

START UP / TEST SCREEN





**REGISTRAR of
VOTERS**

NEAL KELLEY

HISTORY

Background on problem and attempts to find solutions



Background on Equipment Allocation

Efficiency versus practical application



2006 and prior allocated the same amount of equipment to all polling places



Background on Equipment Allocation

Efficiency versus practical application

- 1** Due to lines forming in certain areas, changed allocation methodology for 2008 and beyond
- 2** In 2016 began including line optimization calculator provided by MIT based on queueing theory



Voter Booth Allocation

Multiple configurations for delivery



Voter Booth Allocation

Multiple configurations for delivery



16



Background on Equipment Allocation

Efficiency versus practical application

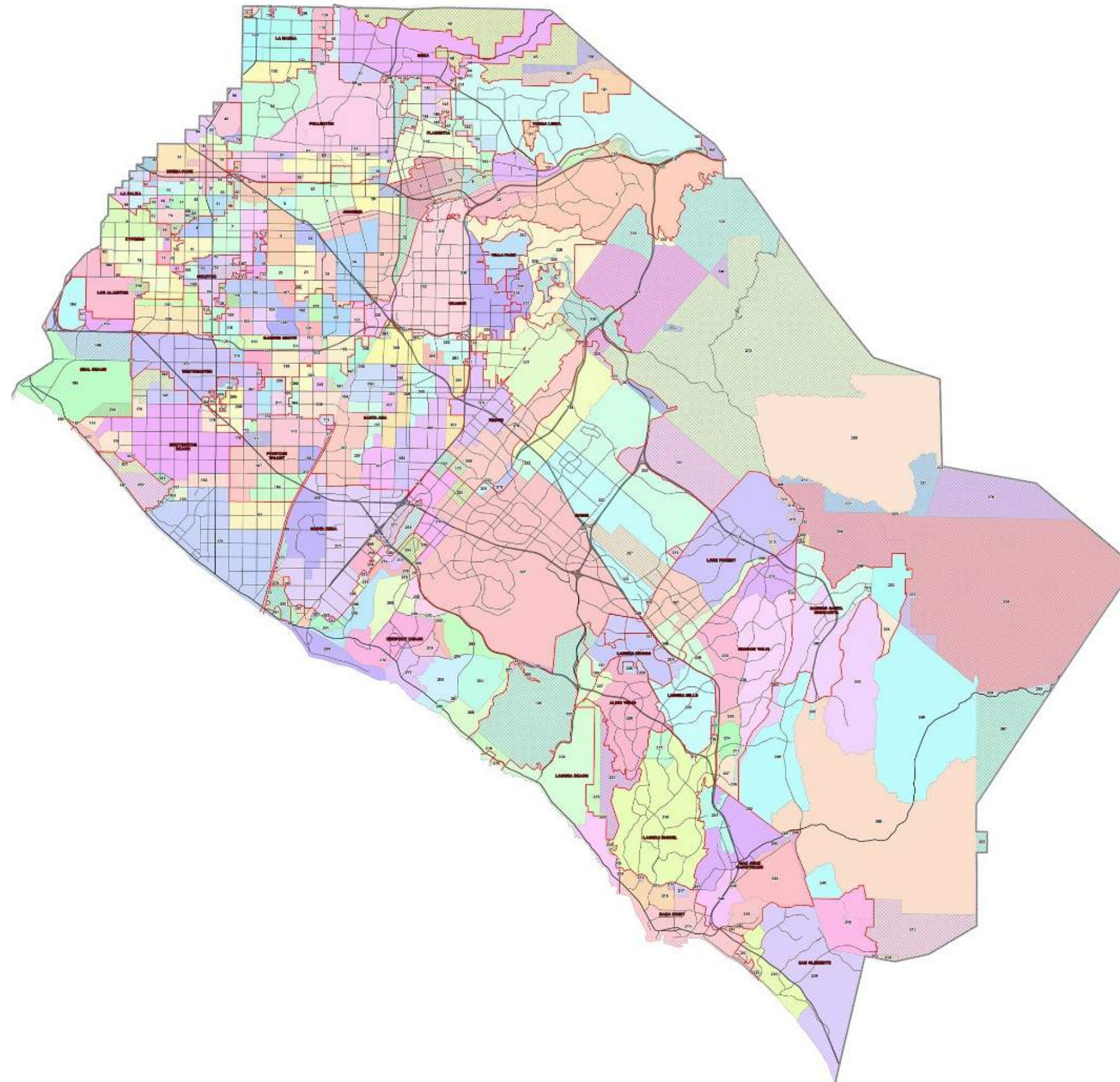


Increasing complexity of district boundaries resulted in more variation of polling place service area



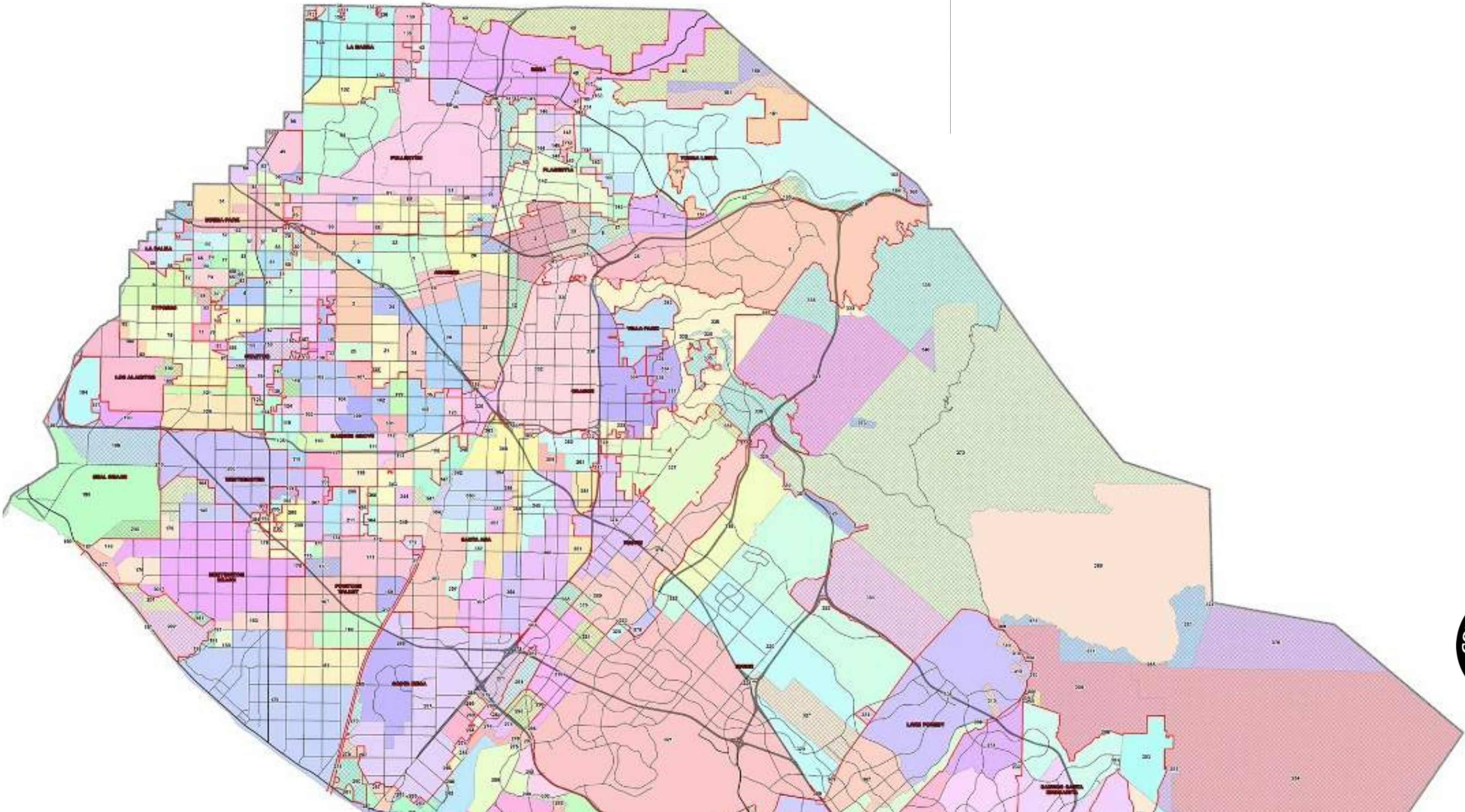
Over 400 Ballot Types in Orange County

Changing dramatically in 2018



Over 400 Ballot Types in Orange County

Changing dramatically in 2018



DATA PREPARATION

Using data to drive decisions on logistics



Changes in Equipment Allocation

Efficiency versus practical application

- 1** In 2008 used historical polling place turnout using voting history = projected turnout
- 2** Consider registration excluding permanent vote-by-mail voters



