
Redistricting California: An Overview of Data, Processes & GIS

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Who we are and what we will do today:

- Karin's and Nicole's redistricting experience
- Statewide Database: Redistricting Database for the State of California – <http://swdb.berkeley.edu>

- Overview of this session:
 - Review the task of selecting 6 additional commissioners
 - Introduce Data used in Redistricting
 - Live Demo on moving lines and how districts are constructed
 - Practical considerations re: public input and the process in general
 - Questions & Answers

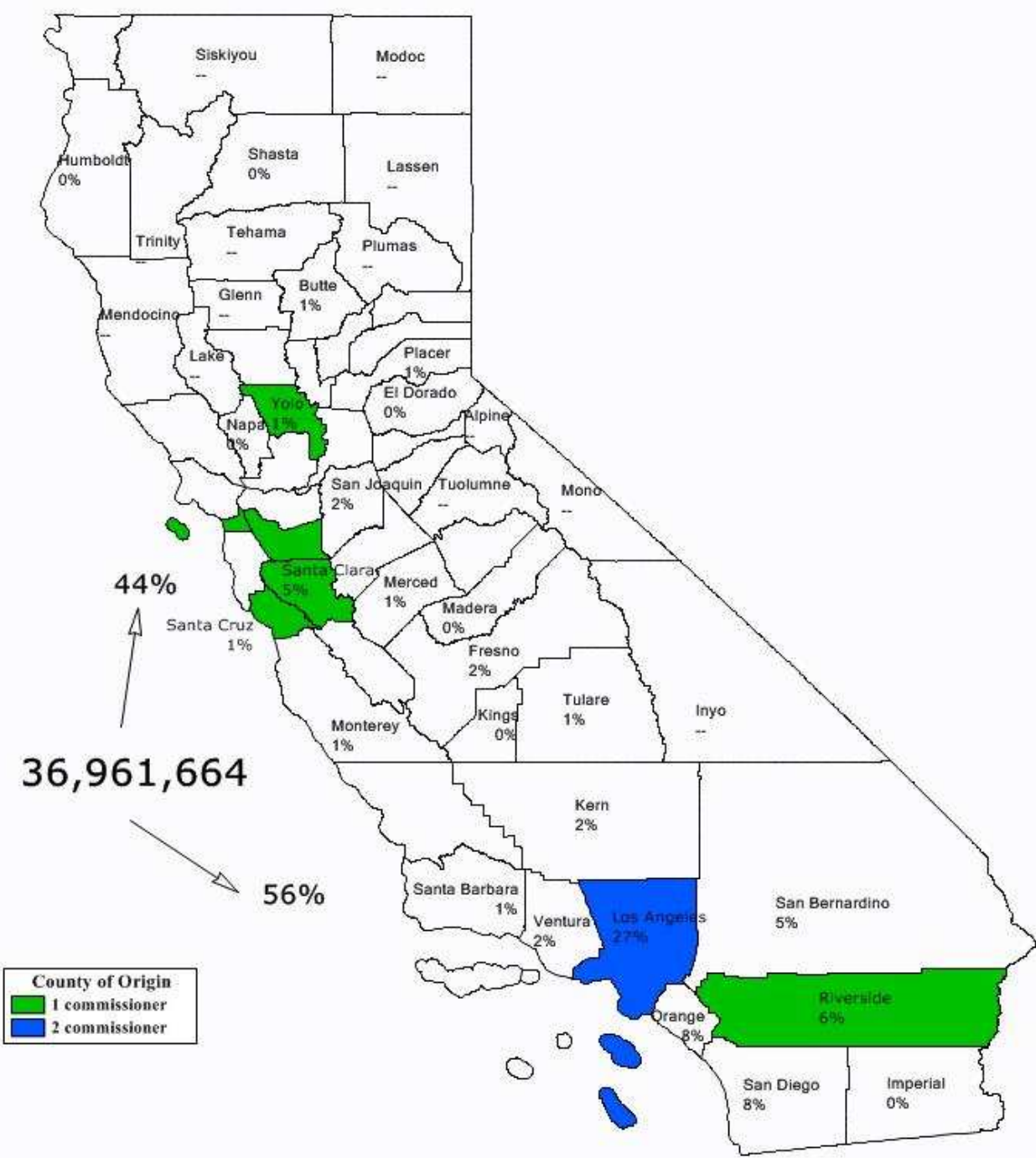
Criteria on which the remaining 6 commissioners shall be selected:

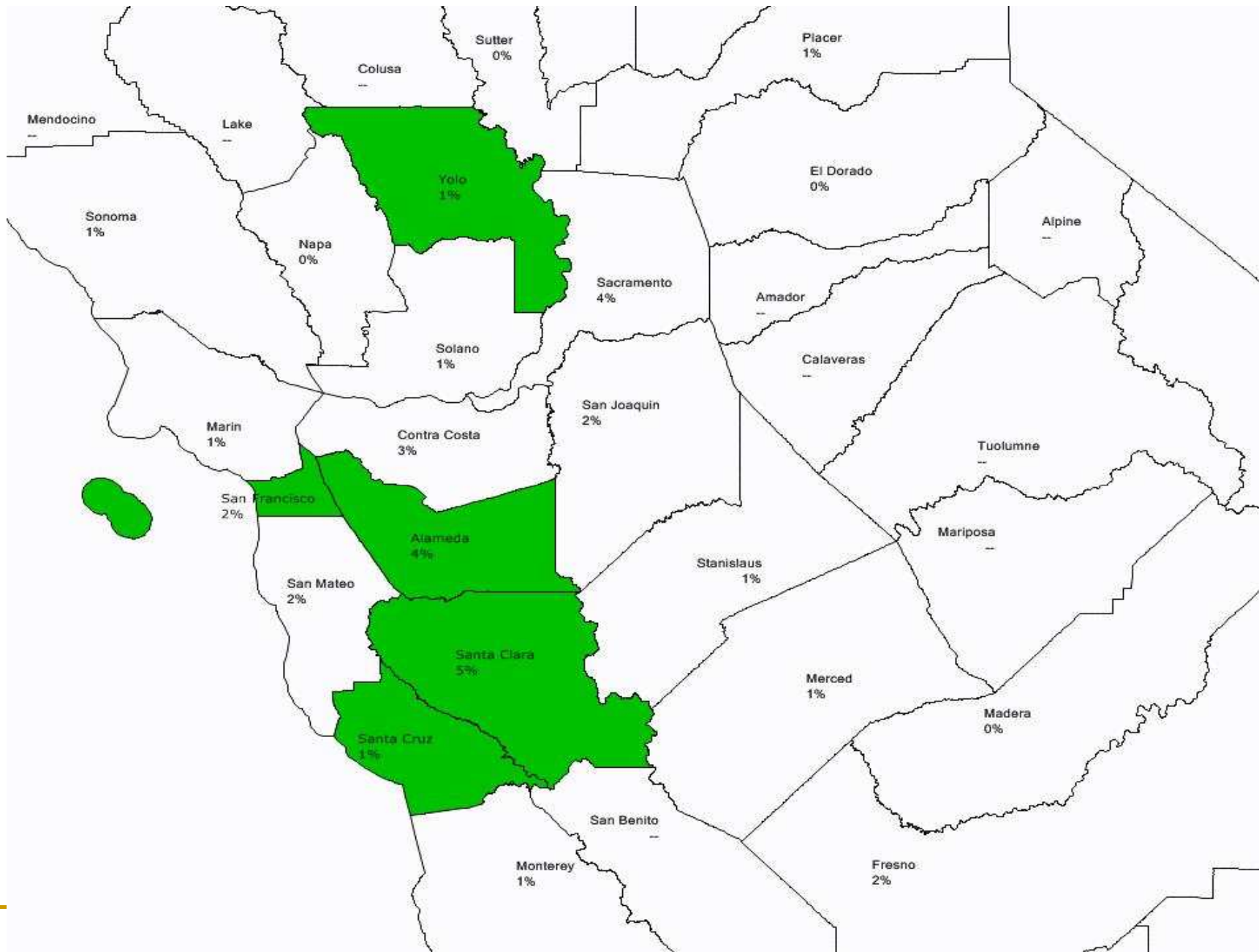
- The six appointees shall be chosen to ensure the commission reflects this state's diversity, including, but not limited to, racial, ethnic, geographic, and gender diversity. However, it is not intended that formulas or specific ratios be applied for this purpose. Applicants shall also be chosen based on relevant analytical skills and ability to be impartial. (legal guide p 7/8)
- Analytical Skills – includes ability to understand technical materials incl. maps and statistical info; resolve complex problems
- Ability to be impartial – includes ability to evaluate information with an open mind; make decisions that set aside personal views/interests

CA Demographic* & Current Commission Breakdown

*2009 ACS 1 yr. estimate

Total Population	36,961,664
White, not of Latino Origin (25%)	41.5%
Latino (12.5%)	37.0%
Asian, not of Latino Origin (50%)	12.3%
Black, not of Latino Origin (12.5%)	5.8%
Hawaiian/Pacific Islander, not of Latino Origin	0.3%
American Indian/ Alaska Native alone, not of Latino Origin	0.4%
All other races, not of Latino origin	0.3%





Reflecting the State's diversity: why is it important?

- Appearances matter!
- Experience working with diverse communities
- Increases collective knowledge of State's geography and uniqueness
- Brings different voices to the commission

...moving on to Data in Redistricting!

- Which data are used to draw lines?
- Which data are used for which criterion?
- Which data are easily accessible?
- Which ones are not?
- Which data sources are available but difficult (or impossible?) to use?

Redistricting Criteria and Data used:

Equal Population – PL94-171

Compliance with Federal Law (VRA) – PL94-171, SOR, SOV

Compactness – Census Geography

Contiguity – Census Geography

Respect for City and County boundaries – Census Geography

Respect for Neighborhoods – Public Testimony, Data/Geography
submitted by Public, Cities/Counties, etc.

Respect for Communities of Interest – Public Testimony,
Data/Geography submitted by Public

Equal Population

- That's why we do it!
- Constitutional requirement
- One person, One vote
- 14th Amendment: Equal protection clause

- How equal is equal???

How equal is equal? Part I: Congress

- Strict population equality in CDs
- No Deviation is too small to worry about
 - (if it could have been avoided)
- Translation: 28 States' CDs had total deviation of less than 10 people after 2000 round of redistricting!

How equal is equal? Part II – Legislative Districts

- Total deviation within 10% may not constitute a ‘prima facie equal protection violation under the 14th Amendment’
 - Gaffney v Cummings 1973
- Above 10%: be ready to justify with “substantial and legitimate state interest”
 - Example: preservation of county boundaries
- Larios v Cox, 2004: Legislature believed that w/in +/-5% is ‘safe harbor’ – not necessarily!

2000 Decennial Census

Census 2000 used 2 forms:

1. The “short” form – asked for basic demographic and housing information, i.e. age, sex, race, ethnicity, # of people in housing unit, renter/owner

EVERY HOUSEHOLD RECEIVED THIS FORM

2. The “long” form – collected the same information as the short form plus income, education, citizenship, language spoken at home, etc.

ONE IN SIX HOUSEHOLDS RECEIVED THIS FORM

Long form data aka “sample data.”

Short form data aka “100 percent data” (or 100% sample)

2010 Decennial Census and American Community Survey (ACS)

What's New?

2010 Census used only the “short” form.

The sample data are now collected by the ACS instead of the “long” form.

