

42.4 Redistricting standards.

1. Legislative and congressional districts shall be established on the basis of population.

a. Senatorial and representative districts, respectively, shall each have a population as nearly equal as practicable to the ideal population for such districts, determined by dividing the number of districts to be established into the population of the state reported in the federal decennial census. Senatorial districts and representative districts shall not vary in population from the respective ideal district populations except as necessary to comply with one of the other standards enumerated in this section. In no case shall the quotient, obtained by dividing the total of the absolute values of the deviations of all district populations from the applicable ideal district population by the number of districts established, exceed one percent of the applicable ideal district population. No senatorial district shall have a population which exceeds that of any other senatorial district by more than five percent, and no representative district shall have a population which exceeds that of any other representative district by more than five percent.

b. Congressional districts shall each have a population as nearly equal as practicable to the ideal district population, derived as prescribed in paragraph "*a*" of this subsection. No congressional district shall have a population which varies by more than one percent from the applicable ideal district population, except as necessary to comply with article III, section 37 of the Constitution of the State of Iowa.

c. If a challenge is filed with the supreme court alleging excessive population variance among districts established in a plan adopted by the general assembly, the general assembly has the burden of justifying any variance in excess of one percent between the population of a district and the applicable ideal district population.

2. To the extent consistent with subsection 1, district boundaries shall coincide with the boundaries of political subdivisions of the state. The number of counties and cities divided among more than one district shall be as small as possible. When there is a choice between dividing local political subdivisions, the more populous subdivisions shall be divided before the less populous, but this statement does not apply to a legislative district boundary drawn along a county line which passes through a city that lies in more than one county.

3. Districts shall be composed of convenient contiguous territory. Areas which meet only at the points of adjoining corners are not contiguous.

4. It is preferable that districts be compact in form, but the standards established by subsections 1, 2 and 3 take precedence over compactness where a conflict arises between compactness and these standards. In general, compact districts are those which are square, rectangular or hexagonal in shape to the extent permitted by natural or political boundaries. When it is necessary to compare the relative compactness of two or more districts, or of two or more alternative districting plans, the tests prescribed by paragraphs "*b*" and "*c*" of this subsection shall be used. Should the results of these two tests be contradictory, the standard referred to in paragraph "*b*" of this subsection shall be given greater weight than the standard referred to in paragraph "*c*" of this subsection.

a. As used in this subsection:

(1) "*Population data unit*" means a civil township, election precinct, census enumeration district, census city block group, or other unit of territory having clearly identified geographic boundaries and for which a total population figure is included in or can be derived directly from certified federal census data.

(2) The "*geographic unit center*" of a population data unit is that point approximately equidistant from the northern and southern extremities, and also approximately equidistant from the eastern and western extremities, of a population data unit. This point shall be determined by visual observation of a map of the

population data unit, unless it is otherwise determined within the context of an appropriate coordinate system developed by the federal government or another qualified and objective source and obtained for use in this state with prior approval of the legislative council.

(3) The "x" co-ordinate of a point in this state refers to the relative location of that point along the east-west axis of the state. Unless otherwise measured within the context of an appropriate co-ordinate system obtained for use as permitted by subparagraph 2 of this paragraph, the "x" co-ordinate shall be measured along a line drawn due east from a due north and south line running through the point which is the northwestern extremity of the state of Iowa, to the point to be located.

(4) The "y" co-ordinate of a point in this state refers to the relative location of that point along the north-south axis of the state. Unless otherwise measured within the context of an appropriate co-ordinate system obtained for use as permitted by subparagraph (2) of this paragraph, the "y" co-ordinate shall be measured along a line drawn due south from the northern boundary of the state or the eastward extension of that boundary, to the point to be located.

b. The compactness of a district is greatest when the length of the district and the width of the district are equal. The measure of a district's compactness is the absolute value of the difference between the length and the width of the district.

(1) In measuring the length and the width of a district by means of electronic data processing, the difference between the "x" co-ordinates of the easternmost and the westernmost geographic unit centers included in the district shall be compared to the difference between the "y" co-ordinates of the northernmost and southernmost geographic unit centers included in the district.

(2) To determine the length and width of a district by manual measurement, the distance from the northernmost point or portion of the boundary of a district to the southernmost point or portion of the boundary of the same district and the distance from the westernmost point or portion of the boundary of the district to the easternmost point or portion of the boundary of the same district shall each be measured. If the northernmost or southernmost portion of the boundary, or each of these points, is a part of the boundary running due east and west, the line used to make the measurement required by this paragraph shall either be drawn due north and south or as nearly so as the configuration of the district permits. If the easternmost or westernmost portion of the boundary, or each of these points, is a part of the boundary running due north and south, a similar procedure shall be followed. The lines to be measured for the purpose of this paragraph shall each be drawn as required by this paragraph, even if some part of either or both lines lies outside the boundaries of the district which is being tested for compactness.

