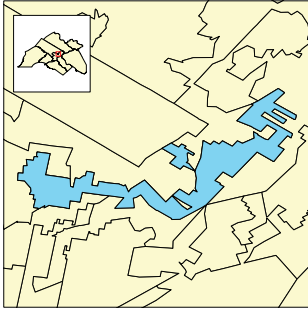
9. PA-18 (85)



10. PA-24 (86)



1. PA-202 (11)



2. PA-170 (19)

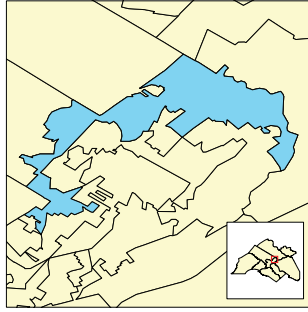
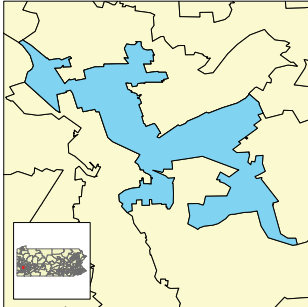


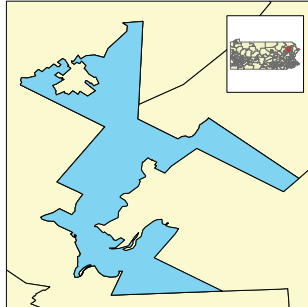
Table 3: Top Ten least compact state assembly districts in Pennsylvania and New Jersey, national rank in parentheses

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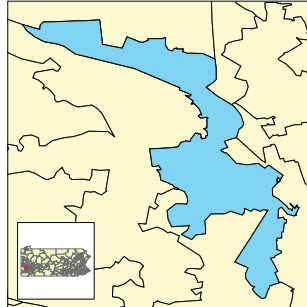
3. PA-19 (25)



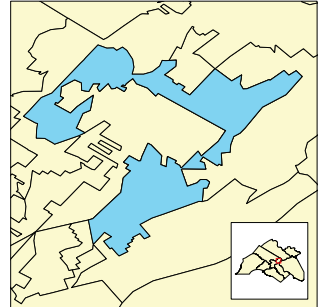
4. PA-113 (30)



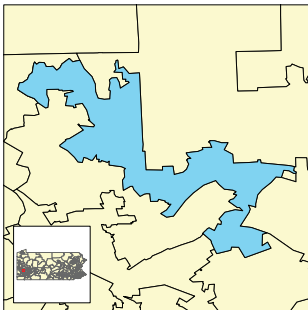
5. PA-27 (34)



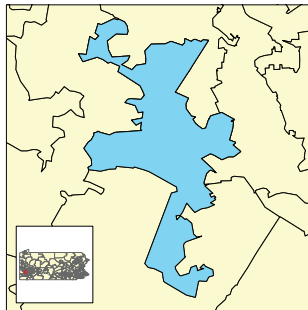
6. PA-172 (48)



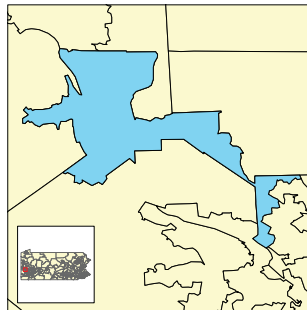
7. PA-21 (56)



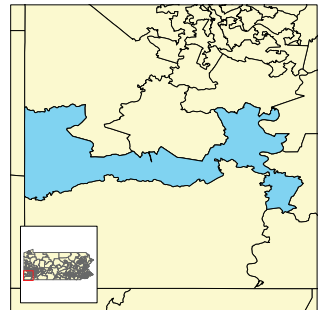
8. PA-42 (58)