What's Old?

Short form data must be released by the Census bureau before April 1, 2011, one year following Census day

2010 Decennial Census PL94-171 Data

- Basic Information/ Data that jurisdictions are required by law to use for Redistricting
- Census 2010 Redistricting Data (Public Law 94-171, or "PL94") contains the count of the U.S. population
- Is a BLOCK-LEVEL dataset
- Includes data on people's race and ethnicity, for both the total and the voting age population
- Information is based on answers to the questions in the Census 2010 Short-Form questionnaire.
- There are 5 detailed tables available in the PL94-171 data product.

2010 Decennial Census PL94 Data Summary Tables

<i>Subject</i>	<i>Table #</i>
Race <i>Total population</i>	P1
Hispanic or Latino, and Not Hispanic or Latino by Race <i>Total population</i>	P2
Race for the Population 18 Years and Over <i>Total population 18 years and over</i>	P3
Hispanic or Latino, and Not Hispanic or Latino by Race for the Population 18 Years and Over <i>Total population 18 years and over</i>	P4
Occupancy Status <i>Housing units</i>	H1

2010 PL94 Data Summary Table Subject Layout

P1. Race

Universe: Total population

Total:

Population of one race:

White alone

Black or African American alone

American Indian and Alaska Native alone

Asian alone

Native Hawaiian and Other Pacific Islander alone

Some other race alone

Repeats for the Population of two or more races.....

P2. Hispanic or Latino, and Not Hispanic or Latino by Race

Universe: Total population

Total:

Hispanic or Latino

Not Hispanic or Latino:

Population of one race:

White alone

Black or African American alone

American Indian and Alaska Native alone

Asian alone

Native Hawaiian and Other Pacific Islander alone

Some other race alone

Repeats for the Population of two or more races.....

2010 PL94 Data Summary Table Subject Layout

P3. Race For The Population 18 Years and Over

P1 variables are repeated for the Population 18 Years and Over

P4. Hispanic or Latino, and Not Hispanic or Latino By Race For The Population 18 Years And Over

P2 variables are repeated for the Population 18 Years and Over

H1. Occupancy Status

Universe: Housing units

Total:

Occupied

Vacant

2010 Census and American Community Survey (ACS)

- nationwide survey that replaces the long-form
 - collects same information on people and housing as the long-form questionnaire used in Census 2000.
 - is an on-going survey versus data released on PL94-171, which are collected on “census day” (April 1, 2010)
 - is released in “multi-year estimates” on census block-group level
- The ACS does NOT release data on the census block level!

Detailed demographic, social, economic, and housing data are no longer collected as part of the decennial census.

ACS data can be grouped into four main types of characteristics – **social, economic, housing, and demographic**

American Community Survey

Demographic Characteristics



- Sex
- Age
- Race
- Ethnicity

American Community Survey

Social Characteristics



- Education
- Marital Status
- Fertility
- Grandparent
Caregivers
- Citizenship
- Veteran Status
- Disability Status

American Community Survey

Economic Characteristics



- Income
- Benefits
- Employment Status
- Occupation
- Industry
- Commuting to Work
- Place of Work

American Community Survey

Housing Characteristics



- Tenure
 - Occupancy & Structure
 - Housing Value
 - Taxes & Insurance
 - Utilities
 - Mortgage/Monthly Rent
-
- And our personal favourite: PLUMBING!



American Community Survey

Data Products Release Schedule

Data Product	Population Size of Area	Data released in:							
		2006	2007	2008	2009	2010	2011	2012	2013
1-Year Estimates for Data Collected in:	65,000+	2005	2006	2007	2008	2009	2010	2011	2012
3-Year Estimates for Data Collected in:	20,000+			2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012
5-Year Estimates for Data Collected in:	All Areas*					2005-2009	2006-2010	2007-2011	2008-2012

* Five-year estimates will be available for areas as small as census tracts and block groups.
Source: US Census Bureau

District Building Blocks: U.S. Census Geography

- Blocks: smallest ‘unit of analysis’ on which data are reported”
 - Block groups
 - Tracts
 - Places (cities)
 - Counties
 - State

