AN EVALUATION OF HOW

COMMUNITIES OF INTEREST IMPACTED

THE 2021 WASHINGTON STATE REDISTRICTING CYCLE

by

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ABSTRACT

An Evaluation Of How Communities Of Interest Impacted The 2021 Washington State Redistricting Cycle

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This study evaluates the 2021 Washington State redistricting process to assess the impact of public participation and independent redistricting commissions on the alignment of redistricting maps with public interest. The analysis supports the hypothesis that increased public input correlates with maps reflecting the majority's preferences, especially at smaller geographical scales. Public engagement surged compared to prior cycles, likely due to technological advancements and heightened political awareness. Key findings highlight a trend toward inclusion, as evidenced by significant representation of some communities' suggestions. In each case study analysis over half of publicly suggested changes were reflected in final district maps. Recommendations to enhance the process include clear Community of Interest definitions, earlier and more accessible outreach, diversified participation methods, and advanced geographic and statistical tools. These measures aim to ensure a fair, transparent redistricting process that upholds the voices of all communities. While progress has been made, addressing these challenges is crucial for achieving equitable representation in future redistricting cycles.

Table of Contents

Chapter 1: Introduction
Chapter 2: Literature Review
Introduction7
Redistricting The National View7
Redistricting issues
Redistricting methods across States15
Impacts of Redistricting Decisions
Checking fairness in redistricting
Public participation in redistricting
GIS in Redistricting
Conclusion
Chapter 3: Washington State Redistricting:
History and the Establishment of the Independent Commission
The Washington Independent Redistricting Commission
2021 Washington State Redistricting Commission
Public participation
Key issues and points of contention
Conclusion
Chapter 4: Methods
Introduction
Analysis Tools and Software
Overview of Case Studies
Chapter 5: Results
Statewide Communities of Interest (COI) Representation
Public Testimony Inclusion Case Study Analysis: Greater Bremerton Area
Yakama Nation 60
Chapter 6: Conclusion and Recommendations
References

List of Figures

Figure 2.1 Compact, Contiguous, and Equal Districts	
Figure 2.2 The Gerry-Mander	
Figure 2.3 Ohio's 2012 Congressional District Map	
Figure 2.4 2020 Redistricting Bodies, United States	
Figure 3.1 WSRC Redistricting Software Autobound EDGE	
Figure 3.2 MyDistricting	
Figure 4.1 Pairwise Intersection	
Figure 4.2 Submitted COI Polygons	47
Figure 4.3 A Single Whole Community Polygon	
Figure 4.4 The Same Community Polygon After Pairwise Intersection	49
Figure 4.5 Total Public Comment Legislative Districts	51
Figure 5.1 Highest Percent Inclusion in a Single District by Area	55
Figure 5.2 Number of Divisions by Community Area (Square Miles)	56
Figure 5.3 Community Area of Most Inclusion in a Single District	57
Figure 5.4 Legislative District 14	

List of Tables

Table 3.1 Commission Mission and Purpose	30
Table 4.1 Analysis Tools and Functions	42
Table 4.2 Feasibly Mappable Comments	45
Table 4.3 Examples of Testimony Data	50
Table 4.4 Comment Inclusion Check	52
Table 5.1 Bremerton Area Case Study Testimony Analysis Results	60

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Author's Note.

As the primary author of this scientific paper analyzing the redistricting process in Washington, I feel it is essential to disclose that I was involved in the process that we are analyzing. In 2021, I served as a member of the non-partisan support staff of the Washington State Redistricting Commission, a bipartisan commission responsible for drawing the state's congressional and legislative district lines. My participation in the redistricting process gave me a unique perspective on the challenges and complexities of the process. It also allowed me to learn firsthand the data, methods, and criteria used to create new district maps.

While my involvement in the process may give the impression of a potential conflict of interest, I want to assure readers that this paper was written with the utmost objectivity and scientific rigor. My analysis is based on empirical data, and conclusions are drawn from a comprehensive examination of the redistricting process in Washington State. I believe that my involvement in the redistricting process enhances the value of this paper, as it allows me to provide a more informed and nuanced perspective on the challenges and opportunities presented by the redistricting process. I hope readers will find this paper informative and a valuable contribution to a deeper understanding of the redistricting process in Washington State and beyond

Chapter 1: Introduction

Redistricting

Districting is the act of drawing district boundary lines in such a way as to ensure that representation of the same number of people is as equal as practicable (13 U.S. Code § 141; U.S. Code §2c, 1967; Title 44 RCW, U.S. Census Bureau). From 2010 to 2020, the population of the United States grew by 22 million (U.S. Census Bureau). National law has been written since 1967 to require drawing single-member districts, a boundary consisting of a population of citizens represented by a single office holder (2 U.S. Code §2c, 1967). To this effect, the U.S. census bureau counts the U.S. population every ten years to achieve this feat (13 U.S. Code § 141). The decennial census makes an account of the United States population over time, while redistricting uses this count to ensure our nation's people hold equal power in our democracy through equal representation of that count. The periodic redrawing of representative district lines is accomplished in each State for congressional representation districts for seats in the United States House of Representatives and legislative districts for seats in the state legislature. However, each State is responsible for its laws and methodologies for state legislative redistricting. Each State governs how redistricting is conducted independently. Redistricting has been a political process for much of history, where majority parties negotiate for territory and the citizens they represent. However, a paradigm shift has occurred in our nation in recent decades. The represented citizens demand an increasingly transparent and inclusive process to limit the long-lasting negative impacts of redistricting, such as Gerrymandering (McDonald, 2011; Šára, 2014; VanderMolen & Milyo, 2016).

Redistricting in the United States has remained a necessary process for our nation's political structure. However, it is an abstract process mistrusted by some American citizens.

Research has found that a combination of ill-informed voters and partisan trust regarding redistricting has negatively impacted the average voter's confidence in the redistricting process, primarily when the process is handled by a state's legislature (Fougere et al., 2010). The infrequency of occurrence, and the nature and history of the process, have caused public weariness. There are many reasons for represented citizens to care about redistricting. This process has decade-long impacts on public policy, representation, government spending, and political elections. The slightest movement of these imaginary lines can sway a member district to the opposite side of a state's major political parties. Changes implemented by redistricting can also prevent incumbent members from serving their duties even after winning an election, as members must reside in the district they represent. Long-standing representation can be swiftly changed, putting a citizen under different representation in another member district. These lines have trickle-down impacts that can change the outcomes of federal, state, and even local policy change. The long-term effects of redistricting and the political nature and scarce education contribute to widespread public distrust of this critical process (Fougere et al., 2010, Panagopoulos, 2013, VanderMolen & Milyo, 2016).

Published research in political and social sciences has a long history of examining the redistricting process in the United States, and Washington State is no different. Much published research on the public-political interface focuses on the nation's outcome, understanding, and overall opinion on the redistricting processes (Confer, 2003; Fougere et al., 2010; Panagopoulos, 2013; Hayes & McKee, 2009; Kubin, 1996; Pirch, K. 2011). Another large portion of work revolves around redistricting reform and comparing lawmaker redistricting and the appointment of independent commissions (Altman & McDonald, 2018; Kubin, 1996; Magpantay, 2020; Šára,

2014; Tolbert et al., 2009). However, a noticeable research gap exists around the role of public input and its impact on redistricting outcomes.

American citizens have become more involved in these political processes. Citizens use their voices and vote to further redistricting into an accessible public process. However, politically active communities face challenges in having their voice heard in the redistricting process. These challenges include loose legal definitions of communities of interest, socioeconomic ecosystems that limit accessibility to the process, and limited evidence on the power of the community's voice in redistricting (Epstein et al., 2007). Communities of citizens seek to share representation over large geographical areas in a state. They often face loose legal definitions of shared community, limited accessibility to the process, and limited evidence of their impact.

The Community of Interest

The "Community of Interest," "Community of Common Interest," or "COI" has been a buzzword in redistricting over the past three decades. While many political organizations, state laws, statutes, and researchers define COI differently, a summation of its principles is viewed as groups of individual citizens who share similar political interests and who would benefit from similar representation (Forest, 2004; Mac Donald & Cain, 2013; Phillips & Montello, 2017; Rossiter et al., 2018; Wang et al., 2021). The community can be something as simple as a single neighborhood of shared values, a small town whose common interests are shared, large geographical regions of communities, or complex political or economic links between a wide array of communities. Communities of Interest are invisible boundaries that can only be defined by the citizens who make up these communities. Many states and political organizations seek to find and include these COI for fair redistricting (Epstein & O'Halloran, 1999; Fougere et al.,

2010; Phillips & Montello, 2017; Stephanopoulos, 2012; Wang et al., 2021). Some scholars even see the community of interest alignment with district plans as a check to fairness in redistricting (Magpantay, 2020; Rossiter et al., 2018; Wang et al., 2021)

This thesis seeks to expand on the evidence of public participants' suggested community inclusion in state legislative redistricting maps of the 2021 Washington State Redistricting cycle. This research will examine the Washington State Redistricting process, how communities of interest are considered, and how the participating public voiced their communities to mapping commissioners during the 2021 redistricting cycle. The method and analysis chapters evaluate the inclusion of publicly defined COI with spatial and tabular analysis of case studies throughout the State of Washington to gain insight and support research regarding COI as a check to publicly inclusive redistricting.

As the 2021 redistricting cycle ended across the nation, what lessons can be learned from the actions of the Independent Washington Redistricting Commission? Can we measure how public suggestions and input were included in the 2021 Washington Legislative redistricting? How has public participation in redistricting been represented in the final maps? To examine these questions this research will focus on the research hypothesis that *Independent Redistricting Commissions when dedicated to public input and comment produce redistricting maps that are in line with the majority of public interest, especially at smaller geographical scales.*

The history behind independent commission redistricting to produce fair, equitable, and inclusive redistricting is still young. The analysis of this thesis seeks to expand the research behind the growing involvement of the public and the political institutions that govern redistricting. Research on this topic would fill a needed gap in the literature that compares what the public and publicly organized groups want versus what the public receives because of

redistricting. This work could impact redistricting reform research and public outreach and transparency research.

