EXHIBIT F

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UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

MICHAEL BANERIAN, et al., Plaintiffs, v. JOCELYN BENSON, et al., Defendants.	**Case No. 1:22-CV-00054-RMK-JTN-PLM**

DECLARATION OF KIMBALL BRACE

I, Kim Brace, declare and state pursuant to 28 U.S.C. § 1746 as follows:

1. My name is Kimball William Brace. I am the president of Election Data Services, Inc. ("EDS, Inc."), a Manassas, Virginia-based consulting firm whose specialty is reapportionment, redistricting matters, election administration issues, and the census.

2. All the materials considered in forming the opinions contained herein are identified in this report.

3. A copy of my curriculum vitae is attached as **Exhibit A**, which includes a complete list of cases in which I have testified as an expert at trial or by deposition.

Michigan Redistricting Experience in 2021 to current

4. In March 2021, Election Data Services, Inc. was selected as the vendor to provide Map Drawing support to the Michigan Independent Citizens Redistricting Commission (MICRC). My company was selected through a competitive bid process to provide full support services to the Michigan Independent Citizens Redistricting Commission (MICRC) during the redistricting process. These services included building a full redistricting database (composed of Census data

and geography, along with political data and precinct geography), providing a full suite of redistricting software for the Commissioners and staff to use to draw district configurations, providing map drawing staffers (either myself at the beginning or subcontractors Kent Stigall and John Morgan) to perform the actual district creation in the software at the direction of Commissioners in open and fully transparent public meetings that were televised, along with creation of analytic software to help the Commissioners understand the racial and political data utilized in the map drawing process. All of this effort and system is now being utilized with regard to the redistricting cases consolidated in the above-captioned matter.

5. This work encompassed a multitude of different activities and tasks. Initially we were responsible for creating a massive database of 1) Census data (the results of the PL 94-171 program when it was released in August, 2021), 2) all Census geography (as provided by the Census Bureau's Topologically Integrated Geographic Encoding and Reference files (TIGER)), along with 3) political data (precinct level election results usually compiled by the Michigan Secretary of State back to 2012) and 4) political geography (the configuration of precincts to correspond to the election data, in many instances reflecting precinct changes that occurred during the decade). I have commonly termed these four elements of a redistricting database as the "redistricting data cube" when I make presentations to groups or the court. We also provided the redistricting software (in Michigan's instance it was the AutoBound Redistricting system for 2020 (called AutoBound EDGE)) and helped the state install it on every Commissioner's state-provided laptop. Support to the Commissioners for their individual needs was also provided.

6. Our contract also provided that we have staff that would operate the redistricting software and draw district possibilities at the direction of Commission members. I, or my subcontracting staff of Kent Stigall and John Morgan, were at every meeting of the Commission

to perform the tasks of actually drawing the districts using Commissioner's thoughts and directions in the AutoBound EDGE software.

7. Even before the PL 94-171 Census data arrived in August 2021, we purchased commercially available population estimates from a demographic and GIS company called ESRI and incorporated them into the AutoBound EDGE system so that draft mapping could take place. At the same time, we incorporate the concepts of Community of Interests (COIs) and built linkages to software and data files generated by MIT that allowed the public to recommend and draw their own concept of Community of Interests for submission to the MICRC.

8. Shortly after our contract started, we went into significant teaching and training mode with the Commission. I did extensive education programs for the Commission (and the public since all these sessions were televised live as well as taped for storage on the MICRC's YouTube page so that the public could view commission meetings at any time). These included all aspects and definitions used in the redistricting process. I designed special in-depth hour-long training sessions that focused upon each of the four pieces of the "redistricting data cube," including examples of how the pieces appear in Michigan.

9. During the life of the contract, we modified or developed separate computer programs to help analyze plans and line drawings done by the Commission. One of our longstanding programs is what we call "AvsB" which allows us to compare, for example, two different plans to see how much is assigned to identical districts, or the amount of population and geography that is configured differently. The AvsB reports are utilized in this declaration.

10. In conjunction with another subcontractor, political scientist Lisa Handley, we created special software to analyze the extent of racial bloc voting in different parts of the state as well as calculate various political science measures to investigate political fairness (one of the

criteria dictated by Michigan law that created the MICRC). The political fairness analysis and reports are utilized in this declaration.

Plaintiffs' Proposed Alternative Plan

11. Plaintiffs' complaint proposed an alternative plan to the court. Plaintiffs' effort to create a plan that has a deviation of only one person from the ideal population for any of the 13 congressional districts is only achievable by unnecessarily splitting the state's counties, townships, cities and precincts into such small pieces that they will expose voter's secrecy of the ballot. In addition, it appears the plaintiffs' have sought to change the political leaning of a number of districts and thereby reverse the efforts of the Commission to create a "politically fair" plan.

12. **Exhibit B** to this declaration is a graphic map showing the Chestnut Congressional Plan drawn by the MICRC (with the districts shaded by the district number), with an overlay of the Plaintiff's plan boundaries in red outline. Because the Upper Peninsula of the state is identical between the two plans, **Exhibit C** to this declaration is a zoomed in portion of the same map, showing just the lower part of the state. **Exhibit D** to this declaration is a 13-page set of maps, one for every Congressional District, showing in a gray hatched pattern the district in the Chestnut plan and a black boundary for the Plaintiff's congressional plan for that district.

13. **Exhibit E** to this declaration is an extract of our normal AvsB report, in this instance comparing the Plaintiffs' plan against counties in the state. This exhibit shows all the counties that are split in the Plaintiffs' plan for Congress and the amount of population in each piece of a split county. The Plaintiff's plan splits 10 different counties, with Oakland County split four ways and Wayne County split three ways. All the other eight counties have two pieces each in their plan. While Oakland County has parts of four districts, only one of those are wholly

contained in the county. Each of the other three parts contribute only 38%, 20% and 6% of the other districts, so they are not majority factors in those districts.

14. **Exhibit F** to this declaration is an extract of our normal AvsB report, in this instance comparing the Plaintiffs' plan against townships in the state. This exhibit shows all the townships that are split in the Plaintiffs' plan for Congress and the amount of population in each piece of a split township. The extremeness of the Plaintiffs' attempt to create districts that all have the same population can be seen in how they split Southfield township in Oakland County. Plaintiffs' map pulled just 13 people out of the town's 91,504 population to place them in district 11, clearly exposing any voter's vote in an election and violating the secrecy of the ballot. The Plaintiffs' plan also pulled just 19 people out of Ross Township in Kalamazoo County to place them in District 4, creating a small pocket of voters that will cause problems for the town clerk. In addition, Plaintiffs' map splits small townships in half unnecessarily, including Orange Township in Ionia County and Wexford Township in Wexford County. Finally, Caledonia Township in Shiawassee County loses just 5.6% of its 4,360 people into District 8 in the Plaintiffs' plan.

15. **Exhibit G** to this declaration performs the same split township analysis on the Commission's Chestnut Congressional plan. There are no instances of extreme small populations in a piece of a township. The smallest split of a township in the Commission's plan is in Royalton Township in Berrien County where 186 people are placed in District 4. While there is one more township split in the Commission's plan compared to what is presented by the Plaintiffs, the Commission looked are a much wider array of different data and matrixes in creating their plan than the Plaintiffs' seemingly focus on just total population equality.

16. But the Commission's Chestnut plan was not a single-minded exercise to create districts that matched the same population number, but instead were a long exhausting effort to look at multiple factors governing the development of a plan. The commission spent multiple sessions stretching out over many hours developing and modifying the steps and procedures they would follow to develop a redistricting plan. They were governed by the language enacted by the voters in the redistricting referendum passed in 2018, as well as the training I gave them, particularly to be observant of the effects of the lines on clerk's efforts to conduct an election.

17. The plaintiff's plan also does damage to a number of the state's cities, splitting 13 cities in total. **Exhibit H**, attached to this declaration shows all the cities (the Census Bureau calls them "places") that are split in the Plaintiffs' plan. It should be noted that a number of the splits have very small pieces pulled out to be in a different district. For example, only 36 people were pulled out of Fenton City's 12,050 population, or 77 people were cut off from the 2,647 people in the Village of Grosse Pointe Shores. Even the small cities of Hubbardston village, Otter Lake village and Reese village were further split apart in the plaintiff's plan.

18. Like townships, the plaintiffs paid little attention to how many precincts they split in creating their plan. While precincts can change because of the redistricting process, it is also important to recognize that maintaining precinct configurations make the implementation of the plan by city and town clerks easier because they already have the older precincts' configuration defined in the voter registration system's street file. All of my research over the past 50 years shows that voters are more likely to be incorrectly assigned to a correct precinct at the beginning of the decade, just after redistricting takes place.

19. **Exhibit I** to this affidavit shows all the precincts (known as VTDs by the Census Bureau) are split in the Plaintiff's proposed plan and the amount of population that is separated

from the precinct. This two-page exhibit shows several instances where tiny pieces have been pulled out of the precincts to match the plaintiff's goal of having all their districts equally populated.

I declare under penalty of perjury that to the best of my memory the foregoing is true and correct.

Executed this 18 day of February, 2022, at Manassas, VA

Kimball W. Brace

Kimball Brace

List of Exhibits Attached to Declaration of Kimball Brace

A. Kimball Brace Vita

B. Statewide map of Chestnut plan by MICRC with overlay of Plaintiff's plan

C. Zoomed in map of Chestnut Plan with Plaintiff's Plan overlay

D. 13 page map set depicting individual congressional districts maps with gray hatch pattern for the Chestnut Plan and black overlay for the Plaintiff's plan.

E. Table of Counties split in Plaintiff's plan for Congress.

F. Table of Townships split in Plaintiff's plan for Congress.

G. Table of Townships split in Chestnut plan for Congress.

H. Table of cities (places) split in Plaintiff's plan for Congress.

I. Table of precincts (VTDs) split in Plaintiff's plan for Congress.

Exhibit A

VITA

KIMBALL WILLIAM BRACE

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kbrace@electiondataservices.com or **kbrace@aol.com**

Kimball Brace is the president of Election Data Services Inc., a consulting firm that specializes in redistricting, election administration, and the analysis and presentation of census and political data. Mr. Brace graduated from the American University in Washington, D.C., (B.A., Political Science) in 1974 and founded Election Data Services in 1977.

Redistricting Consulting

Activities include software development; construction of geographic, demographic, or election databases; development and analysis of alternative redistricting plans; general consulting, and onsite technical assistance with redistricting operations.

Congressional and Legislative Redistricting

Arizona Independent Redistricting Commission: Election database, 2001

Arizona Legislature, Legislative Council: Election database, 2001

Colorado General Assembly, Legislative Council: Geographic, demographic, and election databases, 1990–91

Connecticut General Assembly
- Joint Committee on Legislative Management: Election database, 2001; and software, databases, general consulting, and onsite technical assistance, 1990–91
- Senate and House Democratic Caucuses: Demographic database and consulting, 2001

Florida Legislature, House of Rep.: Geographic, demographic, and election databases, 1989–92

Illinois General Assembly
- Speaker of House and Senate Minority Leader: Software, databases, general consulting, and onsite technical assistance, 2000–02,
- Speaker of House and President of Senate: Software, databases, general consulting, and onsite technical assistance, 2018-current, 2009-2012, 1990–92, and 1981-82

Iowa General Assembly, Legislative Service Bureau and Legislative Council: Software, databases, general consulting, and onsite technical assistance, 2000–01 and 1990–91

Kansas Legislature: Databases and plan development (state senate and house districts), 1989

Massachusetts General Court
- Senate Democratic caucus: Election database and general consulting, 2001–02
- Joint Reapportionment Committees: Databases and plan development (cong,, state senate, and state house districts), 1991–93, 2010-2012

(Redistricting Consulting, cont.)