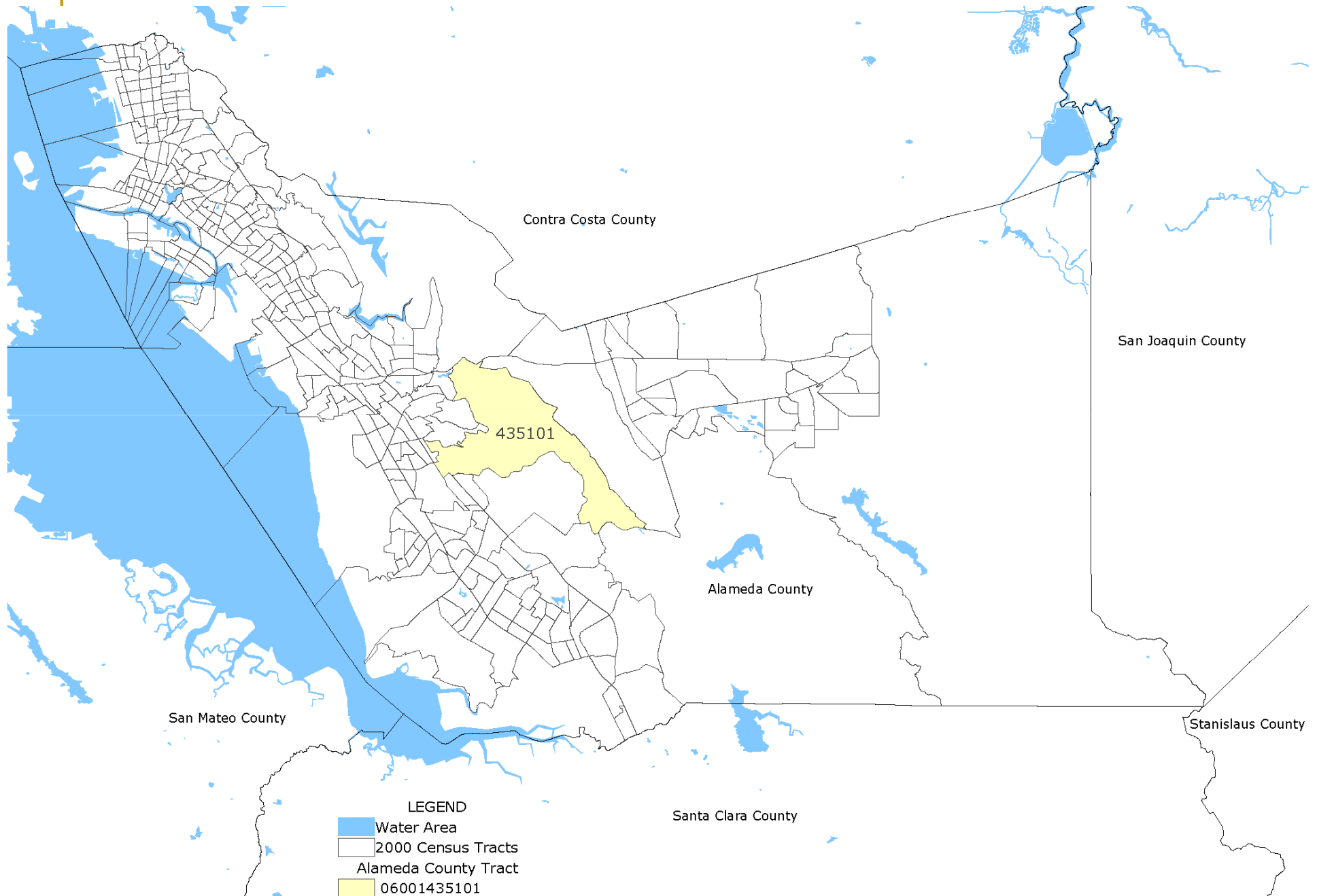
California's 58 Counties



LEGEND
□ Counties
■ Example County
■ Alameda

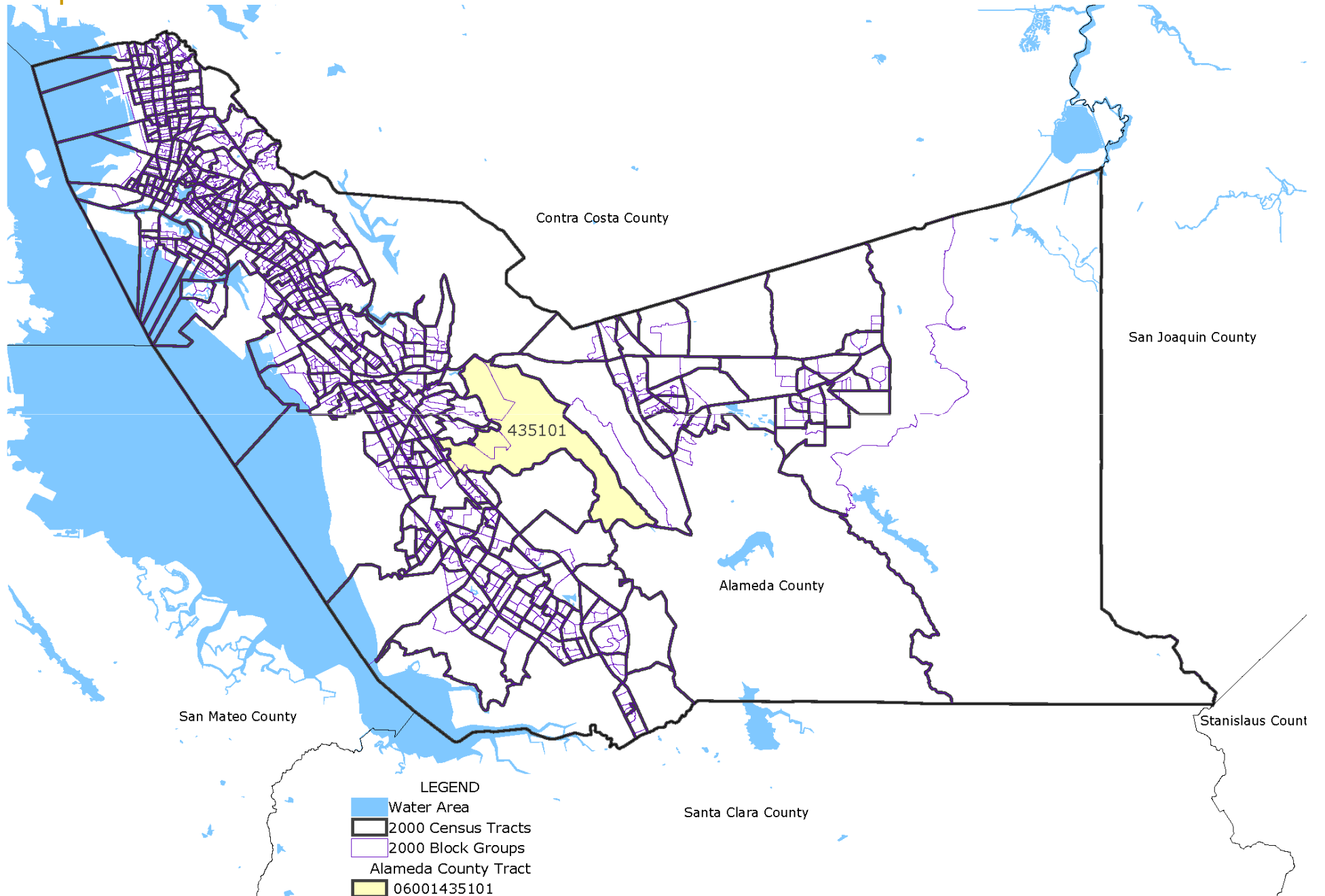
Alameda County, California

2000 Census Tracts (321 tracts in county)



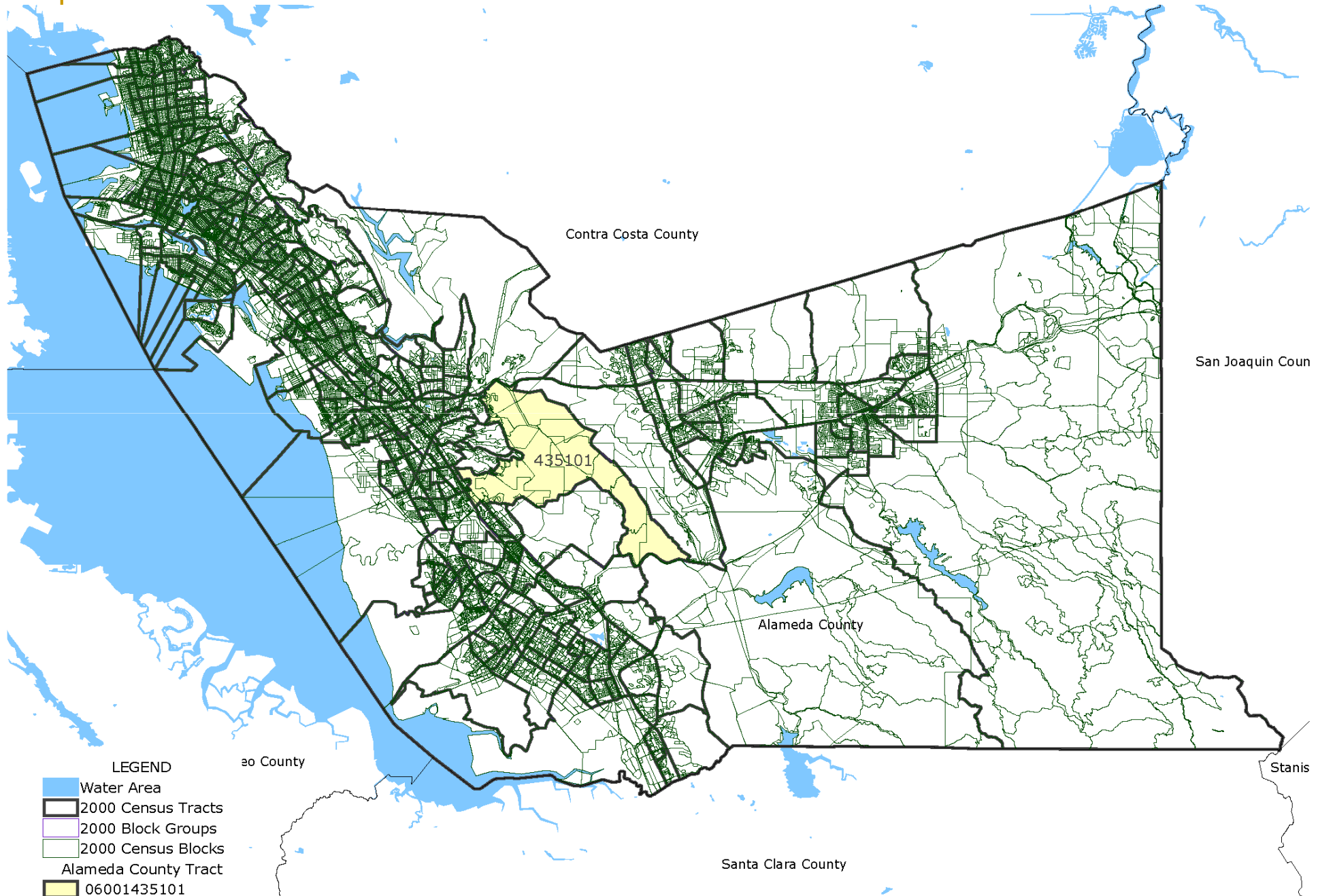
Alameda County, California

2000 Census Block Groups (983 block groups in county)



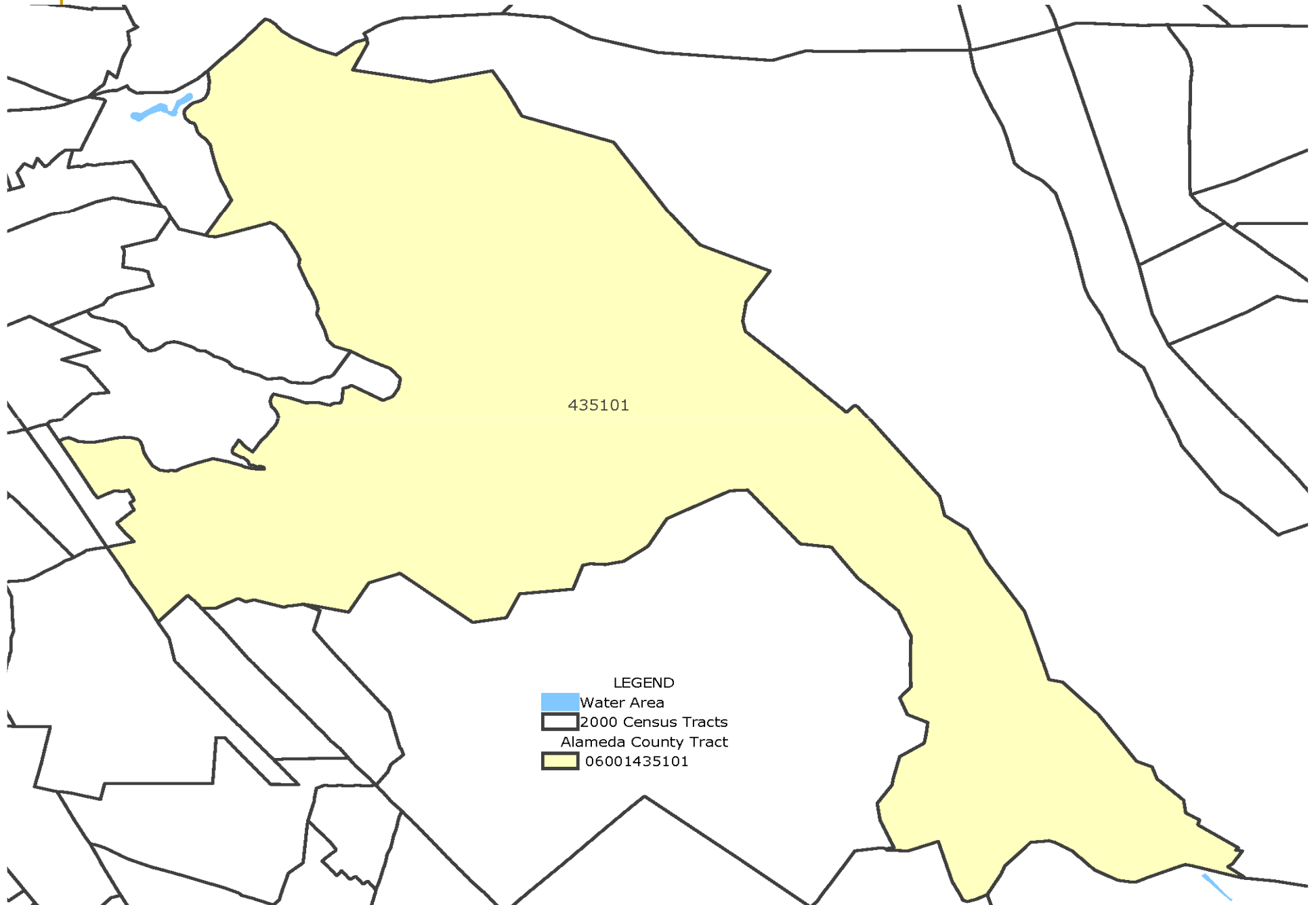
Alameda County, California

2000 Census Blocks (14,931 blocks in county)



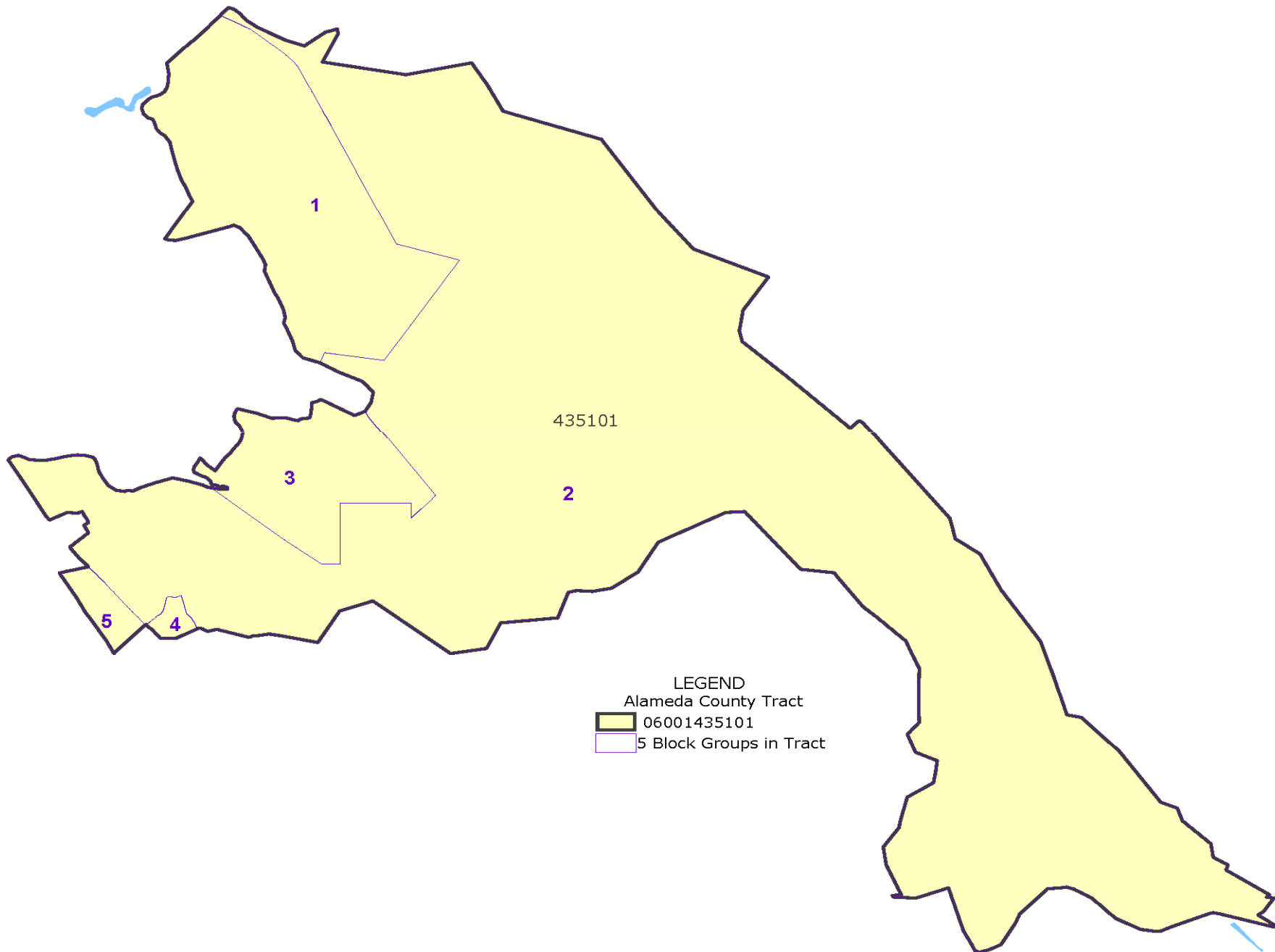
Alameda County, California

2000 Census Tract 435101



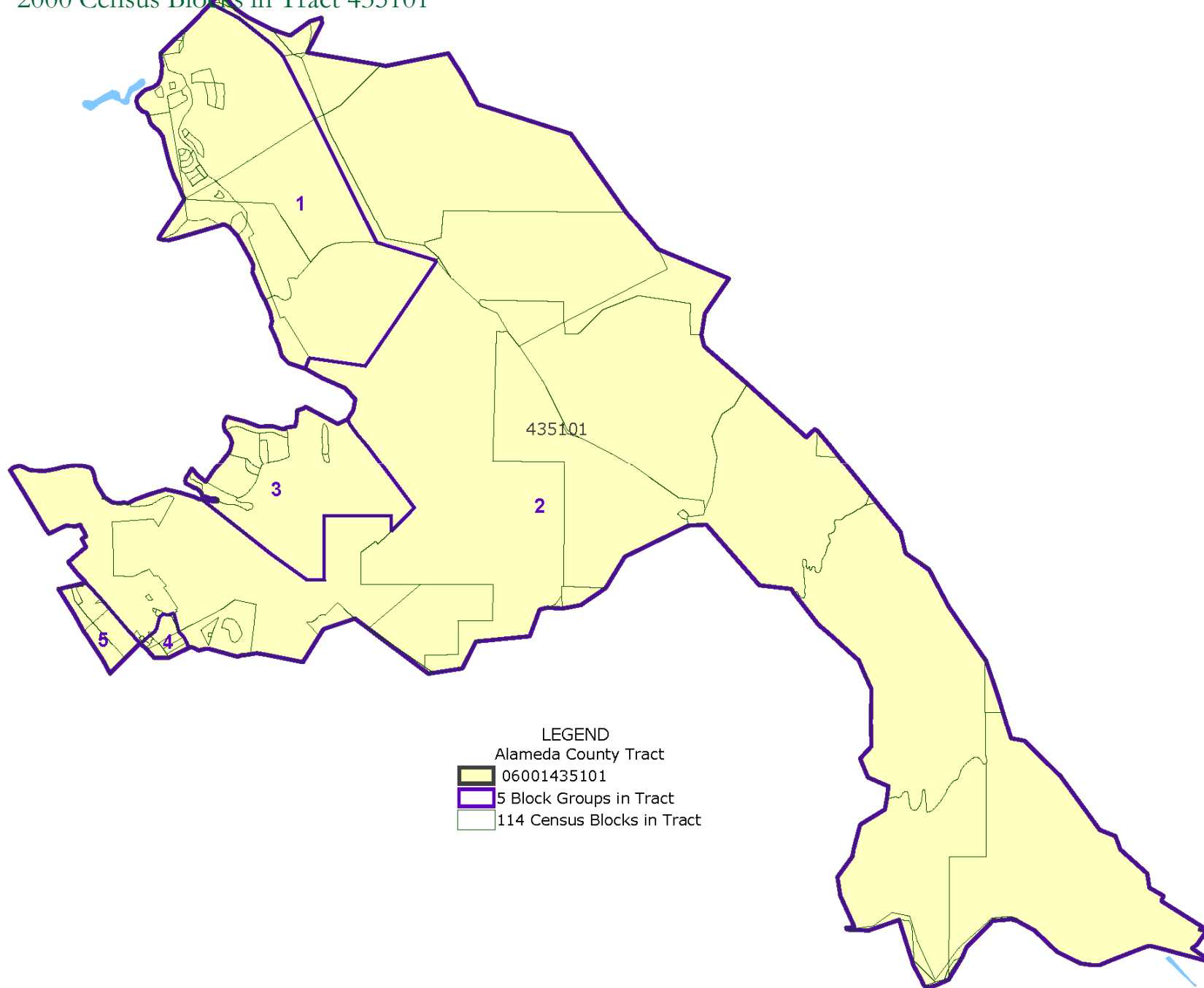
Alameda County, California

2000 Census Block Groups in Tract 435101

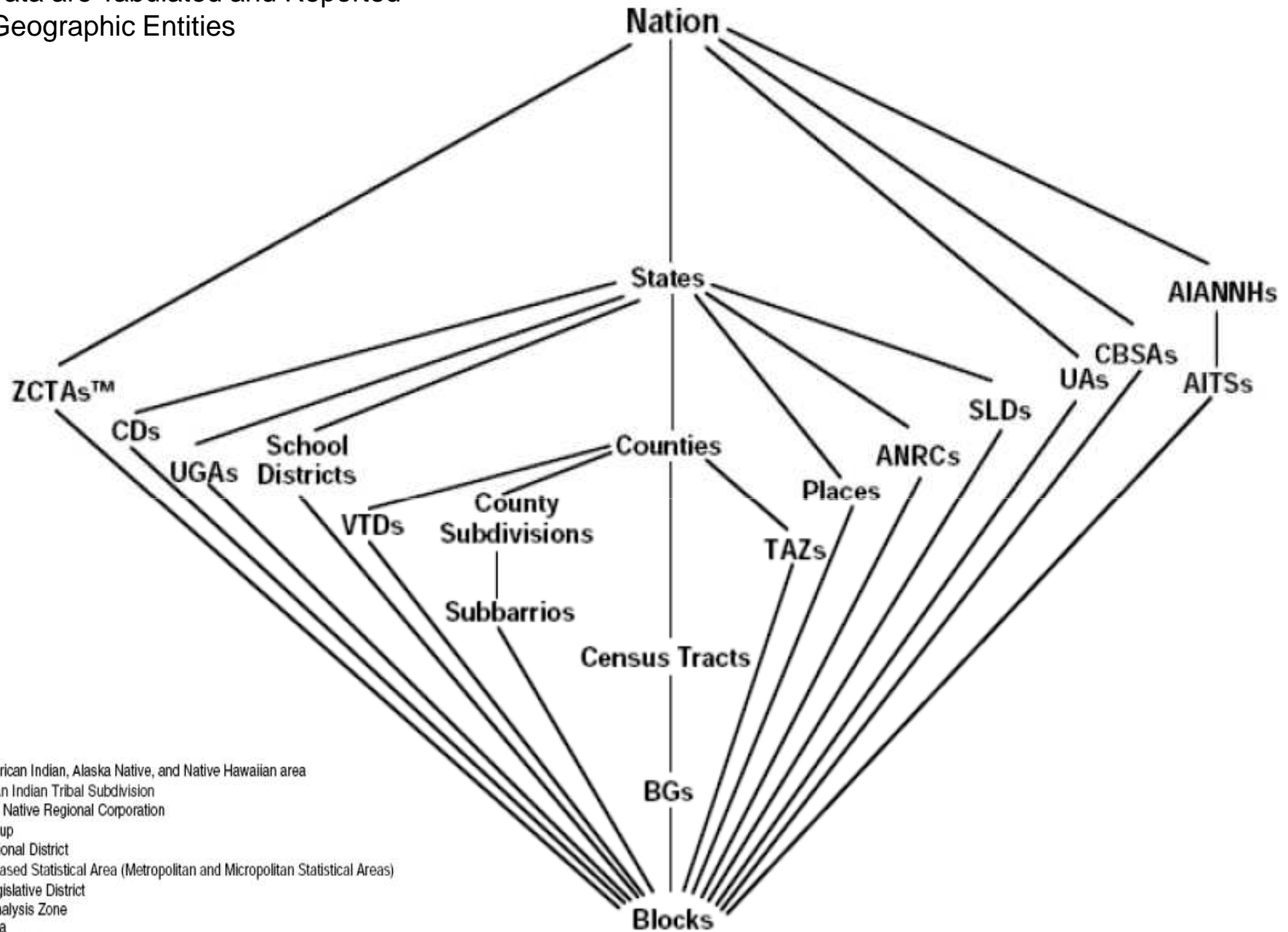


Alameda County, California

2000 Census Blocks in Tract 435101



PL94 Data are Tabulated and Reported
for All Geographic Entities



- AIANNH: American Indian, Alaska Native, and Native Hawaiian area
- AITSS: American Indian Tribal Subdivision
- ANRC: Alaska Native Regional Corporation
- BG: Block Group
- CD: Congressional District
- CBSA: Core Based Statistical Area (Metropolitan and Micropolitan Statistical Areas)
- SLD: State Legislative District
- TAZ: Traffic Analysis Zone
- UA: Urban Area
- UGA: Urban Growth Area
- VTD: Voting District
- ZCTA™: ZIP Code Tabulation Area

U.S. Census Bureau TIGER/Line

Topologically Integrated Geographic Encoding and Referencing system

1990 TIGER/ Line

58 Counties
471 Census Places/ Cities
5,874 Census Tracts
21,554 Census Block Groups
400,414 Census Blocks

2000 TIGER/ Line

58 Counties
1,018 Census Places/ Cities
7,049 Census Tracts
22,133 Census Block Groups
533,163 Census Blocks

2010 TIGER/Line

58 Counties
? Census Places/ Cities
? Census Tracts
? Census Block Groups
710,145 Census Blocks

Election Data! Why are those needed???

Voting Rights Act: Sections 2 & 5

Section 2 – Majority Minority Districts

- >Minority group must be large enough to constitute a majority in the district (50%+)
- >Minority group must be geographically compact
- >Minority group votes cohesively
- >There must be evidence of polarized voting against the minority group

NOTE: Sec 2 does NOT prohibit the drawing of “influence seats” nor considering racial/ethnic Communities of Interest