This thesis will expand on emerging research to quantify the inclusion of public suggestions from the 2021 redistricting cycle in Washington applied to the legislative plan. This research will examine publicly acquired outreach and suggestion data from the 2021 Washington Redistricting Commission to ask how the suggestions from the public response to the 2021 Washington Legislative Redistricting cycle are represented in the final legislative district map. The methods chapter outlines a summary analysis of the inclusion of these suggestions to test the research hypothesis that *Independent Redistricting Commissions when dedicated to public input and comment produce redistricting maps that are in line with the majority of public interest, especially at smaller geographical scales.*

For this work, feasibly mappable means suggestions centered on a specific area such as a district, county, city, community, or natural and artificial geographic boundary. To accomplish this work, the literature review chapter will highlight the current research in this field. To add context to the research hypothesis, an in-depth literature review surrounding redistricting, communities of interest, and analytical methodology surrounding the community of interest discussion will be provided. A separate chapter on Washington State-specific redistricting will highlight the research area, including outlining the case study locations during the 2021 Washington redistricting cycle. Finally, the methods and analysis chapters define the methodology and data sources before applying them to an analysis of publicly available data on public participation during the 2021 legislative redistricting cycle in Washington State.

Expanding on existing work will outline methods and perform spatial analysis on the public suggestions compared to the final district map. The resulting work will provide insight

into redistricting reform, public outreach and impact, redistricting education, and communities of interest studies. This work will act as a catalyst to quantify the result of public action in these political processes and inform the public of the importance and lasting impacts of their participation in the redistricting process.

Chapter 2: Literature Review

Introduction

The literature review will dive deeply into the published work on Federal and State legislative redistricting. The purpose of this chapter is to examine the concept of redistricting from the national and state perspectives, and finally, redistricting in Washington State. This chapter will showcase the interaction between the public and the institutions that perform redistricting, the public's opinion on redistricting, its importance, and how technology bridges the gap between the political and public interface of redistricting. Finally, this chapter examines special mentions of research closely related to studying the impact of public input in political processes. This review will act as an encompassing guide to information surrounding redistricting to inform readers of the necessary nuances to the public and their involvement with redistricting.

Redistricting The National View

Redistricting in the United States is redrawing the boundary lines of representative districts in every State to determine the number of representatives in the United States House of Representatives at the federal level or the number of state representatives in a state's legislature. You may know your city limits or the boundary lines between your home county and neighboring counties. However, boundary lines also surround you and your neighbors in the form of congressional and legislative districts. Congressional districts contain an equal population to elect representatives in the United States House of Representatives. Legislative district boundaries include as equal a population as possible for elective legislatures to your state government. This process works in tandem across every State in the United States, where each state legislative body elects two senators to sit in the United States Senate, though now senators are elected by a vote of the people. However, the history of redistricting is more complex. Redistricting in the United States became a legal necessity to ensure fair federal and state representation. One person, one vote precedence ensures an even distribution of voters to representatives.

The United States Constitution determines the powers and composition of elected officials in the United States Congress consisting of the United States Senate, and the United States House of Representatives. The United States Senate is a fixed number of members, two from each State. However, the United States House of Representatives is instructed to contain a number of seats apportioned by the population of the State they represent. Growing populations demanded changes to the number of representatives in the House. The first law which governed this process was the Apportionment Act of 1792, which set the number of representatives in the House of Representatives based on the reported populations of each State. Apportionment Acts would continue until 1929, the permanent reapportionment act that capped the limit of 437 members and required reapportionment following the decennial census.

Apportionment Acts determined state representation but did not set guidelines for election or determine rules around representative districts. These Act's did not instruct how State governments determine representation. In 1946, the Supreme Court case Colegrove v. Green decided that the federal courts could not interfere with state representation districts with large population imbalances. These population imbalances caused the under-representation of some States and the over-representation of others. This uneven balance led to a series of United States Supreme Court cases in the 1960s and the Uniform Congressional District Act of 1967 (Baker v. Carr, 1962; Wesberry v. Sanders, 1963; Reynolds v. Sims, 1964). The Uniform Congressional

District Act ensured an "equal as practicable" population distribution between Congressional Districts. Supreme Court rulings also spelled out additional guidelines for re-drawling district boundaries, including contiguous and compact districts. The standards set by legal precedence and national legislation led to redistricting rules still used today in congressional and legislative redistricting that district populations are equally balanced, compact, and contiguous.

The United States decennial census occurs every ten years. It counts the total population and demographic counts of all people in the nation (13 U.S. Code § 141). This crucial data fuels the nation's research, marketing, policy, spending, and industry. Census data is pivotal to the redistricting process (U.S. Census Bureau). This decennial data set is delivered to each State Secretary of State as "Public Law 94-171" Redistricting Data by April of each year ending in one. In 2021 the decennial census was changed to include more race demographic options to account for the diversity of the United States. The delivery date was delayed due to the COVID-19 Pandemic, with a delivery date of August 11th, 2021 (U.S. Census Bureau).

In redistricting, Census data is used to balance the population of political district boundaries to determine the amount representatives allotted to the State's people since the 'one person, one vote' Supreme Court case of the 1960s (13 U.S. Code § 141). At the national level, laws in the U.S. Constitution determine rules for a single representative member of a Congressional District. These rules, defined in Article 2 of the U.S. Constitution, state that the population of these single-member districts is as equal as practicable. The US Supreme Court backed this constitutional interpretation in 1963 with Wesberry v. Sanders, that set population equality for Congressional Districts, followed shortly by Reynolds v. Sims, which applied these rules for state legislative districts. While this rule is applied to legislative redistricting today, standards may vary from state to state. Legal precedence from US Supreme Court Karcher v.

⁹

Daggett, 1983 and Vieth v. Jubelirer, 2004 could be interpreted to mandate *no more than* one person in population deviation between districts, however, state legislative districts can vary by up to ten percent (Brown v. Thompson 1983). Other undefined criteria are held by legal precedence of the U.S. Supreme Court. These extrajudicial criteria for Congressional Districts include non-discrimination of a racial voter group (Voting Rights Act 1965) and generally compact and contiguous districts.

Compact districts are a principle in redistricting that requires districts to have a shape that is as geographically condensed and regular as possible. This criterion helps prevent the creation of elongated, irregularly shaped districts that can be drawn to favor one political party or group. Compactness is often assessed by comparing the district's shape to simpler geometric forms, like circles or squares, with the goal of reducing odd shapes or extensions that might suggest intentional manipulation. Districts with shorter perimeters relative to their area are typically more compact, while districts with long, winding boundaries are less compact. For example, two districts share an equal area, a square, and a narrow but tall rectangle. The square district would be considered compact over the narrow and tall rectangle.

For districts to be contiguous, it must be a single unit of an area without a gap or another district in between; it must also be connected via a transportation route such as a road, bridge or ferry. The U.S. Constitution leaves it up to the states to define redistricting laws. These rulings often inform the states when determining their rules for legislative redistricting (Figure 2.1).

Figure 2.1

Compact, Contiguous, and Equal Districts



Note. This figure shows examples of contiguity and population distribution among district shapes. The shape to the far right is the goal of the law. The first shape on the left, "Not Contiguous", is illegal, as well as the third shape, "Not equal". However, the Second shape, "Not Compact" is a grey area in the law if it meets the requirements of Contiguous and Equal. (*How to Automate Territory Optimization*, Maptitude, accessed 2/24/2023)

While each state determines the methods in which they perform redistricting within the law, states differ on guidelines for the process. In theory, these guidelines ensure that populations in each new district are equal as practicable, no political party is favored or discriminated against, and that communities of interest are kept intact. The redistricting guidelines across states include rules requiring compact, contiguous districts, preserving existing political subdivisions such as voter districts or county lines, preserving the core of prior districts, preserving communities of interest, and supporting political competition. Meanwhile, some state laws and statutes discourage favor or disfavor to a specific party, candidate, or incumbent (NCSL, *Redistricting Criteria*, accessed 2023)

Redistricting issues

While the US census data is used exclusively by redistricting bodies throughout the nation as Public Law 94-171 Redistricting data, it has flaws compared to the accurate demographic picture of our country. Public Law 94-171 Redistricting data fails to represent certain unique culture groups, income and education data, citizen voting age population (CVAP), and accurate block-level counts. Differential privacy, or the blurring of data specifics at the smallest geographical level (census block), creates difficulty in redistricting accurately at highly detailed, small geographical areas. With how the census data is collected, many opportunities are missed to collect detailed information about unique race and ethnicity demographic data. The PL 94-171 data set provided to state restrictions is limited to Hispanic ethnicity and race categories of White, Black, Native American, Asian, Pacific Islander, Other, and a combination of those values. With differential privacy, the Census Bureau purposefully jumbles or blurs population data at the block level- the level most states use to redistrict, to protect individual privacy in low population blocks. More detailed data, including housing, income equity, and other crucial demographic data considerations, aren't usually released by the US census bureau until many states have completed redistricting. Even the base redistricting data set, PL 94-171 data, representing the decade census, isn't released to redistricting bodies until later the following year; when numbers are crunched, and lines are drawn, the demographic counts are nearly two years out of date.

Gerrymandering

One of the biggest and most infamous issues facing redistricting is Gerrymandering. Gerrymandering as a term comes from a well-known political cartoon published on March 12^{th,}

1812, in the Boston Gazette, showing a "creature" titled the Gerry-mander, designed around a snaking or salamander-like creature over the political district drawn by Massachusetts Governor Elbridge Gerry (Figure 2.2).

Figure 2.2

The Gerry-Mander



Note. A political cartoon representing a "creature" around representative district, an example of allegedly intentional, non-compactness (Boston Gazette March 12th, 1812). How related are the community of voters in the head of the "creature" as to those in the tail, or feet?