Michigan Legislature: Geographic, demographic, and election databases, 1990–92; databases and plan development (cong., state senate, and state house districts), 1981-82

Missouri Redistricting Commission: General consulting, 1991–92

Commonwealth of Pennsylvania: General consulting, 1992

Rhode Island General Assembly and Reapportionment Commissions

- Software, databases, plan development, and onsite assistance (cong., state senate, and state house districts), 2016- current, 2010-2012, 2001–02 and 1991–92
- Databases and plan development (state senate districts), 1982-83

State of South Carolina: Plan development and analysis (senate), U.S. Dept. of Justice, 1983–84

Local Government Redistricting

Orange County, Calif.: Plan development (county board), 1991–92

City of Bridgeport, Conn.: Databases and plan development (city council), 2011-2012 and 2002–03

Cook County, Ill.: Software, databases, and general consulting (county board), 2010-2012, 2001–02, 1992–1993, and 1989

Lake County, Ill.: Databases and plan development (county board), 2011 and 1981

City of Chicago, Ill.: Software, databases, general consulting, and onsite technical assistance (city wards), 2010-2012, 2001–02 and 1991–92

City of North Chicago, Ill.: Databases and plan development (city council), 1991 and 1983

City of Annapolis, Md.: Databases and plan development (city council), 1984

City of Boston, Mass.: Databases and plan development (city council), 2011-2012, 2001-2002, and 1993

City of New Rochelle, N.Y.: Databases and plan development (city council), 1991–92

City of New York, N.Y.: Databases and plan development (city council), 1990–91

Cities of Pawtucket, Providence, East Providence, and Warwick, and town of North Providence, R.I.: Databases and plan development (city wards and voting districts), 2011-2012, 2002

City of Woonsocket and towns of Charlestown, Johnston, Lincoln, Scituate and Westerly, R.I.: Databases and plan development (voting districts), 2011-2012, 2002; also Westerly 1993

City of Houston, Tex.: Databases and plan development (city council), 1979 — recommended by U.S. Department of Justice

City of Norfolk, Va.: Databases and plan development (city council), 1983–84 — for Lawyers' Committee for Civil Rights

Virginia Beach, Va.: Databases and plan development (city council), 2011-2012, 2001–02, 1995, and 1993

Other Activities

International Foundation for Electoral Systems (IFES) and U.S. Department of State: redistricting seminar, Almaty, Kazakhstan, 1995

Library of Congress, Congressional Research Service: Consulting on reapportionment, redistricting, voting behavior and election administration

National Conference of State Legislatures (NCSL): Numerous presentations on variety of redistricting and election administration topics, 1980 - current

Election Administration Consulting

Activities include seminars on election administration topics and studies on voting behavior, voting equipment, and voter registration systems.

Prince William County, VA:
2013 – Appointed by Board of County Supervisors to 15 member Task Force on Long Lines following 2012 election. Asked and appointed by County's Electoral Board to be Acting General Registrar for 5-month period between full-time Registrars.
2008 - current – poll worker and now chief judge for various precincts in county

U.S. Election Assistance Commission (EAC): Served as subcontractor to prime contractors who compiled survey results from 2008 and 2010 Election Administration and Voting Survey.

U.S. Election Assistance Commission (EAC): Compile, analyze, and report the results of a survey distributed to state election directors during FY–2007. Survey results were presented in the following reports of the EAC: *The Impact of the National Voter Registration Act of 1993 on the Administration of Elections for Federal Office, 2005–2006, A Report to the 110th Congress,* June 30, 2007; *Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA), Survey Report Findings,* September, 2007; and *The 2006 Election Administration and Voting Survey, A Summary of Key Findings,* December, 2007.

U.S. Election Assistance Commission (EAC): Compile, analyze, and report the results of three surveys distributed to state election directors during FY–2005: Election Day, Military and Overseas Absentee Ballot (UOCAVA), and Voter Registration (NVRA) Surveys. Survey results were presented in the following reports: *Final Report of the 2004 Election Day Survey,* by Kimball W. Brace and Dr. Michael P. McDonald, September 27, 2005; and *Impact of the National Voter Registration Act of 1993 on the Administration of Elections for Federal Office, 2003–2004, A Report to the 109th Congress,* June 30, 2005.

Rhode Island Secretary of State: Verification of precinct and district assignment codes in municipal registered voter files and production of street files for a statewide voter registration database, on-going maintenance of street file, 2004-2006, 2008-2014, 2016-2017.

Rhode Island Secretary of State, State Board of Elections & all cities & towns: production of precinct maps statewide, 2012, 2002, 1992

District of Columbia, Board of Elections and Ethics (DCBOEE): Verification of election ward, Advisory Neighborhood Commission (ANC), and Single-Member District (SMD) boundaries and production of a new street locator, 2003. Similar project, 1993.

Harris County, Tex.: Analysis of census demographics to identify precincts with language minority populations requiring bilingual assistance, 2002–03

(Election Administration Consulting, cont.)

Cook County, Ill., Election Department and Chicago Board of Election Commissioners:
- Analysis of census demographics to identify precincts with language minority populations requiring bilingual assistance, 2019, 2010-2013, 2002–03
- Study on voting equipment usage and evaluation of punch card voting system, 1997

Chicago Board of Election Commissioners: Worked with Executive Director & staff in Mapping Dept. to redraw citywide precincts, eliminate over 600 to save costs, 2011-12

Library of Congress, Congressional Research Service: Nationwide, biannual studies on voter registration and turnout rates, 1978–2002

U.S. General Accounting Office (GAO), U.S. Dept. of Justice, and numerous voting equipment vendors and media: Data on voting equipment usage throughout the United States, 1980–present

Needs assessments and systems requirement analyses for the development of statewide voter registration systems:
- Illinois State Board of Elections: 1997
- North Carolina State Board of Elections, 1995
- Secretary of Commonwealth of Pennsylvania, 1996

Federal Election Commission, Office of Election Administration:
- Study on integrating local voter registration databases into statewide systems, 1995
- Nationwide workshops on election administration topics, 1979–80
- Study on use of statistics by local election offices, 1978–79

Cuyahoga County, Ohio, Board of Elections: Feasibility study on voting equipment, 1979

Winograd Commission, Democratic National Committee: Analysis of voting patterns, voter registration and turnout rates, and campaign expenditures from 1976 primary elections

Mapping and GIS

Activities include mapping and GIS software development (geographic information systems) for election administration and updating TIGER/Line files for the decennial census.

2000 Census Transportation Planning Package (CTPP), 1998–99: GIS software for the U.S. Department of Transportation to distribute to 400 metropolitan planning organizations (MPOs) and state transportation departments for mapping traffic analysis zones (TAZs) for the 2000 census; provided technical software support to MPOs

Census 2000, 2010 and 2020 Redistricting Data Program, Block Boundary Suggestion Project (Phase 1) and Voting District Project (Phase 2), 1995–99: GIS software and provided software, databases, and technical software support to the following program participants:
- Alaska Department of Labor
- Connecticut Joint Committee on Legislative Management
- Illinois State Board of Elections
- Indiana Legislative Services Agency
- Iowa Legislative Service Bureau

(Mapping & GIS Support, cont.)

- New Mexico Legislative Council Service
- Rhode Island General Assembly
- Virginia Division of Legislative Services

Developed PRECIS® Precinct Information System—GIS software to delineate voting precinct boundaries—and delivered software, databases, and technical software support to the following state and local election organizations (with date of installation):

- Cook County, Ill., Department of Elections (1993)
- Marion County, Fla., Supervisor of Elections (1995)
- Berks County Clerk, Penn. (1995)
- Hamilton County, Ohio, Board of Elections (1997)
- Brevard County, Fla., Supervisor of Elections (1999)
- Osceola County, Fla., Supervisor of Elections (1999)
- Multnomah County, Ore, Elections Division (1999)
- Chatham County, Ga., Board of Elections (2000)
- City of Chicago, Ill., Board of Election Commissioners (2000)
- Mahoning County, Ohio, Board of Elections (2000)
- Iowa Secretary of State, Election and Voter Registrations Divisions (2001)
- Woodbury County, Iowa, Elections Department (2001)
- Franklin County, Ohio, Board of Elections (2001)
- Cobb County, Ga., Board of Elections and Voter Registration (2002)

Illinois State Board of Elections, Chicago Board of Election Commissioners, and Cook County Election Department: Detailed maps of congressional, legislative, judicial districts, 1992

Associated Press: Development of election night mapping system, 1994

Litigation Support

Activities include data analysis, preparation of court documents and expert witness testimony. Areas of expertise include the census, demographic databases, district compactness and contiguity, racial bloc voting, communities of interest, and voting systems. Redistricting litigation activities also include database construction and the preparation of substitute plans.

State of Alabama vs. US Department of Commerce, et al (2019-2020) apportionment & citizenship data

NAACP vs. Denise Merrill, CT Secretary of State, et al (2019-2020) state legislative redistricting and prisoner populations

Latasha Holloway, et al. v. City of Virginia Beach, VA (2019) city council redistricting

Joseph V. Aguirre vs. City of Placentia, CA (2018-2019), city council redistricting

Davidson, et al & ACLU of Rhode Island vs. City of Cranston, RI (2014-16), city council & school committee redistricting with prisoner populations.

Navaho Nation v. San Juan County, UT (2014-17) county commissioner & school board districts.

Michael Puyana vs. State of Rhode Island (2012) state legislature redistricting

(Litigation Support, cont.)

United States of America v. Osceola County, Florida, (2006), county commissioner districts.

Deeds vs McDonnell (2005), Va. Attorney General Recount

Indiana Democratic Party, et al., v. Todd Rokita, et al. (2005), voter identification.

Linda Shade v. Maryland State Board of Elections (2004), electronic voting systems

Gongaley v. City of Aurora, Ill. (2003), city council districts

State of Indiana v. Sadler (2003), ballot design (city of Indianapolis-Marion County, Ind.)

Peterson v. Borst (2002–03), city-council districts (city of Indianapolis-Marion County, Ind.)

New Rochelle Voter Defense Fund v. City of New Rochelle, City Council of New Rochelle, and Westchester County Board Of Elections (2003), city council districts (New York)

Charles Daniels and Eric Torres v. City of Milwaukee Common Council (2003), council districts (Wisconsin)

The Louisiana House of Representatives v. Ashcroft (2002–03), state house districts

Camacho v. Galvin and *Black Political Caucus v. Galvin* (2002–03), state house districts (Massachusetts)

Latino Voting Rights Committee of Rhode Island, et al., v. Edward S. Inman, III, et al. (2002–03), state senate districts

Metts, v. Harmon, Almond, and Harwood, et al. (2002–03), state senate districts (Rhode Island)

Joseph F. Parella, et al. v. William Irons, et al. (2002–03), state senate districts (Rhode Island)

Jackson v. County of Kankakee (2001–02), county commissioner districts (Illinois)

Corbett, et al., v. Sullivan, et al. (2002), commissioner districts (St Louis County, Missouri)

Harold Frank, et al., v. Forest County, et al. (2001–02), county commissioner districts (Wisc.)

Albert Gore, Jr., et al., v. Katherine Harris as Secretary of State, State of Florida, et al., and The Miami Dade County Canvassing Board, et al., and The Nassau County Canvassing Board, et al., and The Palm Beach County Canvassing Board, et al., and George W. Bush, et al (2000), voting equipment design — Leon County, Fla., Circuit Court hearing, December 2, 2000, on disputed ballots in Broward, Volusia, Miami-Dade, and Palm Beach counties from the November 7, 2000, presidential election.

Barnett v. Daley/PACI v. Daley/Bonilla v. Chicago City Council (1992–98), city wards

Donald Moon, et al. v. M. Bruce Meadows, etc and Curtis W. Harris, et al. (1996–98), congressional districts (Virginia)

Melvin R. Simpson, et al. v. City of Hampton, et al. (1996–97), city council districts (Va.)

Vera vs. Bush (1996), Texas redistricting

In the Matter of the Redistricting of Shawnee County Kansas and Kingman, et al. v. Board of County Commissioners of Shawnee County, Kansas (1996), commissioner districts

Vecinos de Barrio Uno v. City of Holyoke (1992–96), city council districts (Massachusetts)

(Litigation Support, cont.)

Torres v. Cuomo (1992–95), congressional districts (New York)

DeGrandy v. Wetherell (1992–94), congressional, senate, and house districts (Florida)

Johnson v. Miller (1994), congressional districts (Georgia)

Jackson, et al v Nassau County Board of Supervisors (1993), form of government (N.Y.)

Gonzalez v. Monterey County, California (1992), county board districts

LaPaille v. Illinois Legislative Redistricting Commission (1992), senate and house districts

Black Political Task Force v. Connolly (1992), senate and house districts (Massachusetts)

Nash v. Blunt (1992), house districts (Missouri)

Fund for Accurate and Informed Representation v. Weprin (1992), assembly districts (N.Y.)

Mellow v. Mitchell (1992), congressional districts (Pennsylvania)

Phillip Langsdon v. Milsaps (1992), house districts (Tennessee)

Smith v. Board of Supervisors of Brunswick County (1992), supervisor districts (Virginia)

People of the State of Illinois ex. rel. Burris v. Ryan (1991–92), senate and house districts

Good v. Austin (1991–92), congressional districts (Michigan)

Neff v. Austin (1991–92), senate and house districts (Michigan)

Hastert v. Illinois State Board of Elections (1991), congressional districts

Republican Party of Virginia et al. v. Wilder (1991), senate and house districts

Jamerson et al. v. Anderson (1991), senate districts (Virginia)

Ralph Brown v. Iowa Legislative Services Bureau (1991), redistricting database access

Williams, et al. v. State Board of Election (1989), judicial districts (Cook County, Ill.)

Fifth Ward Precinct 1A Coalition and Progressive Association v. Jefferson Parish School Board (1988–89), school board districts (Louisiana)

Michael V. Roberts v. Jerry Wamser (1987–89), St. Louis, Mo., voting equipment

Brown v. Board of Commissioners of the City of Chattanooga, Tenn. (1988), county commissioner districts

Business Records Corporation v. Ransom F. Shoup & Co., Inc. (1988), voting equip. patent

East Jefferson Coalition for Leadership v. The Parish of Jefferson (1987–88), parish council districts (Louisiana)

Buckanaga v. Sisseton School District (1987–88), school board districts (South Dakota)

Griffin v. City of Providence (1986–87), city council districts (Rhode Island)

United States of America v. City of Los Angeles (1986), city council districts

Latino Political Action Committee v. City of Boston (1984–85), city council districts

Ketchum v. Byrne (1982–85), city council districts (Chicago, Ill.)