Section 5 – Preclearance and Retrogression

- > Kings, Merced, Monterey, Yuba

Electoral Geography

Precincts

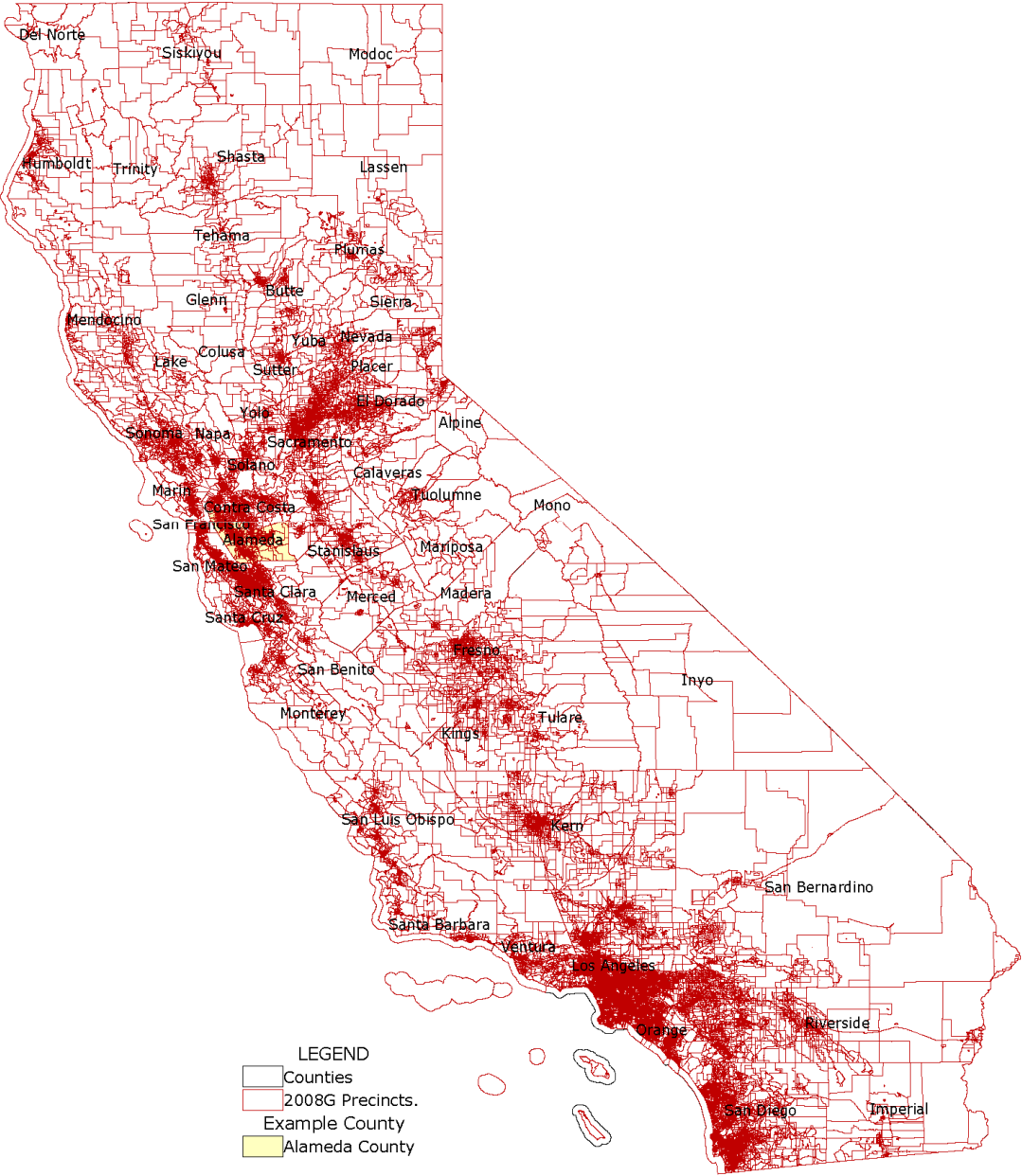
- Smallest unit of analysis for reporting of electoral data.
- Many precincts change with each election**

Electoral geography that must be redistricted:

- Assembly, Senate, and Congressional districts
- City Council and County Board of Supervisor districts
- Board of Equalization districts
- County Hospital Board of Trustees districts, Community College districts, Water districts, Transportation districts, Mosquito Abatement districts, etc.