The practice became known as Gerrymandering, which is manipulating electoral district boundary lines to advantage or disadvantage a particular political party, group, or class. Methods include "Packing" or filling a district with an opponent's constituents to reduce their voting impact, "Cracking" or splitting voting people up in many districts to dilute their voting impact, and drawing lines around or in an incumbent's residence. Some examples of extreme Gerrymandering are seen in Ohio's 2012 district nine, nick-named the "Snake on the Lake." However, looking at their district map, districts one, four, and six represent noncompact districts that may include vastly different communities, thus diluting their vote (Figure 2.3).

Figure 2.3

Ohio's 2012 Congressional District Map



Note. District 9 in the north wraps along the north coast of the great lake; populations to either the west or east end of this district are not likely to share similar voting interests. The same is true for the 4^{th} and 6^{th} districts on this map. Stretching far lengths across the state, their communities' voting power is diminished (ACLU| News & Commentary, 2018, accessed 2/24/2023).

These methods became apparent the more blatantly they were applied. However, acts of Gerrymandering can be subtle. The most significant impact of Gerrymandering exists in electoral competition. When district boundaries are strategically drawn to favor a particular party or group, gerrymandering can reduce genuine competition by creating "safe" seats for incumbents or a dominant party, effectively diminishing the influence of opposing votes. This practice undermines one of the fundamental principles of democratic elections: that voters should choose their representatives. Gerrymandering in redistricting allows representatives to choose their voters.

While no state or federal laws take a firm stance on the legality of Gerrymandering, political reform has cited methods to reduce the practice through public input, communities of interest, computer analysis, and independent redistricting commissions. It is up to the public and constituent voters to point out these practices and demand fairer representation. In a decade-long cycle, the changes and possible damages to vote representation are long-lasting (Forgette & Platt, 2005; Gilligan & Matsusaka, 2006; *Justice Department Issues Guidance on Federal Statutes Regarding Redistricting and Methods for Electing Public Officials*, 2021; *Partisan Bias and Competition*; McConnell, 2000; McGann et al., 2016).

Redistricting methods across States

Every State across the nation sets its laws and guidelines around the redistricting process. In most states, the legislature draws the district boundaries for congressional and legislative districts. While a few set up a temporary commission to handle the task. In the United States in 2020, redistricting was performed by 27 state legislatures, three political commissions, eight independent commissions, three "backup" commissions, and three advisory commissions, and six states have only one congressional district and perform no national districting due to their population (Figure 2.4).

Figure 2.4

2020 Redistricting Bodies, United States



Note. A map of each state's redistricting body. Washington has an independent commission to perform its state's redistricting. In contrast, most states rely on the state legislature to draw new district boundaries (*All About Redistricting*, Justin Levitt, 2020).

The state legislature draws Congressional and state legislative district lines in most states. This means that the majority party in the state legislature can potentially draw the district boundaries to benefit their party and disadvantage their opponents. In a state legislature, the state-represented government treats redistricting as legislation, such as a bill; each political party works to draw up draft district maps and cast a vote on the winning map. The winning map to be passed in the state's house, senate, and finally signed into law by the governor. A State may invite lobbyists or the public to chime in on how the districts should be drawn. The politically active public may be highly invested and write their representation to support specific ideals they wish to be represented in the maps. In the case of state legislative redistrictors, draft maps may or may not be public during the process. Redistricting by the state legislature usually sets the decade-long electoral precedent to represent the majority power that draws it, as gerrymandering tactics aren't expressly illegal. We see this evidence when uncontested legislative districts are drawn to coincide with congressional districts. Long-standing elected State representatives can run for congressional office and win elections at the federal level, effectively drawing themselves into a desired position in government. Often redistricting outcomes are watched closely and challenged in state Supreme Courts for matters of state legislative districts or Federal District Courts in matters of Congressional redistricting.

A handful of states use an outside body, the "Commission," to either fully complete the redistricting process or advise the legislature to perform the task. The same is true that public outreach and participation opportunities will vary between each state. With redistricting commissions, an outside body is appointed to perform redistricting at the state and federal levels. In the case of California, a group of citizens is appointed to redraw the boundaries. However a state goes about redistricting, it has the responsibility of determining guidelines, if any, to apply to the process. In some states, an independent commission is responsible for redistricting. These commissions are composed of a mix of republicans, democrats, and independents and are designed to be nonpartisan. The exact makeup of the commission can vary from state to state. Some states use a commission of politically appointed officials to draw district lines. The governor or other elected officials typically appoint these officials and may have partisan affiliations.

In some cases, redistricting disputes are settled in court. State and Federal Courts can order new district maps to be drawn if they find that the existing maps violate the US or State's Constitution, or the Voting Rights Act. It's important to note that redistricting can significantly impact elections and political power, and the process is often heavily politicized. The type of redistricting body in a given state can significantly impact the resulting districts' fairness and competitiveness.

Impacts of Redistricting Decisions

Representation changes profoundly affect the public and their opinion of the redistricting process. Many public members become attached to their representatives after an election or a long-standing in a particular district. The politically active public is close to their representative and may move to a district for its politics; when the district or its representation changes, public opinion on the process can be impacted.

In 2009, Hayes and McKee found that voters removed from their district were significantly less likely to participate in an election with unknown state and federal representatives. The authors show that in the new district where voters face two new incumbent representatives, voter roll-off, or the reduction in electoral participation, was 8% higher than in districts facing the same incumbents of previous elections (Hayes & McKee, 2009). Political challengers and incumbents are often "redistricted" *out* of their home district, where they will soon or have won an election. Some states require that individual candidates move into "their" district or be removed from the ballot, meaning if they recently won an election by a vote of the people, they can lose their position by just a change in district lines- or be forced to move their residence into the new district. This can represent a political strategy with gerrymandering

tactics, eliminating incumbents, or making an unpopular representative more secure in a district, which can hurt the public's trust in our government processes.

Outcomes of well-planned public policy can be hampered by redistricting. Drawing district lines can swing a district into another majority party, changing the outcome, especially along partisan lines, for public policy in a state. In 2007, Epstein et al. proposed a theory of the relationship between redistricting and policy outcomes: redistricting determines representation, and representation determines policy. The authors found that redistricting could lead to more minority candidates holding office in a particular party but not increase the minority constituents' policy support in government. With this complex and sometimes long-lasting relationship, redistricting can determine winners and losers of the public's choice in government policy.

According to recent research, little is known by the public about redistricting, yet most citizens have a negative opinion of the process (Panagopoulos, 2013; VanderMolen & Milyo, 2016). Historically, the public has little power to impact the process, and public consultation in redistricting is a relatively new trend in many states. For example, in the 27 states where the legislature determines district lines, constituents may contact their legislative representative to explain their redistricting needs. However, the controlling party in that government will ultimately choose the outcome since the redistricting plan is ultimately put to the legislature's vote. Luckily there has been a growing movement for more public involvement in this often stigmatized process through increased transparency. Public outreach efforts to hold representatives accountable to their constituents and calls for independent redistricting commissions lead to more transparent redistricting (Confer, 2003; McDonald, 2011; McDonald & Altman, 2018; Pirch K., 2011).

Checking fairness in redistricting

While much of the public-political interface on redistricting focuses on outcomes of political maps and opinions of the process, there is limited evidence to suggest an impact of public participation on the process. One such example from Miller and Grofman in 2018 analyzed the "feasibly mappable" suggestions or suggestions that could impact the boundary of a district, of public testimony from nine states during the 2011 redistricting cycle. Miller and Grofman's work used the rate of public comment in each state and compared it to a list of "good government" checks to final district maps. The authors determined good government checks to be those whose redistricting plans were evenly balanced and compact and encouraged political competition. The authors also examined how many public comments were successfully included in each state's maps. They found little difference between the type of redistricting authority, be that independent commission, or state legislators, and the amount of public suggestion adopted into final plans. The authors also found that while most suggestions were included in final maps in each case, the suggestions included were those of small geographical areas. Miller and Grofman concluded that public suggestion could help determine communities of interest throughout a state by examining clusters of related interest.

The perception of the public on the redistricting process in the United States is often that it is a highly partisan and politicized process, with district boundaries being drawn in a way that benefits one political party over the other. Many people believe that the party in power will use redistricting to consolidate its power and reduce the influence of opposing parties. This perception is not entirely unfounded, as there have been cases of redistricting used to achieve partisan goals. However, the reality of the redistricting process is more complex than the public perception. In many cases, redistricting is carried out fairly and in a non-partisan manner. For

example, some states have established independent commissions to oversee redistricting to ensure that district boundaries are drawn fairly and without regard to political considerations.

Additionally, legal requirements must be followed during the redistricting process, such as the requirement that districts must be roughly equal in population size and not be drawn in a way that violates the Voting Rights Act. Courts also play a role in overseeing the redistricting process and can intervene if they believe that district boundaries have been drawn in a way that violates the law. Overall, while there are cases where redistricting has been used for political gain, the reality is that the process can be carried out fairly and nonpartisan. The public must be aware of the potential for political manipulation and call for safeguards to be in place to ensure that redistricting is carried out fairly and transparently.

In a paper by Wang et al. in 2021, the authors define a novel check to redistricting authorities based on public communities of interest (COI). They propose quantifiable standards to assess how a publicly defined community has been split. They propose these metrics as a check and standard for fair redistricting. The authors agree COIs are groups of people with shared interests who are more likely to influence political outcomes when they are not divided across multiple districts. When a community is split, it loses its ability to gain representation.

Wang et al. proposes using quantitative metrics to determine the extent to which COIs are split in district plans. One approach is to count the number of splits, similar to how the preservation of county boundaries is assessed. It's also important to consider not only whether a community is split but also how many times it is split, as a community may be divided by multiple district lines. Unlike precise political subdivisions like counties or cities, COIs are often not clearly defined, leading to subjectivity and disagreement over boundary lines. Therefore, the

suggested splitting metrics should prioritize preserving the agreed-upon core of a community and avoid penalizing the exclusion of small portions of a community.