9. PA-16 (59)



10. PA-49 (67)





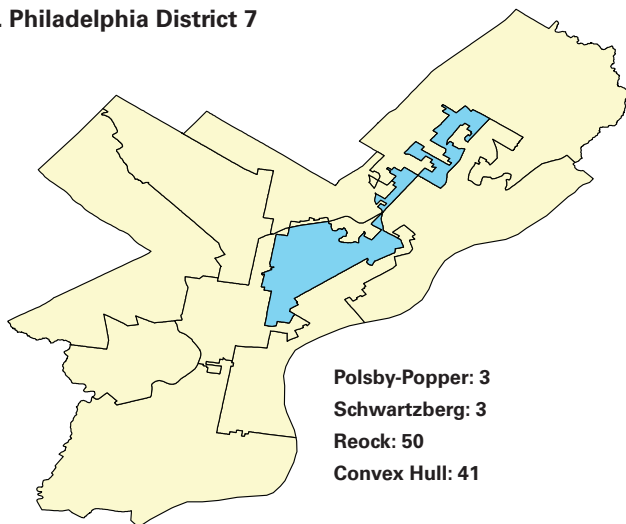
## Philadelphia City Council

Partisan redistricting at the Congressional and state levels attracts most of the attention, but the problem is equally acute at the municipal level, though it takes on a different form. How does Philadelphia fare in this regard? Among city council districts in the nation's fifty most populous cities, Philadelphia City Council Districts Seven and Five consistently rank among

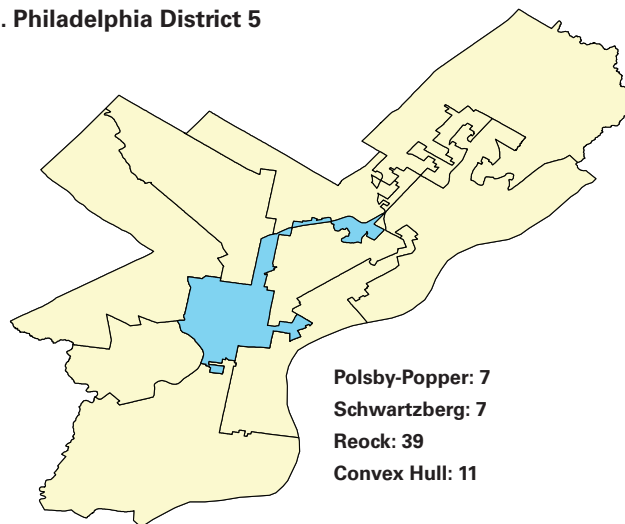
the least compact, often in the Top Ten.<sup>4</sup> Philadelphia Council Districts Nine and One also appear at the top of the list of least compact districts, by several measures.