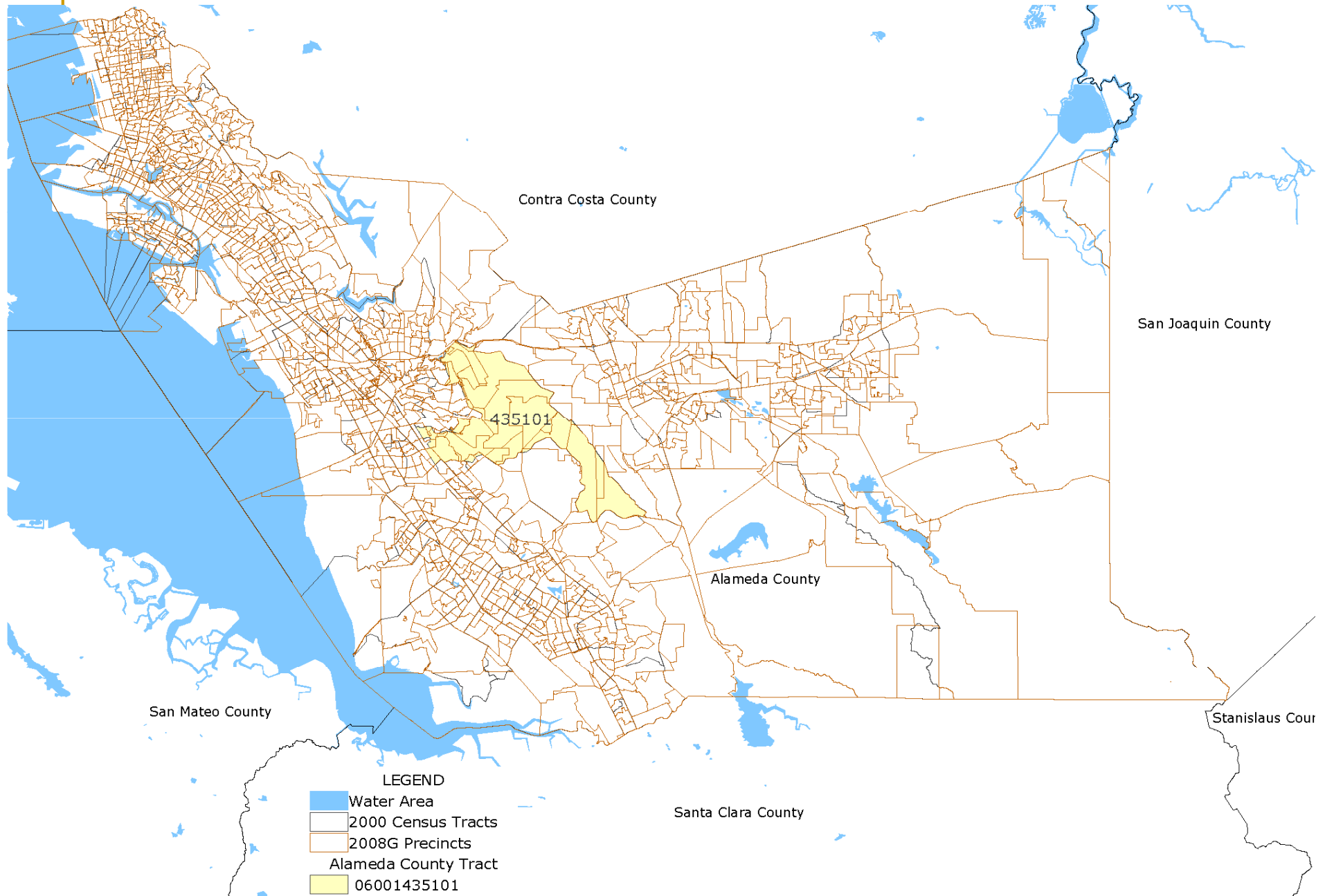
2008 California General Election

62,404 Precincts in the State



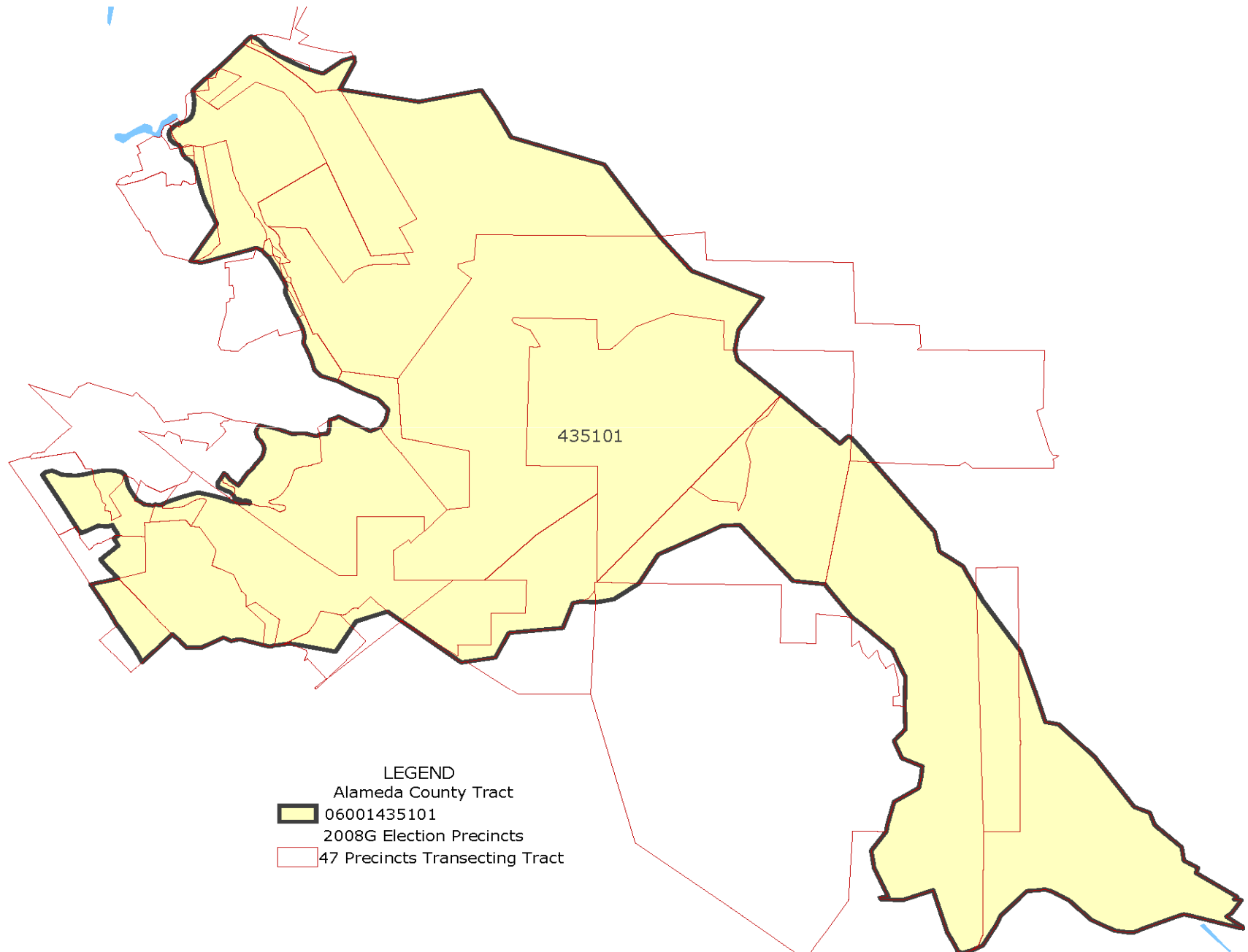
Alameda County, California

2008 General Election Precincts (1,504 in county)



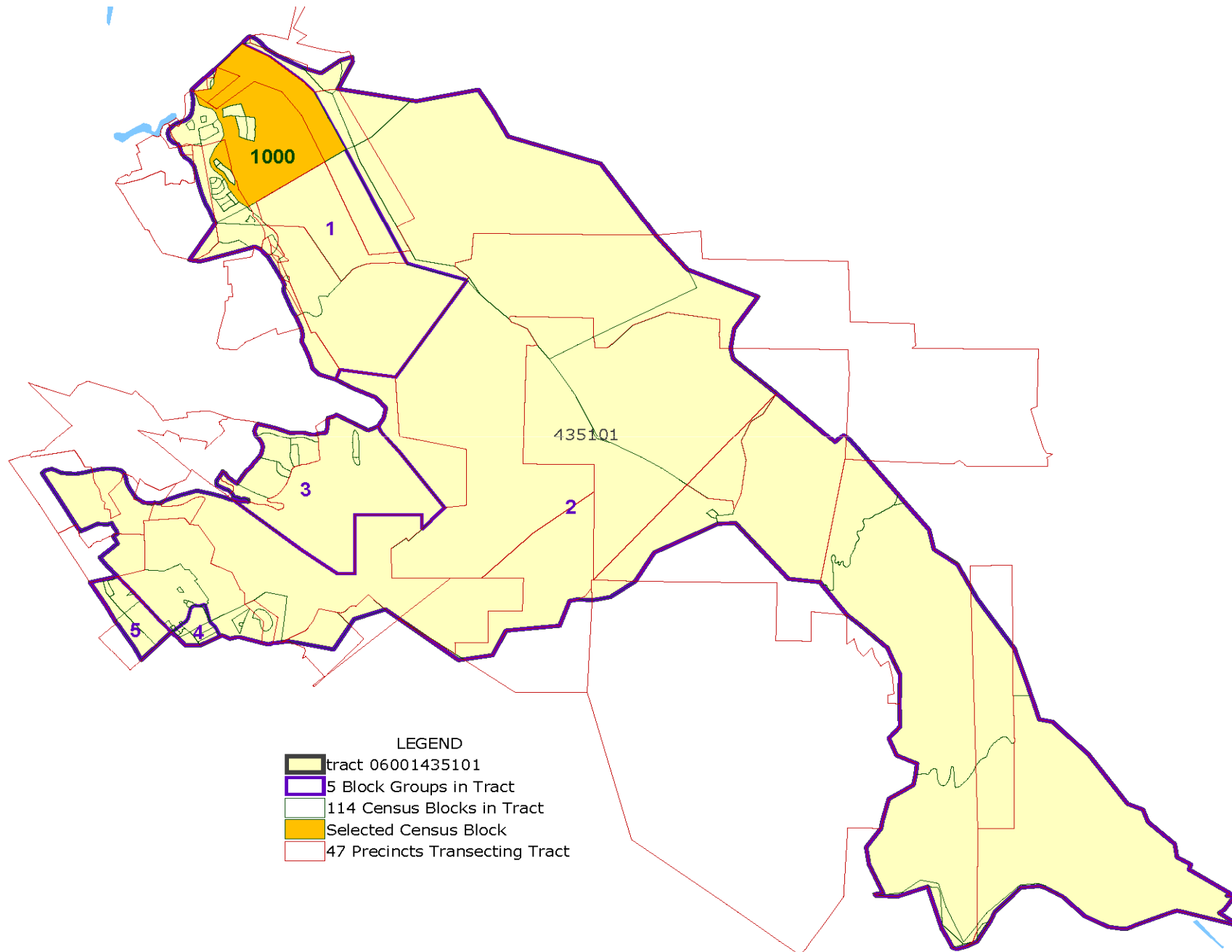
Alameda County, California

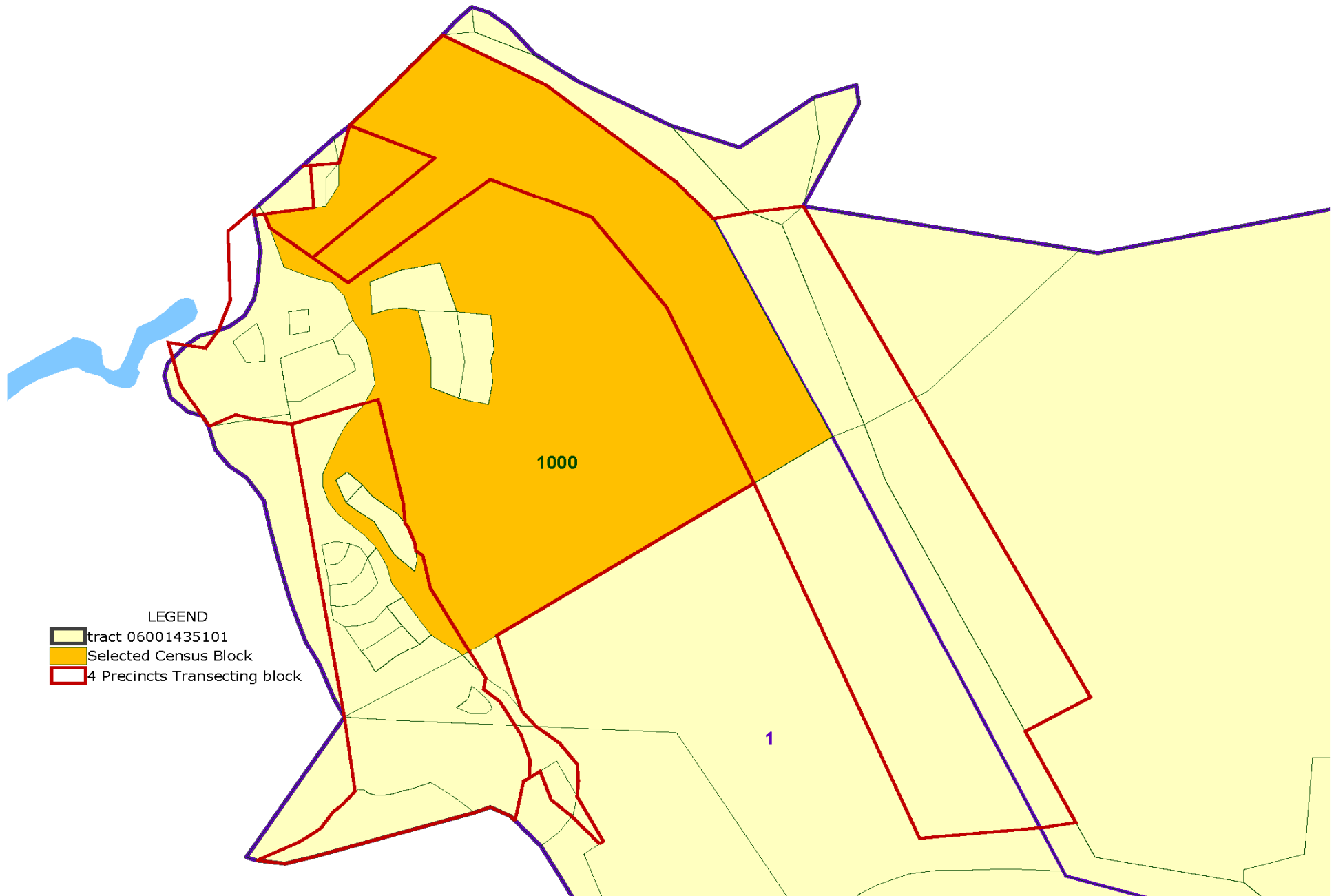
2008G Precincts that are contained or partially contained in 2000 Census Tract 435101



Alameda County, California

2000 Census Tract 435101





Data and reporting geography

- PI94-171
 - Census block (constant for 10 years)
- Statements of Vote (SoV)
 - Voting precinct (frequent changes)
- Statements of Registration (SoR)
 - Registration files: individual level data

SoV & SoR

- SoV variables:
 - Total Vote
 - Votes for Races and Propositions
- SoR variables:
 - Total Registration
 - Party ID
 - Sex/Gender
 - Age
 - Cycles Registered
 - Race/Ethnicity – surname matched

Data Complexities:

- Task: build dataset comparable on same unit of analysis over time ... available for redistricting (2011)
- Why is this difficult?
 - Election results reporting geography changes frequently (precincts)
- What's the solution?
 - Answer: census blocks

The Statewide Database

- The State of California's Redistricting Database
- History
- Data Collection:
 - Census
 - Registrars of Voters/County Clerks

Why are we talking about the Statewide Database?

- (b) The Legislature shall take all steps necessary to ensure that a complete and accurate computerized database is available for redistricting, and that procedures are in place to provide the public ready access to redistricting data and computer software for drawing maps. Upon the commission's formation and until its dissolution, the Legislature shall coordinate these efforts with the commission.

A Quick Overview of the Statewide Database (SWDB)

The Database includes:

- I. Census & Electoral Data
- II. Census & Electoral Geography
- III. Conversion files

- IV. Data Reports & Maps
- V. Redistricting & Census News and Court case archive
- VI. Redistricting Research

<http://swdb.berkeley.edu>

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submitted by Public, Cities/Counties, etc.

Respect for Communities of Interest – Public Testimony,
Data/Geography submitted by Public

Criteria for which data are not easily available:

Communities of Interest:

What is a Community of Interest? It depends...
Group of people with specific common interest
("actual shared interests" Miller v Johnson, 1995)
Can be defined geographically

What are they NOT?

In CA: Communities of interest shall not include relationships with political parties, incumbents, or political candidates

Neighborhoods:

Vary in size
Are sometimes defined by cities (often poorly), and/or communities
No data sources available that show neighborhoods statewide
Need to be documented and submitted

CA's new definition of 'community of interest'

'A community of interest is a contiguous population which shares common social and economic interests that should be included within a single district for purposes of its effective and fair representation. Examples of such shared interests are those common to an urban area, a rural area, an industrial area, or an agricultural area, and those common to areas in which the people share similar living standards, use the same transportation facilities, have similar work opportunities, or have access to the same media of communication relevant to the election process.'

Community of Interest definitions may include:

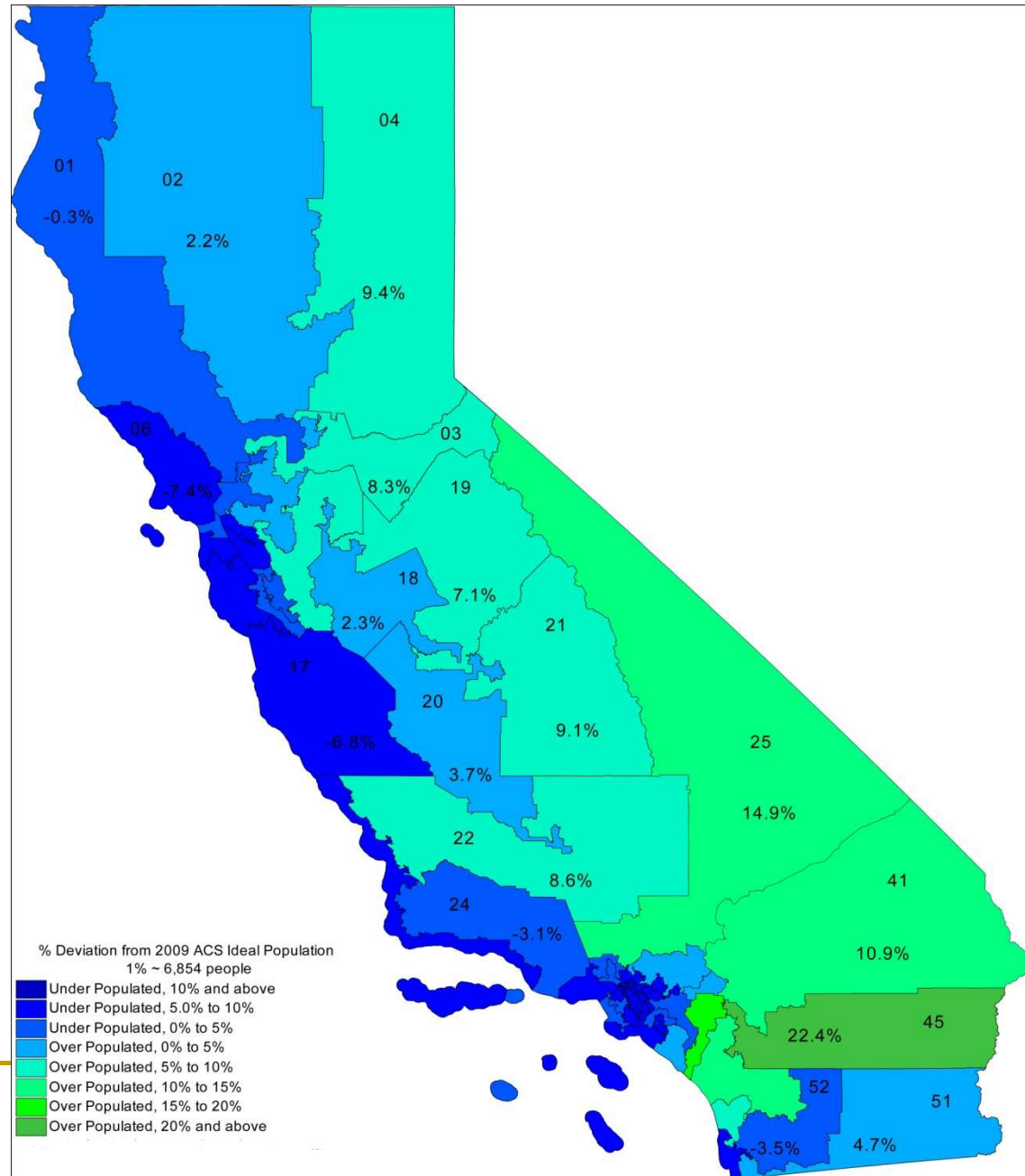
- Organizing around schools, school districts
- Transportation hubs
- Community Centers
- Dog parks