Wang et al. introduces two metrics to quantify the fragmentation of communities: "Uncertainty of Membership" (based on information theory) and the "Effective Splits Index" (derived from election research). These metrics aim to assess the splitting of COIs and prioritize the preservation of the core community. The authors provide examples to demonstrate how these splitting metrics can be applied to real-world data. One example focuses on Asian American communities in Queens neigborhood of New York, analyzing the splitting across different district maps. Another example examines the greater Richmond area in Virginia, comparing splitting metrics of how well district plans respect community boundaries. They allow for comparisons between different maps and help redistrictors and courts determine if a proposed plan excessively splits COIs. Ultimately, the goal is to promote fair and meaningful political representation by integrating and assessing communities effectively in district plans (Wang et al. 2021).

Public participation in redistricting

In common with other states, especially those with independent redistricting commissions, Washington has set a criterion for the redistricting process into law: "Districts coincide with the boundaries of local political subdivisions and areas recognized as communities of interest" – RCW 44.05.090. The Term "Communities of Interest," or COI, is among many redistricting methodologies in law and reform, recognized in state law through state constitutions of redistricting statutes (Handley, 2008). However, the community of interest has loose legal definitions. In 1985, Grofman defined COI as population groups with like values, shared

concerns, and shared culture (Grofamn, 1985). Without a firm definition, nuances of COI as recognized by their inhabitants can be lost on political redistrictors, regardless of their independence from political establishments. In 2017, Phillips and Montello defined COI as both thematic land areas and economic interests as well as cognitive interests and ideologies; this combination of geographical similarity and ideological commonalities was used to determine constituent group communities of interest (Phillips & Montello, 2017).

A standard method of determining communities of interest (COI) is a geographical representation of these areas. With the introduction of geographical information system (GIS) technology in redistricting, the place-to-location of these communities can be defined spatially and represented visually. This is still not without error, as individuals representing their Communities of Interest may differ from their neighbors or locally organized political groups. This could cause a winners-and-losers scenario when mapping commissioners review the desired communities of interest- even before concessions to abide by other legal redistricting criteria are considered (Mac Donald & Cain, 2013; Stephanopoulos, 2012).

Computer technology has increased the potential for accessibility and transparency of the public-political bridge in redistricting. In 2014 Altman et al. found that data sharing and GIS-based redistricting software in the 2011 redistricting cycle increased public participation in the process by orders of magnitude over previous, technology-limited cycles of 2001 and 1991. As technology increased, the ability to provide live web-app style mapping tools, a live stream of mapping officials, and remote access to public testimony events increased nationwide. The authors cited these technologies as opening the door to redistricting transparency and a check to political district map plans from redistrictors. They found that even with this increase in public involvement through technology, there was little evidence of the impact of increased public

presence in the process, as proved by litigation challenging the constitutionality of some state maps (Altman et al. 2014).

While public interest in redistricting has led to much reform, calls for further transparency, the inclusion of public suggestion, and politically independent redistricting commissions have been widespread. There is a gap in research that fails to examine how the public can impact redistricting significantly. The issues around examining public suggestions in redistricting include the biases around the active public in a given community, which research shows does not account for the variance of the opinion of that community (Arrington, 2010; Forest, 2004; Fougere et al., 2010; McDonald, 2011; Šára, 2014).

GIS in Redistricting

GIS, or Geographic Information System, is a powerful tool that can be used in redistricting to create and analyze various maps and datasets related to population demographics and geography. GIS can be used to create maps of population distribution, identify areas of high and low population density and provide information about the number of people living in a given area. This information can then be used to create district boundaries that balance population, ensuring each district has an equal number of residents. GIS can also be used to analyze other demographic factors such as age, income, race, and ethnicity, which can be used to ensure that districts are drawn in an equitable and inclusive way. GIS can help to identify neighborhoods or communities of interest that should be kept together when drawing district boundaries, taking into account factors such as shared cultural or economic interests. Overall, GIS provides robust tools for analyzing complex data and creating accurate and fair maps. By using GIS in redistricting, commissions can ensure that district boundaries are drawn in a way that reflects the interests and concerns of the communities they serve, leading to a more transparent and

democratic redistricting process. However, this is only as effective as the detail provided by US census data.

In GIS, vector data is a type of geospatial data that represents features on the earth's surface as discrete objects with a specific location and shape. Vector data is created by storing geometric data as points, lines, or polygons, along with attributes that describe the features being represented. Points are used to represent discrete objects, such as the location of a city or a specific landmark. Lines are used to represent linear features, such as roads, rivers, or coastlines. Polygons are used to represent areas or regions, such as states, counties, or land use types. Each point, line, or polygon can be associated with a set of attributes, such as population, land use type, or even political affiliation.

GIS can increase public interaction and transparency in the redistricting process in several ways, including public web-based mapping tools, public comment submission, and data accessibility. With online mapping tools, GIS can provide online mapping tools that allow the public to explore and visualize different redistricting scenarios. These tools can help to increase public engagement and provide a more transparent view of the redistricting process. For example, Ohio and Washington State have developed an online mapping tool allowing the public to create and submit their redistricting plans. With public comments, GIS can be used to map and analyze public comments on the redistricting process. This can help to identify patterns and trends in public feedback and provide a more transparent view of the public input process (Altman & McDonald, 2018, 2014; Forest, 2004).

GIS can provide easy access to redistricting data and analysis for the public. This can help to increase transparency and provide a more informed public debate. For example, the state of Maryland provides an open data portal that includes redistricting data and analysis. However,

while web platforms can reach more audiences, which increases information accessibility over paper or in-person hearings, internet access of individuals is a significant barrier to accessing information especially in rural or low-income communities.

Conclusion

The literature review provides an in-depth exploration of redistricting, starting from the national perspective and then delving into the specific case of redistricting in Washington State. The review examines the interaction between the public and the institutions involved in redistricting, the public's opinion on redistricting, and the importance of technology in bridging the gap between the political and public aspects of redistricting. The review also highlights the significance of public input in political processes and discusses the impact of gerrymandering on the fairness of representation. Furthermore, it discusses the different redistricting methods employed across states, including state legislatures drawing district boundaries and the use of commissions. Finally, the review emphasizes the profound impact of redistricting decisions on the public and their perception of the process. With this comprehensive understanding of redistricting, the next chapter will focus specifically on the redistricting process in Washington State, examining its unique guidelines, challenges, and potential implications for representation.

Chapter 3: Washington State Redistricting:

History and the Establishment of the Independent Commission

In Washington State, the first state law regarding redistricting was passed in 1890, which defined the number of members represented by districts for the Washington State Legislature. During this early period, the legislature passed changes to these district boundaries until 1930. In 1930, redistricting was accomplished by a people's initiative, which was challenged and upheld by the Washington State Supreme Court. However, the state legislature changed the district map three years later, in 1933 (WA initiative 57, 1930; Prich, 2011). Initiative redistricting continued in Washington, where a bill of new districting would be written and voted on as an initiative of the people. In the 1960s, U.S. Supreme Court cases challenged the redistricting structure nationwide (Baker v. Carr, 1962; Thigpen v. Meyers, 1964; Reynolds v. Sims, 1964). These cases started a pattern of the Washington State Legislature enacting redistricting plans that would be challenged by a U.S. District Court, redrawn by the court, and then amended by the state legislature. (Prince v. Kramer et. al, Civil Order No. 9668, 1972; Prich, 2011). Then history was made with the 1983 Redistricting Act that set Washington State apart from the nations as a state with an independent redistricting commission to draw district lines using the 1990 census in 1991.

The Washington Independent Redistricting Commission

The Independent, bi-partisan Washington Redistricting Commission would be established in January each year ending in one. With four appointed state resident members of the public as voting mapping commissioners who do not hold any elected representative office. Of these four are one appointee by each political party (Democrat and Republican) of the Washington
legislature's upper (Senate) and lower (House) chambers. The four appointed commissioners would then appoint a non-voting chair to oversee the process and act in a mediating role between the commissioners. The Chair would find an executive director who would then hire all non-partisan staff. No currently elected official may serve as a commissioner, and no member can be elected for two years after serving, or have been in office for at least two years prior to serving. The commission would seek input from the public through public hearings and outreach before deliberating a final redistricting plan to be delivered to the legislature by a specified date of each year ending in one (1991, 2001, 2011, 2021, 2031, etc.). The legislature would then have the opportunity to make small changes, adjusting no more than 2% of the population in any one district with a two-thirds majority vote in both chambers, before finally approving the plan in legislative session, as a bill to be signed into law by the Governor (Washington Constitution, article II, section 43).

Since 1991, the Washington State Redistricting Commission (WSRC) has sought to be a fair and independent process governed by the Washington State Constitution to draw these political boundaries under specific guidance that includes the role of public communities of interest (RCW 44.05.090; Washington Constitution art. II, § 43(3)). The requirements in Washington State from both the Washington Constitution and applicable laws under the revised code of Washington (RCW 44.05.90) set that redistricting in Washington be made up of districts with as equal populations as practicable, be contiguous, compact and convenient, be separated from adjoining districts by natural geographic barriers, artificial barriers, or political subdivision boundaries and recognized communities of interest. The law also states that no commission's plan should purposely favor or discriminate against any particular political party or group and encourage political competition (RCW 44.05.090; Washington Constitution art. II, § 43(3)).

In Washington law, no definition is given to what a Community of Interest is; only that redistricting must consider communities of interest when redrawing district boundaries. Washington law does not explicitly denounce gerrymandering practices such as packing, or cracking by name; it denounces the purposeful favor or discrimination of a political party or group. This legal framework allows for challenging redistricting plans in court when gerrymandering is suspected. Even with this legal framework, proving bad conduct redistricting in court can be complex. These loose legal frameworks also make it difficult for members of the public to specifically outline communities of interest while participating in redistricting outreach events.

2021 Washington State Redistricting Commission

The 2021 Washington State Redistricting Commission was established in January 2021 to conduct redistricting after the 2020 census. The appointees of voting commissioners were April Sims, the appointee by the House Democratic Caucus; Paul Graves, the appointee by the House Republican Caucus; Brady Walkinshaw, the Senate Democratic Caucus appointee and Joe Fain, the Senate Republican Appointee. All the appointees, besides April Sims, served in the Washington State legislature as elected officials in the past. With the appointment by the Commissioners of Sarah Augustine as the Commission Chair, the 2021 Redistricting commission was recorded as the youngest and most diverse group of commissioners in Washington State History (Washington State Redistricting Commission, 2021). The Commission set up a public website, *redistricting.wa.gov*. It made social media accounts to represent their work along with media advertising and public outreach events leading up to the day the U.S. census bureau provided the redistricting data set in August 2021. The Commission's published mission statement to the public is in in Table 3.1 below.

