P.O. Box 240147 Anchorage, Alaska 99503 www.akredistrict.org 907.563.0300



ALASKA REDISTRICTING BOARD

PROCLAMATION OF REDISTRICTING

WHEREAS, Article VI of the Alaska Constitution requires the Alaska Redistricting Board to reapportion the House of Representatives and the Senate immediately following the official reporting of each decennial census of the United States; and

WHEREAS, the United States Bureau of the Census conducted a census of the United States on April 1, 2020 and reported the results of the census to the State of Alaska on August 12, 2021; and

WHEREAS, the Alaska Redistricting Board was duly constituted in August 2020 and undertook its constitutional responsibilities for preparing a redistricting plan for the State of Alaska; and

WHEREAS, the Alaska Redistricting Board adopted draft redistricting plans on September 9, 2021, in conformity with Article VI, section 10 of the Alaska Constitution, requiring that the Board adopt a draft plan or plans within 30 days of the reporting of the Census results for Alaska; and

WHEREAS, the Alaska Redistricting Board held numerous public hearings throughout the state in conformity with Article VI, section 10 of the Alaska Constitution; and

WHEREAS, the Alaska Redistricting Board strictly adhered to the requirements of Article VI, Section 6 of the Alaska Constitution and the "Hickel process" outlined by the Alaska Supreme Court to draw districts consisting of contiguous and compact territory containing as nearly as practicable relatively integrated socio-economic areas and a population as near as practicable to 18,335; and

WHEREAS, adhering to Article VI, Section 3 of the Alaska Constitution, the Board did not adjust, alter or modify the Census enumerated population or Census block geography; and

WHEREAS, the Alaska Redistricting Board adopted by this Final Plan and Proclamation of Redistricting today, November 10, 2021 in conformity with the constitutional requirement that it do so within 90 days of the reporting of the Census results for Alaska.

NOW, THEREFORE, THE ALASKA REDISTRICTING BOARD, hereby does PROCLAIM, ON THIS DAY NOVEMBER 10, 2021

First, that the state house election districts described in this Redistricting Proclamation and in the report accompanying this Redistricting Proclamation, shall be implemented for legislative elections in the year 2022, and thereafter, until a valid Redistricting Proclamation has been adopted following the next decennial census; and

Second, that the terms of Senate incumbents – B, D, F, H, J, and N under the 2013 Redistricting Proclamation labeling system be truncated because those Senate Districts have been substantially changed by this Redistricting Proclamation, and that the term of the incumbent of Senate District T, not be truncated because that Senate District is substantially unchanged; and

Third, that Senate districts be assigned to election cycles according to the following schedule, using the 2021 Senate District designations in this Redistricting Proclamation:

Elected in 2022, 2026, 2030	Elected in 2024, 2028, 2032
А	В
C	D
E	F
G	н
I	J
к	L
Μ	Ν
0	Р
Q	R
S	Т

Fourth, that the metes and bounds district descriptions appended to this Redistricting Proclamation may be used to resolve inconsistencies between district boundaries and topographic features.

Dated this 10th day of November, 2021 at Anchorage Alaska.

In support:

John Binkley of Fairbanks, Chair

E. Budd Simpson, of Juneau

Bethen Llaver

Bethany Marcum, of Anchorage

In opposition:

Mr Bahnke

Melanie Bahnke, of Nome

Nicole Borromeo, of Anchorage

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Alaska Redistricting Board 2021 Process Report November 10, 2021

On November 10, 2021, the Alaska Redistricting Board issued its Final Plan and Proclamation of Redistricting in accordance with the provisions of Article VI of the Alaska Constitution. The provisions of Article VI that govern the Board's work are attached to this report as Appendix 1. This report describes the work of the Redistricting Board, and individual districts. Accompanying regional, statewide and interactive maps may be found at www.akredistrict.org/maps

The Board

The members of the Alaska Redistricting Board were appointed as required by the Alaska Constitution, Article VI.

Governor Mike Dunleavy appointed Budd Simpson of Juneau and Bethany Marcum of Anchorage on July 28, 2020.

Senate President Cathy Giessel appointed John Binkley of Fairbanks on July 29, 2020.

The Speaker of the House of Representatives, Bryce Edgmon, appointed Nicole Borromeo of Anchorage on July 30, 2020.

Alaska Supreme Court Chief Justice Joel Bolger appointed Melanie Bahnke of Nome on August 7, 2020.

Executive Director, Peter Torkelson and Deputy Director TJ Presley were retained in December and began work later that month. The Board's traditional relationship with the Department of Labor was re-established in mid-January 2021. As in past redistricting cycles, the Department agreed to provide the Board with technical expertise of the State Demographer, Eric Sandberg, who supported the Board's efforts in 2011-2013.

Preparations

On January 11, 2021 the Board issued a Request for Information for Legal Services.

The Board website, <u>www.akredistrict.org</u> was launched on February 19th with a design that dynamically adapts to both widescreen and portrait mobile environments. The website includes forms for the public to sign-up for e-news updates and submit formal public comment which is included the Public Testimony packet published on the Board's Meeting Information page. The email subscriber list contains 550 subscribers and the public comment form has received nearly 1,200 submissions. Public written comment was also accepted at an email

address dedicated for that purpose, <u>testimony@akredistrict.org</u>. More than 2,000 pages of public testimony was received.

On March 12, the Board retained Matt Singer and Lee Baxter of the Anchorage law firm Schwabe Williamson & Wyatt to advise and represent the Board in legal matters.

On April 19 the Board issued a Request for Information for a Voting Rights Act Consultant and on June 21 executed a contract with Bruce Adelson and Dr. Jonathan Katz of Federal Compliance Consulting LLC.

The U.S. Census faced unprecedented delays due to the COVID-19 pandemic and alerted the Board that official delivery of the Census data would likely be delayed until August or September of 2021.

With additional time to prepare, the Board directed staff to reach out to local governments and any other interested groups to proactively educate Alaskans about the upcoming redistricting cycle. Between April and August 2021 board staff presented to over 20 local governments and groups who responded to the offer of a redistricting presentation.

On July 20 the Board launched a first-ever web-based redistricting tool customized for Alaska and optimized for use by the general public. This online application allowed anyone with internet access the ability to draw their own legislative districts, track populations and deviations, and overlay maps of existing districts and local government boundaries. The tool was customized to allow seamless map submission through the Board's website and permit collaboration between contributors by saving the plan with a simple URL format which could be easily shared. Throughout the redistricting process, the Board received several complete maps and numerous partial maps which allowed members of the public to express their redistricting ideas graphically.

Legal counsel advised the Board to interpret Alaska Constitution clause in Article VI, § 3, *"Reapportionment shall be based upon the population within each house and senate district as reported by the official decennial census of the United States"* to mean that district lines must be comprised of whole census blocks, since that is the most precise level of enumeration available. Lines which depart from Census block geometry could leave the enumerated population value in question.

While redistricting software is more user-friendly than ever, initial mapping exercises revealed that changes to Census methodology had the effect of reducing the precision possible while drawing new legislative maps.

Between the 2010 Census and the 2020 Census, the Bureau engaged in a block count reduction effort which reduced the number of census blocks in Alaska from 45,292 to 28,568. This 37% decrease in blocks represents a loss of resolution, and a significant reduction in the number of blocks available to build compact and similarly populated districts. While Census blocks are

generally compact in populated areas, there were glaring exceptions – bizarre, salamander-like heavily populated census blocks in Anchorage, Matsu, Fairbanks and Juneau frequently confounded efforts to find compact shapes and precise population assignments.

The Process

On August 5, 2021 the U.S. Census announced that "legacy" formatted redistricting data would be released on August 12, 2021 at 9am Alaska time and on August 9th, the Census published a statement that the "legacy" data was "official" and fit for use.

At 9:01am on August 12 Board staff downloaded the Census data and began processing 2020 population information. The 2020 enumerated Alaska population is 733,391. Divided by 40, this sets the ideal House district size at 18,335 persons. In compliance with Alaska Statute 15.10.200, the Board made no adjustments to the Census population numbers for prisoner or military reallocation or for any other purpose. Legal counsel advised the Board that a draft redistricting plan or plans must be adopted by September 11, 2021, thirty days after receipt of official Census data, in keeping with Alaska Constitution Article VI, section 10.

The full Board met in late August to formally receive the Census data and review the task ahead. The state demographer was on-hand to assist the Board in understanding population trends. These meetings were webcast and statewide teleconferenced. The following week saw numerous informal mapping work sessions in groups of 2 or fewer Board members often working with staff. These were conducted at the Board's offices and were open to the public to attend and observe.

The full Board met in a statewide webcast and teleconferenced series of meetings on September 7, 8 and 9 in Anchorage. The Board took public testimony at the start and end of each meeting. On September 9, in compliance with its constitutional mandate and within the thirty-day window, the Board adopted two proposed redistricting plans, titled Board Composite v.1 and Board Composite v.2. Following the advice of legal counsel, the Board did not load racial data into the mapping software, nor did it consider racial composition while crafting v.1, v.2 or subsequent plans, instead focusing on the four Alaska Constitutional criteria of compactness, contiguity, socio-economic integration and drawing districts as near as practicable to an equal population of 18,335.

Board members worked individually and collaboratively the following week to refine and improve on v.1 and v.2. Office sessions were open to the public. In a statewide webcast and teleconferenced public hearing on September 17, the Board took two hours of public testimony from 40+ individuals and then moved to replace v.1 and v.2 with refined versions labeled Board v.3 and Board v.4.

The Board then received presentations from five third-party groups who each offered a unique proposed redistricting plan. After a weekend to consider the various plans, on Monday, September 20 the Board took public testimony and then proceeded to adopt four of the five

presented plans for inclusion in public hearings statewide . The four adopted proposed plans were from the following organization: Coalition of Doyon, Tanana Chiefs Conference, Fairbanks Native Association, Sealaska, and Ahtna; AFFER (Alaskans for Fair and Equitable Redistricting), AFFR (Alaskans For Fair Redistricting), and Senate Minority (the Alaska Senate Minority Caucus). Video recordings of hearings were linked from the Board website.

All six proposed plans were posted on the Board's website, <u>www.akredistrict.org</u>, and converted into interactive Google Map products allowing users to dynamically scale each map and toggle on/off underlying satellite or topographic layers. Each district may be individually selected to open an overlay with district number, population count and deviation percentages. A multi-plan interactive Google Map was created which allows users to overlay the boundaries of all six adopted plans over each other to quickly detect areas of consensus and divergence between any combination of plans. The various Google Map plans accumulated over 15,000 views by website users.

Within days, Board staff posted nearly 300 hi-res PDF maps of each plans' individual districts, regions and statewide maps which have subsequently been downloaded thousands of times.

Public Hearings

Board members and staff then embarked on an aggressive public hearing campaign with an emphasis first on outlying communities in hopes of avoiding the worst weather challenges which would become more likely as winter approached.

The following itinerary was implemented. Staff worked to advertise public hearings in local newspapers and regional radio stations for several days in advance of each meeting.

Juneau Haines Sitka Valdez	September 27 September 28 September 29 September 30	5:30pm – 7:30pm 2:30pm – 4:00pm 3:30pm – 5:30pm 4:30pm – 6:30pm
Meet the Maps Virtual	October 1	12:30pm – 1:30pm
Anchorage	October 4	4:30pm – 6:30pm
Kotzebue	October 5	3:00pm – 5:00pm
Ketchikan	October 6	4:30pm – 6:30pm
Petersburg	October 7	12:30pm – 2:00pm
Wrangell	October 7	4:30pm – 6:30pm
Nome	October 11	12:30pm – 2:30pm
Seward	October 12	4:00pm – 6:00pm
Homer	October 13	5:00pm – 7:00pm
Kenai	October 14	5:30pm – 7:30pm
Kodiak	October 15	12:00pm – 2:00pm

Meet the Maps Virtual	October 15	6:00pm – 7:00pm
Delta Junction	October 18	12:00pm – 2:00pm
Fairbanks	October 18	5:30pm – 7:30pm
Bethel	October 19	4:00pm – 6:00pm
Statewide Call In	October 20	10:00am – 4:00pm
Dillingham	October 21	12:00pm- 2:00pm
Unalaska	October 22	Canceled due to Weather
Palmer	October 25	6:00pm – 8:00pm
Wasilla	October 26	6:00pm – 8:00pm
Anchorage	October 27	5:00pm – 7:00pm
Utqiagvik	October 28	4:30pm – 6:30pm
Statewide Call In	October 30	10:00am – 4:00pm
Cordova	November 1, 2021	4:00pm – 6:00pm

Aware that some members of the public could be uncomfortable attending in-person events because of COVID concerns, or unable due to scheduling conflicts, the Board offered two statewide all-day dial-in teleconference options on Wednesday, October 20th, from 10am – 4pm and again on Saturday, October 30 from 10am – 4pm. These hearings were solely dedicated to taking public testimony. While any caller could participate at any time, to facilitate community conversations, the Board assigned specific call-in hours for each region of the state.

To facilitate engagement and understanding of the proposed maps the public were offered two "Meet the Maps" statewide zoom webinars, October 1 mid-day from 12:30 – 1:30pm and the second the evening of October 15 from 6:00pm – 7:00pm. Staff walked through all six proposed plans and demonstrated interactive map tools, hi-res PDF download options and public comment submission pages. Questions were encouraged.

Adopting a Plan

After the public hearing concluded on November 1, the Board met in Anchorage to take statewide public testimony, receive a Voting Rights Act compliance report from experts and deliberate on all they had learned during the weeks of public hearings. Counsel advised the Board that, in the opinion of their VRA consultants, the Board's districts 37, 38, 39 and 40 were in compliance with the Federal Voting Rights act and would preserve the ability of Alaska Native voters to elect candidates of their choice. The Board was further advised that while diverse minority populations exceeded 50% in some Anchorage districts, there was no available evidence to suggest that these minorities were voting as a bloc, or being opposed by a bloc of

white voters. Without these legal preconditions being met, counsel advised the Board to avoid subordinating traditional redistricting criteria to racial considerations.

The Board then recessed into an extended three-day intensive mapping work session held at the Board's offices in Anchorage. The public were welcome attend and observe and the meetings were web streamed statewide via a voice tracking virtual teleconference camera appliance which dynamically stitches together video panes of speaking participants.

The 'herculean' task came into focus as Board members wrestled with competing Constitutional mandates of compactness, contiguity, relative socio-economic integration while keeping an eye on population deviations. Learning from past court guidance, the Board did not adopt a fixed target deviation percentage, but instead engaged in a fluid debate comparing more tight deviations which came at a cost to compactness, with less rigid population allowances permitting creating greater compactness and socio-economic integration.

Alaska's vast geography and isolated communities presented the same challenges previous boards had encountered. Cordova, Valdez and Kodiak, which are geographically distant and loosely economically associated with their surrounding areas presented dilemma upon dilemma.

Robust conversation eventually led to a least-worst compromise placing Cordova with Kodiak, Valdez with the Matsu, as it has been since the 2013 plan, and the City of Seward with Kodiak. Public testimony in Seward had favored an association with Kodiak as both communities pursue "outward facing" deep sea ground fisheries. Koniag, the Alaska Native Corporation for Kodiak had also suggested and supported this association. While these choices gave the Board pause, in the final analysis they represented the most socio-economically integrated possibility which also respected long-standing socio-economic relationships in other portions of the state and resulted in modest population deviations.

By mid-day Friday, November 5th informal mapping progress had been forged and the Board gaveled back into take public testimony in-person and telephonically statewide. The meeting was web streamed and teleconferenced statewide.

Late Friday, the Board adopted a consensus map labeled v7 as the Final Redistricting map subject only to error correction and cleanup which would be brought back for review the following Monday, November 8.

The Board reconvened on Monday, November 8th, approved several technical changes and took up consideration of senate district assignments and terms allocations. Public testimony was taken in-person and via statewide teleconference.

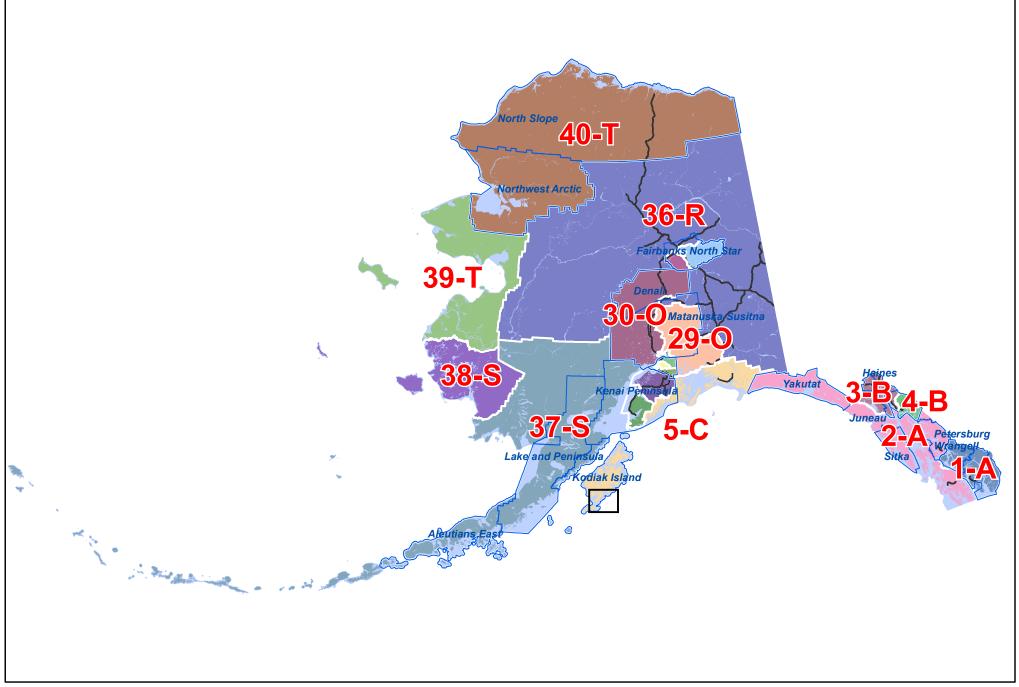
The Board then debated senate pairings. After lengthy discussion, the Board adopted new senate assignments and house seats in the final plan were renumbered to follow the traditional sequential pattern of House Seats 1 and 2 being assigned to Senate Seat A, and so on.

The Board then reviewed a purely numerical report of Senate district core constituency. No senate seat labels or geographic data were included. Members unanimously set the truncation cutoff limit at 16.3% new constituency or greater. The Board then considered setting Senate term allocations and adopted a pattern of alternating election terms for the coming decade: Seats A, C, E, G, I, K, M, O, Q, S standing for election in 2022/2026/2030 and Seats B, D, F, H, J, L, N, P, R, and T standing for election in 2024/2028/2032 in keeping with Alaska's constitutional requirement for alternating 4 year Senate terms. *See Appendix: Senate Constituency Report*

The Board met again on November 10, 2021 and adopted a final proclamation of redistricting.

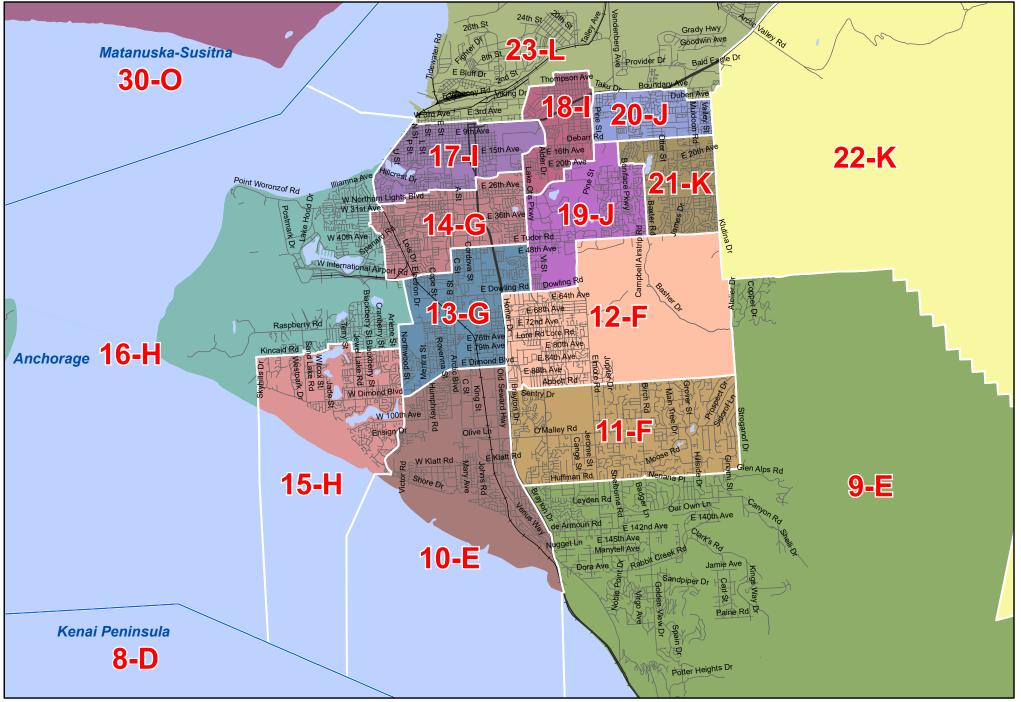


2021 Board Proclamation Statewide





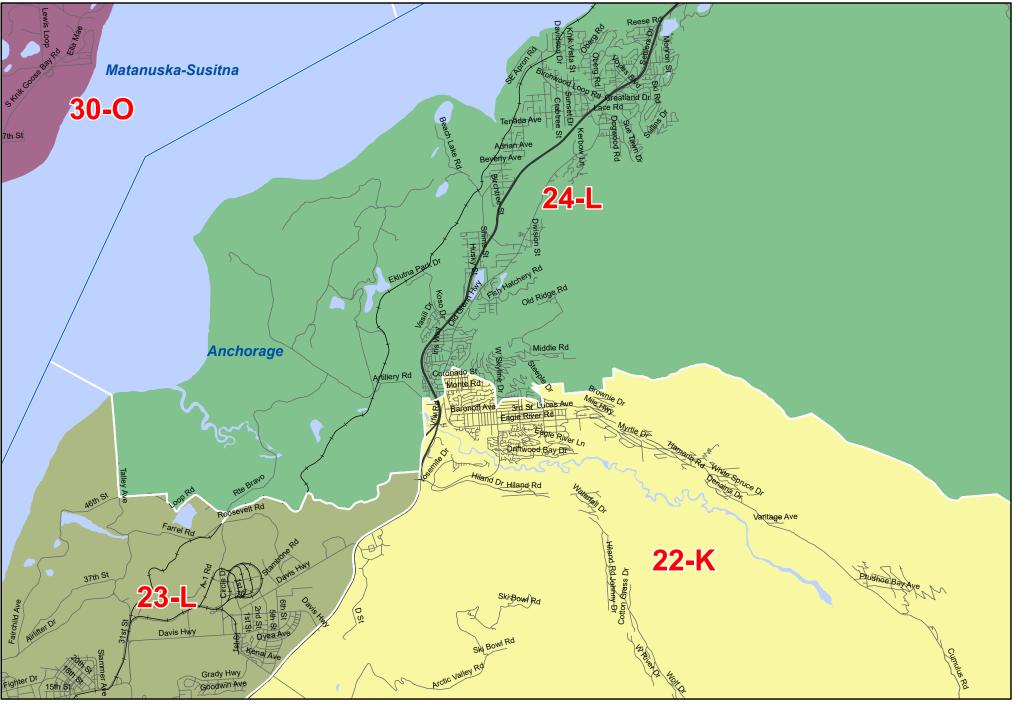
2021 Board Proclamation Anchorage Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021



Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



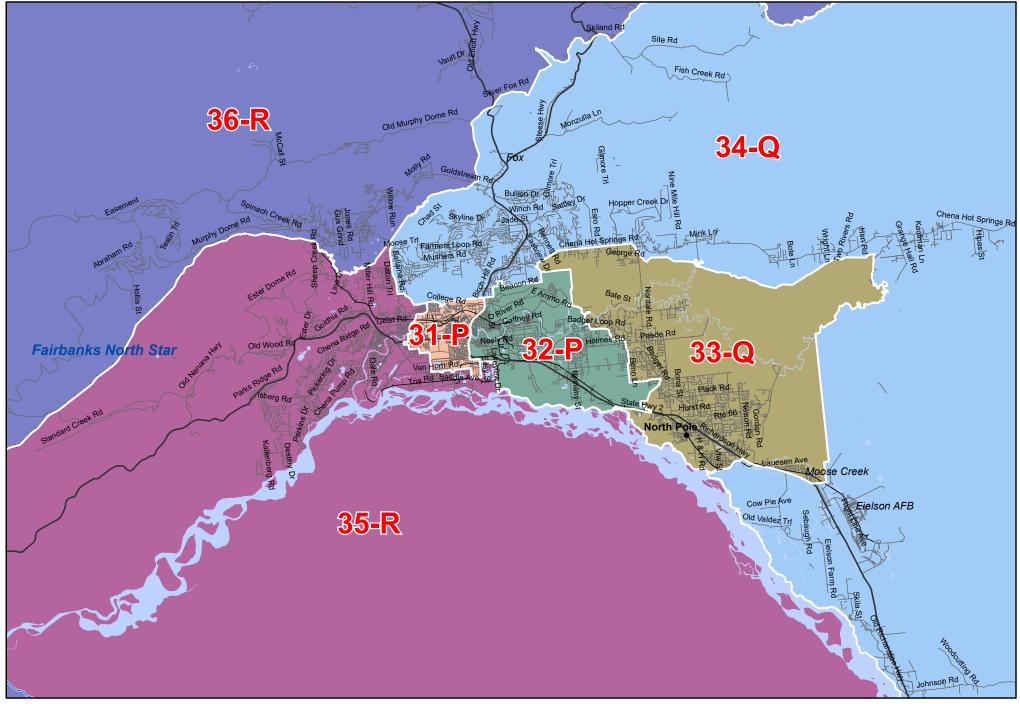
2021 Board Proclamation Eagle River Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021



Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



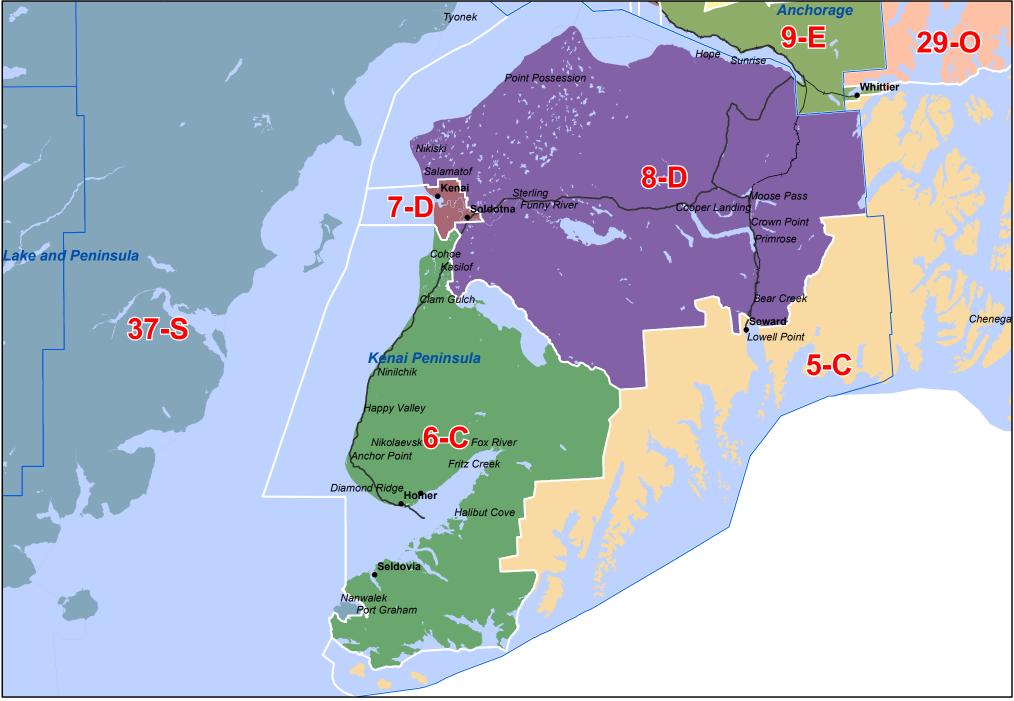
2021 Board Proclamation Fairbanks



Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



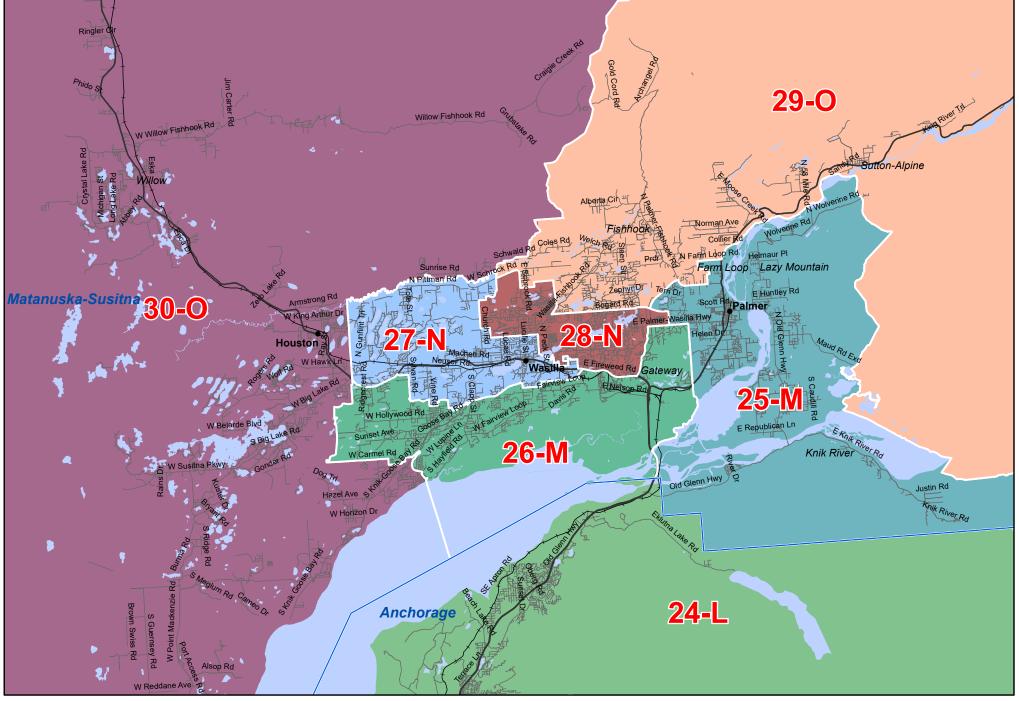
2021 Board Proclamation Kenai Peninsula



Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



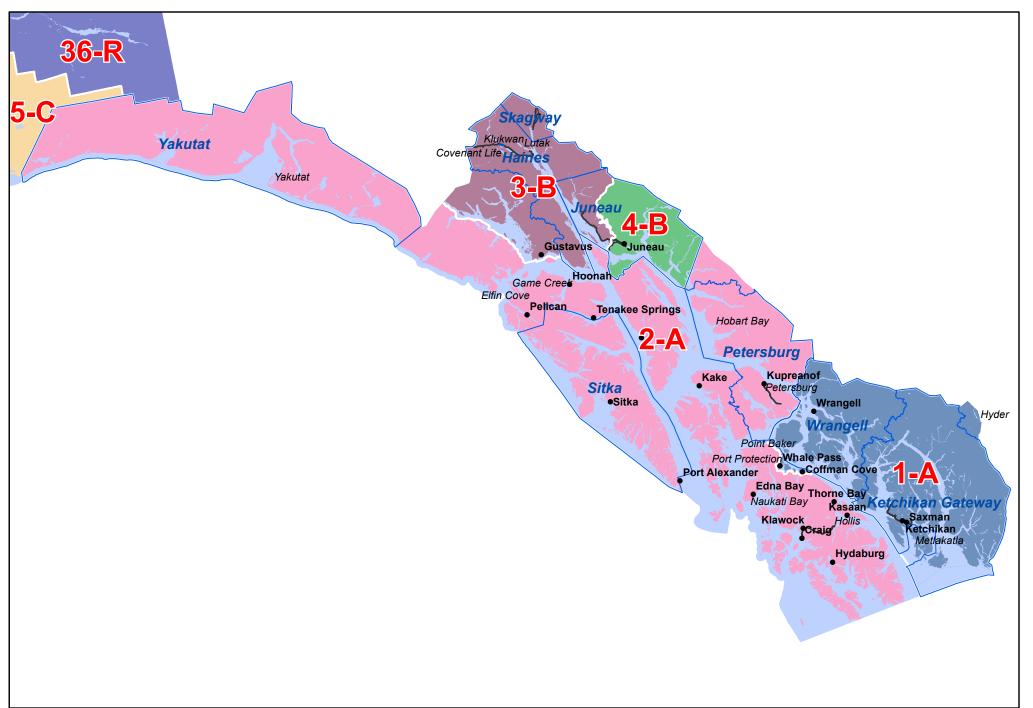
2021 Board Proclamation Mat-Su



Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



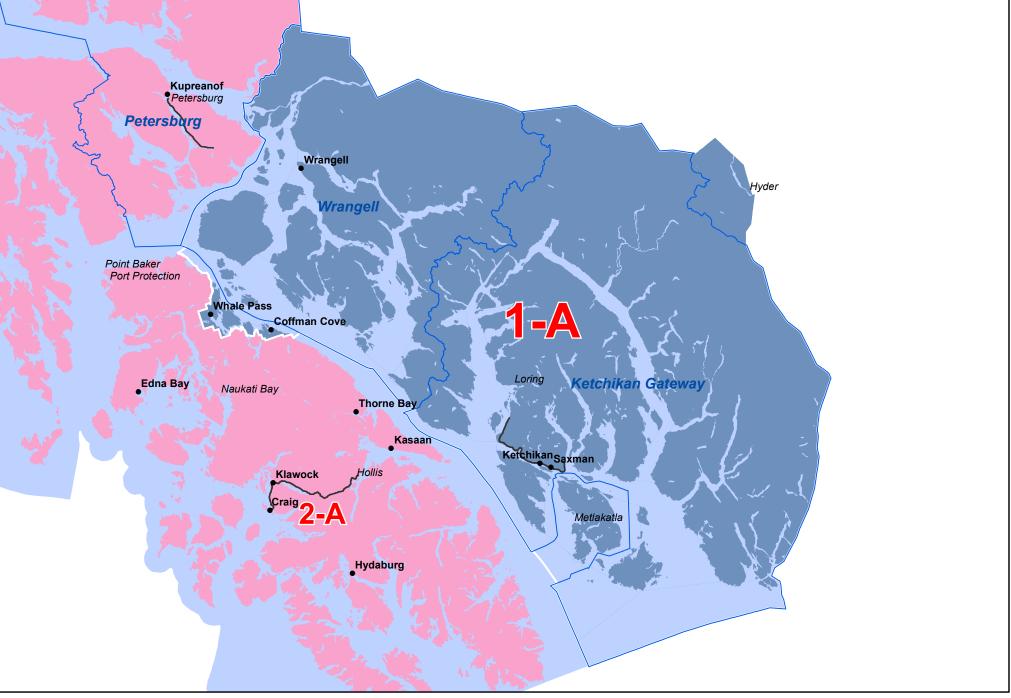
2021 Board Proclamation Southeast





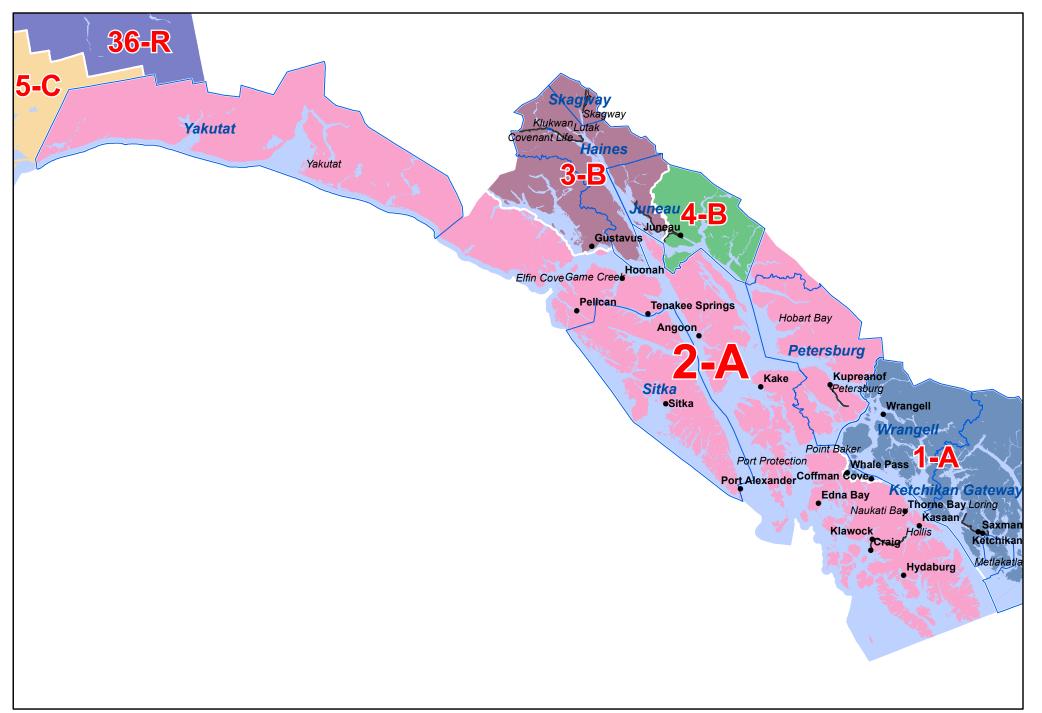
2021 Board Proclamation District 1-A

Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021



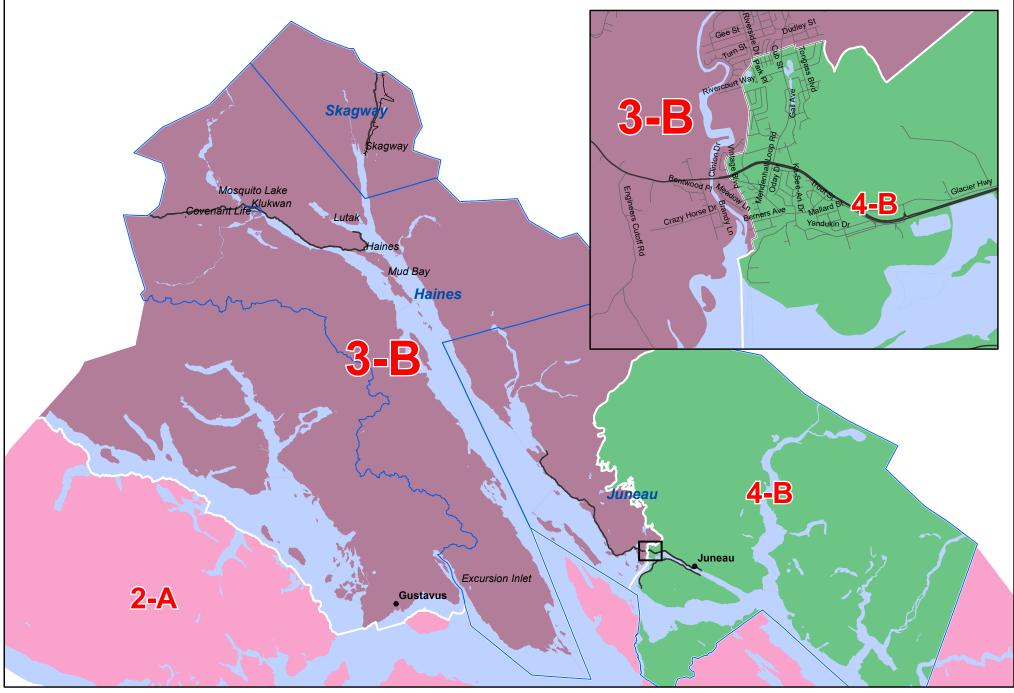


2021 Board Proclamation District 2-A





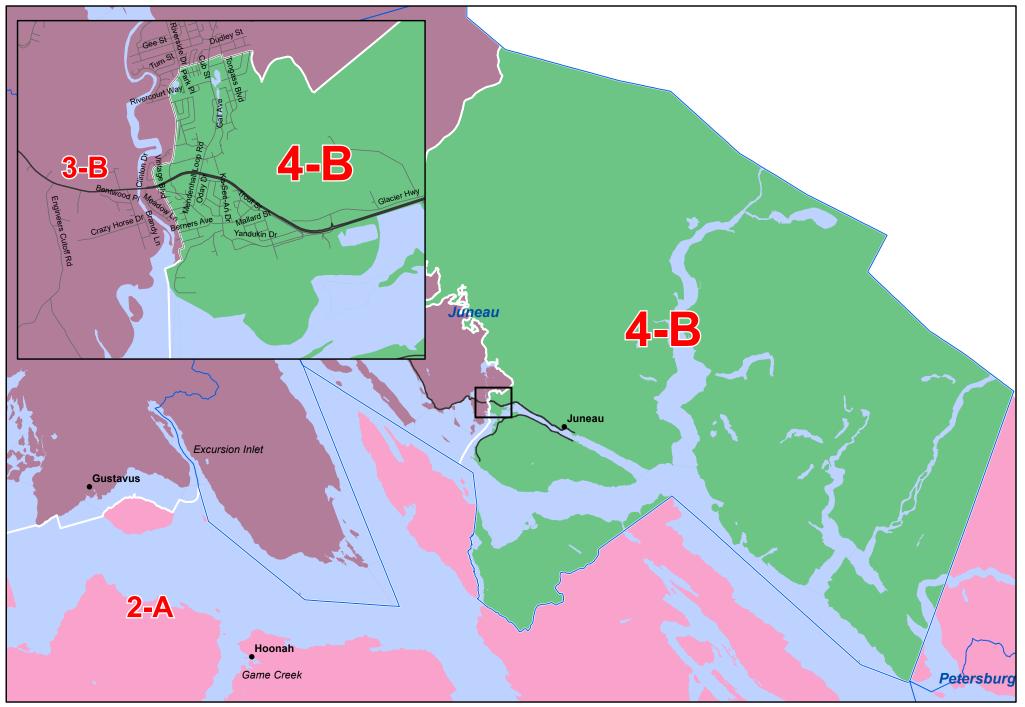
2021 Board Proclamation District 3-B



Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



2021 Board Proclamation District 4-B

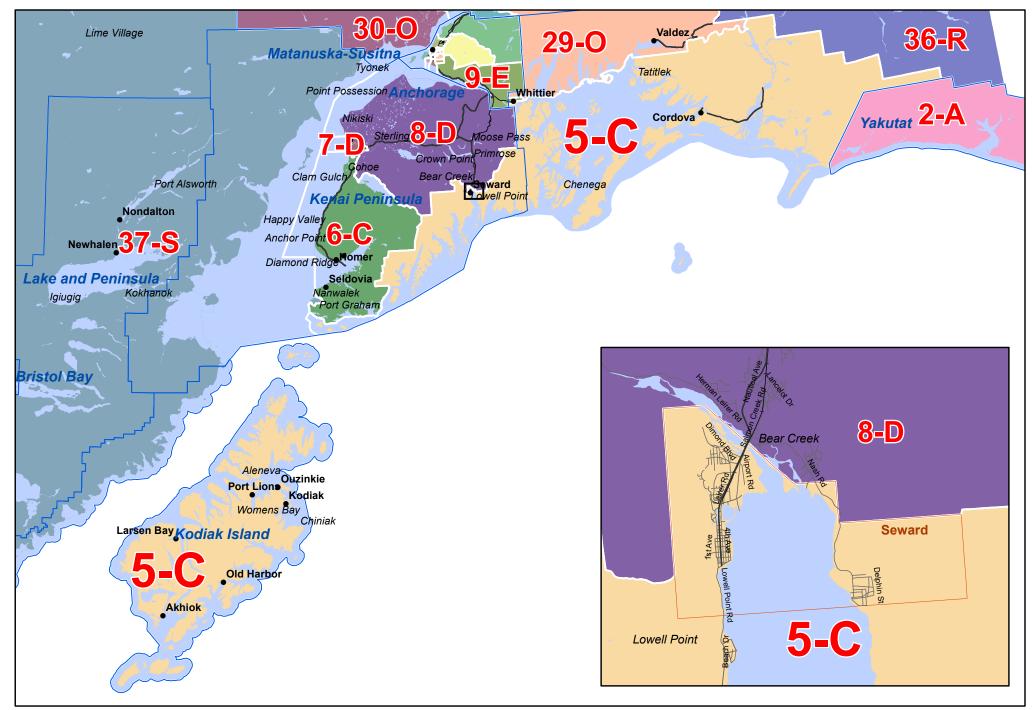


Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps

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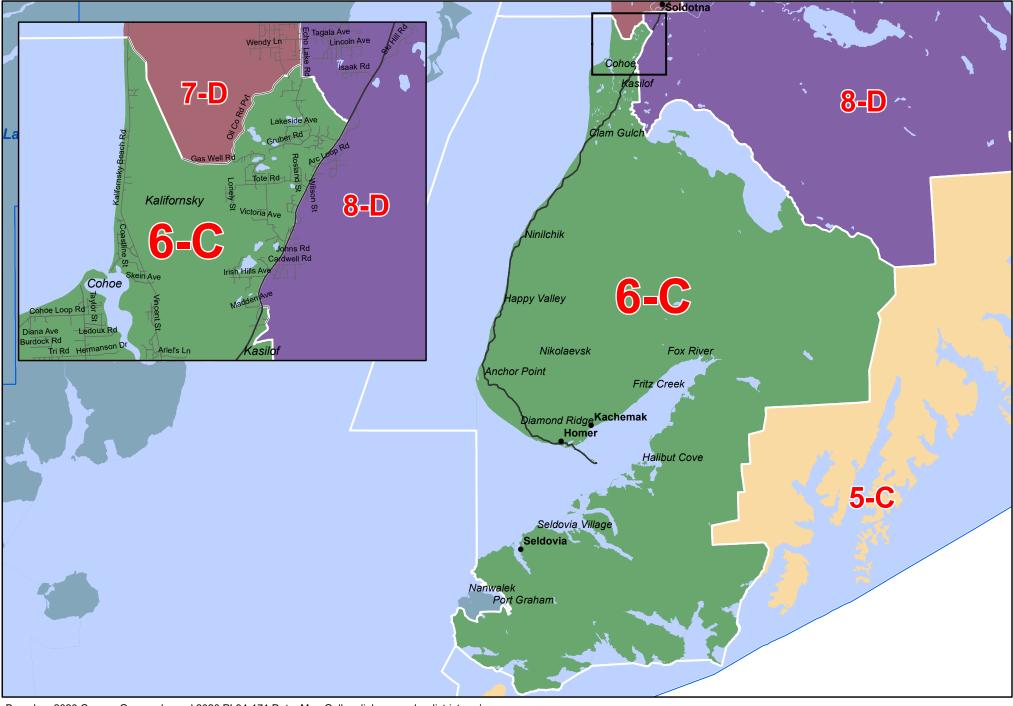
2021 Board Proclamation District 5-C



Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



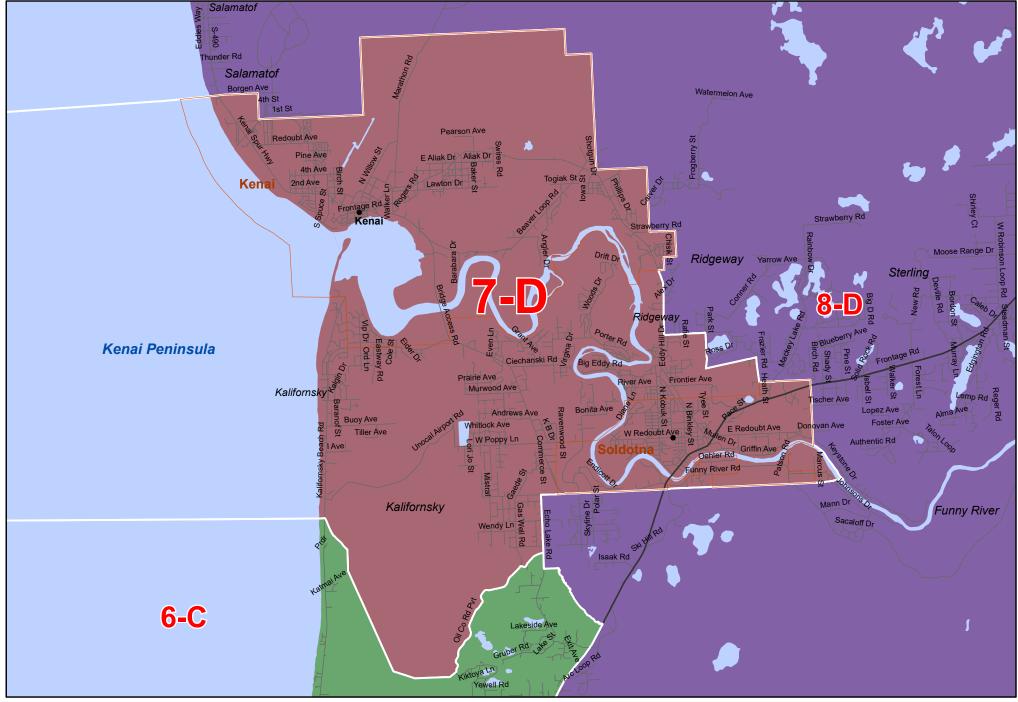
2021 Board Proclamation District 6-C



Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



2021 Board Proclamation District 7-D



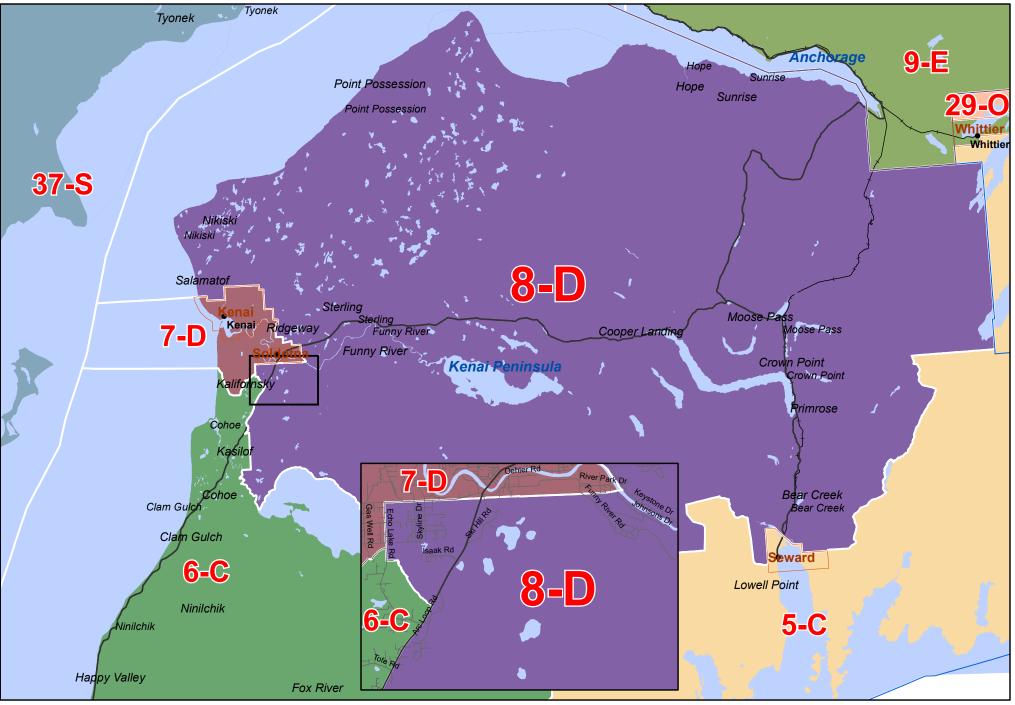
Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps

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2021 Board Proclamation District 8-D

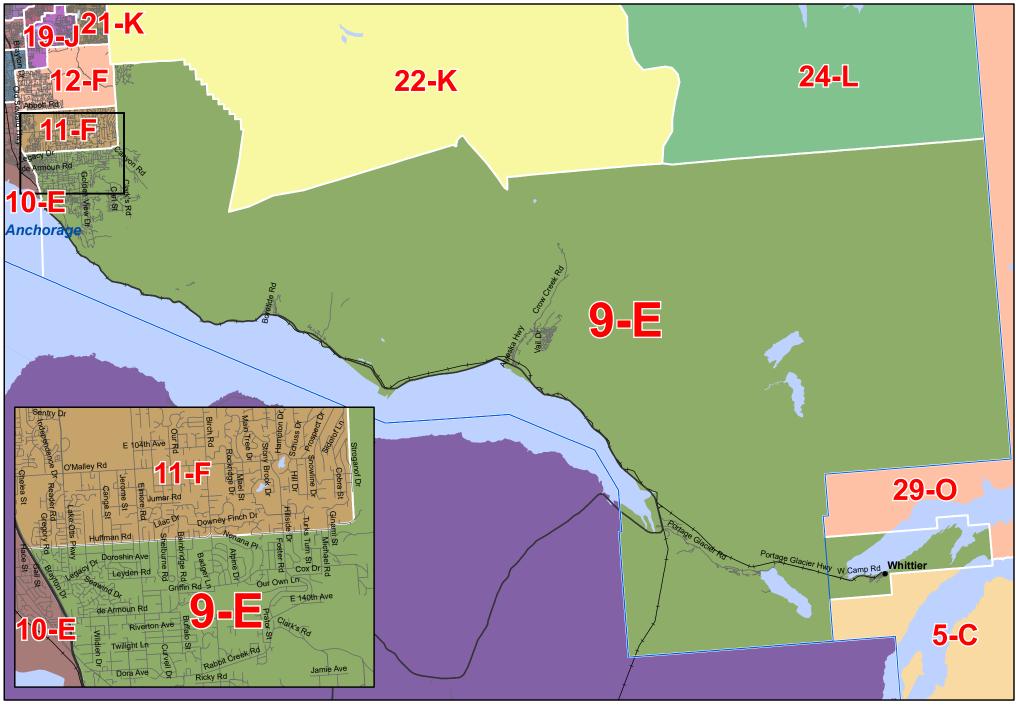
Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





2021 Board Proclamation District 9-E

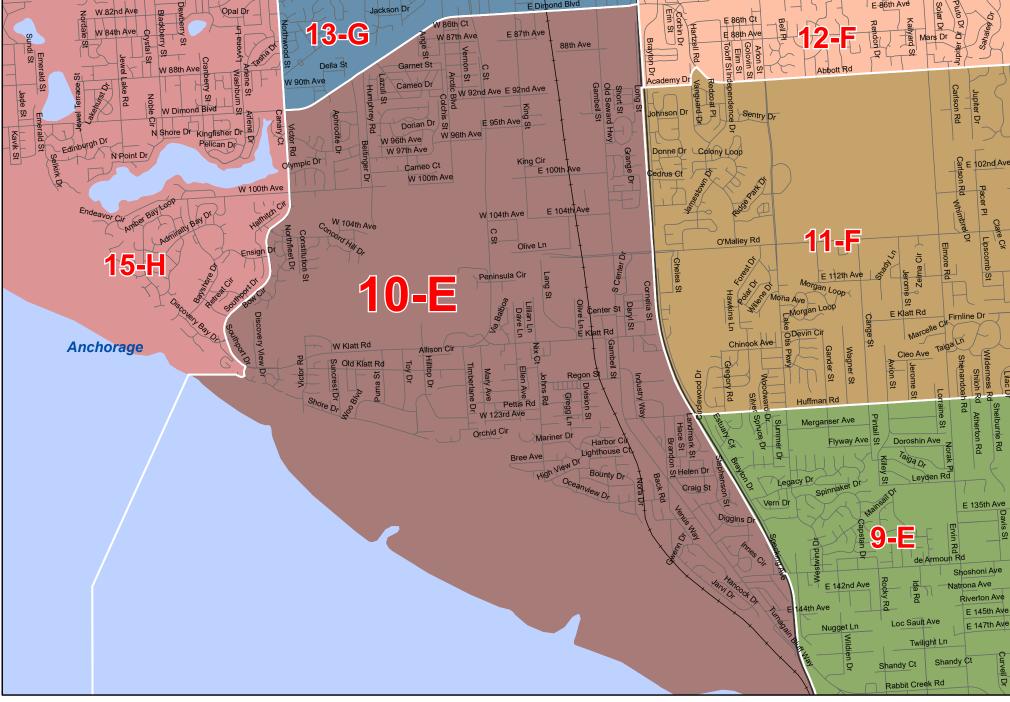
Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





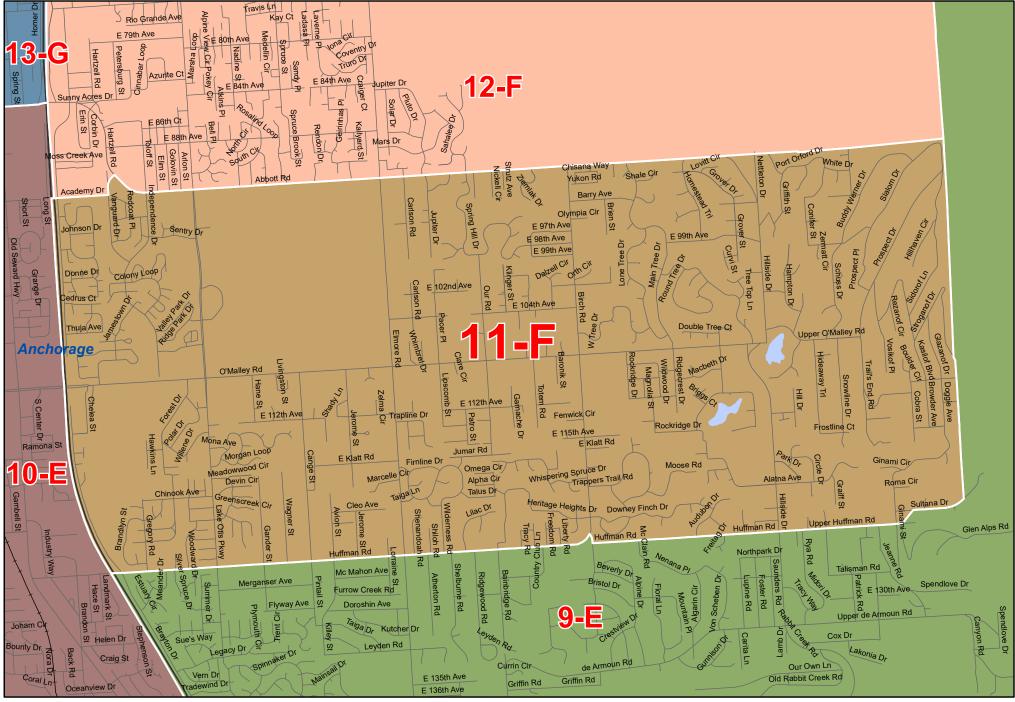
2021 Board Proclamation District 10-E

Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





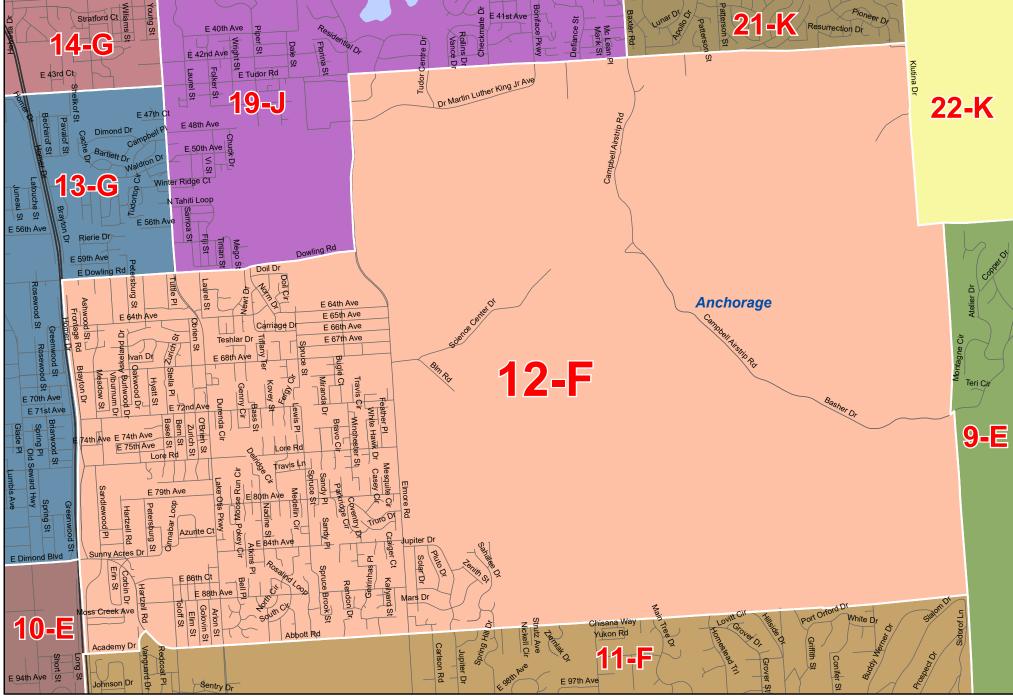
2021 Board Proclamation District 11-F



Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



2021 Board Proclamation District 12-F

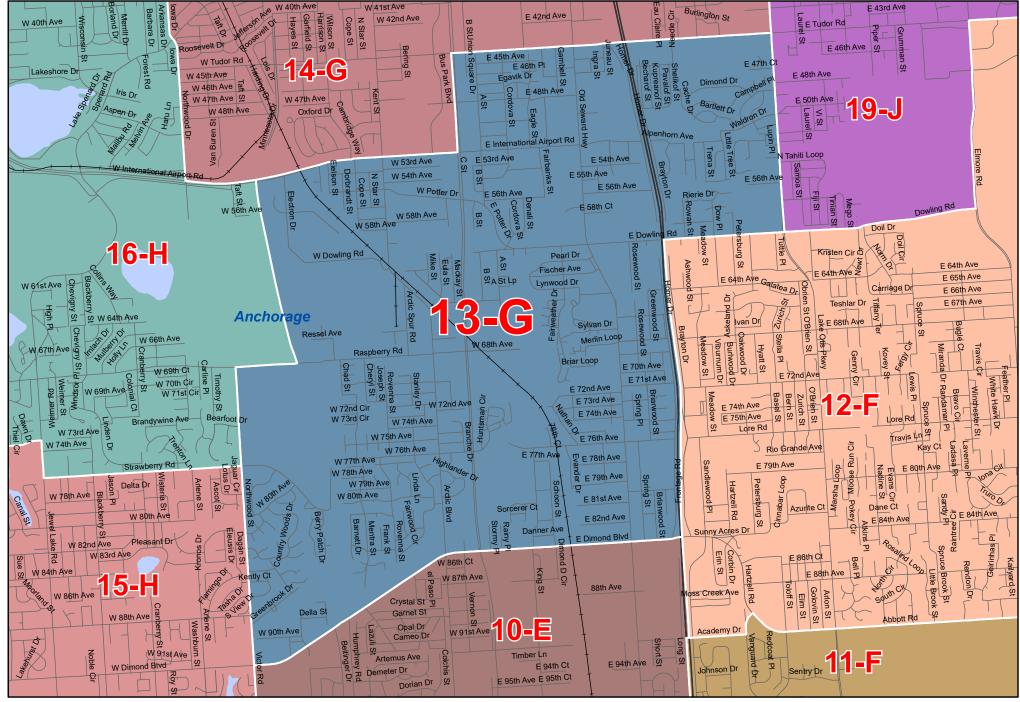


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2021 Board Proclamation District 13-G

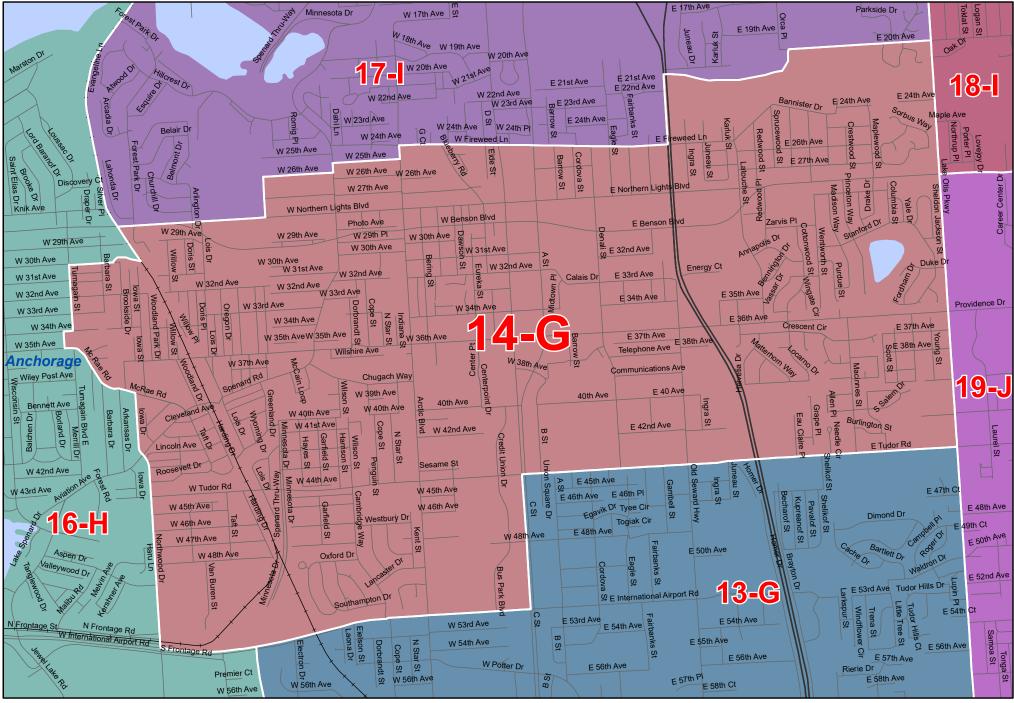
Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





