

October 21, 2021

SECOND REDISTRICTING PLAN

**FROM: TIMOTHY MCDERMOTT, INTERIM DIRECTOR
ED COOK, SENIOR LEGAL COUNSEL
IOWA LEGISLATIVE SERVICES AGENCY**

I. INTRODUCTION.

Pursuant to Iowa Code section 42.3, the Legislative Services Agency, on October 21, 2021, delivered to the Secretary of the Senate and the Chief Clerk of the House of Representatives identical bills embodying a plan of legislative and Congressional districting prepared in accordance with Iowa Code section 42.4.

Iowa Code section 42.3 further provides that upon delivery to the General Assembly of the identical bills, copies of the identical bills, maps illustrating the plan, a summary of the standards prescribed by Iowa Code section 42.4 for development of the plan, and a statement of the population of each district included in the plan and the relative deviation of each district population from the ideal district population shall be made available to the public at the earliest feasible time. To fulfill these requirements, this memorandum, the identical bills, as well as maps illustrating the plan, will be made available to the Iowa General Assembly and the public on the 2021 Iowa Redistricting Link on the Iowa General Assembly's website: www.legis.iowa.gov/.

II. GLOSSARY OF TERMS.

To assist in the understanding of this report and the attached statistical data, the following terms were used to describe various aspects of measuring compactness and the population equality between districts:

Absolute deviation: The difference, expressed as a positive number, between the actual population in a district and the ideal population for that district.

Absolute mean deviation: The sum of the absolute deviations of all districts in a plan divided by the number of districts.

Average length-width compactness: The total length-width compactness for all districts in a redistricting plan, divided by the number of districts to be created.

Ideal population: The total population of the state as reported in the federal decennial census divided by the number of districts to be created.

Length-width compactness: The absolute difference in miles between the width (east-west) and the height (north-south) of a district. A lower number indicates better length-width compactness.

Mean deviation percentage variance: The absolute mean deviation of a plan divided by the ideal population for districts in that plan, and expressed as a percentage.

Overall range: The difference between the most populous and least populous districts in a proposed redistricting plan.

Overall range percentage variance: The absolute overall range for a plan, divided by the ideal population for a district, and expressed as a percentage.

Overall range ratio: The ratio calculated by dividing the population of the most populous district by the least populous district.

Perimeter compactness: The distance, in miles, needed to traverse the perimeter of a district in a redistricting plan. A lower number indicates better perimeter compactness.

Total perimeter compactness: The distance, in miles, needed to traverse the perimeters of all districts in a redistricting plan.

III. STANDARDS FOR REDISTRICTING.

The following is a summary of the standards applicable to congressional and legislative redistricting in Iowa as provided by the United States Constitution, the Iowa Constitution, and Iowa Code section 42.4. The plan prepared and submitted is in strict adherence to these standards as required by law.

A. Population Equality

Congressional districts:

Iowa Code section 42.4(1) provides that each congressional district in the plan shall have a population as nearly equal as practicable to the ideal population and each district shall not have a population which varies by more than 1 percent from the ideal district population. The U.S. Supreme Court has determined that, pursuant to the U.S. Constitution, the “as nearly equal as practicable” standard that is required for congressional districts means that the difference between the ideal population and the actual population of a proposed congressional district should be as close to zero as practicable.

Table I includes population statistics for the congressional districts proposed in Plan I.

Senate and House districts:

Iowa Code section 42.4(1) provides that the mean deviation percentage variance for a proposed state senatorial or state representative redistricting plan shall not exceed 1 percent. In addition, a Senate or House district shall not have a population which exceeds that of any other Senate or House district by more than 5 percent. Finally, the most restrictive requirement in Iowa Code section 42.4(1) provides

that the General Assembly has the burden of proof to justify any Senate or House district that deviates from the ideal population for that district by more than 1 percent.

Tables 2 and 3 include population statistics for the Senate and House districts proposed in Plan I.

B. Respect for Political Subdivisions:

Congressional districts:

Article III, section 37, of the Constitution of the State of Iowa, provides, in part, that, “ ... no county shall be divided in forming a congressional district.”

Senate and House Districts:

Iowa Code section 42.4(2) provides that, to the extent consistent with the population equality standard, the number of counties and cities divided among more than one Senate or House 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, except when a county line divides a city.

Tables 4 - 7 provide information relating to the number of cities and counties kept whole and divided for the Senate and House districts proposed in Plan I.

C. Contiguity:

Congressional districts:

Article III, section 37, of the Constitution of the State of Iowa, provides, in part, that, “When a congressional district is composed of two or more counties it shall not be entirely separated by a county belonging to another district ...” In addition, Iowa Code section 42.4(3) provides that all districts shall be composed of convenient contiguous territory and areas of a district which meet only at the points of adjoining corners are not contiguous.

Senate and House districts:

Article III, section 35, of the Constitution of the State of Iowa provides that districts for Senators and Representatives “... shall be of compact and contiguous territory.” In addition, Iowa Code section 42.4(3) provides that all districts shall be composed of convenient contiguous territory and areas of a district which meet only at the points of adjoining corners are not contiguous.

D. Compactness:

Congressional districts:

Iowa Code section 42.4(4) provides that all districts shall be reasonably compact in form, to the extent consistent with the population equality, respect for political subdivisions, and contiguity standards. In general, reasonably compact districts are those which are square, rectangular, or hexagonal in shape, and not irregularly shaped, to the extent permitted by natural or political

boundaries. Methods for determining compactness are provided by law and include a length-width compactness test and a perimeter compactness test.

Table 1 provides statistical information relating to the length-width compactness test and the perimeter compactness test for the congressional districts proposed in Plan I.

Senate and House districts:

Article III, section 35, of the Constitution of the State of Iowa provides that districts for Senators and Representatives "... shall be of compact and contiguous territory." In addition, Iowa Code section 42.4(4) provides that all districts shall be reasonably compact in form, to the extent consistent with the population equality, respect for political subdivisions, and contiguity standards. In general, reasonably compact districts are those which are square, rectangular, or hexagonal in shape, and not irregularly shaped, to the extent permitted by natural or political boundaries. Methods for determining compactness are provided by law and include a length-width compactness test and a perimeter compactness test.

Tables 2 - 3 provide statistical information relating to the length-width compactness test and the perimeter compactness test for the Senate and House districts proposed in Plan I.

E. Prohibited Factors:

Congressional, Senate, and House districts:

Iowa Code section 42.4(5) provides that a district shall not 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. Data that shall not be used in establishing districts include addresses of incumbent legislators or members of Congress, political affiliations of registered voters, previous election results, and any demographic information, other than population head counts, except as required by the Constitution and the laws of the United States.

The Legislative Services Agency did not consider the addresses of incumbents, the political affiliations of registered voters, previous election results, or demographic information other than population headcounts in the development of congressional, senatorial, and representative districts. Following the development of proposed Senate and House districts, the Legislative Services Agency reviewed information indicating which districts in the proposed plan incumbent Senators elected from an even-numbered or odd-numbered district resided for purposes of numbering Senate districts in accordance with Iowa law.

F. District Nesting:

Senate and House districts:

Iowa Code section 42.4(6) provides that each state representative district shall be wholly included within a single state senatorial district and, so far as possible, each representative and each senatorial district shall be included within a single congressional district. All other standards take precedence

where a conflict arises between those standards and the requirement, so far as possible, of including a senatorial or representative district within a single congressional district.

Proposed Plan 2 contains 12 Senate and 25 House districts within each congressional district, and two Senate districts, districts 24 and 33, contained within two congressional districts.

G. Numbering of Senate Districts and Incumbent Senators:

Article III, section 6, of the Constitution of the State of Iowa provides that “as nearly as possible, one-half of the members of the Senate shall be elected every two years.” Iowa Code section 42.4(8) provides that each bill embodying a plan shall include provisions for election of senators to the General Assemblies which take office in 2023 and 2025, which shall be in conformity with Article III, section 6, of the Constitution of the State of Iowa. The Iowa Code section further provides that if an incumbent senator was elected from an even-numbered district and resides in a newly created even-numbered district with no other incumbent senator residing in that district, that incumbent senator can serve until January 2025 without an election in 2022.

Following the development of proposed Senate and House districts, the Legislative Services Agency reviewed information concerning the location of senators in the proposed state senatorial district plan for purposes of numbering Senate districts. The information reviewed indicated only which districts in the proposed plan incumbent senators elected from an even-numbered or odd-numbered district resided. If an incumbent senator resided in a new district without another incumbent senator, that new Senate district was given an odd or even number based upon whether that senator’s current district was an odd or even number. If an incumbent senator from a current even-numbered district resided in a new district with or without another incumbent senator, that new Senate district was given an even number.

IV. IOWA SUPREME COURT ORDER.

On September 14, 2021, the Iowa Supreme Court issued an order entitled “In the Matter of Reapportionment of State Senatorial Representative Districts.” The Supreme Court order provided that “Pursuant to its constitutional authority to “cause the state to be apportioned,” the supreme court permits the parties identified in Iowa Code chapter 42 (2021) to prepare an apportionment in accord with Iowa Code chapter 42 (2021) by December 1, 2021.” Parties identified in Iowa Code chapter 42 to which the Supreme Court order pertains includes the Governor, the General Assembly, the Temporary Redistricting Advisory Commission, and the Legislative Services Agency. Pursuant to the Supreme Court order, all plans of reapportionment of state senatorial and representative districts submitted by the Legislative Services Agency will be in accord with all requirements specified in Iowa Code chapter 42 as contained in the 2021 Iowa Code.

V. SENATE RESOLUTION 9.

Iowa law provides that the selection of the second proposed redistricting plan must consider the reasons, if any, provided for the rejection of the first proposed redistricting plan by the General Assembly insofar as they are consistent with Iowa Code section 42.4. Following disapproval of Senate File 620 containing the first proposed redistricting plan, the Iowa Senate adopted Senate Resolution 9 advising the Legislative Services Agency of the reasons for the Senate’s rejection of Senate File 620.

1. Iowa Constitution.

a. Resolution language.

BE IT RESOLVED BY THE SENATE, That Article III, section 34 of the Constitution of the State of Iowa states that “Each district so established shall be of compact and contiguous territory. The state shall be apportioned into senatorial and representative districts on the basis of population”; and

b. Legislative Services Agency response.

The Legislative Services Agency notes that Article III, section 34 of the Constitution of the State of Iowa is only applicable to the establishment and apportionment of Iowa Senate and House of Representatives districts. All plans of legislative redistricting submitted by the Legislative Services Agency consider and comply with this constitutional provision.

2. Compactness.

a. Resolution language.

BE IT FURTHER RESOLVED, That Iowa Code section 42.4(4) requires that districts shall be reasonably compact in form to the extent consistent with the requirements of population, district boundaries coinciding with political subdivisions, and be of convenient contiguous territory; and

b. Legislative Services Agency response.

The Legislative Services Agency notes that the compactness provision in Iowa Code section 42.4 excerpted in the resolution applies to both legislative and congressional redistricting. While compactness is a criteria in establishing proposed congressional and legislative districts, the statute provides, as noted in the resolution, that compactness is a lesser standard in developing proposed districts than population equality, respect for political subdivisions, and having districts composed of convenient contiguous territory. The Legislative Services Agency further notes that the statute specifies that if it is necessary to compare the relative compactness of two or more districts or alternative districting plans, the length-width compactness and perimeter compactness tests shall be used. As such, the tables attached to this report include information on both compactness tests as to each district in the proposed plan as well as for the proposed combined plan for congressional, state Senate, and state House districts.

3. Compactness and population equality balance.

a. Resolution language.

BE IT FURTHER RESOLVED, That the Senate requests a second plan implementing the criteria established in Article III, section 34 of the Constitution of the State of Iowa and Iowa Code section 42.4(4), by submitting a plan that better balances compactness with the legally mandated population deviation.

b. Legislative Services Agency response.