Table 3.1

Commission Mission and Purpose

Commission Mission and Purpose			
In Our Process:			
•	Be open, transparent, and credible		
•	Provide access to everyone and welcome all voices		
•	Grounded in statute		
In Our Conduct:			
•	Strive for transparency		
•	Commissioners participate and negotiate in good-faith		
•	Commissioners collaborate and cooperate		
•	Commissioners are respectful and civil		
Our Desired Outcome:			
•	Meet our deadline		
•	Produce best possible maps		
Final Outcomes			
•	Plan and/or Maps are credible to everyone		

Note. The agreed mission and purpose statements from the 2021 Washington redistricting commission (Washington State redistricting commission, 2021).

In 2021, the Washington State Redistricting Commission process saw incredible public input. The Commission received over 5000 individual public testimonies, suggestions, and comments. The 2021 Commission followed the 2011 Commission by hosting district-organized outreach where public members organized political groups and county organizations. Before census data arrived in August of 2021, the Commission had already surpassed the last decade's redistricting process in public outreach through media releases in multiple languages, American Sign Language, and a novel tribal consultation policy. The never-before-established tribal consultation policy sought the opinion of eleven Washington tribes and their desired outcomes in redistricting or the districts where they saw their communities would be best represented. This outreach effort was made possible through technologies like web-based GIS, and video conferencing services that were not as available during 1991 and 2001 and were just coming into its own in 2011. The public outreach effort of the commission included YouTube and Facebook advertisements, public outreach meetings in each Congressional District before and after the draft map publication, tribal consultation, and a public-facing GIS mapping tool. The media releases and social media pages saw many views and subscribers. At the same time, the public meetings often went over time with testimony. The mapping tool was a web application service purchased from Citygate GIS and worked in tandem with the Commission's mapping desktop tools. When Commissioners publish draft maps, public users of the web-facing tool could comment on those maps, and Commissioners could review those comments in real-time. Users of the web mapping tool could also draw their maps and submit them to the commission for review and consideration. Another feature was the ability for the public to draw their communities to be considered as Communities of Interest. It was a widely used public outreach tool with over 2000 users who could draw their communities of interest, draw their districting maps and submit comments on the current map, draft maps by commissioners, and even the final map.

However, the 2021 Washington Redistricting cycle faced challenges that shortened the process's length from start to finish. In 2016 Senate Joint resolution 8210 passed amendment 108 to the Washington State Constitution. It moved their deadline from December 31st at 11:59 PM of the year ending in one to November 15th at 11:59 PM of the year ending in one for final maps, removing two months from the end of commission mapping time and process. In combination with the COVID-19 pandemic and a six-month delay on census redistricting data, the Commission could not agree on the final redistricting plan in time, as the final plan was submitted to the legislature on November 16th, one day late of the State Constitutional deadline. The Commission relinquishes its authority to the Washington State Supreme Court per state

statute (RCW 44.05). However, the independent Commission endorsed map plans the day following the deadline. On December 3rd of, 2021, the Washington State Supreme Court ruled that the Commission had effectively accomplished its legal duty. This allowed the plan adopted by the independent Commission to move forward in the process.

On February 8^{th,} 2022, the final redistricting plan endorsed by the Redistricting Commission plan with legislative approved amendments impacting no more than 2% of the population of each district, was passed and solidified new district lines for Congressional and legislative districts in Washington until 2031 (EHCR 4409; Chapter 2011 c60 §41).

Another new law facing the Washington State Redistricting Commission in 2021 was RCW 44.05.140, passed in 2019. It included reallocating individuals in state custody to their last known address. This novel process is relatively new to redistricting processes across the nation; to reduce the "Packing" gerrymandering method of packing populations in a district to reduce voting power, Washington, along with five other states, passed similar legislation to account for all individuals in state custody facilities and redistribution their population in redistricting data sets to account for their last known place of residence.

Public participation

The public outreach and web-based community of interest tools provided by the 2021 Washington State Redistricting Commission allowed public participants to provide their individual or organized group suggestions to the voting Commissioners for Washington redistricting. The 2021 Commission tracked three forms of public participatory data useful for analysis in their work. First, was the written and spoken testimony by public participants through scheduled outreach events televised on TVW, Washington State government

broadcasting service. Second, an online map comment tool was provided to the public to support or critique draft maps, where users could click a region to submit their comments. The last collection method was a participant-drawn Community of Interest mapping tool, where users drew their desired communities of interest and submitted them to Commissioners for consideration.

Written and spoken testimony was submitted to the 2021 Washington Redistricting Commission through email, official form letters and testimony during scheduled televised outreach events with Commissioners. Written testimony and form letters were received consistently throughout the process from March of 2021 to well beyond the approval of the Commission's final map. A total of 15 televised outreach events were hosted from April 22nd, 2021, to July 31st, 2021. During these open and public outreach meetings, public and individuals representing organized political groups could sign up to speak for two minutes each to address their opinions to the mapping Commissioners. All outreach responses, written or spoken, was translated and recorded in text spreadsheet by the Commission's communications team and archived for public record request.

The public mapping tool offered by the 2021 Washington Redistricting Commission was a source of Geographic Information system (GIS) data collection of public participation. The commission purchased Autobound EDGE web and desktop redistricting software to support both public participation and commissioner mapping. Citygate's AutoBound Edge is a mapping and redistricting software that can be utilized by redistricting commissions to improve public outreach efforts. The software can be used to create maps that are easily accessible to the public, with a user-friendly web interface called MyDistricting. MyDistricting allows members of the public to submit comments and suggestions on proposed district boundaries. These suggestions

can be easily integrated into the software to visualize potential changes to the district boundaries in real-time. This can help increase public engagement and ensure that the concerns and preferences of the public are considered when creating final maps. The software can also be used to create multiple scenarios to compare different maps, which can further improve transparency and accountability in the redistricting process. Citygate's AutoBound Edge (figure 3.1) provides redistricting commissions with a valuable tool to engage with the public. (Citygate GIS, 2021).

Figure 3.1

WSRC Redistricting Software Autobound EDGE



Note. Snapshot of Autobound EDGE Desktop Redistricting Software. This shows the user interface of the Philadelphia metropolitan area being redistricted by the user. The map itself shows colored districts with population metrics in the table below. (Citygate GIS, 2021, accessed 4/3/2023)

With the MyDistricting tool (Figure 3.2) the public could easily review and comment on the Commissioners draft redistricting plans and compare with the current (2012) district maps.

Users could also draw their own district map for official 3rd party submission to the Commission for consideration. Users had the ability to draw their communities for consideration as official Communities of Interest to the Commission. All the information submitted by public users was recorded and made available through public record requests. The information collected by MyDistricting was in the form of Geographical Information System (GIS) data. This data includes vector (points, lines, and polygons) point location data for comments submitted on maps, vector polygon data for drawn communities of interest and vector polygon data in the form of whole redistricting plans. This GIS data was instantly available to mapping Commissioners through their Autobound Edge desktop redistricting software.

Figure 3.2

MyDistricting



Note. MyDistricting Public web redistricting tool. Screen shows Districts of the State of Illinois. Users can click an area to add their own comment to the map. (Citygate GIS, 2021, accessed 4/3/2023)

Key issues and points of contention

Public response to the Washington redistricting process can highlight areas of contention and concern in the state. Public comments and feedback submitted to the Washington State Redistricting Commission have revealed areas where residents are particularly concerned about the potential splitting of communities or the need for more equitable representation for specific groups. If many residents from a particular area express similar concern, this can indicate a high level of contention around that issue in that area.

Public response to the Washington redistricting process 2021 has shown that Bremerton and Yakima are areas of the greatest contention in the redistricting process. In Bremerton, the public response has focused on concerns about the potential splitting of the city across the 23rd, 26th and 35th Legislative Districts. The Kitsap Sun reported that residents in Bremerton have urged the Washington State Redistricting Commission to keep the city whole in a single legislative district, arguing that splitting the city could dilute their voices and interests in the legislative process. Similarly, in Yakima, the public response has focused on concerns about fair representation for the city's Hispanic population in the 14th and 15th Legislative District. The Yakima Herald reported that Latino residents in Yakima have been advocating for the creation of a majority-Latino district to ensure that their voices are heard in the state legislature. A large portion of interest also centered around keeping the Yakama Nation's federally recognized tribal boundary within a single represented legislative district, opposed to its split between the 14th and 15th Legislative Districts in 2012. These examples demonstrate how public response in the Washington redistricting process can highlight areas of contention and concern in the state.

The City of Bremerton received a majority of media and public attention during the 2021 redistricting cycle. In 2011, the city of Bremerton was split between the 23rd, 26th, and 35th legislative districts. Many public and political figures argued against splitting one of Washington's largest and most diverse cities. On May 27th of 2021, after the sixth congressional district outreach meeting by the Washington State Redistricting Commission, the Kitsap Sun published an article calling for Bremerton to be included in a single legislative district. The article reported on the sixteen testimonies by public testifiers who described the city of Bremerton as a commonly defined community of interest, that the city is a geographical community with common interests that should be respected and its impact in a single district not minimized by splitting. Residents of Bremerton may feel that their voices are diluted or

marginalized in the legislative process, if elected officials are primarily accountable to voters outside of Bremerton. In that case, they may not prioritize the needs and concerns of Bremerton residents as much as they would if the city were wholly contained within a single legislative district. Political groups like the League of Women Voters from the Kitsap region made their voices heard on the splitting of Bremerton, along with the resident public through written and spoken testimony from the WSRC's outreach meetings, as well as local news outlets.