2021 Board Proclamation District 14-G

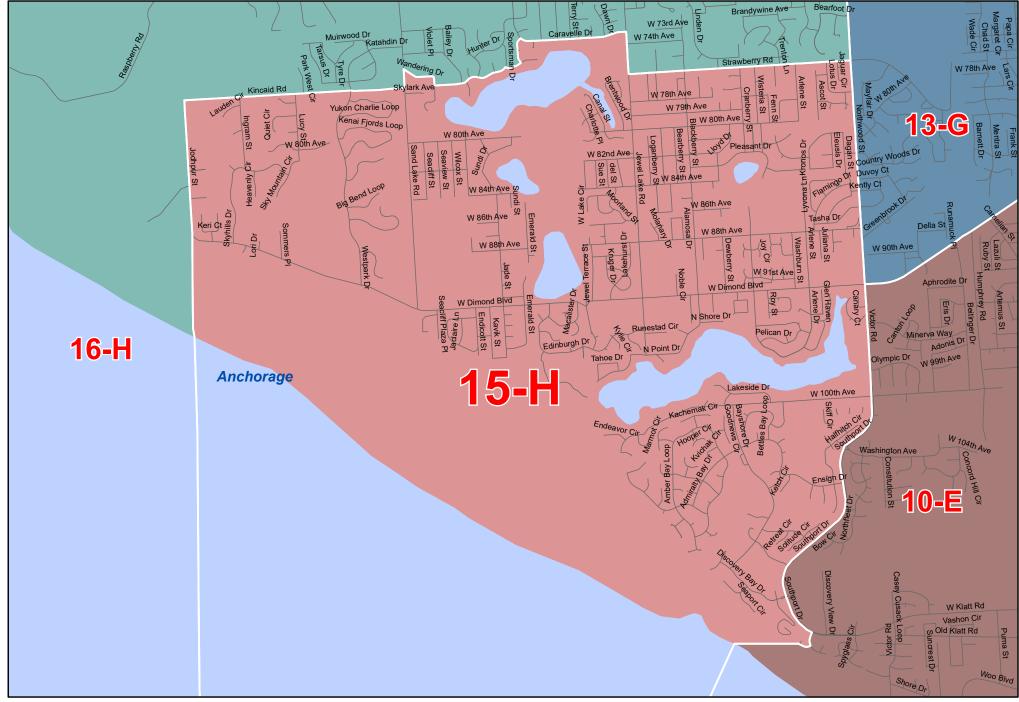
Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





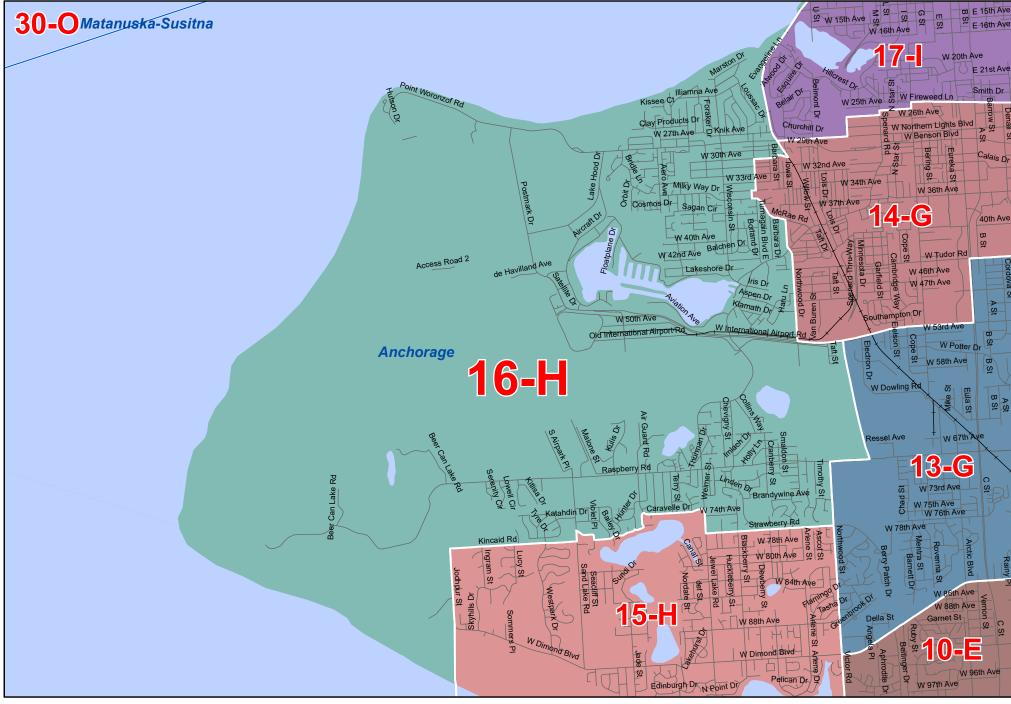
2021 Board Proclamation District 15-H

Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





2021 Board Proclamation District 16-H

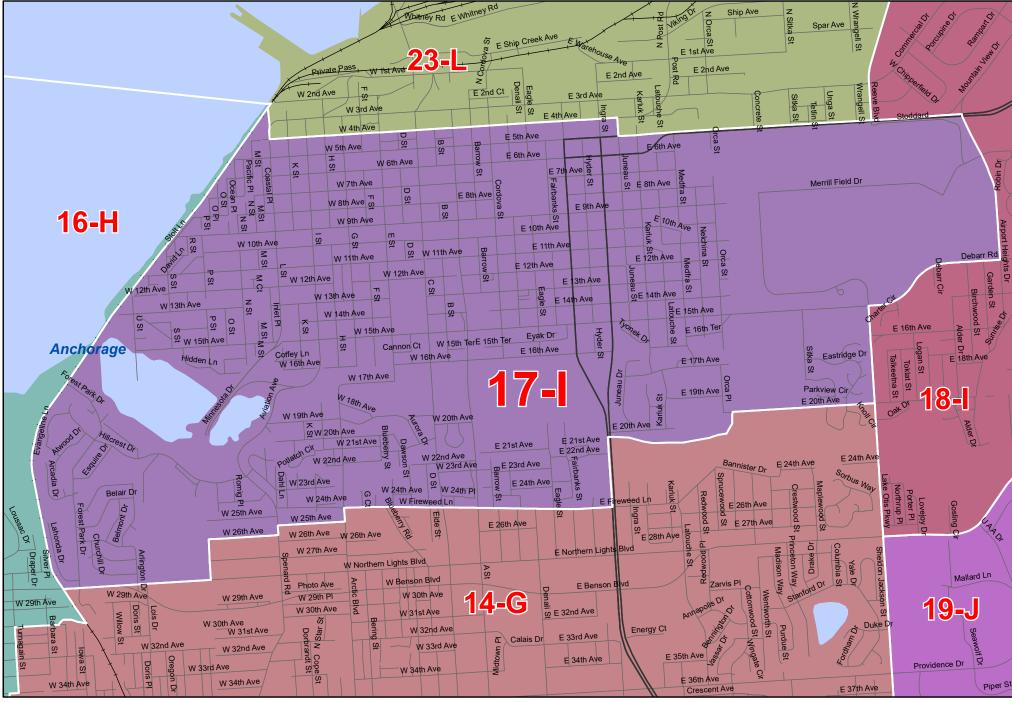


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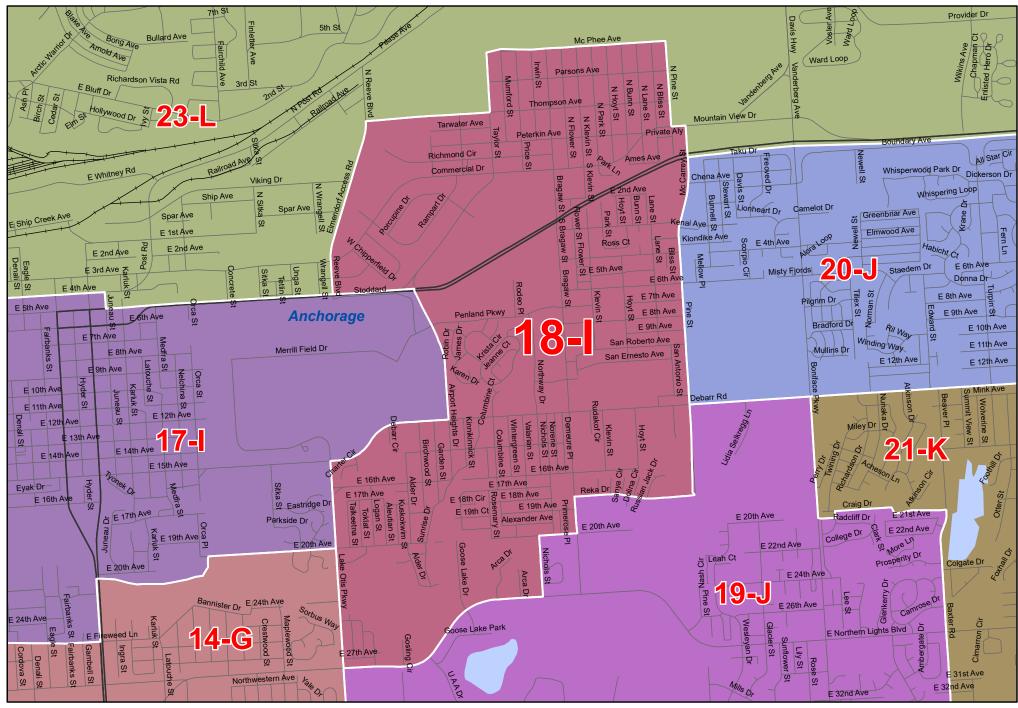
2021 Board Proclamation District 17-I

Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





2021 Board Proclamation District 18-I

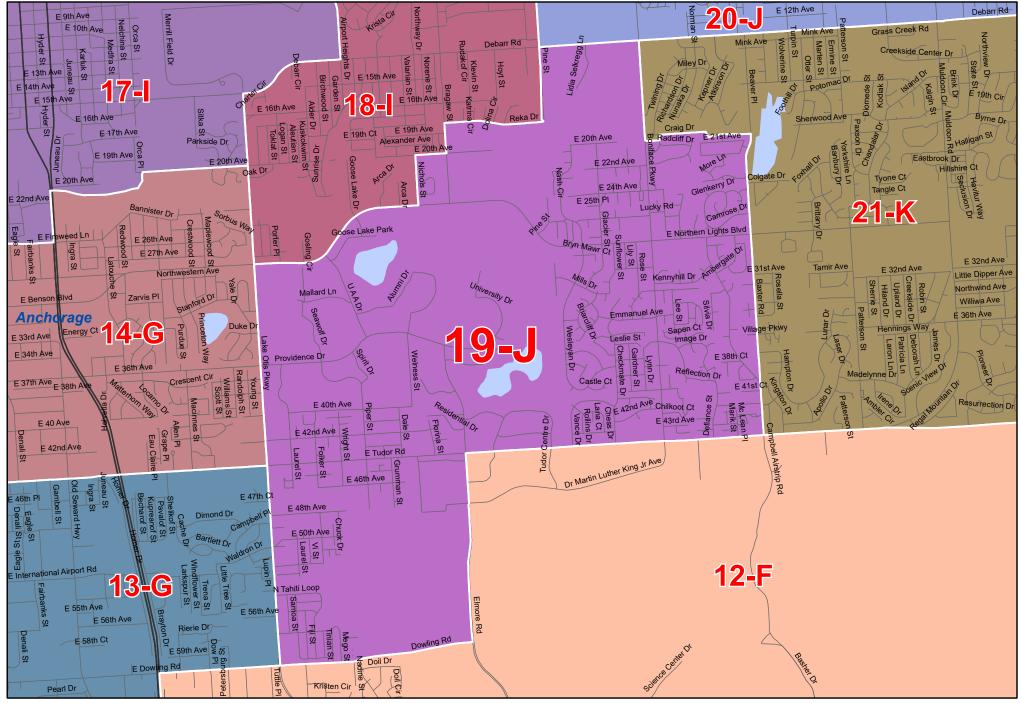


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2021 Board Proclamation District 19-J

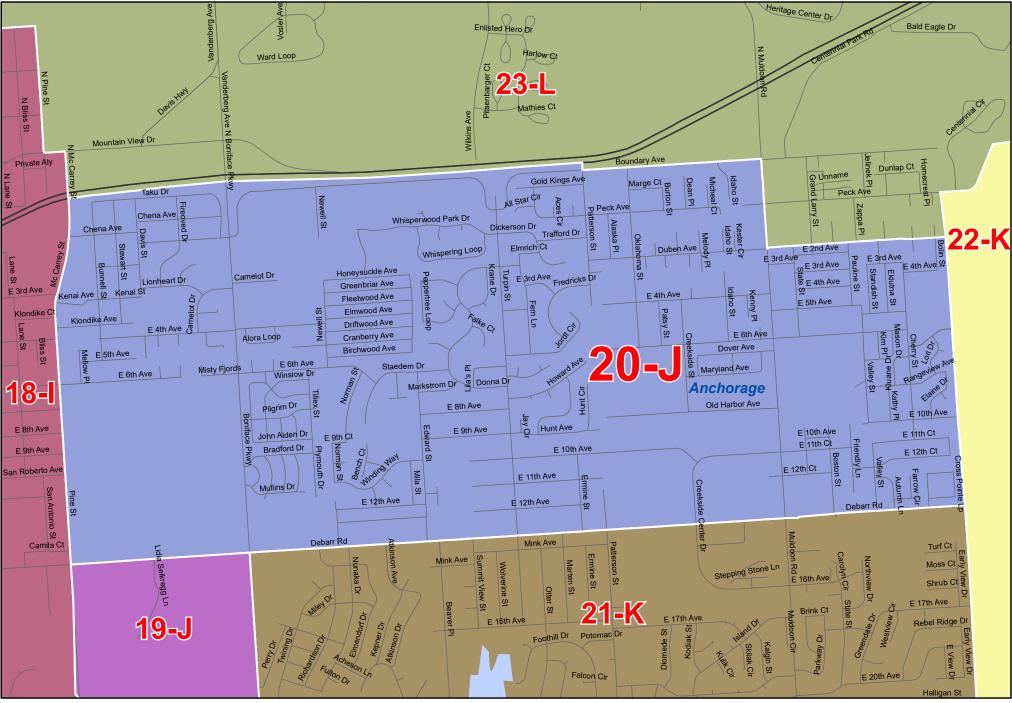
Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





2021 Board Proclamation District 20-J

Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021

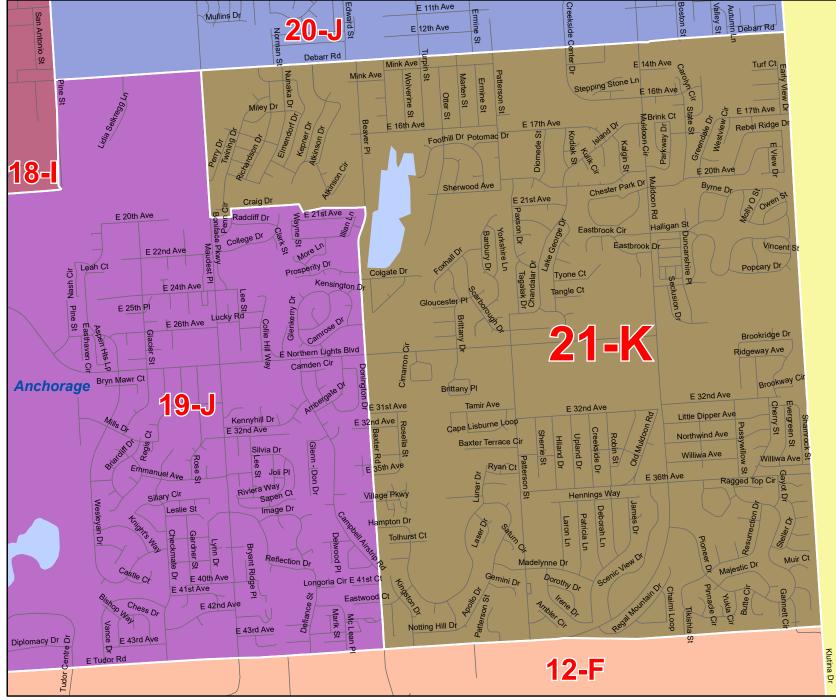


22-K



2021 Board Proclamation District 21-K

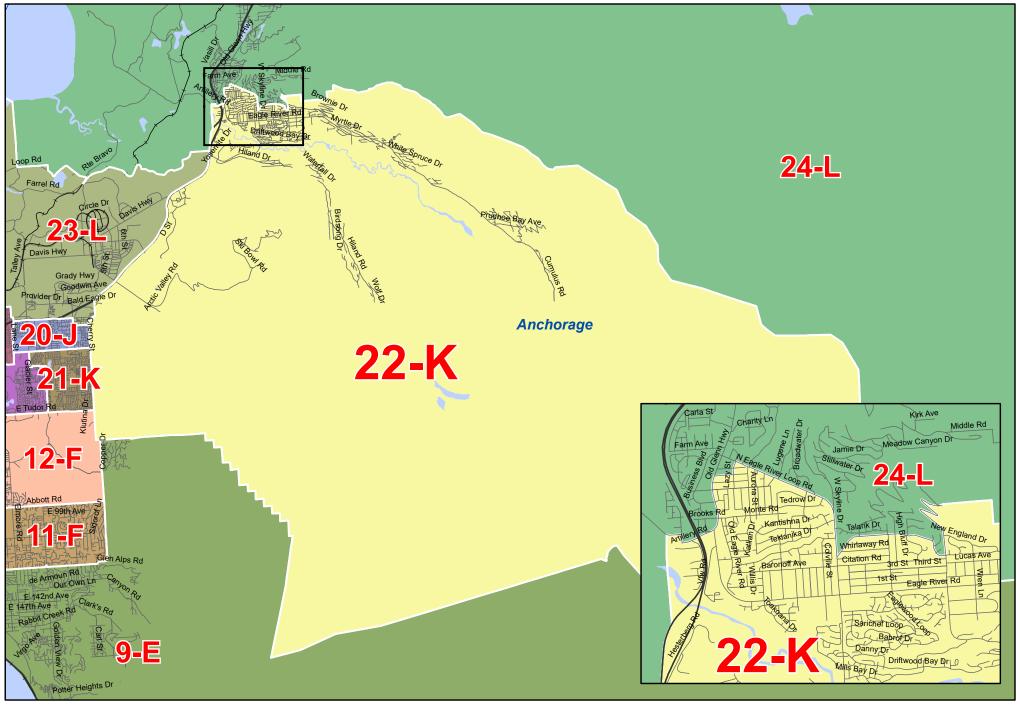
Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





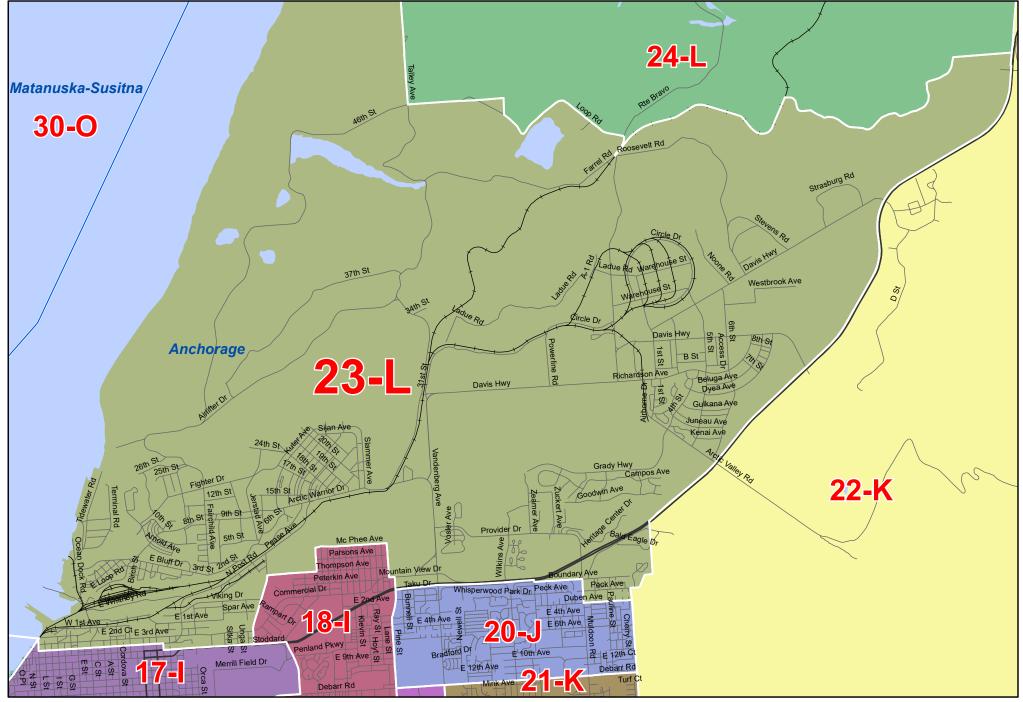
2021 Board Proclamation District 22-K

Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





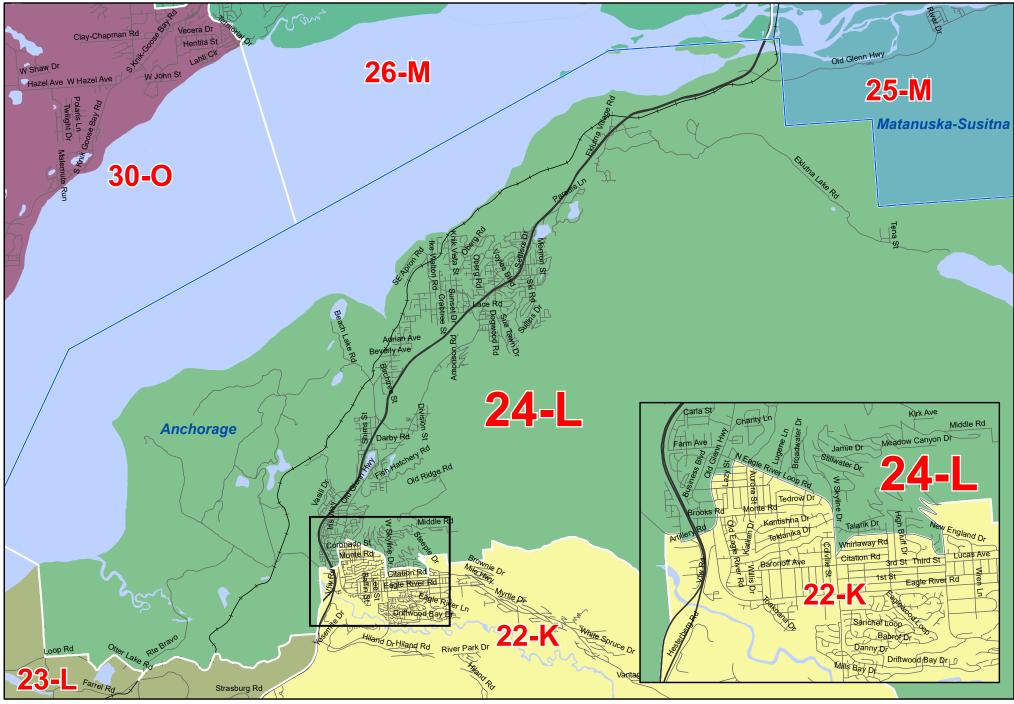
2021 Board Proclamation District 23-L



Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



2021 Board Proclamation District 24-L

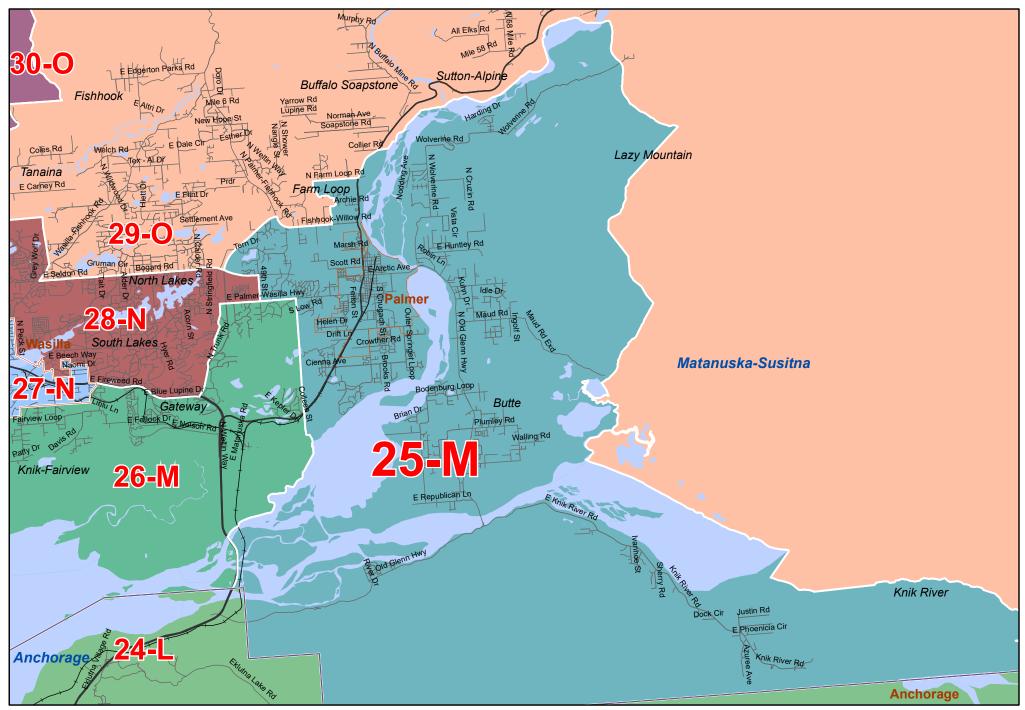


Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



2021 Board Proclamation District 25-M

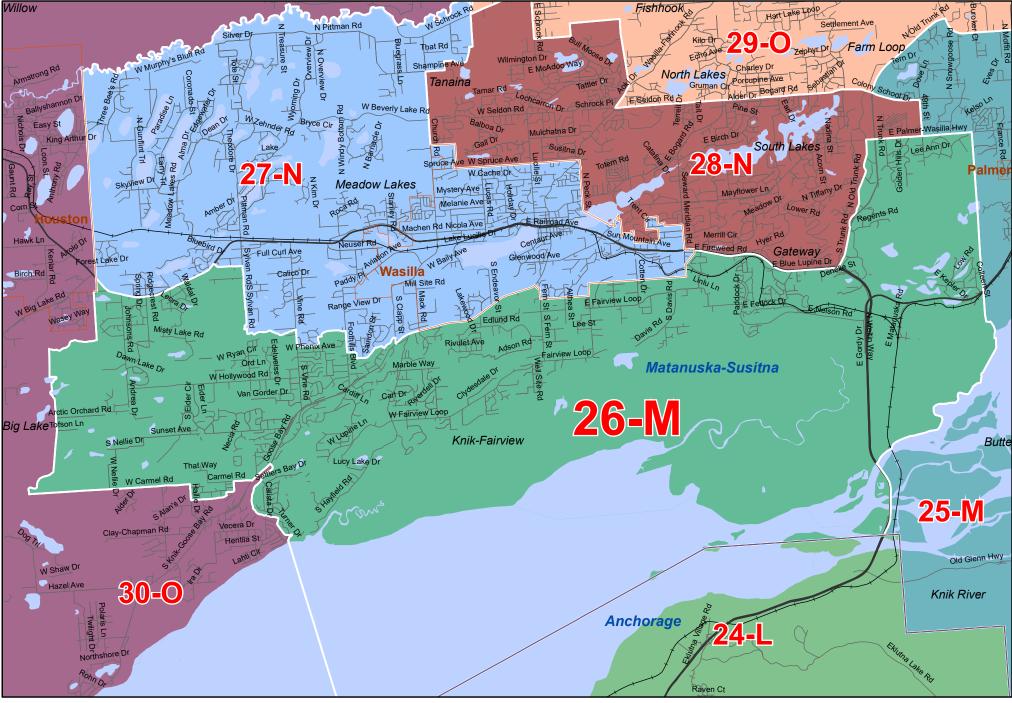
Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