**Table 4: Top Four least compact Philadelphia City Council Districts, rank by measure**

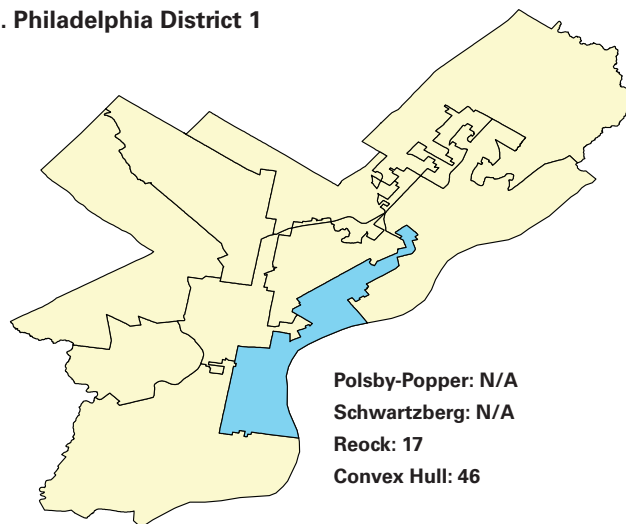
### 1. Philadelphia District 7



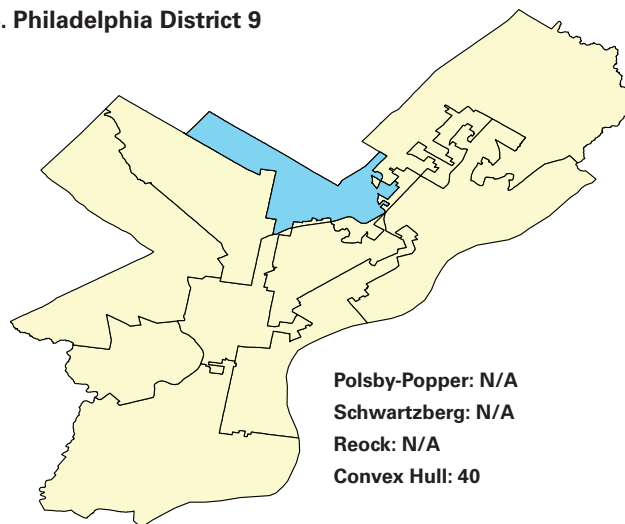
### 2. Philadelphia District 5



### 3. Philadelphia District 1



### 4. Philadelphia District 9



## Process

### The Census and Redistricting

The goal of redistricting is to ensure that the principle of “one person, one vote” is respected by drawing district boundaries such that they contain populations of equal size. At the Congressional level, redistricting goes hand-in-hand with reapportionment: the process of distributing the seats in the U.S. House of Representatives among the 50 states to reflect the distribution of the population across the nation; every state is guaranteed one seat. In 1911 Congress fixed the number of seats in the House at 435 to prevent the chamber from growing to an unwieldy size. At this time members of the House each represented approximately 212,000 constituents—up from 33,000 in the original House—but now this number has grown to an average of 700,000.<sup>5</sup> Congress made it a legal requirement in 1967 that members of the House be elected from geographically defined, single-member districts.

The Constitution mandates that a Census be conducted every ten years, and redistricting at the federal, state and local levels is conducted following the release of Census figures to ensure that district boundaries reflect the most recent, comprehensive and accurate population data. Redistricting data must be submitted to the states within one year following the Census; April 1, 2011, in this case. From that point forward, redistricting timelines diverge depending on the policies in place for the particular legislative body.

#### Census Timeline

- **February – March 2010:** Census questionnaires are mailed or delivered to households.
- **April 1, 2010:** Census Day
- **April – July 2010:** Census takers visit households that did not return a questionnaire by mail.
- **December 31, 2010:** By law, Census Bureau delivers population counts to President for apportionment.
- **April 1, 2011:** By law, Census Bureau completes delivery of redistricting data to states.

Source: U.S. Census Bureau<sup>6</sup>

### U.S. Congress, Pennsylvania

In Pennsylvania, Congressional district plans must be passed by the General Assembly and signed into law by the governor. Following the delivery of Census data to the state, a redistricting plan must be put in place in time for candidates to file paperwork for the first round of primary elections, which will likely mean late January of 2012. If the General Assembly fails to enact a districting plan, the Supreme Court of Pennsylvania is empowered to intervene and adopt a plan, as it did in 1992. Because the stakes are higher—votes in the U.S. House of Representatives can impact legislative priorities on the national stage—Congressional districting typically attracts the most media attention. For this reason, gerrymandering of federal legislative districts typically fits the familiar mold of partisan gerrymandering, in which representatives of the majority political parties jockey to ensure that district plans are drawn so as to yield as many seats as possible for candidates from their party. The case of *Vieth v. Jubelirer*, discussed in the Introduction above, illustrates the power of partisan gerrymandering and the difficulty of challenging such plans in the courts.

Compounding this problem is the fact that Pennsylvania’s population growth has lagged behind the rest of the United States for the past several decades, meaning that in recent rounds of post-Census reapportionment the state has lost Congressional seats. In addition to the purely partisan aspects of redistricting, the process has become a game of musical chairs in which not all incumbents’ seats are guaranteed, rendering the process particularly contentious. This pattern is likely to hold true in 2010, with Pennsylvania’s congressional delegation predicted to shrink to 18.