(Litigation Support, cont.)

State of South Carolina v. United States (1983–84), senate districts — U.S. Dept. of Justice

Collins v. City of Norfolk (1983–84), city council districts (Virginia) — for Lawyers' Committee for Civil Rights

Rybicki v. State Board of Elections (1981–83), senate and house districts (Illinois)

Licht v. State of Rhode Island (1982–83), senate districts (Rhode Island)

Agerstrand v. Austin (1982), congressional districts (Michigan)

Farnum v. State of Rhode Island (1982), senate districts (Rhode Island)

In Re Illinois Congressional District Reapportionment Cases (1981), congressional districts

Publications

"EAC Survey Sheds Light on Election Administration", *Roll Call*, October 27, 2005 (with Michael McDonald)

Developing a Statewide Voter Registration Database: Procedures, Alternatives, and General Models, by Kimball W. Brace and M. Glenn Newkirk, edited by William Kimberling, (Washington, D.C.: Federal Election Commission, Office of Election Administration, Autumn 1997).

The Election Data Book: A Statistical Portrait of Voting in America, 1992, Kimball W. Brace, ed., (Bernan Press, 1993)

"Geographic Compactness and Redistricting: Have We Gone Too Far?", presented to Midwestern Political Science Association, April 1993 (with D. Chapin and R. Niemi)

"Whose Data is it Anyway: Conflicts between Freedom of Information and Trade Secret Protection in Redistricting", *Stetson University Law Review*, Spring 1992 (with D. Chapin and W. Arden)

"Numbers, Colors, and Shapes in Redistricting," *State Government News*, December 1991 (with D. Chapin)

"Redistricting Roulette," *Campaigns and Elections*, March 1991 (with D. Chapin)

"Redistricting Guidelines: A Summary", presented to the Reapportionment Task Force, National Conference on State Legislatures, November 9, 1990 (with D. Chapin and J. Waliszewski)

"The 65 Percent Rule in Legislative Districting for Racial Minorities: The Mathematics of Minority Voting Equality," *Law and Policy*, January 1988 (with B. Grofman, L. Handley, and R. Niemi)

"Does Redistricting Aimed to Help Blacks Necessarily Help Republicans?" *Journal of Politics*, February 1987 (with B. Grofman and L. Handley)

"New Census Tools," *American Demographics*, July/August 1980

Professional Activities

Member, Task Force on Long Lines in 2012 Election, Prince William County, VA

Member, 2010 Census Advisory Committee, a 20-member panel advising the Director of the Census on the planning and administration of the 2010 census.

Delegate, Second Trilateral Conference on Electoral Systems (Canada, Mexico, and United States), Ontario, Canada, 1995; and Third Trilateral Conference on Electoral Systems, Washington, D.C., 1996

Member, American Association of Political Consultants

Member, American Association for Public Opinion Research

Member, American Political Science Association

Member, Association of American Geographers, Census Advisory Committee

Member Board of Directors, Association of Public Data Users

Member, National Center for Policy Alternatives, Voter Participation Advisory Committee

Member, Urban and Regional Information Systems Association

Historical Activities

Member, Manassas Battlefield Trust Board Member, 2018 -- current

Member, Historical Commission, Prince William County, VA., 2015 – current. Elected Chairman in 2017, re-elected 2018

Member of Executive Committee & head of GIS Committee, Bull Run Civil War Round Table, Centerville, VA. 2015 – current

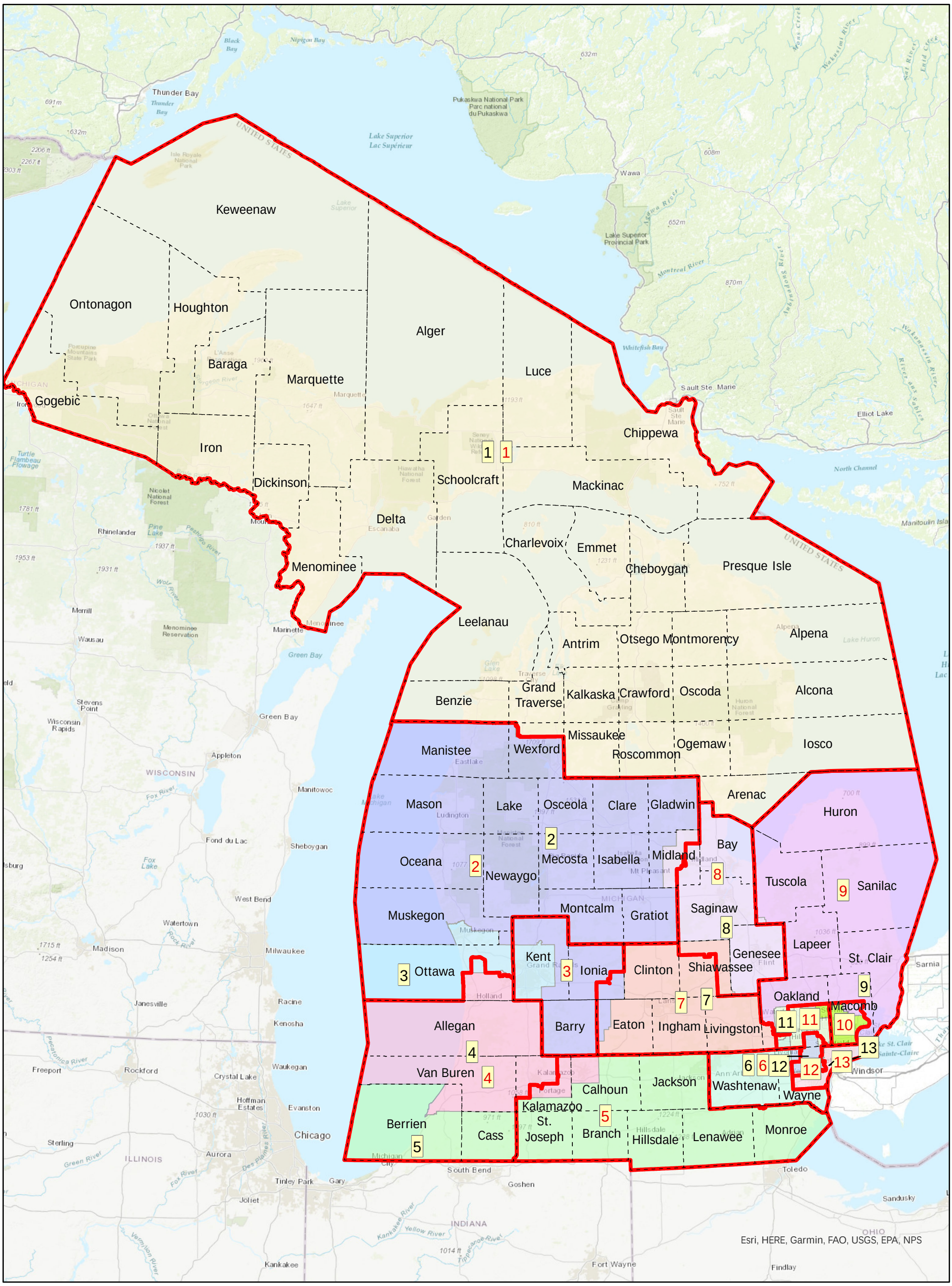
Member, Washington Capitals Fan Club, Executive Board 2017 -- current