- If race/ethnicity are raised, it may summarize:
 - Shared experiences
 - Access (or lack of) to education
 - Higher number of kids per household
 - Younger overall population

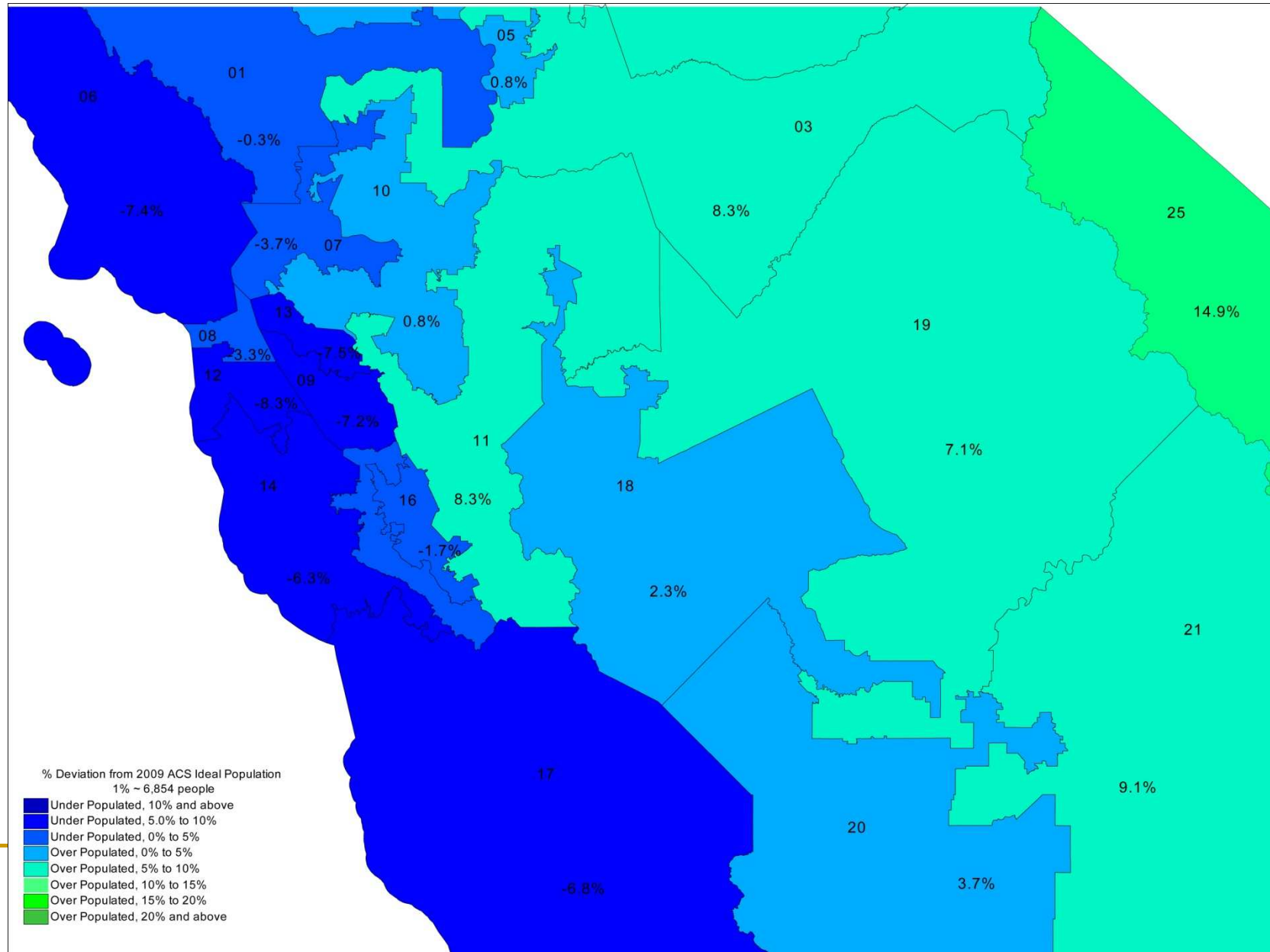
Communities of Interest continued:

- Defining them top-down versus bottom-up
- Big difference here! (variables etc.)
 - Race/Ethnicity (SCOTUS cases: stereotyping)
- Defining Cols may be especially important within the API group: multi/pan-ethnic populations

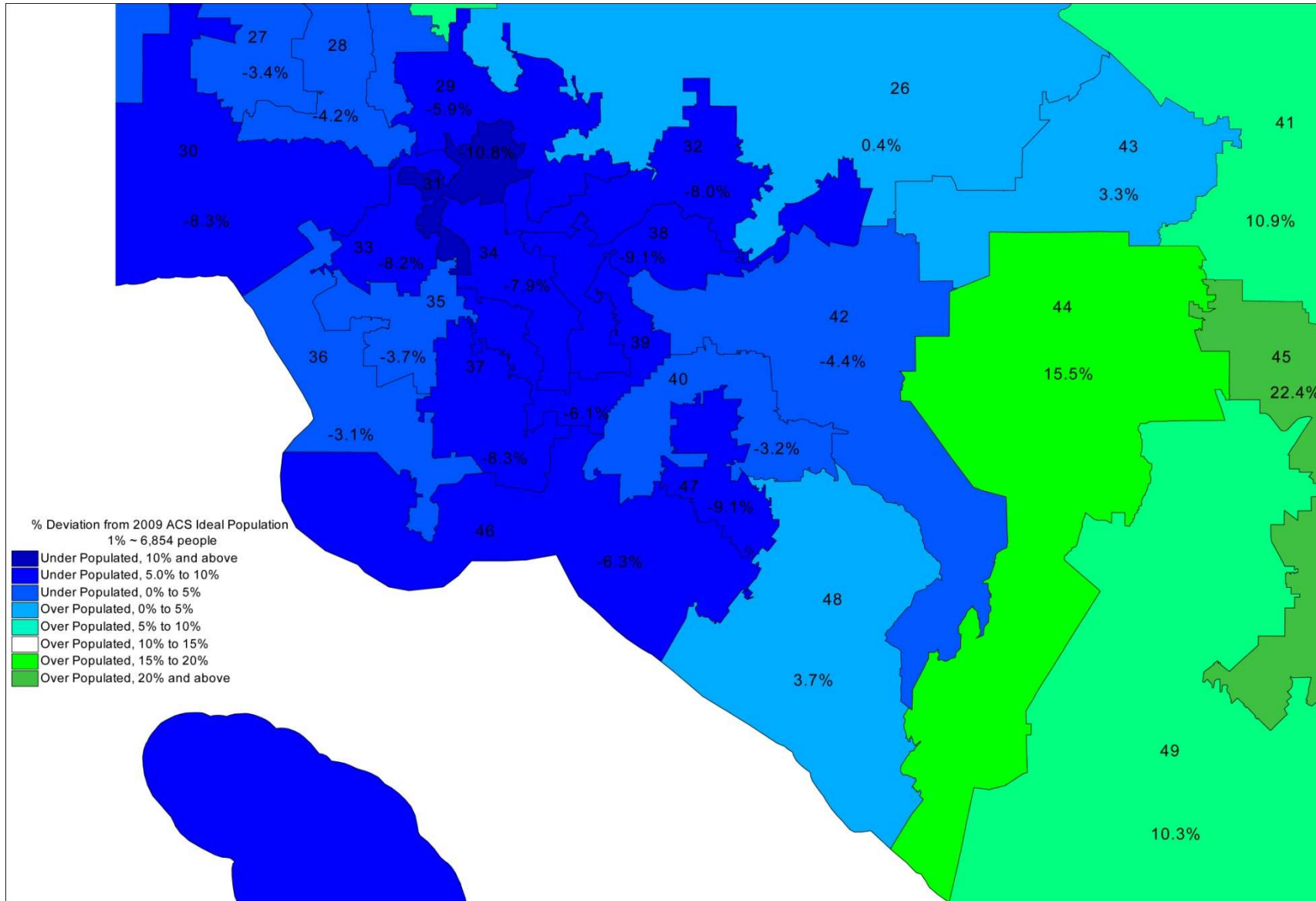
California Congressional Districts Deviation from 2009 ACS Ideal



