

California
Strategic Growth Council



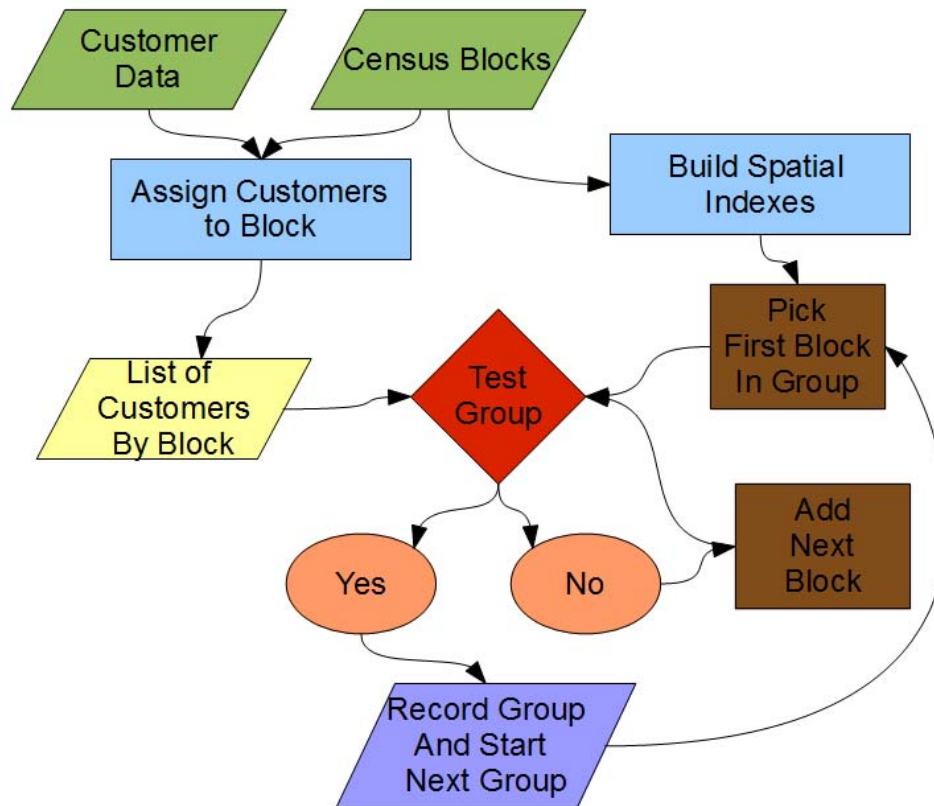
Spatial Clustering

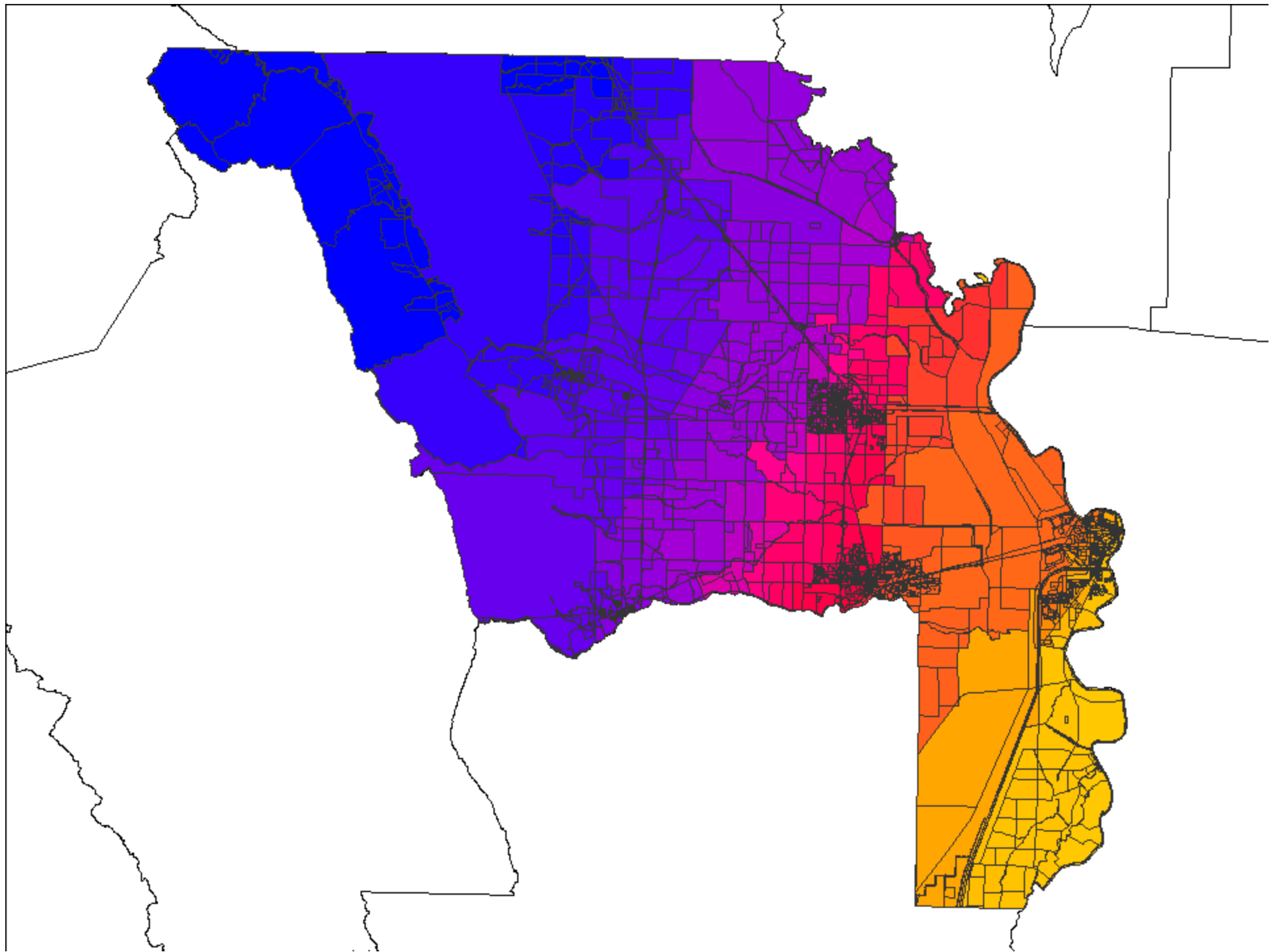
Mike McCoy, Executive Director
California Strategic Growth Council