Registration Trends

Voter registration density

Surfcity USA

Happiest Place on Earth



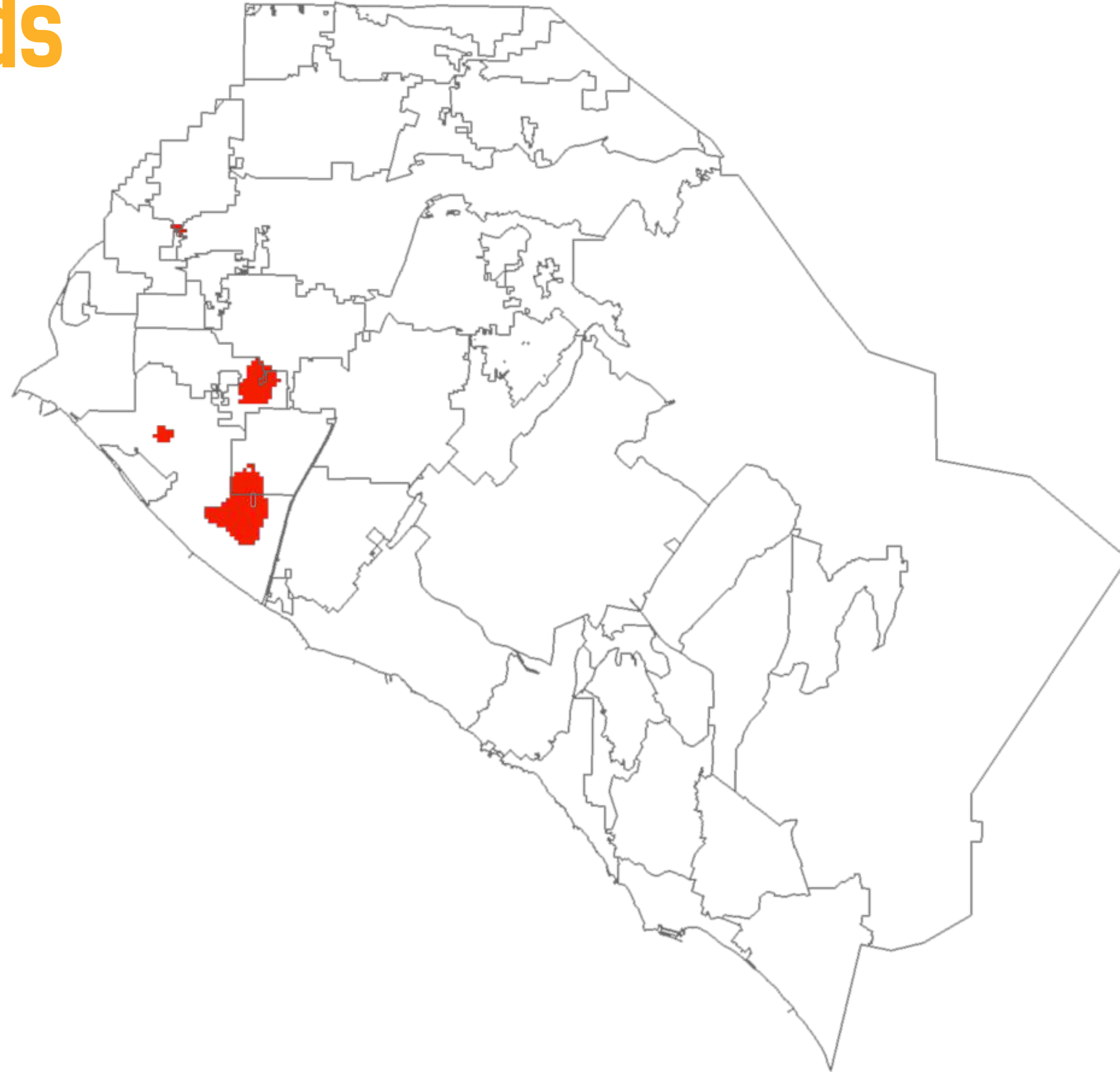
Registration Trends

Voter registration density



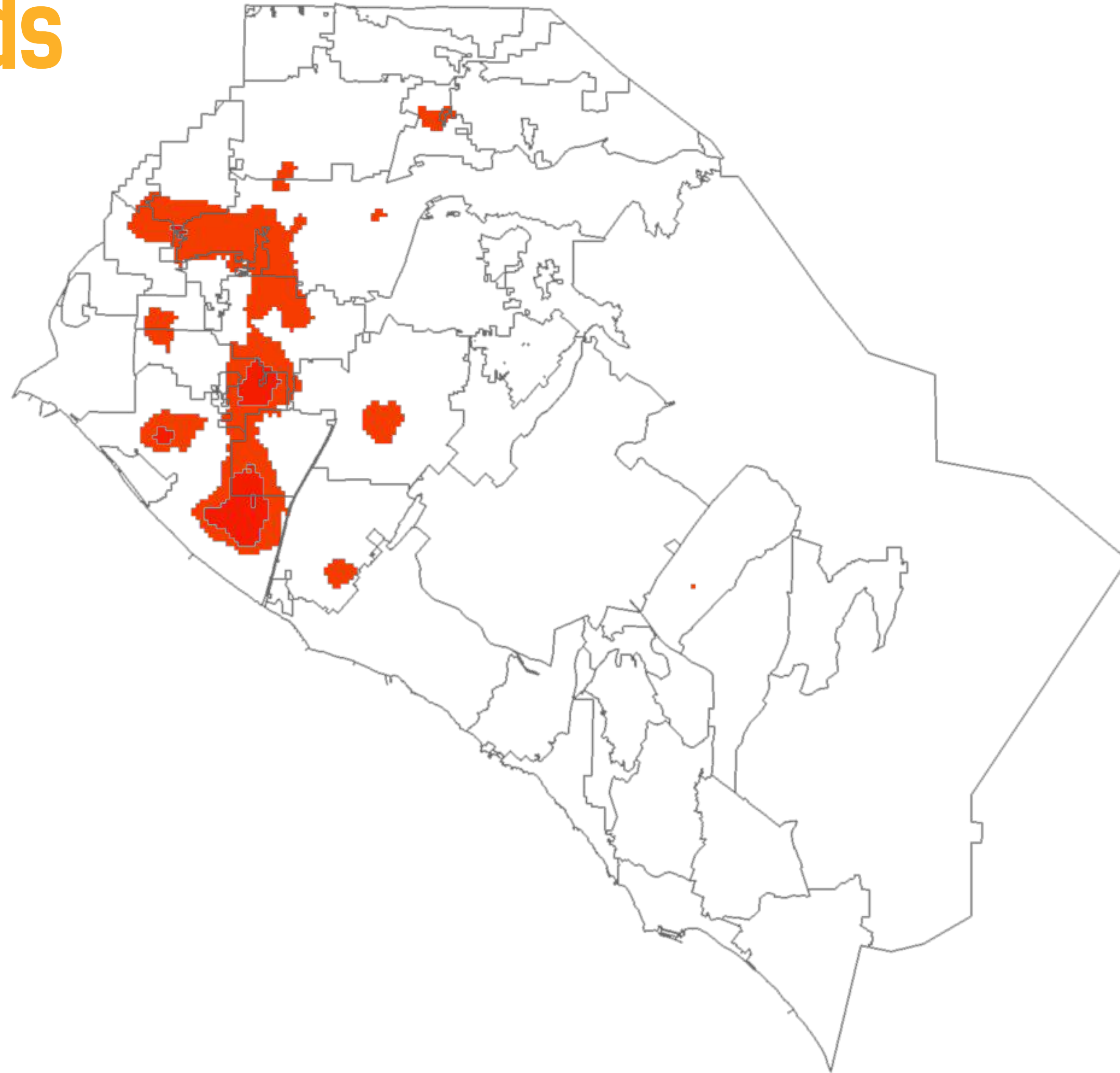
Registration Trends

Voter registration density



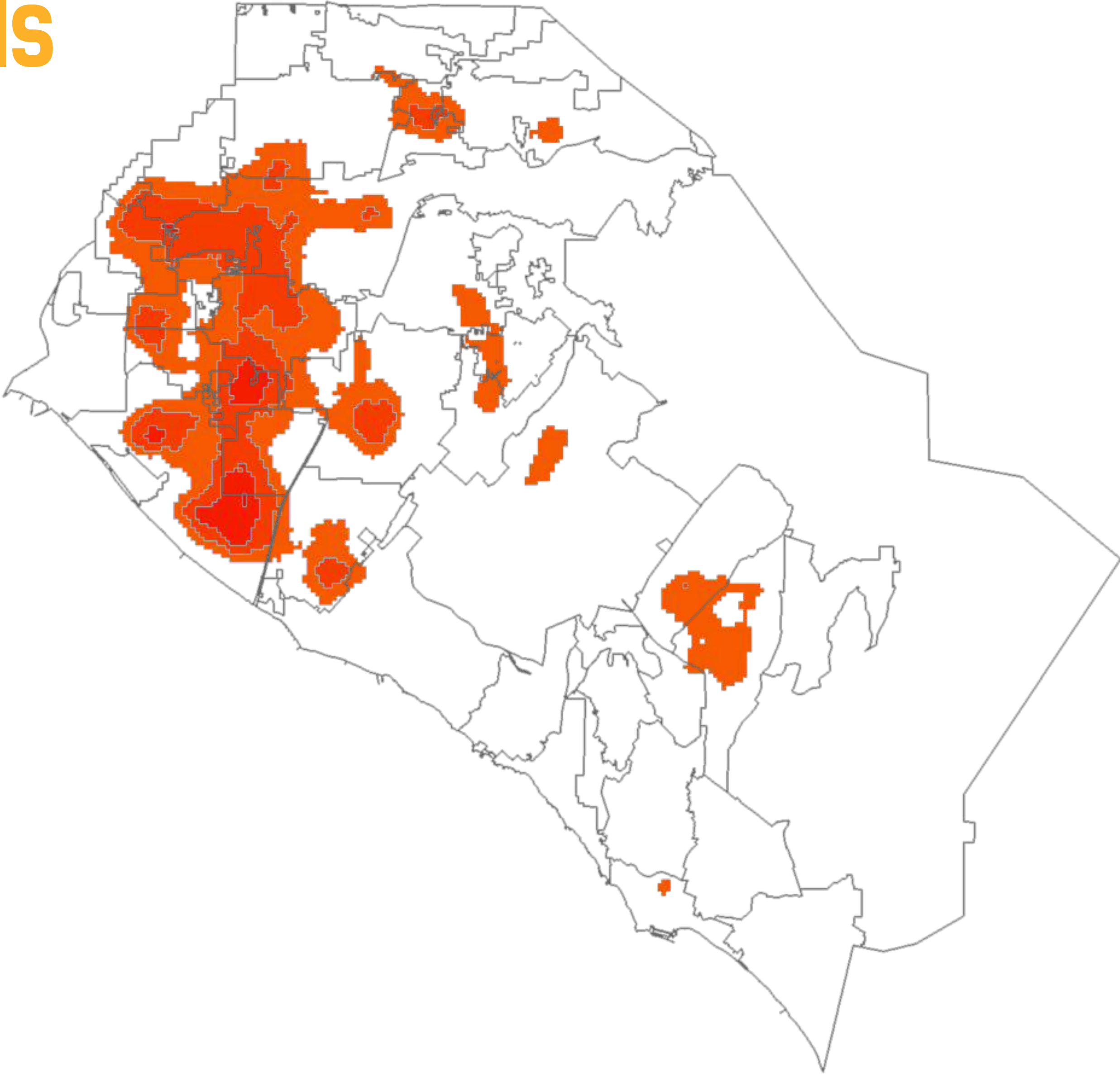
Registration Trends

Voter registration density



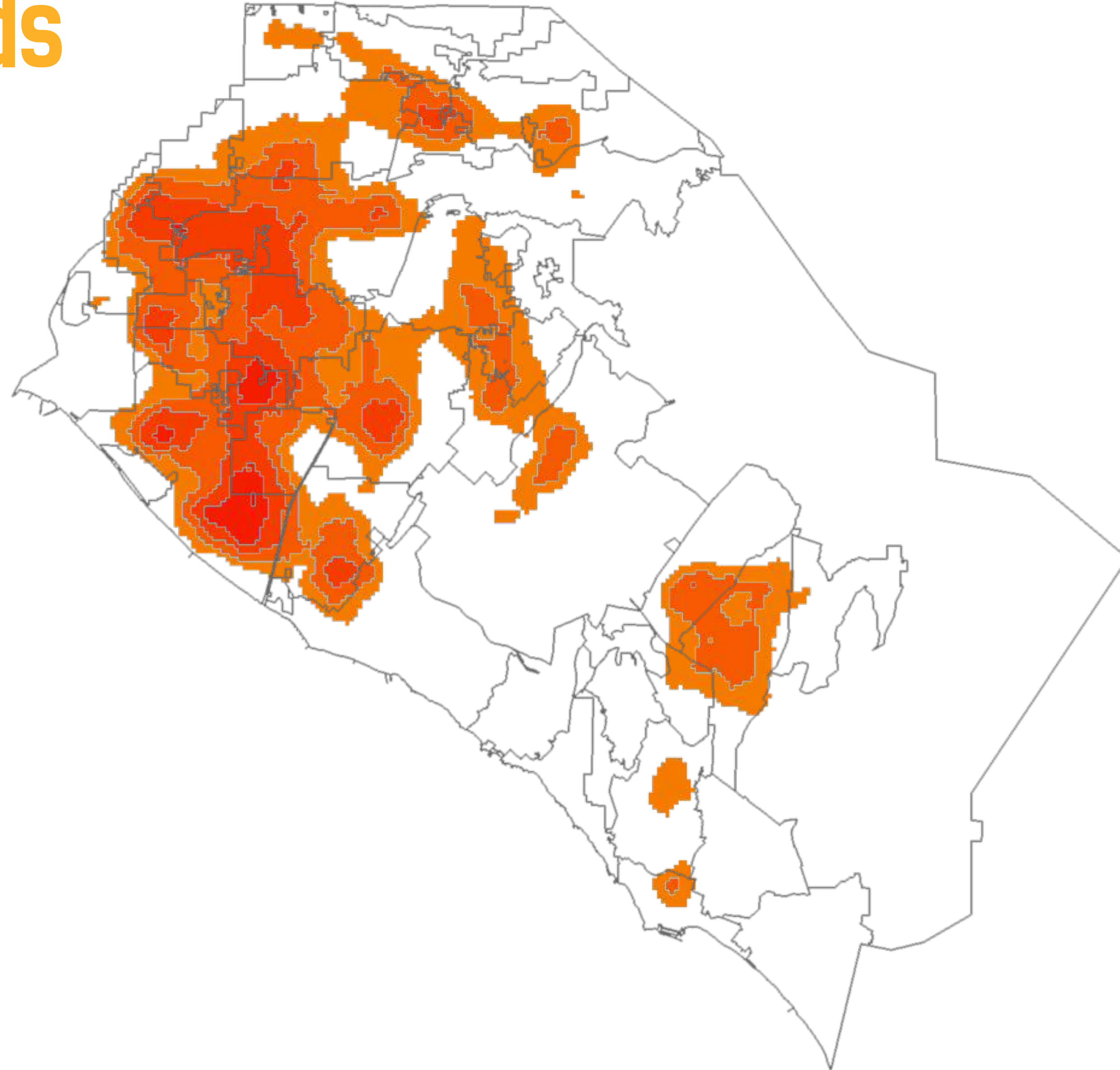
Registration Trends

Voter registration density



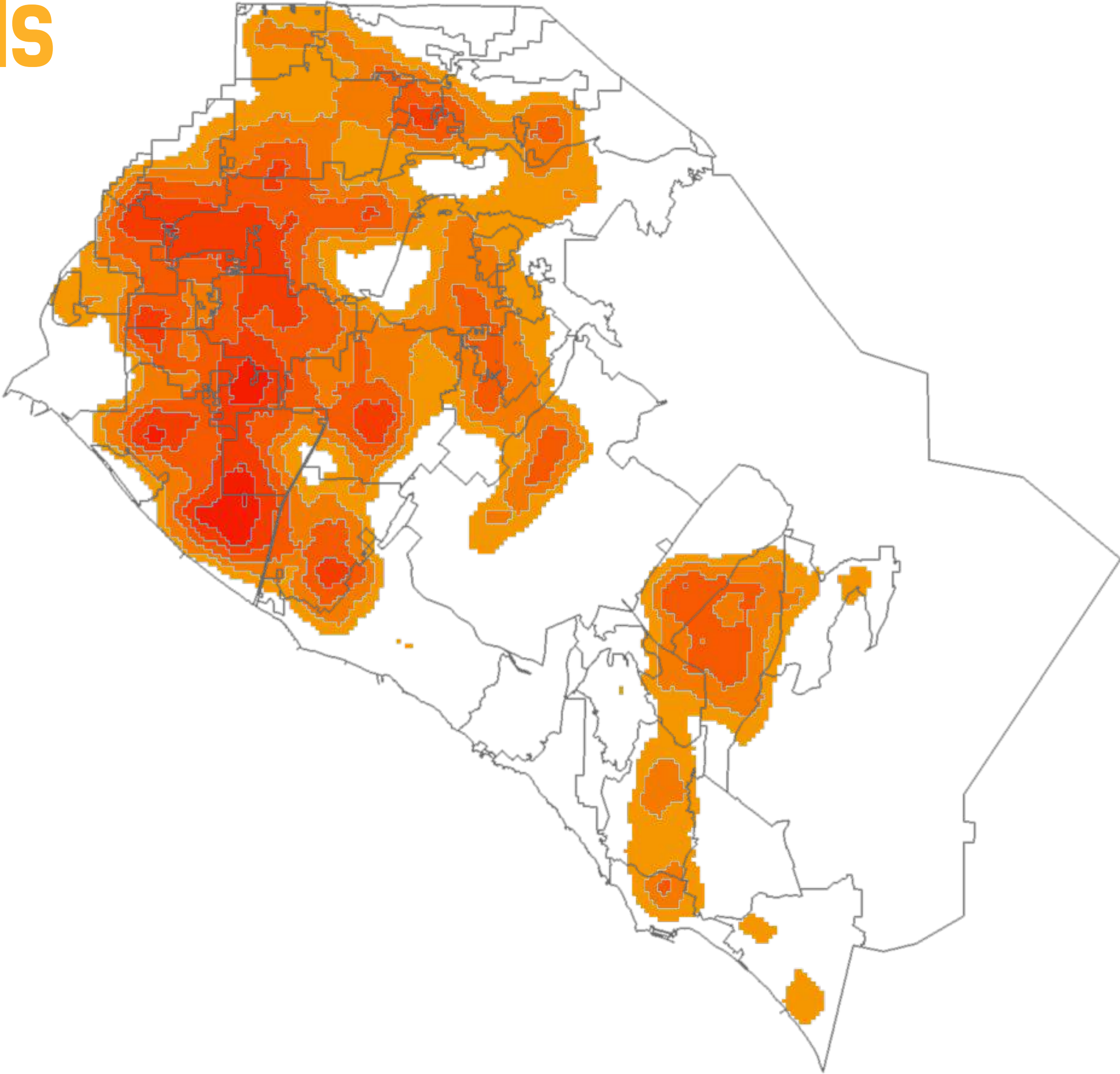
Registration Trends

Voter registration density



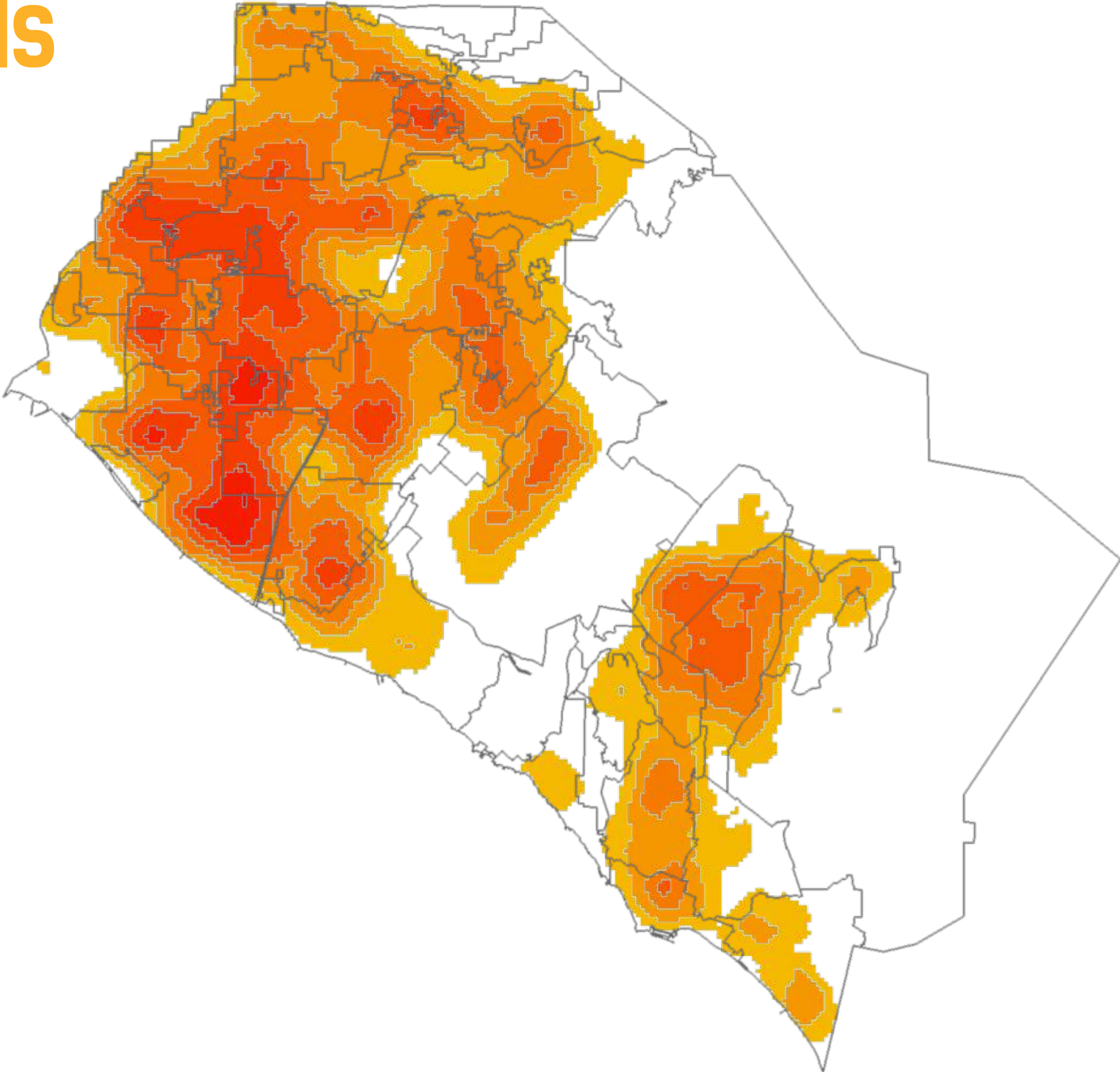
Registration Trends

Voter registration density



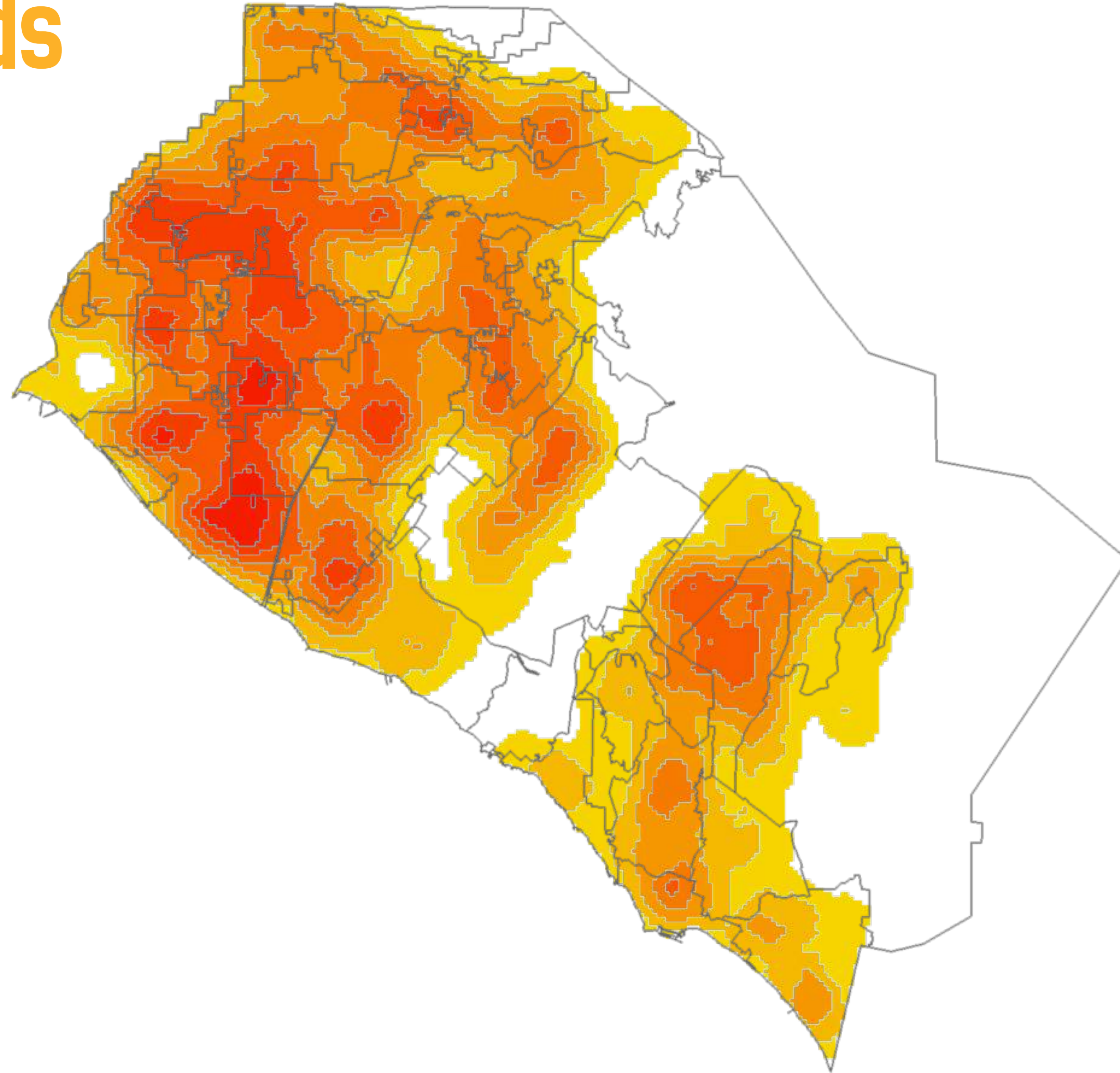
Registration Trends

Voter registration density



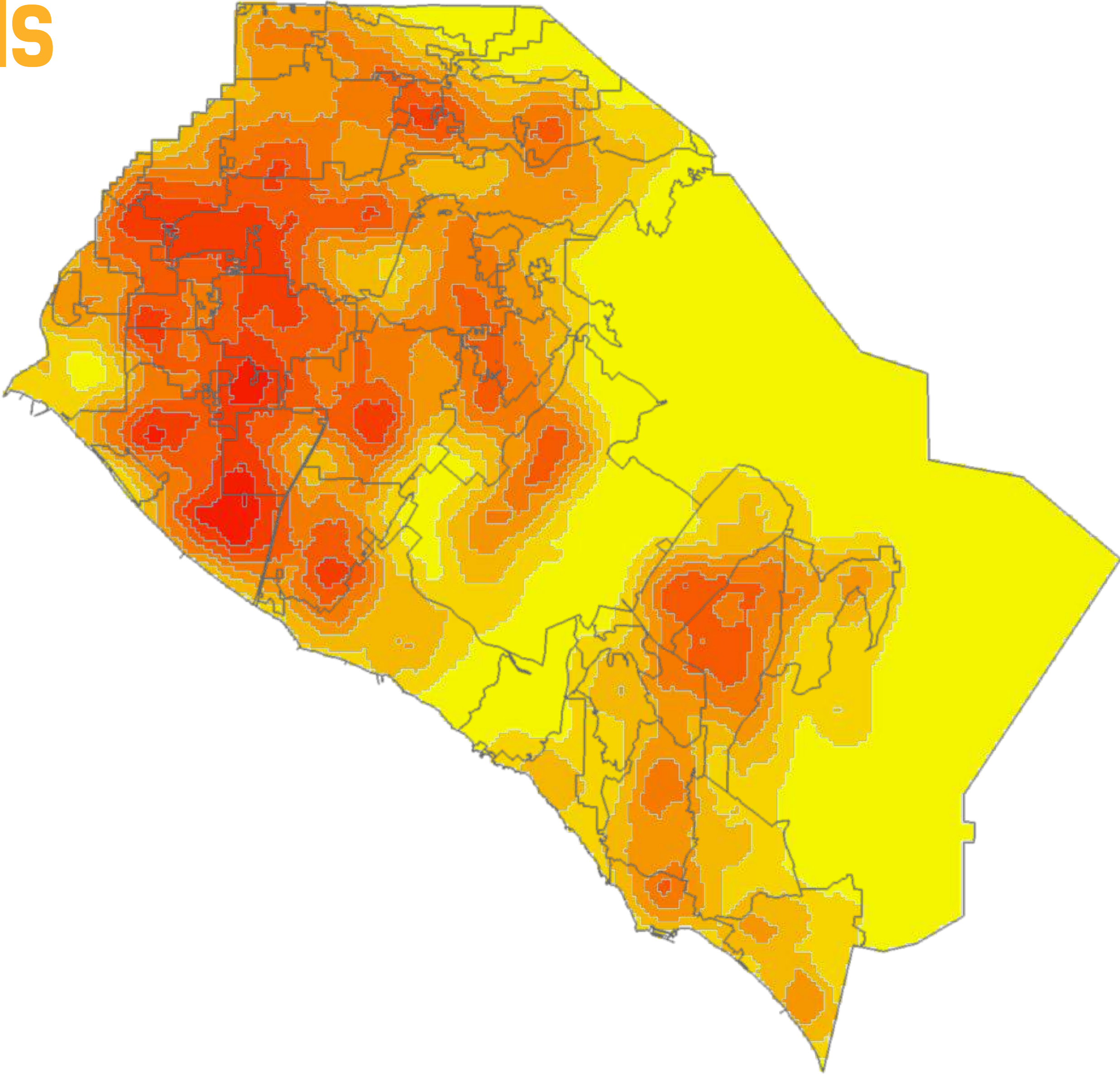
Registration Trends

Voter registration density



Registration Trends

Voter registration density



DATA = FORECAST

NEXT DAY WEATHER IS BEST



HISTORICAL TURNOUT