The Legislative Services Agency agrees that both population equality and compactness are to be considered in developing a proposed redistricting plan for congressional and legislative districts.

However, the resolution infers that both standards should be granted equal weight or that compactness should be granted more importance, relative to population equality, so long as “the legally mandated population deviation” is satisfied. The Legislative Services Agency contends that this inference, if it accurately reflects the intent of the resolution, is not consistent with Iowa Code section 42.4, the United States Constitution, or the Iowa Constitution.

Iowa Code section 42.4(1) provides, in general, that the legally mandated population deviation for both congressional and legislative districts are districts with a population as nearly equal as practicable to the ideal district population for such districts. While the Iowa Code section also provides a specified allowable deviation for congressional districts, numerous United States Supreme Court decisions have specifically rejected establishing an acceptable percentage deviation for congressional redistricting. Instead, the United States Supreme Court has consistently applied the “as nearly equal as practicable” standard, allowing only minor population deviations from congressional districts of nearly equal population for consistently applied traditional redistricting principles, such as, for example, Iowa’s whole county constitutional provision. Similarly, the Iowa Code section provides several allowable population deviation percentages for legislative districts. However, the Legislative Services Agency, since 1981, has consistently applied the strictest statutory deviation percentage, establishing legislative districts that do not vary from the ideal population of that district in excess of 1 percent. Reliance on this strict requirement is consistent with the decision of the Iowa Supreme Court in 1972 which rejected establishing an acceptable deviation percentage for legislative districts but instead required legislative districts to be as nearly equal in population as practicable.

Iowa Code chapter 42 provides that the selection of a proposed redistricting plan be based on all of the criteria specified in Iowa Code section 42.4. However, population equality is the most important factor and is specifically given greater weight by Iowa Code section 42.4 than compactness as previously noted. While Iowa Code Chapter 42 contains no provision mandating a certain population equality standard for the second or third congressional plan different from that prescribed for the first, the requirements of the United States Constitution, as interpreted by the United States Supreme Court, mandate that a second proposed congressional redistricting plan must have equal or lower population deviations than the first plan submitted. However, consideration of population equality alone is not required based on the United States Constitution and is also not consistent with the requirements of Iowa Code chapter 42 or Iowa law in general. The second congressional redistricting plan selected must be the one that best meets all the requirements of Iowa law, including the standard of compactness, while providing for equal or better population equality amongst districts. Since 1981, the Legislative Services Agency has followed this standard when submitting a second, and a third, plan of congressional redistricting. For 2021, the Legislative Services Agency followed this constitutionally directed mandate by submitting a second plan of congressional districting to the General Assembly of equal or better population equality amongst districts than the first plan submitted.

VI. ATTACHMENTS.

Attached to this Report are the following:

MAPS

Map 1 — Map of proposed congressional districts.

Map 2 — Map of proposed Senate districts.

Map 3 — Map of proposed House districts.

Map 4 — Map of Ames Area

Map 5 — Map of Cedar Rapids Area

Map 6 — Map of Council Bluffs Area

Map 7 — Map of Davenport-Bettendorf Area

Map 8 — Map of Dubuque Area

Map 9 — Map of Iowa City Area

Map 10 — Map of Sioux City Area

Map 11 — Map of Waterloo-Cedar Falls Area

Map 12 — Map of Polk County Area

Map 13 — Map of Ankeny Area

Map 14 — Map of Des Moines Area

TABLES

Table 1 — Populations, population variance, and compactness statistics for each congressional district.

Table 2 — Populations, population variance, and compactness statistics for each Senate district.

Table 3 — Populations, population variance, and compactness statistics for each House district.

Table 4 — Counties kept whole in Senate and House districts.

Table 5 — Dividable precincted cities over 20,000 persons located within a single county kept whole in Senate and House districts.

Table 6 — Number of Senate and House districts contained wholly or partially within each county.

Table 7 — Number of Senate and House districts contained wholly or partially within each dividable precincted city over 20,000 persons.

MAPS

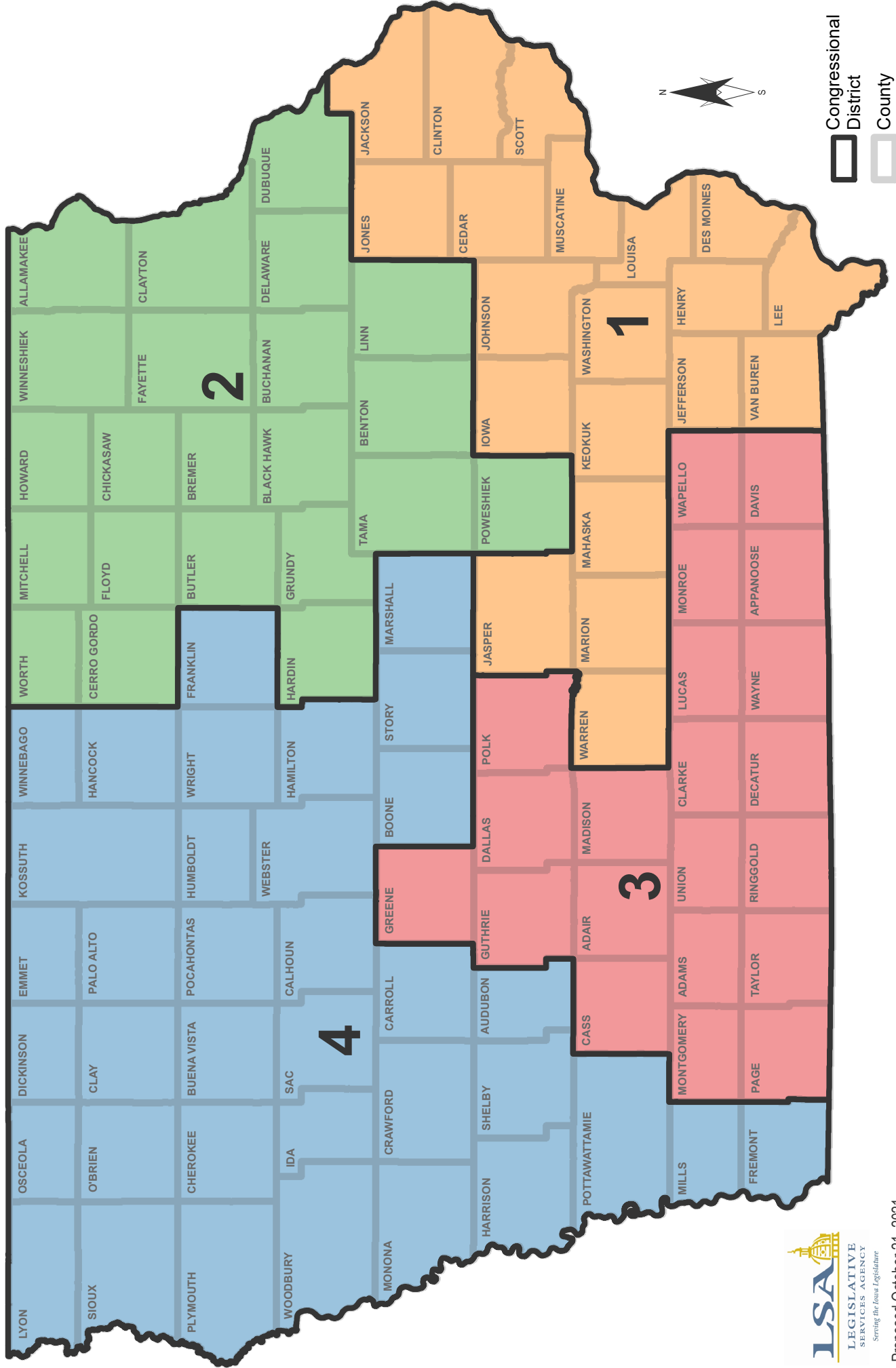
SECOND REDISTRICTING PLAN

Legislative Services Agency

October 21, 2021

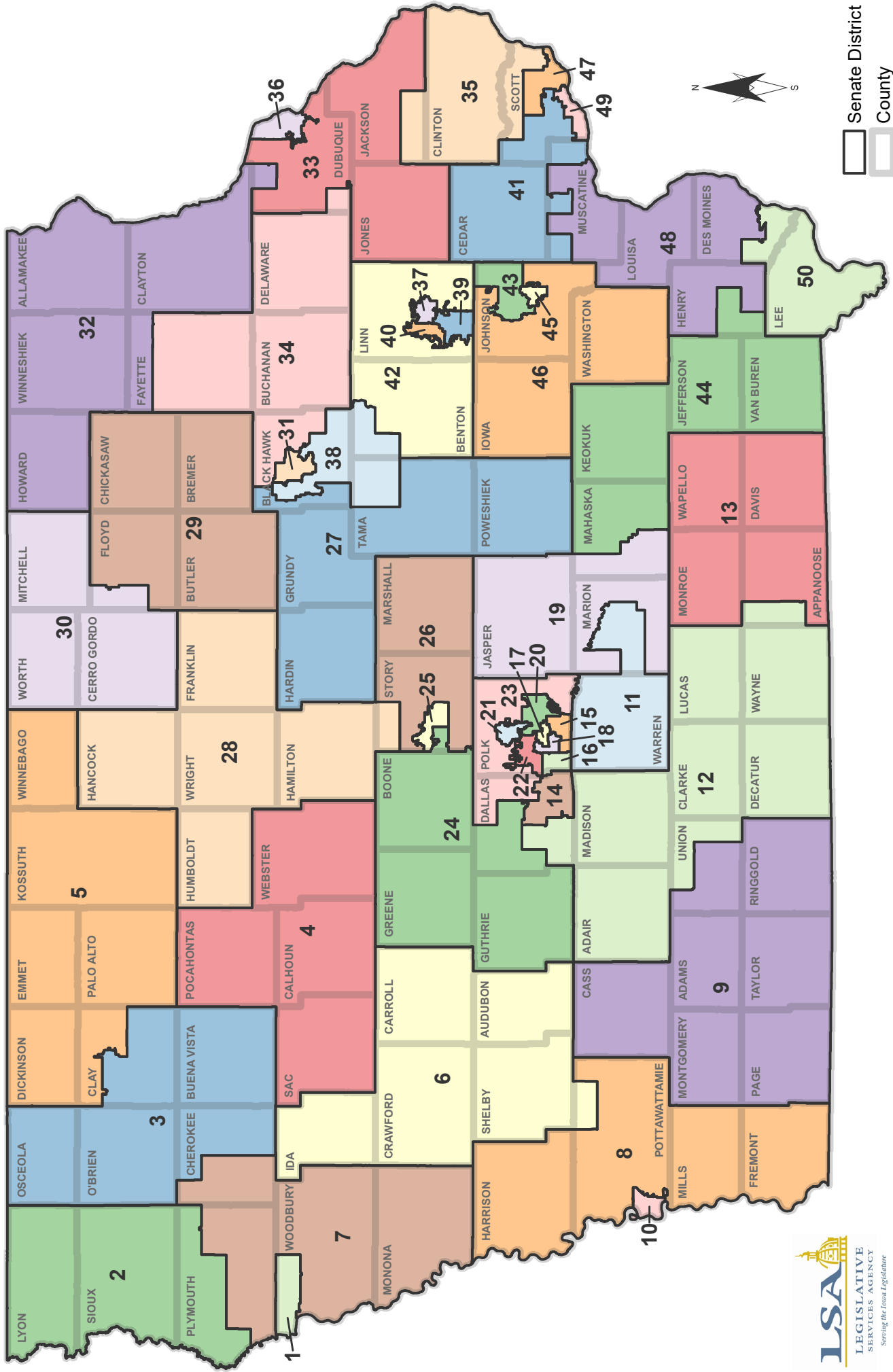
PROPOSED PLAN 2: IOWA CONGRESSIONAL DISTRICTS

To Be Effective Beginning with the Elections in 2022 for the 118th General Assembly