February, 2020

Exhibit B

Michigan Redistricting Comparison

Commission Adopted Congressional Plan (Chestnut) vs Plaintiff Congressional Plan



County

Congressional Districts: Plaintiff

Congressional Districts: Chestnut

1 2 3 4 5 6 7 8 9 10 11 12 13

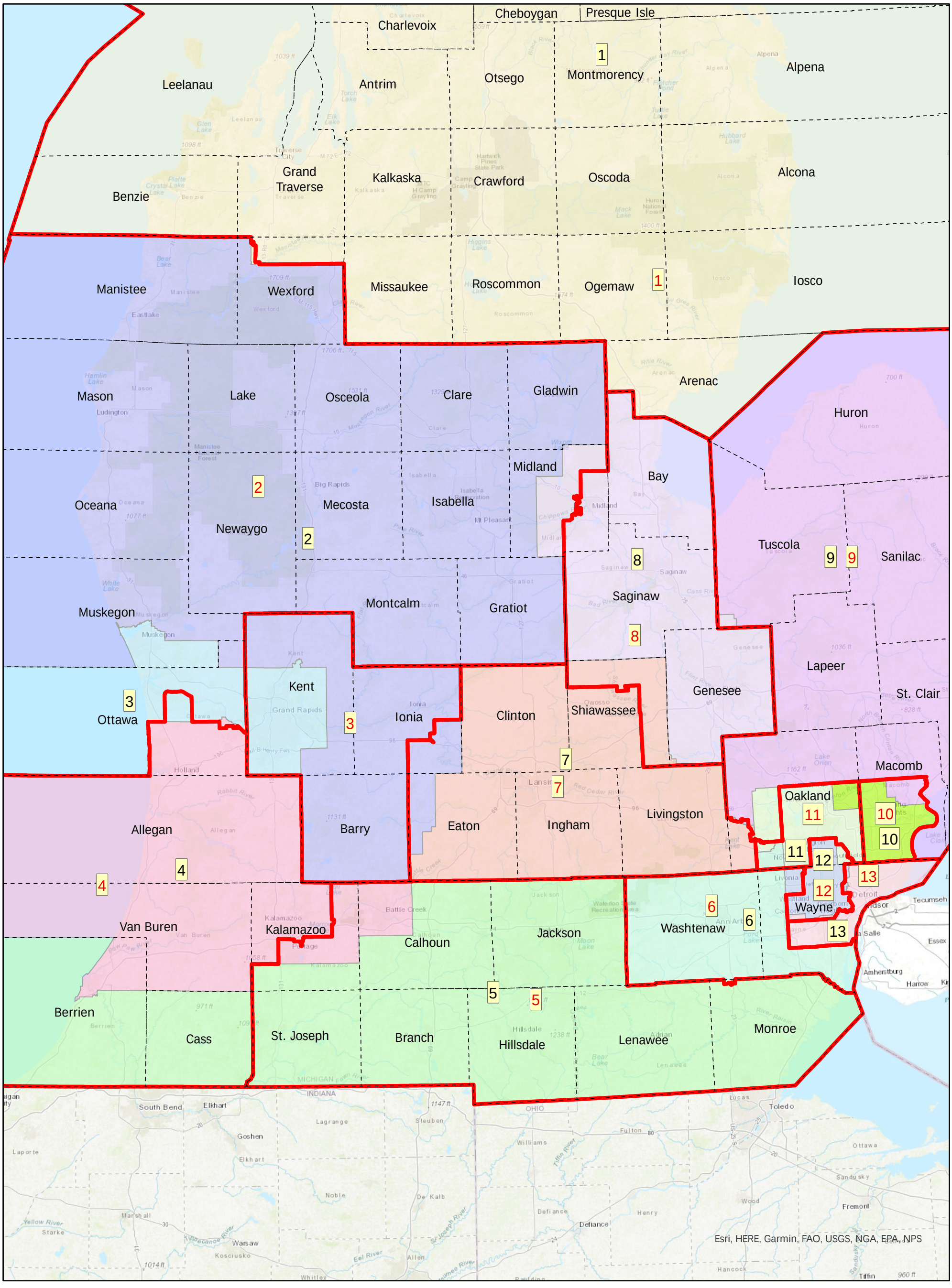
MICHIGAN INDEPENDENT CITIZENS REDISTRICTING COMMISSION

Election Data Services

Exhibit C

Michigan Redistricting Comparison

Commission Adopted Congressional Plan (Chestnut) vs Plaintiff Congressional Plan



0 10 20 40 Miles

Congressional Districts: Chestnut

County

Congressional Districts: Plaintiff

1 2 3 4 5 6 7 8 9 10 11 12 13

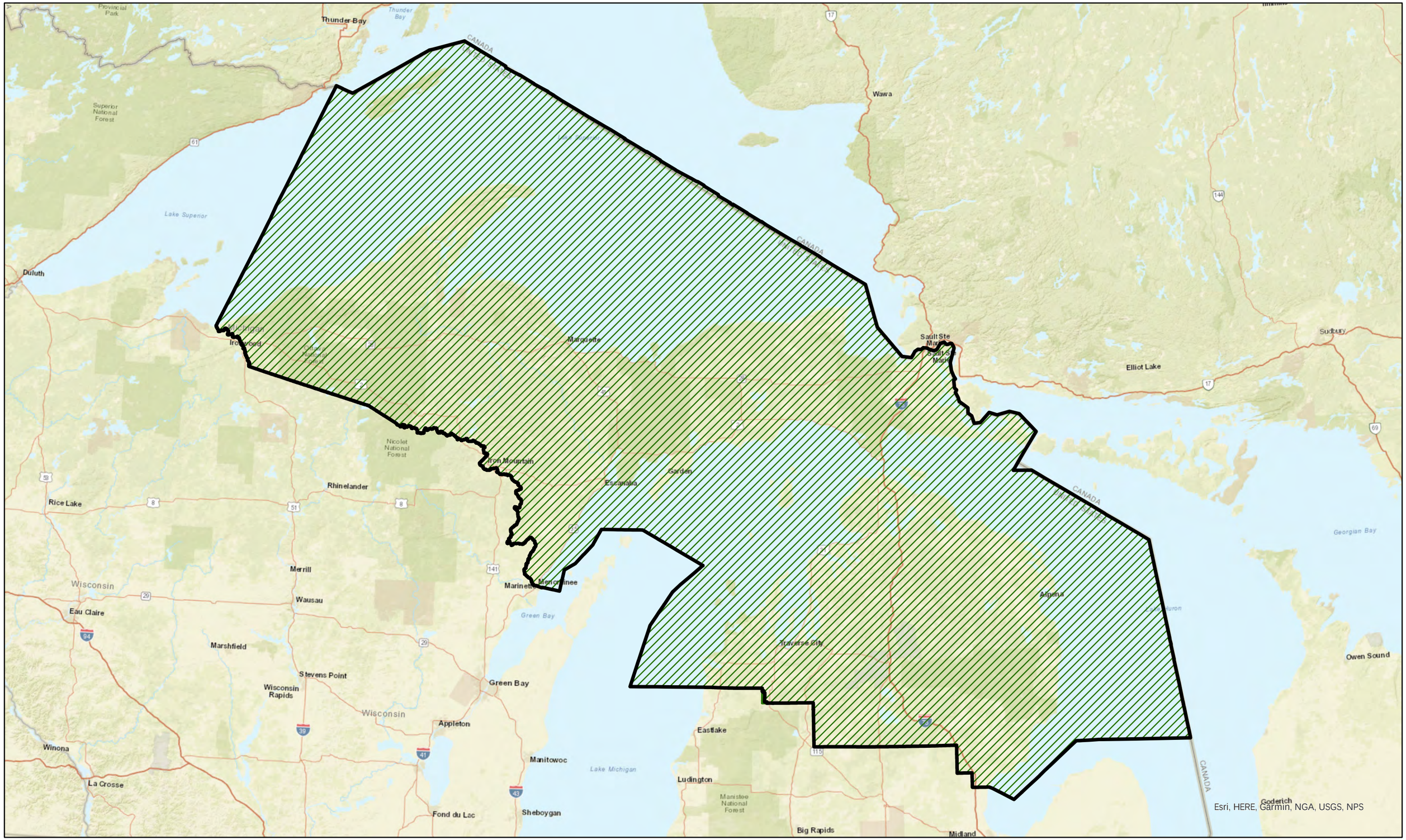
MICHIGAN INDEPENDENT CITIZENS REDISTRICTING COMMISSION

Election Data Services

Exhibit D

Michigan - Plaintiff Congressional District - 1

Election Data Services



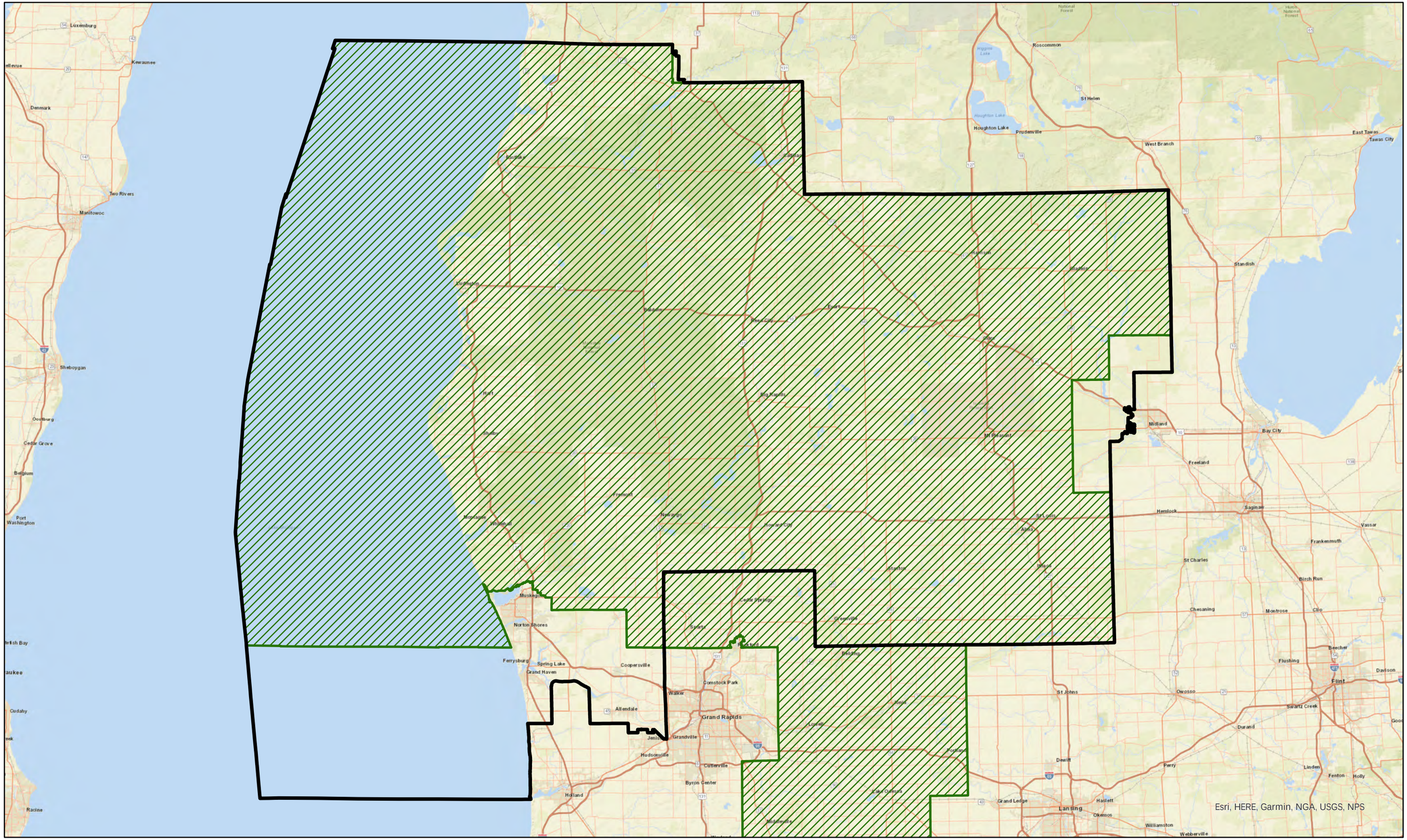
0 25 50 100 Miles

Chestnut District

Congress_fromPlaintiff

Michigan - Plaintiff Congressional District - 2

Election Data Services



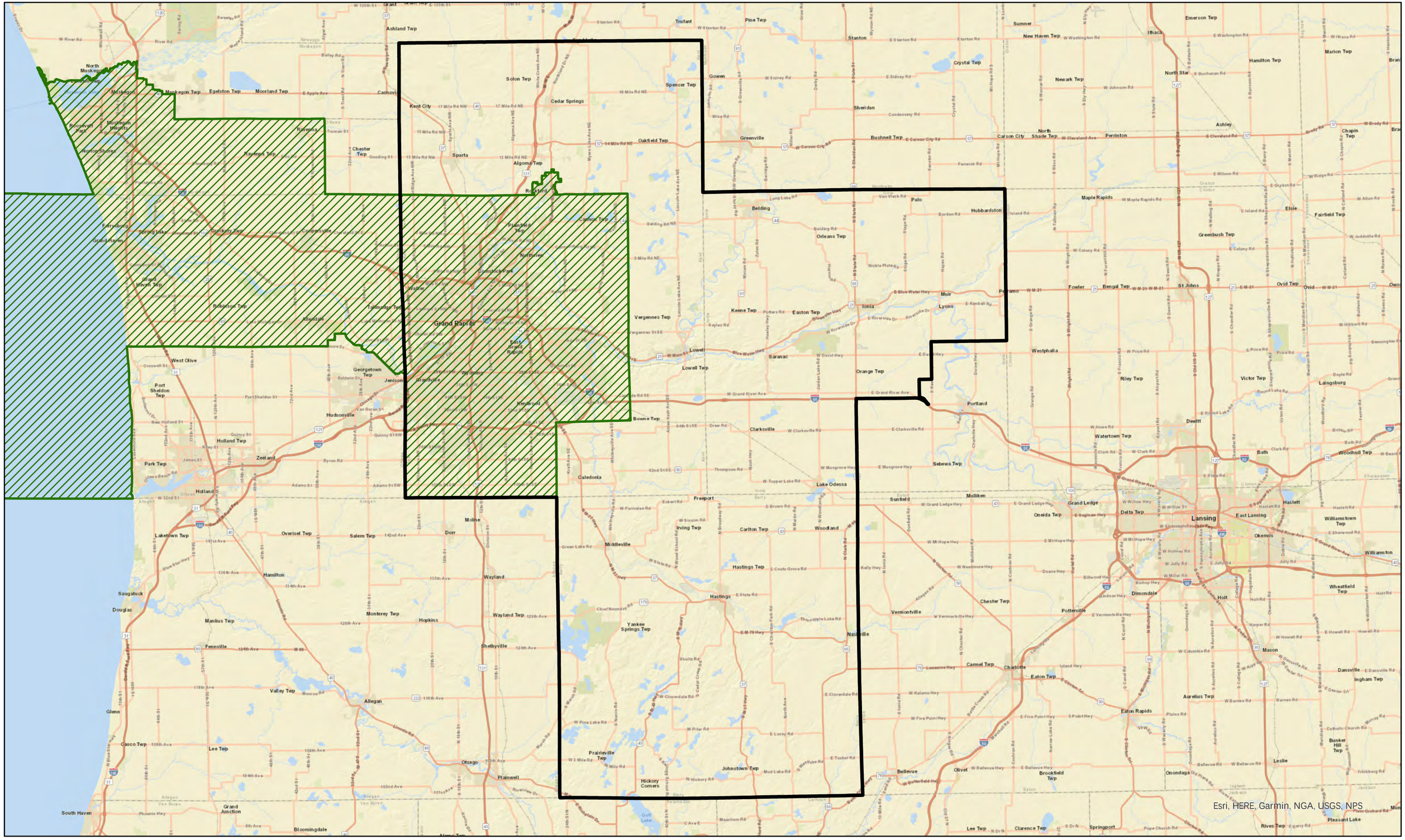
0 10 20 40 Miles

Chestnut District

Congress_fromPlaintiff

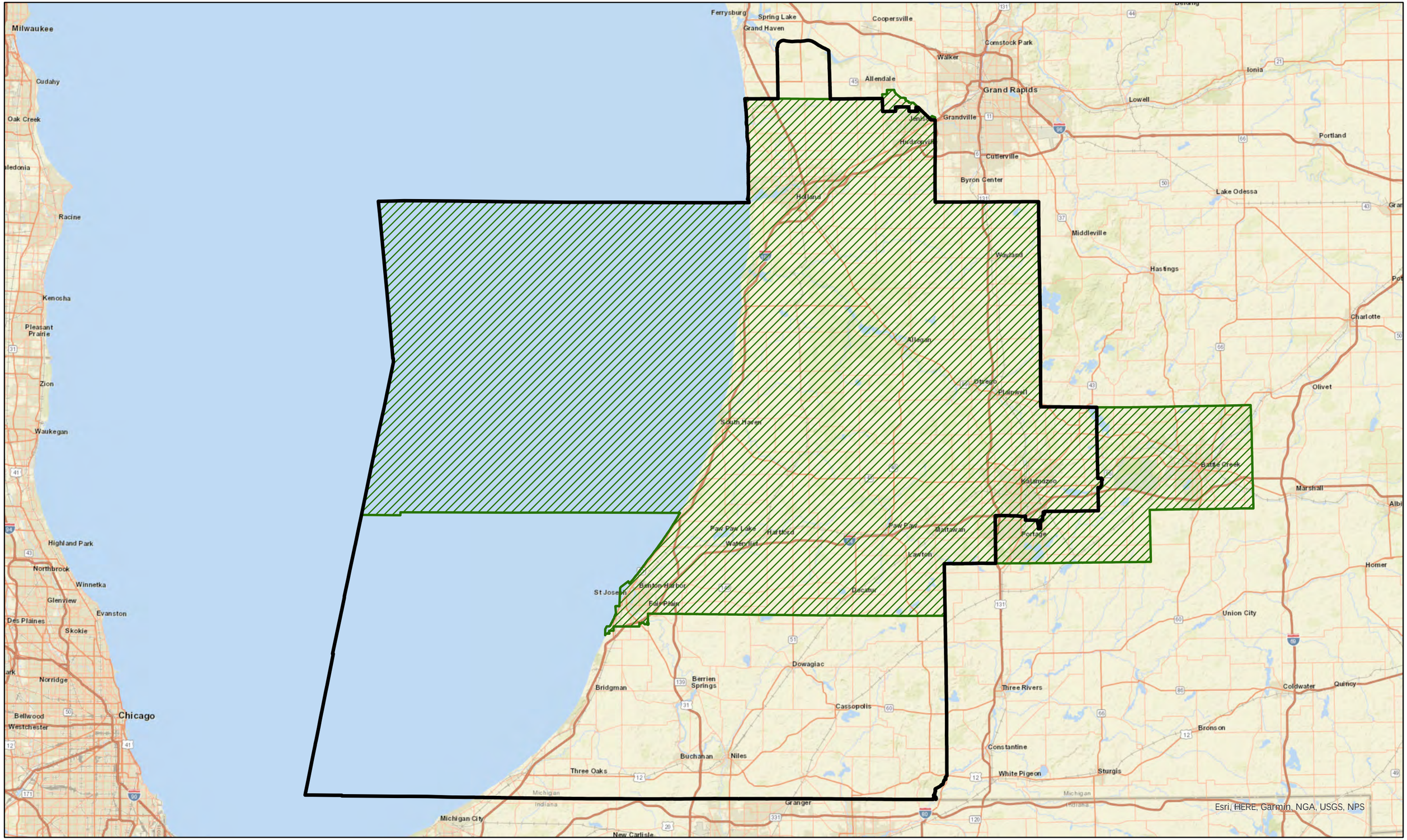
Michigan - Plaintiff Congressional District 3