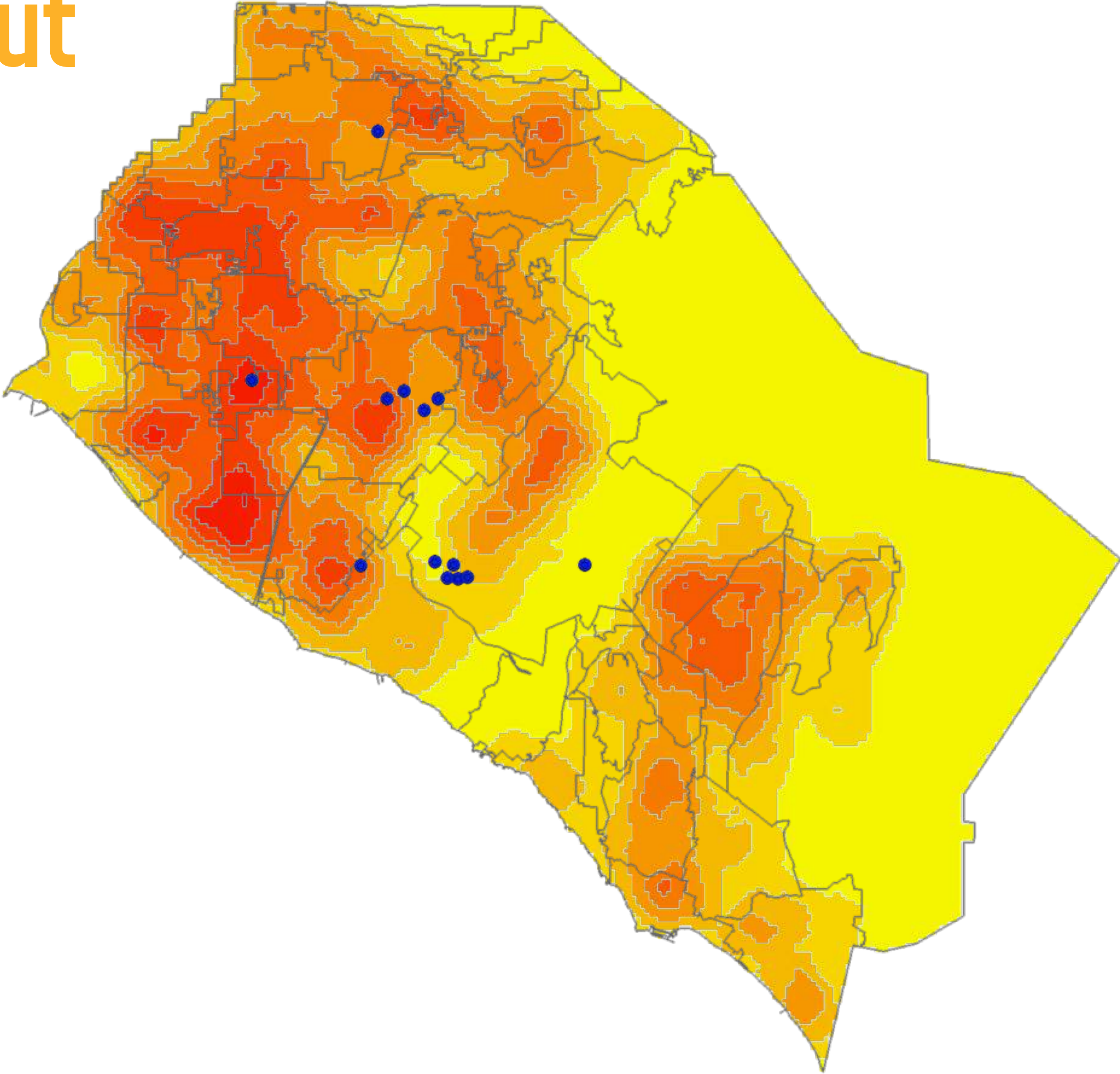
PRECINCT BY PRECINCT DATA



Forecasting Turnout

Precinct level data reviewed over 10 year period

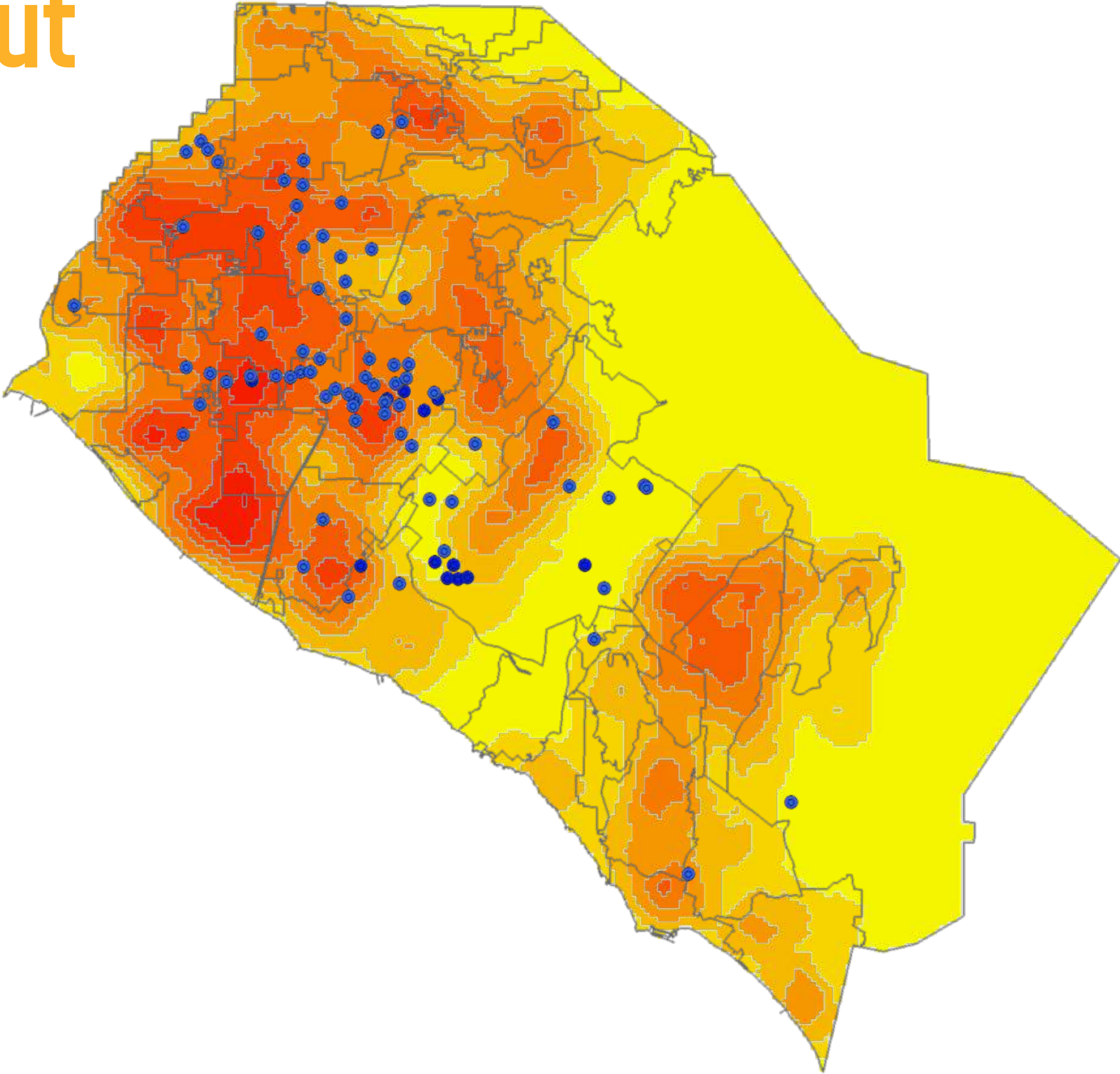
- 0 - 25% forecast
- 26 - 35% forecast
- 36 - 45% forecast
- 46 - 55% forecast
- 56 - 60% forecast
- 61 - 65% forecast
- 66 - 75%+ forecast



Forecasting Turnout

Precinct level data reviewed over 10 year period

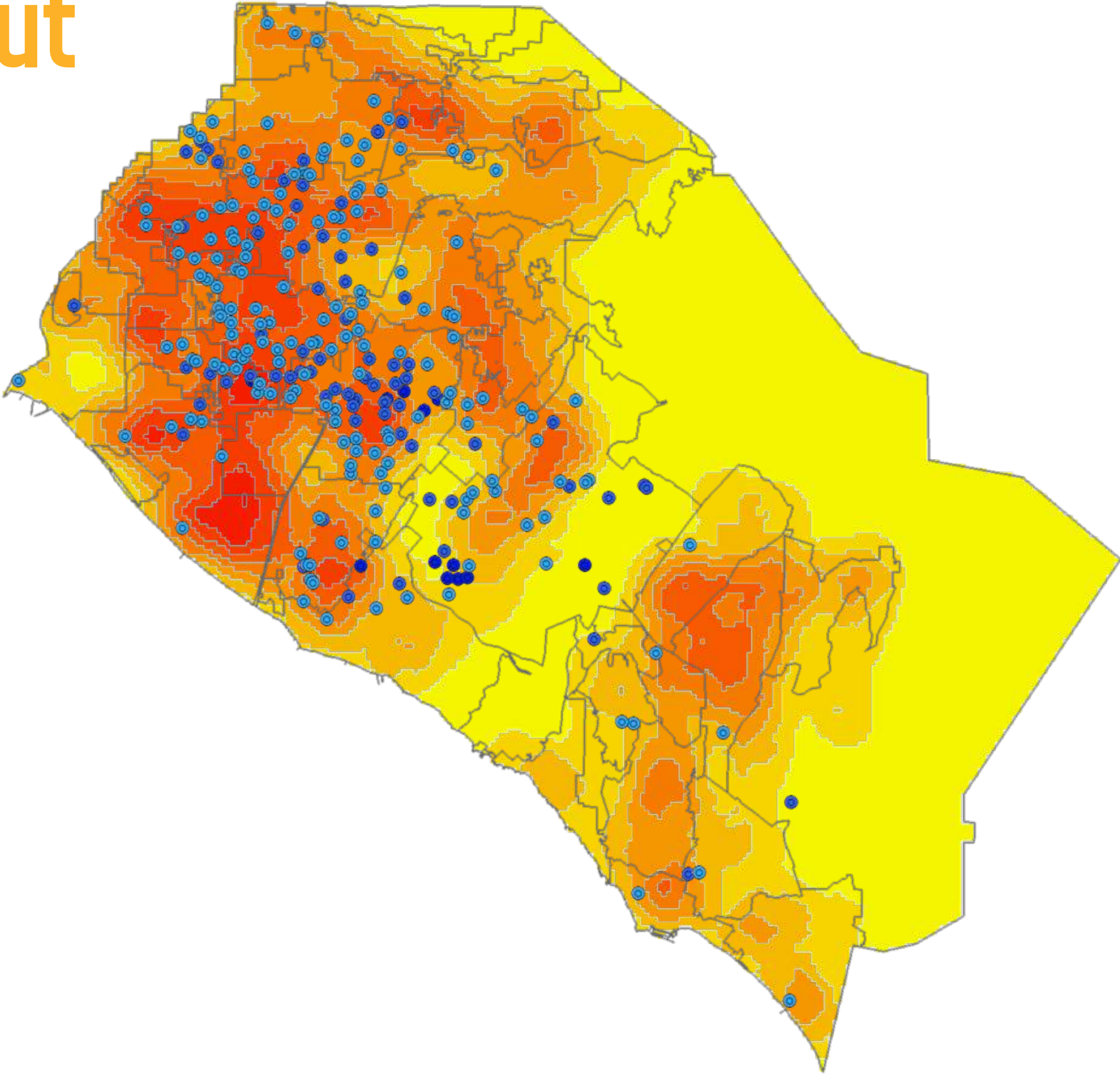
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Forecasting Turnout

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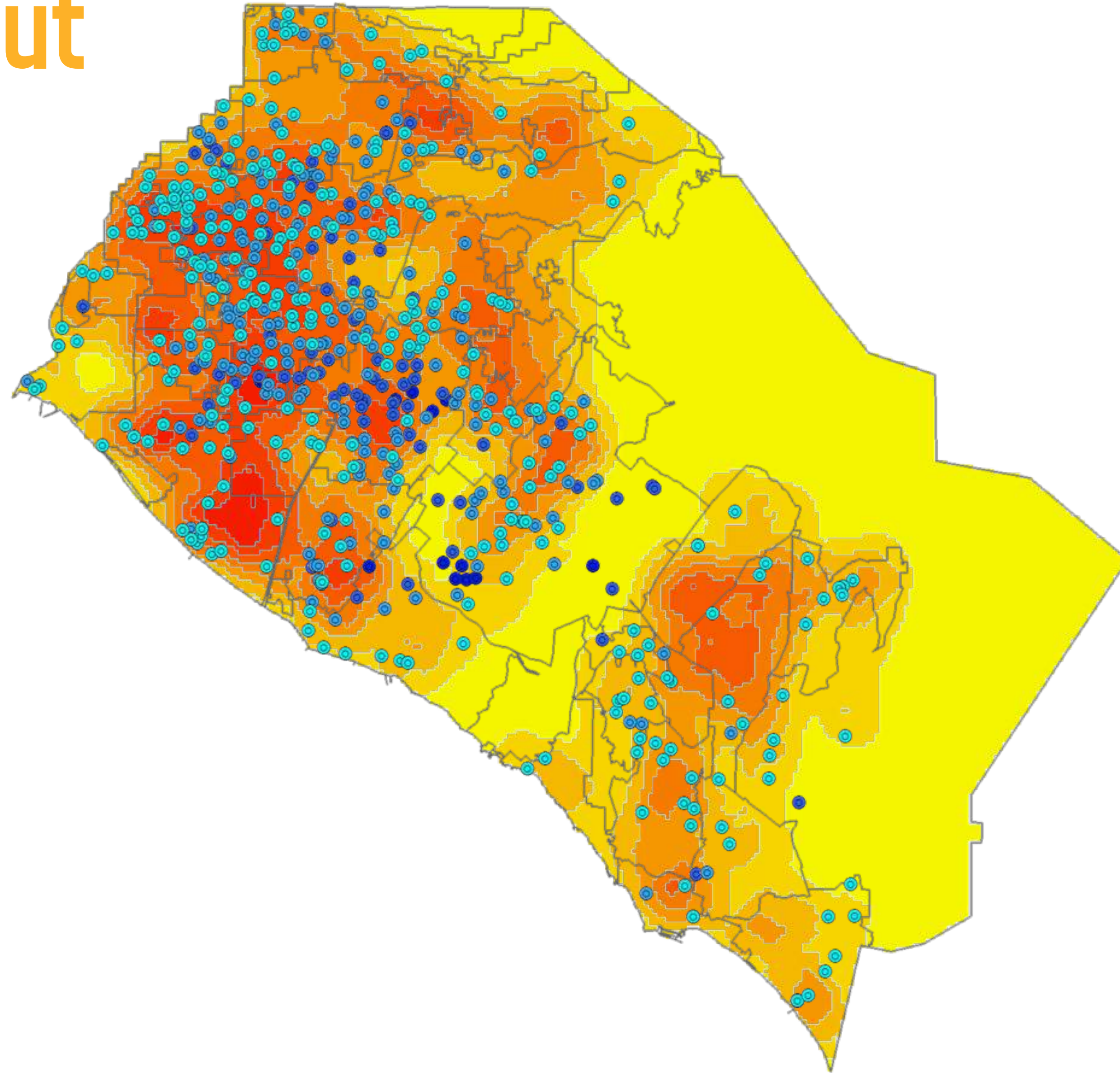
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Forecasting Turnout

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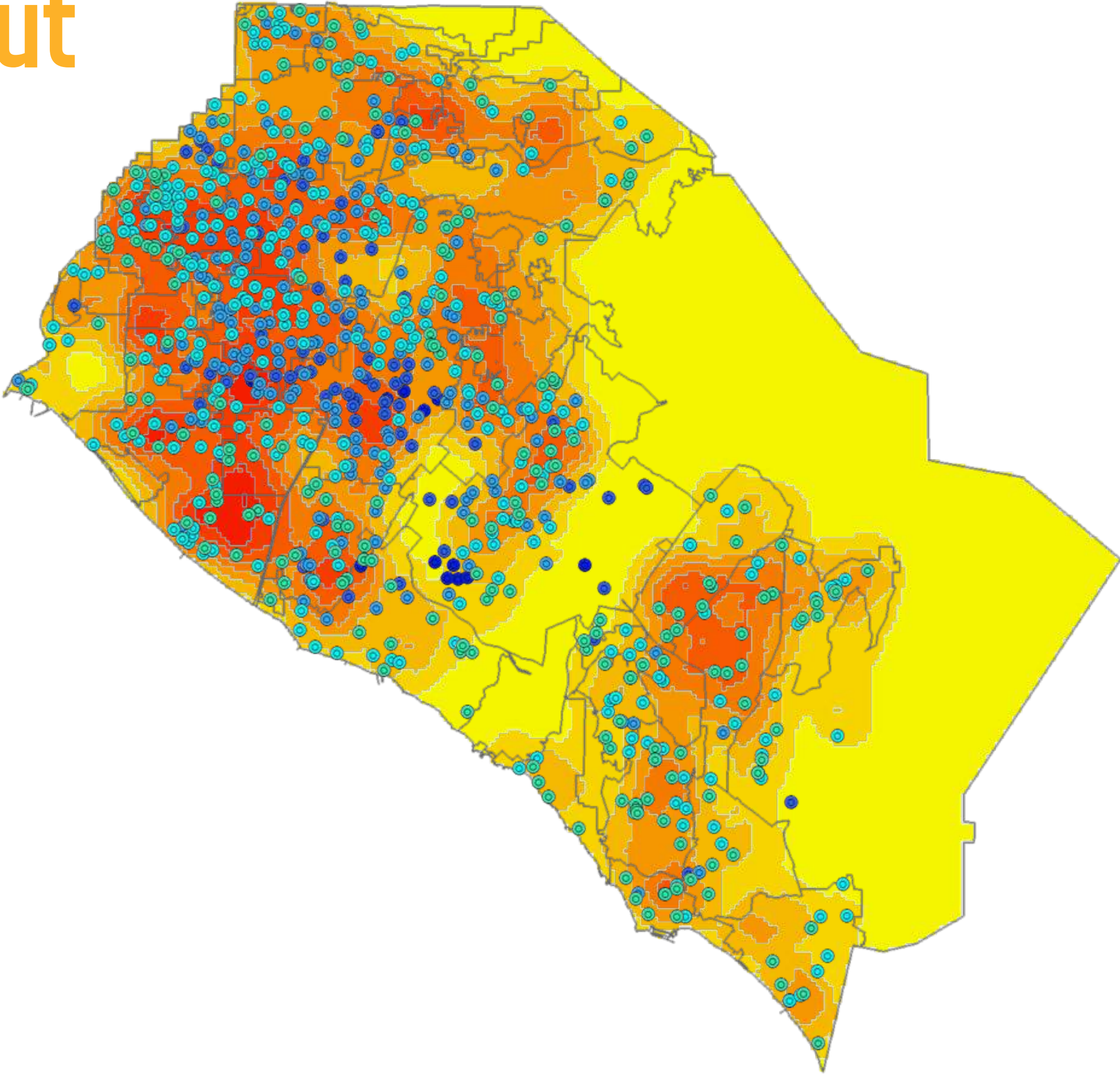
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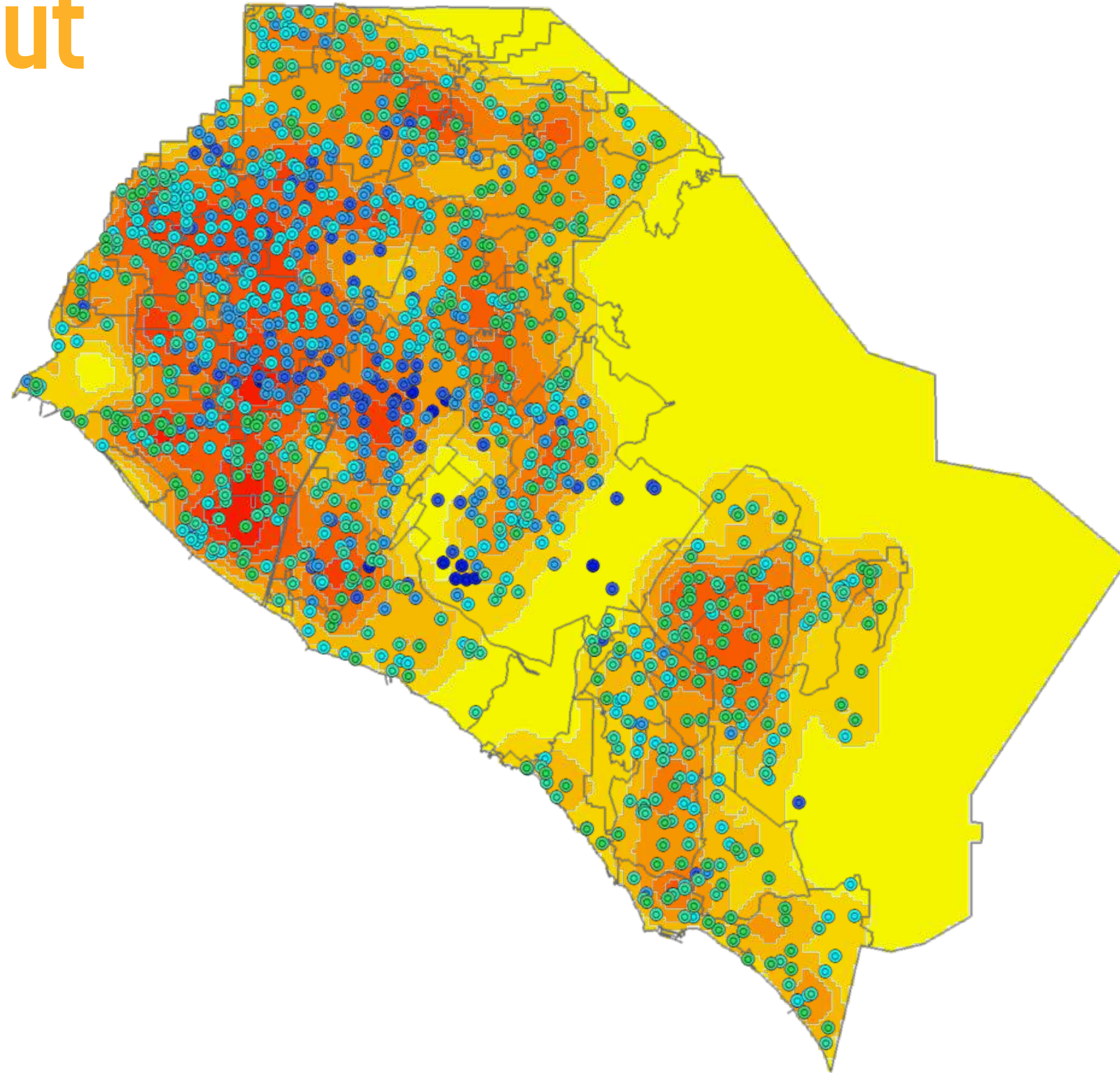
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Forecasting Turnout