In general, these concerns were heard by commissioners who agreed that the city of Bremerton could be split less than they were in 2012. In the final plan put into law in 2022, Bremerton was split into two districts instead of three as the last decade had. Difficulties arise in balancing the population between districts as Bremerton sits across the sound from major population centers of western Washington. To keep the balanced population districts, some cities need to be split. The three districts that split Bremerton in 2012 saw more public suggestions than any other districts by a large margin, asking to be wholly included in a single district.

The district pair that saw the second most public attention was the 14th and 15th districts in Yakima and the Yakama nation. Many called for the Yakama Nation to be in one district, as the tribe suggested. Political motivations exist here as the city centers were predominantly democratic party voting with the suburbs and countryside in the two districts being predominantly republican party voting. Another concern was abiding by the Voting Rights Act of 1965, ensuring the sizeable Hispanic population was adequately represented in a single district. In Yakima, there has been significant public attention on ensuring that districts are drawn in a way that gives fair representation to the city's Latino population. The Yakima Herald reported that Latino residents in Yakima have been pushing for the creation of a majority-Latino district to ensure that their voices are heard in the state legislature. This outcry was fresh in the

public minds of these districts since a recent United States District Court case in Yakima found discrimination against the Hispanic population in voting districts in 2014 (Montes v. City of Yakima, 40 F. Supp. 3d 1377, 2014). Yakima was involved in a lawsuit regarding violations of the Voting Rights Act (VRA) and the disenfranchisement of Latino voters in the city. In 2012, the American Civil Liberties Union (ACLU) and other civil rights groups filed a lawsuit against the city of Yakima, alleging that the city's at-large system for electing its city council members violated the Voting Rights Act and resulted in the dilution of Latino voting power in the city. In 2014, a federal judge ruled in favor of the plaintiffs, finding that the at-large system in Yakima had effectively prevented Latino residents from electing candidates to the city council. The judge ordered the city to adopt a new district-based system for electing city council members to ensure that Latino residents had a fair opportunity to elect candidates who represented their interests. In 2015, Yakima held its first district-based city council elections, with three of the seven seats on the council up for election. Two Latino candidates were elected to the council, marking a significant victory for Latino residents and civil rights advocates. The Yakima case has been cited as an example of the importance of the Voting Rights Act in protecting the voting rights of minority communities and ensuring fair representation in local government.

Conclusion

Public scrutiny over redistricting creates an ever-evolving reform and inclusion process throughout the nation and in Washington State. The 2021 redistricting cycle in Washington State saw great public outreach efforts through its independent Commission and more participation than ever before. Many factors led to this historic participation in the redistricting process, including new technologies in media outreach and mapping, increased political interest from the public, and the legal guidelines that demand the Commission to consider local communities of

interest and keep them intact. It appears that Washington citizens are strongly tied to their communities and reserve the time to make it known. Research around this growth of public interest and its impact on the redistricting process is relatively new. The question remains, how can we measure the growing public participation effects of redistricting? In the next chapter the methods of analysis are examined in depth.

Chapter 4: Methods

Introduction

This chapter examines the publicly submitted legislative mapping suggestions of the 2021 Washington Legislative redistricting cycle to test the hypothesis that *Independent Redistricting Commissions when dedicated to public input and comment produce redistricting maps that are in line with the majority of public interest, especially at smaller geographical scales.* This verification of the 2021 redistricting process is solely geographical in nature, using geographical information system standard geoprocessing tools, and tabular analysis in excel. This analysis will focus on the "feasibly mappable" geographically verifiable public suggestions submitted to commissioners of the 2021 Washington Redistricting Commission.

The methods of analysis are partitioned into three parts, one statewide overview, and two area case studies. This partition is based on the two ways public comments were collected. Comparison of submitted communities on a statewide scale with the final legislative boundaries produced by the commission will show which MyDistricting submissions were included in final district lines. For the written and spoken testimony, two case study locations will be examined and compared with the geographically verifiable public suggestions, and the final legislative boundaries produced by the commission.

Analysis Tools and Software

This section outlines the tools and software used for the analysis of public comments and geographic data from the 2021 Washington State Redistricting Commission (WSRC). Microsoft Excel and ArcGIS Pro were utilized to organize, query, and spatially analyze the large dataset of public comments and their geographic relationship. The analysis focuses on assessing how well

Communities of Interest and public suggestions were incorporated into the final redistricting maps, specifically evaluating geographic inclusion and exclusion. Microsoft Excel was instrumental in managing and categorizing the public comment data, while ArcGIS Pro facilitated the detailed spatial analysis of geographic areas and districts (Table 4.1). The following sections describe the functions and tools applied within each software, demonstrating their role in comparing public input with the final district maps.

Table 4.1

Microsoft Excel (Data Import, Organization, and Querying)			
Functions Used	Description/Usage		
COUNTIF	Counts specific occurrences, such as mentions of a geographic area		
	in public comments.		
AVERAGE	Calculates average values, like the average number of comments per		
	district.		
SUM	Aggregates data, summing total mentions of geographic areas or		
	public suggestions.		
VLOOKUP	Looks up values across different columns, categorizing comments		
	based on geographic area or community of interest.		
ArcGIS Pro 2.9.1 (S	Spatial Analysis of Geographic Features and Public Comments)		
Tools Used	Description/Usage		
Pairwise Intersection	Identifies intersections between public comment areas and final		
	district maps to measure COI inclusion.		
Join Features	Links spatial data (maps) with non-spatial data (public comments)		
	for analysis.		
Spatial Join	Combines attributes from two spatial layers to evaluate how public		
	comments overlap with final districts.		
Table to Point	Converts public comments (from tables) into spatial data points for		
	visualization on a map.		
Area Calculation	Measures the geographic area of COIs and legislative districts,		
	quantifying the percentage of inclusion.		

Analysis Tools and Functions

Note. Tools and Functions used during analysis by software.

Pairwise Intersection

A Critical analysis tool in this study is a spatial analysis geoprocessing function called "Intersection" or "Pairwise Intersection" on the ESRI ArcGIS Desktop Pro Software. The Pairwise Intersect tool in ArcGIS Pro (Figure 4.1) allows users to combine two geographic shapes on a map into a single output, containing the attribute information of both inputs. This tool is useful for analyzing the spatial relationship between different geographic shapes, especially the area of one shape that's contained by another. In this analysis, Pairwise Intersect was used to calculate the percentage of the area of geographic location (e.g. the boundary of a city, county) or the boundaries of submitted Communities of Interest that falls within the geographical boundary of a legislative district shape.

Figure 4.1

Pairwise Intersection



Note. Pairwise Intersect (Analysis)—ArcGIS Pro; in this analysis the yellow feature represents the boundary of a geographical place such as a city, or the geometric boundary of a community of interest, while the blue represents the legislative district(s) it resides in. the resulting green shape shows how much of the geometric area of that boundary is included in a single district.

Geographically Verifiable

Another critical portion of this analysis is determining what is geographically verifiable or "feasibility mappable" in the context of publicly submitted suggestions. To determine feasibly mappable comments, any comment that mentioned a physical place, such as a legislative district, city, county, or other geographical area was kept for analysis while unrelated comments were rejected. This delineation of "place" meant the suggestion could have feasibly been used by the mapping commissioners to make or reject a specific and verifiable mapping decision. To further illustrate feasibly mappable comments, some examples of the data are provided in Table 4.2.

Table 4.2

Feasibly Mappable Comments

Comment	Text Feasibility		Reasoning		
A	"We deserve balanced competitive districts. Living in Gold Bar I feel the conservatives are unheard in District 1, We align more with eastern Washington. It is time to give us more of a voice and balanced districts would help! The far-left liberals have way too much sway! "	Feasibly Mappable	To Address this comment commissioners could either map the city of Gold Bar into a more eastern district, or Map district 1 to include more easternly communities.		
В	"Leave Bainbridge Island as part of Kitsap County!!!"	Not Feasibly Mappable	Bainbridge island is already a part of Kitsap county.		
С	"Do Not Redistrict the 17th District!"	Feasibly Mappable	While this comment may be impossible for the commissioners to perform, an effort could be made by commissioners to change as little as possible in this district. This lack of change could be verified in analysis		
D	"DO NOT REDISTRCT EASTERN WASHIGNTON"	Not Feasibly Mappable	Redistricting is required by law, statewide		

Note. Examples of public comments and their feasibility in mapping.

Overview of Case Studies

Statewide overview: Communities of Interest (COI) in Washington State

In this case study, I examine the Communities of Interest (COI) drawn by public

participants using the WSRC mapping tool. Public users submitted their own drawn areas of

interest to represent their unique community in the hopes mapping commissioners would give unified representation to these communities. I used geospatial analysis tools outlined in the next section to compare the submitted community geography with the geography of the final legislative districts to demonstrate single-district inclusion.

Citygate GIS provided web-based geographic information systems (GIS) support for the 2021 Washington State Redistricting Commission (WSRC). One of their key tools was the Community of Interest (COI) Mapping Tool, which enabled users to identify and map areas of shared community interests and concerns. This tool helped the Commission understand the specific needs and priorities of Washington residents by visualizing where particular community interests were concentrated. The web tool allowed a user to submit communities of interest by clicking with their mouse on a map of Washington and drawing a polygon shape around their desired community. The tool allowed users to submit additional text comments with the drawn community. Commissioners could overlay this submitted community polygon in Autobound Edge Mapping tools (discussed in Chapter 3.).

During the 2021 redistricting cycle, 32 communities of interest were submitted for consideration by the WSRC. To assess how well these communities were represented in the final maps, the polygons (areas) drawn by the public to represent their COIs were compared to the final district boundaries. This allowed an analysis of how much of a given COI was fully included within a single district (Figure 4.2).

Figure 4.2

Submitted COI Polygons



Note. The purple Polygons represented geographic areas submitted by the public as their community of interest, while the black lines represent the final legislative district map approved by the commission.