Redistricting reform at the Federal level has been sluggish. In each of the last several sessions of Congress, Rep. John Tanner has introduced the Fairness and Independence in Redistricting Act, which would prohibit states from carrying out more than one Congressional redistricting following the decennial census and would require them to conduct redistricting through independent commissions. Unfortunately there seems to be little political will for reform on the part of Congress, and the bill and its companion Senate bill have been stuck in committee repeatedly.

## Pennsylvania General Assembly

The Pennsylvania Constitution (Article II, Section 17) entrusts the redrawing of state General Assembly districts to a Legislative Reapportionment Commission.<sup>7</sup> Unlike the independent redistricting commissions established in other states, Pennsylvania's commission is composed of five members, "four of whom shall be the majority and minority leaders of both the Senate and the House of Representatives" or their deputies. These four members select a fifth member to chair the commission, provided that this person is a citizen of the Commonwealth and is not a paid local, State or Federal official. The state Constitution sets forth a firm timeline for achieving various benchmarks of the redistricting process, essentially giving the commission seven to eight months to complete a plan, submit it for public comment and make any necessary changes.

Unlike in some states, the full Pennsylvania legislature is not involved in drafting the redistricting plan, nor does it vote the plan into law. Nevertheless, the redistricting plans generated by the Legislative Reapportionment Commission have typically favored incumbents; this should come as no surprise given the partisan composition of the commission. In marked contrast to the partisan gerrymandering characteristic of Congressional redistricting plans, the manipulation that goes on with regard to state legislative districts is best described as bipartisan incumbent protection, a.k.a. a "sweetheart" gerrymander.

In these cases, incumbent legislators are protected by district lines drawn to exclude promising challengers or to form a more sympathetic electorate. In 1991 one potential candidate who had stated his intention to challenge an incumbent Senator found that his house had been redrawn into a different district. Another promising candidate, wise to these sorts of tactics, went to extraordinary lengths to prevent legislative leaders from drawing him out of the House district in which he had made a good showing two years earlier. During the redistricting process he moved to a series of undisclosed locations, bought a decoy house, and eventually moved into the same precinct as the incumbent.

Incumbents who have done a poor job of representing the voters may even be protected from their own constituents. In one

case, community members had organized to oppose a state representative who had sold local farmland to be transformed into a landfill, posing a threat to his re-election chances. In the final version of the redistricting plan, the township where the agitators were concentrated had been transplanted to a neighboring district.

Redistricting of General Assembly seats also offers an opportunity to enforce party discipline. Those legislators on both sides of the aisle who have bucked their party's leadership may find themselves out in the cold, either by being drawn into hostile territory or through the elimination of their districts altogether. Population shifts during the 1990s saw suburban areas growing at the expense of urban centers in Philadelphia and Pittsburgh. These demographic changes alone seem insufficient to explain the fact that in the final 2002 redistricting plan the three Pittsburgh-area districts that were eliminated had been represented by Democratic lawmakers who had clashed frequently with their party's leadership. Similarly, a Republican representative from suburban Philadelphia found that the precinct in which his house was located had been combined with a predominantly Democratic area, but the rest of his hometown—his base of support—had been left behind.

Common Cause Pennsylvania and the League of Women Voters (LWV) collaborated on a 2008 effort to amend the state

### PA State Redistricting Timeline

- **April 1, 2010:** Deadline for the U.S. Census Bureau to publish the data required for redistricting.
- **May 31, 2011:** Sixty days after publication of the census data, the state must name and certify four members of the Legislative Reapportionment Commission.
- **July 15, 2011:** By forty-five days after certification, the Legislative Reapportionment Commission must select a fifth member who shall serve as chairperson of the commission.
- **October 13, 2011:** By ninety days after certification of the commission (or after the publication of the census data, whichever is later) it shall file a preliminary redistricting plan with the Secretary of the Commonwealth.