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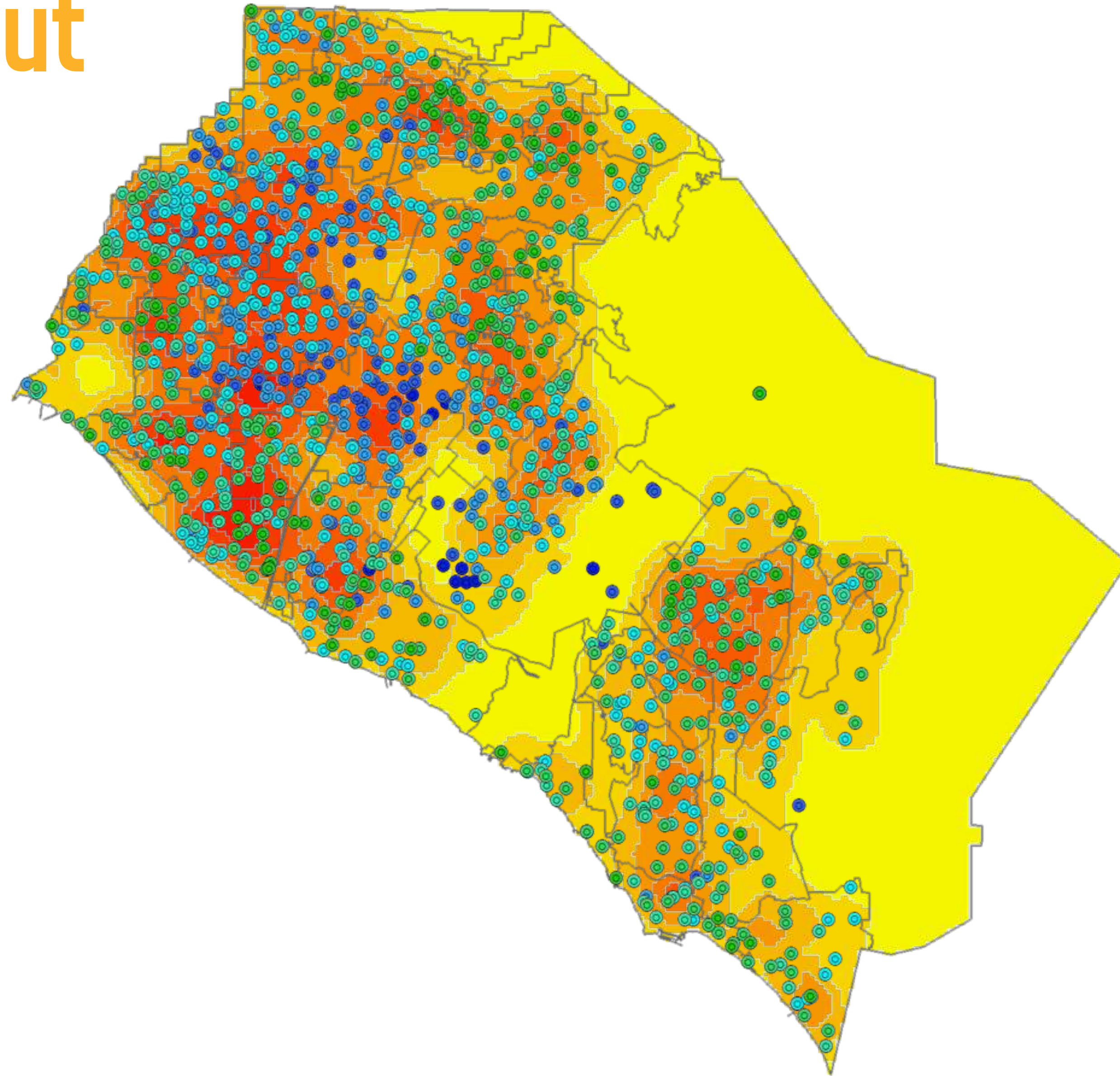
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Forecasting Turnout

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TIME STUDIES

DETAILED DATA ON BALLOT TIMING



Detailed Time Tests on Typical Ballot Style

Time tests provide approximate time per voter



Began to conduct time tests for voting using actual ballot



Background on Equipment Allocation

Efficiency versus practical application

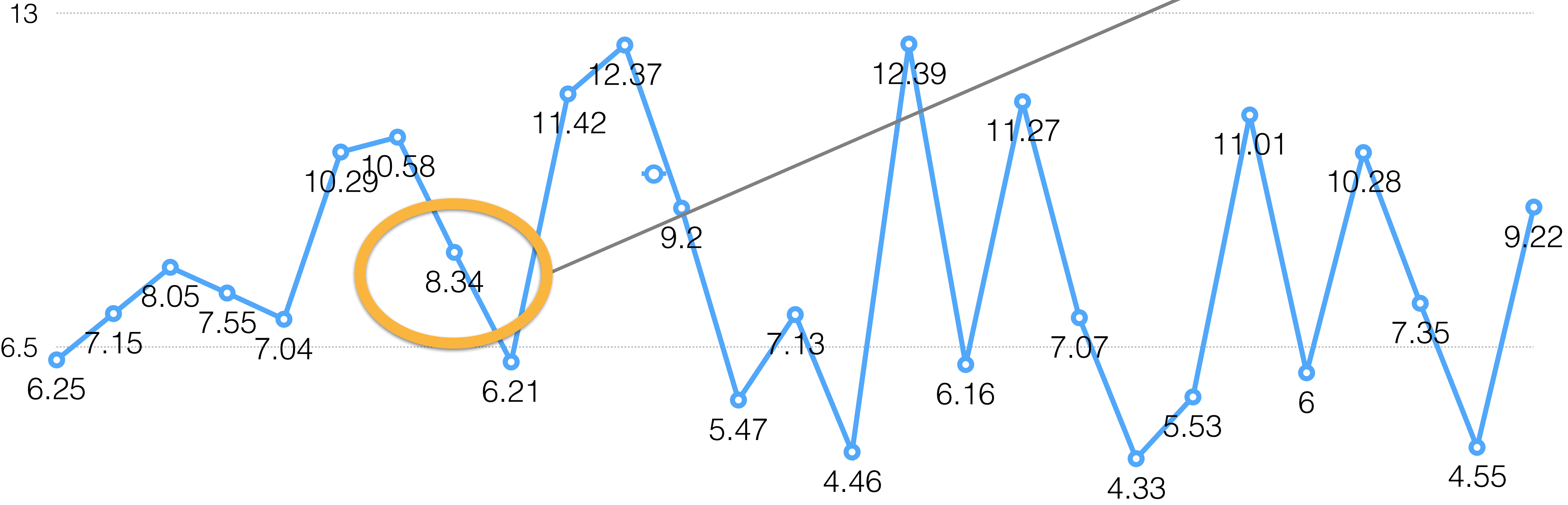
- 1 Time to vote ballot is important for multiple reasons
- 2 Important input into optimization calculator and provides data on how many votes for each VVPAT