The above figure compares the geographical area of these Community of interest polygons submitted by the public to the geographical area of the legislative district polygons. In dividing the COI by where it's intersected by a legislative district boundary, I can connect a numerical value of inclusivity in a single district. If we can imagine a community made up of 30 acres of residential development, the local grocery, and church, split down the middle by the boundary of two legislative districts; then we can show 50% inclusivity in a single district. Using ESRI's ArcGIS Pro, the "intersection" tool was employed to analyze where each community polygon overlapped with district boundaries. For example, as shown in Figure 4.3, one community was split between two districts in the final map in Figure 4.4, showing that the community was divided. By comparing the areas of these split portions with the original COI boundary, we can calculate the percentage of the community that remained within a single district.

Figure 4.3

A Single Whole Community Polygon



Note. This polygon is one of the submitted communities of interest using the MyDistricting and Autobound EDGE Redistricting Mapping tool. The Purple Shape is the submitted community of interest, and the black line is final Legislative District lines signed into law in 2022.

Figure 4.4

The Same Community Polygon After Pairwise Intersection



Note. This is the same polygon from Figure 4.3. The grey line shows where the district boundary splits this community of interest.

Case Study 1: Greater Bremerton Area

During the outreach meetings of the Washington State Redistricting Commission (WSRC), public participants provided both video and written testimony, which was recorded in a log. This log, referred to as "Public Comment Notes" (Table 4.3), summarizes all public input collected by the 2021 WSRC. To analyze this data, Microsoft Excel 2022 was used to import, organize, and process the testimony data provided in .xlsx format.

Table 4.3

Examples of Testimony Data

CDs (Affected)	LDs (Affected)	Cities (Mentioned)	Counties (Where Suggestions Take Place)	Written Testimony	Summary
				I would like to see district boundaries following natu	Don't use roads as dividing
	38			Hello! I am a voter living south Everett in District 38	Make LD 38 include South I
	46	Kenmore		Honorable Commissioners, On behalf of the Kenmore	Keep Kenmore in LD 46
	42			Thank you for taking input. I am in LD 42, in CD 1. I	Keep LD 42 intact, do not s
1,2,8				APPLE, CEDAR, FIELD, FARM Let us draw a special ne	Draw a CD focused on the r
	1			We deserve balanced competitive districts. Living in	Gold Bar is not like the rest
	39			The districting maps drafted by Brady Walkinshaw a	Do not break up cities as oc
	42			I live outside Bellingham in Whatcom County. I urge	The LDs around Bellingham
				September 30, 2021 I am writing today to express m	Support the Democrat's pro
1	38			I live in Everett the 38th LD and 1st CD. In reviewing	Contiguous and compact m
				To Whom It May Concern: I have lived in Conway, S	Keep all of Mount Vernon i
1	48	Bellevue, Kirkland, S	King	My name is I vote in the 48th LD and	have lived in the city of Rec
1	32, 46	Kenmore, Shoreline,	King	My comments have to do with the change to a a dif	ferent legislative district for
1	46	Kenmore	King	I agree with the 46th District Democrats recommend	dation that the 46th District
1	46	Kenmore, Lake Fore	King	Good afternoon, I am Constant Constant Section Constant Section 2010	erving as a
	21, 44			Either adopt Commissioner April Sim's 44th LD prop	osal, or Redistricting Justice

Note. Personal Identifiers Removed For Privacy. Public Comment Notes, 2021 WSRC

The total dataset contained 1,188 comments, of which 717 were feasibly mappable, meaning they referenced specific districts or geographical areas. Initial analysis found that the districts with the most comments were Districts 12, 14, 15, 23, 26, 31, and 35, with Districts 23, 26, and 35 representing the Bremerton area.

In this case study focusing on Bremerton, 179 comments were related to Districts 23, 26, and 35, which made up 27% of all comments statewide, despite this area representing only 6% of Washington's population. Figure 4.1 below displays the distribution of comments by legislative district, with District 23 receiving 85 mentions alone.

Figure 4.5

Total Public Comment Legislative Districts



Note. This chart shows total counts of public comments that mentioned a particular District. The 14th, 23rd, 26th, 31st, and 35th districts saw the most attention. The bars in green outline the districts concerning the city of Bremerton.

The comments were then evaluated using a "Boolean check" to determine if they were fully represented in the final maps. For example, if a comment requested that Bremerton be in a single legislative district, the check would determine whether this was true in the final map. GIS analysis further quantified the degree of inclusion; for example, 78% of Bremerton's boundaries were included in one district, with the remaining 22% in another, in the final map. Table 4.4 illustrates this process, showing how each comment was reduced, checked for representation in the final map, and quantified by percentage of inclusion. For instance, the comment "Bremerton should be in 1 LD" failed the Boolean check because the city was split, but 78% of its area was included in one district.

Table 4.4

Comment Inclusion Check

Description	City	County	Check	in LD	Y/N	%
Bremerton should be in 1 LD	Bremerton		No split		n	78.96229
Bremerton should be in 1 LD	Bremerton		No split		n	78.96229
Bremerton should be in 1 LD	Bremerton		No split		n	78.96229
Bremerton should be in 1 LD	Bremerton		No split		n	78.96229
Bremerton should be in 1 LD	Bremerton		No split		n	78.96229
Bremerton should be in 1 LD	Bremerton		No split		n	78.96229
Include all of Bremerton in the 23 LD	Bremerton		No split	23	n	20.91458
Bremerton should be in LD 26	Bremerton			26	у	100
Bremerton should be in 1 LD	Bremerton		No split		n	78.96229
Bremerton should be in 1 LD. The 35 LD should not include Bremerton.	Bremerton		No split	35	n	78.96229
Put Bremerton in the 23LD. Remove Tacoma from the 6 CD	Bremerton			23	у	20.91458

Note. This Table shows the description of a public comment, it's associated geographical locations, a check factor, yes or no result to the check, and partial percent inclusion of the check.

Case Study 2: Yakima Nation

A large portion of public testimony centered around the 14th and 15th legislative districts and the city of Yakima. Many of these comments, however, were centered around the Hispanic voting population and the VRA. Geographically verifiable comments regarding this region of Washington focused on the desire to keep the Yakima Nation in a single legislative district. Focusing on the verifiable geographical region such as the Yakima Nation, this work can compare the geographic boundaries of the tribal nation with the legislative boundaries produced by the redistricting commission to see how these public suggestions were included in the final district boundaries.

This work will not analyze the Voting Rights Act (VRA) or demographic analysis to maintain a clear focus on a geographically specific research objective. The VRA deals with ensuring racial and ethnic minority voting rights, which adds legal and statistical complexities that could shift the emphasis away from my core topic of how geographically defined communities are represented in the redistricting process. Addressing the VRA is beyond the scope and capability of this thesis.

Chapter 5: Results

Statewide Communities of Interest (COI) Representation

Following the established methodology for analyzing public submissions and geographical boundaries, the analysis of Communities of Interest (COI) was conducted to evaluate how well these community-defined areas were represented in the final legislative maps. Using the COI polygons submitted during the 2021 Washington State Redistricting Commission process, GIS spatial tools were employed to determine the extent to which these communities were kept intact within single districts or divided across multiple districts. The analysis aimed to measure the percentage of each COI that remained in one legislative district, providing insight into whether the redistricting process reflected the desires of community members for unified representation. The following section presents the key findings of this statewide analysis, including the overall patterns of inclusion, statistical trends, and specific case studies that highlight the geographic distribution of COI representation across legislative districts.

The submitted communities of interest (COI) were analyzed by splitting the original community polygons into smaller sub-polygons of portions within a single legislative district. In total, 32 community polygons were submitted, resulting in 92 sub-polygons after analysis. This ratio, 32 to 92, suggests on average a three-district division of submitted communities. For each COI submission, this analysis calculated the percentage of the community included in one district. While only six of the 32 submitted communities were wholly contained in a single district, on average, 77% by area of each COI was represented within a single district, meaning that most communities seeking representation in one district were partially split. This implies that, while most of each community was placed within one district, a substantial portion (approximately 23% on average) was split between multiple districts. It could be said that this

partially supports the hypothesis *Independent Redistricting Commissions when dedicated to public input and comment produce redistricting maps that are in line with the majority of public interest, especially at smaller geographical scales*, since a majority (77%) of the submitted communities by area, on average, received a single representation in the final maps (Figure 5.1).

Figure 5.1





Note. The chart was produced by splitting 2021 WSRC Public submitted COI along legislative district lines, only the highest percentage of original area are reported above.

Figure 5.2 was created to examine the relationship between the size of the COI in square miles and the number of respective splits in the original suggested COI. Results show a slight

trend between the size in area and the number of divisions by district. This seems to imply that as the size of communities by area increases, so does the likelihood they are to be split by district lines.

Figure 5.2

Number of Divisions by Community Area (Square Miles)



Note. This Chart shows the relationship between size in area and number of community divisions by district lines. Log Base 2 was used to condense area outliers. The trendline is exponential to outline the linear relationship between size in area and number of splits.

To re-examine a size-based relationship, a chart was produced examining only the highest portion of single district inclusion and the geographic size of the original community. Charting the area of each COI against the percentage included in a single district (shown in Figure 5.3) revealed a slight downward trend. This suggests that as the size of a COI decreases, its likelihood of being included in a single district increase.

Figure 5.3

Community Area of Most Inclusion in a Single District



Note. This Chart shows the relationship between size in area and number of community divisions by district lines. Log Base 2 was used to condense area outliers. The trendline is exponential to outline the linear relationship between size in area and number of splits.

The results of this statewide COI analysis show trends in how community boundaries were respected within the redistricting process. While smaller communities often achieved unified representation within a single district, larger COIs faced a higher likelihood of being somewhat divided. These patterns suggest that the redistricting efforts aligned well with public input in many cases. To further test this relationship, the following case studies examine if public testimony played a role in shaping district boundaries.