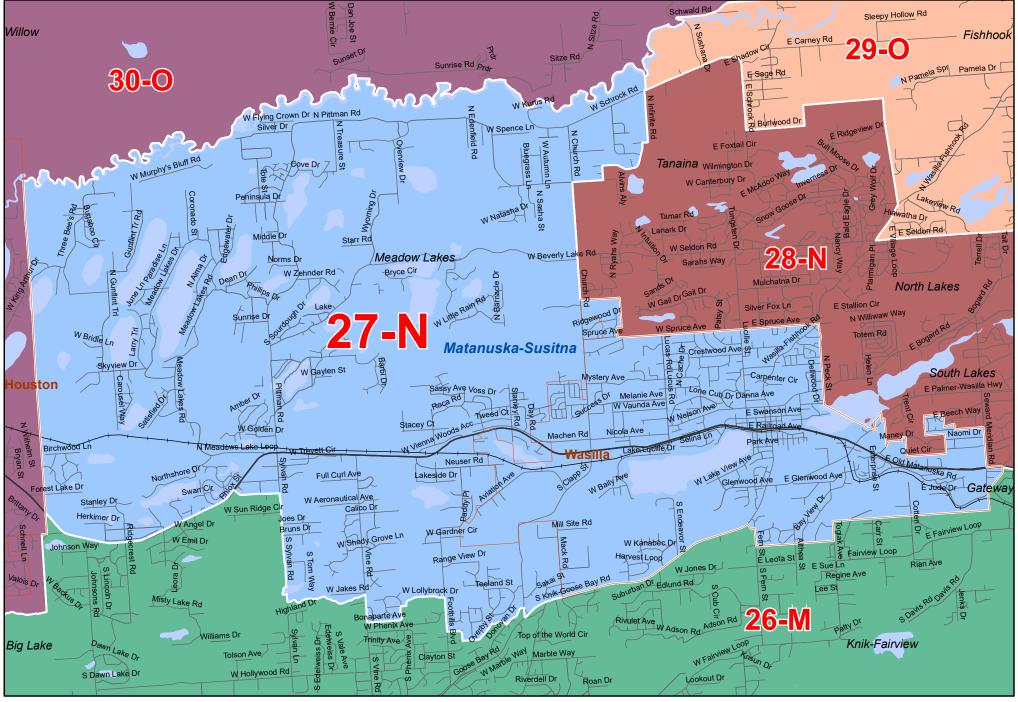
2021 Board Proclamation District 26-M

Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





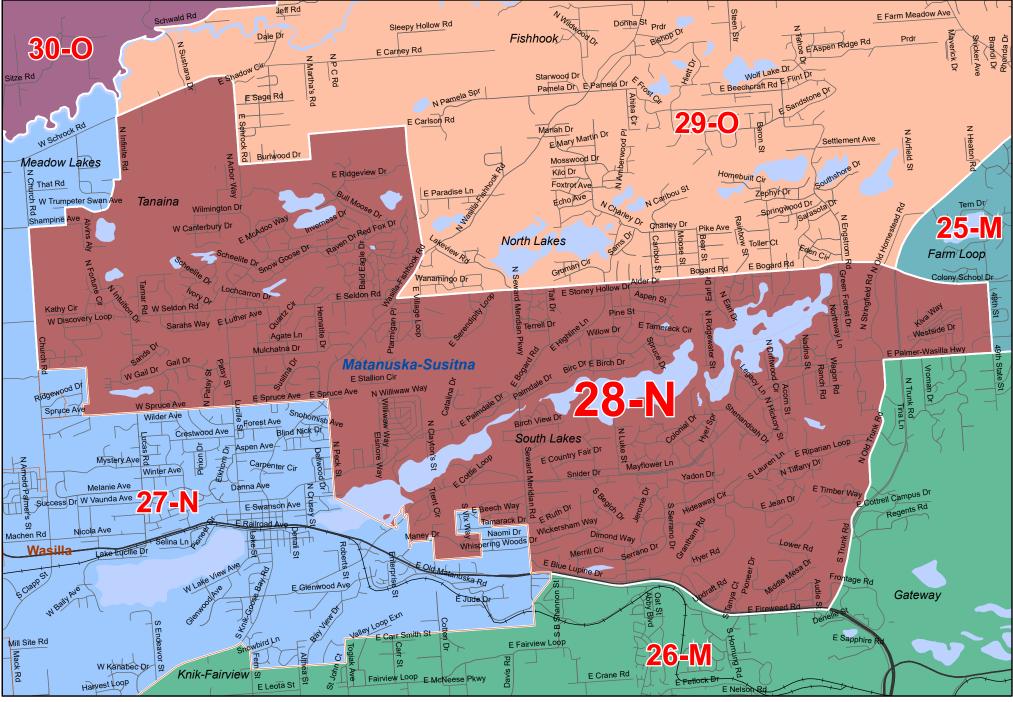
2021 Board Proclamation District 27-N



Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



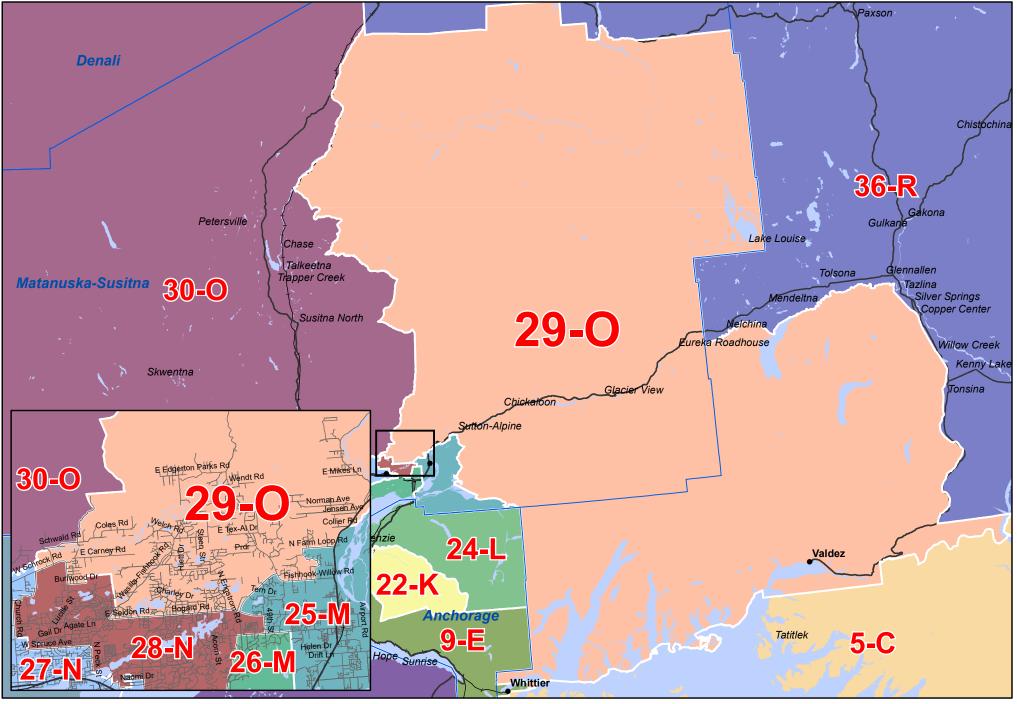
2021 Board Proclamation District 28-N



Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



2021 Board Proclamation District 29-O

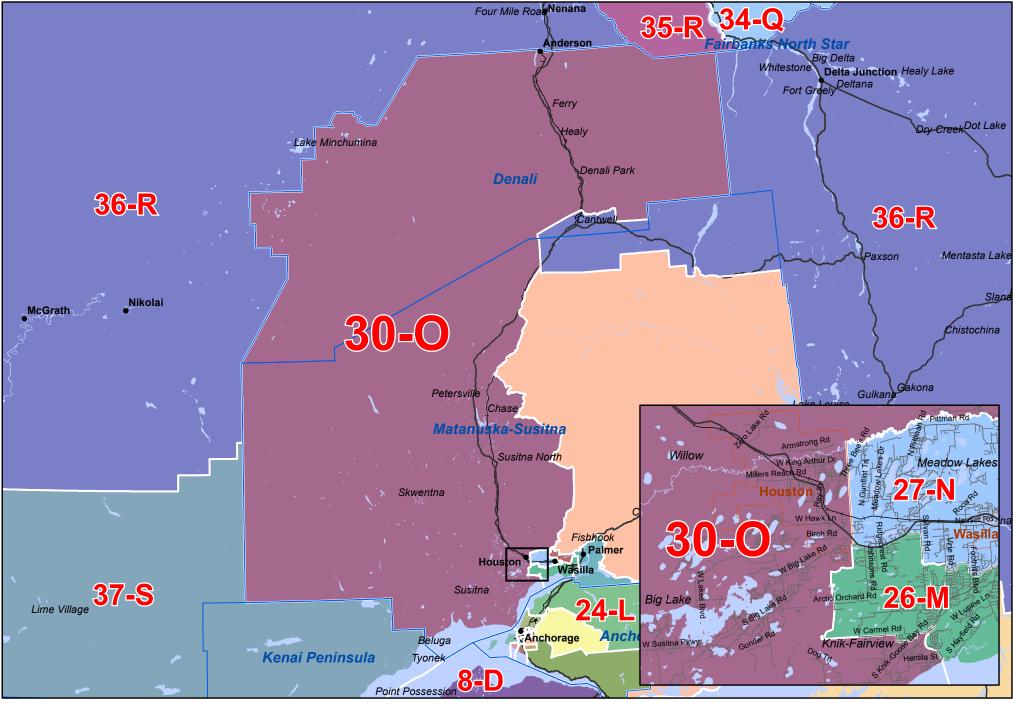


Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps





2021 Board Proclamation District 30-O

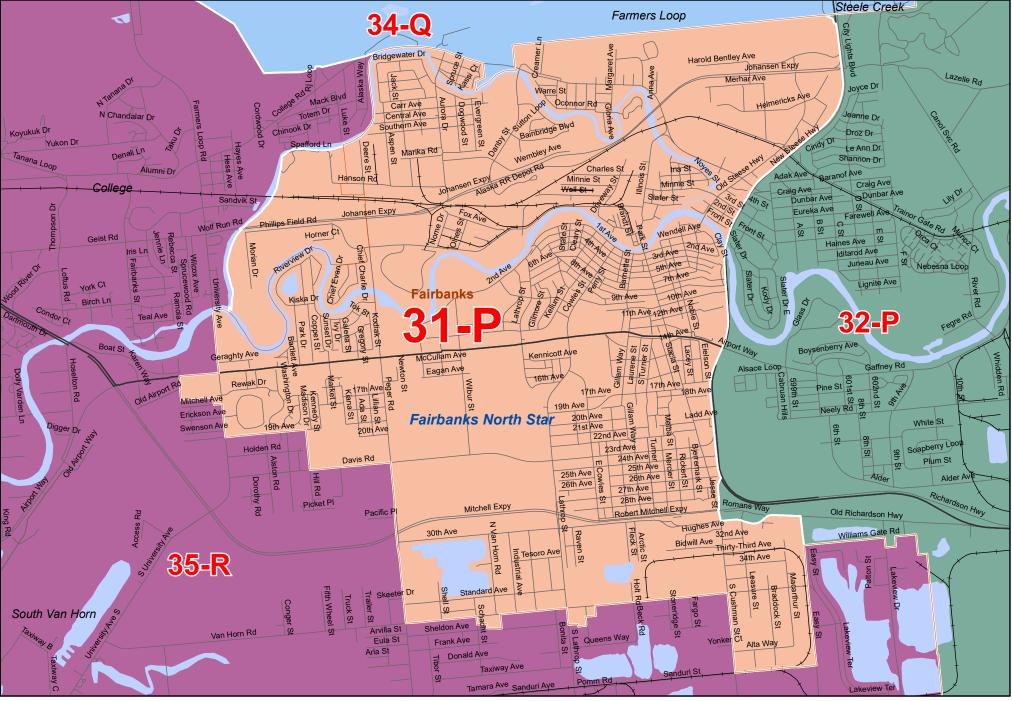


Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



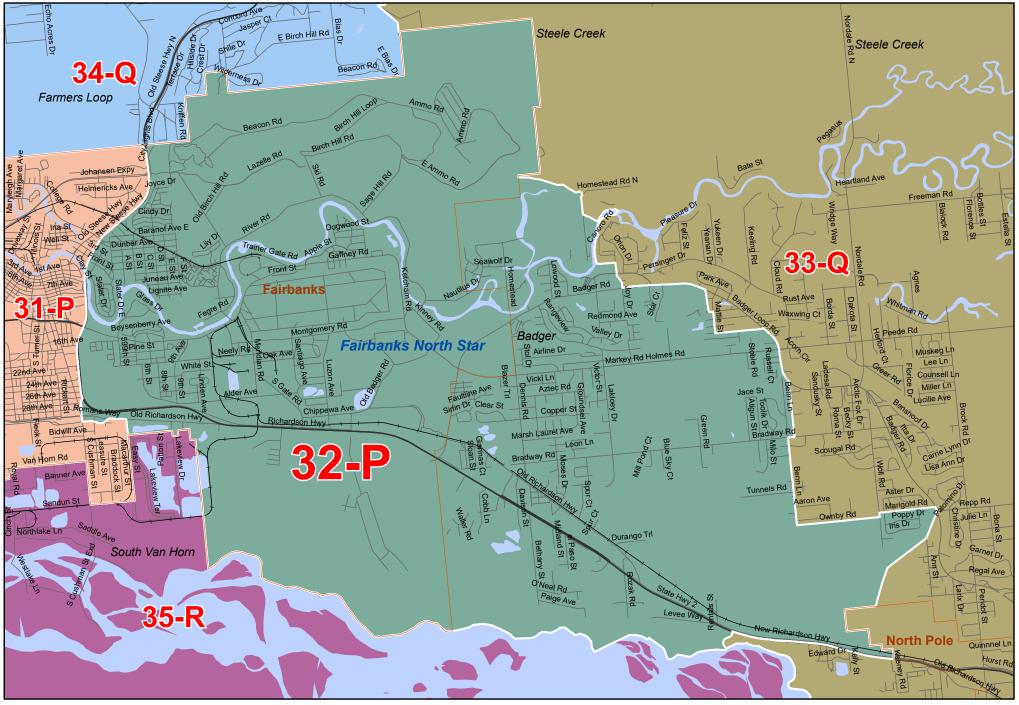
2021 Board Proclamation District 31-P

Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





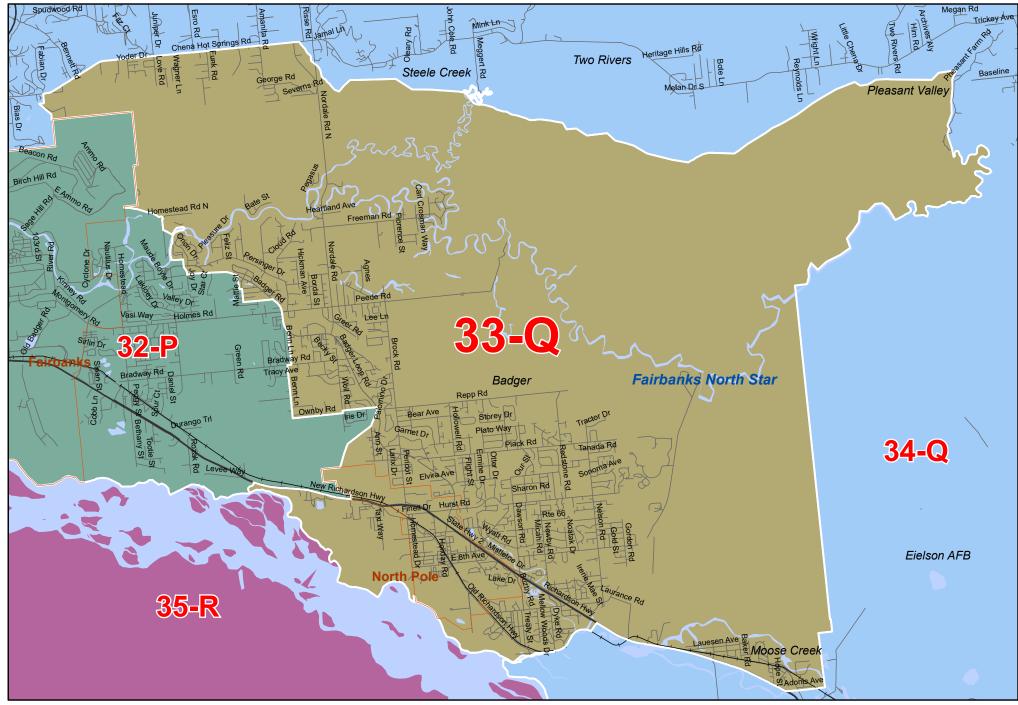
2021 Board Proclamation District 32-P



Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



2021 Board Proclamation District 33-Q

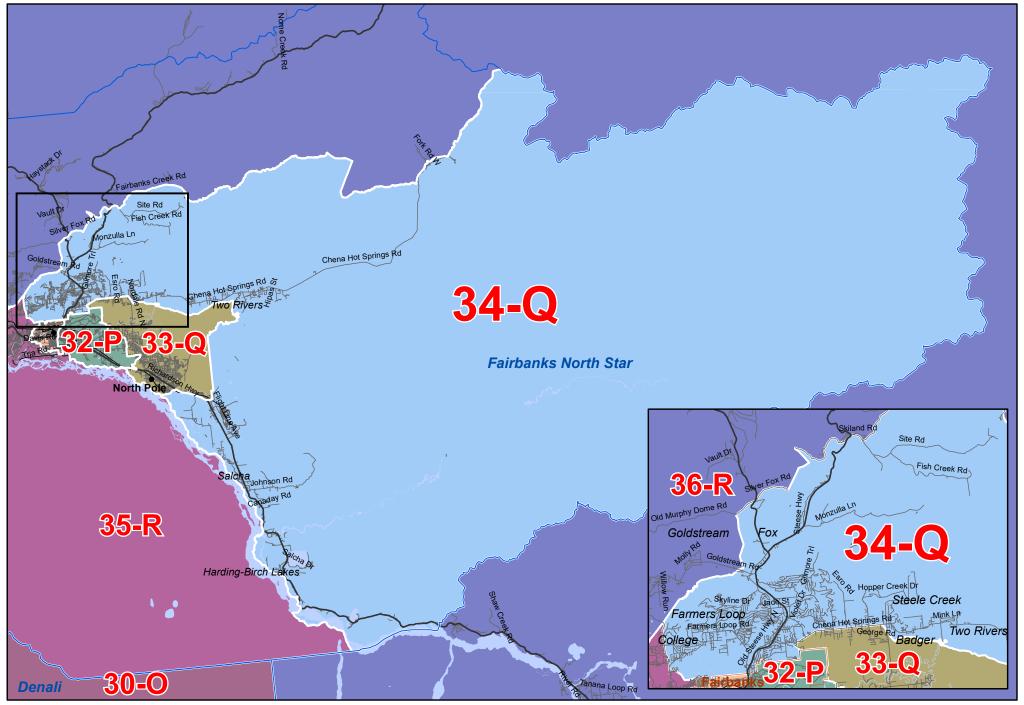


Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



2021 Board Proclamation District 34-Q

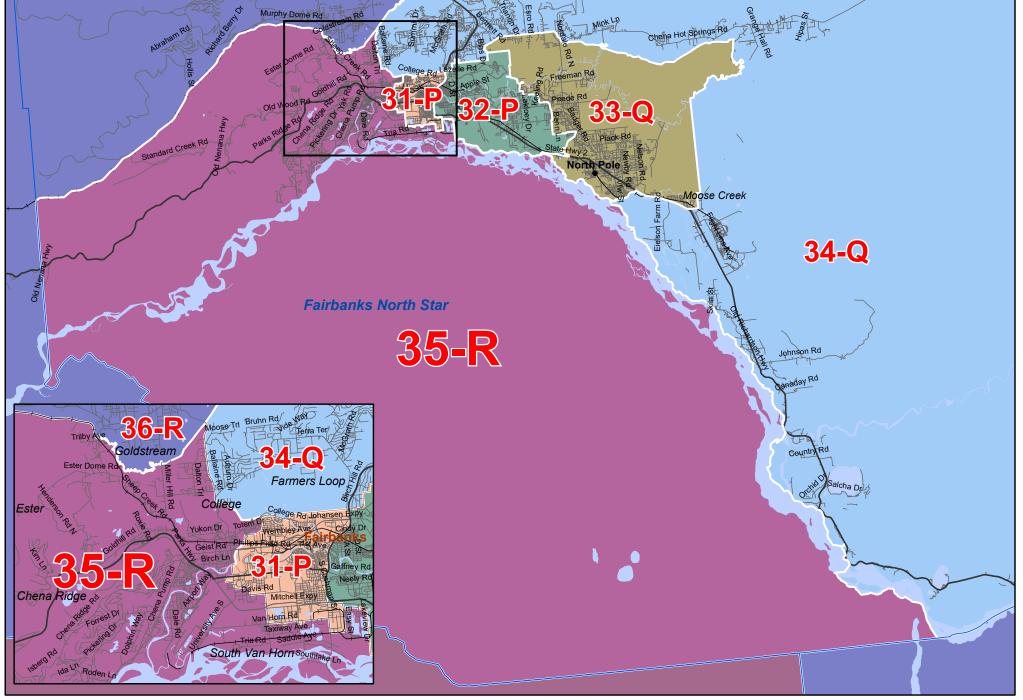
Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





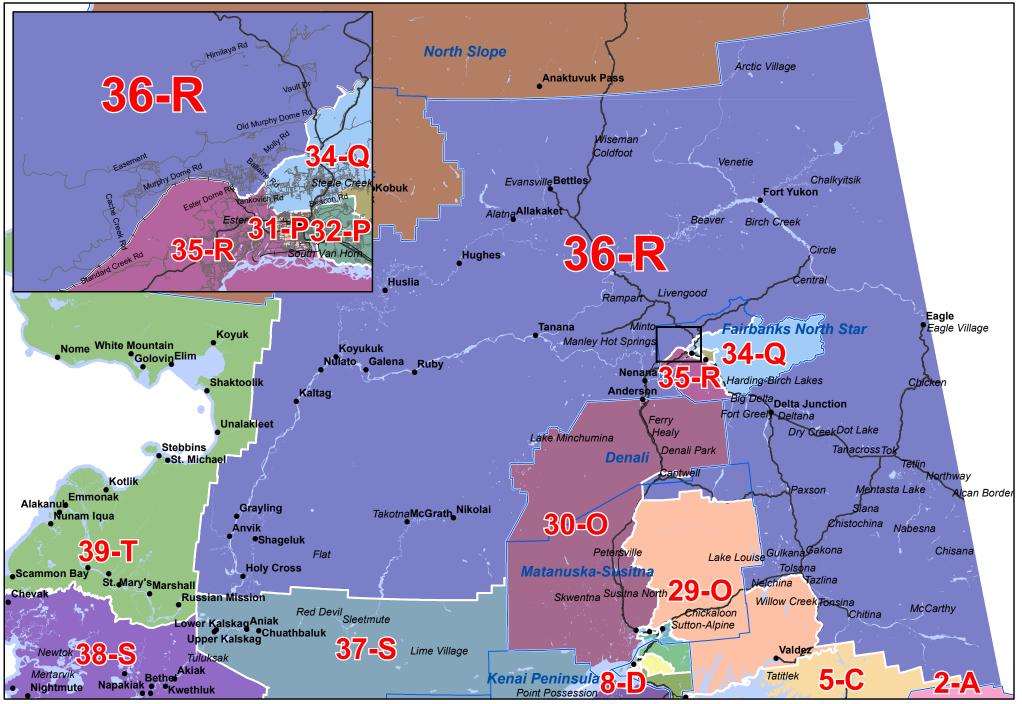
2021 Board Proclamation District 35-R

Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





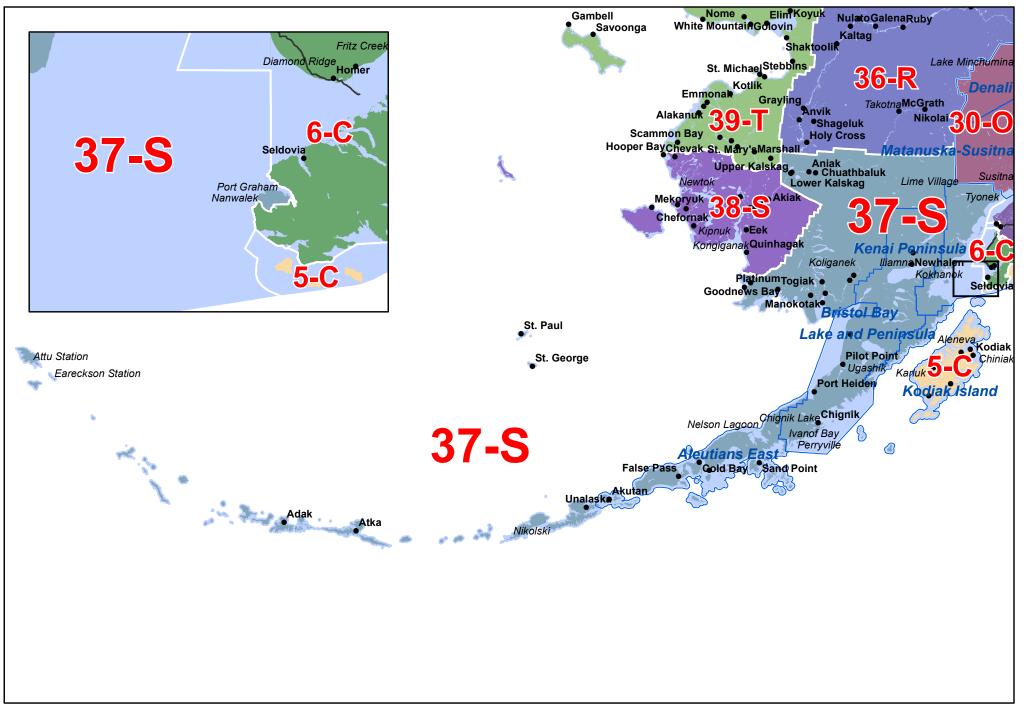
2021 Board Proclamation District 36-R



Based on 2020 Census Geography and 2020 PL94-171 Data; Map Gallery link: www.akredistrict.org/maps



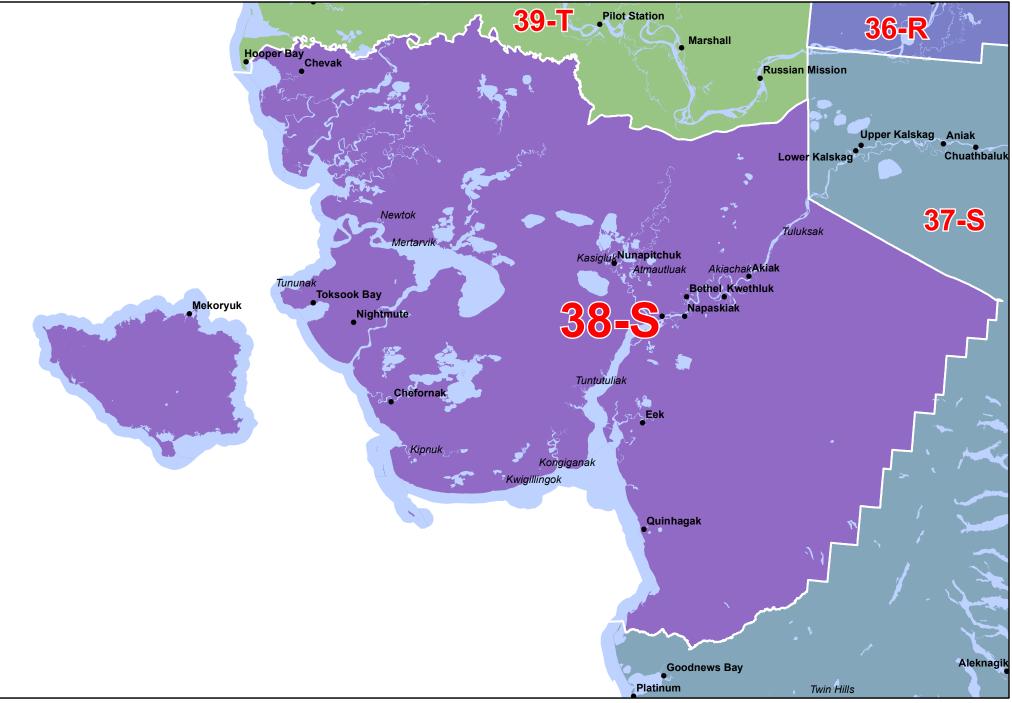
2021 Board Proclamation District 37-S





2021 Board Proclamation District 38-S

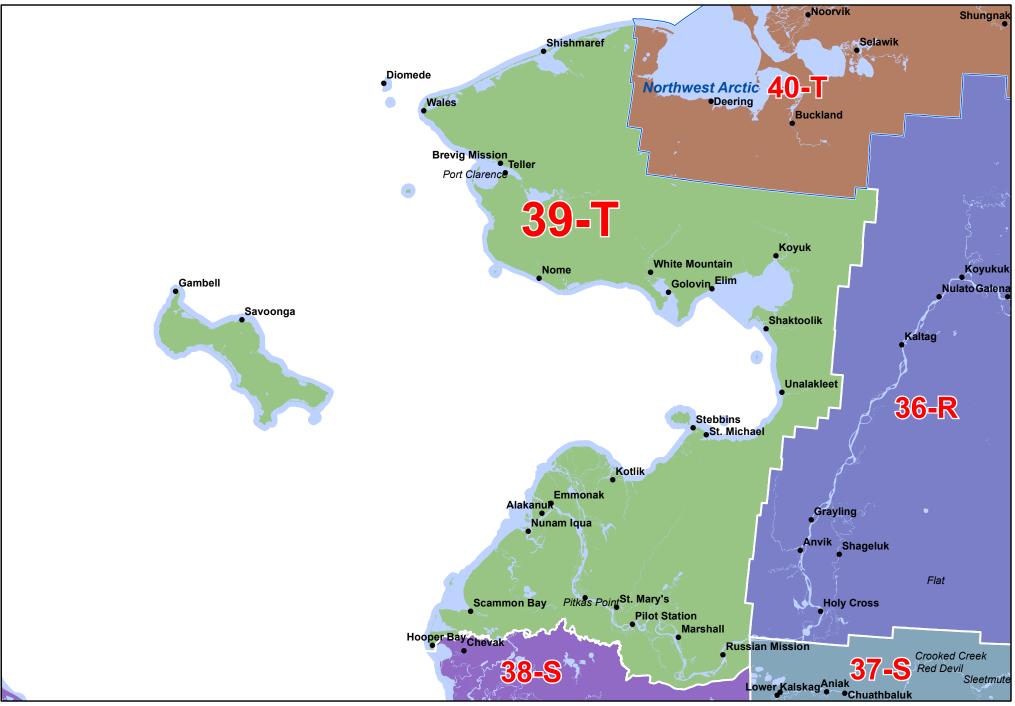
Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





2021 Board Proclamation District 39-T

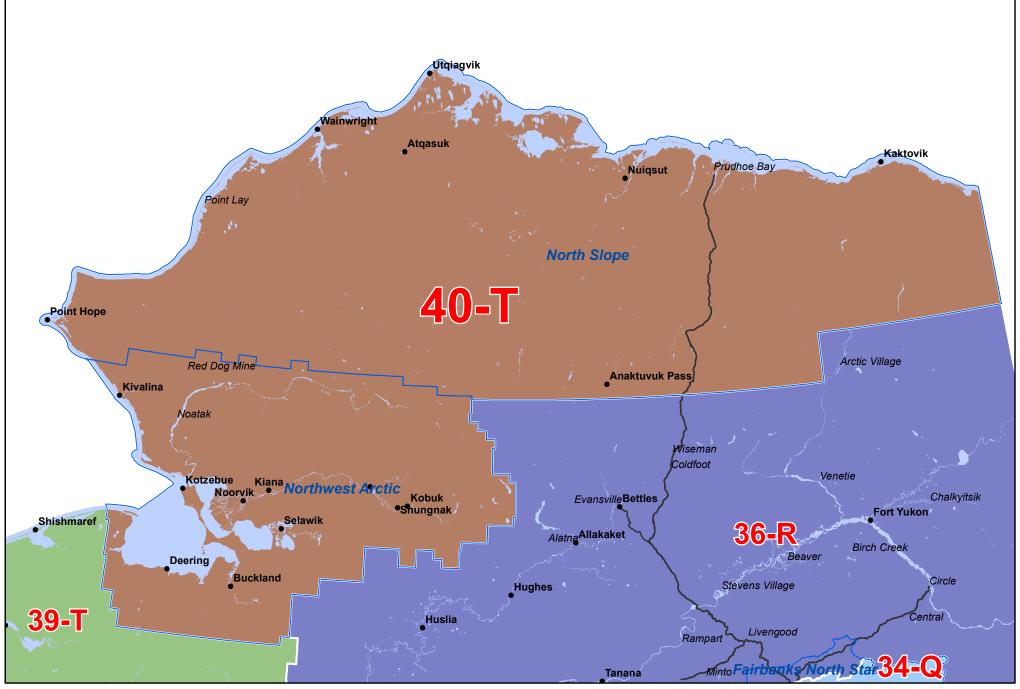
Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021





2021 Board Proclamation District 40-T

Redistricting Plan Adopted by the Alaska Redistricting Board 11/10/2021



P.O. Box 240147 Anchorage, Alaska 99503 www.akredistrict.org 907.563.0300



John Binkley, Chair Melanie Bahnke Nicole Borromeo Bethany Marcum Budd Simpson

ALASKA REDISTRICTING BOARD

Description of 2021 Proclamation Plan House and Senate Districts

Prepared by the Alaska Redistricting Board – November 10, 2021

House District 1 – Senate District A – Ketchikan/Wrangell/Metlakatla

House District 1 includes all uplands and islands bounded by a line beginning at the northwestern-most point of the City and Borough of Wrangell, northeast to the Canadian Border, southeast then southwest to the maritime border in the Dixon Entrance, west to the southwestern-most point of the Ketchikan Gateway Borough, north then east the centerline of Clarence Strait west of Annette Island, north to the boundary of the Ketchikan Gateway Borough, north then east to the boundary of the City and Borough of Wrangell, north to a point due east of Eagle Creek, west along a non-visible line to the mouth of Eagle Creek, north along the shoreline to the boundary of the City of Coffman Cove, west then north to the shoreline of Lake Bay, southwest to the entrance of Barnes Lake, west along a non-visible line to Stevenson Island, west along the shoreline to Indian Creek, west along a non-visible line to the western shoreline of Indian Creek, north to the southern shoreline of Whale Passage, north then west to the boundary of the City of Whale Pass, west then north then east to Exchange Cove Road, north to Exchange Creek, north to the western shoreline of Exchange Cove, north to the shoreline of Clarence Strait, northwest to the entrance of an unnamed bay near Lava Creek, north across the entrance to the shoreline of Clarence Strait, north to the entrance of Salmon Bay, north across the entrance to the shoreline of Clarence Strait, north along the shoreline to a non-visible line near Point Colpoys, northeast to the boundary of the City and Borough of Wrangell, northwest to the point of beginning.