2016 Ballot Completion Time Studies

Multiple tests with multiple voters

Average time spent in booth
8.25 minutes



INPUTS

Using data to make critical decisions



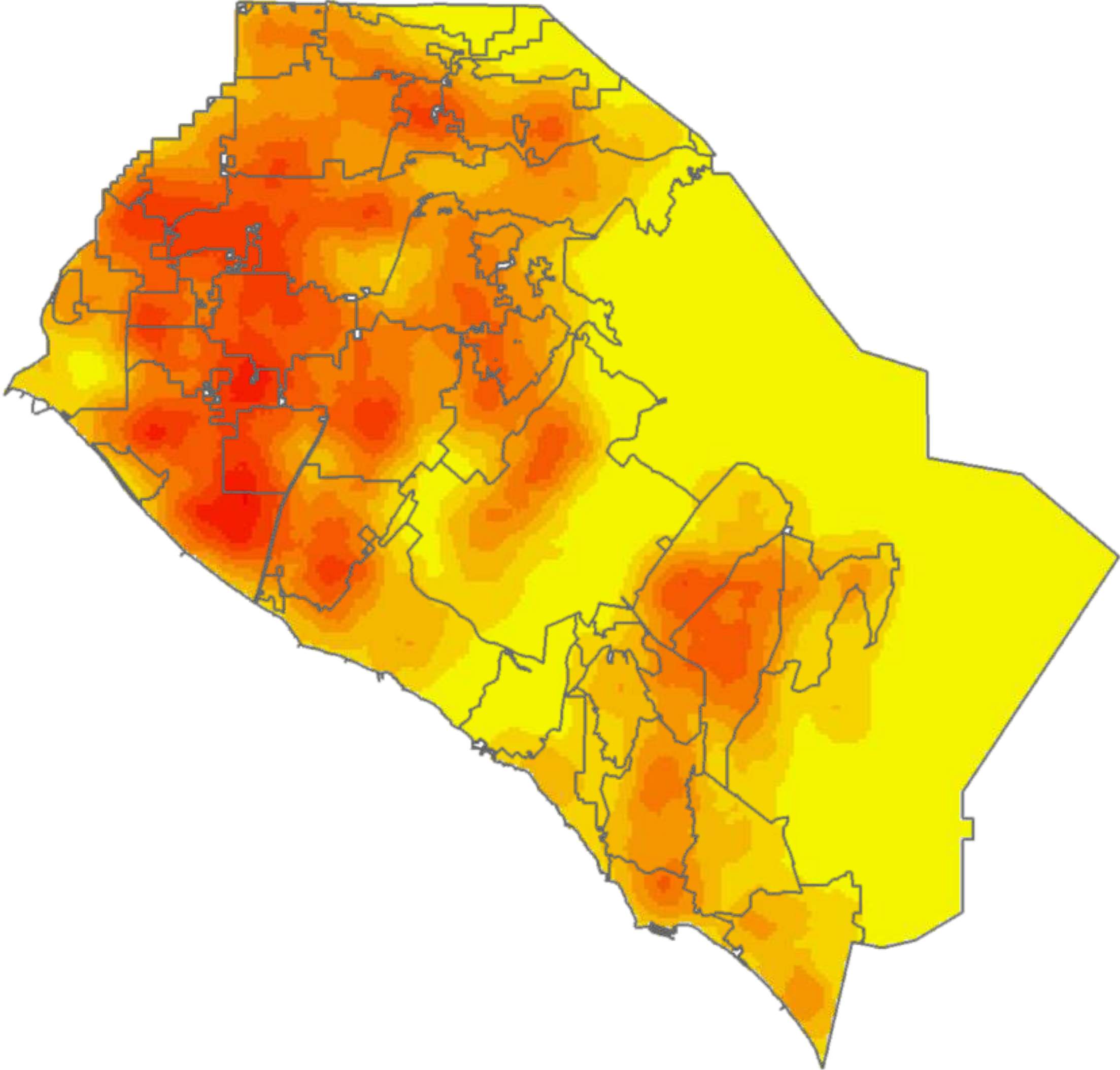
QUEUEING CALCS

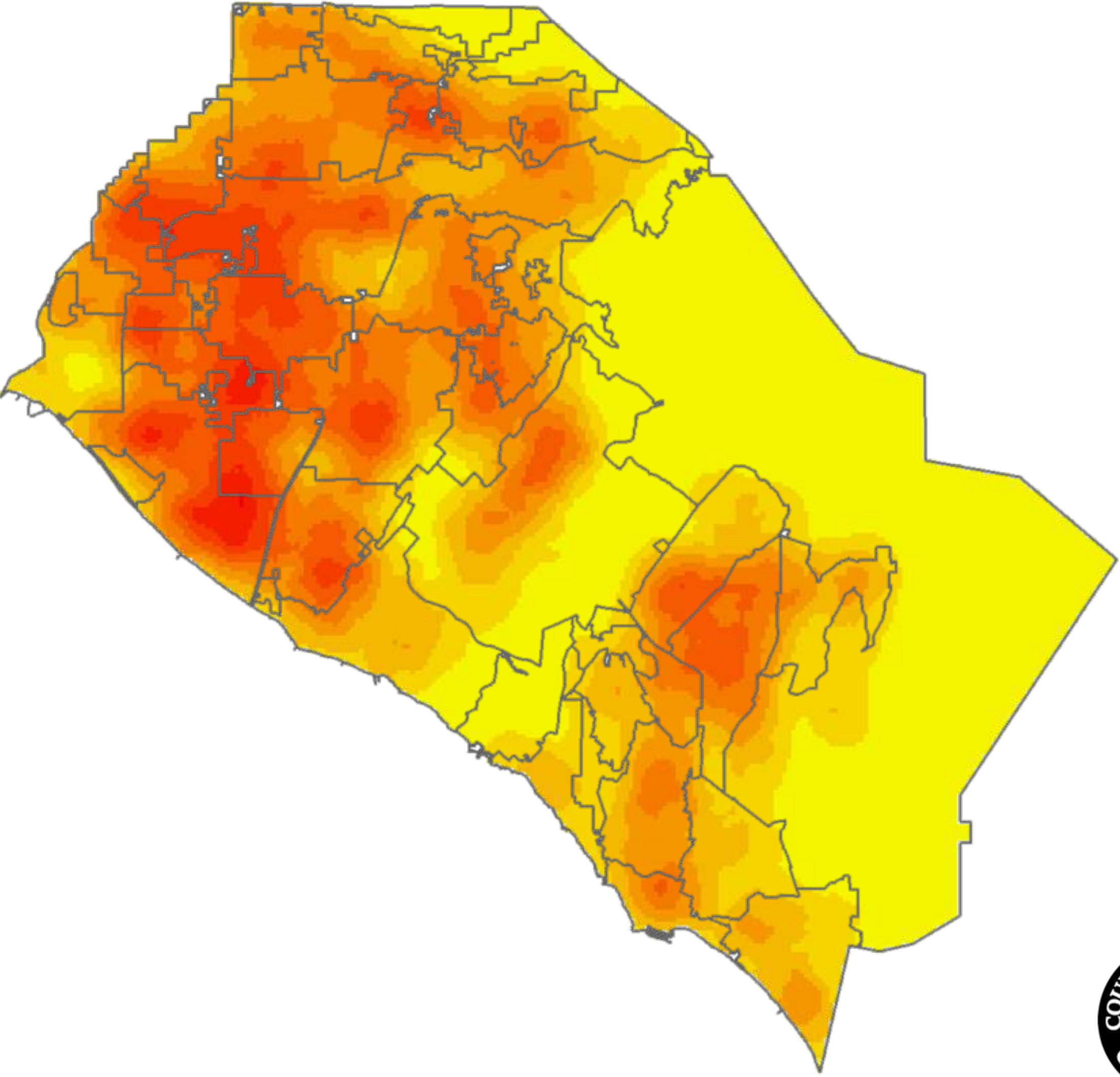
USING DATA FROM QUEUEING MODELS

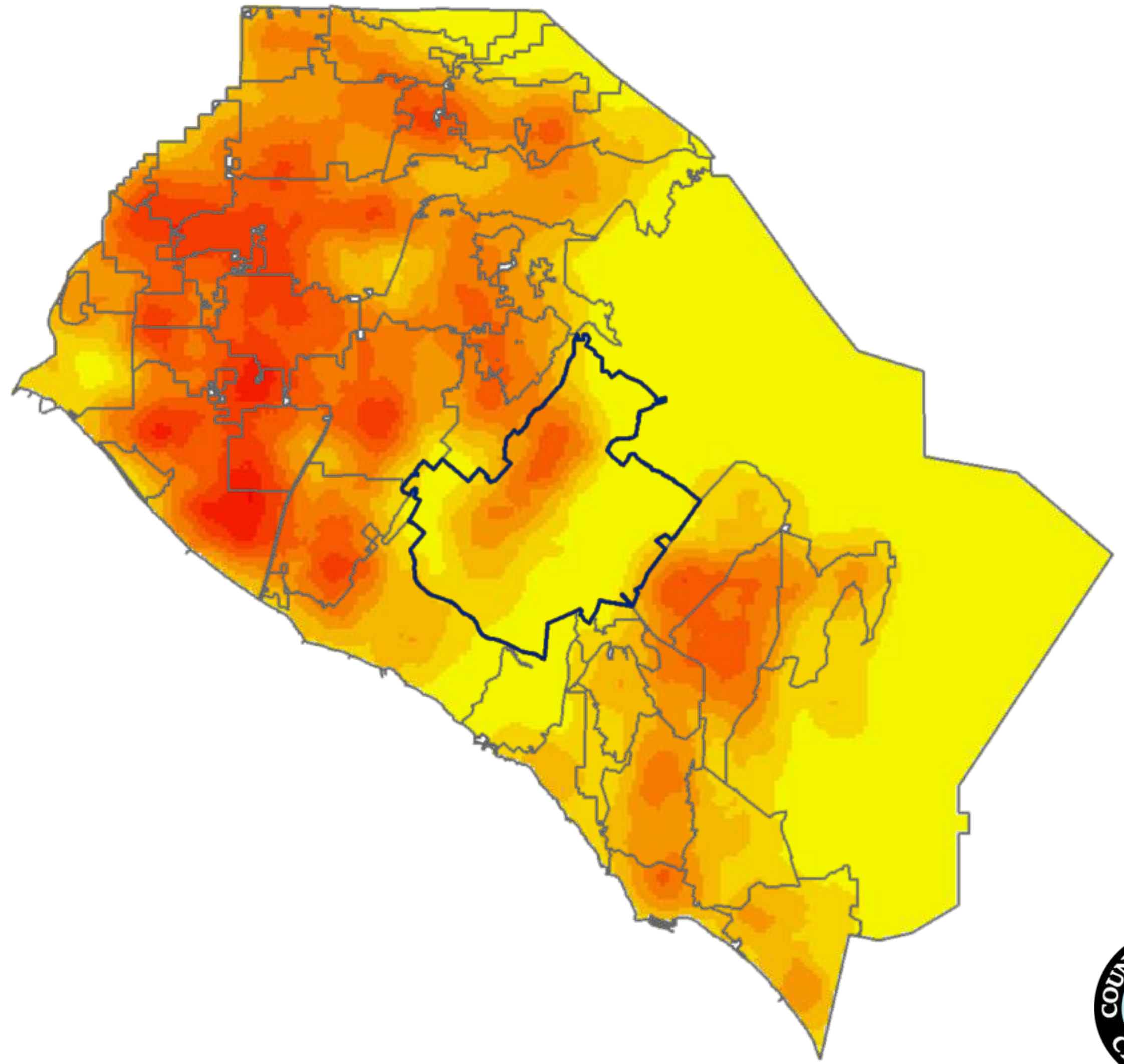


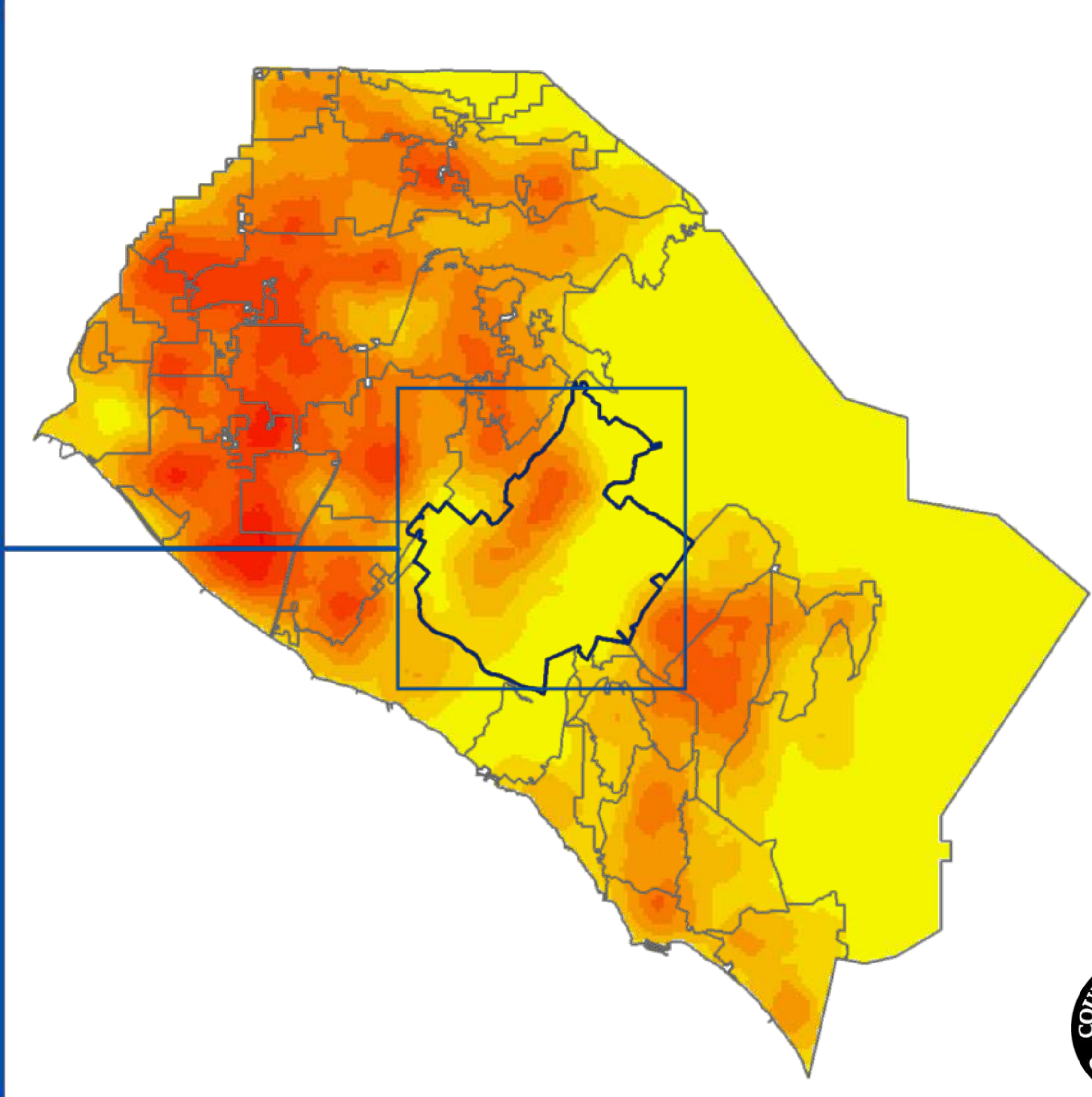
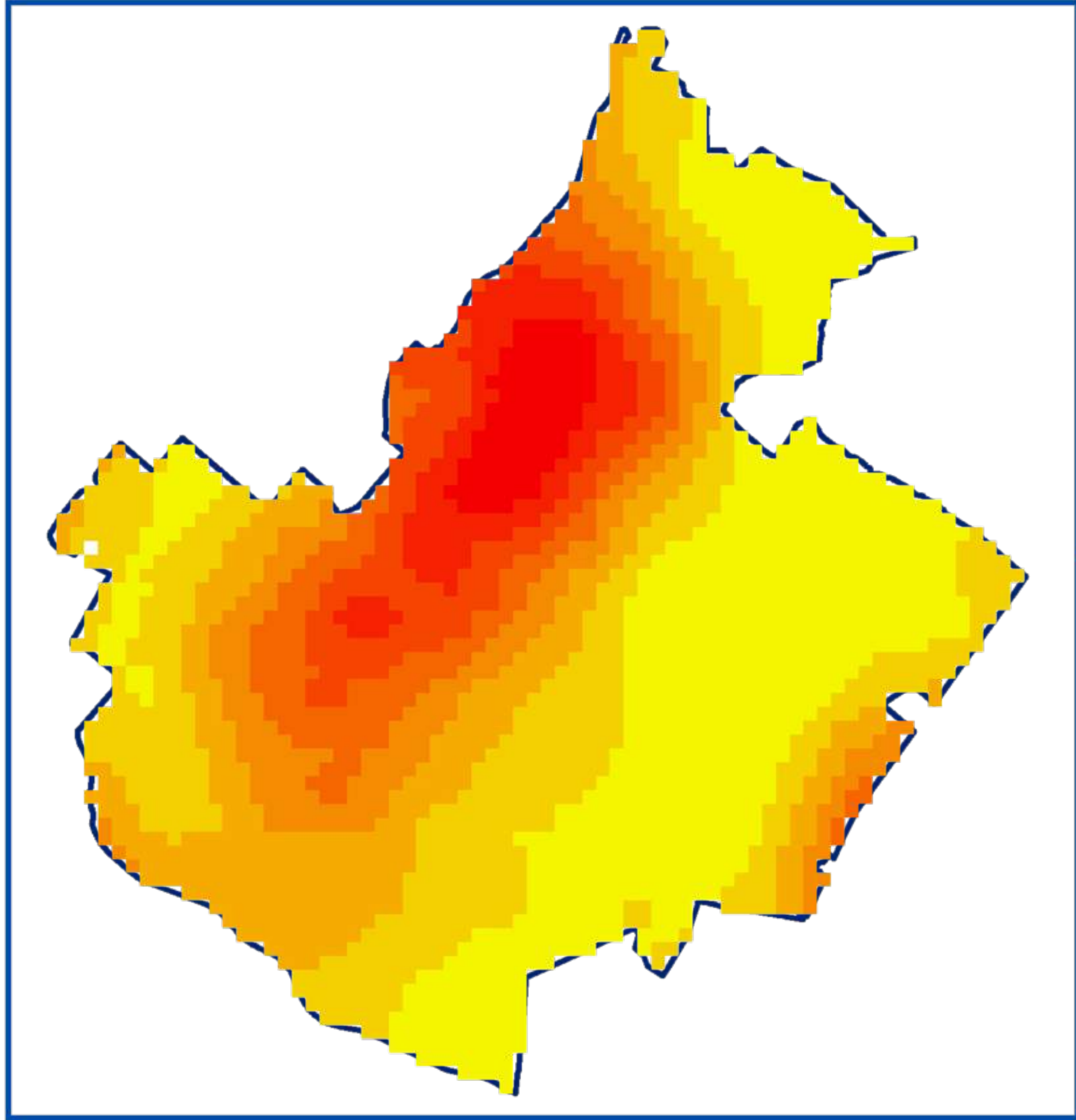
2016 Irvine, CA

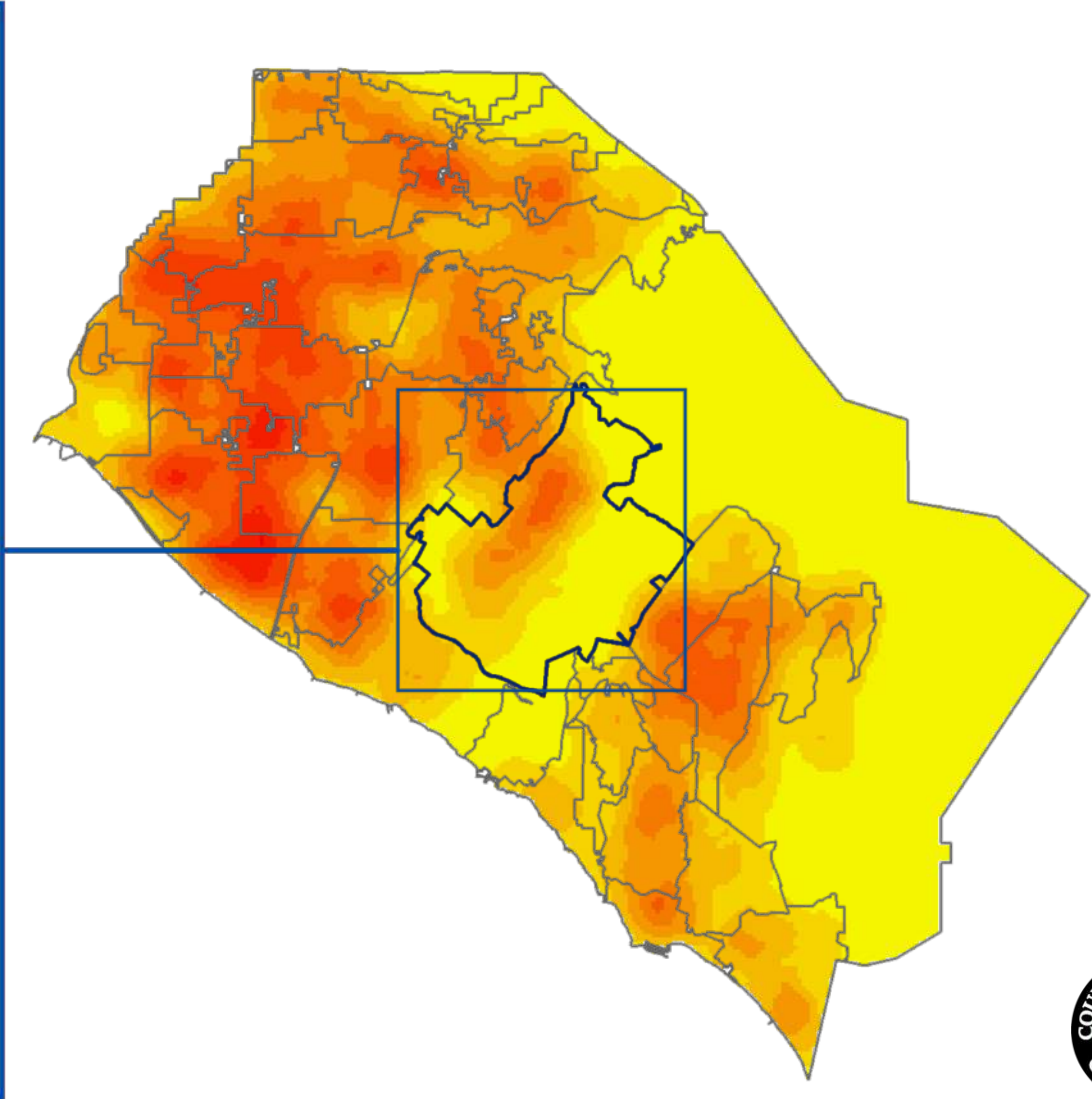
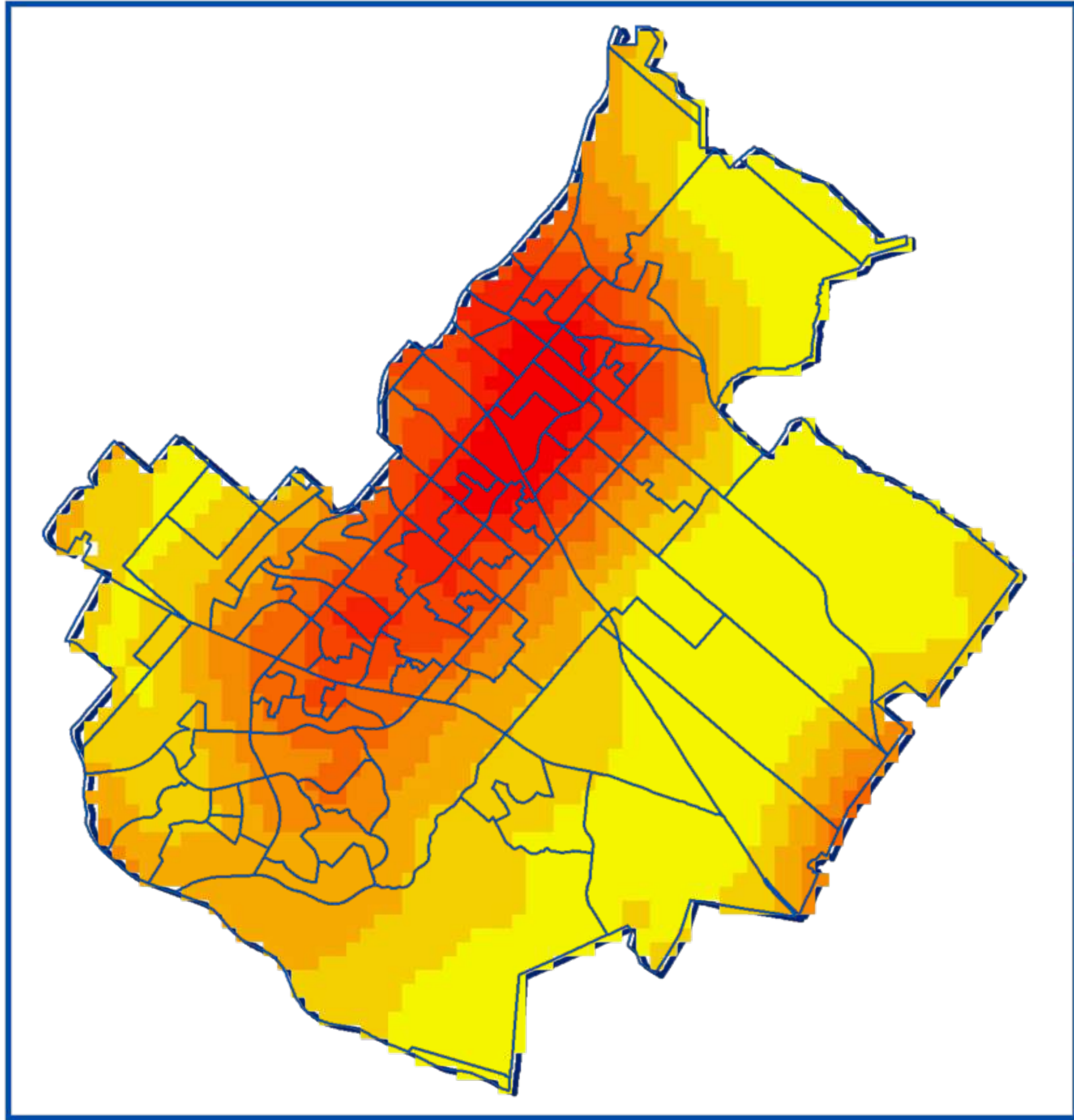
High utilization polling place

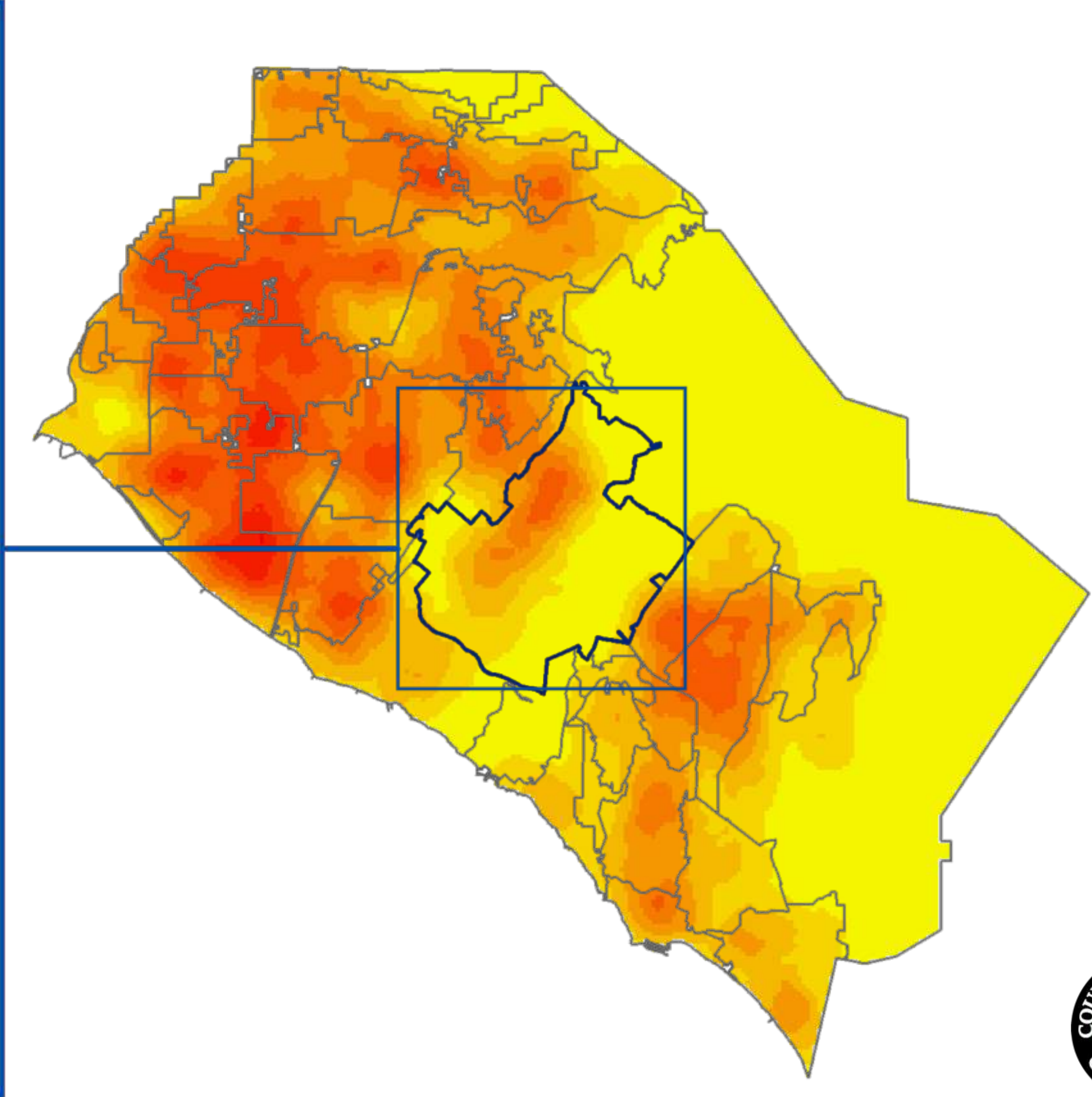
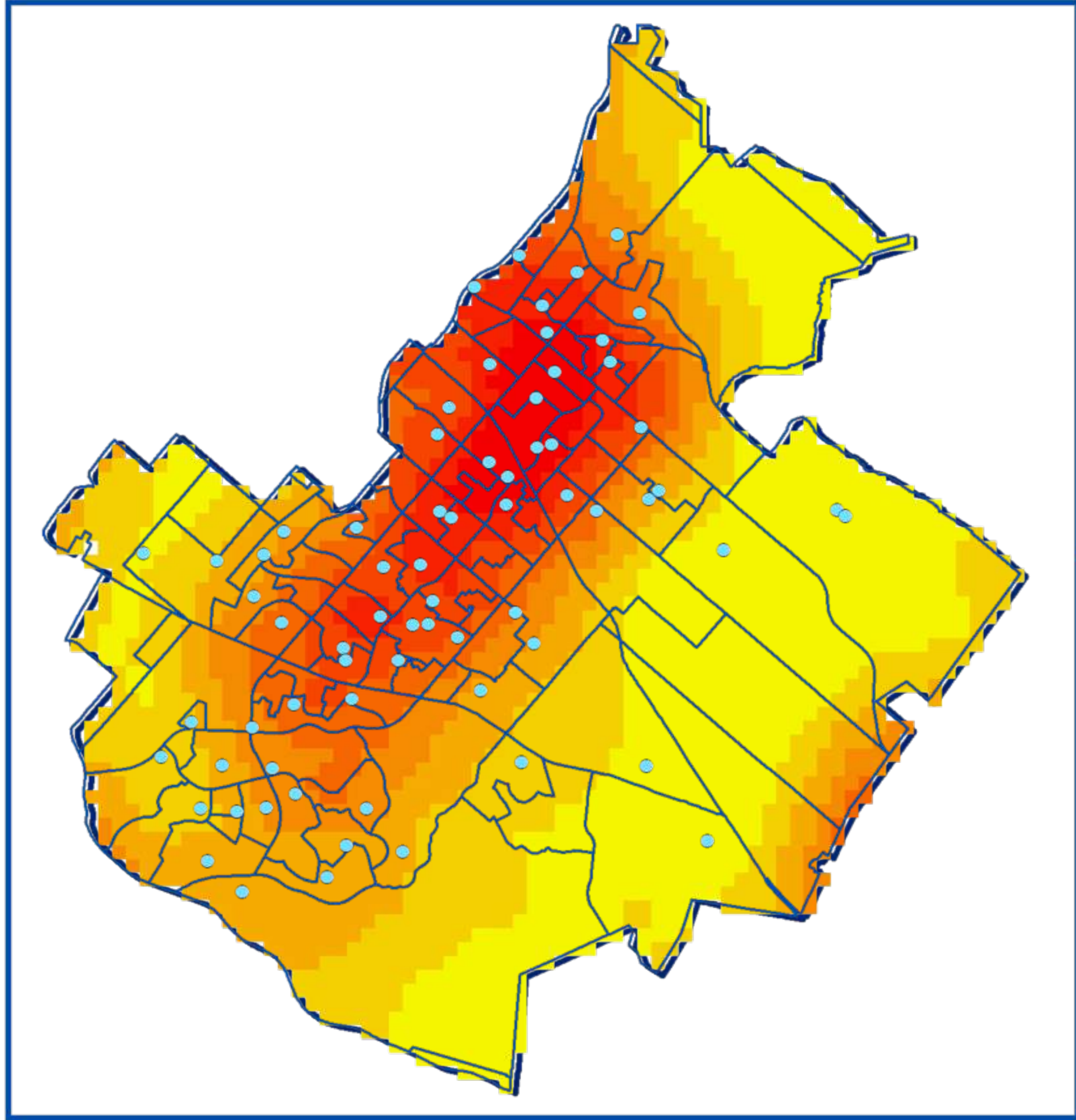