Public Testimony Inclusion Case Study Analysis: Greater Bremerton Area

The analysis of public comment testimony focused on specific geographical areas, with the greater Bremerton area serving as a key case study. This area focused on public recommendations surrounding the 23rd, 26th and 35th legislative districts. The greater Bremerton area received significant public input during the 2021 Washington State Redistricting Commission process, with many commenters advocating for the city and it's surrounding communities, to remain within a single legislative district, outlining the city as a community of interest in the public eye. To assess the extent to which public testimony influenced the final maps, a detailed comparison was conducted using both Boolean analysis and GIS tools to evaluate how Bremerton's boundaries were treated in the approved district maps. Boolean checks in this analysis refer to a simple "Yes" or "No" classification based on whether public suggestions were fully incorporated into the final legislative map. GIS tools outlined in the methods chapter were used to calculate percentages of geographical area when a simple yes or no check was an insufficient identifier of inclusion. This analysis provided a measure of how well public requests were reflected, examining the city's inclusion across districts and identifying any deviations from the public's desired outcomes. The following section outlines the results of this case study, offering insights into how effectively Bremerton's boundaries were maintained in response to public input.

The Boolean checks were calculated using Excel, with the following formula: =(COUNTIF (G2:G108,F110)/(COUNTIF(G2:G108,F110)+COUNTIF(G2:G108,F111)))*100 This formula provided the percentage of suggestions that were fully represented in the final maps. Additionally, ArcGIS Pro was used to calculate the inclusion percentages by analyzing how geographical boundaries of the public suggestions were split across districts. The results showed that, on average, 88% of Bremerton related suggestions were at least partially represented in the final legislative maps. However, it's important to note that this analysis was not weighted by comment subtypes, meaning that different types of suggestions (e.g., city boundaries vs. community boundaries) were treated equally. For example, if a letter submitted to the commissioners read: "I want the old town neighborhood of Bremerton in the 23rd district" this was treated as a yes or no inclusion and weighted the same as "I want the entire city of Bremerton in the 23rd District". The lack of a weighted average could potentially skew the results, as some suggestion types may have been more prevalent or impactful than others.

When analyzed, the Boolean checks were used to determine if public suggestions were represented in the final legislative map produced by the 2021 Washington State Redistricting Commission. The analysis revealed that 58% of the public suggestions were wholly represented in the final maps. A notable example was the suggestion to keep Bainbridge Island within the 23rd Legislative District and to ensure that no part of King County was represented by the 23rd District. This suggestion was fully reflected in the final map, resulting in a "Yes" check, with 100% inclusion when examining the geospatial boundaries of Bainbridge Island, Kitsap County, King County, and the 23rd Legislative District lines. Another common suggestion was to keep the city of Bremerton within a single legislative district. However, this suggestion received a "No" check because the city was split between two districts in the final map. A geographical analysis using ArcGIS Pro revealed that 78% of Bremerton was represented by one district, while the remaining 22% fell within a second district. While not wholly represented in a single district, this is a noticeable improvement from the 2011 redistricting cycle, where the city of Bremerton was split by three separate districts. A summary of these findings is shown in Table 5.1.

Table 5.1

Bremerton Area Case Study Testimony Analysis Results

Percentage of Suggestions	Average Percenage of
Represented in Final	Suggestions partially
Maps	represented (By Area)
58%	88%

Note. The left shows the percentage of public testimony fully and equivocally represented by simple yes or no check. The right used by area analysis to attach values to "no" checks, when partial representation of the comment was verifiable.

Following the Bremerton analysis, we turn our focus to comments centered around the Yakama Nation in the 14th legislative district to explore how public testimony influenced redistricting. The use of Boolean and GIS-based approaches offers valuable insight into the ways specific communities' input was reflected or only partially captured in the redistricting maps. In the next section, we will examine the Yakama case study, focusing on how public testimony from this area was addressed and its impact on the districting outcomes.

Yakama Nation

The Yakama Nation case study followed the same analytical approach used in other public comment testimony analyses, applying geographic verification to assess whether public suggestions were reflected in the final legislative district boundaries. Using a combination of GIS spatial tools, the analysis specifically checked whether the Yakama Nation's boundaries were fully included within a single legislative district, as was consistently requested by community members during the public comment period. The Yakama Nation served as a focal point in the redistricting process, with a strong emphasis on ensuring its full inclusion within a single legislative district, as expressed through public testimony showing an important community of interest in the public eye. Numerous comments highlighted the importance of keeping the Yakama Nation intact to protect its political representation. To evaluate how the final maps addressed these concerns, a detailed analysis was performed, comparing the public requests with the finalized district boundaries. Spatial analysis confirmed that 100% of the Yakama Nation was incorporated into a single district, aligning with public testimony and meeting community expectations. This change is noticeable from the 2011 Redistricting cycle that had the boundaries of the Yakama Nation Split effectively in half between two districts. Figure 5.1 shows the results of this analysis, highlighting the success of the redistricting process in fully including the Yakama Nation within a single legislative boundary.

Figure 5.4

Legislative District 14



Note. In the final Legislative District 14 map published by the 2021 WSRC, we can see the federal and state recognized boundary of the Yakama Nation fully included within the district.

The Yakama Nation case study further underscores the positive impact of public testimony on redistricting outcomes. Unlike prior cycles where the Yakama Nation's boundaries were split between districts, the 2021 redistricting efforts successfully addressed the community's calls for unified representation, ensuring the entire Yakama Nation was included within a single district. This alignment demonstrates how community input, particularly in cases with strong geographical and cultural significance, can shape redistricting decisions in meaningful ways.

These findings from both statewide analyses and specific case studies emphasize the effectiveness of public input in achieving representation goals. The alignment of redistricting outcomes with community-defined boundaries illustrates how Independent Redistricting Commissions can support equitable representation through thoughtful integration of public testimony. The conclusions chapter will synthesize these insights, highlighting the broader implications for future redistricting processes and recommendations for enhancing public engagement.
Chapter 6: Conclusion and Recommendations

Based on my analysis of the Washington State redistricting process in 2021, this research hypothesized that *Independent Redistricting Commissions when dedicated to public input and comment produce redistricting maps that are in line with the majority of public interest, especially at smaller geographical scales.* The facts that emerged from this research support this hypothesis.

It was found that the 2021 Redistricting Commission experienced increased public participation compared to previous cycles, which could be attributed to the rise of social media technology and increased political awareness of the redistricting process. However, the representation of public participation in the final legislative maps was not consistent. Only 58% of participants' suggestions were fully represented in the final plan, with an average of 88% partial inclusion of those suggestions. Over half of comments were fully represented in the areas examined, and those not fully represented had a high average inclusion by area. A clear trend existed toward inclusion; it is difficult to conclude based on these results if inclusion of these suggestions was an intentional choice by mapping commissioners. It is however, clear that the cumulative public voice resulted in less district splits within the city of Bremerton.

For example, those suggesting keeping Bainbridge Island in the 23rd Legislative District had 100% of their suggestion represented in the final plan, indicating that the geography is entirely within District 23. On the other hand, those suggesting keeping the city of Bremerton in only one legislative district saw that 78% of the Bremerton city boundary area was included in a single district, the 26th, with 22% in the 23rd. This distribution of inclusion suggests an attempt to keep the majority of the city in a single district, but it still resulted in the city being divided

64

into two districts. While those who wished Bremerton to be fully included in a single district aren't represented in these findings, it is an improvement from 2011, where the city of Bremerton was split by three districts.

Communities Of Interest can serve as important checks to ensure fair redistricting, as they represent the interests of specific communities and can provide valuable input into the process. However, my analysis suggests that the extent of COI representation in the final maps is not always consistent based on geography alone, indicating the complexity and challenges of the redistricting process when balancing various interests and considerations. The importance of represented communities in redistricting has to face the competition of the other redistricting criteria, such as population, and political competition.

Comparing the results of my analysis with similar papers, it becomes evident that the representation of communities of interest (COIs) in the final maps varied. Some COIs had their suggestions fully included, while most had only partial inclusion in a single district. This indicates that the redistricting process in Washington State may not always align with the preferences of all communities of interest. Overall, however, when examining the trend of highest portion of inclusion and the trend of all submitted COI it shows that a majority of these communities received single representation by area. From this data it cannot be determined if this was an intentional result. However, these results show that an attempt to be as inclusive as possible was made by Commissioners using the redistricting tools to include data provided by the public while mapping.

While there was increased public participation in the 2021 Washington State redistricting process, the representation of public suggestions and communities of interest in the final legislative maps was not always consistent. Some suggestions were fully included, while others

65

had only partial inclusion or were not included at all. This highlights the nuanced nature of the redistricting process and the challenges in balancing various interests to ensure fair and equitable districting. Further research and analysis will be needed to fully understand the dynamics of how public participation and COI representation is reflected in future redistricting cycles in Washington State.

A challenge in the redistricting process is data accessibility and equity issues. Many communities, particularly those in low-income areas, lack access to technology and may not be able to participate in the redistricting process online. This can result in these communities being left out of the process, which can lead to unfair district lines being drawn. There is also a concern that some communities may not have access to the same quality of data as others, which can result in unfair representation.

To increase public participation in redistricting and ensure a fair process, the following recommendations are proposed;

- Specific definitions of COI: To ensure that the redistricting process is fair, it is important to have clear definitions of COI as a redistricting criterion. This could help to prevent district lines from being drawn in ways that separate recognized communities.
- 2. Earlier outreach and participation accessibility: In order to ensure that all communities have the opportunity to participate in the redistricting process, it is important to begin outreach efforts even before commissioners are chosen and to provide accessibility options that do not rely solely on online participation. This may include community meetings and the use of video conferencing technologies or social media platforms to ensure that all voices are heard.

- Other forms of participation: It is also important to consider other forms of participation, such as the use of public hearings or community feedback sessions. These forms of participation can help to ensure that all voices are heard and that the process is transparent.
- 4. The use of Geographic Information Systems (GIS), AI, or other geographic and statistical analysis software: Help to ensure that district lines are drawn fairly and accurately. By using GIS, data can be analyzed more effectively, being both a tool for mapping commissioners and a transparent check by the public, using the same data.

In conclusion, public participation in the redistricting process is critical to ensure a fair and equitable process that accurately represents all communities. Public awareness, time limitations and accessibility issues are challenges that need to be addressed prior to the next redistricting cycle, but there are recommendations that can be implemented to ensure that all communities have a voice in the process. By working together, we can ensure that the redistricting process is fair and that all communities are accurately represented.

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