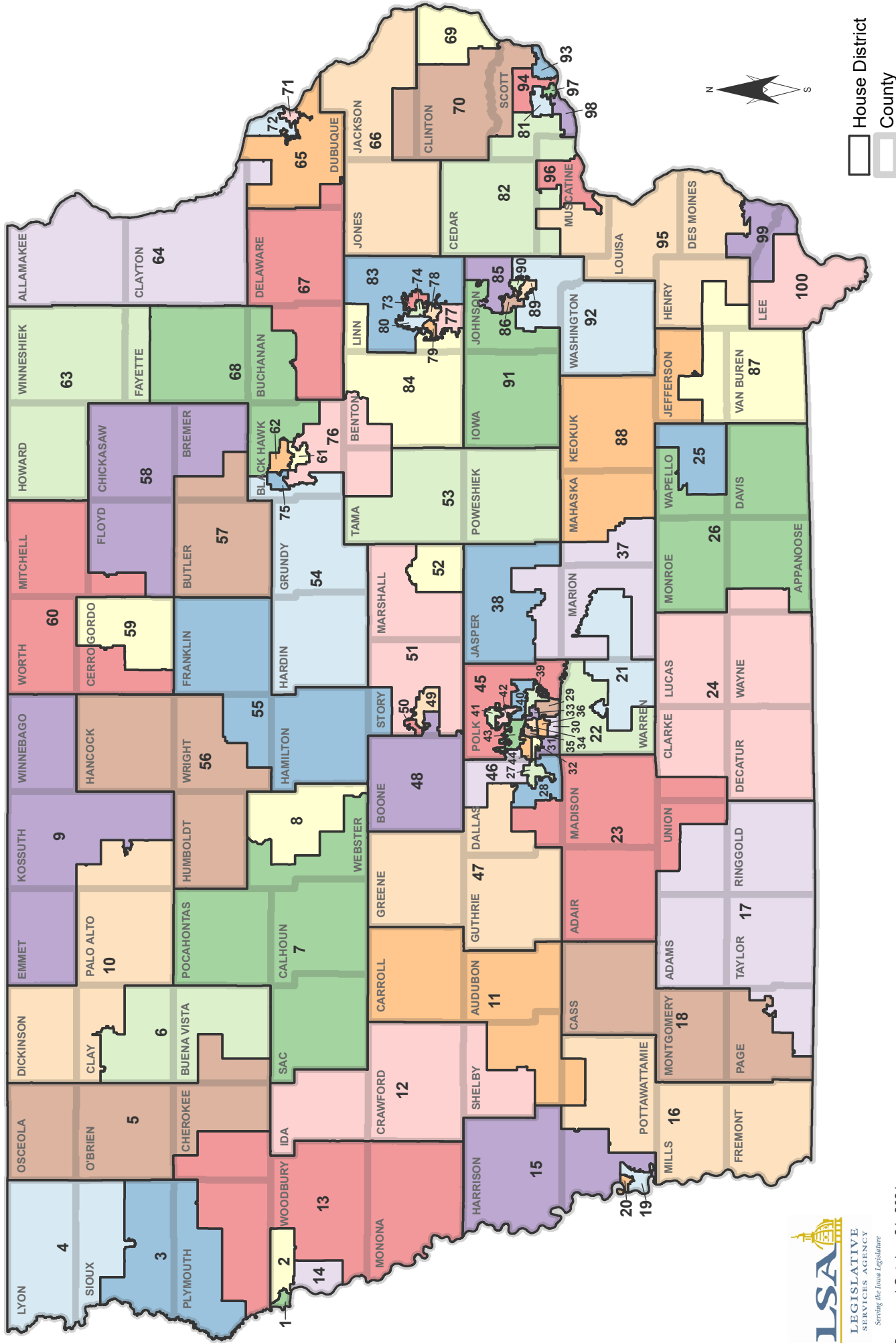
PROPOSED PLAN 2: IOWA SENATE DISTRICTS

To Be Effective Beginning with the Elections in 2022 for the 90th General Assembly






PROPOSED PLAN 2: IOWA HOUSE DISTRICTS

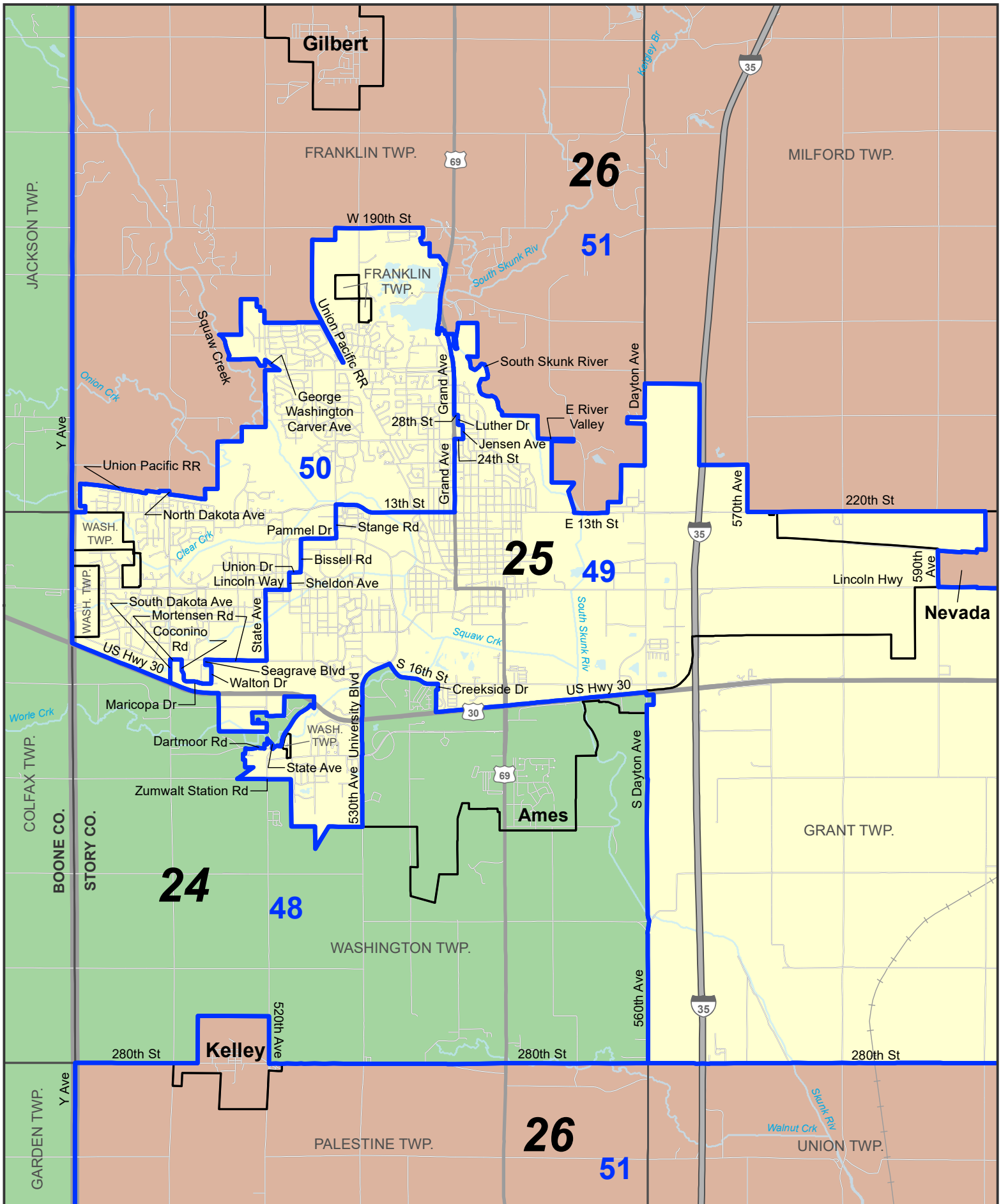
To Be Effective Beginning with the Elections in 2022 for the 90th General Assembly



PROPOSED PLAN 2: AMES AREA

To Be Effective Beginning with the Elections in 2022 for the 90th General Assembly
 Proposed October 21, 2021 - Prepared by the Iowa Legislative Services Agency

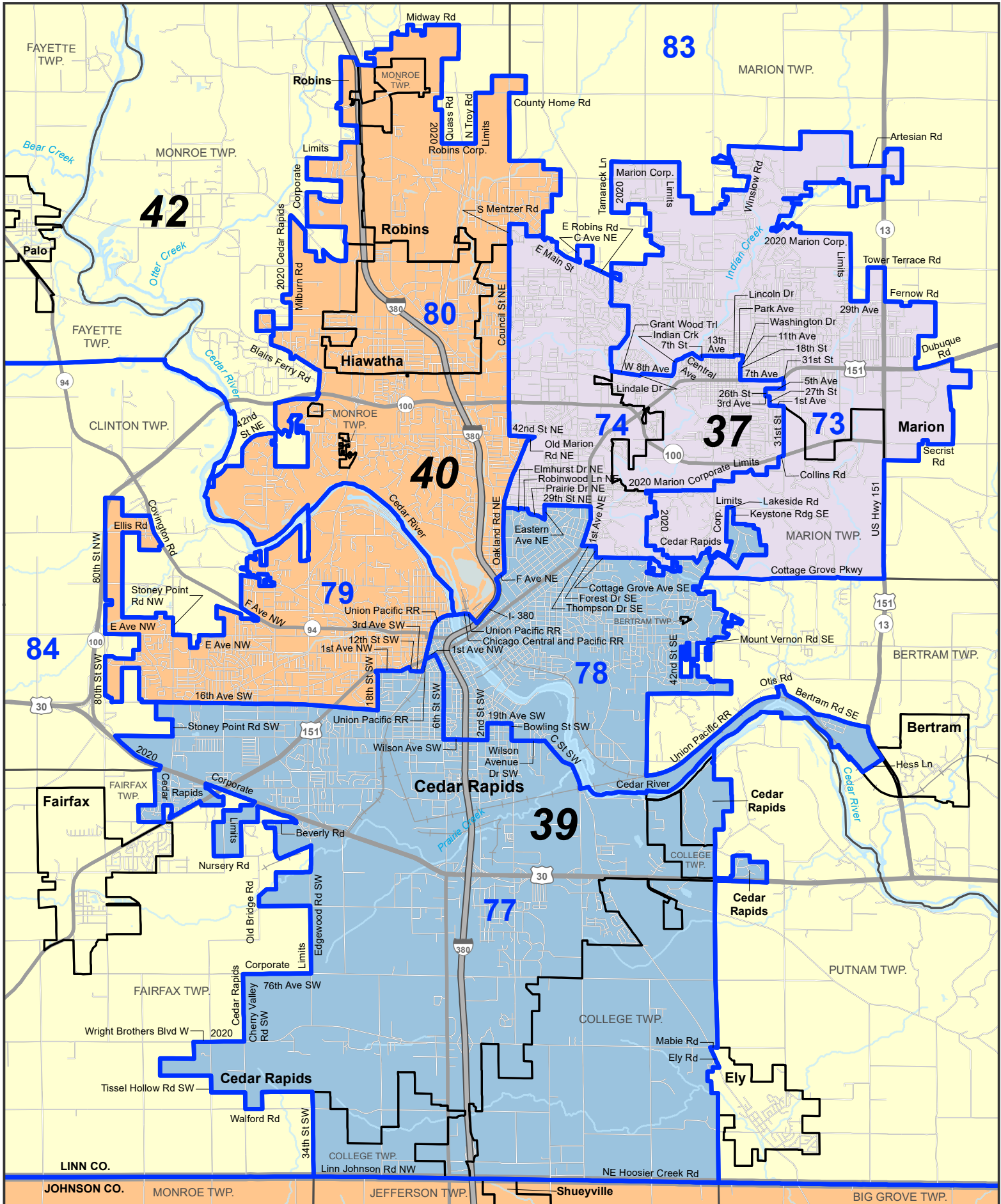
 City Boundary
 House District
 Senate District
 (color-fill areas)