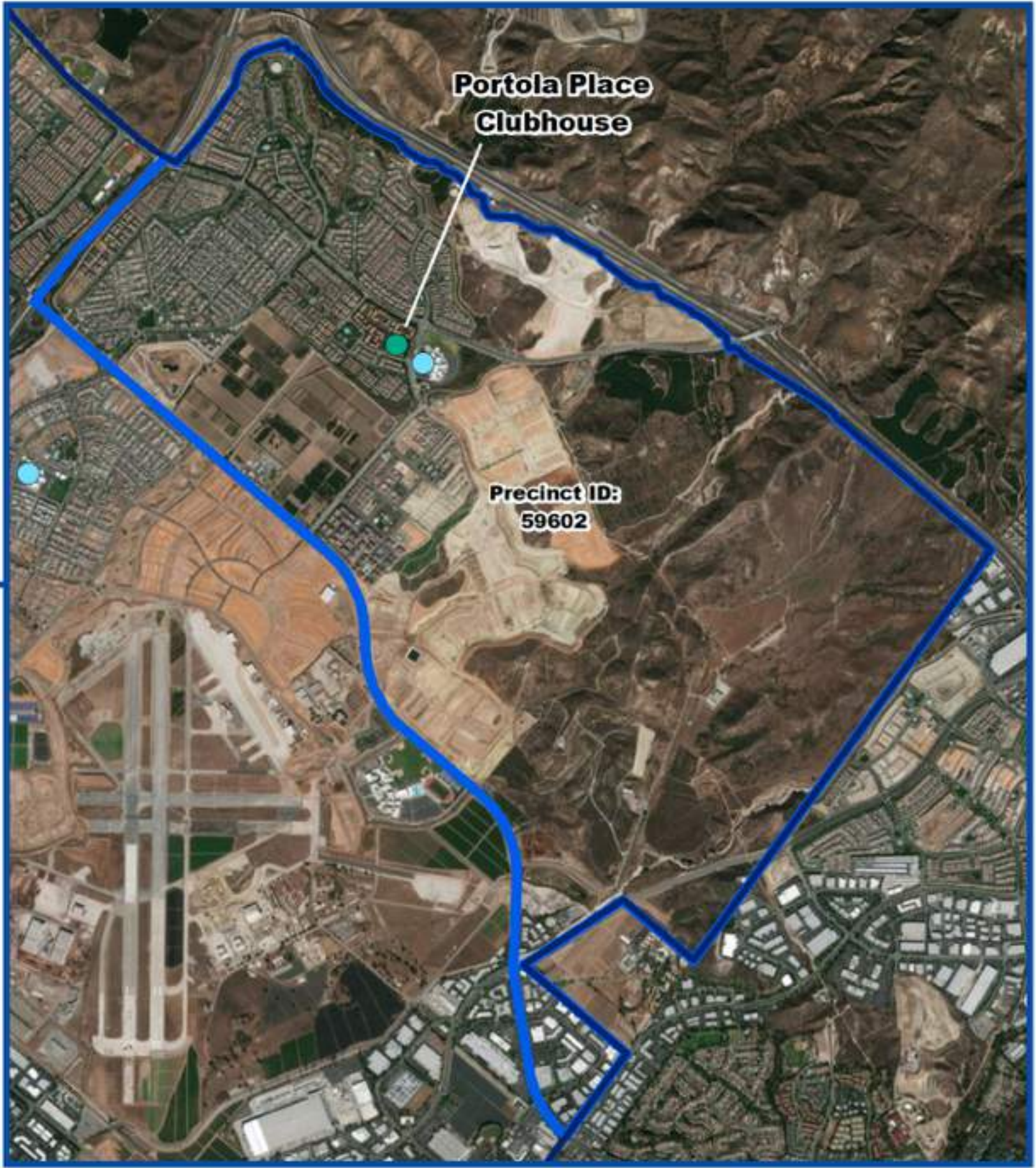
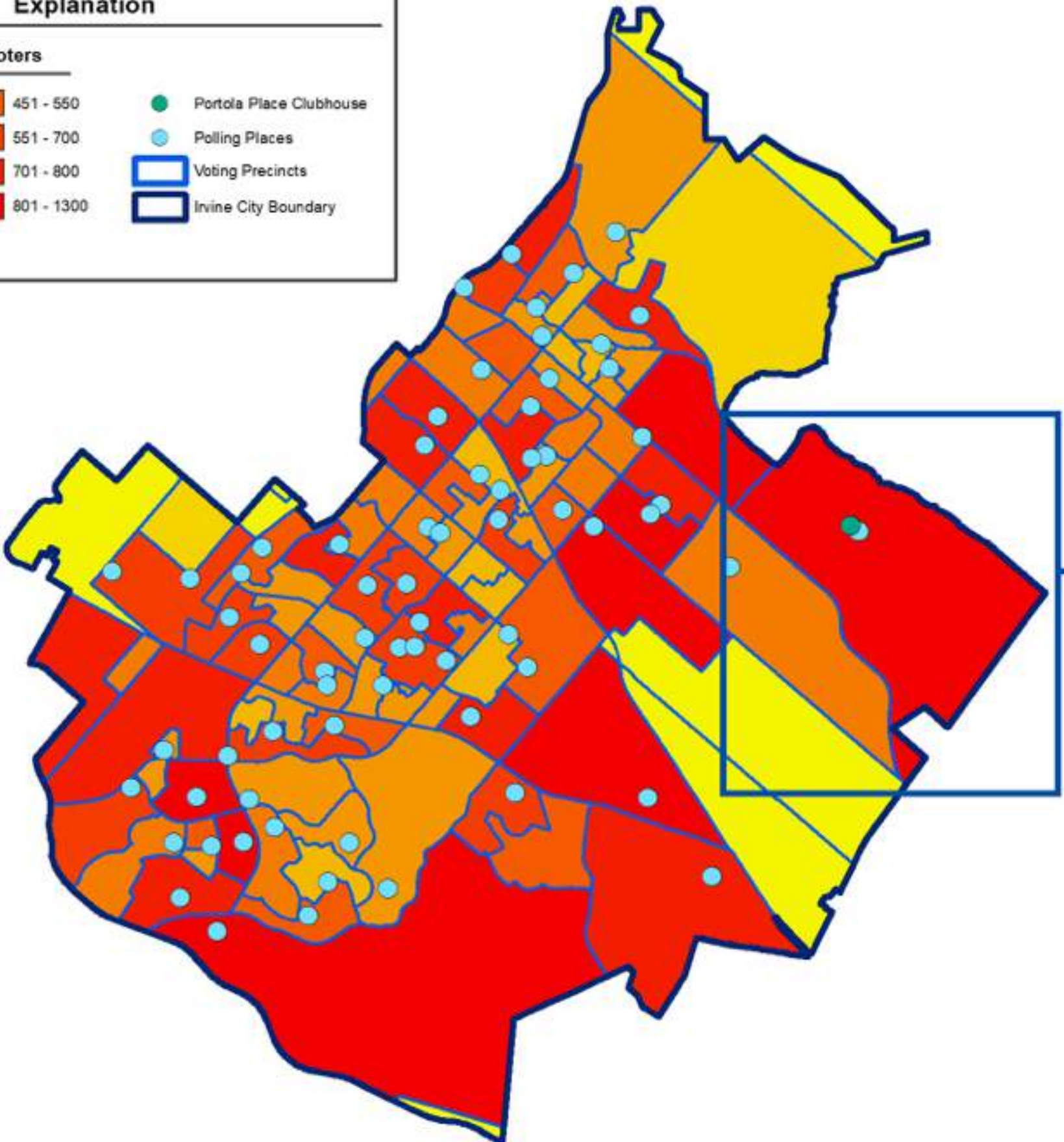
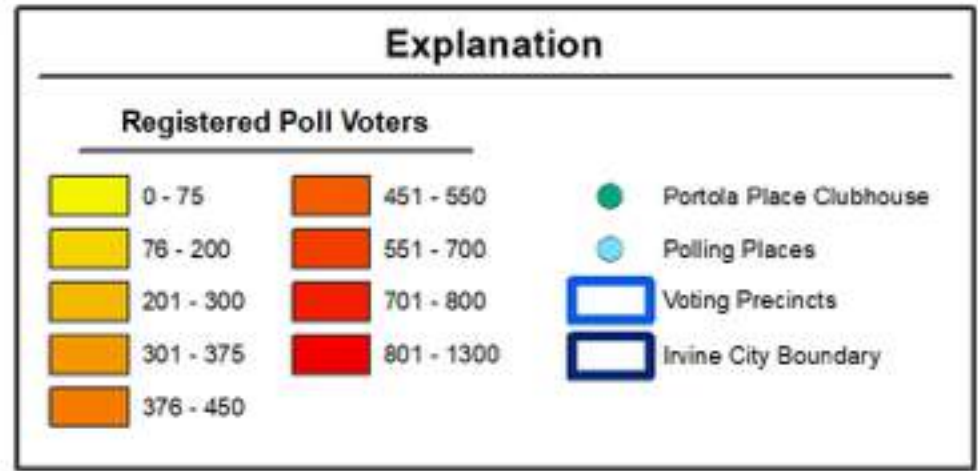












Background on **Equipment Allocation**

Efficiency versus practical application

- 1** Specific example in Irvine, CA - 390 voters voted in-person in 2012
- 2** Based on additional historical data (and average increases) projected an 80% increase to 702 for 2016



Detailed Time Tests on Typical Ballot Style

Time tests provide approximate time per voter



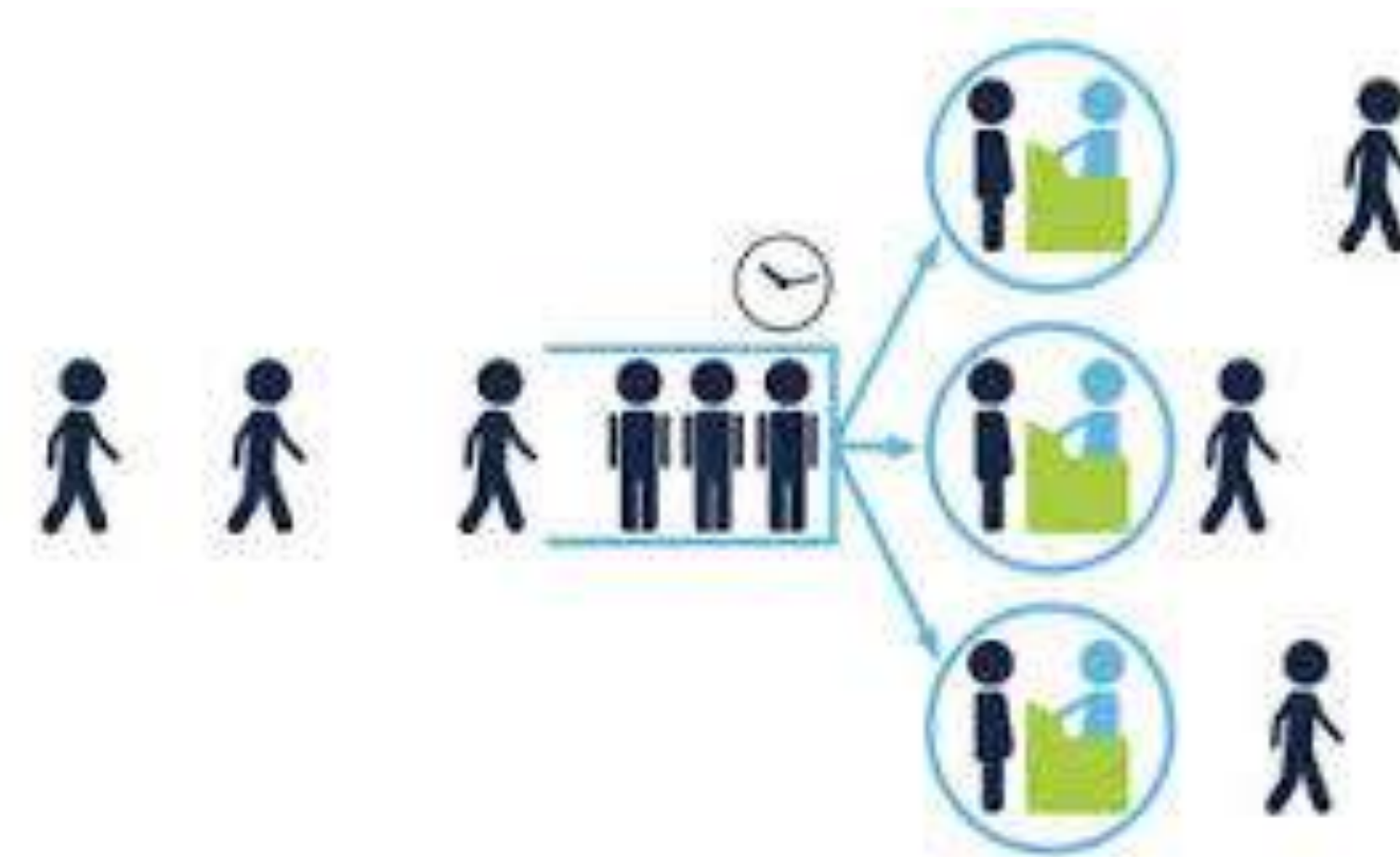
Using 702 forecasted voters used
an 8-hour day to calculate 84
voters per hour



Background on Equipment Allocation

Efficiency versus practical application

- 1 Utilized optimization calculator and input average time to vote = 8.25 minutes
- 2 Maximum wait time target established as 15 minutes with 90% service level