House District 2 – Senate District A – Sitka/Petersburg/Yakutat

House District 2 includes all uplands and islands bounded by a line beginning at the western-most point of Yakutat Borough, northeast then east to Canadian Border, southeast then northeast to the Pacific Glacier Drainage, east to Tarr Inlet, southeast along the southern shoreline to Glacier Bay, south along the shoreline to the entrance of John Hopkins Inlet, southeast across the entrance to the shoreline of Glacier Bay, east to the entrance of Reid Inlet, east across the entrance to the shoreline of Glacier Bay, east then southeast along the shoreline to the entrance of Blue Mouse Cove, southeast across the entrance to an unnamed island, southeast then west along the shoreline to the entrance of Hugh Miller Inlet, south across the entrance to the western shoreline of Glacier Bay, southeast to the entrance of Geikie Inlet, southeast across the entrance to the western shoreline of Glacier Bay, southeast to the entrance of Fingers Bay, southeast to the western shoreline of Glacier Bay, southeast to the entrance of Berg Bay, south across the entrance to the western shoreline of Glacier Bay, south to the entrance of Glacier Bay, east across the entrance to the eastern shoreline of Glacier Bay, east along the shoreline to the boundary of the City of Gustavus, south then east to the shoreline of Pleasant Island, northeast then southeast to the eastern entrance to Icy Passage, northeast to the boundary of Glacier Bay National Park, east to the boundary of Haines Borough, southeast then north to the boundary of the City and Borough of Juneau, southeast then south then northeast then southeast then northeast along the

boundary to the Canadian Border, southeast to the northern boundary of the City and Borough of Wrangell, southwest then southeast to a non-visible line across Clarence Strait from Point Colpoys, west along a non-visible line to the shoreline near Point Colpoys, southeast to entrance of Salmon Bay, south across the entrance to the shoreline of Clarence Strait, south to the entrance of an unnamed bay near Lava Creek, south across the entrance to the shoreline of Clarence Strait, southeast to Exchange Cove, south along the western shoreline to Exchange Creek, south to Exchange Cove Road, south to the boundary of the City of Whale Pass, west then south then east to the southern shoreline of Whale Passage, east then south to the western shoreline of Indian Creek, south to Barnes Lake, east along a non-visible line to Stevenson Island, east then north along the shoreline to Lake Bay, east across a nonvisible line to the eastern shoreline of Lake Bay, northeast to the boundary of the City of Coffman Cove, south then east to the western shoreline of Clarence Strait, south to the mouth of Eagle Creek, northeast along a non-visible line to the boundary of the City and Borough of Wrangell, southeast to the boundary of the Ketchikan Gateway Borough, south to the centerline of Clarence Strait west of Annette Island, south to the boundary of the Ketchikan Gateway Borough, south to the maritime border in the Dixon Entrance, west to the 3-mile limit in the Pacific Ocean near Forrester Island, north along the 3mile limit to the boundary of the City and Borough of Sitka, northwest along the boundary to the 3-mile limit in the Pacific Ocean near Yakobi Island, northwest along the 3-mile limit to the boundary of Yakutat Borough, northwest to the point of beginning.

House District 3 – Senate District B – Mendenhall Valley/Haines/Skagway/Gustavus

House District 3 includes all uplands and islands bounded by a line beginning at the intersection of the northern edge of the Juneau Icefield and the Canadian Border, northwest then southwest along the border to the Pacific Glacier Drainage, east to Tarr Inlet, southeast along the southern shoreline to Glacier Bay, south along the shoreline to the entrance of John Hopkins Inlet, southeast across the entrance to the shoreline of Glacier Bay, east to the entrance of Reid Inlet, east across the entrance to the shoreline of Glacier Bay, east then southeast along the shoreline to the entrance of Blue Mouse Cove, southeast across the entrance to an unnamed island, southeast then west along the shoreline to the entrance of Hugh Miller Inlet, south across the entrance to the western shoreline of Glacier Bay, southeast to the entrance of Geikie Inlet, southeast across the entrance to the western shoreline of Glacier Bay, southeast to the entrance of Fingers Bay, southeast to the western shoreline of Glacier Bay, southeast to the entrance of Berg Bay, south across the entrance to the western shoreline of Glacier Bay, south to the entrance of Glacier Bay, east across the entrance to the eastern shoreline of Glacier Bay, east along the shoreline to the boundary of the City of Gustavus, south then east to the shoreline of Pleasant Island, northeast then southeast to the eastern entrance to Icy Passage, northeast to the boundary of Glacier Bay National Park, east to the boundary of Haines Borough, southeast then north to the boundary of the City and Borough of Juneau, south to a non-visible line extending southwest from the centerline of Fritz Cove, northeast to the centerline of Fritz Cove, northeast to the entrance of Gastineau Channel, north to the mouth of the Mendenhall River, north along the eastern bank of the Mendenhall River to the mouth of Duck Creek, east to Mendenhall Refuge Access Road, north to Radcliffe Road, north to the Glacier Highway, west to Vintage Boulevard, north then east to Riverside Drive, north to Stephen Richards Memorial Drive, east to Haloff Way, east to Tongass Boulevard, south to Jennifer Drive, east to the end of Jennifer Drive, south along a non-visible line to the Jorden Creek Tributary, northeast then southeast to Heintzleman Ridge, northeast to a non-visible line near the headwaters of Steep Creek, northeast to the headwaters of Steep Creek, northwest to Glacier Spur Road, northwest to a non-visible line near Mendenhall Lake, northwest to the shoreline of Mendenhall Lake, north then south then west to Mendenhall Glacier, west then north along the western edge of Mendenhall Glacier to the Juneau Icefield, west then north along the northern edge of the Juneau Icefield to the point of beginning.

House District 4 – Senate District B – Downtown Juneau/Douglas/Juneau Airport

House District 4 includes all uplands and islands bounded by a line beginning at the intersection of the Canadian Border and the southern boundary of the City and Borough of Juneau, southwest then northwest then north to a non-visible line extending southwest from the centerline of Fritz Cove, northeast to the centerline of Fritz Cove, northeast to the entrance of Gastineau Channel, north to the mouth of the Mendenhall River, north along the eastern bank of the Mendenhall River to the mouth of Duck Creek, east to Mendenhall Refuge Access Road, north to Radcliffe Road, north to the Glacier Highway, west to Vintage Boulevard, north then east to Riverside Drive, north to Stephen Richards Memorial Drive, east to Haloff Way, east to Tongass Boulevard, south to Jennifer Drive, east to the end of Jennifer Drive, south along a non-visible line to the Jorden Creek Tributary, northeast then southeast to the headwaters of Steep Creek, northwest to Glacier Spur Road, north then south then west to Mendenhall Lake, northwest to the shoreline of Mendenhall Lake, north then west to Mendenhall Lake, north along the western edge of Mendenhall Clacier to the Juneau Icefield, west then north along the northern edge of the Juneau Icefield to the Canadian Border, than southeast to the point of beginning.

House District 5 – Senate District C – Kodiak/Seward/Cordova

House District 5 includes all uplands and islands bounded by a line beginning at the intersection of the Chugach ANRC and the western boundary of the Wrangell-Saint Elias National Park, south along the park boundary to the boundary of the Chugach National Forest, west to a non-visible line extending east from the headweaters of the Lowe River, west along a non-visible line to the headwaters of the Lowe River, west to a non-visible line extending south from the Trans-Alaska Pipeline east of the boundary of the City of Valdez, north along a non-visible line to the Trans-Alaska Pipeline, west to boundary of the City of Valdez, south then west then north to the boundary of the Chugach National Forest on the northern shoreline of Valdez Arm, west to the entrance of Sawmill Bay, west across the entrance to the boundary of the Chugach National Forest, southwest then west to the entrance of Columbia Bay, west across the entrance to the shoreline of Prince William Sound, west to the entrance of an unnamed bay east of Long Point, west across the entrance to the shoreline of Prince William Sound, west to the entrance of Long Channel, west across the entrance to the shoreline near Buyers Cove, southwest to a non-visible line extending northwest from Glacier Island, southeast along on non-visible line to the shoreline of Glacier Island, east along the shoreline to a non-visible line extending west from the northern-most point of Growler Island, east to Growler Island, east along a non-visible line to the shoreline of Glacier Island, south then west to the western-most point of Glacier Island, west to a peninsula of Land near Fairmount Bay, southwest to the entrance of a small bay, southwest across the entrance to the shoreline of Prince William Sound, southwest then north then northwest to the entrance of a small unnamed bay east of Fairmount Bay, northwest across the entrance to the shoreline, west to the entrance of Fairmount Bay, west across the entrance to a non-visible line extending north from Fairmount Island, south along a nonvisible line to Fairmount Island, southeast then south then west then north to a non-visible line extending south from Fairmount Point, north the shoreline near Fairmount Point, north to the entrance of Wells Bay, west across the entrance to the shoreline near Unakwik Point, south then west to the entrance of Unakwik Inlet, southwest across the entrance to the shoreline north of Olsen Cove, south to a non-visible line extending west from Olsen Island, east to the shoreline of Olsen Island, northeast then southeast then south the west to a non-visible line extending east from south of Olsen Cove, west to the shoreline south of Olsen Cove, south then west to a small bay north of Kiniklik Island, west across the entrance to the shoreline, west the entrance of a small bay northwest of Kiniklik Island, west across the entrance to the shoreline, west to the entrance of Eaglek Bay, southwest across the entrance to the shoreline of island west of Eaglek Island, southwest then west to the western entrance of Eaglek Bay,

west across the entrance to the shoreline, southwest then west to the entrance of a small cove east of Squaw Bay, west across the entrance to the shoreline, west to the entrance of a unnamed bay east of Squaw Bay, west across the entrance, west to the entrance of a small cove east of Squaw Bay, west across the entrance to the shoreline, northwest to the entrance of Squaw Bay, northwest across the entrance to the shoreline, west to the entrance of a small cove east of Esther Bay, west across the entrance to the shoreline, west to the entrance of a small cove east of Esther Bay, west across the entrance to the shoreline, west to the entrance of Esther Bay, west across the entrance to the shoreline, south then southwest to the entrance of Esther Passage, southwest across the entrance to the shoreline, southwest then west to the entrance of Quillian Bay, southwest across the entrance to the shoreline, west to the entrance of Lake Bay, west across the entrance to the shoreline, west to the eastern shoreline of Port Wells, west along a non-visible line to the western shoreline of Port Wells east of Entry Cove, west to the entrance of Entry Cove, west across the entrance to the shoreline, west to the entrance of Passage Canal, west across the entrance to the shoreline, south then west to the boundary of the City of Whittier, south then west to the boundary of the Municipality of Anchorage, south to the boundary of the Kenai Peninsula Borough, east then south to the southern boundary of the Chugach National Forest, west then south then southwest then west to the boundary of the City of Seward, north then northwest then south to Lowell Creek, west to the headwaters of Lowell Creek, north along a nonvisible line to the boundary of Kenai Fjords National Park, northwest to the boundary of Chugach ANRC, south to the boundary of Kenai Fjords National Park, southwest then east then south to the shoreline of Nuka Passage, southwest to the entrance of Tonsina Bay, south across the entrance to shoreline of Nuka Passage, south to the shoreline of the Gulf of Alaska, south the entrance of an unnamed bay, south across the entrance to the shoreline near Gore Point, west to the entrance of Port Dick, west across the entrance to the shoreline of the Gulf of Alaska, west to the entrance of Touglaalek Bay, west across the entrance to the shoreline of the Gulf of Alaska, west to the entrance of Qikutulig Bay, west across the entrance to entrance of Rocky Bay, west across the entrance to the shoreline of the Gulf of Alaska, west to the entrance of an unnamed bay, west across the entrance to the shoreline of the Gulf of Alaska, southwest to the entrance of Chugach Bay, southwest across the entrance to the shoreline of Chugach Passage, west then north to the entrance of Port Chatham, northwest across the entrance to shoreline of Chugach Passage, northwest to the entrance of Koyuktolik Bay, northwest across the entrance to the shoreline of Kennedy Entrance, northwest along the shoreline to the western edge of Kennedy Entrance, south along the western edge of Kennedy Entrance to the 3-mile limit south of Elizabeth Island, southwest then southeast the northeast around all of the Barren Islands and Afogak Island and Kodiak Island and the Trinity Islands to the southern boundary of the Kenai Peninsula Borough near East Chugach Island, northeast along the southern boundary to the 3-mile limit of the Pacific Ocean south of Whidbey Bay, east along the along the 3-mile limit of the Pacific Ocean including Middleton Island to the boundary of Yakutat Borough, north then northeast then east to the boundary of Chugach ANRC, northwest to the point of beginning.

House District 6 – Senate District C – Kachemak Bay/Ninilchik/Kasilof

House District 6 is bounded by a line beginning at the intersection of Slikok Creek and the Sterling Highway, south along the highway to Wolverine Avenue, east then south to the end of Wolverine Avenue, south along an unnamed path to Heavy Down Drive, south to western branch of Coal Creek, southwest to the confluence with the eastern branch of Coal Creek, east to a non-visible line extending north from the western boundary of the Kenai National Wildlife Refuge, south to the boundary of the Kenai National Wildlife Refuge, south the west to the northern bank of the Kasilof River, southeast along the northern bank to Tustumena Lake, northeast then southeast to Glacier Creek, southeast to Tustamena Glacier, east along the northern edge of the glacier to the Harding Icefield, south to a nonvisible line extending northwest from the boundary of Chugach ANRC, southeast to the Chugach ANRC, south to the boundary of Kenai Fjords National Park, southwest then east then south to shoreline of Nuka Passage, southwest to the entrance of Tonsina Bay, south across the entrance to shoreline of Nuka Passage, south to the shoreline of the Gulf of Alaska, south to the entrance of an unnamed bay, south across the entrance to the shoreline near Gore Point, west to the entrance of Port Dick, west across the entrance to the shoreline of the Gulf of Alaska, west to the entrance of Touglaalek Bay, west across the entrance to the shoreline of the Gulf of Alaska, west to the entrance of Qikutulig Bay, west across the entrance to entrance of Rocky Bay, west across the entrance to the shoreline of the Gulf of Alaska, west to the entrance of an unnamed bay, west across the entrance to the shoreline of the Gulf of Alaska, southwest to the entrance of Chugach Bay, southwest across the entrance to the shoreline of Chugach Passage, west then north to the entrance of Port Chatham, northwest across the entrance to shoreline of Chugach Passage, northwest to the entrance of Koyuktolik Bay, northwest across the entrance to the shoreline of Kennedy Entrance, northwest to the shoreline of Cook Inlet, north to an unnamed creek north of Point Bede, east to the headwaters of the unnamed creek, south along a non-visible line to the Mount Bede Ridgeline, southeast to an unnamed creek, northeast to an unnamed lake along the English Bay River, north to the outlet of the lake, east to an unnamed creek, north to the shoreline of Port Graham, east then north then northwest to the shoreline of Cook Inlet, north the entrance of Kachemak Bay, north across the entrance to a non-visible line extending east from the centerline of Cook Inlet, west to the centerline of Cook Inlet, north to a non-visible line extending west from the shoreline near Oil Company Haul Road, east to the shoreline of Cook Inlet, east along a non-visible line to Oil Company Haul Road, south to the end of Oil Company Haul Road, southeast along a non-visible line to Gas Well Road, east then northeast to a non-visible line extending west from Harmony Avenue, east to Harmony Avenue, northeast to Echo Lake Road, south to Evelyn Lane, east to the end of Evelyn Lane, east along a non-visible line to Slikok Creek, southeast to the point of beginning.

House District 7 – Senate District D – Kenai/Soldotna

House District 7 is bounded by a line beginning at the northwestern most point of the City of Kenai, east then south to the Kenai Spur Highway, south to Sports Lake Road, east to Moser Street, south to the end of Moser Street, south along a non-visible line to Alaska Natural Gas Pipeline ROW, east to a non-visible line extending north from boundary of the City of Soldotna, south to the boundary of the City of Soldotna, east then south to the northern bank of the Kenai River, southeast to the boundary of the Kenai National Wildlife Refuge, west to the boundary of the City of Soldotna near the Sterling Highway, west along the boundary to Gas Well Road, west to Echo Lake Road, south to Harmony Avenue, southwest to the end of Harmony Avenue, west along a non-visible line to Gas Well Road, southwest then west to the end of Gas Well Road, northwest along a non-visible line to Oil Company Haul Road, northwest to a non-visible line near Kalifornsky Beach Road, west along the non-visible line to the shoreline of Cook Inlet, west along a non-visible line to the centerline of Cook Inlet, north to a nonvisible line extending west from the northern boundary of the City of Kenai, east to the point of beginning.

House District 8 – Senate District D – Northern Kenai Peninsula

House District 8 is bounded by a line beginning at the intersection of the Kenai Peninsula Borough with both the Matansuska-Susitna Borough and the Municipality of Anchorage, southwest along the Kenai Peninsula Borough boundary to the centerline of Cook Inlet, southwest then south to a non-visible line extending west from the northern boundary of the City of Kenai, east to the boundary of the City of Kenai, east then south to the Kenai Spur Highway, south to Sports Lake Road, east to Moser Street, south to the end of Moser Street, south along a non-visible line to Alaska Natural Gas Pipeline ROW, east to a non-visible line extending north from boundary of the City of Soldotna, south to the boundary of the City of Soldotna, east then south to the northern bank of the Kenai River, southeast to the boundary of the Kenai National Wildlife Refuge, west to the boundary of the City of Soldotna near the Sterling Highway, west along the boundary to Gas Well Road, west to Echo Lake Road, south to Evelyn Lane, east to the end of Evelyn Lane, east along a non-visible line to Slikok Creek, southeast to the Sterling Highway, south along the highway to Wolverine Avenue, east then south to the end of Wolverine Avenue, south along an unnamed path to Heavy Down Drive, south to western branch of Coal Creek, southwest to the confluence with the eastern branch of Coal Creek, east to a non-visible line extending north from the western boundary of the Kenai National Wildlife Refuge, south to the boundary of the Kenai National Wildlife Refuge, south then west to the northern bank of the Kasilof River, southeast along the northern bank of the Kasilof River, to Tustumena Lake, northeast then southeast to Glacier Creek, southeast to Tustamena Glacier, east along the northern edge of the glacier to the Harding Icefield, north to a non-visible line extending northwest from the boundary of the Chugach ANRC, east then north then northwest to the Chugach ANRC, northeast to the boundary of Kenai Fjords National Park along the Resurrection River, southeast to the eastern boundary of the park, south along a non-visible line to the headwaters of Lowell Creek, east to the boundary of the City of Seward, north then east then south to the boundary of the Chugach National Forest, east then northeast then east to the boundary of the Kenai Peninsula Borough, north then northwest to the point of beginning.

House District 9 - Senate District E - South Anchorage/Turnagain Arm/Whittier

House District 9 is bounded by a line beginning at the intersection of the New Seward Highway and Huffman Road, east on Huffman Road to Birch Road, northeast then south to Huffman Road, east to Upper Huffman Road, east to Sultana Drive, northeast then east to the boundary of Chugach State Park, north to Basher Drive, southwest to the boundary of Far North Bicentennial Park, north to the boundary of Fort Richardson, east to the boundary of Chugach State Park, east then southeast to a non-visible line extending north from the powerlines near the headwaters of the south fork of Campbell Creek, south along the non-visible line to the powerlines, east along a non-visible line to Ship Creek, east then northeast to the headwaters of Ship Creek, southeast along a non-visible line to the ridgeline between Bird Creek and Raven Creek, southeast to the boundary of the Chugach National Forest, north then east to the boundary of the Municipality of Anchorage, south then west then south to the northern boundary of the City of Whittier, east then south then west along the city boundary to the boundary of the Municipality of Anchorage, south then north then northwest to a non-visible line extending south from the mouth of Little Rabbit Creek, north to the mouth of Little Rabbit Creek, east to the New Seward Highway, north to the point of beginning.

House District 10 – Senate District E – Oceanview/Klatt

House District 10 is bounded by a line beginning at the intersection of the New Seward Highway and Dimond Boulevard, west on Dimond Boulevard to Victor Road, south to Southport Drive, south to Diligence Circle, south to Crow's Nest Circle, west to the end of Crow's Nest Circle, west along a nonvisible line to the shoreline of Turnagain Arm, southwest then south along a non-visible line to the boundary of the Municipality of Anchorage, southeast to a non-visible line extending south from the mouth of Little Rabbit Creek, north to the mouth of Little Rabbit Creek, east to the New Seward Highway, north to the point of beginning.

House District 11 – Senate District F – Lower Hillside

House District 11 is bounded by a line beginning at the intersection of the New Seward Highway and Huffman Road, east on Huffman Road to Birch Road, northeast then south to Huffman Road, east to

Upper Huffman Road, east to Sultana Drive, northeast then east to the boundary of Chugach State Park, north to the boundary of Far North Bicentennial Park, west to the boundary of Hillside Park, west to Abbott Road, west then northwest to Vanguard Drive, southwest then south to Academy Drive, west to the end of Academy Drive, west along a non-visible line to the New Seward Highway, south to the point of beginning.

House District 12 – Senate District F – Far North Bicentennial Park

House District 12 is bounded by a line beginning at the intersection of Elmore Road and Tudor Road, east on Tudor Road to the boundary of Far North Bicentennial Park, east then south then west to the boundary of Hillside Park, west to Abbott Road, west then northwest to Vanguard Drive, southwest then south to Academy Drive, west to the end of Academy Drive, west along a non-visible line to the New Seward Highway, north to E Dowling Road, east to Elmore Road, north to the point of beginning.

House District 13 – Senate District G – Campbell

House District 13 is bounded by a line beginning at the intersection of Dowling Road and the New Seward Highway, south on the New Seward Highway to Dimond Boulevard, west then southwest to Northwood Street, north to Raspberry Road, east to Minnesota Drive, north to International Airport Road, east to C St, north to Tudor Road, east to Lake Otis Parkway, south to Dowling Road, west to the point of beginning.

House District 14 – Senate District G – Spenard

House District 14 is bounded by a line beginning at the intersection of Tudor Road and C Street, south on C Street to International Airport Road, west on International Airport Road to Northwood Drive, north to Iowa Drive, north to McRae Road, northwest to Turnagain Street, north to W 34th Avenue, east to Turnagain Street, north to W 30th Avenue, east to Fish Creek, north then east to the Alaska Railroad, northwest to Northern Lights Boulevard, east to Minnesota Drive, north to W 26th Avenue, east to Spenard Road, north to W 25th Avenue, east to Arctic Boulevard, north to Fireweed Lane, east to the New Seward Highway, north to Chester Creek, east to the north fork of Chester Creek, north to E 20th Avenue, east to Lake Otis Parkway, south to Tudor Road, west to the point of beginning.

House District 15 – Senate District H – Sand Lake/Campbell Lake

House District 15 is bounded by a line beginning at the intersection of Strawberry Road and Northwood Street, south on Northwood Street to Victor Road, south to Southport Drive, south to Diligence Circle, south to Crow's Nest Circle, west to the end of Crow's Nest Circle, west along a non-visible line to the shoreline of Turnagain Arm, southwest then south along a non-visible line to the boundary of the Municipality of Anchorage, northwest to a non-visible line extending south from the eastern boundary of Kincaid Park, north along a non-visible line to the boundary of Kincaid Road, east to Sand Lake Road, north to Wandering Drive, southeast then east then south to Kincaid Road, east to Sportsman Drive, east to Sandy Beach Drive, northeast to Silver Birch Drive, north to Caravelle Drive, east to Jewel Lake Road, south to Strawberry Road, east to the point of beginning.

House District 16 – Senate District H – Anchorage Airport

House District 16 is bounded by a line beginning at the intersection of Minnesota Drive and International Airport Road, west on International Airport Road to Northwood Drive, north to Iowa Drive, north to McRae Road, northwest to Turnagain Street, north to W 34th Avenue, east to Turnagain Street, north to W 30th Avenue, east to Fish Creek, north then east to the Alaska Railroad, north then northeast to a non-visible line extending east near W 2nd Avenue, west on the non-visible line to the shoreline of Knik Arm, west then northwest along a non-visible line to the boundary of the Municipality of Anchorage, southwest then southeast then south then southeast to a non-visible line extending south from the eastern boundary of Kincaid Park, north along a non-visible line to the boundary of Kincaid Park, north to Jodhpur Street, north to Kincaid Road, east to Sand Lake Road, north to Wandering Drive, southeast to Silver Birch Drive, north to Caravelle Drive, east to Jewel Lake Road, south to Strawberry Road, east to Northwood Street, north to Raspberry Road, east to Minnesota Drive, north to the point of beginning.

House District 17 – Senate District I – Downtown Anchorage

House District 17 is bounded by a line beginning at the intersection of E 4th Avenue and Juneau Street, south on Juneau Street to E 5th Avenue, east to Airport Heights Drive, south to Debarr Road, west to Lake Otis Parkway, south to E 20th Avenue, west to the north fork of Chester Creek, south to Chester Creek, west to the New Seward Highway, south to Fireweed Lane, west to Arctic Boulevard, south to W 25th Avenue, west to Spenard Road, south to W 26th Avenue, west to Minnesota Drive, south to Northern Lights Boulevard, west to the Alaska Railroad, north then northeast to a non-visible line extending north from the end of L Street, south to L Street, south to W 4th Avenue, east to the point of beginning.

House District 18 – Senate District I – Mountainview/Airport Heights

House District 18 is bounded by a line beginning at the intersection of Lake Otis Parkway and E Northern Lights Boulevard, east on E Northern Lights Boulevard to Nichols Street, north to E 20th Avenue, east to Bragaw Street, north to Reka Drive, east to the powerlines extending south from Pine Street, north to Pine Street, north to McCarrey Street, north to Mountainview Drive, west to N Pine Street, north to McPhee Avenue, west to the boundary of Elmendorf Air Force Base, southwest then south to Taylor Street, south to Thompson Avenue, west to the boundary of Elmendorf Air Force Base, west to Reeve Boulevard, south to E 5th Avenue, east to Airport Heights Drive, south to Debarr Road, west to Lake Otis Parkway, south to the point of beginning.

House District 19 – Senate District J – U-Med

House District 19 is bounded by a line beginning at the intersection of Lake Otis Parkway and Northern Lights Boulevard, east on Northern Lights Boulevard to Nichols Street, north to E 20th Avenue, east to Bragaw Street, north to Reka Drive, east to the powerlines extending south from Pine Street, north to Pine Street, north to Debarr Road, east to Boniface Parkway, south to a non-visible line extending west from E 20th Avenue, east to E 20th Avenue, east to Penn Circle, north to Craig Drive, east to the end of Craig Drive, southeast along a non-visible line to the southern boundary of Nunaka Valley Park, east to Beaver Place, south to Baxter Road, south to Tudor Road, west to Elmore Road, south to Dowling Road, west to Lake Otis Parkway, north to the point of beginning.

House District 20 – Senate District J – North Muldoon

House District 20 is bounded by a line beginning at the intersection of Debarr Road and Pine Street, north on Pine Street to McCarrey Street, north to the Glenn Highway, east to a non-visible line extending north from Boundary Avenue near Patterson Street, south along a non-visible line to Boundary Avenue, east to Muldoon Road, south to Duben Avenue, east to the boundary of Fort Richardson, south to a non-visible line extending east from the end of Debarr Road, west along a nonvisible line to Debarr Road, west to a non-visible line extending east from Debarr Road and Muldoon Road, west along a non-visible line to Debarr Road, west to the point of beginning.

House District 21 – Senate District K – South Muldoon

House District 21 is bounded by a line beginning at the intersection of Debarr Road and Boniface Parkway, south on Boniface Parkway to a non-visible line extending west from E 20th Avenue, east to E 20th Avenue, east to Penn Circle, north to Craig Drive, east to the end of Craig Drive, southeast along a non-visible line to the southern boundary of Nunaka Valley Park, east to Beaver Place, south to Baxter Road, south to Tudor Road, east along the north boundary of Far North Bicentennial Park, east to the boundary of Fort Richardson, north to a non-visible line extending east from the end of Debarr Road, west along a non-visible line to Debarr Road, west to a non-visible line extending east from Debarr Road and Muldoon Road, west along a non-visible line to Debarr Road, west to the point of beginning.

House District 22 – Senate District K – Eagle River Valley

House District 22 is bounded by a line beginning at the intersection of Eagle River Loop Road and Lazy Street, south on Lazy Street to Easy Street, west to the Old Glenn Highway, south then west to Mausel Street, then north to Artillery Road, west then north then west to the boundary of Fort Richardson, south to the Glenn Highway, southwest to the western boundary of Fort Richardson, south then west to a non-visible line extending northeast from the end of Peck Avenue, southwest to Peck Avenue, southwest then west to the boundary of Fort Richardson, south then east to the boundary of Chugach State Park, east then southeast to a non-visible line extending north from the powerlines near the headwaters of the south fork of Campbell Creek, south along the non-visible line to the powerlines, east along a non-visible line to Ship Creek, east then northeast to the headwaters of Ship Creek, southeast along a non-visible line to the ridgeline between Bird Creek and Raven Creek, southeast to the boundary of the Chugach National Forest, north then east to the ridgeline between Eagle River and Peters Creek, northwest along the ridgeline to a non-visible line extending east from the headwaters of Meadow Creek, west along a non-visible line to the headwaters of Meadow Creek, northwest to a non-visible line extending north from the boundary of Chugach State Park, south along a non-visible line to the boundary of Chugach State Park, west to Steeple Drive, southwest to Eagle River Lane, south to War Admiral Road, northwest then west to Sun Beau Drive, southwest to Eagle River Loop Road, north then northwest to the point of beginning.

House District 23 – Senate District L – Government Hill/JBER/Northeast Anchorage

House District 23 is bounded by a line beginning at the intersection of the Glenn Highway and McCarrey Street, north on McCarrey Street to Mountainview Drive, west to Pine Street, north to McPhee Avenue, west to the boundary of Elmendorf Air Force Base, west then south to Taylor Street, south to Thompson Avenue, west to the boundary of Elmendorf Air Force Base, west to Reeve Boulevard, south to E 5th Avenue, west to Juneau Street, north to E 4th Avenue, west to L Street, north to the end of L Street, north along a non-visible line to the Alaska Railroad, northeast to a non-visible line extending east near W 2nd Avenue, west on the non-visible line to the shoreline of Knik Arm, west then northwest along a

non-visible line to the boundary of the Municipality of Anchorage, north to the northern boundary of Elmendorf Air Force Base, southeast then south then east then south to Loop Road, east to the Alaska Railroad, east then northeast to Fossil Creek, east then northeast to the boundary of Fort Richardson, north then east to the Glenn Highway, southwest to the western boundary of Fort Richardson, south then west to a non-visible line extending northeast from the end of Peck Avenue, southwest to Peck Avenue, southwest to the boundary of Fort Richardson, south to Duben Avenue, west to Muldoon Road, north to Boundary Avenue, west to a non-visible line extending northeast from Highway, west to the point of beginning.

House District 24 – Senate District L – North Eagle River/Chugiak

House District 24 is bounded by a line beginning at the intersection of Sun Beau Drive and Eagle River Loop Road, north then northwest on Eagle River Loop Road to Lazy Street, south to Easy Street, west to the Old Glenn Highway, south then west to Mausel Street, then north to Artillery Road, west then north then west to the boundary of Fort Richardson, south then west then southwest along the boundary of Fort Richardson to Fossil Creek, west to the Alaska Railroad, west then southwest to Loop Road, north then northwest then west to the boundary of Elmendorf Air Force Base, north then west then north then west to the boundary of the Municipality of Anchorage, northeast then east then south then east then south to the boundary of the Chugach National Forest, west to the ridgeline between Eagle River and Peters Creek, northwest along the ridgeline to a non-visible line extending east from the headwaters of Meadow Creek, west along a non-visible line to the headwaters of Meadow Creek, northwest to a non-visible line extending north from the boundary of Chugach State Park, south along a non-visible line to the boundary of Chugach State Park, west to Steeple Drive, southwest to Eagle River Lane, south to War Admiral Road, northwest then west to Sun Beau Drive, southwest to the point of beginning.

House District 25 – Senate District M – Palmer/Butte

House District 25 is bounded by a line beginning at the intersection of the Glenn Highway and the boundary of the Municipality of Anchorage, east then southeast then east to Glacier Fork, northwest to Metal Creek, southwest to the Knik River, west along the northern bank of the Knik River to the confluence with Jim Creek, northeast then east then south then north then south then west around the headwaters of Jim Creek to the confluence with McRoberts Creek, northwest to a small stream near Jim Lake, northeast to the shoreline of Jim Lake, south then east then north to an unnamed creek on the northeast side of the lake, northeast to the headwaters, northeast along a non-visible line to the ridgeline, northeast to a non-visible line extending southeast from a tributary of Wolverine Creek, northwest to a tributary of Wolverine Creek, northeast to its confluence with Wolverine Creek, northeast along a non-visible line to headwaters of an unnamed creek, northwest to the Matanuska River, west along a non-visible line to the northern bank of the Matanuska River east of Eska Creek, southwest to a non-visible line east of E Collier Road, west along a non-visible line to the Glenn Highway, south to N Farm Loop Road, west then south to Fence Line Drive, southeast to Monte Carlo Lane, south to E Biscane Drive, west to N Ryder Drive, south to N Palmer-Fishhook Road, west then northwest to N Trunk Road, southwest to E Bogard Road, east to 49th Street, south to E Palmer-Wasilla Highway, east to a non-visible line east of Loma Prieta Drive, south along a non-visible line Grandview Drive, southeast then southwest to a non-visible line north of Rabbit Slough, southeast to the western bank of the Matanuska River, south along the western bank to the Glenn Highway, south to the point of beginning.