Election Data Services



Michigan - Plaintiff Congressional District 4

Election Data Services



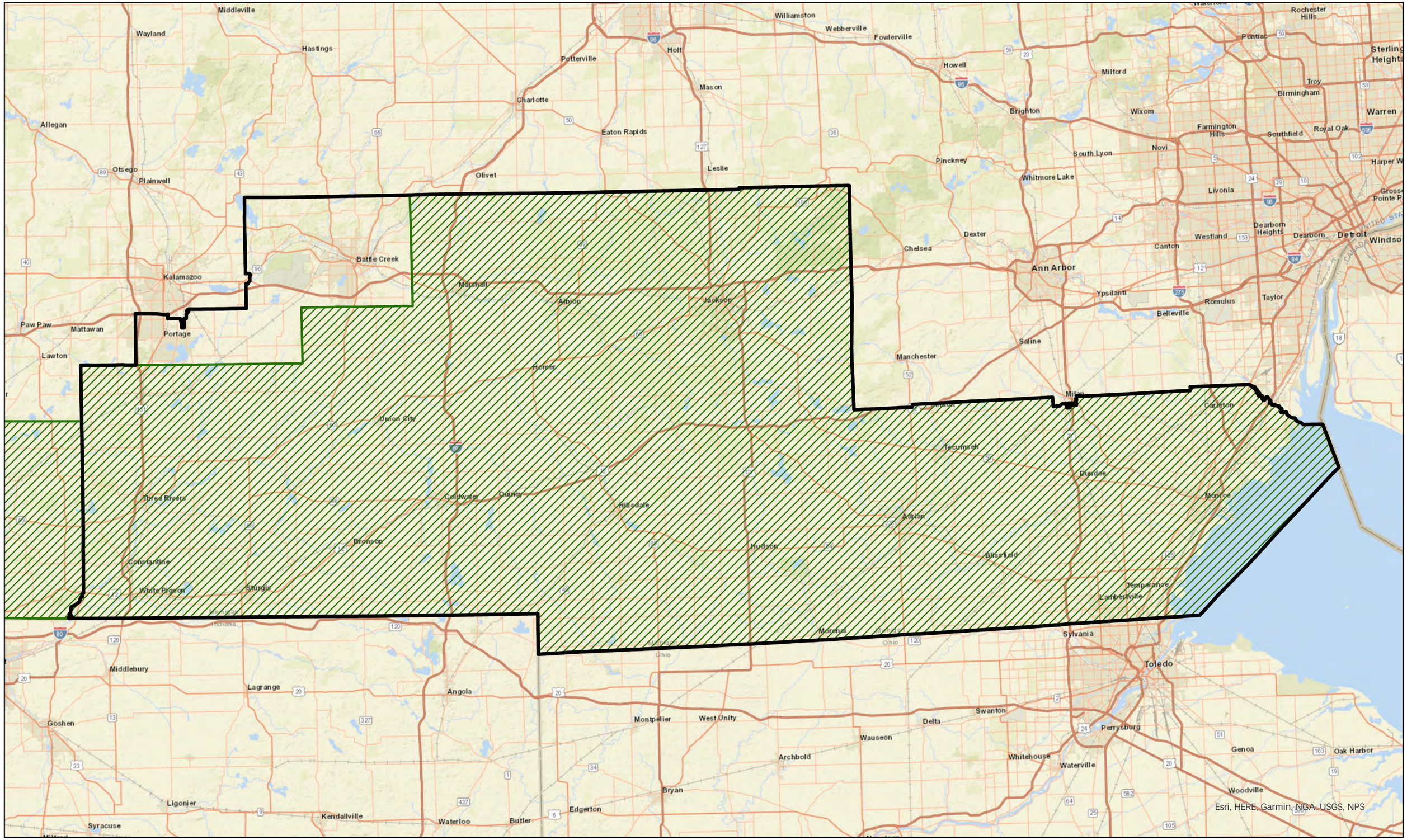
0 5 10 20 Miles

Chestnut District

Congress_fromPlaintiff

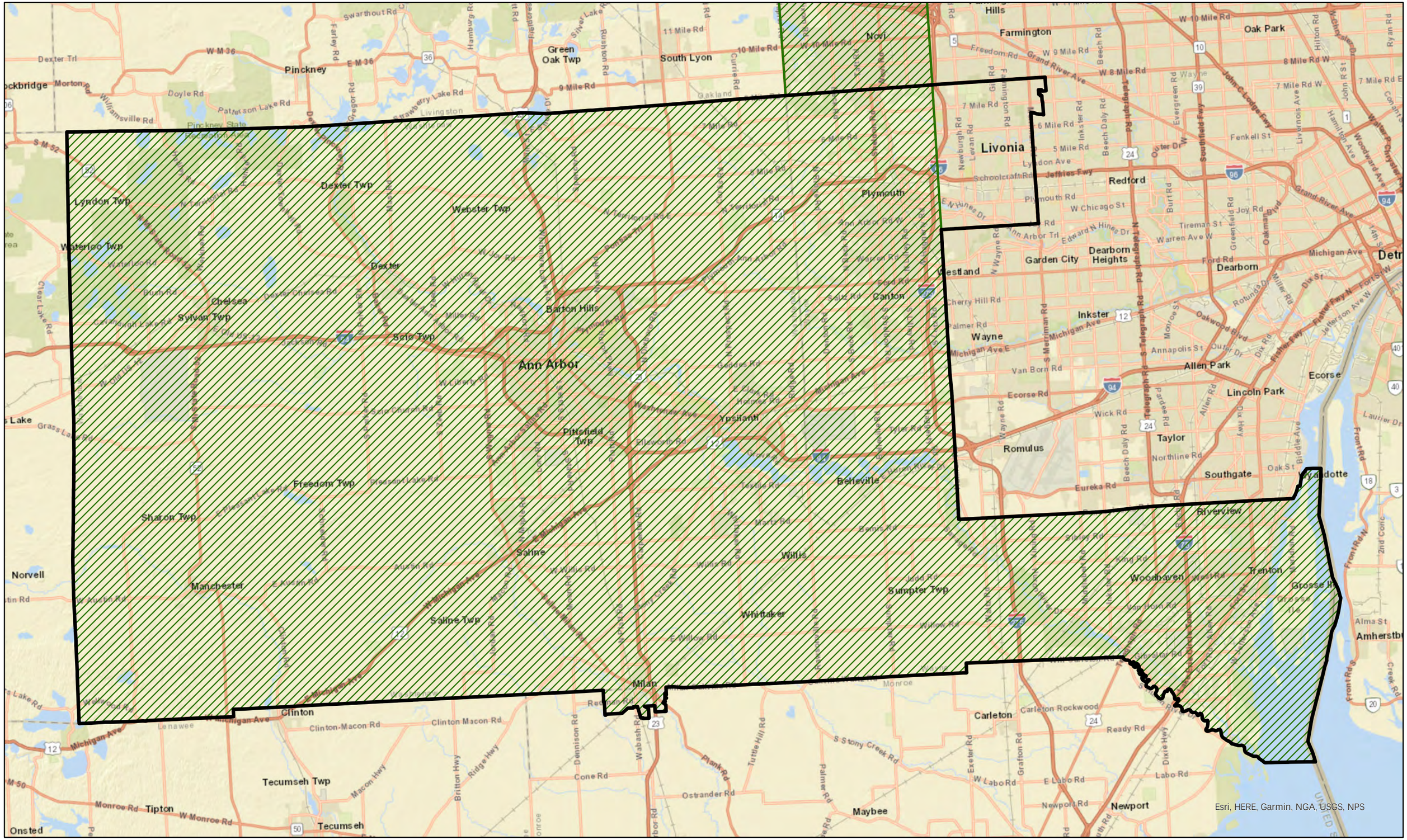
Michigan - Plaintiff Congressional District - 5

Election Data Services



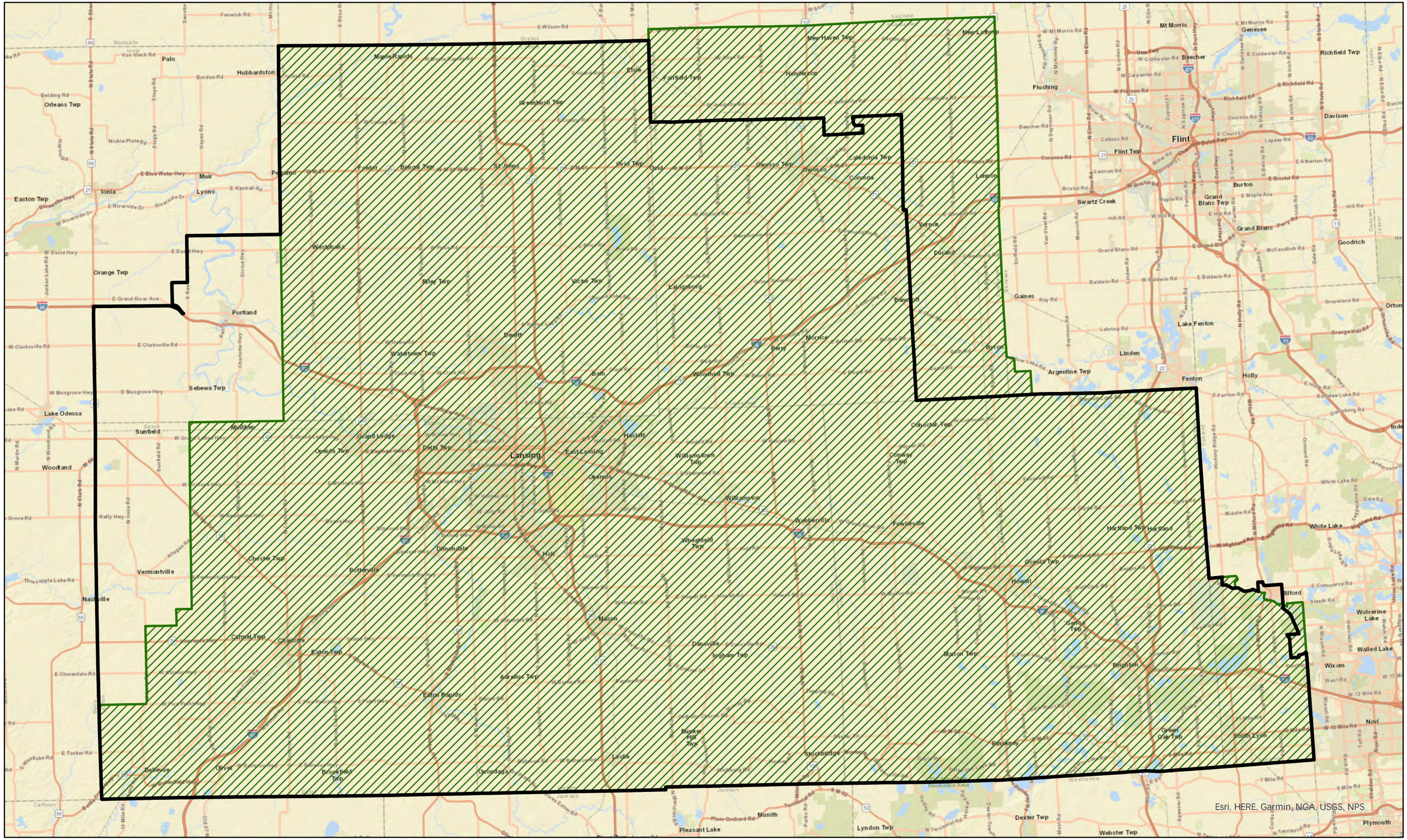
Michigan - Plaintiff Congressional District - 6