(3) The absolute values computed for individual districts under this paragraph may be cumulated for all districts in a plan in order to compare the overall compactness of two or more alternative districting plans for the state, or for a portion of the state. However, it is not valid to cumulate or compare absolute values computed under subparagraph (1) with those computed under subparagraph (2) of this paragraph.

c. The compactness of a district is greatest when the ratio of the dispersion of population about the population center of the district to the dispersion of population about the geographic center of the district is one to one, the nature of this ratio being such that it is always greater than zero and can never be greater than one to one.

(1) The population dispersion about the population center of a district, and about the geographic center of a district, is computed as the sum of the products of the population of each population data unit included in the district multiplied by the square of the distance from that geographic unit center to the population center or the geographic center of the district, as the case may be. The geographic center of the district is defined by averaging the locations of all geographic unit centers which are included in the district. The population center

of the district is defined by computing the population-weighted average of the "x" co-ordinates and "y" co-ordinates of each geographic unit center assigned to the district, it being assumed for the purpose of this calculation that each population data unit possesses uniform density of population.

(2) The ratios computed for individual districts under this paragraph may be averaged for all districts in a plan in order to compare the overall compactness of two or more alternative districting plans for the state, or for a portion of the state.

5. No district shall be drawn for the purpose of favoring a political party, incumbent legislator or member of Congress, or other person or group, or for the purpose of augmenting or diluting the voting strength of a language or racial minority group. In establishing districts, no use shall be made of any of the following data:

a. Addresses of incumbent legislators or members of Congress.

b. Political affiliations of registered voters.

c. Previous election results.

d. Demographic information, other than population head counts, except as required by the Constitution and the laws of the United States.

6. In order to minimize electoral confusion and to facilitate communication within state legislative districts, each plan drawn under this section shall provide that each representative district is wholly included within a single senatorial district and that, so far as possible, each representative and each senatorial district shall be included within a single congressional district. However, the standards established by subsections 1 through 5 shall take precedence where a conflict arises between these standards and the requirement, so far as possible, of including a senatorial or representative district within a single congressional district.

7. Each bill embodying a plan drawn under this section shall provide that any vacancy in the general assembly which takes office in the year ending in one, occurring at a time which makes it necessary to fill the vacancy at a special election held pursuant to section 69.14, shall be filled from the same district which elected the senator or representative whose seat is vacant.

8. Each bill embodying a plan drawn under this section shall include provisions for election of senators to the general assemblies which take office in the years ending in three and five, which shall be in conformity with article III, section 6 of the Constitution of the State of Iowa. With respect to any plan drawn for consideration in the year 2001, those provisions shall be substantially as follows:

a. Each odd-numbered senatorial district shall elect a senator in 2002 for a four-year term commencing in January 2003. If an incumbent senator who was elected to a four-year term which commenced in January 2001, or was subsequently elected to fill a vacancy in such a term, is residing in an odd-numbered senatorial district on February 1, 2002, that senator's term of office shall be terminated on January 1, 2003.

b. Each even-numbered senatorial district shall elect a senator in 2004 for a four-year term commencing in January 2005.

(1) If one and only one incumbent state senator is residing in an even-numbered senatorial district on February 1, 2002, and that senator meets all of the following requirements, the senator shall represent the district in the senate for the Eightieth General Assembly:

(a) The senator was elected to a four-year term which commenced in January 2001 or was subsequently elected to fill a vacancy in such a term.

(b) The senatorial district in the plan which includes the place of residence of the state senator on the date of the senator's last election to the senate is the same as the even-numbered senatorial district in which the senator resides on February 1, 2002, or is contiguous to such even-numbered senatorial district and the senator's declared residence as of February 1, 2002, was within the district from which the senator was last elected. Areas which meet only at the points of adjoining corners are not contiguous.

The secretary of state shall prescribe a form to be completed by all senators to declare their residences as of February 1, 2002. The form shall be filed with the secretary of state no later than five p.m. on February 1, 2002.

(2) Each even-numbered senatorial district to which subparagraph (1) of this paragraph is not applicable shall elect a senator in 2002 for a two-year term commencing in January 2003. However, if more than one incumbent state senator is residing in an even-numbered senatorial district on February 1, 2002, and, on or before February 15, 2002, all but one of the incumbent senators resigns from office effective no later than January 1, 2003, the remaining incumbent senator shall represent the district in the senate for the Eightieth General Assembly. A copy of the resignation must be filed in the office of the secretary of state no later than five p.m. on February 15, 2002.

[C81, § 42.4]

90 Acts, ch 1244, §1; 94 Acts, ch 1042, §1; 94 Acts, ch 1179, §3