House District 26 – Senate District M– Goose Bay/Gateway

House District 26 is bounded by a line beginning at the intersection of the eastern boundary of the City of Wasilla and the Parks Highway, east along the Parks Highway to S Trunk Road, north to N Old Trunk Road, north to E Palmer-Wasilla Highway, east to a non-visible line east of Loma Prieta Drive, south along a non-visible line to Grandview Drive, southeast then southwest to a non-visible line north of Rabbit Slough, southeast to the western bank of the Matanuska River, south along the western bank to the Glenn Highway, south to the boundary of the Matanuska-Susitna Borough, west then southwest to a non-visible line extending south from the mouth of Crocker Creek, north to the mouth of Crocker Creek, northeast to Settlers Bay Drive, northwest to Crocker Creek, west then north to S Settlers Bay Drive, northeast then northwest to S Knik-Goose Bay Road, southwest to Carmel Road, west to S Aurora Drive, south then west to S Northern Lights Drive, south to Shearwater Street, west to Hallie Drive, north to W Carmel Road, west to the end of W Carmel Road, west along a non-visible line to an unnamed creek north of Threemile Lake, northeast to a non-visible line extending south from S Pond Lily Lane, north to S Pond Lily Lane, north to non-visible line extending south from Whale Lake, north along a non-visible line to Whale Lake, west then northeast along the shoreline to a non-visible line extending north to a unnamed lake, north along a non-visible line to an unnamed lake, east then north then west to a nonvisible line extending south from Lucille Creek, north along a non-visible line to Lucille Creek, east to a non-visible line extending south from the boundary of the City of Houston east of W Eastwind Circle, north along a non-visible line to the boundary of the City of Houston, east then north to the Parks Highway, east to W Buttercup Drive, east to Sylvan Road, south to W Dun Fussin Road, east to a nonvisible line east of Sylvan Road, south along a non-visible line to an unnamed lake north of Lucille Creek, west then south then east to a non-visible line extending north from Lucille Creek, south along a nonvisible line to Lucille Creek, east to Vine Road, south to Bonaparte Avenue, east to S Rue de la Paix Loop, north to W Montclaire Avenue, east to W Lollybrock Drive, north then east to Foothills Boulevard, south to W Ronnies Circle, east then south to Overby Street, east then northeast to Saindon Street, east to Donovan Drive, northeast to S Clapp Street, south to Knik-Goose Bay Road, northeast to the boundary of the City of Wasilla, east then north along the city boundary to the point of beginning.

House District 27 – Senate District N – Wasilla/Meadow Lakes

House District 27 is bounded by a line beginning at the intersection of the City of Houston and the Parks Highway, east to W Buttercup Drive, east to Sylvan Road, south to W Dun Fussin Road, east to a nonvisible line east of Sylvan Road, south along a non-visible line to an unnamed lake north of Lucille Creek, west then south then east to a non-visible line extending north from Lucille Creek, south along a nonvisible line to Lucille Creek, east to Vine Road, south to Bonaparte Avenue, east to S Rue de la Paix Loop, north to W Montclaire Avenue, east to W Lollybrock Drive, north then east to Foothills Boulevard, south to W Ronnies Circle, east then south to Overby Street, east then northeast to Saindon Street, east to Donovan Drive, northeast to S Clapp Street, south to Knik-Goose Bay Road, northeast to the boundary of the City of Wasilla, east then north then west then south then west then north west then north then east then north then east around the city boundaries to Church Road, north to Shampine Avenue, east to N Sandhill Crane Street, north to W Trumpeter Swan Avenue, east then north to W Woodpecker Circle, east to N Infinite Road, north to the intersection with W Schrock Road, north along a non-visible line to the northern bank of the Little Susitna River, west along the northern bank to the boundary of the City of Houston, south to the point of beginning.

House District 28 – Senate District N – Tanaina/Lakes

House District 28 is bounded by a line beginning at the intersection of N Trunk Road and E Bogard Road, to E Seldon Road, then west along E Bogard Road to Wasilla-Fishhook Road, northeast to a non-visible

line extending from near E Polar Bear Drive, north then west then south along a non-visible line to the eastern end of Burlwood Drive, west to E Schrock Road, north then southwest to N Infinite Road, south to W Woodpecker Circle, west to W Trumpeter Swan Avenue, south then west to N Sandhill Crane Street, south to Shampine Avenue, west to Church Road, south to the boundary of the City of Wasilla, east then south then east then south then southeast then north then east then south to the Parks Highway, east to S Trunk Road, north to N Old Trunk Road, north to E Palmer-Wasilla Highway, east to 49th Street, north to E Bogard Road, west to the point of beginning.

House District 29 – Senate District O – Eastern Mat-Su/Valdez

House District 29 includes all uplands and islands bounded by a line beginning at the intersection of the northern boundary of Ahtna ANRC and the eastern boundary of the Matanuska-Susitna Borough, south then west then south along the borough boundary to the Nelchina River, east to the shoreline of Tazlina Lake, northeast along the western shoreline to the Tazlina River, east along the northern bank of the Tazlina River to the Trans-Alaska Pipeline, south to the boundary of the Chugach ANRC, east to the boundary of the Wrangell-Saint Elias National Park, south along the park boundary to the boundary of the Chugach National Forest, west to a non-visible line extending east from the headweaters of the Lowe River, west along a non-visible line to the headwaters of the Lowe River, west to a non-visible line extending south from the Trans-Alaska Pipeline east of the boundary of the City of Valdez, north along a non-visible line to the Trans-Alaska Pipeline, west to boundary of the City of Valdez, south then west then north to the boundary of the Chugach National Forest on the northern shoreline of Valdez Arm, west to the entrance of Sawmill Bay, west across the entrance to boundary of the Chugach National Forest, southwest then west to the entrance of Columbia Bay, west across the entrance to the shoreline of Prince William Sound, west to the entrance of an unnamed bay east of Long Point, west across the entrance to the shoreline of Prince William Sound, west to the entrance of Long Channel, west across the entrance to the shoreline near Buyers Cove, southwest to a non-visible line extending northwest from Glacier Island, southeast along on non-visible line to the shoreline of Glacier Island, east along the shoreline to a non-visible line extending west from the northern-most point of Growler Island, east to Growler Island, east along a non-visible line to the shoreline of Glacier Island, south then west to the western-most point of Glacier Island, west to a peninsula of Land near Fairmount Bay, southwest to the entrance of a small bay, southwest across the entrance to the shoreline of Prince William Sound, southwest then north then northwest to the entrance of a small unnamed bay east of Fairmount Bay, northwest across the entrance to the shoreline, west to the entrance of Fairmount Bay, west across the entrance to a non-visible line extending north from Fairmount Island, south along a non-visible line to Fairmount Island, southeast then south then west then north to a non-visible line extending south from Fairmount Point, north the shoreline near Fairmount Point, north to the entrance of Wells Bay, west across the entrance to the shoreline near Unakwik Point, south then west to the entrance of Unakwik Inlet, southwest across the entrance to the shoreline north of Olsen Cove, south to a non-visible line extending west from Olsen Island, east to the shoreline of Olsen Island, northeast then southeast then south the west to a non-visible line extending east from south of Olsen Cove, west to the shoreline south of Olsen Cove, south then west to a small bay north of Kiniklik Island, west across the entrance to the shoreline, west the entrance of a small bay northwest of Kiniklik Island, west across the entrance to the shoreline, west to the entrance of Eaglek Bay, southwest across the entrance to the shoreline of island west of Eaglek Island, southwest then west to the western entrance of Eaglek Bay, west across the entrance to the shoreline, southwest then west to the entrance of a small cove east of Squaw Bay, west across the entrance to the shoreline, west to the entrance of a unnamed bay east of Squaw Bay, west across the entrance, west to the entrance of a small cove east of Squaw Bay, west across the entrance to the shoreline, northwest to the entrance of Squaw Bay, northwest across the entrance to the shoreline, west to the entrance of a small cove east of Esther Bay, west across the entrance to the shoreline, west to the entrance of a small cove east of Esther Bay, west across the entrance to the shoreline, west to the

entrance of Esther Bay, west across the entrance to the shoreline, south then southwest to the entrance of Esther Passage, southwest across the entrance to the shoreline, southwest then west to the entrance of Quillian Bay, southwest across the entrance to the shoreline, west to the entrance of Lake Bay, west across the entrance to the shoreline, west to the eastern shoreline of Port Wells, west along a nonvisible line to the western shoreline of Port Wells east of Entry Cove, west to the entrance of Entry Cove, west across the entrance to the shoreline, west to the entrance of Passage Canal, west across the entrance to the shoreline, south then west to the boundary of the City of Whittier, north then west to the boundary of the Municipality of Anchorage, north then east then north then west to Glacier Fork, northwest to Metal Creek, southwest to the Knik River, west along the northern bank of the Knik River to the confluence with Jim Creek, northeast then east then south then north then south then west around the headwaters of Jim Creek to the confluence with McRoberts Creek, northwest to a small stream near Jim Lake, northeast to the shoreline of Jim Lake, south then east then north to an unnamed creek on the northeast side of the lake, northeast to the headwaters, northeast along a non-visible line to the ridgeline, northeast to a non-visible line extending southeast from a tributary of Wolverine Creek, northwest to a tributary of Wolverine Creek, northeast to its confluence with Wolverine Creek, northeast along a non-visible line to headwaters of an unnamed creek, northwest to the Matanuska River, west along a non-visible line to the northern bank of the Matanuska River east of Eska Creek, southwest to a non-visible line east of E Collier Road, west along a non-visible line to the Glenn Highway, south to N Farm Loop Road, west then south to Fence Line Drive, southeast to Monte Carlo Lane, south to E Biscane Drive, west to N Ryder Drive, south to N Palmer-Fishhook Road, west then northwest to N Trunk Road, southwest to E Bogard Road, to E Seldon Road, west to Wasilla-Fishhook Road, northeast to a non-visible line extending south from near E Polar Bear Drive, north then west then south along a nonvisible line to the eastern end of Burlwood Drive, west to E Schrock Road, north then southwest to the intersection with N Infinite Road, north along a non-visible line to the northern bank of the Little Susitna River, northeast to N Sushana Drive, west then east to Schwald Road, west to Moose Meadows Road, northeast to an unnamed creek, northwest to a non-visible line extending west from an unnamed creek, east along a non-visible line to an unnamed creek, north to a non-visible line extending south from the Bald Mountain Ridgeline, north along a non-visible line to the Bald Mountain Ridgeline, north to the Talkeetna Mountains Ridgeline, northeast to a non-visible line extending south from the headwaters of Bartholf Creek, north to Bartholf Creek, north to the confluence with the Kashwitna River, north along a non-visible line to the headwaters of Sheep Creek, northwest to the Iron Creek Trail, north to the Sheep River, west to the Talkeetna River, north to a non-visible line extending southeast from Cache Lake, northwest along a non-visible line to Cache Lake, northeast along a non-visible line to a tributary of Disappointment Creek, northweast to a non-visible line extending east from a tributary of Chunilna Creek, west to a tributary of Chunilna Creek, west to the confluence with Chunilna Creek, north to the Philips Lake Trail, northwest to Deadhorse Creek, northwest to the eastern bank of the Susitna River, north to the Alaska Railroad, north then west to the Parks Highway, north to the boundary of the Ahtna ANRC, south then east, then northeast, then southeast to an unnamed creek south of Snodgrass Lake, east to the Susitna River, north along the western bank to the Denali Highway, southeast then east to the northern boundary of Ahtna ANRC, east to the point of beginning.

House District 30 – Senate District O – Houston/Big Lake/Parks Highway

House District 30 is bounded by a line beginning at northeastern-most corner of the Denali Borough, west then southwest then south to the boundary of the Matanuska-Susitna Borough, south then east then southeast then northeast along the borough boundary to a non-visible line extending south from the mouth of Crocker Creek, north to the mouth of Crocker Creek, northeast to Settlers Bay Drive, northwest to Crocker Creek, west then north to S Settlers Bay Drive, northeast then northwest to S Knik-Goose Bay Road, southwest to Carmel Road, west to S Aurora Drive, south then west to S Northern Lights Drive, south to Shearwater Street, west to Hallie Drive, north to W Carmel Road, west to the end

of W Carmel Road, west along a non-visible line to an unnamed creek north of Threemile Lake, northeast to a non-visible line extending south from S Pond Lily Lane, north to S Pond Lily Lane, north to non-visible line extending south from Whale Lake, north along a non-visible line to Whale Lake, west then northeast along the shoreline to a non-visible line extending north to a unnamed lake, north along a non-visible line to an unnamed lake, east then north then west to a non-visible line extending south from Lucille Creek, north along a non-visible line to Lucille Creek, east to a non-visible line extending south from the boundary of the City of Houston east of W Eastwind Circle, north along a non-visible line to the boundary of the City of Houston, east then north along the city boundary to the northern bank of the Little Susitna River, east then northeast along the northern bank to N Sushana Drive, west then east to Schwald Road, east to Moose Meadows Road, northeast to an unnamed creek, northwest to a nonvisible line extending west from an unnamed creek, east along a non-visible line to an unnamed creek, north to a non-visible line extending south from the Bald Mountain Ridgeline, north along a non-visible line to the Bald Mountain Ridgeline, north to the Talkeetna Mountains Ridgeline, northeast to a nonvisible line extending south from the headwaters of Bartholf Creek, north to Bartholf Creek, north to the confluence with the Kashwitna River, north along a non-visible line to the headwaters of Sheep Creek, northwest to the Iron Creek Trail, north to the Sheep River, west to the Talkeetna River, north to a nonvisible line extending southeast from Cache Lake, northwest along a non-visible line to Cache Lake, northeast along a non-visible line to a tributary of Disappointment Creek, northwest to a non-visible line extending east from a tributary of Chunilna Creek, west to a tributary of Chunilna Creek, west to the confluence with Chunilna Creek, north to the Philips Lake Trail, northwest to Deadhorse Creek, northwest to the eastern bank of the Susitna River, north to the Alaska Railroad, north then west to the Parks Highway, northeast to the boundary of Ahtna ANRC, north then northeast along the boundary to the Nenana River, southeast then east to the confluence with Buskasna Creek, northeast to the boundary of Doyon ANRC, south then east to the boundary of Denali Borough, north then east then north to the point of beginning.

House District 31 – Senate District P – Downtown Fairbanks

House District 31 is bounded by a line beginning at intersection of Old Richardson Highway and Easy Street, south on Easy Street to the boundary of the City of Fairbanks, south then west then north then west then north then west then north then west then north then east along the city boundary to confluence of the Chena River with Noyes Slough, north along a non-visible line to the southern bank of Noyes Slough, northeast to the boundary of the City of Fairbanks, north then east then south then east then north then east to Farmers Loop Road Extended, southeast to a non-visible line extending west from the New Steese Highway, east along a non-visible line to the New Steese Highway, south to the New Richardson Highway, south to a ramp to S Cushman Street, south to the Mitchell Expressway, west to S Cushman Street, south to the Old Richardson Highway, east to the point of beginning.

House District 32 – Senate District P – East Fairbanks/Fort Wainwright

House District 32 is bounded by a line beginning at the intersection of Ownby Road and Benn Lane, north on Benn Lane to Bradway Road, east to Burgess Airstrip Road, north to Badger Road, north then northwest to Endecott Avenue, west to Mattie Street, north to Bobanna Lane, west to a jeep trail, north to Badger Road, west to Joy Drive, north to Canono Road, north to Micheal Lane, west to the end of Michael Lane, west along a non-visible line to the southern bank of the Chena River, north along the southern bank to a non-visible line south of Homestead Road, north along a non-visible line to the northern bank of the Chena River, west then southwest an unnamed creek extended southeast of Homestead Road N, northwest to Homestead Road N, north to a jeep trail, northwest to the boundary of the City of Fairbanks, north then west then south then west to Farmers Loop Road Extended, southeast to a non-visible line extending west from the New Steese Highway, east along a non-visible line to the New Steese Highway, south to the New Richardson Highway, south to a ramp to S Cushman Street, south to the Mitchell Expressway, west to S Cushman Street, south to the Old Richardson Highway, east to Easy Street, south to the boundary of the City of Fairbanks, east then south to the northern bank of the Tanana River, east to an unnamed creek near Levee Way, north to the Richardson Highway, east to the boundary of the City of North Pole, northwest then north then east to an unnamed creek west of Boulder Avenue, northeast to an non-visible line west of Lions Road, northeast along a non-visible line to Badger Road, north to Marigold Road, west to Woll Road, south to Ownby Road, west to the point of beginning.

House District 33- Senate District Q - North Pole/Badger

House District 33 is bounded by a line beginning at the intersection of Ownby Road and Benn Lane, north on Benn Lane to Bradway Road, east to Burgess Airstrip Road, north to Badger Road, north then northwest to Endecott Avenue, west to Mattie Street, north to Bobanna Lane, west to a jeep trail, north to Badger Road, west to Joy Drive, north to Canono Road, north to Micheal Lane, west to the end of Michael Lane, west along a non-visible line to the southern bank of the Chena River, north along the southern bank to a non-visible line south of Homestead Road, north along a non-visible line to the northern bank of the Chena River, west then southwest an unnamed creek extended southeast of Homestead Road N, northwest to Homestead Road N, north to a jeep trail, northwest to the boundary of the City of Fairbanks, east then north then west along the city boundary to a non-visible line extending southeast from the end of Falcon View Street, northwest to the end of Falcon View Street, east then north to Chena Hot Springs Road, east to Hopper Creek, southeast to a winter trail east of Severns Road, east to the Little Chena River, east along the northern bank to a non-visible line just north of a Sled Road, east along a non-visible line to the southern bank of the Little Chena River, south to a Sled Road, east to a non-visible line extending north from Mullen Sough, south along a non-visible line to Mullen Slough, southeast to the confluence with the Chena River, southwest along the northern bank to a non-visible line just west of the boundary of Eielson Air Force Base, west then south along a nonvisible line to the boundary of Eielson Air Force Base, south then west to the Richardson Highway, northwest to the Moose Creek Dam Levee, southwest to the Alaska Railroad, southwest to Dyke Road, south to Piledriver Slough, south across a non-visible line to the northern bank of the Tanana River, northwest along the northern bank to an unnamed creek near Levee Way, north to the Richardson Highway, east to the boundary of the City of North Pole, northwest then north then east to an unnamed creek west of Boulder Avenue, northeast to an non-visible line west of Lions Road, northeast along a non-visible line to Badger Road, north to Marigold Road, west to Woll Road, south to Ownby Road, west to the point of beginning.

House District 34 – Senate District Q – Steele Creek/Two Rivers/Eielson/Salcha

House District 34 is bounded by a line beginning at the intersection of Farmers Loop Road and Iniakuk Avenue, east on Iniakuk Avenue to Henrik Court, south then southeast to the end of Henrik Court, southeast then east along a non-visible line to RJ Loop, north then east then south to a non-visible line extending west from the intersection of College Road and Alaska Way, east along a non-visible line to College Road, east to the boundary of the City of Fairbanks, east then south then northeast then north then east then north then east then north along the city boundary to a non-visible line extending southeast from the end of Falcon View Street, northwest to the end of Falcon View Street, east then north to Chena Hot Springs Road, east to Hopper Creek, southeast to a winter trail east of Severns Road, east to the Little Chena River, east along the northern bank to a non-visible line just north of a Sled Road, east along a non-visible line to the southern bank of the Little Chena River, south to a Sled Road, east to a non-visible line extending north from Mullen Sough, south along a non-visible line to Mullen Slough, southeast to the confluence with the Chena River, southwest along the northern bank to a nonvisible line just west of the boundary of Eielson Air Force Base, west then south along a non-visible line to the boundary of Eielson Air Force Base, south then west to the Richardson Highway, northwest to the Moose Creek Dam Levee, southwest to the Alaska Railroad, southwest to Dyke Road, south to Piledriver Slough, south across a non-visible line to the northern bank of the Tanana River, southeast along the northern bank to a non-visible line south of Loon Song Lane, southwest along a non-visible line to the southern bank of the Tanana River, southeast to the boundary of the Fairbanks North Star Borough, northeast then north then west along the borough boundary to a non-visible line extending east from the headwaters of Boulder Creek, west along a non-visible line to the headwaters of Boulder Creek, south to the confluence with the north fork of the Chena River, southwest to Chena Hot Springs Road, west to a trail north of Chena Hot Springs Road, west to W Fork Road, northwest to Trapper Loop, southwest then southeast to a trail north of Chena Hot Springs Road, southwest to Chena Hot Springs Road, south to a 4WD road west of Chena Hot Springs Road, south to Angel Creek, west to a non-visible line extending south from the headwaters of Chena Dome Runoff Creek, north then west along a nonvisible line to the headwaters of Chena Dome Runoff Creek, west to the little Chena River, southwest to the confluence with Miller Creek, north to Fish Creek, west to Fairbanks Creek Road, north to a small tributary of Fairbanks Creek, south to Fairbanks Creek, west to a non-visible line extending south from unnamed road, north along a non-visible line to an unnamed road, east to a non-visible line extending north from Fairbanks Creek, south along a non-visible line to Fairbanks Creek, west to Fairbanks Creek Road, west then southwest then northwest to Skiland Road, southwest to Pedro Dome Road, west then southwest to an unnamed road, west to a non-visible line extending north from the end of Silver Fox Road, south along a non-visible line to Silver Fox Road, west then southwest to Old Murphy Dome Road, southwest to a trail near the Trans-Alaska Pipeline, south to the Trans-Alaska Pipeline, south to a nonvisible line north of Goldstream Creek, west along a non-visible line to Goldstream Creek, southwest to a unnamed lake, southwest along the southern shoreline to Goldstream Creek, west to a non-visible line extending northeast from Ballaine Road, southwest along a non-visible line to Ballaine Road, south to Farmers Loop Road, south to the point of beginning.

House District 35 – Senate District R – College/Ester/Chena Ridge

House District 35 is bounded by a line beginning at the intersection of the boundary of the Fairbanks North Star Borough and the Alaska Railroad, northeast then east then southeast along the railroad to Sheep Creek Road, north to Goldstream Creek, southeast then east to a non-visible line extending north from Miller Hill Road, south along a non-visible line to Miller Hill Road, south to a non-visible line north of Railroad Drive, northeast along a non-visible line to Ballaine Road, south to Farmers Loop Road, south to Iniakuk Avenue, east to Henrik Court, south then southeast to the end of Henrik Court, southeast then east along a non-visible line to RJ Loop, north then east then south to a non-visible line extending west from the intersection of College Road and Alaska Way, east along a non-visible line to College Road, east to the boundary of the City of Fairbanks, southwest along the city boundary to the southern bank of Noyes Slough, south along the southern bank of Noyes Slough to the Chena River, south along a non-visible line to the boundary of the City of Fairbanks, south then west then southeast then east then south then east then north then east then south along the city boundary to the southern bank of Noyes Slough, south along the city of Fairbanks, south then west then southeast then east then south then east then north then east then south along the city boundary to the northern bank of the Tanana River, southeast along the northern bank to a non-visible line south of Loon Song Lane, southwest along a non-visible line to the southern bank of the Tanana River, southeast to the boundary of the Fairbanks North Star Borough, west then northwest then north to the point of beginning.

House District 36- Senate District R – Copper River Basin/Delta/Tok/Yukon Drainage

House District 36 is bounded by a line beginning at the intersection of the southern boundary of the North Slope Borough and the Canadian Border, south along the border to the boundary of Chugach

ANRC, northwest then west to the Trans-Alaska Pipeline, north to the northern bank of the Tazlina River, west to Tazlina Lake, southwest along the northern shoreline to the Nelchina River, west to the boundary of the Matanuska-Susitna Borough, north then east then north to the boundary of Doyon ANRC, west to the Denali Highway, west then northwest to the western bank of the Susitna River, south to an unnamed creek south of Snodgrass Lake, west to the boundary of Ahtna ANRC, north then west then north then northeast to the boundary to the Nenana River, southeast then east to the confluence with Buskasna Creek, northeast to the boundary of Ahtna ANRC, south then east to the boundary of Denali Borough, north then east then north to the boundary of the Fairbanks North Star Borough, east then northeast then north then west along the borough boundary to a non-visible line extending east from the headwaters of Boulder Creek, west to the headwaters of Boulder Creek, south to the confluence with the north fork of the Chena River, southwest to Chena Hot Springs Road, west to a trail north of Chena Hot Springs Road, west to W Fork Road, northwest to Trapper Loop, southwest then southeast to a trail north of Chena Hot Springs Road, southwest to Chena Hot Springs Road, south to a 4WD road west of Chena Hot Springs Road, south to Angel Creek, west to a non-visible line extending south from the headwaters of Chena Dome Runoff Creek, north then west along a non-visible line to the headwaters of Chena Dome Runoff Creek, west to the little Chena River, southwest to the confluence with Miller Creek, north to Fish Creek, west to Fairbanks Creek Road, north to a small tributary of Fairbanks Creek, south to Fairbanks Creek, west to a non-visible line extending south from unnamed road, north along a non-visible line to unnamed road, east to a non-visible line extending north from Fairbanks Creek, south along a non-visible line to Fairbanks Creek, west to Fairbanks Creek Road, west then southwest then northwest to Skiland Road, southwest to Pedro Dome Road, west then southwest to an unnamed road, west to a non-visible line extending north from the end of Silver Fox Road, south along a non-visible line to Silver Fox Road, west then southwest to Old Murphy Dome Road, southwest to a trail near the Trans-Alaska Pipeline, south to the Trans-Alaska Pipeline, south to a non-visible line north of Goldstream Creek, west along a non-visible line to Goldstream Creek, southwest to a unnamed lake, southwest along the southern shoreline to Goldstream Creek, west to a non-visible line extending northeast from Ballaine Road, southwest along a non-visible line to Ballaine Road, southwest along a non-visible line to Miller Hill Road north of Railroad Drive, north to the end of Miller Hill Road, north along a non-visible line to Goldstream Creek, west then northwest to Sheep Creek Road, south to the Alaska Railroad, north then west then southwest to the boundary of the Fairbanks North Star Borough, south then southeast to the boundary of the Denali Borough, west then southwest then south to the boundary of the Matanuska-Susitna Borough, south to the boundary of the Doyon ANRC, west then north then northeast then north to the boundary of the North Slope Borough, east then north then east to the point of beginning.

House District 37 – Senate District S – Bristol Bay/Aleutians/Kuspuk

House District 37 includes all uplands and islands bounded by a line beginning at the intersection of the boundary of Doyon ANRC and the western boundary of the Matanuska-Susitna Borough, south then east then southeast along the borough boundary to the centerline of Cook Inlet, southwest then south to a non-visible line west of Diamond Creek, east along a non-visible line to the entrance of Kachemak Bay, south across the entrance to the shoreline near Point Pogibshi, south along the shoreline to the entrance of Port Graham, southeast then southwest then northwest along the northern shoreline of Port Graham to an unnamed creek, southwest to a non-visible line extending east from an unnamed lake on the English Bay River, east along a non-visible line to an unnamed lake, south along the western shoreline to an unnamed creek, west then south to the Mount Bede Ridgeline, northwest to a non-visible line extending southeast from an unnamed creek north of Point Bede, northwest to an unnamed creek, west to the shoreline of Cook Inlet, south to the entrance of Kennedy Entrance, south across the entrance to the boundary of the Kenai Peninsula Borough, west then southwest to the 3-mile limit of the Pacific Ocean near Sukoi Bay, southwest along the 3-mile limit to the boundary of the Lake and

Peninsula Borough, southwest to the boundary of the Aleutians East Borough including Chirikof and the Semedi Islands, southwest then northwest then east around the entire Aleutian Island Chain and the Pribilof Islands to the western boundary of the Bristol Bay ANRC south of Port Heiden, northeast then north then west to the boundary of the Calista ANRC, west then north to a non-visible line north of the Indian River, east then southeast along a non-visible line to the shoreline of the Carter Bay north of the Indian River, south to the mouth of the Indian River, east to the headwaters of the headwaters of the north fork of the Indian River, southeast along a non-visible line to the confluence with the north fork of the Indian River, east to the headwaters of Camp Creek, east to the confluence with Barnum Creek, southeast to the confluence with Native Creek, south to the confluence with the Goodnews River, northeast to Goodnews Lake, northeast along the southern shoreline to Igniumanik Creek, northeast to the boundary of the Bristol Bay ANRC, northeast to the boundary of the Kuspuk School District, northwest then north to the boundary of Doyon ANRC, east to the point of beginning.

House District 38 – Senate District S – Lower Kuskokwim

House District 38 includes all uplands and islands bounded by a line beginning at the boundary of the Kuspuk School District and the southern boundary of the Kusilvak Census Area, southwest along the census area boundary to a non-visible line extending south from the headwaters of the Pitmik River, north along a non-visible line to the Pitmik River, north then west along the southern bank to the confluence with the Kashunuk River, west along the northern bank to the confluence with the Kokechik River, west along the southern bank to the confluence with Komoiarak Slough, southwest to the headwaters of Komoiarak Slough, northwest then southwest along a non-visible line to the eastern boundary of the City of Hooper Bay, south to the shoreline of Hooper Bay, east to a non-visible line extending out east and north from south of the City of Hooper Bay, south then west along a non-visible line to the 3-mile limit of the Bering Sea, south then southwest to a non-visible line north of the Indian River including Saint Matthew and Nunivak Islands, east then southeast along a non-visible line to the shoreline of the Carter Bay north of the Indian River, south to the mouth of the Indian River, east to the confluence with the north fork of the Indian River, east to the headwaters of the headwaters of the north fork of the Indian River, southeast along a non-visible line to the headwaters of Camp Creek, east to the confluence with Barnum Creek, southeast to the confluence with Native Creek, south the confluence with the Goodnews River, northeast to Goodnews Lake, northeast along the southern shoreline to Igniumanik Creek, northeast to the boundary of the Bristol Bay ANRC, northeast to the boundary of the Kuspuk School District, northwest then north to the point of beginning.

House District 39 – Senate District T – Bering Straits/Yukon Delta

House District 39 includes all uplands and islands bounded by a line beginning at the northern-most point for the Bering Straits ANRC, south then east to the boundary of Doyon ANRC, south to the boundary of the Kuspuk School District, south to the boundary of the Kusilvak Census Area, southwest along the census area boundary to a non-visible line extending south from the headwaters of the Pitmik River, north along a non-visible line to the Pitmik River, north then west along the southern bank to the confluence with the Kashunuk River, west along the northern bank to the confluence with the Kokechik River, west along the southern bank to the confluence with Komoiarak Slough, southwest to the headwaters of Komoiarak Slough, northwest then southwest along a non-visible line to the eastern boundary of the City of Hooper Bay, south to the shoreline of Hooper Bay, east to a non-visible line extending out east and north from south of the City of Hooper Bay, south then west along a non-visible line to the 3-mile limit of the Bering Sea, north along the 3-mile limit to the boundary of the Bering Straits ANRC, northeast then west then north including Saint Lawrence and Little Diomede Islands to the point of beginning.

House District 40 – Senate District T – Arctic

House District 40 includes all uplands and islands within the Northwest Arctic Borough and the North Slope Borough.

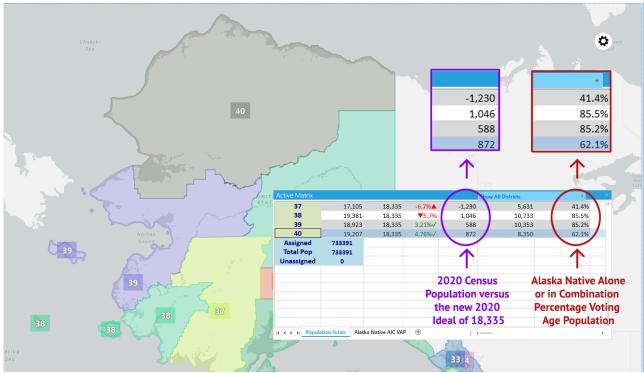
Complying with the Voting Rights Act in Alaska Crafting Legislative Districts from 2020 Census Data

Summary:

The Federal Voting Rights Act of 1965¹, Section 2, applies to redistricting in Alaska. For the past decade, Alaska House Districts 37, 38, 39 and 40 have reliably elected Alaska Native² preferred candidates.