PROPOSED PLAN 2: CEDAR RAPIDS AREA

To Be Effective Beginning with the Elections in 2022 for the 90th General Assembly
Proposed October 21, 2021 - Prepared by the Iowa Legislative Services Agency

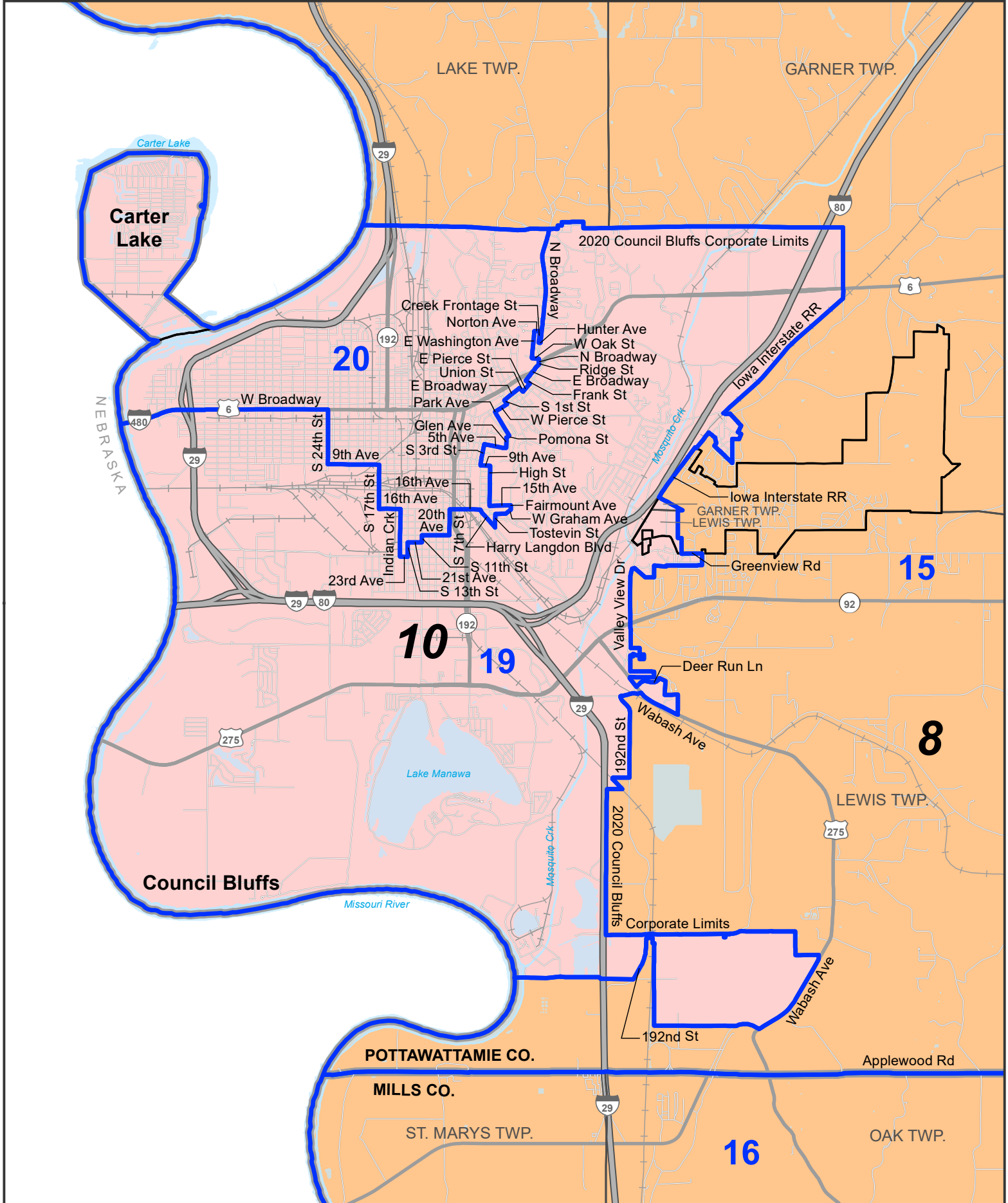
 City Boundary
 House District
 Senate District
(color-fill areas)



PROPOSED PLAN 2: COUNCIL BLUFFS

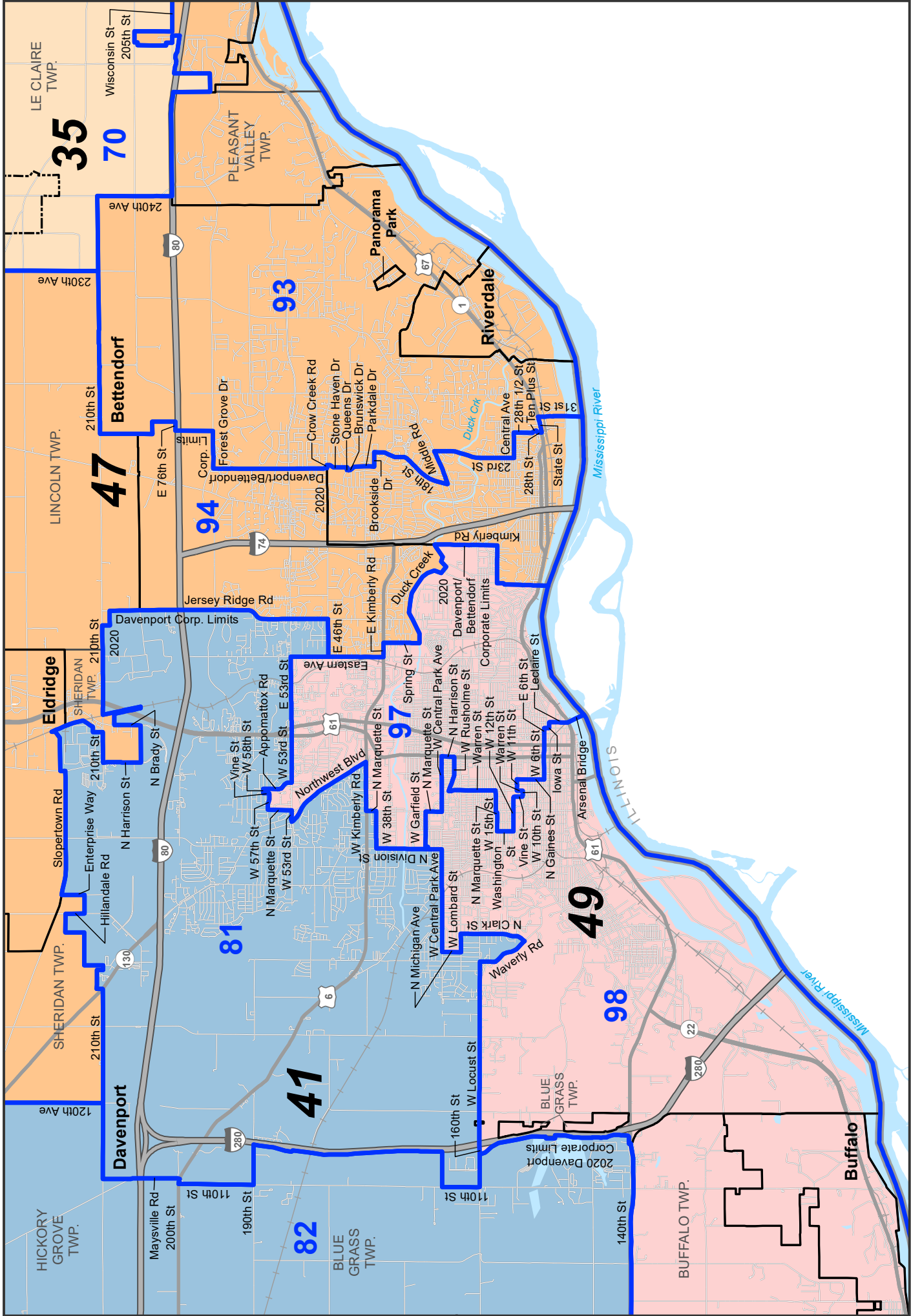
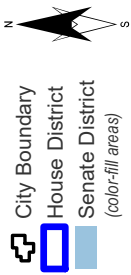
To Be Effective Beginning with the Elections in 2022 for the 90th General Assembly
 Proposed October 21, 2021 - Prepared by the Iowa Legislative Services Agency

 City Boundary
 House District
 Senate District (color-fill areas)






PROPOSED PLAN 2: DAVENPORT-BETTENDORF AREA

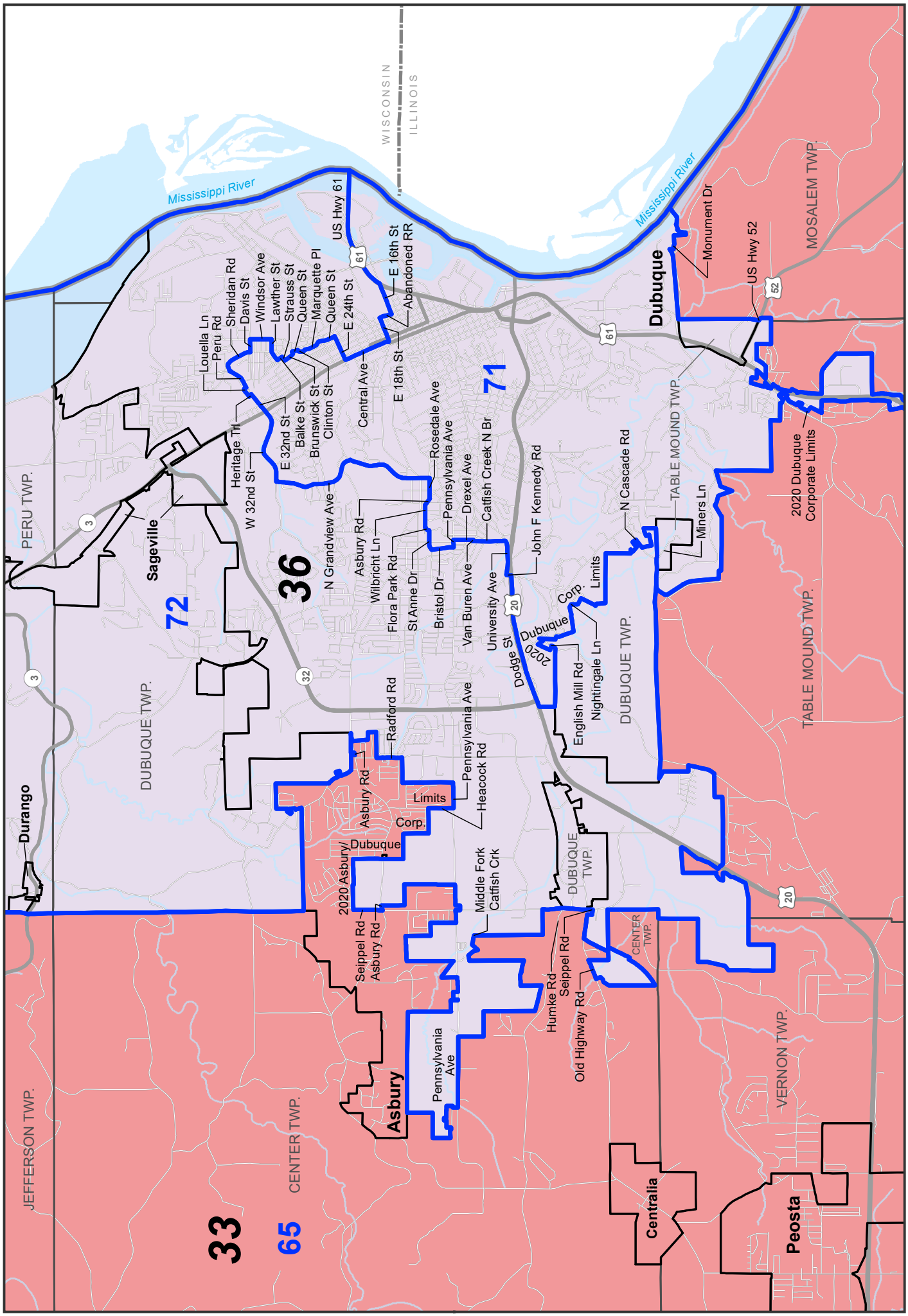
To Be Effective Beginning with the Elections in 2022 for the 90th General Assembly
Proposed October 21, 2021 - Prepared by the Iowa Legislative Services Agency