Constitution by proposing a redistricting reform bill that would remedy some of the worst abuses described above by prohibiting the use of incumbent addresses as districting criteria. Additionally, the legislation would establish clear criteria for the legislature to use when drawing district boundaries, and would require the legislature to conduct public hearings on redistricting.<sup>8</sup> Although it is now too late for the bill to pass as a Constitutional amendment in time for the 2011 redistricting, Common Cause and LWW continue to advocate for a more transparent process, and hope to succeed with the Constitutional amendment in time for the 2021 round.

### **Philadelphia City Council**

Within Philadelphia, the City Council redistricting process is guided by the Home Rule Charter (Article II, Section 102), which outlines a tight deadline and punitive measures if a plan is not enacted expeditiously. Council has 60 days in which to generate a plan, which the Mayor must sign or veto. The seventeen-member Council can override the Mayor's veto with a twelve member majority or can devise and submit an alternate plan. If the Council members are unable to secure approval of a plan within six months, the City will withhold their paychecks until a plan is agreed upon, at which time they will receive their salaries with back pay.

The dynamics of redistricting at the local level typically reflect the interests of individual politicians and local coalitions more than partisanship. A particularly vicious redistricting battle in 2001 was largely the product of a power struggle between Council President Anna Verna and Mayor John Street and his allies on Council. The fight was precipitated by a district plan in which rapidly developing areas of Center City would have been transferred from the Fifth District of Darrell Clarke—a former chief of staff to then newly elected Mayor (and former Council President) John Street—to that of Council President Anna Verna. At stake were wealthy constituents and access to powerful developers with interests in the area. Allied with Clarke against the other fifteen Council members was Rick Mariano of the Seventh District.

The redistricting plan became the subject of a protracted battle that involved numerous pieces of legislation as well as the city's unions and other local power brokers. As the fight

dragged on, Mayor Street wielded his redistricting veto power to his advantage, forcing Council members to go without their salaries in the face of his opponents' inability to assemble a veto-proof majority. In early February 2002, not having been paid for months, Council approved the district proposal supported by Clarke and Mariano. Notably, under the plan that they created, these Council Members represented two districts—the Fifth and the Seventh—that have subsequently been ranked as among the least compact and potentially most gerrymandered city council districts in the nation (see Compactness section, above).

In addition to the political dynamics of redistricting, Council must weigh the impact of shifting city demographics as they draw their plans. While Philadelphia's total population has been stagnant or contracted over the past few decades, the Latino population has been steadily growing, concentrated largely in North Philadelphia. The 1991 round of redistricting saw Council devise a plan that would disperse Latino voters across four districts, diluting their power as a voting bloc and denying them the opportunity for geographical representation on Council. Mayor Goode vetoed this plan and Council was unable to pass a plan before a new mayor and Council were inaugurated in 1992. Ignoring protests of Latino leaders that the plan constituted vote suppression, the then-new City Council passed the plan and the new Mayor at the time, Ed Rendell, declined to veto it as his predecessor had done. One significant outcome of the 2001 redistricting was the creation of a single district, the Seventh, in which Latinos comprised more than 40% of the population. After Rick Mariano, the district's representative on Council, was convicted on corruption charges and jailed in 2006, Maria Quiñones-Sánchez was elected to replace him, attaining the geographical representation on Council that the Latino community had long sought.

To date, there has been little momentum behind a local redistricting reform movement in Philadelphia. During the 2001 redistricting standoff, then-Council member (and current Mayor) Michael Nutter introduced a proposal to amend the City Charter to eliminate the mayor's redistricting veto power and to lift the salary suspension requirement, but it was not enacted. During the 2007 election campaign, the Committee of Seventy—a non-partisan, non-profit organization cited as the

region's "premier government watchdog"—urged City Council candidates to endorse "a non-partisan and independent citizen's commission to allow for an open and public process that will result in a fair redistricting plan." Mayor Nutter and nine current council members (a majority) endorsed the plan at the time, but to date they have taken no action on the proposal.<sup>9</sup>

## Conclusion

When we began to research our first Gerrymandering white paper in 2006 we were propelled largely by local concerns. The Philadelphia-area legislative districts in which we lived and worked seemed strangely contorted, but how bad were they? Using the district shapes we had on hand as part of our Cicero elected official database, we developed a nationwide Gerrymandering Index that enabled us to compare Philadelphia legislative districts to those around the country. Now, in anticipation of the 2010 Census and subsequent redistricting, we have revised and expanded that white paper as *Redrawing the Map on Redistricting 2010: A National Study*. Our research into district compactness has underscored the point that an open process is the key to successful redistricting.