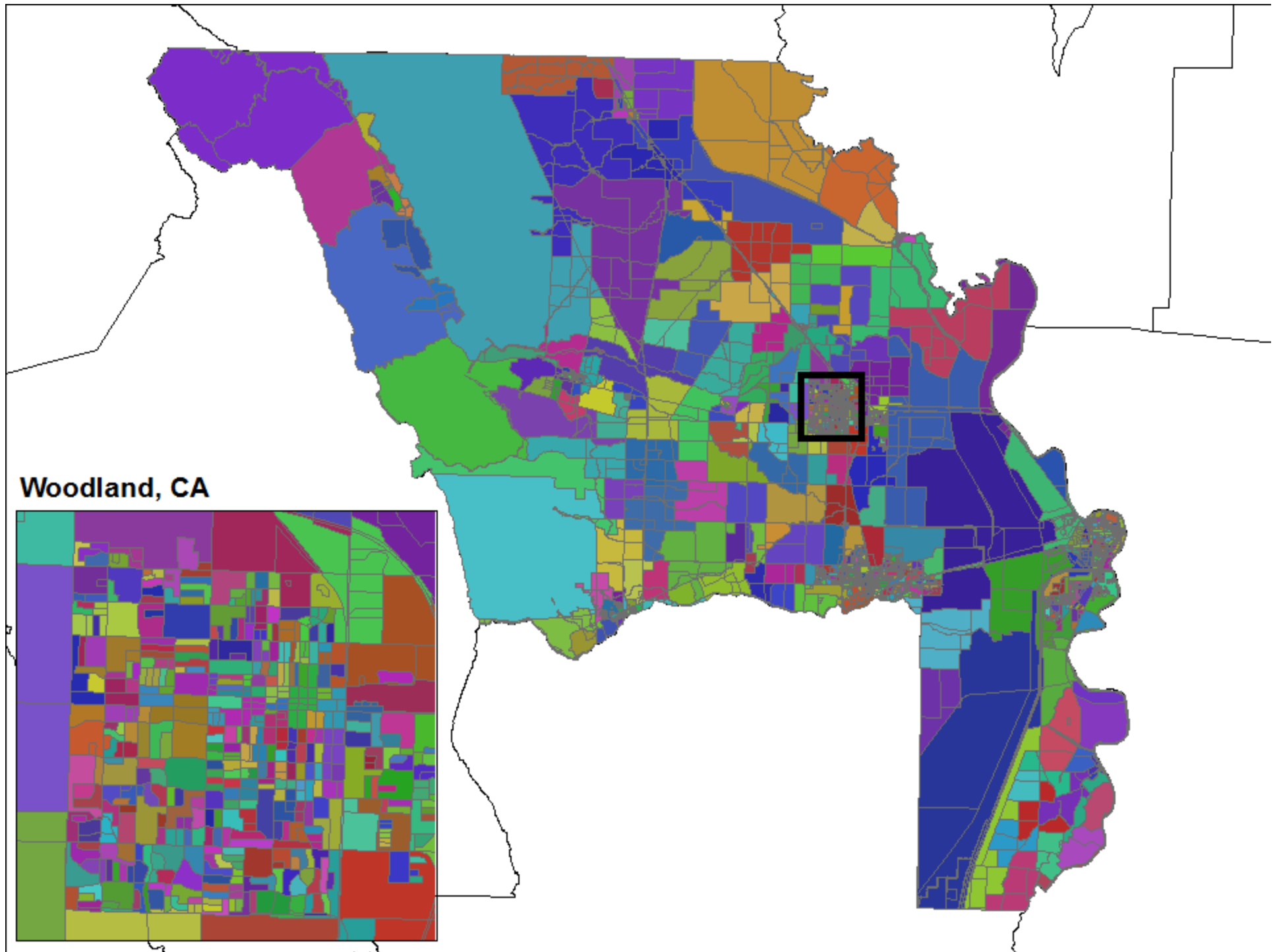
Steps

1. Assign Customers to Census Block based on street address.
2. Build Spatial Indexes on Blocks
3. Select the First Block as the “seed” for a new group.
4. Test to whether the combination of all customers in the block passes the 15/15 requirements
5. If No, add the next unassigned neighboring block (and its customers) to the group, and retest. Repeat as needed.
6. If Yes, write the group into the results, and pick the next starting block as the next “seed”
7. When there are no new available “seeds”, aggregate the customers in each group and produce statistics on the group.
8. Make the aggregated data available for use