PROPOSED PLAN 2: DUBUQUE AREA




To Be Effective Beginning with the Elections in 2022 for the 90th General Assembly
 Proposed October 21, 2021 - Prepared by the Iowa Legislative Services Agency

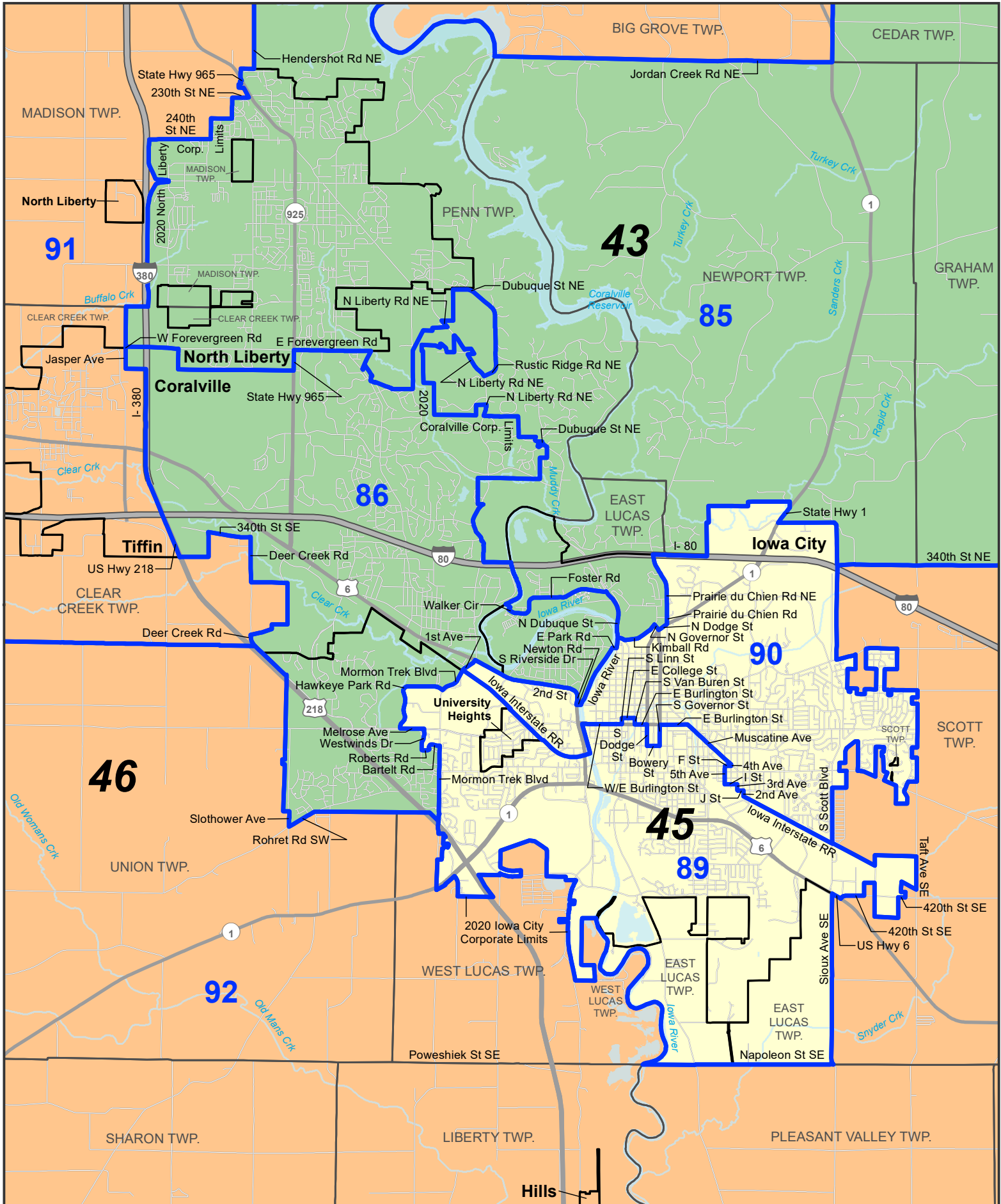
 City Boundary
 House District
 Senate District
 (color-fill areas)



PROPOSED PLAN 2: IOWA CITY AREA




To Be Effective Beginning with the Elections in 2022 for the 90th General Assembly
Proposed October 21, 2021 - Prepared by the Iowa Legislative Services Agency

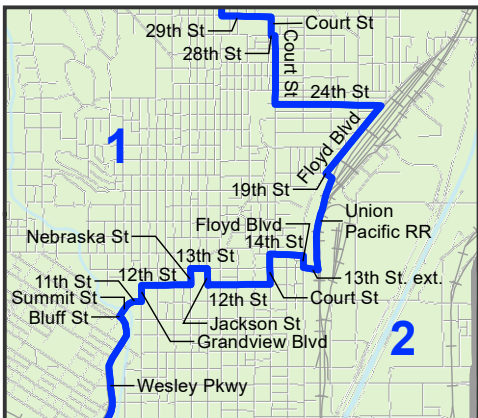
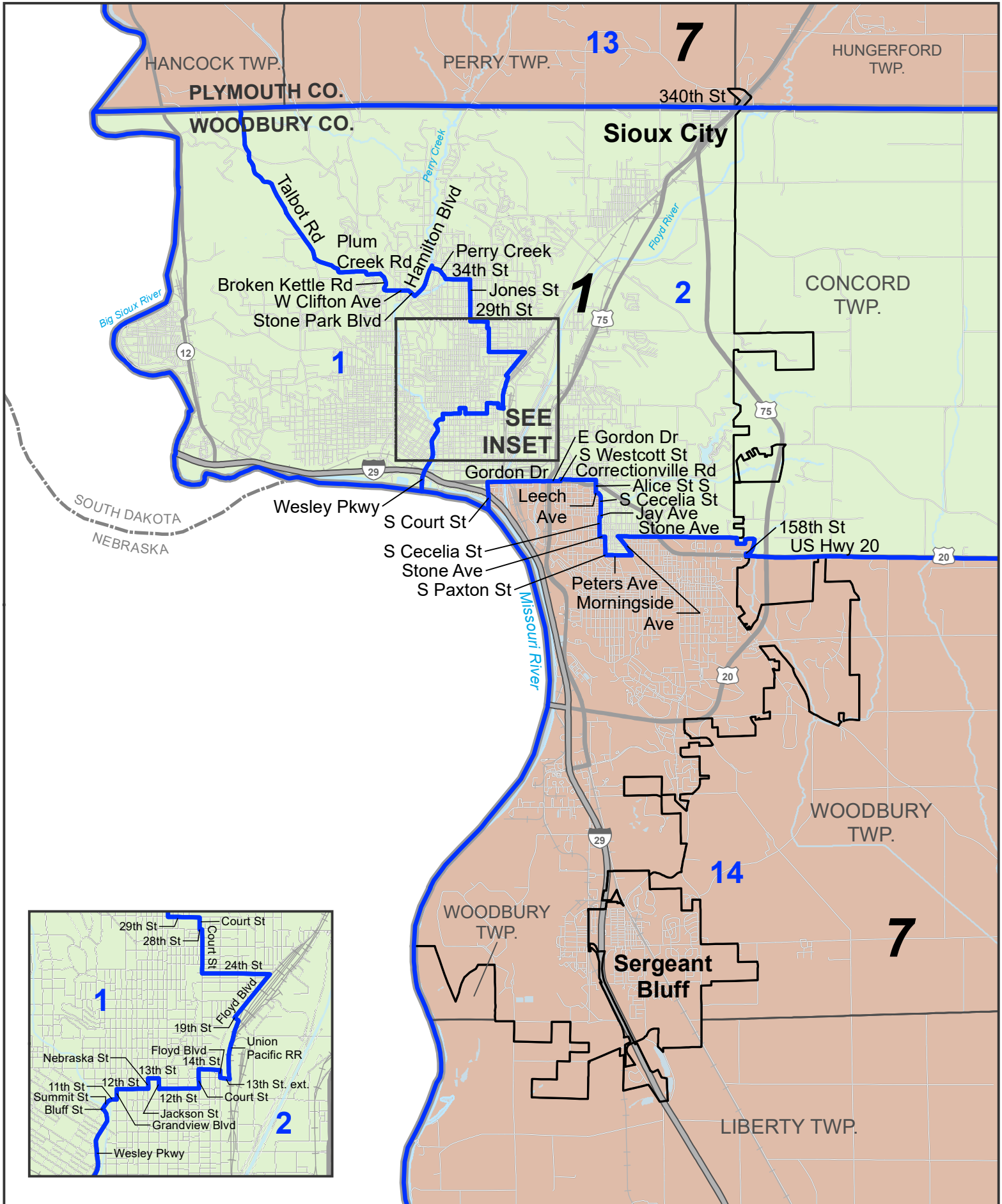
-  City Boundary
-  House District
-  Senate District (color-fill areas)



PROPOSED PLAN 2: SIOUX CITY AREA

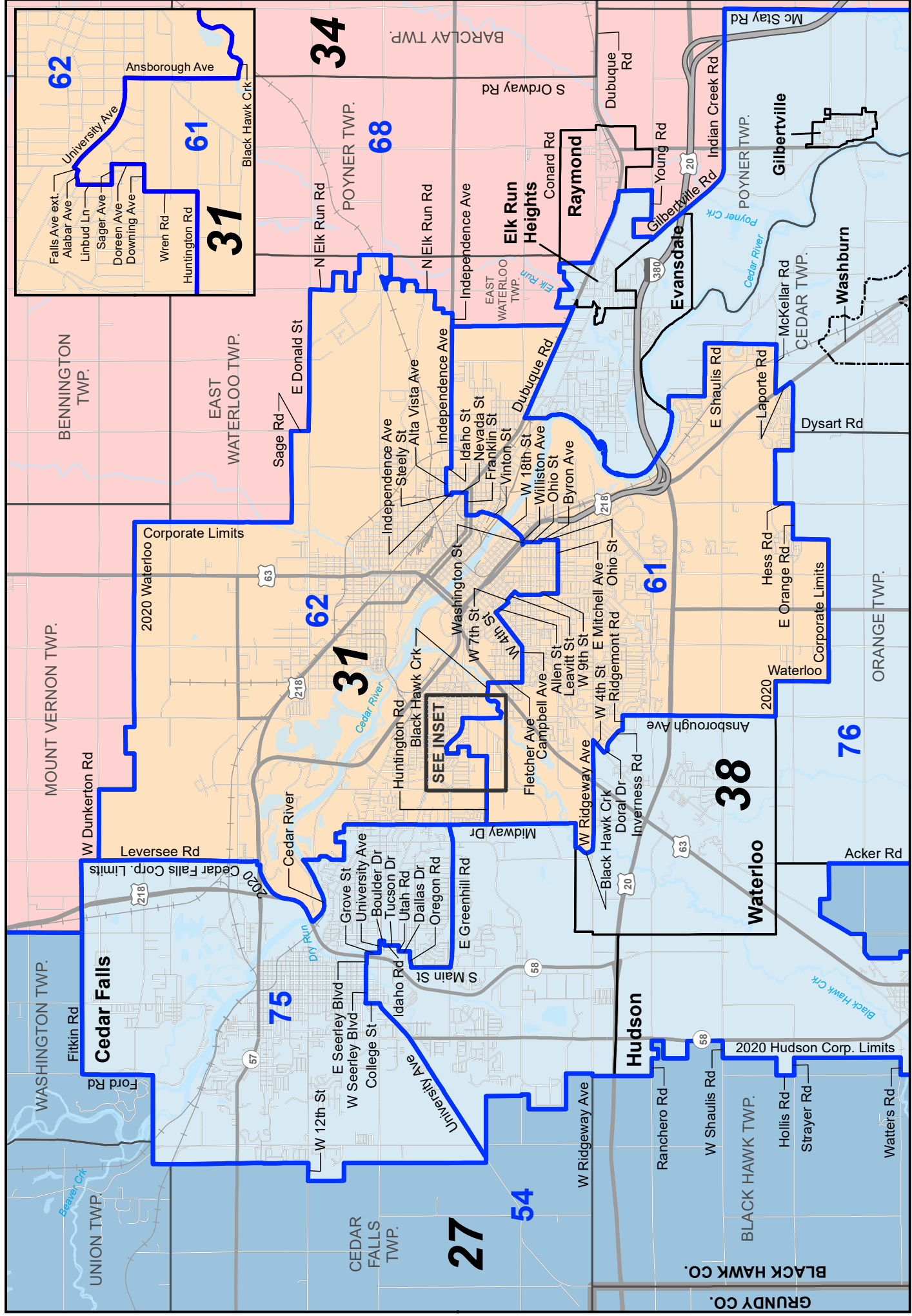
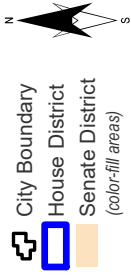
To Be Effective Beginning with the Elections in 2022 for the 90th General Assembly
 Proposed October 21, 2021 - Prepared by the Iowa Legislative Services Agency