The Alaska Redistricting Board retained Voting Rights Act experts Bruce Adelson and Dr. Jonathan Katz³ to advise and assist the Board in complying with the Voting Rights Act.

The purpose of this report is to explain how the Alaska Redistricting Board's 2021 redistricting map for Districts 37, 38, 39 and 40 complies with the Federal Voting Rights Act by retaining effective Alaska Native voting populations and maintaining established socio-economic and local government relationships among Alaska Native communities. Anchorage Minority Voting Age Populations are discussed in detail in Section 2.



Alaska's four current minority-controlled State House Districts are District 37 (yellow), District 38 (teal), District 39 (purple) and District 40 (gray). Currently these are combined into Senate District S (House 37 & 38) and Senate District T (House 39 & 40). The total 2020 population deviation from the new 2020 ideal population of 18,335 is shown on the overlaid table and is highlighted in purple. Note that three of Alaska's four Alaska Native minority-controlled districts grew faster than the state as a whole. Only a single district, 37, is underpopulated. The Alaska Native alone or in combination Voting Age Population (VAP) as a percentage of all VAP is shown in the right column of the overlaid spreadsheet for each House District and circled in red.

Background:

Alaska has been subject to the Federal Voting Rights Act (VRA) since it was passed by Congress in 1965. In previous redistricting cycles, the Board submitted proposed redistricting plans to the U.S. Department of Justice for preclearance prior to adoption in keeping with Section 5 of the VRA. Once received, this preclearance authorized the Board to proceed with the adoption of the reviewed plan since the Department had concluded that it complied with the VRA.

In 2013, the U.S. Supreme Court struck down Section 4, and by implication the Section 5 preclearance requirements, of the Voting Rights Act.⁴ On April 7, 2021, the U.S. Department of Justice confirmed that they were no long conducting preclearance activities. (See Appendix *DOJ Letter*)

To assist the board and ensure compliance with Section 2 of the Voting Rights Act, which remains in effect, the Board retained Voting Rights experts Bruce Adelson and Dr. Jonathan Katz to review the Board's proposed redistricting plans and advise the Board on making any necessary adaptations to comply with Section 2 of the Voting Rights Act.

In redistricting, compliance with the Voting Rights Act of 1965 (VRA) is one of the non-negotiable tasks for the Alaska Redistricting Board (ARB). To enable and inform such compliance, the ARB tasked its Voting Rights consultants to analyze Alaska election results to determine if voting in the State is racially polarized.

Dr. Katz conducted a Racially Polarized Voting analysis of Alaska elections between 2014 and 2020 to determine if there is statistical evidence that Alaska elections may be racially polarized in some circumstances – that is when an Alaska Native preferred candidate receives most of the votes from Alaska Native voters, while the opposing candidate receives most of the votes from non-Alaska Native Voters. After extensive statistical work, Dr. Katz concluded that Racially Polarized Voting does occur in some Alaska elections districts. (See Appendix, *Katz RBV Report*)

Mr. Adelson then advised the Board in his executive summary of the Racially Polarized Voting Analysis that, as in previous decades, Alaska Native voters are subject to the protections of Section 2 of the Federal Voting Rights Act (see Appendix, *Adelson Executive Summary*) and recommended that the Board work diligently to maintain effective Alaska Native districts, including two Alaska Native Senate seats.

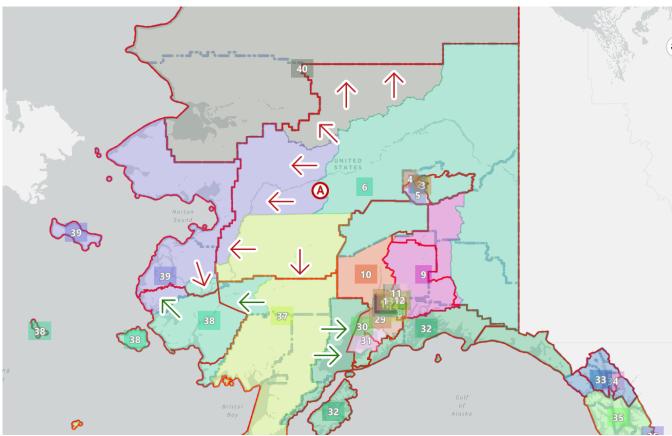
Alaska currently has four Alaska Native controlled legislative districts. These are Districts 37, 38, 39 and 40. Each has reliably elected an Alaska Native preferred candidate to the state legislature for the past decade.

According to the 2020 Census, population growth in Districts 38, 39 and 40 has outpaced statewide growth in the last 10 years. This means that three of the four traditional Alaska Native controlled districts must share population with adjoining districts as their boundaries move inward, while District 37, which did not keep pace with statewide population growth, must have its boundaries modified to incorporate additional population.

Active Matrix				
37	17,105	18,335	-6.7%▲	-1,230
38	19,381	18,335	▼5.7%	1,046
39	18,923	18,335	3.21%√	588
40	19,207	18,335	4.76%√	872
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This Excel table illustrates that D37 is under populated by 1,230 while D38-D40 are over populated.

In consultation with representatives of Alaska Native organizations, and after extensive public input, the Board adopted a 2021 Redistricting Map on November 5, 2021. The 2021 Map is careful to maintain the core VRA-protected constituency and general shape of the existing four VRA districts while making minor adaptations to re-balance the population in light of 2020 Census enumeration and improve socio-economic integration within districts.

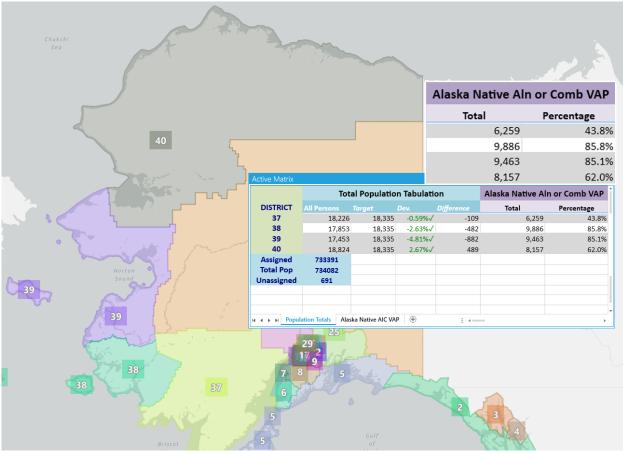


Alaska's four current minority-controlled State House Districts are District 37 (yellow), District 38 (teal), District 39 (purple) and District 40 (gray). The red outline overlay illustrates the Board's 2021 plan. Red arrows highlight how a district boundary was moved inward to reduce over population while green arrows indicate growth of a VRA district to increase population. Notice that Districts 38, 39 and 40, which were overpopulated were modestly reduced in size, while District 37 was widened to the easterly and westerly directions to gain population. The northern boundary of D37 was moved south to yield a large, sparsely populated region to the interior district. The Board felt that this change best respected long-standing Alaska Native social and economic connections in this region and was supported by Alaska Native group representatives.

While these geographic changes represent expansive areas, they occur in thinly populated regions of Alaska's vast interior expanses. For example, the westerly move of District 39's east boundary 170 miles from the center of the state (denoted with a red "A") to near the coastline results in a loss of

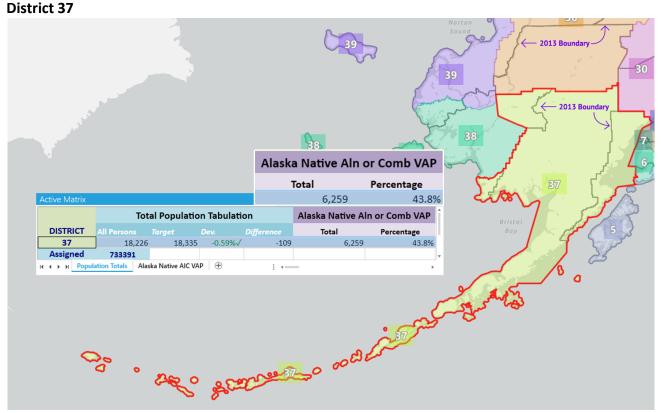
over twenty-four thousand square miles – the size of West Virginia – yet yields a population reduction of 935 persons.

Making these modest boundary modifications results in the following district shapes and accompanying Alaska Native Voting Age populations.

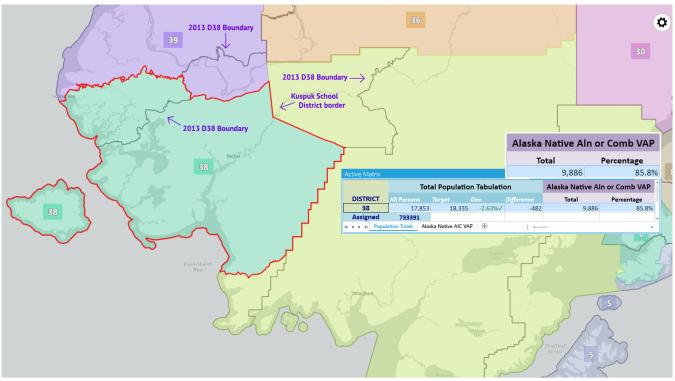


The Board's four minority-controlled State House Districts would be District 37 (yellow), District 38 (teal), District 39 (purple) and District 40 (gray). The Alaska Native Voting Age Population percentages appear in the overlaid Excel table's far right column and are District 37 (43.8%), District 38 (85.8%), District 39 (85.1%) and District 40 (62%).

These revised district boundaries reflect local government boundaries such as boroughs, school districts, traditional linguistic divisions, and integrated socio-economic areas drawn into districts as compact as practicable given Alaska's vast and rugged geography. The following four pages detail district boundary changes.



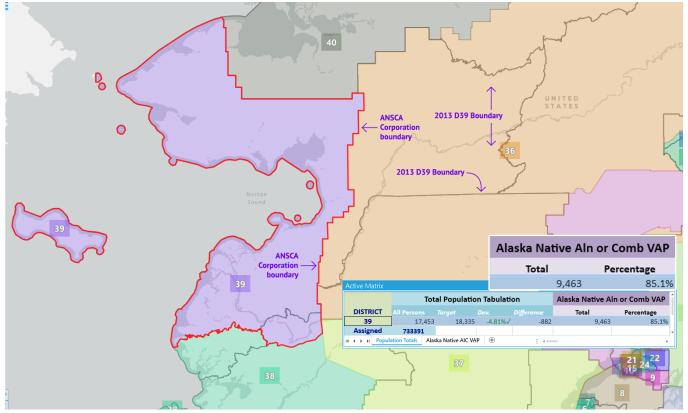
The Board's adopted District 37 retains nearly 85% of its previous population base and contains a higher percentage of Alaska Native Voting Age Population (43.8%) than the existing 2013 drawn district (41.4%). Throughout the last decade, the current District 37 has reliably elected Alaska Native preferred candidates to office. There is no reason to believe that the revised District 37 proposed by the Board would fail to continue to afford Alaska Native voters the opportunity to elect candidates of choice.



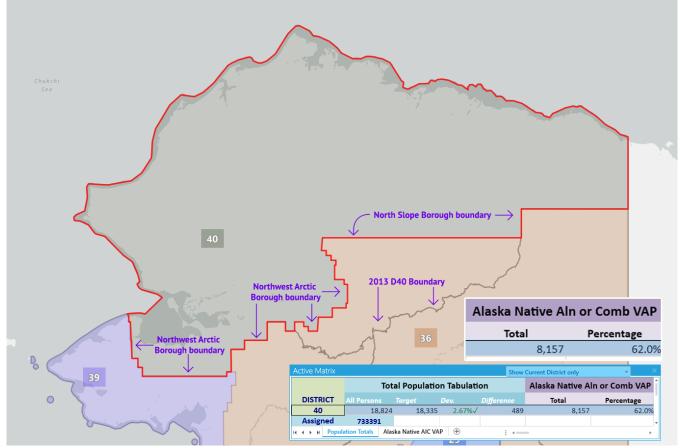
District 38

The Board's adopted District 38 retains over 80% of its existing population base and contains the a slightly higher percentage of Alaska Native Voting Age Population than has existed since the 2013 Proclamation, 85.8% up from 85.5%. Population growth in District 38 made retraction of its existing boundary necessary. The Board chose to use the western boundary of the Kuspuk School District to define District 38's northeastern boundary. The boundary transitions on the northwest side were in response to requests from local Alaska Native representatives for improved socio-economic integration.





The Board's adopted District 39 retains over 85% of its existing population base and contains a nearly the same percentage of Alaska Native Voting Age Population (85.1%) than the existing 2013 Proclamation District 39 (85.2%). Population growth from 2010 to 2020 in District 39 made reduction of its geographic area necessary. The Board chose to use boundaries of the Bering Straits and Calista Native Corporations to demarcate the eastern boundary of the new District 39 thus respecting long-standing socio-economic and cultural relationships within the wider region. The boundary transitions on the southern side were in response to requests from local Alaska Native representatives for improved socio-economic integration.

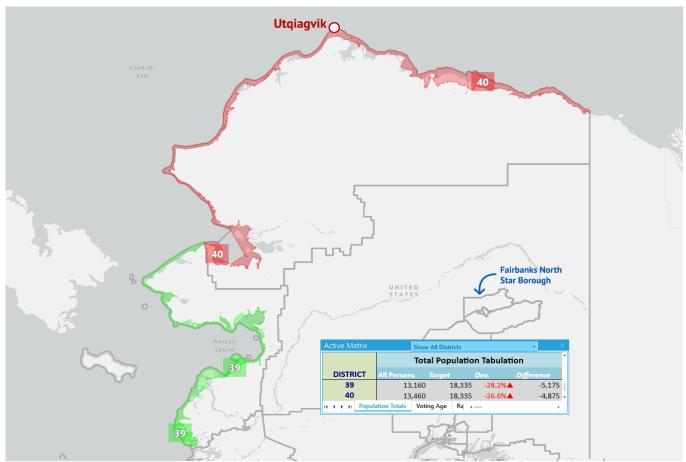


District 40

The Board's adopted District 40 retains 98% of its existing population base and contains one-tenth of a percent less Alaska Native Voting Age Population (62%) than the existing 2013 Proclamation District 39 (62.1%). Population growth from 2010 to 2020 in District 40 necessitated modest reductions in population and geographic area. The Board chose to use boundaries of the North Slope and Northwest Arctic Boroughs to demarcate the southern boundary of the new District 40 thus retaining local government and service area socio-economic integration. No other substantive boundary changes were made.

Voting Age Populations High and Low

Board Adopted Plan Districts 38, 39 and 40 feature concentrations of Alaska Native Voting Age Population necessary for electoral effectiveness. District 38 and 39 each have over 85% Alaska Native Voting Age Population while District 40 features 62.1%. This raises the question: is it possible to share some of District 38, 39 and 40's Alaska Native population with adjoining districts to create a fifth Alaska Native controlled district?



This map depicts the population concentration along Alaska's northern and western shorelines. Over seventy percent (73.1%) of District 39 and 71.5% of District 40's population is tightly bound to the coastline.

The answer is no. Concentrated Alaska Native communities, many having 90%+ Alaska Native populations, are found along a geographically isolated ribbon of coastline. Adjoining non-coastal populations are small and spread across a vast interior wilderness broken only by a few distant, densely populated urban centers with lower concentrations of Alaska Native Voting Age Population.

For example, 500 miles to the south from District 40's hub community of Utqiagvik (pop. 4,927) is the Fairbanks North Star Borough (pop. 95,655) with an Alaska Native Voting Age Population of 12.3%. Utqiagvik is the hub city for the North Slope Borough⁵, which provides public safety, healthcare and education services throughout a Borough larger than 40 U.S. states.

Only by fracturing integrated community concentrations of Alaska Native voters, such as slicing apart the North Slope Borough, and spanning vast geographic distances to unite disparate economies, cultures and climates, could Alaska Native concentrations along the coastline be shared with another district. Doing so would run contrary to public testimony from coastal residents stating that they strongly prefer to stay united with their borough service centers (see Appendix, *Selected Received Testimony*) and neighboring communities which share a common coastal way of life.

At the opposite end of the spectrum is Board District 37 with an Alaska Native Voting Age Population of 43.8%. This is 1.2% below the lower threshold that Dr. Katz determined in his Racial Block Voting Analysis. (See Appendix, *Katz RBV Report*)

District 37 is perhaps the most unique legislative district in the United States encompassing the entirety of the Aleutian Island chain, which arcs island-to-island nearly 1,700 miles from District 37's northeastern most point to the remote tip of Attu Island.*

World class seafood ports are sprinkled along the Aleutian chain. Fisheries and on-shore processing provide employment for thousands of entry-level workers and include a substantial population of short-term or transient laborers. Many of these workers are not registered to vote in Alaska.

For example, the largest seafood port in the United States is Dutch Harbor in Unalaska. Only 53.8% (2,030) of Unalaska's election precinct voting age population (3,768 per the 2020 census) are registered to vote, and of those, 585 (28.9%) voted in the 2018 statewide election for Alaska Governor.⁶ Measuring voter turnout as a fraction of total precinct voting age population shows that 15.5% of Unalaska's enumerated voting age population participated in the 2018 election. The percentage of Alaska Native Voting age population in Unalaska'a voting precinct (Aleutians #2) is 5.94%.

Contrast this with Dillingham, District 37's mainland hub community election precinct. Of the 1,691 voting age persons counted by the Census in 2020, 1,760 (104%)⁷ are registered to vote. In the statewide 2018 election, 727 (41.3%) cast votes in the election. Comparing voter turnout to total voting age population shows that 42.9% of Dillingham's population cast votes in the 2018 general election, nearly three times the rate of voter engagement observed in Unalaska. The percentage of Alaska Native Voting age population in Dillingham's voting precinct is 61.56%.

This voter participation disparity is one explanation for District 37's consistent success in electing Alaska Native preferred candidates with a 41.1% Alaska Native voting age. Observed voter engagement patterns of the last decade are expected to continue in the years ahead as the fisheries-based economy in the Aleutians has an established track record of productivity.⁸

* The Alaska Supreme Court has previously opined against splitting the Aleutian chain into separate districts. Given this guidance from the court, the Board kept the Aleutians assigned to one district in its adopted redistricting plan.

Does the Voting Rights Act Protect Anchorage Minority Voters as a "Coalition"?

Working with experts at the Alaska Department of Labor, Board staff noted the rising percentages of minority populations in Anchorage. This change in Anchorage's population raises the question: does the Federal Voting Rights Act apply to Minority Voting Age Populations in Alaska's largest city?

As detailed in a legal memorandum provided to the Board by *Alaskans For Fair Redistricting*, Anchorage attorney Susan Orlansky highlighted the divided opinions and uncertain standing of multiracial minority "coalitions" in Federal jurisprudence.⁹

In summary, there is no clear guidance from the U.S. Supreme Court whether or not a diverse multiracial/multi-cultural group of voters is eligible for Section 2 protection under the Federal Voting Rights Act.

The U.S. Supreme Court, in its key decision of *Thornburg v. Gingles*, 478 U.S. 30 (1986), decided that one of the most important factors in a VRA analysis of redistricting plans is *"the extent to which voting in the elections of the state or political subdivision is racially polarized."* ^{10 11}

As Ms. Orlansky notes, the U.S. Supreme Court established a three-prong test by which application of the Voting Rights Act may be determined. The group of voters must demonstrate all three preconditions in order to qualify for protection under Section 2 of the Voting Rights Act. These are:

- 1. That the racial or language minority group is "sufficiently numerous and geographically compact" as to constitute a majority of the population in a single-member district, and
- 2. The minority group is "politically cohesive," meaning its members tend to vote similarly, and
- 3. The non-minority group votes sufficiently as a bloc to enable it "usually to defeat the minority's preferred candidate". ^{12, 13}

Without clear U.S. Supreme Court direction on the legal standing of multi-racial minority communities in relation to Section 2 of the Federal Voting Rights Act, the Board engaged with its Voting Rights Act Consultants Bruce Adelson and Dr. Jonathan Katz to explore the *Gingles* criteria in relation to Anchorage's multi-racial minority voters. For purposes of this exploration, we presume that a mixed minority district satisfies the first *Gingles* factor and so focused our efforts on searching for evidence of the second and third tests: minority political cohesiveness and counter-minority racial bloc voting by whites.

Election results for Northeast Anchorage were analyzed for the possibility of minority coalition bloc voting. In consultation with Mr. Adelson and Dr. Katz, it was determined that court-accepted statistical methods are not capable of detecting political cohesiveness or racial bloc voting among minority groups in Anchorage from available election returns. (See Appendix: *Katz Anchorage Memo*)

Without empirical evidence of Racial Bloc Voting, or Racially Polarized voting, the U.S. Supreme Court has directed that "... a State may not assum[e] from a group of voters' race that they 'think alike, share the same political interests, and will prefer the same candidates at the polls."^{14 15}

The Hickel Process Constraint

The Alaska Supreme Court has made clear that the Board's first task is to comply with the Alaska Constitution, and that the Board may only consider race when redistricting if necessary to comply with the requirements of the Federal Voting Rights Act.

Reasoning that Federal law trumped Alaska's Constitution, the 2011-2013 Redistricting Board started mapping with the Voting Rights Act provisions in hand.¹⁶ The 2011 Board created a few racially influenced maps first before discharging their Alaska constitutional duty to draw districts which are compact, contiguous, relatively socio-economically integrated, and, as a nearly as practicable, equal to the ideal district population. After years of litigation and millions in sunk cost, the 2011 Board learned that the Alaska Constitution does not smile on districts crafted with a racial yardstick.

In throwing out the entire 40-seat redistricting plan in two separate appeals, the Alaska Supreme Court removed any possible ambiguity clouding the Board map crafting process:¹⁷ The Board must start first by drawing compact, contiguous, socio-economically and equally populated districts. Only after doing so may the Board deviate from its Alaska's constitutional districts and then only as little as necessary in order to comply with the requirements of the Federal Voting Rights Act.¹⁸

If authorized by legislative appropriation, a future Board may study emerging minority coalitions in more detail, but the current Board is explicitly prohibited by statute from expending state funds for redistricting-related population studies.¹⁹ The Board must reach decisions based on currently available evidence, not on theory or speculation.

In the absence of clear evidence that mixed minority groups in Anchorage are politically cohesive and that they face opposing racial bloc voting by white voters, we believe the Alaska Constitution directs the Board to focus on its constitutional mandate to draw Anchorage districts that are compact, contiguous, socio-economically integrated, and roughly equal in population.

Without meeting the *Gingles* test for application of Section 2 of the Voting Rights Act, the Board cannot assert to an Alaska court that the Voting Rights Act "requires" district lines to be adjusted for a racial purpose, regardless of how noble the intent.²⁰ If the Voting Rights Act does not require a departure from the Alaska Constitutional criteria, then the Board should not deviate from its focus on the four constitutional redistricting guidelines.

This approach has the dual benefit of complying with Alaska case law and protecting the Board from an equal protection claim that traditional redistricting principles were "subordinated to race."²¹ Similarly, focusing on constitutionally required redistricting goals protects the Board from the accusation that intentional discrimination motivated Board decisions.

With these legal guardrails in view, the Board's counsel and staff, in coordination with retained VRA experts, recommend that the Board proceed with its established commitment to draw compact, contiguous and socio-economically integrated districts in Anchorage with as near as practicable equal populations and avoid subordination of these criteria to racial balancing goals.

Conclusion

Over the last decade, three of Alaska's four Alaska Native controlled legislative districts experienced population growth which outpaced increases in the overall state population. This strength allowed the Board to draw compact, contiguous districts which retain existing socio-economic integration while retaining core constituencies and modestly adjust boundaries to provide population rebalancing. The Board chose, where possible, to respect local government boundaries and thereby respect established socio-economic relationships among various regions of Alaska's vast rural geography while retaining proven electoral effectiveness to Alaska Native populations protected by the Voting Rights Act.

For the reasons outlined in detail in the preceding pages, and after consultation with retained VRA experts, we believe the Alaska Redistricting Board's proposed Districts 37, 38, 39 and 40 comply with the Voting Rights Act.

While the Board has noted rising percentages of minority voting age populations in Anchorage, available evidence does not suggest that these populations currently meet the second and third prongs of the *Gingles* vote dilution test for application of Section 2 of the Voting Rights Act. Therefore, the Board is cautioned by Alaska case law from departing from the Alaska Constitution's redistricting criteria for a racial purpose while drawing legislative districts in Anchorage.

Footnotes

¹ Information about the Federal Voting Rights Act of 1965 may be found here: <u>https://www.justice.gov/crt/history-federal-voting-rights-laws</u>

² In past cycles and currently, the Alaska Redistricting Board inclusively defines "Alaska Native" as anyone who selected Alaska Native alone or in combination with any other race when responding to the U.S. Census. Therefore, the Voting Age Population percentage calculations shown throughout this report are derived using this methodology but applied to the 18+ age group. More specifically, these numbers are a summation of the following US Census data fields published on August 12, 2021:

P0030005+P0030012+P0030016+P0030020+P0030021+P0030022+P0030027+P0030031+P0030032+P0030033+P003003 7+P0030038+P0030039+P0030043+P0030044+P0030045+P0030048+P0030049+P0030050+P0030054+P0030055+P0030 056+P0030058+P0030059+P0030060+P0030062+P0030064+P0030065+P0030066+P0030068+P0030069+P0030071

The Board has relied on the Alaska Department of Labor's Research and Analysis section to assist with identifying the correct Census fields and building this calculation. The overlaid Excel sheets in the maps shown in this report are generated by the data and Excel calculations provided the State Demographer.

³ On April 19, 2021 the Board posted a Request for Information for Voting Rights Act Consultant. The full public notice and RFI document may be found here: <u>http://notice.alaska.gov/202194</u>

⁴ See: *Shelby County v. Holder, 133 S. Ct. 2612 (2013)* https://www.supremecourt.gov/opinions/12pdf/12-96 6k47.pdf

⁵ In Alaska, "Boroughs" perform the same services and have the same legal relationship with the state as "Counties" do in the continental United States.

⁶ State of Alaska - 2018 General Election Results for House District 37: https://www.elections.alaska.gov/results/18GENR/data/sovc/hd37.pdf

⁷ The Alaska Division of Elections can run 4 or more years behind in removing voters who are no longer eligible. <u>https://www.juneauempire.com/news/alaska-has-more-registered-voters-than-eligible-residents/</u>

⁸ Dutch Harbor is consistently one of the top performing seafood ports in the United States. <u>https://www.alaskaseafood.org/wp-content/uploads/McDowell-Group_ASMI-Economic-Impacts-Report-JAN-2020.pdf#page=18</u> (see page 18)

⁹ Ms. Orlansky presently serves as president of the Alaska chapter of the American Civil Liberties Union. The memo and AFFR cover letter are available here: https://www.akredistrict.org/files/1016/3510/4568/Alaska Redistricting Board Testimony File 2021.10.23.pdf#page=6

¹⁰ Thornburg v. Gingles, 478 U.S. 30 (1986) https://supreme.justia.com/cases/federal/us/478/30/

¹¹ In *Brnovich v. Democratic National Committee*, 141 S. Ct. 2321, 2337 (2021), the Supreme Court described *Gingles* as "our seminal § 2 vote dilution case" and recognized that "[o]ur many subsequent vote dilution cases have largely followed the path that *Gingles* charted."

12 Ibid

¹³ Redistricting Law 2020, "The Red Book", National Conference of State Legislatures, 2019, page 54

¹⁴ League of United Latin American Citizens(Lulac) V. Perry, 548 U.S. 399 (2006) See: https://supreme.justia.com/cases/federal/us/548/399/

¹⁵ Shaw V. Reno, 509 U. S. 630, 647 (1993). See: https://supreme.justia.com/cases/federal/us/509/630/

¹⁶ *In re 2011 Redistricting Cases*, 274 P.3d 466, 467 (Alaska 2012)

¹⁷ In re 2011 Redistricting Cases, 274 P.3d 466, 467, 468 (Alaska 2012) and 294 P.3d 1032, 1037 (Alaska 2012).

¹⁸ In re 2011 Redistricting, 274 P.3d 466, 467-68 (Alaska 2012)

¹⁹ Alaska Statute AS 15.10.210, see: <u>http://www.akleq.qov/basis/statutes.asp#15.10.210</u> Expenditures for population surveys or sampling prohibited. An expenditure of public funds may not be made for a population survey or sampling conducted for purposes of redistricting the legislature without an express appropriation by the legislature for that purpose.

²⁰ Badillo v City of Stockton, 956 F.2d 884 (U.S. Court of Appeals, Ninth Circuit, 1992)

²¹ *In re 2011 Redistricting Cases*, 274 P.3d 466, 468 (Alaska 2012)



April 7, 2021

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VIA EMAIL ONLY Robert.berman@usdoj.gov

Robert Berman Assistant Attorney General U.S. Department of Justice Civil Rights Division

Re: Alaska Redistricting Board – Preclearance Review

Dear Mr. Berman,

I am writing to follow up on our phone call last week. I contacted you in my capacity as counsel to the Alaska Redistricting Board. I explained that pursuant to an Alaska state statute, the Board is to submit its redistricting plan for preclearance to the United States Department of Justice (USDOJ) "under 42 U.S.C. 1973." *See* Alaska Statute 15.10.220. I contacted you to determine if USDOJ is still conducting preclearance review after the U.S. Supreme Court's decision in *Shelby County v. Holder*.

You directed me to the webpage for the Voting Section of the Civil Rights Division of the U.S. Department of Justice at <u>https://www.justice.gov/crt/voting-section</u>. That page summarizes the following Attorney General advisory that has been provided to states seeking preclearance review:

On June 25, 2013, the United States Supreme Court held that the coverage formula in Section 4(b) of the Voting Rights Act, 42 U.S.C. 1973b(b), as reauthorized by the Voting Rights Act Reauthorization and Amendments Act of 2006, is unconstitutional and can no longer be used as a basis for subjecting jurisdictions to preclearance under Section 5 of the Voting Rights Act, 42 U.S.C. 1973c. *Shelby County v. Holder*, 570 U.S. ____, 2013 WL 3184629 (U.S. June 25, 2013) (No. 12-96). Accordingly, no determination will be made under Section 5 by the Attorney General on the specified change.

In our telephone discussion, you confirmed that USDOJ is not accepting requests for preclearance review by states previously subject to the coverage formula of the Voting Rights Act. For the foregoing reasons, we have concluded that despite the legacy Alaska Robert Berman April 7, 2021 Page 2

state statute that contemplates preclearance review, there is no such process available to the Alaska Redistricting Board.

Sincerely,

SCHWABE, WILLIAMSON & WYATT, P.C.

Matthew Singer

MSI:jmh

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April 7, 2021

VIA EMAIL ONLY Robert.berman@usdoj.gov

Robert Berman Assistant Attorney General U.S. Department of Justice Civil Rights Division

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Sincerely,

SCHWABE, WILLIAMSON & WYATT, P.C.

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Alaska Racially Polarized Voting Analysis for 2021 Redistricting

Bruce Adelson, Esq. and Jonathan N. Katz, Ph.D.

October 20, 2021

1 Introduction

This report presents results of a racially polarized voting analysis of elections in Alaska. The analysis focuses on elections for the State House and Senate that must be redrawn because of the release of the 2020 Federal Census. We analysed all contested elections between 2014 and 2018 for either office where at least one candidate on the ballot was identified as Alaska Native. Given the large number of absentee ballots in 2020 because of the pandemic, it was not possible to analyze any of these elections. Further, given data limitations, we also analyzed the statewide elections for Governor/Lt.Governor in 2018 and 2014 that featured a ticket that included at least one Alaska Native candidate.

Several of the studied election show evidence of statistically significant racially polarized voting, particularly in the statewide races. That is, an estimated majority of Alaska Natives voted for one candidate, typically the one identifying as Alaska Native, whereas a majority of non-Alaska Natives voted for another candidate. Therefore, we conclude that there is racially polarized voting in elections in the state.

The next section reviews the methods for estimating voting behavior from aggregate data. This is referred to as ecological inference in the statistics and social science literature. The next section then discusses the results of the analysis of the Alaska election data. The final section discusses the implications of this analysis for redistricting in Alaska.

2 Methods for Ecological Inference

The problem of inferring voting behavior from aggregate information is known as ecological inference. We are interested in estimating how groups of voters, say Alaska Natives and Others (i.e., non-Alaska Natives), voted in a given election when all we observe are the precinct-level returns and the demographic make-up of the precincts.

2.1 Homogenous Precincts and the Method of Bounds

A common starting point is to consider only homogeneous precincts. That is, we could examine the election results from precincts that are closest to racially/ethnically homogeneous in character. For example, if a precinct were completely homogeneous, say with a population that was 100% Alaska Native, then we know what fraction of Alaska Natives that voted for a given candidate in the precinct: it is just the share the given candidate got in the precinct. While this might be a useful starting point, as a statistical procedure it is problematic since it throws out most of the data unless most of the precincts are homogeneous.