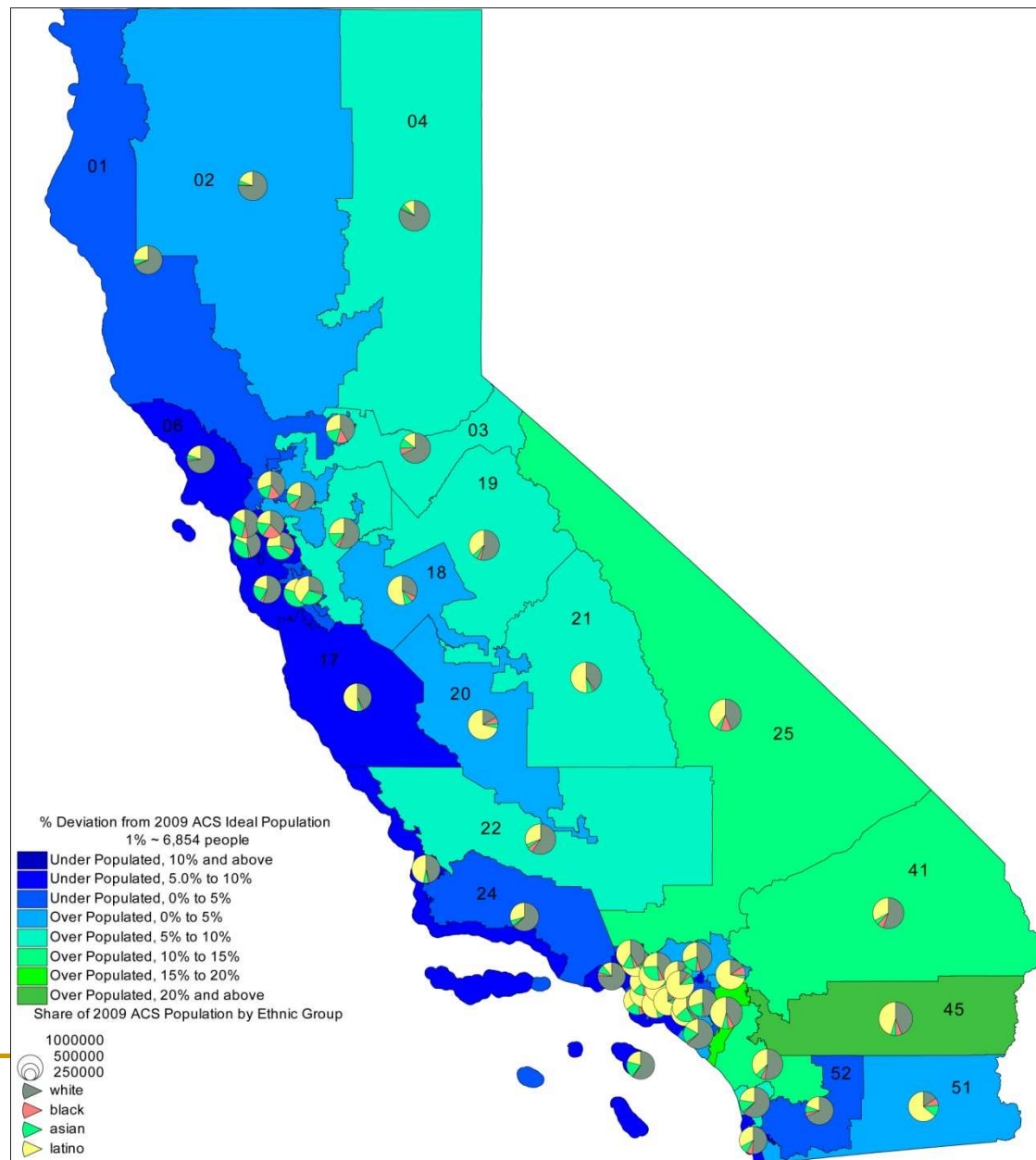
Deviation from 2009 ACS Ideal Population - San Francisco Bay Area



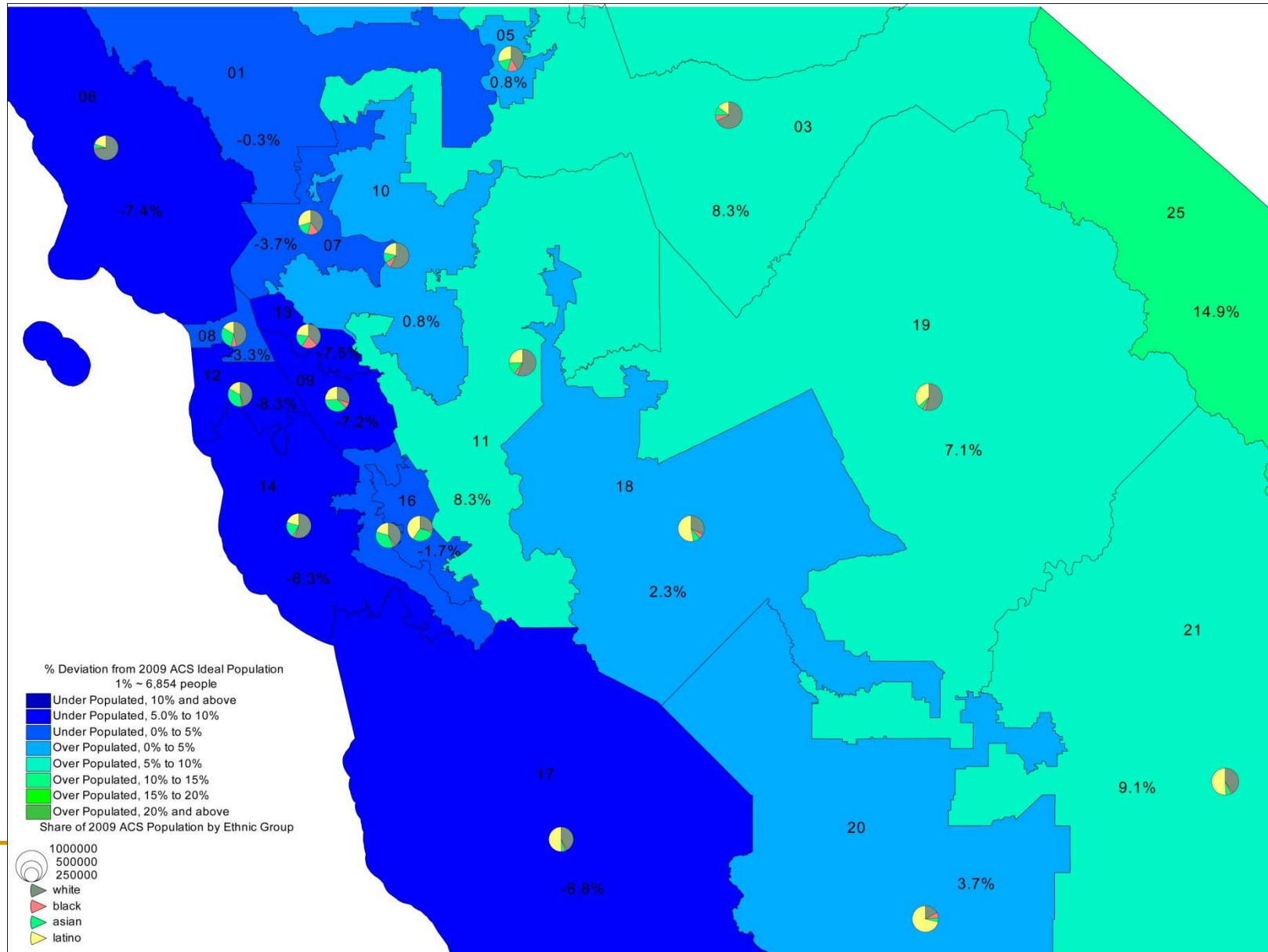
Deviation from 2009 ACS Ideal Population – Los Angeles Area



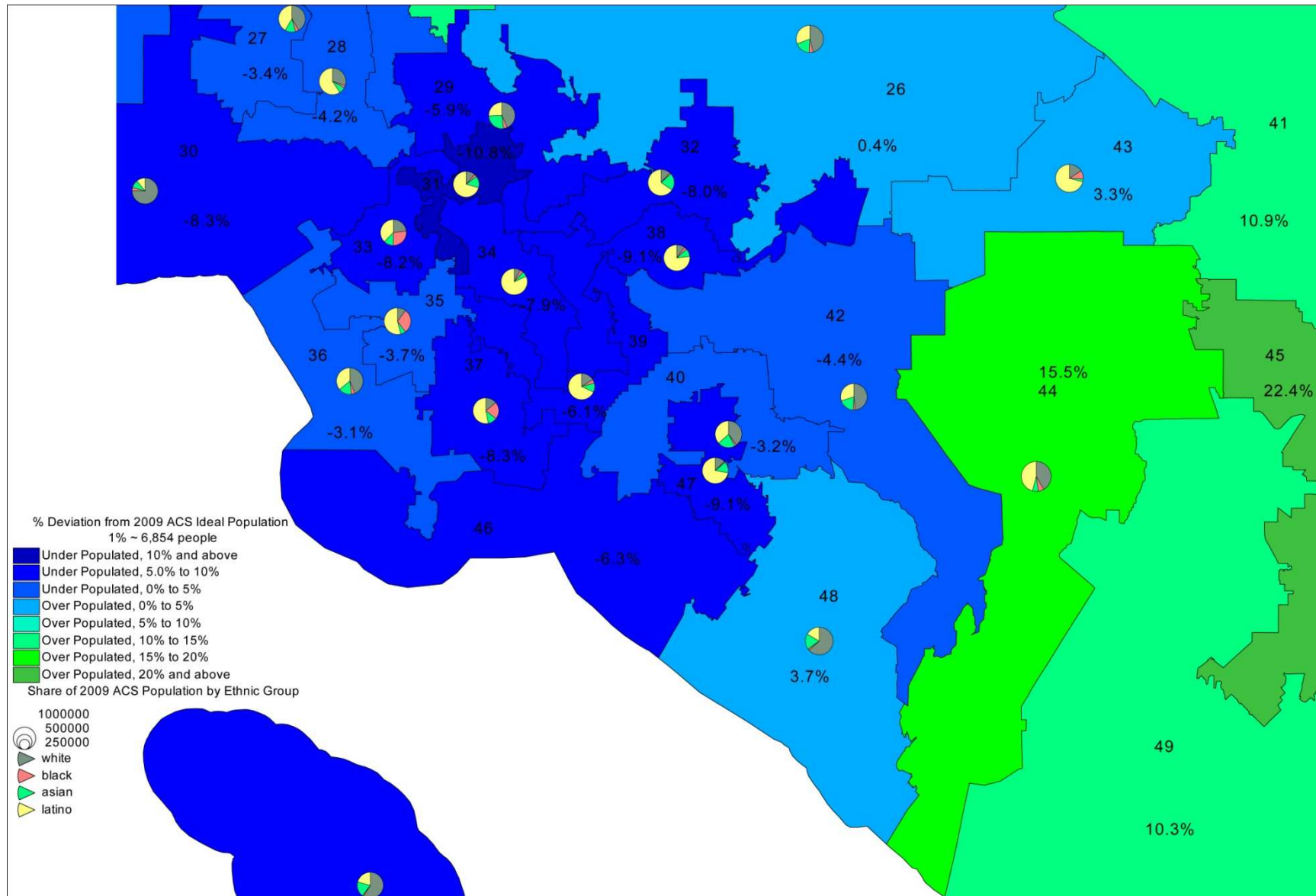
California Congressional Districts Deviation from 2009 ACS Ideal with District Population by Ethnicity



Deviation from 2009 ACS Ideal Population - San Francisco Bay Area with District Population by Ethnicity



Deviation from 2009 ACS Ideal Population – Los Angeles Area with District Population by Ethnicity



Public Input!

- (7) The commission shall establish and implement an open hearing process for public input and deliberation that shall be subject to public notice and promoted through a thorough outreach program to solicit broad public participation in the redistricting public review process. The hearing process shall include hearings to receive public input before the commission draws any maps and hearings following the drawing and display of any commission maps. In addition, hearings shall be supplemented with other activities as appropriate to further increase opportunities for the public to observe and participate in the review process. (legal guide p 9)

Public Participation and What is happening now?

- Importance of having a public process
- How can people participate?
- Accepting public testimony, maps, data

- Redistricting Assistance Centers
- Website with Educational Materials

Some quick notes about resolution of complex problems and the ability to be impartial...

Lessons learned from research:

Criteria Interactions – example: effects on Compactness

- Majority/Minority Seats
- Preserving City and County Boundaries
- Respecting Communities of Interest

- The Mapper Effect!

That's it for now!

Any questions?