-  House District
-  City Boundary
-  Senate District (color-fill areas)



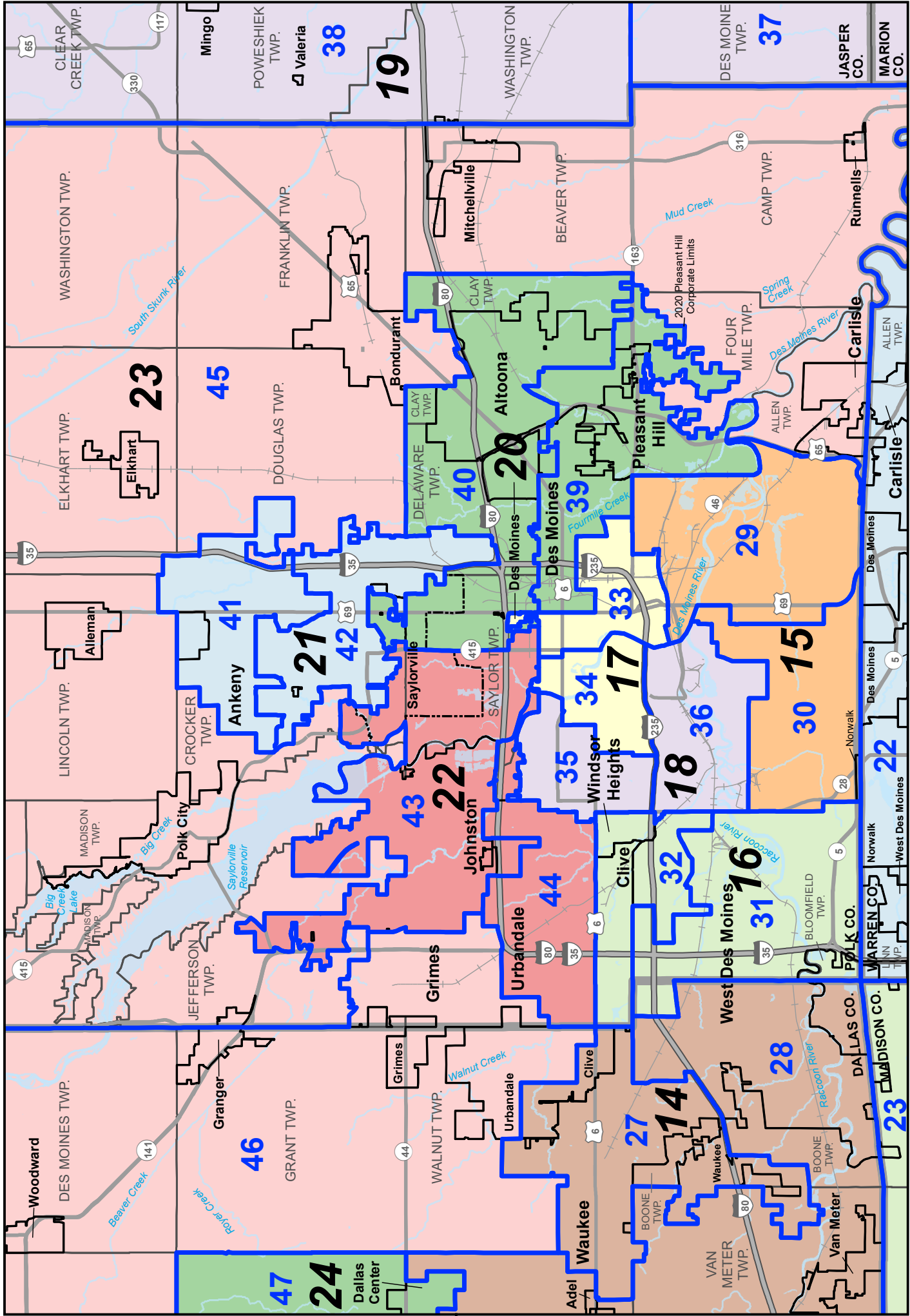
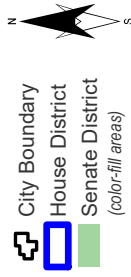
PROPOSED PLAN 2: WATERLOO-CEDAR FALLS AREA

To Be Effective Beginning with the Elections in 2022 for the 90th General Assembly
 Proposed October 21, 2021 - Prepared by the Iowa Legislative Services Agency






PROPOSED PLAN 2: POLK COUNTY AREA

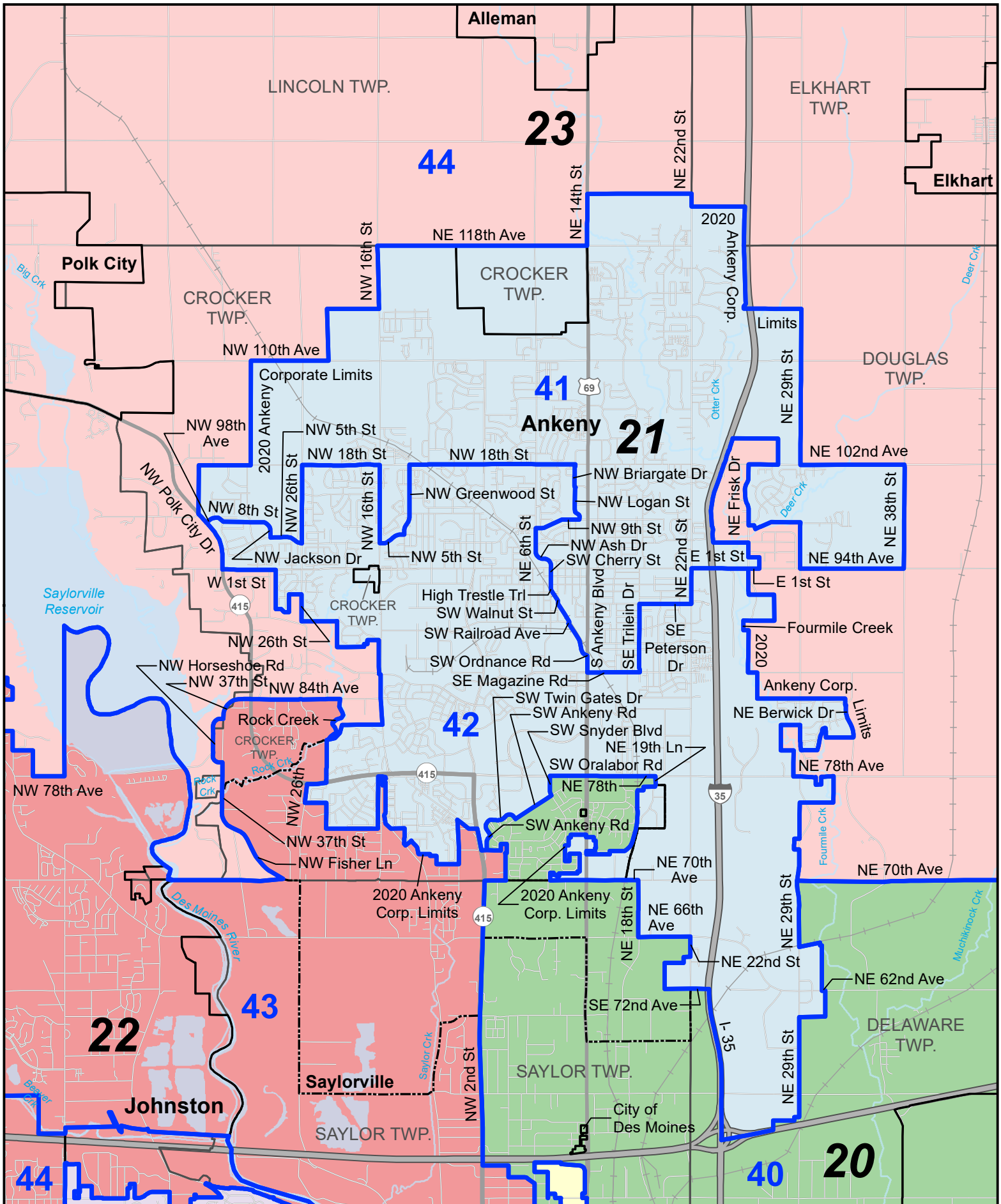
To Be Effective Beginning with the Elections in 2022 for the 90th General Assembly
 Proposed October 21, 2021 - Prepared by the Iowa Legislative Services Agency