Election Data Services



Michigan - Plaintiff Congressional District - 7

Election Data Services

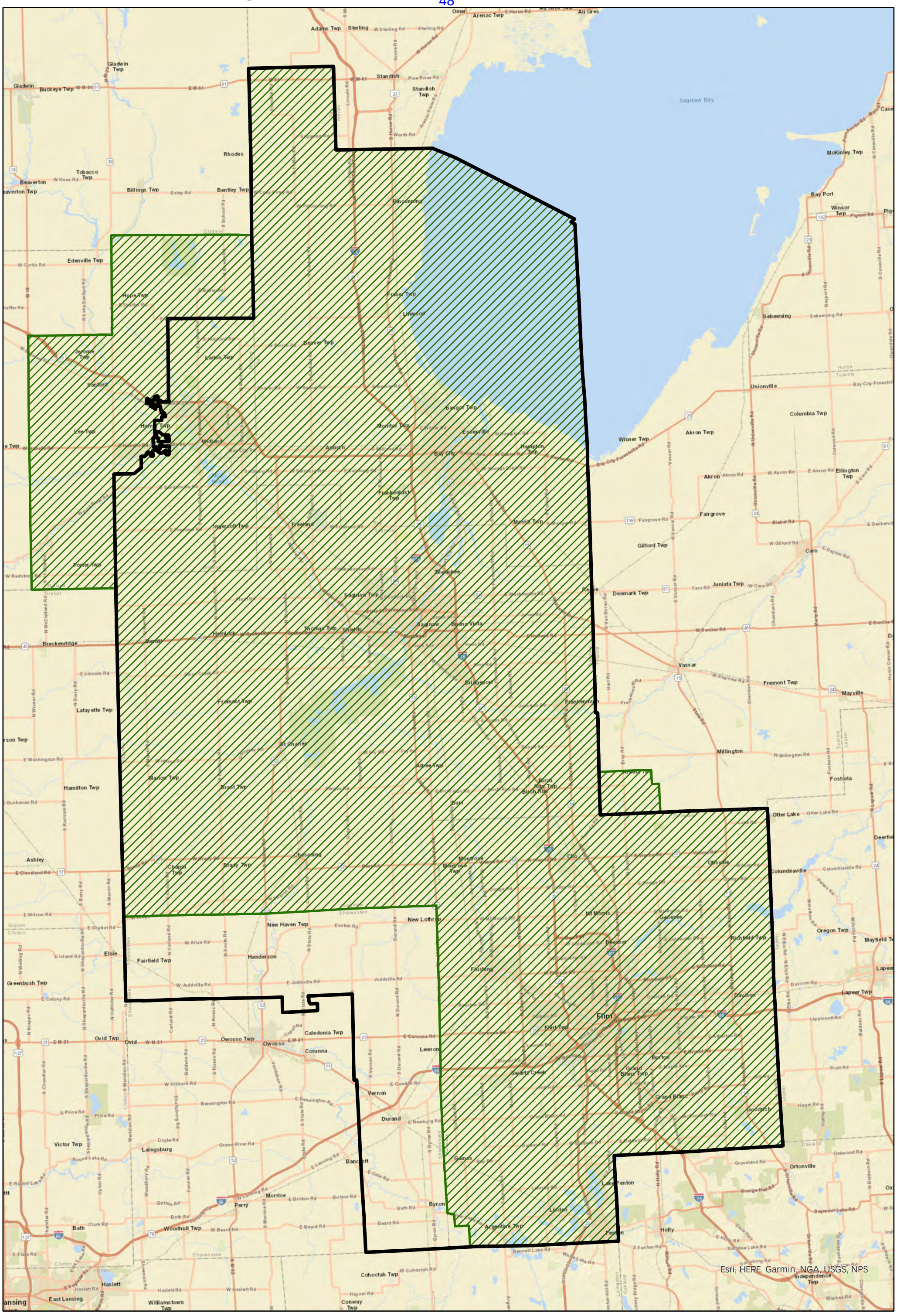


0 4.5 9 18 Miles

Chestnut District

Congress_fromPlaintiff

Michigan - Plaintiff Congressional District - 8

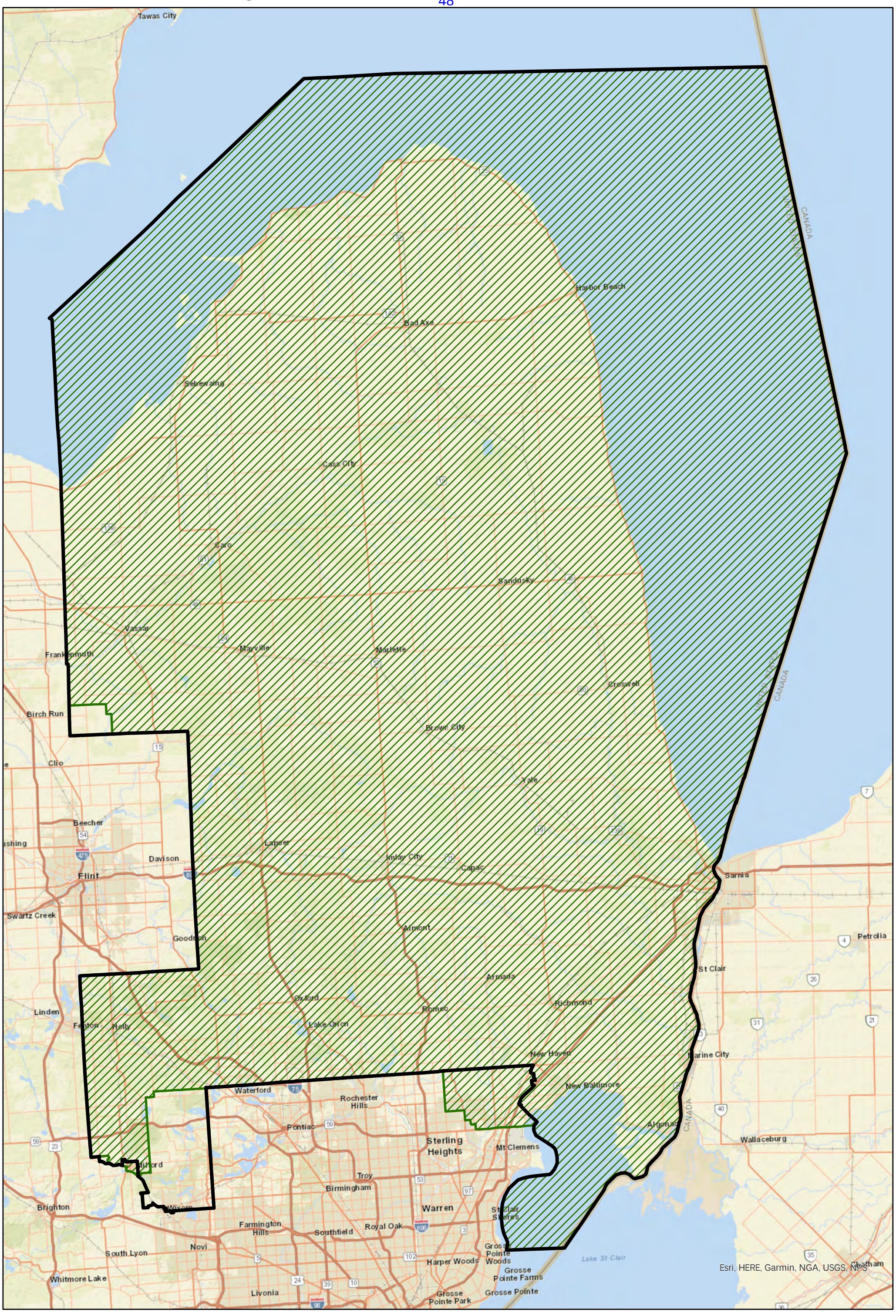


0 4.75 9.5 19 Miles

Chestnut District

Congress_fromPlaintiff

Michigan - Plaintiff Congressional District - 9



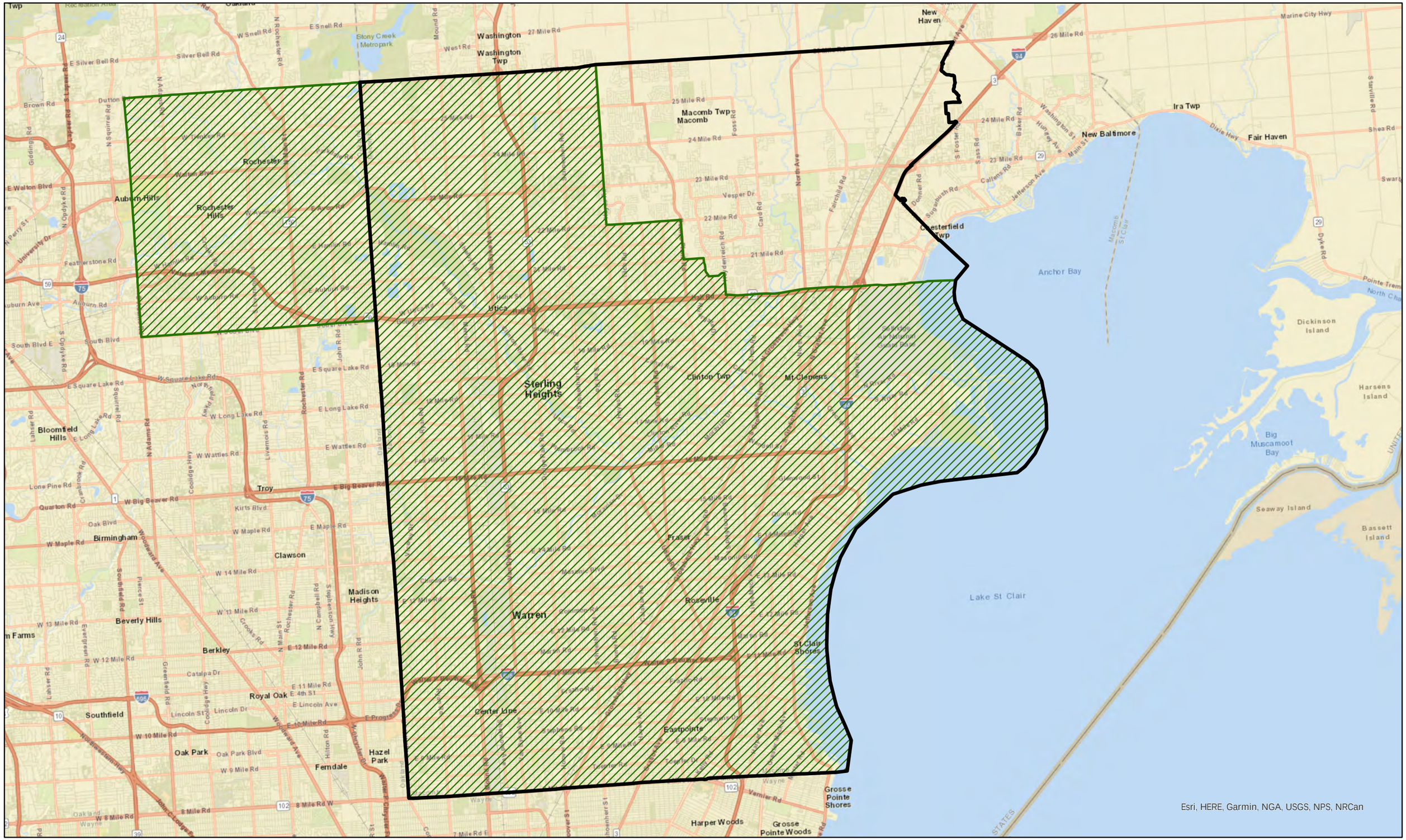
0 5 10 20 Miles

Chestnut District

Congress_fromPlaintiff

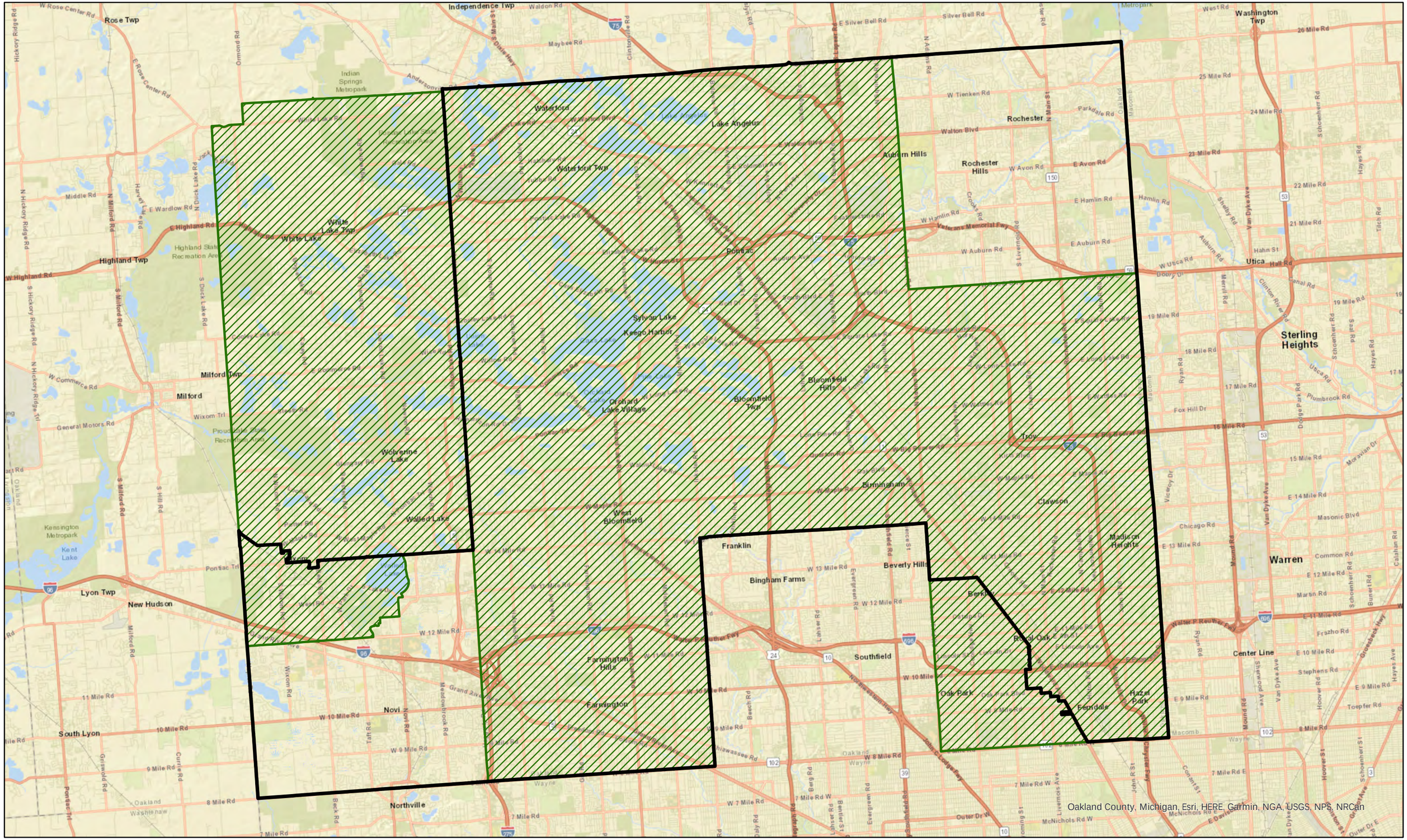
Michigan - Plaintiff Congressional District - 10

Election Data Services



Michigan - Plaintiff Congressional District - 11

Election Data Services



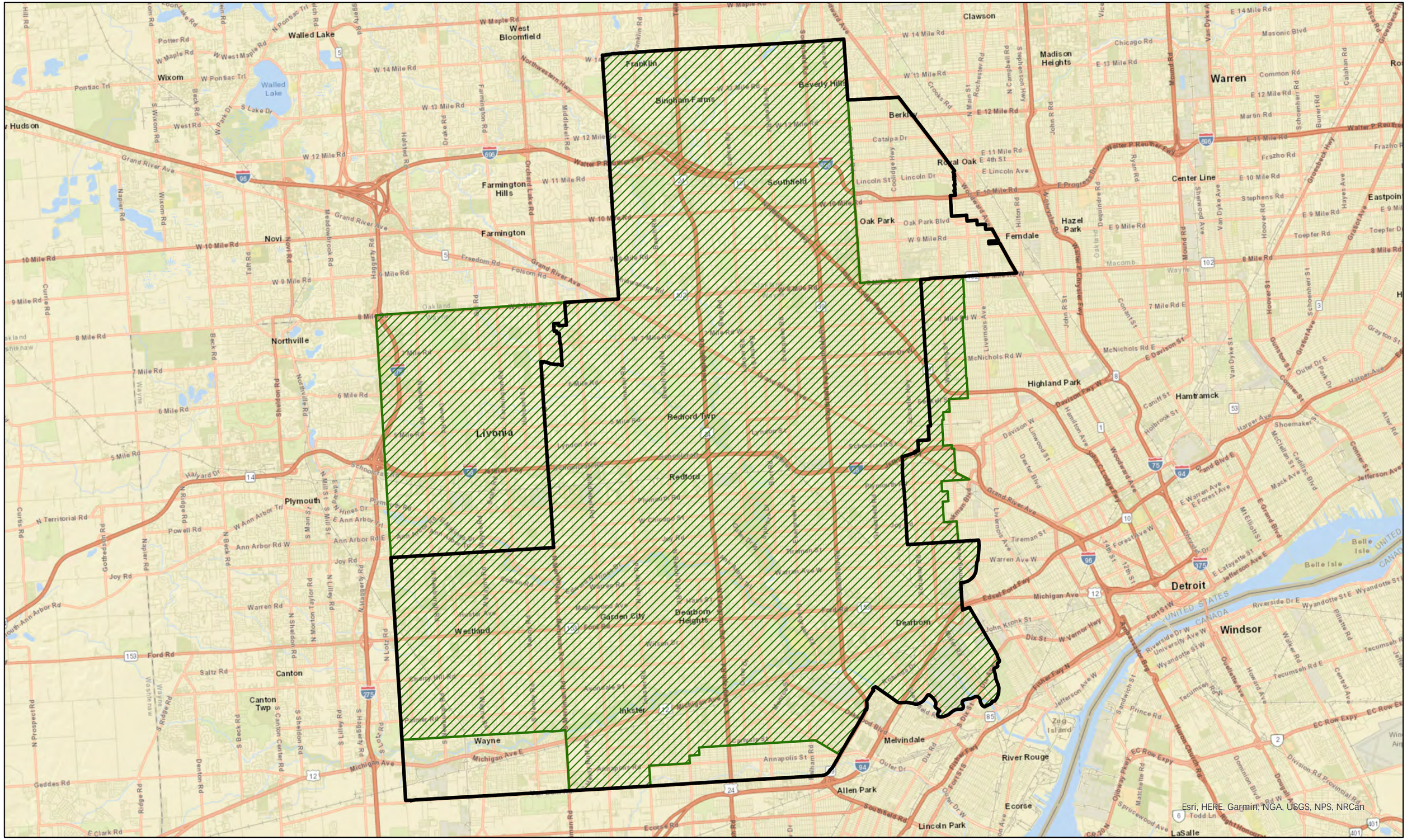
0 1.75 3.5 7 Miles

Chestnut District

Congress_fromPlaintiff

Michigan - Plaintiff Congressional District - 12

Election Data Services



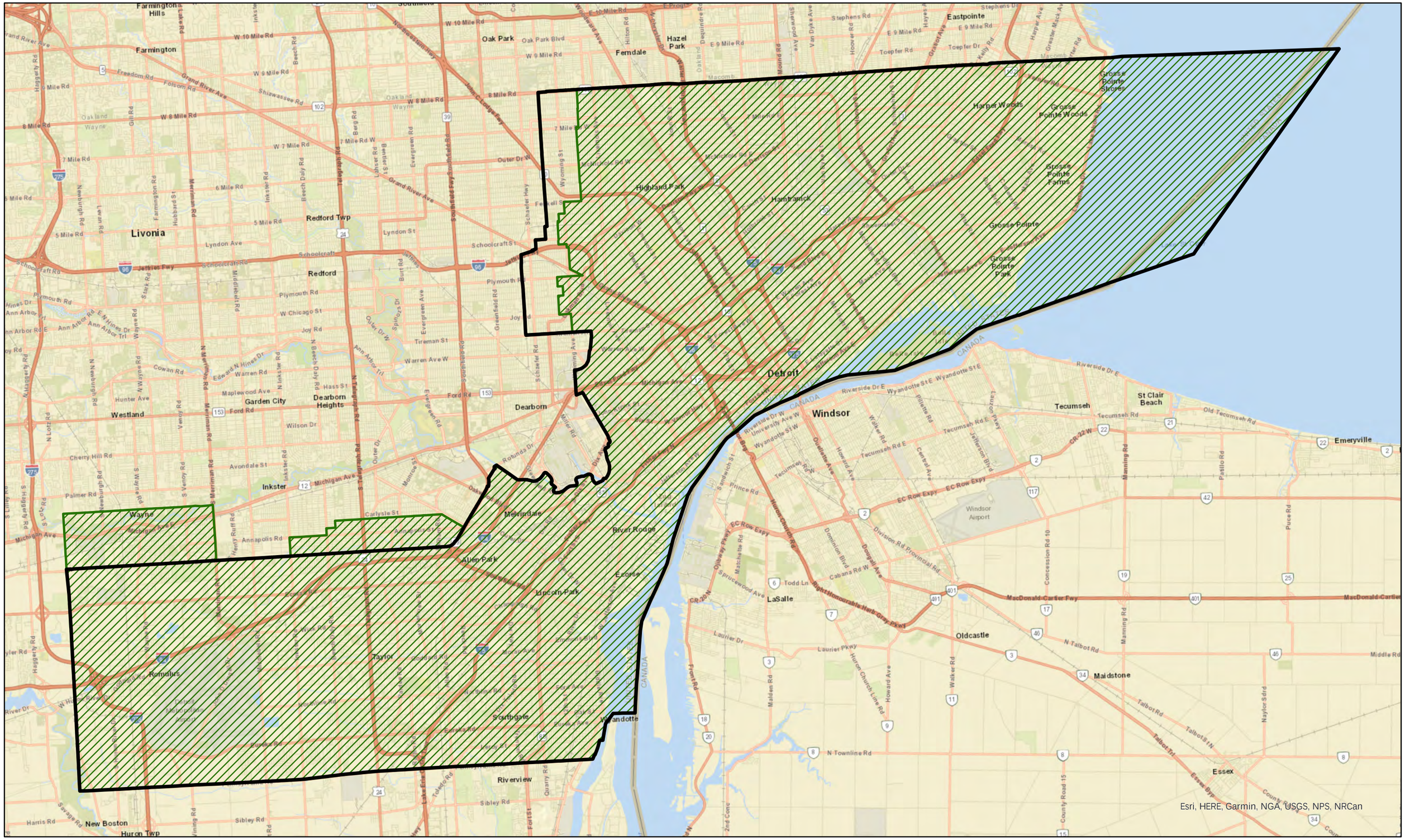
0 1.75 3.5 7 Miles

Chestnut District

Congress_fromPlaintiff

Michigan - Plaintiff Congressional District - 13

Election Data Services



0 1.75 3.5 7 Miles

Chestnut District

Congress_fromPlaintiff

Exhibit E

Plaintiff's Congressional Plan

P_Counties