For this case study we returned our attention to the Philadelphia region to examine the processes that shape our local districts, and our analysis has led us to a few important conclusions. First, the compactness calculations that we developed in our national study demonstrate that non-compactness—a potential flag for gerrymandering—is pervasive at every level of government in the Philadelphia region. Second, the motivations and methods behind the manipulation of district boundaries vary based on spatial scale. The incentive to gerrymander a U.S. Congress district is often quite different than for a Philadelphia City Council seat, and the process by which it is achieved is distinct as well. There are committed reform organizations working at every legislative level, and they are able to identify and advocate for the procedural changes that will be most effectively prevent gerrymandering in a particular case.

However, there is one remedy that is common across spatial scales: transparency. Reform advocates recognize that engaging citizens and exposing the redistricting process to public scrutiny is an essential way to ensure that legislative districts are drawn with the interests of voters, rather than politicians,

in mind. Only when that happens will Philadelphians realize Mayor Nutter's hope of being inspired by government rather than ashamed of it. Getting people informed and involved is the key to bringing this change about. To this end, Azavea has partnered with the Committee of Seventy to launch the *Redistricting the Philadelphia Region* website. We believe that armed with knowledge and the right tools, ordinary citizens can help redraw the map on redistricting.

- 1 <http://www.greatexpectations07.com/node/105>
- 2 The New Jersey Constitution goes into a more detailed description of what constitutes population equality, and both states bar the division of counties and various sorts of municipalities into multiple districts. Neither provides additional guidance on the meaning of "compact."
- 3 Only 49 states have a lower legislative chamber because Nebraska governs through a unicameral legislature.
- 4 The analysis began with a group of more than 500 legislative districts drawn from 43 of the nation's 50 most populous cities. For each measure of compactness, a normalized index score was calculated for those districts (approximately 100) whose compactness was far below the norm. The ranks that appear here are generated after two rounds of analysis. When the rank N/A appears, it indicates that the district's compactness was normal enough that no index score was calculated. For a complete explanation of our method, see Avencia's *Redrawing the Map on Redistricting 2010: A National Study*.
- 5 Baker, Peter. "Expand the House?" The New York Times. 17 September 2009. <http://www.nytimes.com/2009/09/18/us/politics/18baker.html>
- 6 U.S. Census Bureau, "2010 Census Timeline: Key Dates" [http://2010.census.gov/2010census/about\\_2010\\_census/013279.html](http://2010.census.gov/2010census/about_2010_census/013279.html); U.S. Census Bureau, "Questions and Answers on Apportionment"
- 7 <http://www.census.gov/population/www/censusdata/apportionment/faq.html>
- 8 [http://sites.state.pa.us/PA\\_Constitution.html](http://sites.state.pa.us/PA_Constitution.html)
- 9 <http://www.commoncause.org/site/pp.asp?c=dkLNK1MQlwG&b=4773689>
- 10 The Council Members endorsing the plan were Blondell Reynolds Brown (D-AL), Bill Green (D-AL), Bill Greenlee (D-AL), Jack Kelly (R-AL), Frank Rizzo (R-AL), Frank DiCicco (D-1st), Anna Verna (D-2nd), Curtis Jones (D-4th), Maria Quiñones-Sánchez (D-7th); Committee of Seventy, 2007 Ethics Agenda responses, [http://www.seventy.org/Files/2007\\_CCethics\\_Responses.pdf](http://www.seventy.org/Files/2007_CCethics_Responses.pdf).