PROPOSED PLAN 2: ANKENY AREA

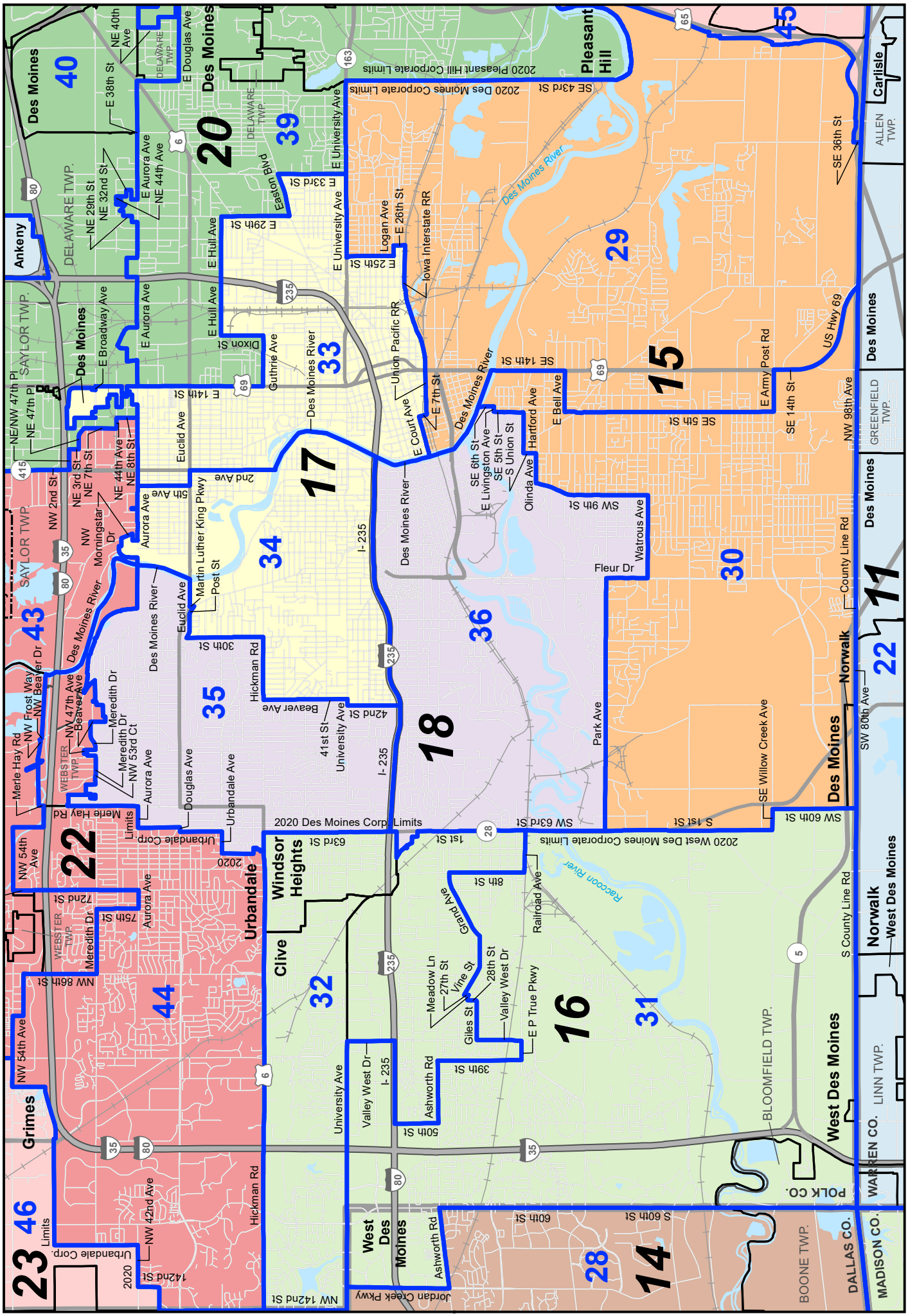
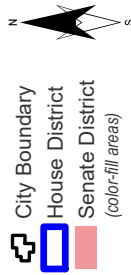
To Be Effective Beginning with the Elections in 2022 for the 90th General Assembly
Proposed October 21, 2021 - Prepared by the Iowa Legislative Services Agency

 City Boundary
 House District
 Senate District
(color-fill areas)



PROPOSED PLAN 2: DES MOINES AREA

To Be Effective Beginning with the Elections in 2022 for the 90th General Assembly
 Proposed October 21, 2021 - Prepared by the Iowa Legislative Services Agency



TABLES

SECOND REDISTRICTING PLAN

Legislative Services Agency

October 21, 2021

TABLE 1
CONGRESSIONAL PLAN SUMMARY

DISTRICT NUMBER	TOTAL POPULATION	% DEVIATION FROM IDEAL DISTRICT POP.	DEVIATION FROM IDEAL DISTRICT POP.	PERIMETER DISTANCE IN MILES	LENGTH-WIDTH COMPACTNESS IN MILES
1	797,584	0.001%	-8	696.48	51.25
2	797,589	-0.00037%	-3	624.17	17.01
3	797,551	-0.00514%	-41	619.72	53.55
4	797,645	-0.00664%	53	991.50	2.30

Ideal Congressional District Population: 797,592

Lowest Population: District 3 Highest Population: District 4

Absolute Mean Deviation: 26.25 persons

Mean Deviation Percentage Variance: 0.00329%

Total Perimeter Score: 2,931.87 miles

Average Length-Width Compactness: 31.03 miles

Overall Range

	LOWEST DISTRICT POP.	HIGHEST DISTRICT POP.	OVERALL
ABSOLUTE	-41	53	94
% VARIANCE	-0.0051%	0.0066%	0.012%
RATIO	1.0001178		

TABLE 2
SENATE PLAN SUMMARY

DISTRICT NUMBER	TOTAL POPULATION	% DEVIATION FROM IDEAL DISTRICT POP.	DEVIATION FROM IDEAL DISTRICT POP.	PERIMETER DISTANCE IN MILES	LENGTH-WIDTH COMPACTNESS IN MILES
1	63,991	0.29%	184	56.53	14.22
2	63,661	-0.23%	-146	252.46	19.27
3	63,782	-0.04%	-25	237.83	16.86
4	63,818	0.02%	11	245.44	25.96
5	63,895	0.14%	88	284.49	54.52
6	63,807	0.00%	0	277.28	21.6
7	63,700	-0.17%	-107	288.1	25.37
8	63,575	-0.36%	-232	327.51	37.44
9	63,507	-0.47%	-300	271.65	7.13
10	63,666	-0.22%	-141	44.97	1.21
11	63,559	-0.39%	-248	158.54	17.64
12	63,604	-0.32%	-203	337.82	12.74
13	63,740	-0.11%	-67	187.43	8.32
14	63,822	0.02%	15	63.61	0.78
15	63,743	-0.10%	-64	35.16	3.8
16	64,223	0.65%	416	26.92	1.09
17	63,990	0.29%	183	25.2	2.02
18	63,978	0.27%	171	29.76	1.55
19	63,733	-0.12%	-74	227.42	11.73
20	64,031	0.35%	224	78.36	0.39
21	63,965	0.25%	158	48.86	2.32
22	63,809	0.00%	2	73.87	1.08
23	63,308	-0.78%	-499	241.72	10.9
24	63,865	0.09%	58	244.56	11.36
25	63,738	-0.11%	-69	58.1	3.33
26	63,918	0.17%	111	187.34	24
27	63,643	-0.26%	-164	305.2	16.42
28	64,060	0.40%	253	304.21	6.01
29	64,103	0.46%	296	188.5	2.61
30	63,993	0.29%	186	178.89	6.82

DISTRICT NUMBER	TOTAL POPULATION	% DEVIATION FROM IDEAL DISTRICT POP.	DEVIATION FROM IDEAL DISTRICT POP.	PERIMETER DISTANCE IN MILES	LENGTH-WIDTH COMPACTNESS IN MILES
31	64,306	0.78%	499	47.08	0.89
32	63,793	-0.02%	-14	299.48	18.84
33	63,743	-0.10%	-64	289.99	11.77
34	63,469	-0.53%	-338	251.92	25.94
35	63,807	0.00%	0	147.96	2.54
36	64,299	0.77%	492	72.22	7.09
37	63,393	-0.65%	-414	48.43	0.27
38	63,383	-0.66%	-424	146.09	5.02
39	63,936	0.20%	129	73.37	1.33
40	64,145	0.53%	338	63.73	3.41
41	63,802	-0.01%	-5	194.78	8.24
42	63,363	-0.70%	-444	287.6	17.8
43	64,185	0.59%	378	77.23	0.66
44	63,655	-0.24%	-152	259.62	3.41
45	63,987	0.28%	180	40.42	0.55
46	63,909	0.16%	102	252.22	0.04
47	63,863	0.09%	56	64.79	5.43
48	63,720	-0.14%	-87	254.54	10.13
49	63,449	-0.56%	-358	47.02	4.69
50	63,935	0.20%	128	148.56	2.52

Ideal Senate District Population: 63,807

Lowest Population: District 23 Highest Population: District 31

Absolute Mean Deviation: 185.94 persons

Mean Deviation Percentage Variance: 0.29141%

Total Perimeter Score: 8,354.78 miles

Average Length-Width Compactness: 9.98 miles

Overall Range

	LOWEST DISTRICT POP.	HIGHEST DISTRICT POP.	OVERALL
ABSOLUTE	-499	499	998
% VARIANCE	-0.78%	0.78%	1.56%
RATIO	1.0157642		

TABLE 3
HOUSE PLAN SUMMARY

DISTRICT NUMBER	TOTAL POPULATION	% DEVIATION FROM IDEAL DISTRICT POP.	DEVIATION FROM IDEAL DISTRICT POP.	PERIMETER DISTANCE IN MILES	LENGTH-WIDTH COMPACTNESS IN MILES
1	32,022	0.37%	118	22.38	0.65
2	31,969	0.20%	65	53.97	12.27
3	31,928	0.08%	24	184.52	3.59
4	31,733	-0.54%	-171	155.48	5.97
5	31,904	0.00%	0	201.61	28.85
6	31,878	-0.08%	-26	156.4	19.91
7	31,944	0.13%	40	255.27	23.67
8	31,874	-0.09%	-30	101.37	9.89
9	31,980	0.24%	76	239.12	30.63
10	31,915	0.03%	11	227.64	18.73
11	31,989	0.27%	85	205.84	9.77
12	31,818	-0.27%	-86	201.72	32.76
13	31,807	-0.30%	-97	281.71	25.37
14	31,893	-0.03%	-11	42.47	4.53
15	31,749	-0.49%	-155	198.55	15.5
16	31,826	-0.24%	-78	223.92	25.52
17	31,748	-0.49%	-156	222.9	24.63
18	31,759	-0.45%	-145	211.41	28.1
19	31,784	-0.38%	-120	45.11	0.56
20	31,882	-0.07%	-22	21.58	0.68
21	31,787	-0.37%	-117	146.05	14.69
22	31,772	-0.41%	-132	131.46	0.15
23	31,838	-0.21%	-66	208.49	7.2
24	31,766	-0.43%	-138	188.67	13.53
25	31,972	0.21%	68	77.17	0.1
26	31,768	-0.43%	-136	216.2	8.34
27	31,685	-0.69%	-219	39.31	1.29
28	32,137	0.73%	233	79.51	0.78
29	31,865	-0.12%	-39	24.63	0.69
30	31,878	-0.08%	-26	23.52	1.98

DISTRICT NUMBER	TOTAL POPULATION	% DEVIATION FROM IDEAL DISTRICT POP.	DEVIATION FROM IDEAL DISTRICT POP.	PERIMETER DISTANCE IN MILES	LENGTH-WIDTH COMPACTNESS IN MILES
31	32,047	0.45%	143	27.49	0.35
32	32,176	0.85%	272	21.97	2.61
33	32,104	0.63%	200	19.06	0.61
34	31,886	-0.06%	-18	12.84	0.08
35	32,015	0.35%	111	16.03	0.53
36	31,963	0.18%	59	16.77	2.11
37	31,835	-0.22%	-69	213.3	0.64
38	31,898	-0.02%	-6	134.02	6.16
39	31,995	0.29%	91	56.82	2.49
40	32,036	0.41%	132	56.77	3.02
41	32,054	0.47%	150	30.02	2.18
42	31,911	0.02%	7	40.84	0.28
43	32,052	0.46%	148	65.03	1.07
44	31,757	-0.46%	-147	29.95	5.99
45	31,630	-0.86%	-274	201.94	1.12
46	31,678	-0.71%	-226	69.36	2.06
47	31,831	-0.23%	-73	185.43	6.74
48	32,034	0.41%	130	118.97	6.16
49	31,961	0.18%	57	51.65	3.3
50	31,777	-0.40%	-127	21.52	0.68
51	31,906	0.01%	2	193.77	23.98
52	32,012	0.34%	108	54.4	2.33
53	31,781	-0.39%	-123	157.21	30.13
54	31,862	-0.13%	-42	183.98	25.43
55	32,027	0.39%	123	208.69	5.92
56	32,033	0.40%	129	192.27	0.2
57	31,918	0.04%	14	120.56	11.83
58	32,185	0.88%	281	176.31	8.43
59	32,090	0.58%	186	86.36	5.98
60	31,903	0.00%	-1	215.25	6.86
61	32,126	0.70%	222	34.77	2.05