DISTRICT	County	Population of Component	Population of City/Township	Population of District	Percent of District	Percent of City/Township
3	Ionia	54,782	66,804	775,179	7.07%	82.00%
7	Ionia	12,022	66,804	775,179	1.55%	18.00%
4	Kalamazoo	184,730	261,670	775,180	23.83%	70.60%
5	Kalamazoo	76,940	261,670	775,179	9.93%	29.40%
9	Macomb	106,038	881,217	775,179	13.68%	12.03%
10	Macomb	775,179	881,217	775,179	100.00%	87.97%
2	Midland	27,426	83,494	775,180	3.54%	32.85%
8	Midland	56,068	83,494	775,179	7.23%	67.15%
5	Monroe	152,593	154,809	775,179	19.68%	98.57%
6	Monroe	2,216	154,809	775,180	0.29%	1.43%
7	Oakland	46,914	1,274,395	775,179	6.05%	3.68%
9	Oakland	294,798	1,274,395	775,179	38.03%	23.13%
11	Oakland	775,179	1,274,395	775,179	100.00%	60.83%
12	Oakland	157,504	1,274,395	775,179	20.32%	12.36%
2	Ottawa	107,744	296,200	775,180	13.90%	36.38%
4	Ottawa	188,456	296,200	775,180	24.31%	63.62%
7	Shiawassee	49,174	68,094	775,179	6.34%	72.21%
8	Shiawassee	18,920	68,094	775,179	2.44%	27.79%
6	Wayne	400,706	1,793,561	775,180	51.69%	22.34%
12	Wayne	617,675	1,793,561	775,179	79.68%	34.44%
13	Wayne	775,180	1,793,561	775,180	100.00%	43.22%
1	Wexford	3,920	33,673	775,179	0.51%	11.64%
2	Wexford	29,753	33,673	775,180	3.84%	88.36%