13

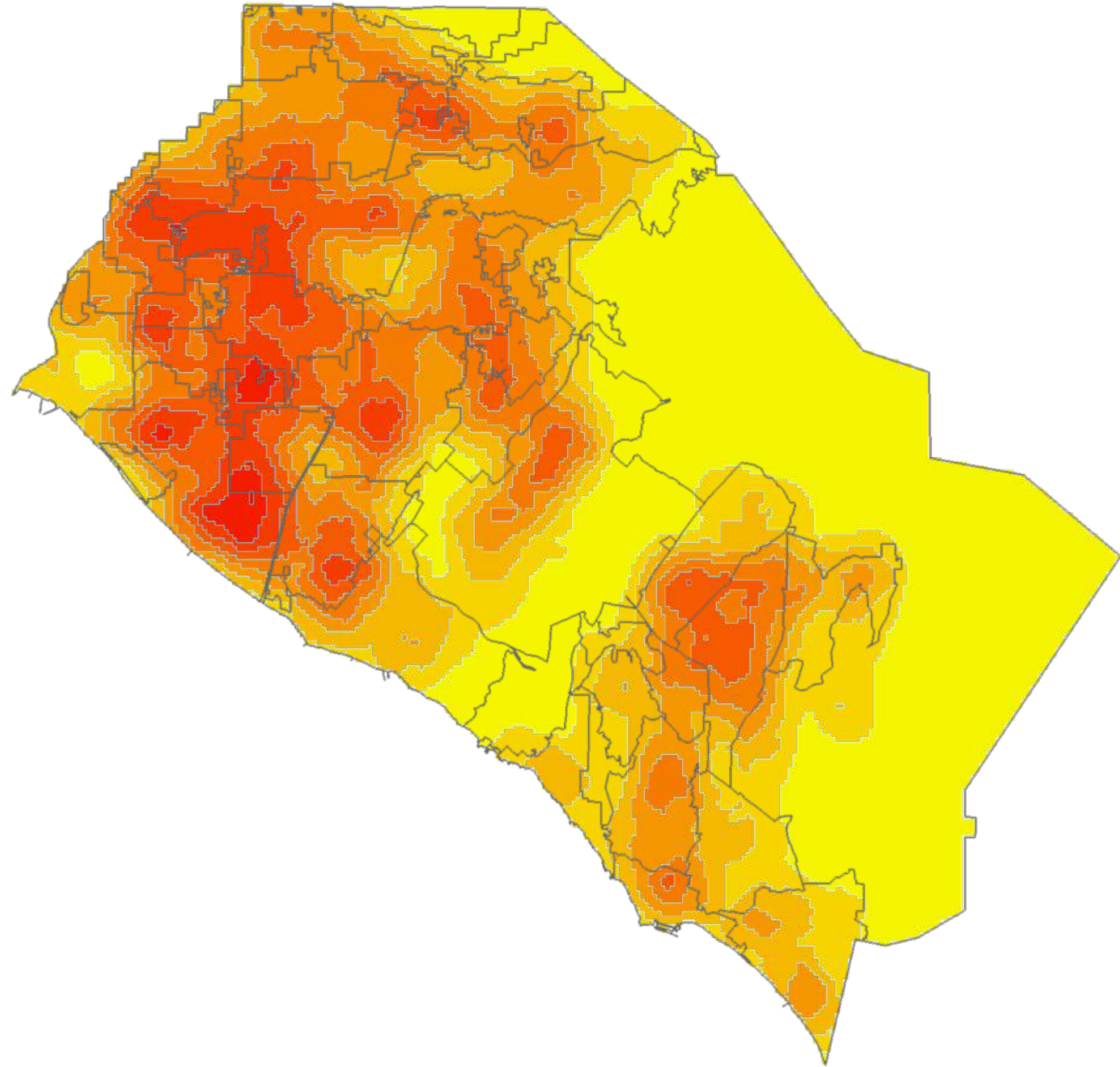


OUTPUTS

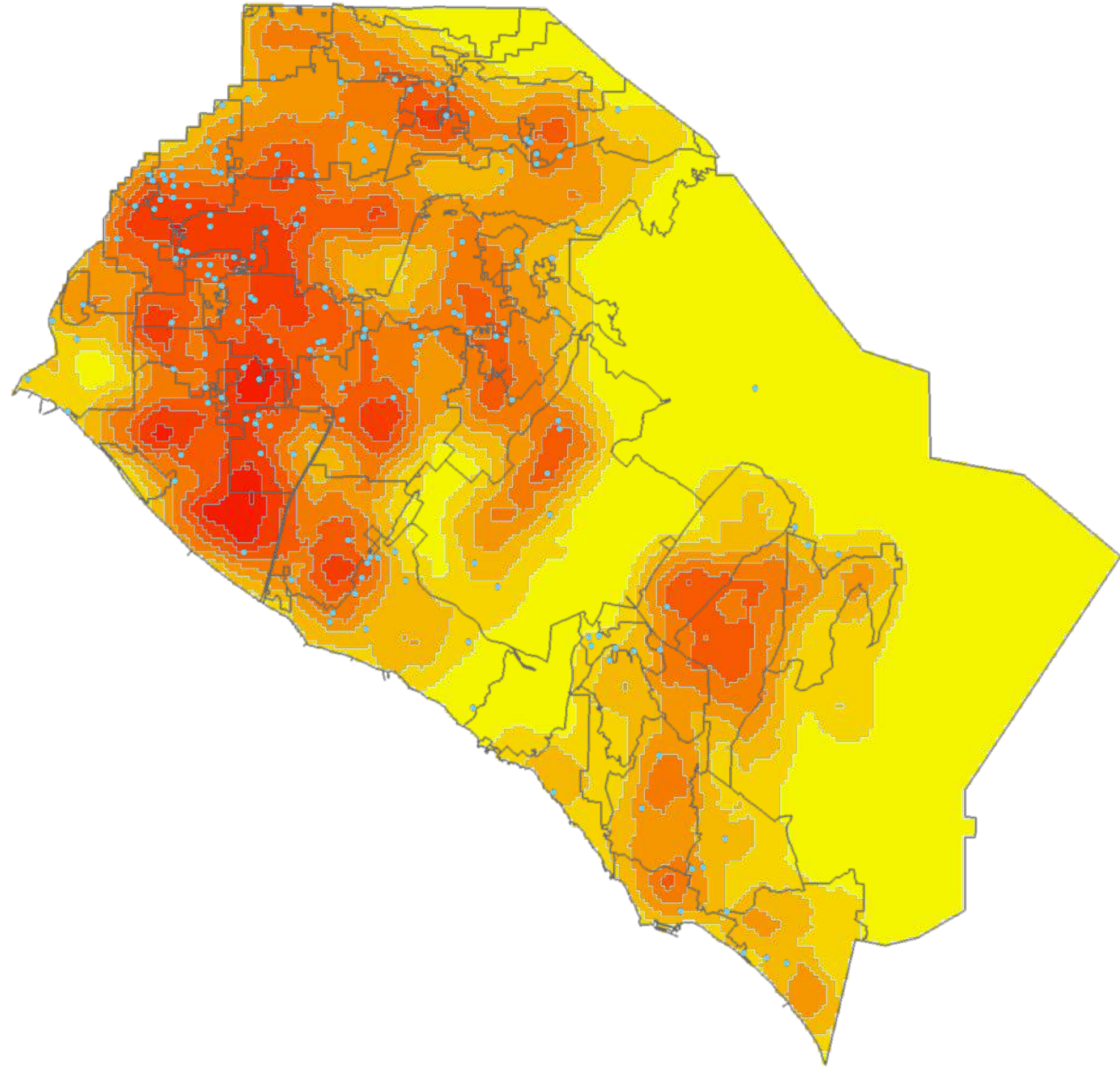
Applying use of data countywide with 1,2,000 units



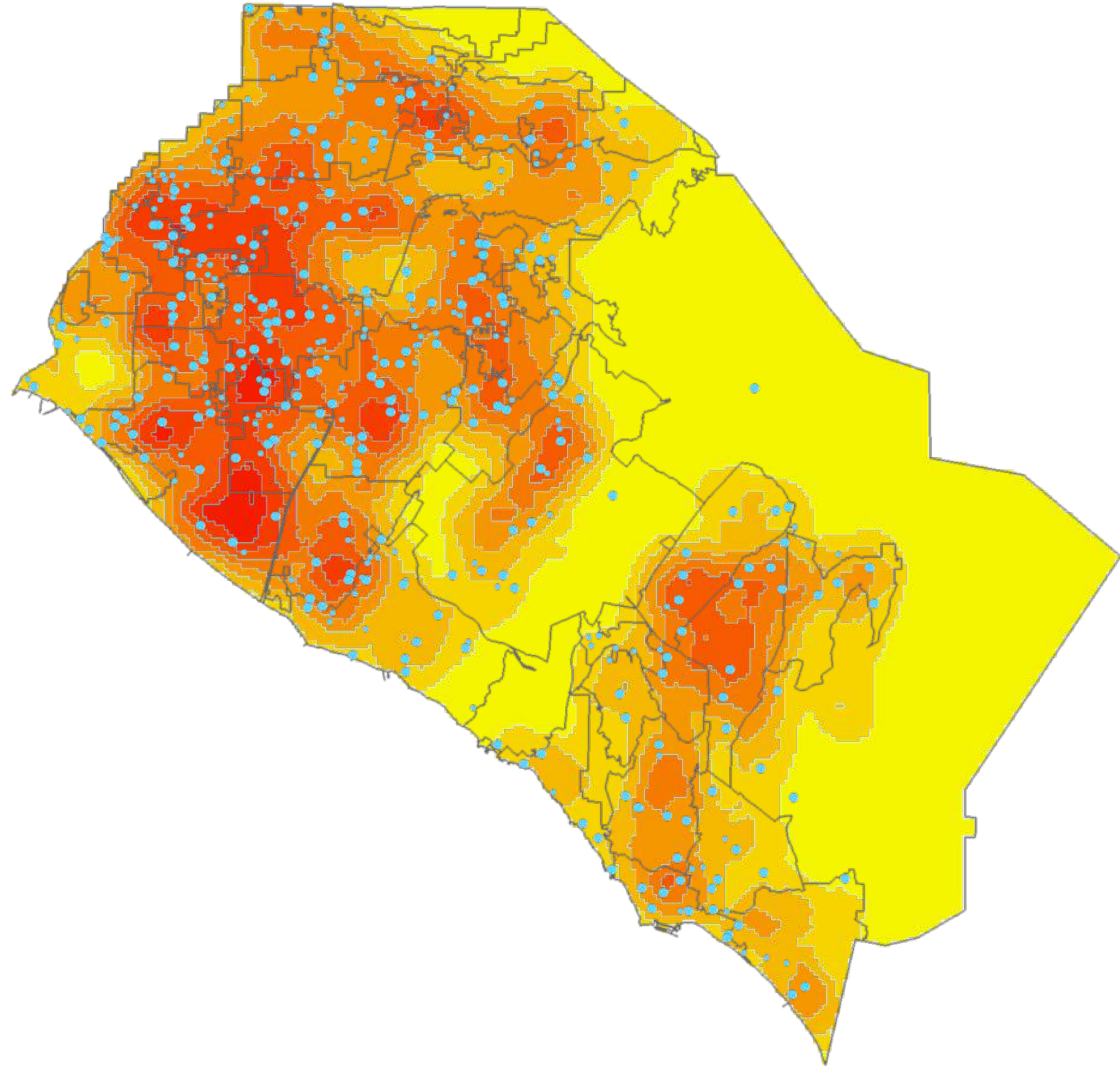
- 4 booths
- 5 - 6 booths
- 7- 8 booths
- 9 - 10 booths
- 11-12 booths
- 13 - 16 booths



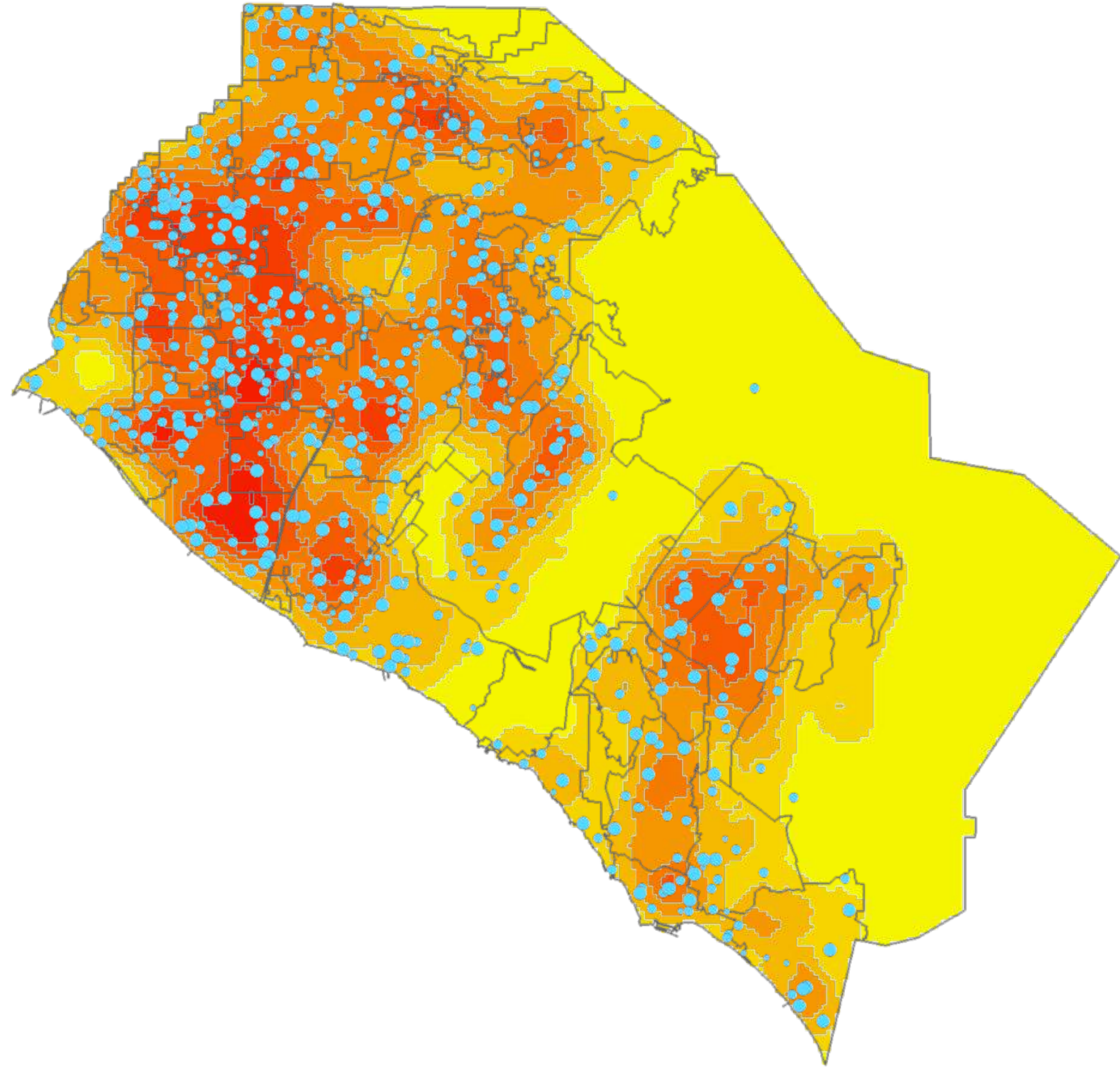
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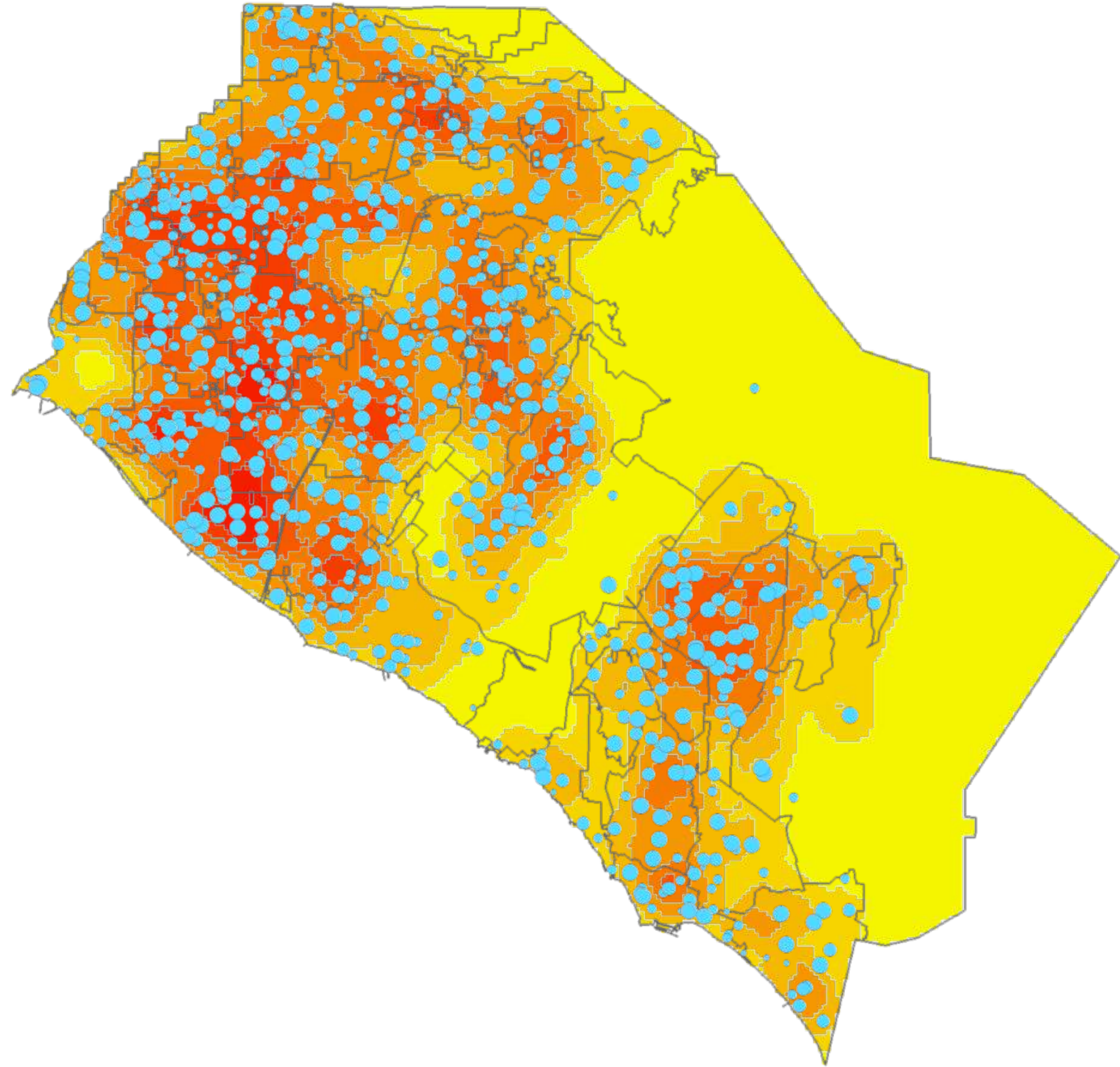
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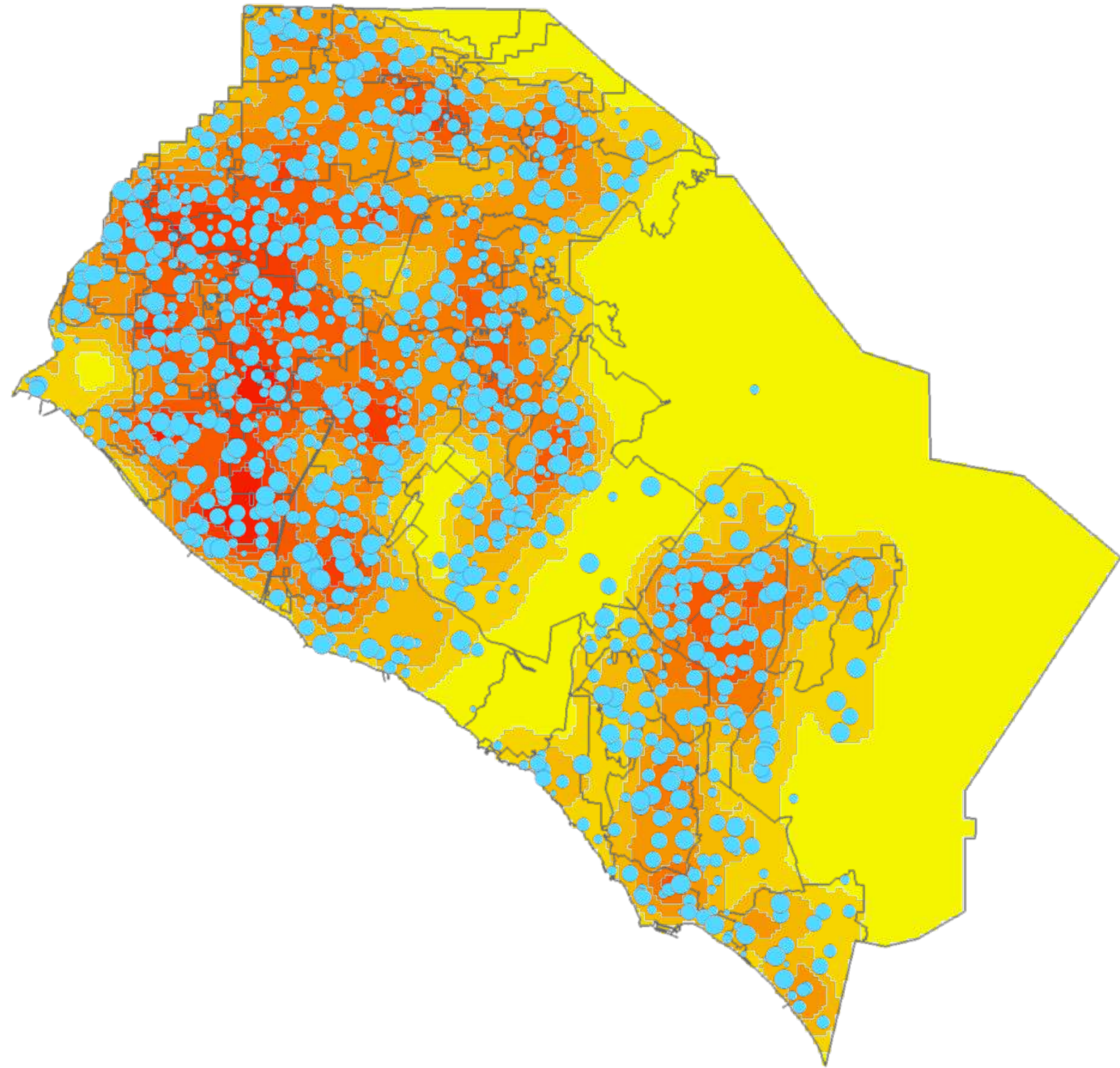
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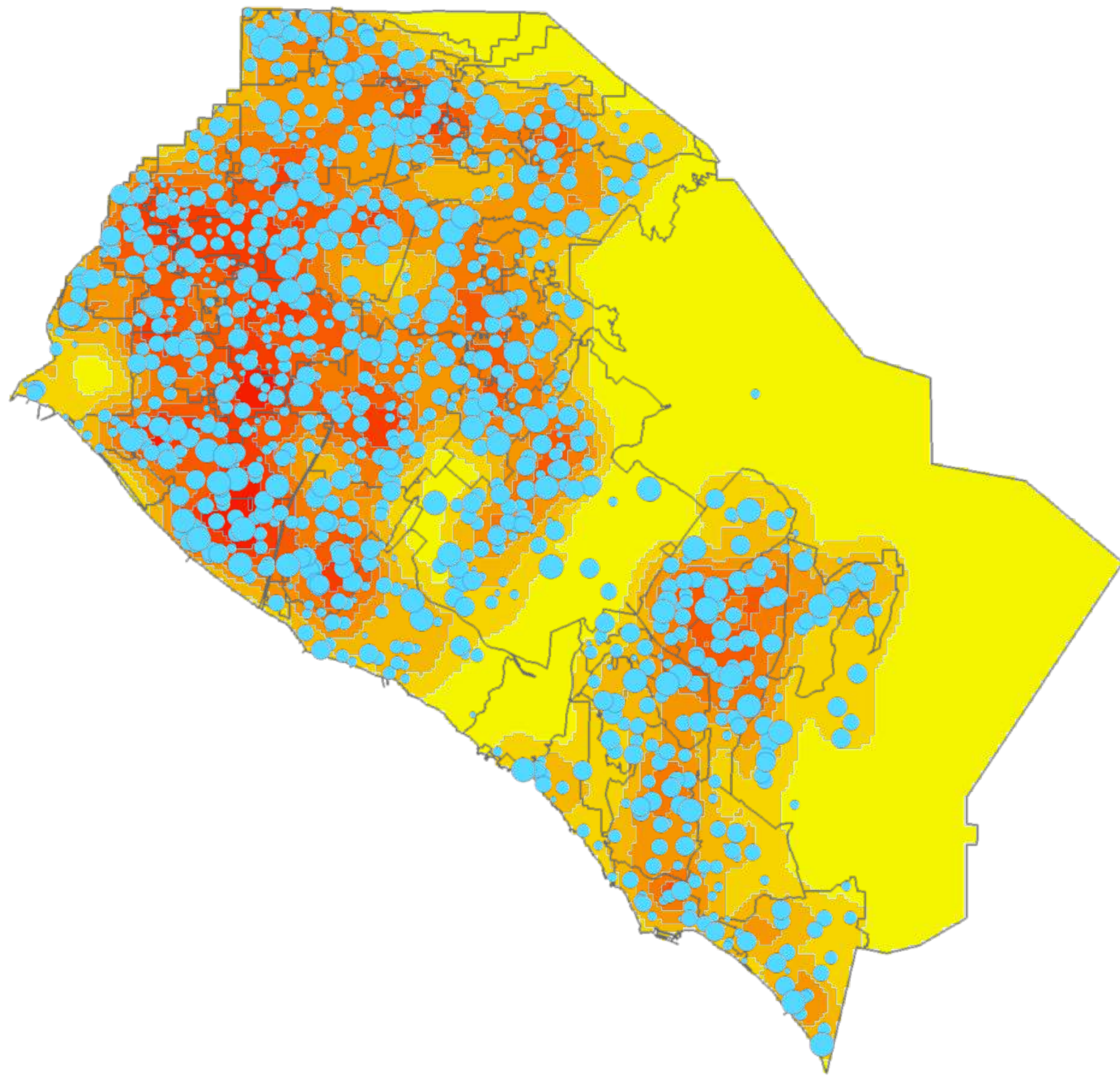
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MEASURING OUTCOMES

Other considerations and using metrics to measure outcomes



TOTAL BOOTHS

ENOUGH AVAILABLE BOOTHS?