DISTRICT NUMBER	TOTAL POPULATION	% DEVIATION FROM IDEAL DISTRICT POP.	DEVIATION FROM IDEAL DISTRICT POP.	PERIMETER DISTANCE IN MILES	LENGTH-WIDTH COMPACTNESS IN MILES
62	32,180	0.87%	276	35.53	2.93
63	31,873	-0.10%	-31	166.52	12.74
64	31,920	0.05%	16	203.74	28.94
65	31,763	-0.44%	-141	166.03	7.49
66	31,980	0.24%	76	189.72	32.12
67	31,722	-0.57%	-182	165.72	31.22
68	31,747	-0.49%	-157	180.49	0.2
69	32,007	0.32%	103	68.92	5.94
70	31,800	-0.33%	-104	136.64	6.36
71	32,131	0.71%	227	35.36	3.08
72	32,168	0.83%	264	66.71	4.1
73	31,680	-0.70%	-224	49.27	1.3
74	31,713	-0.60%	-191	22.57	0.97
75	31,757	-0.46%	-147	25.48	0.68
76	31,626	-0.87%	-278	135.22	0.99
77	31,963	0.18%	59	50.55	1.83
78	31,973	0.22%	69	36.31	2.48
79	32,066	0.51%	162	27.84	1.81
80	32,079	0.55%	175	42.74	3.59
81	32,052	0.46%	148	35.36	1.39
82	31,750	-0.48%	-154	174.6	1.7
83	31,736	-0.53%	-168	180.61	5.88
84	31,627	-0.87%	-277	180.7	5.92
85	32,115	0.66%	211	78.63	1.58
86	32,070	0.52%	166	33.93	0.53
87	31,811	-0.29%	-93	145.5	3.38
88	31,844	-0.19%	-60	199.06	18.08
89	32,071	0.52%	167	29.21	1.46
90	31,916	0.04%	12	24.91	1.35
91	32,036	0.41%	132	152.64	17.95
92	31,873	-0.10%	-31	159.86	6.01

DISTRICT NUMBER	TOTAL POPULATION	% DEVIATION FROM IDEAL DISTRICT POP.	DEVIATION FROM IDEAL DISTRICT POP.	PERIMETER DISTANCE IN MILES	LENGTH-WIDTH COMPACTNESS IN MILES
93	31,949	0.14%	45	32.47	2.07
94	31,914	0.03%	10	54.58	0.38
95	31,942	0.12%	38	230.04	13.82
96	31,778	-0.39%	-126	67.85	1.44
97	31,753	-0.47%	-151	19.84	0.21
98	31,696	-0.65%	-208	39.39	4.58
99	32,064	0.50%	160	91.19	3.28
100	31,871	-0.10%	-33	105.96	5.92

Ideal House District Population: 31,904

Lowest Population: District 76 Highest Population: District 58

Absolute Mean Deviation: 116.33 persons

Mean Deviation Percentage Variance: 0.36462%

Total Perimeter Score: 11,243.02 miles

Average Length-Width Compactness: 7.87 miles

Overall Range

	LOWEST DISTRICT POP.	HIGHEST DISTRICT POP.	OVERALL
ABSOLUTE	-278	281	559
% VARIANCE	-0.87%	0.88%	1.75%
RATIO	1.0176753		

TABLE 4
COUNTIES KEPT WHOLE IN A SENATE DISTRICT

(Total: 74)

Adair	Davis	Jefferson	Pocahontas
Adams	Decatur	Jones	Poweshiek
Allamakee	Delaware	Keokuk	Ringgold
Audubon	Dickinson	Kossuth	Sac
Boone	Emmet	Lee	Shelby
Bremer	Franklin	Louisa	Sioux
Buchanan	Fremont	Lucas	Taylor
Buena Vista	Greene	Lyon	Van Buren
Butler	Grundy	Madison	Wapello
Calhoun	Guthrie	Marshall	Warren
Carroll	Hamilton	Mills	Washington
Cass	Hancock	Mitchell	Wayne
Cedar	Hardin	Monona	Webster
Cerro Gordo	Harrison	Monroe	Winnebago
Chickasaw	Howard	Montgomery	Winneshiek
Clarke	Humboldt	O'Brien	Worth
Clayton	Ida	Osceola	Wright
Clinton	Iowa	Page	
Crawford	Jasper	Palo Alto	

COUNTIES KEPT WHOLE IN A HOUSE DISTRICT

(Total: 56)

Adair	Delaware	Iowa	Pocahontas
Adams	Dickinson	Jones	Poweshiek
Allamakee	Emmet	Keokuk	Ringgold
Audubon	Franklin	Louisa	Sac
Boone	Fremont	Lucas	Taylor
Butler	Greene	Lyon	Van Buren
Calhoun	Grundy	Madison	Washington
Carroll	Guthrie	Mills	Wayne
Cass	Hamilton	Mitchell	Winnebago
Cedar	Hancock	Monona	Winneshiek
Chickasaw	Hardin	Monroe	Worth
Clayton	Harrison	Montgomery	
Crawford	Howard	O'Brien	
Davis	Humboldt	Osceola	
Decatur	Ida	Palo Alto	

TABLE 5

**DIVIDABLE PRECINCTED CITIES ABOVE 20,000 PERSONS LOCATED WITHIN A
SINGLE COUNTY AND KEPT WHOLE IN SENATE AND HOUSE DISTRICTS**

(21 cities)

CITIES KEPT WHOLE IN SENATE DISTRICTS

Bettendorf	Johnston
Burlington	Marion
Cedar Falls	Marshalltown
Clinton	Mason City
Coralville	Muscatine
Dubuque	Ottumwa
Fort Dodge	Waukee

CITIES KEPT WHOLE IN HOUSE DISTRICTS

Burlington
Clinton
Coralville
Fort Dodge
Johnston
Marshalltown
Mason City
Muscatine
Ottumwa
Waukee

TABLE 6

LEGISLATIVE DISTRICTS PER COUNTY

	4/1/2020	Senate	Senate	House	House
	Census	Districts	Districts in	Districts	Districts in
County	Population	Required	Plan 2	Required	Plan 2
Adair	7,496	1	1	1	1
Adams	3,704	1	1	1	1
Allamakee	14,061	1	1	1	1
Appanoose	12,317	1	2	1	2
Audubon	5,674	1	1	1	1
Benton	25,575	1	2	1	2
Black Hawk	131,144	3	4	5	6
Boone	26,715	1	1	1	1
Bremer	24,988	1	1	1	2
Buchanan	20,565	1	1	1	2
Buena Vista	20,823	1	1	1	2
Butler	14,334	1	1	1	1
Calhoun	9,927	1	1	1	1
Carroll	20,760	1	1	1	1
Cass	13,127	1	1	1	1
Cedar	18,505	1	1	1	1
Cerro Gordo	43,127	1	1	2	2
Cherokee	11,658	1	2	1	2
Chickasaw	12,012	1	1	1	1
Clarke	9,748	1	1	1	2
Clay	16,384	1	2	1	2
Clayton	17,043	1	1	1	1
Clinton	46,460	1	1	2	2
Crawford	16,525	1	1	1	1
Dallas	99,678	2	5	4	6
Davis	9,110	1	1	1	1
Decatur	7,645	1	1	1	1
Delaware	17,488	1	1	1	1
Des Moines	38,910	1	2	2	2
Dickinson	17,703	1	1	1	1
Dubuque	99,266	2	4	4	5
Emmet	9,388	1	1	1	1
Fayette	19,509	1	2	1	2
Floyd	15,627	1	2	1	2
Franklin	10,019	1	1	1	1
Fremont	6,605	1	1	1	1
Greene	8,771	1	1	1	1
Grundy	12,329	1	1	1	1

	4/1/2020	Senate	Senate	House	House
	Census	Districts	Districts in	Districts	Districts in
County	Population	Required	Plan 2	Required	Plan 2
Guthrie	10,623	1	1	1	1
Hamilton	15,039	1	1	1	1
Hancock	10,795	1	1	1	1
Hardin	16,878	1	1	1	1
Harrison	14,582	1	1	1	1
Henry	20,482	1	2	1	2
Howard	9,469	1	1	1	1
Humboldt	9,597	1	1	1	1
Ida	7,005	1	1	1	1
Iowa	16,662	1	1	1	1
Jackson	19,485	1	2	1	2
Jasper	37,813	1	1	2	2
Jefferson	15,663	1	1	1	2
Johnson	152,854	3	3	5	6
Jones	20,646	1	1	1	1
Keokuk	10,033	1	1	1	1
Kossuth	14,828	1	1	1	2
Lee	33,555	1	1	2	2
Linn	230,299	4	4	8	8
Louisa	10,837	1	1	1	1
Lucas	8,634	1	1	1	1
Lyon	11,934	1	1	1	1
Madison	16,548	1	1	1	1
Mahaska	22,190	1	2	1	2
Marion	33,414	1	2	2	2
Marshall	40,105	1	1	2	2
Mills	14,484	1	1	1	1
Mitchell	10,565	1	1	1	1
Monona	8,751	1	1	1	1
Monroe	7,577	1	1	1	1
Montgomery	10,330	1	1	1	1
Muscatine	43,235	1	2	2	3
O'Brien	14,182	1	1	1	1
Osceola	6,192	1	1	1	1
Page	15,211	1	1	1	2
Palo Alto	8,996	1	1	1	1
Plymouth	25,698	1	2	1	2
Pocahontas	7,078	1	1	1	1
Polk	492,401	8	8	16	16
Pottawattamie	93,667	2	3	3	5
Poweshiek	18,662	1	1	1	1
Ringgold	4,663	1	1	1	1

	4/1/2020	Senate	Senate	House	House
	Census	Districts	Districts in	Districts	Districts in
County	Population	Required	Plan 2	Required	Plan 2
Sac	9,814	1	1	1	1
Scott	174,669	3	4	6	7
Shelby	11,746	1	1	1	2
Sioux	35,872	1	1	2	2
Story	98,537	2	4	4	5
Tama	17,135	1	2	1	2
Taylor	5,896	1	1	1	1
Union	12,138	1	2	1	2
Van Buren	7,203	1	1	1	1
Wapello	35,437	1	1	2	2
Warren	52,403	1	1	2	2
Washington	22,565	1	1	1	1
Wayne	6,497	1	1	1	1
Webster	36,999	1	1	2	2
Winnebago	10,679	1	1	1	1
Winneshiek	20,070	1	1	1	1
Woodbury	105,941	2	2	4	4
Worth	7,443	1	1	1	1
Wright	12,943	1	1	1	2

TABLE 7**LEGISLATIVE DISTRICTS PER DIVIDABLE PRECINCTED CITY ABOVE 20,000 PERSONS**

	4/1/2020	Senate	Senate	House	House
	Census	Districts	Districts in	Districts	Districts in
City	Population	Required	Plan 2	Required	Plan 2
Ames	66,427	2	2	3	3
Ankeny	67,887	2	2	3	3
Bettendorf/Riverdale/Panorama Park	39,620	1	1	2	2
Burlington	23,982	1	1	1	1
Cedar Falls	40,713	1	1	2	2
Cedar Rapids	137,710	3	3	5	5
Clinton	24,469	1	1	1	1
Coralville	22,318	1	1	1	1
Council Bluffs/Carter Lake	66,590	2	2	3	3
Davenport	101,724	2	3	4	4
Des Moines (Polk Co)	213,921	4	4	7	8
Dubuque	59,667	1	1	2	2
Fort Dodge	24,871	1	1	1	1
Iowa City/University Heights	76,056	2	2	3	4
Johnston	24,064	1	1	1	1
Marion	41,535	1	1	2	2
Marshalltown	27,591	1	1	1	1
Mason City	27,338	1	1	1	1
Muscatine	23,797	1	1	1	1
Ottumwa	25,529	1	1	1	1
Sioux City (Woodbury Co)	85,791	2	2	3	3
Urbandale (Polk Co)	33,804	1	1	2	2
Urbandale (Polk and Dallas Co)	45,580	1	2	2	3
Waterloo	67,314	2	2	3	3
Waukee	23,940	1	1	1	1
West Des Moines (Polk Co)	45,582	1	1	2	2
West Des Moines (Polk and Dallas Co)	68,494	2	2	3	3