Exhibit F

DISTRICT	County	Township	Population of Component	Population of City/Township	Population of District	Percent of District	Percent of City/Township
3	Ionia County	Orange, Ionia County	744	1012	775179	0.10%	73.52%
7	Ionia County	Orange, Ionia County	268	1012	775179	0.03%	26.48%
4	Kalamazoo County	Portage, Kalamazoo County	4776	48891	775180	0.62%	9.77%
5	Kalamazoo County	Portage, Kalamazoo County	44115	48891	775179	5.69%	90.23%
4	Kalamazoo County	Ross, Kalamazoo County	19	4851	775180	0.00%	0.39%
5	Kalamazoo County	Ross, Kalamazoo County	4832	4851	775179	0.62%	99.61%
9	Macomb County	Chesterfield, Macomb County	25027	45376	775179	3.23%	55.15%
10	Macomb County	Chesterfield, Macomb County	20349	45376	775179	2.63%	44.85%
2	Midland County	Homer, Midland County	2250	3993	775180	0.29%	56.35%
8	Midland County	Homer, Midland County	1743	3993	775179	0.22%	43.65%
5	Monroe County	Milan, Monroe County	1569	3785	775179	0.20%	41.45%
6	Monroe County	Milan, Monroe County	2216	3785	775180	0.29%	58.55%
11	Oakland County	Ferndale, Oakland County	10781	19190	775179	1.39%	56.18%
12	Oakland County	Ferndale, Oakland County	8409	19190	775179	1.08%	43.82%
7	Oakland County	Milford, Oakland County	11897	17090	775179	1.53%	69.61%
9	Oakland County	Milford, Oakland County	5193	17090	775179	0.67%	30.39%
11	Oakland County	Royal Oak, Oakland County	58211	60585	775179	7.51%	96.08%
12	Oakland County	Royal Oak, Oakland County	2374	60585	775179	0.31%	3.92%
11	Oakland County	Southfield, Oakland County	13	91504	775179	0.00%	0.01%
12	Oakland County	Southfield, Oakland County	91491	91504	775179	11.80%	99.99%
9	Oakland County	Wixom, Oakland County	10384	17193	775179	1.34%	60.40%
11	Oakland County	Wixom, Oakland County	6809	17193	775179	0.88%	39.60%
2	Ottawa County	Georgetown, Ottawa County	7846	54091	775180	1.01%	14.51%
4	Ottawa County	Georgetown, Ottawa County	46245	54091	775180	5.97%	85.49%
7	Shiawassee County	Caledonia, Shiawassee County	4114	4360	775179	0.53%	94.36%
8	Shiawassee County	Caledonia, Shiawassee County	246	4360	775179	0.03%	5.64%
12	Wayne County	Detroit, Wayne County	205233	639111	775179	26.48%	32.11%
13	Wayne County	Detroit, Wayne County	433878	639111	775180	55.97%	67.89%
6	Wayne County	Livonia, Wayne County	62466	95535	775180	8.06%	65.39%
12	Wayne County	Livonia, Wayne County	33069	95535	775179	4.27%	34.61%
1	Wexford County	Wexford, Wexford County	653	1161	775176	0.08%	56.24%
2	Wexford County	Wexford, Wexford County	508	1161	775180	0.07%	43.76%

Exhibit G

DISTRICT	County	Township	Population of Component	Population of City/Township	Population of District	Percent of District	Percent of City/Township
4	Berrien County	Lincoln, Berrien County	544	14929	774600	0.07%	3.64%
5	Berrien County	Lincoln, Berrien County	14385	14929	774544	1.86%	96.36%
4	Berrien County	Royalton, Berrien County	186	5141	774600	0.02%	3.62%
5	Berrien County	Royalton, Berrien County	4955	5141	774544	0.64%	96.38%
2	Eaton County	Kalamo, Eaton County	789	1765	774997	0.10%	44.70%
7	Eaton County	Kalamo, Eaton County	976	1765	775238	0.13%	55.30%
7	Genesee County	Argentine, Genesee County	203	7091	775238	0.03%	2.86%
8	Genesee County	Argentine, Genesee County	6888	7091	775229	0.89%	97.14%
9	Macomb County	Macomb, Macomb County	68947	91663	774962	8.90%	75.22%
10	Macomb County	Macomb, Macomb County	22716	91663	775218	2.93%	24.78%
5	Monroe County	Milan, Monroe County	1569	3785	774544	0.20%	41.45%
6	Monroe County	Milan, Monroe County	2216	3785	775273	0.29%	58.55%
2	Muskegon County	Laketon, Muskegon County	7255	7626	774997	0.94%	95.14%
3	Muskegon County	Laketon, Muskegon County	371	7626	775414	0.05%	4.86%
2	Muskegon County	Muskegon, Muskegon County	7723	55914	774997	1.00%	13.81%
3	Muskegon County	Muskegon, Muskegon County	48191	55914	775414	6.21%	86.19%
2	Muskegon County	North Muskegon, Muskegon County	2443	4093	774997	0.32%	59.69%
3	Muskegon County	North Muskegon, Muskegon County	1650	4093	775414	0.21%	40.31%
7	Oakland County	Milford, Oakland County	9641	17090	775238	1.24%	56.41%
9	Oakland County	Milford, Oakland County	7449	17090	774962	0.96%	43.59%
6	Oakland County	Novi, Oakland County	59233	66403	775273	7.64%	89.20%
11	Oakland County	Novi, Oakland County	7170	66403	775568	0.92%	10.80%
9	Oakland County	White Lake, Oakland County	1271	30950	774962	0.16%	4.11%
11	Oakland County	White Lake, Oakland County	29679	30950	775568	3.83%	95.89%
3	Ottawa County	Georgetown, Ottawa County	2679	54091	775414	0.35%	4.95%
4	Ottawa County	Georgetown, Ottawa County	51412	54091	774600	6.64%	95.05%
8	Tuscola County	Arbela, Tuscola County	1398	2808	775229	0.18%	49.79%
9	Tuscola County	Arbela, Tuscola County	1410	2808	774962	0.18%	50.21%
12	Wayne County	Dearborn Heights, Wayne County	43090	63292	775247	5.56%	68.08%
13	Wayne County	Dearborn Heights, Wayne County	20202	63292	775666	2.60%	31.92%
12	Wayne County	Detroit, Wayne County	242662	639111	775247	31.30%	37.97%
13	Wayne County	Detroit, Wayne County	396449	639111	775666	51.11%	62.03%
1	Wexford County	Wexford, Wexford County	849	1161	775372	0.11%	73.13%
2	Wexford County	Wexford, Wexford County	312	1161	774997	0.04%	26.87%

Exhibit H

DISTRICT	Place (City, Village, Census Designated Place)	Population of Component	Population of City/Township	Population of District	Percent of District	Percent of City/Township
2	Casnovia village	165	316	District populations within Cities, Villages, and Census Designated Places do not equal 100% of a District		52.22%
3	Casnovia village	151	316			47.78%
12	Detroit city	205,233	639,111			32.11%
13	Detroit city	433,878	639,111			67.89%
8	Fenton city	12,014	12,050			99.70%
9	Fenton city	36	12,050			0.30%
11	Ferndale city	10,781	19,190			56.18%
12	Ferndale city	8,409	19,190			43.82%
3	Hubbardston village	336	369			91.06%
7	Hubbardston village	33	369			8.94%
6	Livonia city	62,466	95,535			65.39%
12	Livonia city	33,069	95,535			34.61%
6	Northville city	2,793	6,119			45.64%
11	Northville city	3,326	6,119			54.36%
8	Otter Lake village	67	426			15.73%
9	Otter Lake village	359	426			84.27%
4	Portage city	4,776	48,891			9.77%
5	Portage city	44,115	48,891			90.23%
8	Reese village	24	1,261			1.90%
9	Reese village	1,237	1,261			98.10%
10	Village of Grosse Pointe Shores city	77	2,647			2.91%
13	Village of Grosse Pointe Shores city	2,570	2,647			97.09%
6	Whitmore Lake CDP	4,919	7,584			64.86%
7	Whitmore Lake CDP	2,665	7,584			35.14%
9	Wixom city	10,384	17,193			60.40%
11	Wixom city	6,809	17,193			39.60%

Exhibit I

DISTRICT	VTD	Population of Component	Population of City/Township	Population of District	Percent of District	Percent of City/Township
8	Voting District 0492776000002	2,051	2,087	775,179	0.26%	98.28%
9	Voting District 0492776000002	36	2,087	775,179	0.00%	1.72%
3	Voting District 0676092000001	744	1,012	775,179	0.10%	73.52%
7	Voting District 0676092000001	268	1,012	775,179	0.03%	26.48%
4	Voting District 0776556000002	351	2,323	775,180	0.05%	15.11%
5	Voting District 0776556000002	1,972	2,323	775,179	0.25%	84.89%
4	Voting District 0776556000003	34	2,828	775,180	0.00%	1.20%
5	Voting District 0776556000003	2,794	2,828	775,179	0.36%	98.80%
4	Voting District 0776556000011	1,706	2,891	775,180	0.22%	59.01%
5	Voting District 0776556000011	1,185	2,891	775,179	0.15%	40.99%
4	Voting District 0776556000015	973	2,410	775,180	0.13%	40.37%
5	Voting District 0776556000015	1,437	2,410	775,179	0.19%	59.63%
4	Voting District 0776556000020	1,712	1,993	775,180	0.22%	85.90%
5	Voting District 0776556000020	281	1,993	775,179	0.04%	14.10%
9	Voting District 0991534000001	2,241	2,280	775,179	0.29%	98.29%
10	Voting District 0991534000001	39	2,280	775,179	0.01%	1.71%
9	Voting District 0991534000013	983	2,786	775,179	0.13%	35.28%
10	Voting District 0991534000013	1,803	2,786	775,179	0.23%	64.72%
9	Voting District 0991534000016	308	1,839	775,179	0.04%	16.75%
10	Voting District 0991534000016	1,531	1,839	775,179	0.20%	83.25%
2	Voting District 1113898000001	694	1,138	775,180	0.09%	60.98%
8	Voting District 1113898000001	444	1,138	775,179	0.06%	39.02%
2	Voting District 1113898000003	302	1,601	775,180	0.04%	18.86%
8	Voting District 1113898000003	1,299	1,601	775,179	0.17%	81.14%
2	Voting District 1114616000001	7	2,059	775,180	0.00%	0.34%
8	Voting District 1114616000001	2,052	2,059	775,179	0.26%	99.66%
5	Voting District 1155390000001	1,569	1,586	775,179	0.20%	98.93%
6	Voting District 1155390000001	17	1,586	775,180	0.00%	1.07%
11	Voting District 1252788000001	725	2,680	775,179	0.09%	27.05%
12	Voting District 1252788000001	1,955	2,680	775,179	0.25%	72.95%
11	Voting District 1252788000009	97	2,282	775,179	0.01%	4.25%
12	Voting District 1252788000009	2,185	2,282	775,179	0.28%	95.75%
7	Voting District 1255398000001	476	2,094	775,179	0.06%	22.73%
9	Voting District 1255398000001	1,618	2,094	775,179	0.21%	77.27%
7	Voting District 1255398000002	790	2,470	775,179	0.10%	31.98%
9	Voting District 1255398000002	1,680	2,470	775,179	0.22%	68.02%
7	Voting District 1255398000004	1,373	1,915	775,179	0.18%	71.70%
9	Voting District 1255398000004	542	1,915	775,179	0.07%	28.30%
7	Voting District 1255398000005	518	1,871	775,179	0.07%	27.69%
9	Voting District 1255398000005	1,353	1,871	775,179	0.17%	72.31%
9	Voting District 1258814000002	2,405	2,807	775,179	0.31%	85.68%
11	Voting District 1258814000002	402	2,807	775,179	0.05%	14.32%

Plaintiff's Congressional Plan

P_VTDs

DISTRICT	VTD	Population of Component	Population of City/Township	Population of District	Percent of District	Percent of City/Township
9	Voting District 1258814000003	710	6,667	775,179	0.09%	10.65%
11	Voting District 1258814000003	5,957	6,667	775,179	0.77%	89.35%
9	Voting District 1258814000004	3,541	3,991	775,179	0.46%	88.72%
11	Voting District 1258814000004	450	3,991	775,179	0.06%	11.28%
2	Voting District 1393188000001	3,492	5,952	775,180	0.45%	58.67%
4	Voting District 1393188000001	2,460	5,952	775,180	0.32%	41.33%
2	Voting District 1393188000004	454	3,012	775,180	0.06%	15.07%
4	Voting District 1393188000004	2,558	3,012	775,180	0.33%	84.93%
2	Voting District 1393188000005	427	3,199	775,180	0.06%	13.35%
4	Voting District 1393188000005	2,772	3,199	775,180	0.36%	86.65%
7	Voting District 1551252000001	2,086	2,332	775,179	0.27%	89.45%
8	Voting District 1551252000001	246	2,332	775,179	0.03%	10.55%
12	Voting District 1632200002225	1,156	1,988	775,179	0.15%	58.15%
13	Voting District 1632200002225	832	1,988	775,180	0.11%	41.85%
12	Voting District 1632200007393	650	1,284	775,179	0.08%	50.62%
13	Voting District 1632200007393	634	1,284	775,180	0.08%	49.38%
6	Voting District 1634900000002A	1,453	2,484	775,180	0.19%	58.49%
12	Voting District 1634900000002A	1,031	2,484	775,179	0.13%	41.51%
6	Voting District 1634900000011A	1,756	2,700	775,180	0.23%	65.04%
12	Voting District 1634900000011A	944	2,700	775,179	0.12%	34.96%
1	Voting District 1658650000001	653	1,161	775,179	0.08%	56.24%
2	Voting District 1658650000001	508	1,161	775,180	0.07%	43.76%