However, we can use the intuition from the homogeneous precincts to place bounds on the level of support each group gives a candidate. Consider the following equation, which is true by definition, that relates the vote share of given candidate to the voting behavior of Alaska Natives and Others (i.e., non-Alaska Natives):

$$V_i = \lambda_i^A X_i + \lambda_i^O (1 - X_i), \tag{1}$$

where V_i is the share of the vote a given candidate received in precinct i, X_i is the fraction of Alaska Natives in the precinct and therefore $(1-X_i)$ is the fraction of Other voters, assuming for the moment that there are only two groups in the electorate. λ_i^A is the fraction of Alaska Natives voting for the given candidate and similarly λ_i^O is the fraction of Others voting for the given candidate. In other words, the equation states the fact that the total vote share for a candidate must equal the proportion of Alaska Native voters who support them multiplied by the proportion of the electorate that is Alaska Native plus the proportion of the Other voters who support the candidate multiplied by the proportion of the electorate which is Other.

In the case of only two groups — e.g., Alaska Native and Others – and only two candidates, then racially polarized voting occurs when λ_i^A and λ_i^O are on opposite sides of 0.5 - e.g., $\lambda_i^A > 0.5$ and $\lambda_i^O < 0.5$. That is, a majority of one group voting for one candidate and the majority of the other group voting for the opposite candidate. If this holds, then the larger the difference between support levels, the greater the level of polarization. Of course, since we are dealing with statistical estimates, this difference must be greater than the statistical uncertainty in the estimates.

Now consider homogeneous Alaska Native precincts again. In these precincts, $X_i = 1$, so that the equation simplifies to $V_i = \lambda_i^A$ as we stated above. However, from these precincts we can not say anything about the voting behavior of Others because any proportion of Others voting for a given candidate is consistent with the observed vote shares in these precincts. We can generalize this idea using Equation 1. Consider, for example, a precinct where $X_i = 0.6$, that is sixty percent of voters are Alaska Native (and, therefore, 40% are Other), and the candidates vote share, V_i , is 0.5.

Since 60% of the voters are Alaska Native and the given candidate got 50% of the vote, then at most $\frac{5}{6}$ ths of the Alaska Native voters could have voted for the candidate. If it were higher than this bound then the vote share in the precinct would have to be higher. On the other hand, even if all of the Others voted for the candidate then at least $\frac{1}{6}$ th of the Alaska Natives would have had to vote for the candidate as well, otherwise the vote share would have been less than 0.5. Thus, we know that proportion of Alaska Natives voting for the candidate, λ_i^A , must be greater than 1/6 and less than 5/6 and λ_i^O can take on any value between zero and one. We actually know more than this: we know that the feasible values for this district must lie on the line segment, called a constraint

line, defined by the bounds $(\frac{1}{6}, 1)$ and $(\frac{5}{6}, 0)$. Using standard algebra by plugging in $X_i = 0.6$ and $V_i = 0.5$, we find that $\lambda_i^{OW} = -\frac{3}{2}\lambda_i^A + \frac{5}{4}$.

Duncan and Davis (1953) fully developed the method of bounds outlined above to analyze ecological data. Unfortunately, with a large number of precincts, it is difficult to make much direct use of these bounds since we need a way to combine them to understand typical behavior in the district. These bounds do, however, provide useful information as we will see below.

2.2 Ecological or Goodman's Regression

An alternative approach that examines all precincts simultaneously was developed by Goodman (1959) and is perhaps the most commonly used procedure. It is referred to in the literature as ecological regression or Goodman's regression. Like the method of bounds, it is based on the identity in Equation 1. Suppose that the fraction of support for a given candidate for both Others and Alaska Natives was the same across all precincts in the district. A bit more formally, suppose that $\lambda_i^A = \lambda^A$ and $\lambda_i^O = \lambda^O$ for every precinct *i*. Then we could estimate these fractions by choosing the best fitting line to the precinct-level data. This is just a standard linear regression, the most commonly used statistical procedure in the social sciences. From these estimates we could then compare the voting behavior between groups.

It is important to note that ecological regression can produce widely inaccurate estimates of group voting behavior (King 1997). First, the assumption that the fraction of group support is constant across every precinct is highly implausible. Second, ecological regression does not use the bounds information either at the precinct level (discussed above) nor even the overall bounds that the average fraction of a group's support for a given candidate must be between zero and one. For example, ecological regression analysis can produce negative estimates for the fraction of a group supporting a particular candidate or values greater than 100%

2.3 Ecological Inference/EI

King (1997) has developed an alternative approach called Ecological Inference or EI. While the technical details are complex, its advantage is that it uses all available information to generate more accurate estimates of voting behavior from aggregate data. EI is basically a way to combine the regression approach of Goodman (1959) with the bounds from Duncan and Davis (1953). Further, it allows the estimates to vary (systematically) across precincts. The idea is we calculate the constraint lines for every precinct. We then choose as our estimate for a given precinct a point on its constraint line near the center of the intersection of all of the other lines. The actual point chosen is based on a standard statistical model. We can then use these precinct estimates to calculate quantities of interest such as the average support level across the district.

It is important to note that since King's method relies heavily on the bounds information, it works best when at least some of these bounds are informative — i.e., narrower than the entire range from 0 to 1. This will happen when more precincts have large proportions of each of the groups who's voting behavior we want to estimate. In other words, we will need some precincts that are relatively homogeneous for each ethnic group we want to study.

2.4 More than Two Groups or Two Candidates

The above discussion on the development of methods for ecological inference assumed that we only had two groups and two candidates (or vote choices). Accommodating more than two groups is rather straight-forward, although notation and intuition become more complicated, especially for the constraint lines. All that is required is adding the additional group fractions to Equation 1.

Allowing for more than two candidates or vote choices, however, is a bit more complicated. In the special case of only two choices, we only need to model the vote share going to one of them since we then automatically know the fraction going to the other candidate: this is just one minus the first vote share. If, for example, we add a third choice, then we need to model the vote share going to any two of the options and then we get third by subtraction the sum of the other two shares from one. Formally, we need to add an additional equation for each vote choice greater than two. Typically, there will always be more than two vote choices even when there are only two candidates because some individuals will choose not to vote in the election. We need to account for this abstention in order to make proper inferences. However, since what we care about is the share of voters supporting each of the candidates, we need to condition out these non-voters. This is not straight-forward, but can be done once we estimate the full set of options: don't vote or vote for one of the candidates on the ballot.

In the general case of more than two groups and more than two vote choices, racially polarized voting is also a more complicated concept. If we only have two choices, then we get voting cohesion among each group automatically since one of the choices must receive a majority of support from the members (ignoring the unlikely event of an exact tie in the election). However, when we have more than two choices, it is possible that no choice receives majority support of the group. In fact, given the estimation uncertainty, it may not be possible to infer which candidate is preferred by the members of the group.¹ Even if we find that the groups both have a strictly preferred candidates (i.e., they are cohesive), we still need to see if the distribution between the groups is statistically different to find racially polarized voting.²

I finally note that adding additional groups and vote choices to King's (1997) EI is not straightforward. The generalization was first developed by King, Rosen, and Tanner (1999). Unfortunately, their approach was computationally inefficient and was later refined by Rosen, Jiang, King and Tanner (2001). I use the Rosen et al. (2001) approach in my analysis here.³

3 Results of the Analsysis of Elections in Alaska

The results of the EI analysis of the contested elections between 2014 and 2018 that had at least one candidate who identifies as Alaska Native are presented in the tables at the end of this report. As previously noted, the non-voters are conditioned out, so the estimates are only for voters.

To read the tables, consider the results for the first election in the set, the 2014 election for Senate

¹Formally, we can not rule out the null hypothesis that the group equally split their votes across two or more choices.

²Formally, we need to reject the null hypothesis that the distribution of vote shares across groups is identical.

³All the computations discussed in this report were done in R (R Core Team 2012), a statistical computing language, using the eiPack (version 0.2–1) developed by Olivia Lau, Ryan T. Moore, and Michael Kellerman.

District C. The two candidates are Dorthy J. Shockley, who is identified as Alaska Native (which is denoted by the "*" after her name) and Click Bishop. The table shows that an estimated fraction of Alaska Natives voting for Shockley is 71.1% and the parenthetical values underneath that give the 95% confidence interval of the estimate is (58.4%, 82.0%). These measure our statistical uncertainty; and we can not rule out that true percent is in this interval with high probability. Similarly, it is estimated that 23.5% of Other (non-Alaska Natives) voted for Shockley with a confidence interval of (19.3%, 27.4%). Similarly it is estimated that 28.9% of Alaska Natives voted for Bishop with a confidence interval of (18.0%, 41.6%) and 76.5% of Other voters with a confidence interval of (72.6%, 80.7%). As we can see from the results from the 2014 election in Senate District C, there is a large amount of statistical uncertainty around all of the estimated vote shares, particularly for Alaska Natives. This is caused in large part because of the small number of precincts in Alaska legislative districts. However, we can confidence interval is completely above 50%. Similarly, we see that Bishop was the majority preferred candidate of non-Alaska Natives. Given the strong voting patterns by groups, this election show statistically significant evidence of racial polarized voting.

This pattern of large amounts of statistical uncertainty holds for almost all Alaska House and Senate elections that we examined for this study. Unlike the 2014 Senate District C election, in most of these elections there is no statistically significant evidence of racially polarized voting given the large amounts of estimation uncertainty. The only exceptions are the 2014 and 2016 elections in House District 6, and the aforementioned 2014 election for Senate District C. In all three of these elections, we see strong evidence for racially polarized voting.

In the 2016 House District 6 election, for example, the estimates clearly show that Alaska Natives strongly preferred Jason Land with an estimated 65.1% voting for him with a confidence interval of (54.2%, 75.3%), whereas David Talerico was the preferred candidate of Other voters with an estimate of 79.2% support with a confidence interval of (74.8%, 82.2%). Given the two groups cohesive and opposing voting patterns, there is statistically significant evidence of racially polarized voting in this election. A similar pattern is found in the 2014 election in the same district between Wilson Justin, the preferred candidate of Alaska Natives, and David Talerico.

Given the small number of precincts in the House and Senate elections, we also examined the election for Governor/Lt. Governor in 2018 and 2014. These are the only statewide, partisan elections that featured at least one candidate on the ticket who identified as Alaska Native. Given these elections are statewide, they have much larger number of precincts that can reduce estimation uncertainty.

The 2018 election saw strong evidence for racially polarized voting. The preferred ticket of Alaska Native voters was Begich/Call with an estimate of 66.2% voting for it with a confidence interval of (64.2%, 68.1%), whereas a majority of 61.9% of non-Alaska Natives are estimated to have voted for the Dunleavy/Meyer ticket with a confidence interval of (61.1%, 62.6|%). The 2014 Gubernatorial election, also showed statistically significant racially polarized voting. However, the amount of polarization was not as large as in the 2018 one, nor as substantively important. Approximate 52.5% of Alaska Natives voted for the Walker/Mallot ticket with a confidence interval of (50.4%, 54.6%), whereas the majority preferred candidate of Other voters was Parnell/Sullivan with 51.3% of their vote with a confidence interval of (50.7%, 52.0%). However, we also see that approximately 45.8% of Other voters chose Walker/Mallot with a confidence interval of (45.2%, 46.5%). In fact,

this cross-over voting of Other voters allowed Walker/Mallot to ultimately win the election.

4 Implications for Redistricting in Alaska

Given that we find evidence of racially polarized voting in Alaska elections, we consider its implications for the redistricting process. Section 2 of the Voting Rights Act of 1965 prohibits, among other things, any electoral practice or procedure that minimizes or cancels out the voting strength of members of racial or language minority groups in the voting population. This phenomenon is known as vote dilution. Redistricting plans cannot crack or pack a geographically concentrated minority community across districts or within a district in a manner that dilutes their voting strength.

In Thornburg v. Gingles, 478 U.S. 30 (1986), the Supreme Court set out the framework for challenges to such practices or procedures. In Brnovich v. Democratic National Committee, 141 S. Ct. 2321, 2337 (2021), the Supreme Court described Gingles as "our seminal § 2 vote-dilution case" and recognized that "[o]ur many subsequent vote-dilution cases have largely followed the path that Gingles charted." Analysis begins by considering whether three Gingles preconditions exist. First, the minority group must be sufficiently large and geographically compact to constitute a majority of the voting-age population in a single-member district. Second, the minority group must be politically cohesive. Third, the majority must vote sufficiently as a bloc to enable it—in the absence of special circumstances, such as the minority candidate running unopposed—usually to defeat the minority group's preferred candidate. Our finding that racially polarized or racial bloc voting exists in Alaska elections and that such racial polarization has prevented Alaska Natives from electing their candidates of choice in given elections is legally significant. Pursuant to Section 2 of the Voting Rights Act of 1965, districts must be created to provide Alaska Natives with the opportunity to elect candidates of choice to overcome cohesive racial bloc voting by white voters that prevents them from doing so. A racial bloc voting analysis, such as presented here, is used to ascertain whether minority voters are politically cohesive and if white voters bloc vote to usually defeat minority-preferred candidates.

If, based on the racial bloc voting (RBV) analysis, it is determined voting is racially polarized, and candidates preferred by a politically cohesive minority group are usually defeated by white voters not supporting these candidates, a district(s) that offers minority voters an opportunity to elect their candidates of choice must be drawn. If such districts already exist, and minority-preferred candidates are winning only because these districts exist, then these minority districts must be maintained in a manner that continues to provide minority voters with an opportunity to elect their preferred candidates.

The question, then, is what is a reasonable share of a district's population that is necessary to ensure that Alaska Natives have a reasonable opportunity to elect their candidates of choice? This can be determined from equation 1. If we have estimates of the vote share of the groups, we can solve for, X, the share of Alaska Natives, needed such as their preferred candidate is likely to get greater than half the votes. Given that the estimates of voting behavior are relatively uncertain in the Alaskan data, we will want to consider a range. Looking at the racially polarized elections, districts would need to be somewhere around 45% to 50% Alaska Native to give them an opportunity to elect candidates of choice.

5 References

Duncan, Dudley and Beverly Davis. 1953. "An Alternative to Ecological Correlation." *American* Sociological Review 64:610–625

Goodman, Leo 1959. "Some Alternatives to Ecological Correlation." *American Journal of Sociology* 64:610–625.

King, Gary. 1997. A Solution to the Ecological Inference Problem. Princeton, NJ: Princeton University Press.

King, Gary; Ori Rosen; and Martin A. Tanner. 1999. Binomial-Beta Hierarchical Models for Ecological Inference. *Sociological Methods & Research*, 28(1):61–90.

Lau, Olivia, Ryan T. Moore, and Michael Kellermann. 2007. "eiPack: Ecological Inference and Higher-Dimension Data Management". *R News*, 7(2):43–477.

Rosen, Rosen, Wenxin Jiang; Gary King; and Martin A. Tanner. 2001 "Bayesian and frequentist inference for ecological inference: The $R \times C$ case." *Statistica Neerlandica*, 55(2):134—156.

R Core Team. 2012. *R: A Language and Environment for Statistical Computing* Vienna, Austria: R Foundation for Statistical Computing.

2014

	Native	Other
Shockley*	71.0	23.5
	(58.6, 82.0)	(19.5, 27.3)
Bishop	29.0	76.5
-	(18.0, 41.4)	(72.7, 80.5)

EI Results for Senate District C in 2014

EI Results for Senate District P in 2014

	Native	Other
Henrichs*	43.5	24.5
	(20.0, 69.5)	(19.9, 28.3)
Stevens	56.5	75.5
	(30.5, 80.0)	(71.7, 80.1)

EI Results for House District 1 in 2014

	Native	Other
Kawasaki	52.4	53.3
	(21.6, 82.4)	(33.6, 73.3)
Bringhurst*	47.6	46.7
	(17.6, 78.4)	(26.7, 66.4)

EI Results for House District 6 in 2014

	Native	Other
Justin*	85.2	21.9
	(76.0, 92.7)	(18.1, 25.7)
Talerico	14.8	78.1
	(7.3, 24.0)	(74.3, 81.9)

EI Results for House District 33 in 2014

	Native	Other
Kito*	64.2	79.1
	(36.5, 87.9)	(72.0, 86.7)
Dukowitz	35.8	20.9
	(12.1, 63.5)	(13.3, 28.0)

8

	Native	Other
Clift/Lee	7.7	1.9
	(6.6, 8.8)	(1.6, 2.3)
Myers/Rensel	9.3	0.8
	(8.6, 9.9)	(0.7, 1.0)
Parnell/Sullivan	30.6	51.4
	(28.6, 32.6)	(50.8, 51.9)
Walker/Mallott*	52.5	45.9
	(50.4, 54.5)	(45.2, 46.5)

2016

EI Results for House District 2 in 2016

	Native	Other
Holdaway*	53.2	12.3
	(15.7, 85.0)	(1.2, 26.7)
Thompson	46.8	87.7
	(15.0, 84.3)	(73.3, 98.8)

EI Results for House District 6 in 2016

	Native	Other
Land*	65.1	20.8
	(54.2, 75.1)	(17.7, 24.0)
Talerico	34.9	79.2
	(24.9, 45.8)	(76.0, 82.3)

EI Results for House District 36 in 2016

	Native	Other
Sivertsen*	23.0	50.0
	(7.8,41.8)	(42.0, 58.3)
Shaw	10.1	3.7
	(3.5, 17.7)	(1.2, 6.5)
Ortiz	67.0	46.3
	(48.2, 83.1)	(37.4, 54.4)

	Native	Other
Edgmon*	62.4	53.5
	(54.5, 70.6)	(38.7, 68.3)
Weatherby	37.6	46.5
	(29.4, 45.5)	(31.7, 61.3)

ΕI	Results	for	House	District	37	in	2016
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2018

EI Results for House District 18 in 2018

	Native	Other
Drummond	52.4	67.1
	(22.0, 80.6)	(53.8, 80.5)
Lekanoff*	47.6	32.9
	(19.4, 78.0)	(19.5, 46.2)

EI Results for House District 32 in 2018

	Native	Other
Harris	30.6	34.1
	(10.5, 56.3)	(26.6, 40.2)
Stutes	38.1	57.7
	(15.5, 63.4)	(50.7, 64.8)
Katelnikoff-Lester*	31.3	8.2
	(12.5, 52.3)	(2.7, 13.3)

EI Results for House District 37 in 2018

	Native	Other
Edgmon*	67.9	55.1
	(61.2, 74.8)	(40.3, 70.7)
Weatherby	32.1	44.9
	(25.2, 38.8)	(29.3, 59.7)

EI Results for House District 38 in 2018

	Native	Other
Zulkosky*	55.9	51.9
	(49.9, 61.9)	(17.4, 82.6)
Deacon*	44.1	48.1
	(38.1, 50.1)	(17.4, 82.6)

	Native	Other
Lincoln*	64.7	36.2
	(57.3, 71.5)	(8.4, 68.3)
Mack*	11.2	47.9
	(4.7, 18.4)	(17.0, 76.6)
Savok*	24.1	15.9
	(19.8, 28.9)	(3.5, 35.9)

EI Results for House District 40 in 2018

EI Results for Governor/Lt. Governor in 2018

	Native	Other
Begich/Call*	66.0	36.6
	(64.2, 67.7)	(36.0, 37.3)
Dunleavy/Meyer	21.8	61.8
	(20.1, 23.5)	(61.1, 62.4)
Toien/Clift	6.2	1.0
	(5.6, 6.9)	(0.9, 1.2)
Walker/Mallott*	5.9	0.5
	(5.5, 6.4)	(0.4, 0.6)

Alaska Racially Polarized Voting Analysis for 2021 Redistricting

Executive Summary

In redistricting, compliance with the Voting Rights Act of 1965 (VRA) is one of the nonnegotiable tasks for the Alaska Redistricting Board (ARB). To enable and inform such compliance, the ARB tasked its Voting Rights consultants to analyze Alaska election results to determine if voting in the State is racially polarized, as the VRA and federal courts require. The ARB's consultants produced a report entitled, "Alaska Racially Polarized Voting Analysis for 2021 Redistricting."

The U.S. Supreme Court, in its key decision of *Thornburg v. Gingles*, 478 U.S. 30 (1986), decided that one of the most important factors in a VRA analysis of redistricting plans is "the extent to which voting in the elections of the state or political subdivision is racially polarized." Such polarization is what the ARB's consultants determined is present in Alaska elections.

In their report, the ARB's consultants conclude that numerous election results analyzed reveal evidence of statistically significant racially polarized voting, particularly in statewide races. In the analyzed elections, an estimated majority of Alaska Natives voted for one candidate, typically the one identifying as Alaskan Native, while a majority of non-Alaska Natives voted for another candidate. Therefore, consultants concluded that there is racially polarized voting in Alaska elections.

In their report, the consultants used Ecological Inference analysis of contested elections where there was at least one candidate who identifies as Alaska Native on the ballot. Ecological Inference or El infers voting behavior by estimating how groups of voters, say Alaska Natives and Others (i.e., non-Alaska Natives), voted in a given election by observing precinct level election returns and the demographic makeup of voting precincts. El is recognized and approved by federal courts and the U.S. Department of Justice as a statistically sound method of VRA and racially polarized voting analysis for redistricting

Among the elections analyzed are the 2014 election for Senate District C between Dorothy J. Shockley and Click Bishop, the 2016 House District 6 election between Jason Land and David Talerico, and the 2014 and 2018 gubernatorial elections, all of which revealed racially polarized voting.

What do the consultants' finding mean for Alaska redistricting?

Section 2 of the Voting Rights Act of 1965 prohibits, among other things, any electoral practice or procedure that minimizes or cancels out the voting strength of members of racial or language minority groups in the voting population. This phenomenon is known as vote dilution. Redistricting plans cannot crack, or pack a geographically concentrated minority community across districts or within a district in a manner that dilutes their voting strength. In *Thornburg v. Gingles*, 478 U.S. 30 (1986), the Supreme Court set out the framework for challenges to such practices or procedures. In *Brnovich v. Democratic National Committee*, 141 S. Ct. 2321, 2337 (2021), the Supreme Court described *Gingles* as "our seminal § 2 vote dilution case" and recognized that "[o]ur many subsequent vote dilution cases have largely followed the path that *Gingles* charted."

Analysis begins by considering whether three *Gingles* preconditions exist. First, the minority group must be sufficiently large and geographically compact to constitute a majority of the voting age population in a single-member district. Second, the minority group must be politically cohesive. Third, the majority must vote sufficiently as a bloc to enabled it usually to defeat the minority group's preferred candidate.

The consultants' conclusion that racially polarized or racial bloc voting exists in Alaska elections and that such racial polarization has prevented Alaska Natives from electing their candidates of choice in given elections is legally significant.

Pursuant to Section 2 of the Voting Rights Act of 1965, districts must be created to provide Alaska Natives with the opportunity to elect candidates of choice to overcome cohesive racial bloc voting by white voters that prevents them from doing so.

A racial bloc voting analysis, such as the consultants conducted, is used to determine whether minority voters are politically cohesive, voting together to support minority community preferred candidates and if white voters bloc vote to usually defeat minority preferred candidates. The ARB's racial bloc voting (RBV) analysis determined that voting is racially polarized, and candidates preferred by a politically cohesive minority group are usually defeated by non-minority voters not supporting these candidates, a district(s) that offers minority voters an opportunity to elect their candidates of choice must be drawn. If such districts already exist, and minority-preferred candidates are winning only because these districts exist, then these districts must be maintained in a manner that continues to provide minority voters with an opportunity to elect their preferred candidates.

Bruce Adelson September 26, 2021

Appendix 4: Selected Testimony

The Board has received over a thousand of pages of testimony from across Alaska. These selected responses illustrate a common theme that residents prefer to say in districts which contain their local government, transportation hubs and that respect long standing socio-economic ties.

"Mr. Cravalho spoke in favor of keeping Buckland and Deering in District 40. It is important to keep these villages together in the borough to maintain representation in the state. At Maniilaq, there are 20 different state grants from various departments that are designed to serve the all the villages in the region in various ways. Keeping these villages in District 40 allows Maniilaq to contact one person when advocacy needs to be done. With limited resources as a nonprofit organization, this is important." – Anthony Cravalho, Maniilaq Association

"There's no way we want to be part of District 39. We have been part of District 40 since 1986. I am form Buckland Alaska and we All feel the same way even Deering will Fight this if it comes." – **Timothy Gavin Jr., Buckland, Alaska**

"I have not studied the state as a whole, more concerned on how our area is organized. I support the Board's version (4 is my first pick, but the other one is acceptable as well). The Board has done an excellent job in keeping the folks in our ANSCA together, which I believe is important. Also, I think we are more socially and economically tied to coastal villages, than we are to areas in the interior. I know it's not an easy job, but you've done well. Thank you!" – John Handeland, Golovin, Alaska

"...The Northwest Arctic Borough does not support any plan that breaks their existing borough boundaries and the residents they serve. If the board splits the borough, it will have significant detrimental effects on their region's strength and unity...Deering and Buckland are essential communities to the Northwest Arctic Borough and the borough has been and will continue to advocate on behalf of these communities. It is hard to understate the damage created by fracturing the borough's communities. Together, the region can address issues such as having no roads to resources." – Lucy Nelson, Northwest Arctic Borough Mayor

"I am from McGrath. I support the redistricting board map 4 because it gets us away from the coastal villages that have different priorities than the interior villages. It makes sense to group the interior villages together. I can not call in to testify, so I hope this e mail counts as testimony, if not, please e mail me the correct place for my comment to be part of the record. Thank you." – Naomi Norbank, McGrath, Alaska

"Buckland & Deering are part of the 11 merged villages that make up Our Nana Regional Corporation. I Do Not support with moving these two villages to another district. I Hope and Pray that you find it in your heart to keep Our Nana Regional villages together and keep it how it is right now being in District 40. Taikuu!" – Clara Ticket, Buckland, Alaska



Northwest Arctic Borough

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ASSEMBLY PRESIDENT NATHAN HADLEY, JR.

Maintaining the Strength and Unity of the Northwest Arctic Borough – October 5, 2021

My name is Nathan Hadley, Jr., and I am speaking as the Northwest Arctic Borough Assembly President, a Buckland City Council member, and a lifelong resident of Buckland. The Northwest Arctic Borough's 11 communities (Ambler, Buckland, Deering, Kiana, Kivalina, Kobuk, Kotzebue, Noatak, Noorvik, Selawik, and Shungnak) have been part of Senate District T and House District 40 since the Borough's formation in 1986.

This 11-village regional organization has long been tied through family, community, our local and regional economies, and a rich social fabric spanning generations. The Northwest Arctic Borough has a longstanding dedication to working with its regional partners - NANA Regional Corporation, Maniilaq, and the Northwest Arctic Borough School District through the Northwest Arctic Leadership Team (NWALT). Through NWALT, the Borough has worked together to serve the people of the region by maximizing resources and minimizing duplication, promoting strategies through grassroots involvement, serving as a steering committee to examine region-wide issues, and coordinating to find solutions and recommend policy and resource allocation.

The Borough also has a longstanding partnership with its sister Borough, the North Slope Borough. The Borough has been able to work hand-in-hand with the North Slope to work with its state legislators to address region-wide issues like resource development, subsistence protection, offshore activities, and other common matters.

If the Alaska Redistricting Board moves to split the Northwest Arctic Borough villages, it will have significant detrimental effects on our region's strength and unity. This will be particularly so for the communities of Buckland and Deering, which are essential villages in our region without direct ties to the communities and region to the south.

- Kotzebue, not Nome, is the region's hub. Buckland and Deering residents route through Kotzebue to travel to and from home.
- They rely on Maniilaq in Kotzebue for healthcare and social services.
- Their students are part of the Northwest Arctic Borough School District in Kotzebue.
- Buckland and Deering are merged villages in NANA Regional Corporation, without individual village corporations.



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 In short, the ties that link Buckland and Deering to the Northwest Arctic Borough and Kotzebue cover every aspect of daily life. And removing Buckland and Deering from our legislative districts will have lasting, damaging consequences.

The Alaska Constitution explicitly contemplates consideration of socioeconomic factor and local government boundaries, and failing to recognize the importance of maintaining continuity between state and borough boundaries here will prove to be a significant and lasting disservice to our region and residents.

In particular, Deering and Buckland are essential pieces of the Northwest Arctic Borough. The Borough and NWALT actively advocate for both villages within the strength and framework of our legislative and policy support on issues like economic development, village infrastructure, water and sewer improvements, heavy equipment procurement, and educational advocacy.

In sum, it's hard to understate the harm created by fracturing the Borough's villages between state legislative districts. Our region is faced with many economic, logistical, and socioeconomic challenges; we do not need an additional barrier to effective advocacy and unity for our people and our region. I support the Board's plan as it keeps the NANA region and villages together in one district. The Northwest Arctic Borough and North Slope Borough are heavily intertwined and very different than the Bering Straits region. Our two boroughs work together as one unified unit on many issues and are formalized boroughs which should not be separated or broken up by reapportionment.

Sincerely,

Nathan Hadley, Jr. Assembly President Northwest Arctic Borough

Supplemental Alaska Racially Polarized Voting Analysis for 2021 Redistricting

Bruce Adelson, Esq. and Jonathan N. Katz, Ph.D.

November 1, 2021

After completing our racially polarized voting analysis of elections in Alaska presented in our earlier report, we were asked to further quantitatively examine voting patterns of Alaska Native, non-Alaska Native Minorities, and Other (non-Minority and non-Alaska Native) individuals in the Anchorage area. In particular, we examined legislative districts 15, 16, 17, 18, 19, 20, 23, and 25. Unfortunately, this analysis is not possible and no reliable inferences can be made of voter behavior in this area. Ecological inference requires at least some almost homogeneous precincts in order to generate reliable estimates of a group's voting behavior. In this area, there are no precincts that are anywhere close to homogeneous. For example, the largest fraction of non-Alaska Native minority population in any precinct is 77.4% and only 30.0% for Alaska Natives. This problem was confirmed by the failed diagnostics of the estimated models attempted on the data from this area.

2021 Senate Term Allocation Table

	New Senate District	Previous Senate District (election year)	Largest Remaining Constituency	Percentage of Constituency Change	Election years	Truncated due to (1) population change or (2) election term assignment
Ketchikan, Sitka	Α	R (2020)	98.1%	1.9%	2022, 2026, 2030	yes, term
Juneau	В	Q (2018)	100.0%	0.0%	2022, 2024, 2028	yes, 2nd term
Kodiak, Homer	С	P (2020)	92.5%	7.5%	2022, 2026, 2030	yes, term
Kenai/Soldotna/Nikiski	D	O (2018)	95.0%	5.0%	2022, 2024, 2028	yes, 2nd term
Anchorage	Е	N (2020)	46.5%	53.5%	2022, 2026, 2030	yes, population
Anchorage	F	M (2018)	95.0%	5.0%	2022, 2024, 2028	yes, 2nd term
Anchorage	G	I (2018)	52.0%	48.0%	2022, 2026, 2030	no truncation
Anchorage	Н	K (2018)	88.3%	11.7%	2022, 2024, 2028	yes, 2nd term
Anchorage	I	J (2020)	83.7%	16.3%	2022, 2026, 2030	yes, both
Anchorage	J	H (2020)	75.5%	24.5%	2022, 2024, 2028	yes, both
Anchorage	К	G* (2018)	49.7%	50.3%	2022, 2026, 2030	no truncation
Anchorage	L	G* (2018)	47.0%	53.0%	2022, 2024, 2028	yes, 2nd term
Matsu	Μ	F (2020)	73.8%	26.2%	2022, 2026, 2030	yes, population
Matsu	Ν	D (2020)	66.6%	33.4%	2022, 2024, 2028	yes, population
Matsu	0	E (2018)	71.2%	28.8%	2022, 2026, 2030	no truncation
Fairbanks, City	Р	A (2018)	98.3%	1.7%	2022, 2024, 2028	yes, 2nd term
North Pole/FNSB	Q	B (2020)	78.3%	21.7%	2022, 2026, 2030	yes, population
Interior/Ester	R	C (2018)	60.9%	39.1%	2022, 2024, 2028	yes, both
Bristol Bay/Bethel	S	S (2018)	95.6%	4.4%	2022, 2026, 2030	no truncation
Northwest Arctic/North Slope	т	Т (2020)	97.5%	2.5%	2024, 2028	no truncation

Note: Previous senate seat G was split into new seats K and L

Note: Previous senate seat L was divided among new seats E, G and H and did not constitute a majority of any new seat

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