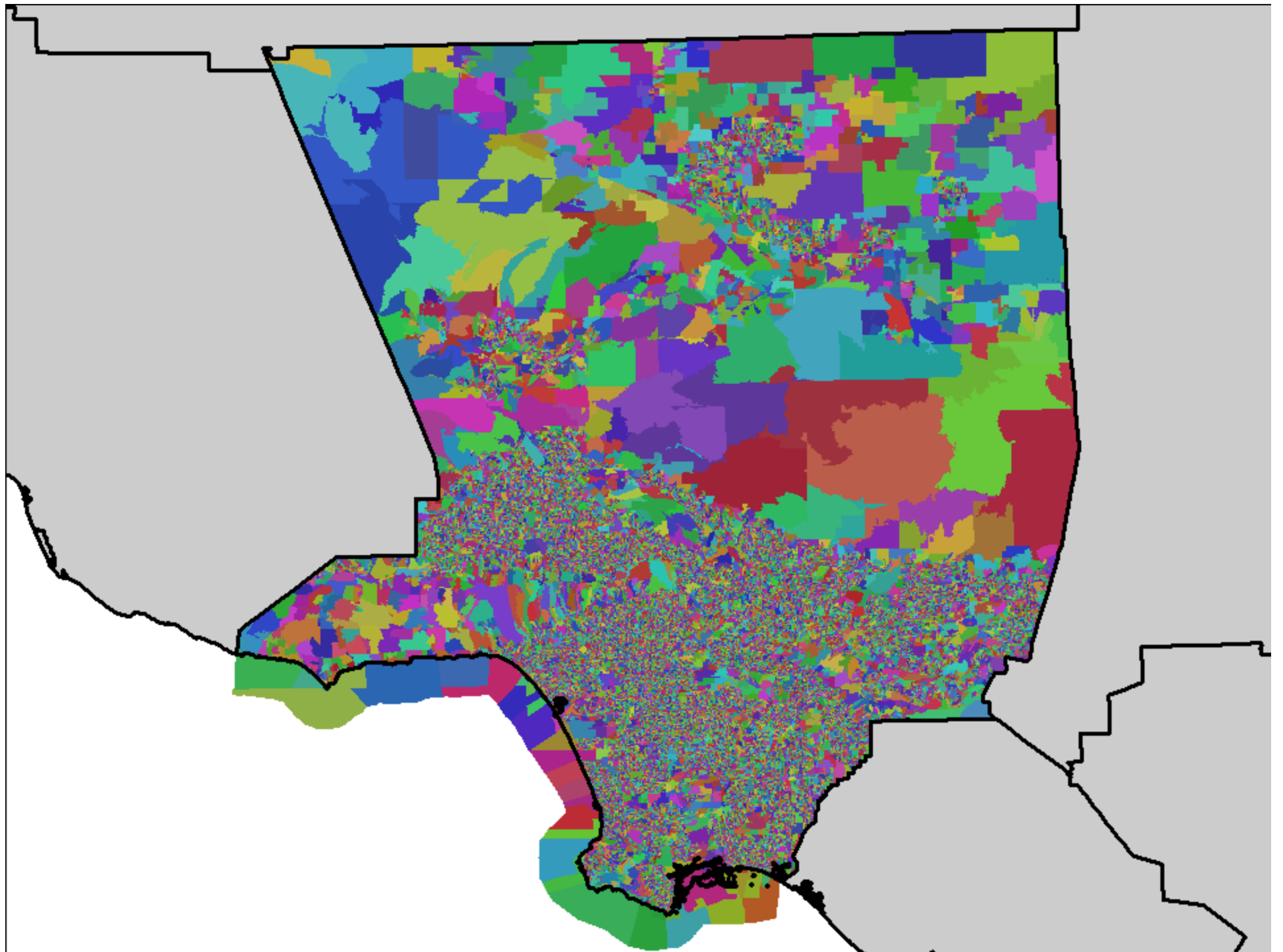
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Woodland, CA



Known Issues

- Computing time:
 - Exponential problem
 - eg. Yolo has ~3600 blocks, LA has ~110,000. 30X the size of Yolo, but computationally is ~900 times the calculations.
 - Yolo takes 25 seconds to run after creating spatial indexes
 - LA takes 1:50 (just under two hours).
- Non-Optimal Solution:
 - This is not an optimizing algorithm. It finds a brute force solution.
 - There are optimizing algorithms, but they tend to need more time and computing power.