FACILITY SIZE

ALLOCATIONS CAN CHOKE POLLING PLACE



NUMBER OF VOTES

PAPER TRAIL UNIT LIMITATIONS



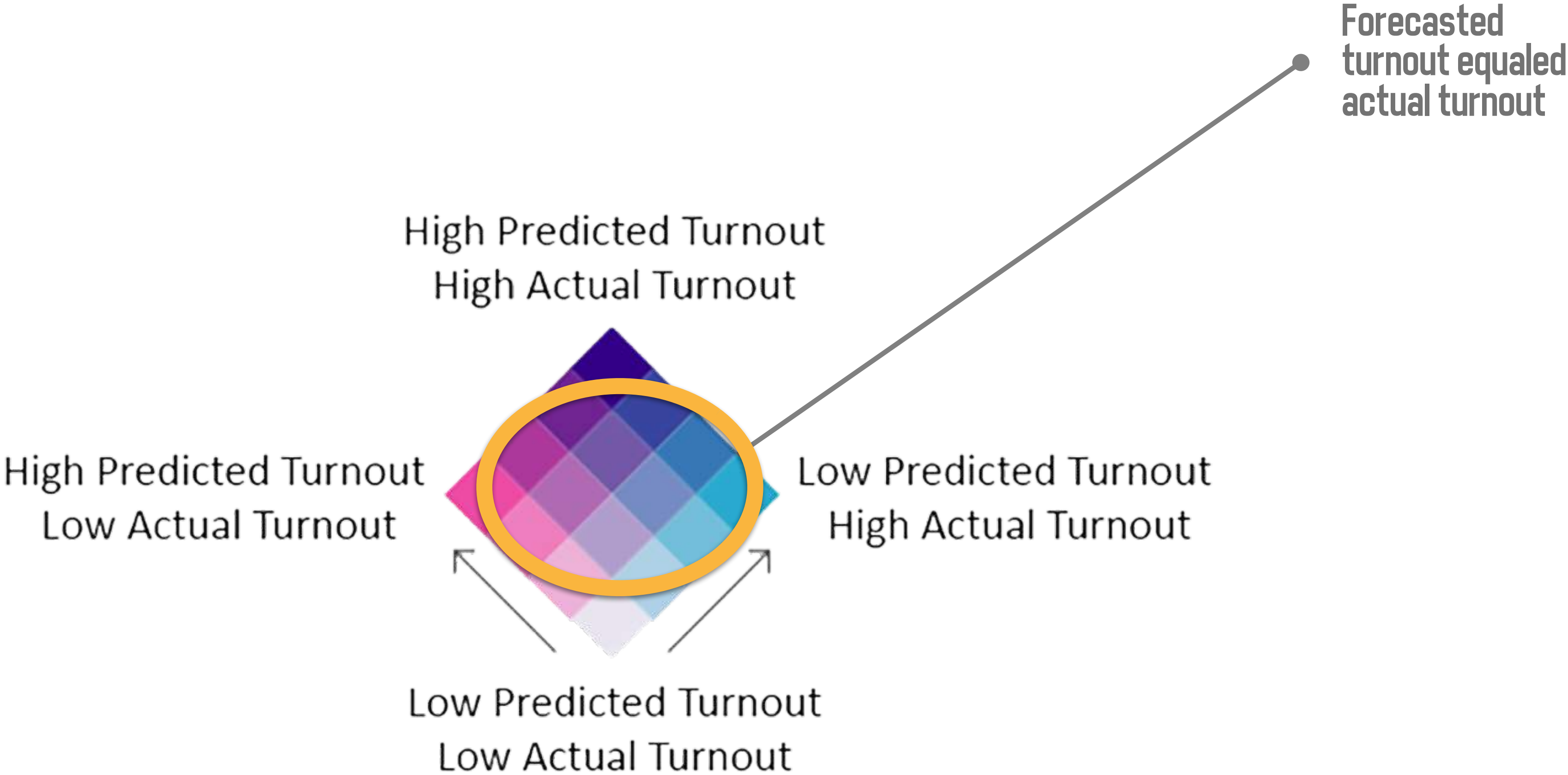
BOTTLENECKS

CHECK-IN STATIONS CAN FOIL PLANS



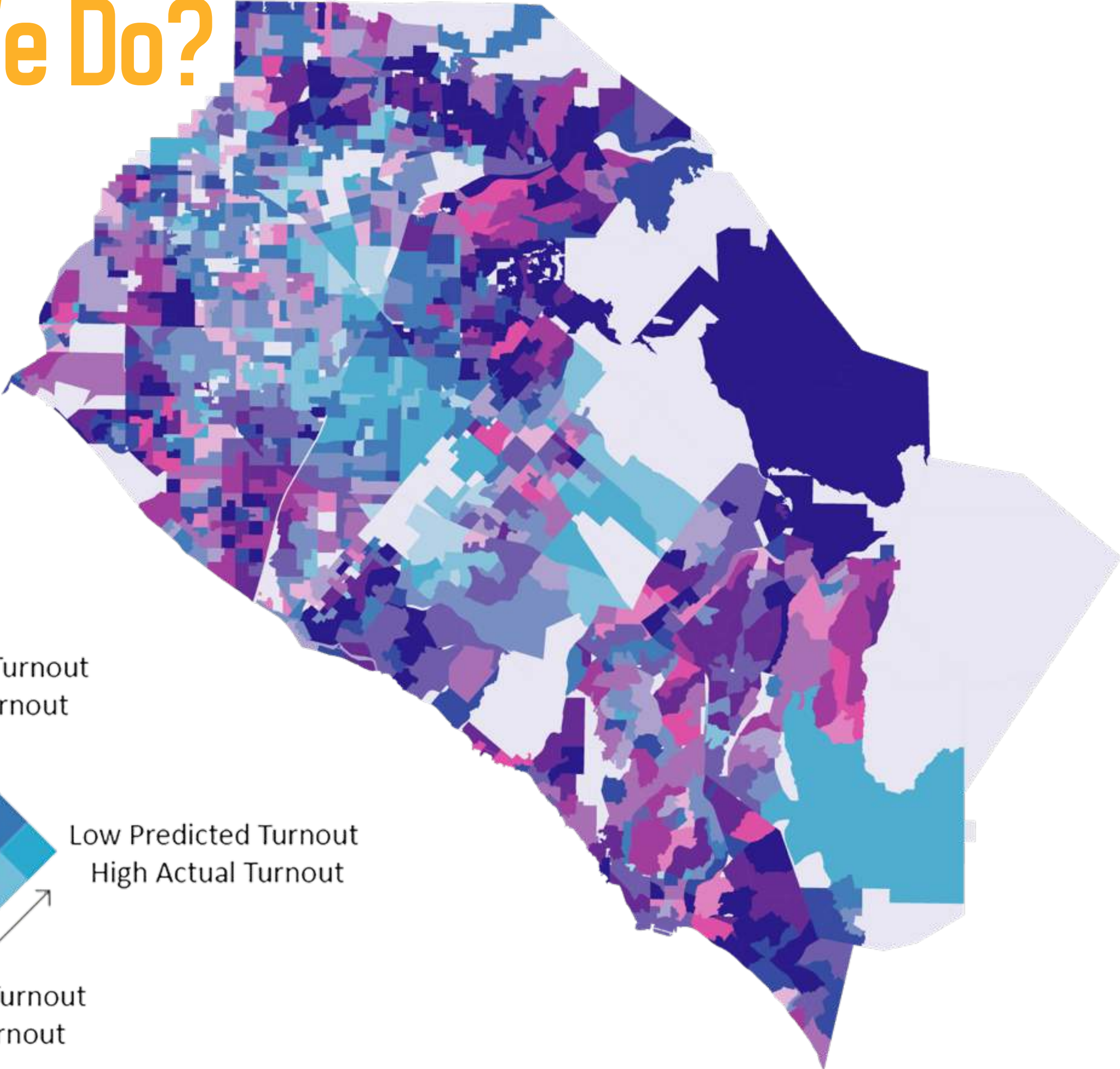
In 2016 How Did We Do?

Measuring outcomes



In 2016 How Did We Do?

Measuring outcomes

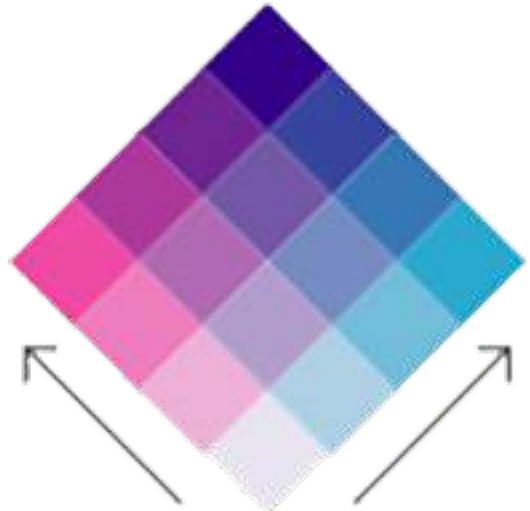


High Predicted Turnout
High Actual Turnout

High Predicted Turnout
Low Actual Turnout

Low Predicted Turnout
High Actual Turnout

Low Predicted Turnout
Low Actual Turnout



17 POLLING PLACES

IN 2016 17 REPORTS OF LONG LINES



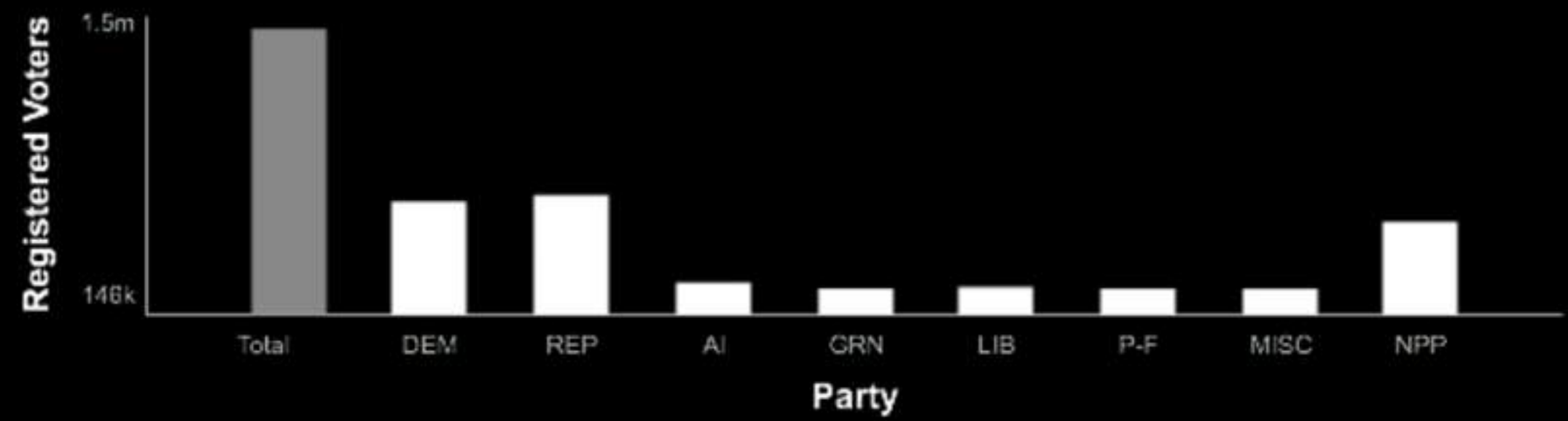
Election Data Central

- Registration
- Operations
- Ballots
- Results
- Maps
- Petitions
- Visualizations

Current Registration Counts	
Total active voters	1,497,496
Total inactive voters (what are inactive voters?)	401,891
Change from yesterday	↑ 153
Change (%)	0.01
Secretary of State report of registration (5/21/2018)	1,459,664
Statewide	17,660,486
Military and overseas	7,935
Party Counts	
DEM	504,228
REP	541,597
AI	38,673
GRN	4,816
LIB	12,955
P-F	3,840
MISC	3,483
NPP	387,904
Printable Weekly Countywide Registration Data (PDF)	

View by City, District, Year :

Registered Voters by Party (Orange County)



Current Registration News [More >](#)

- 03/30/2018 [Automated Registration Starts at DMV in April – Here's a Few Facts](#)
- 11/06/2016 [Orange County Election Data Brief: Voters 18-35 years old made up 61% of all new registrations on last day](#)
- 05/24/2016 [What happens when a voter in California does not select a party on their registration form?](#)

Current Registration Press Releases [More >](#)

- 05/20/2016 [Voter Registration Deadline is Monday, May 23rd](#)
- 10/17/2014 [Voter Registration Deadline is Monday, October 20th](#)
- 09/22/2014 [Voter Registration Deadline Today for Yorba Linda Recall Election](#)

Current Registration Podcasts [More >](#)

- 09/14/2010 [OC Registrar of Voters Discusses Military and Overseas Voting](#)

Current Registration Election Studio Broadcasts [More >](#)

- 10/22/2012 [KNBC Close of Voter Registration](#)
- 10/05/2012 [Orange County Registrar of Voters Neal Kelley Discusses the Phone Bank](#)
- 09/21/2012 [Orange County Registrar of Voters Election Journal September 21, 2012](#)

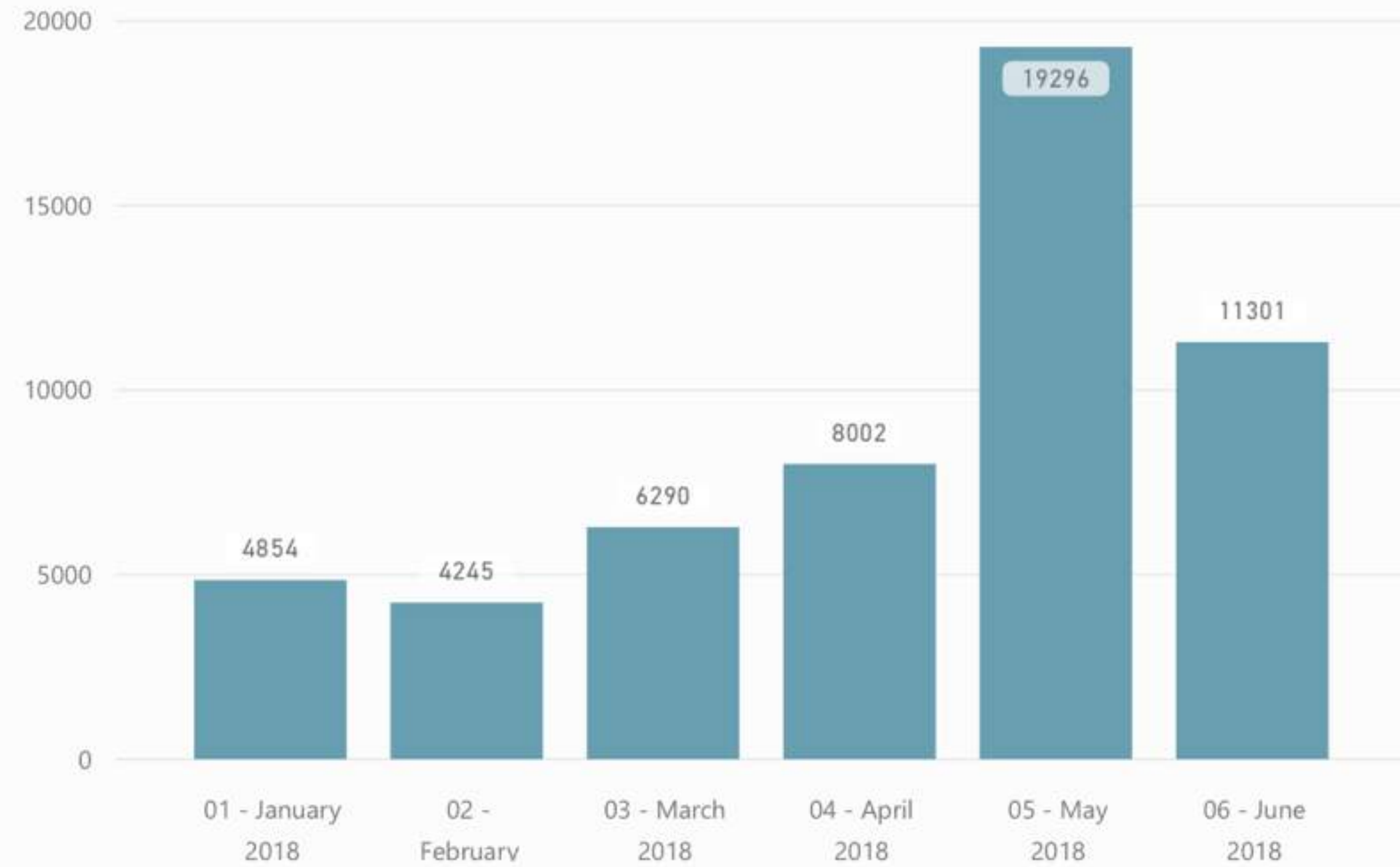


Data Visualizations

Please click on the page numbers at the bottom of the screen to navigate between visuals

Count of Newly Registered Voters by Month

Registration by Period



Period	Registration
01 - January 2018	4854
02 - February 2018	4245
03 - March 2018	6290
04 - April 2018	8002
05 - May 2018	19296
06 - June 2018	11301
Total	53988

Registration

▶ || ■ ◀ ▶▶ Registration

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Election Data Summit

#ElectionData18

